



29th

BaSS

Congress
Belgrade
April 24-26, 2025

Abstract Book



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Organized by Balkan Stomatological Society - SRB

**29th Congress of the
BALKAN STOMATOLOGICAL SOCIETY**

ABSTRACT BOOK

April 24 - 26, 2025

Sava Center

Belgrade, Serbia

I. Message from the President of the 29th BaSS Congress

Dear Colleagues and Friends,

On behalf of the Serbian Section of the Balkan Stomatological Society (BaSS), and under the auspices of the BaSS Council Members, it is my great pleasure to welcome you to the 29th BaSS Congress in Belgrade.

As in previous years, the 29th BaSS Congress aspires to serve as a dynamic platform for uniting dental professionals from across the Balkans. Our goal is to share up-to-date, world-class knowledge, explore modern international practices, and foster the exchange of experiences- both with leading global experts and among ourselves. This collaborative spirit offers valuable insight into the latest developments in dental science, clinical practice, and emerging technologies.

True to the tradition of BaSS, the Congress will feature a broad and engaging scientific program that spans a wide range of relevant and compelling topics in dentistry. This year, we are placing a special focus on the current and future applications of digital technologies and artificial intelligence in dental practice, with particular attention to their role within the regional context of the Balkan countries.

The Congress will host over 60 distinguished international and regional speakers, delivering a rich and diverse program that includes plenary lectures, round tables, meet-the-expert forums, workshops, oral poster presentations, covering the most innovative themes in our field.

We hope you will find the scientific program both inspiring and informative, and that you will also take the opportunity to enjoy the vibrant social and cultural life of the city of Belgrade.

Professor Dejan Marković

President of the 29th BaSS Congress

II. Message from the President of the Balkan Stomatological Society (BaSS)

Dear Colleagues and Friends,

I am happy to invite you to the 29th Congress of the Balkan Stomatological Society (BaSS) that will be held in Belgrade, Serbia, from 24th to 26th of April 2025.

Dentistry is a constantly developing profession and dentists need to constantly renew their knowledge and information to take into account the latest developments. Being 'ahead of the game' is what our members of society expect from us.

As an Organizing Committee, we aim to create a stimulating and informative congress that will benefit all attendees from the Balkan peninsula. We remain dedicated to delivering outstanding quality and experience to our participants and providing access to the latest technologies, techniques, and trends that will enable dental professionals to offer exceptional care to their patients.

We would like to see all our colleagues in the beautiful city of Belgrade.

Best wishes,

Prof. Dr. Ender Kazazoglu

President of the Balkan Stomatological Society (BaSS)

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IV. CONGRESS COMMITTEES

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EXHIBITORS



THURSDAY, APRIL 24, 2025

	Amphitheatre	MR 9	MR 11	MR 10	MR 12
Morning Sessions		10.30 National Day  REGIONAL LANGUAGES	12.00 Session: Radiology	11.00 OP/PP <i>Endodontics I</i>	11.00 OP/PP <i>Dental Materials</i>
13.30-14.00		Coffee Break			
Afternoon Sessions 14.00 - 17.00		Session: Minimum Intervention / Esthetic Dentistry	Session: Oral Surgery / Implantology I	14.00 BaSS Lecturers OP/PP <i>Diagnostic Sciences</i> 16.45 OP / PP Cariology	14.00 BaSS Lecturer OP/PP <i>Prosthodontics I</i> 16.45 PP <i>National Day</i>
18.00-19.00	Opening Ceremony				
19.00-20.30	Welcome Reception				

FRIDAY, APRIL 25, 2025

	MR 9	MR 11	MR 21	MR 8	MR 10	MR 12	MR 7
09.30 - 11.30	Session: Maxillofacial Surgery 11.00 OP / PP	Session: Pediatric Dentistry 11.00 OP / PP		BaSS Lecturer OP / PP Endodontics II	BaSS Lecturer OP / PP Prosthodontics II	BaSS Lecturer OP / PP Orthodontics I	Round table I Peri-implant disease
11.30-12:00	Coffee Break						
12.00-14.00	Session: Periodontal / Oral Surgery / Oral Medicine / Implantology II	Session: Endodontics I		BaSS Lecturers OP / PP Digital Dentistry/ Prosthodontics IV	OP / PP Prosthodontics III	OP / PP Orthodontics II	BaSS Award Session
13:30-14:30	Break						
14.30-16.30	Session: Orthodontics	Session: Restorative Dentistry	14:00-17:00 Workshop: Periolink	15.00 BaSS Lecturers OP / PP Basic Sciences	15.00 BaSS Lecturer OP / PP Periodontology	BaSS Lecturer OP / PP Oral Surgery / Implantology	BaSS Council Meeting I
20:00	Gala Dinner, Restaurant Jezero, Ada Ciganlija						

FRIDAY, APRIL 25, 2025 – WORKSHOPS		
Venue: School of Dental Medicine, University of Belgrade, Implant Center		
10:00-13:00	Workshop: Immediate Implant Placement with Immediate Loading	Prof. Dr. Aleksa Marković, Prof. Dr. Zoran Aleksic, Asist. Prof. Dr Mirko Glišić, Dr. Jovana Marković
14:00-16:30	Workshop: Intraoral Photogrametry in all on X Cases	Prof. Dr. Miodrag Šćepanović
Venue: Sava Center		
14:00-17.00	Workshop: Treatment Modalities for Surgical Crown Lengthening	Prof. Dr. Nataša Nikolić Jakoba Dr. Srđan Stepanović

SATURDAY, APRIL 26, 2025

	MR 9	MR 11	MR 21	MR 8	MR 10	MR 12	MR 7
09.30-11.30	Session: Endodontics II	Session: Oral Surgery/ Implantology III		OP / PP Pediatric Dentistry I	OP / PP <i>Oral medicine</i> <i>Oral</i> <i>Epidemiology,</i> <i>Dental Public</i> <i>Health</i>	Session: Bioengineering	Round table II. Public Dental Health
11.30-12.00	Coffee Break						
12.00-14.30	Session: Digital Dentistry	Session: Aesthetics	11:00 - 14:00 Workshop: Endodontic Retreatment	OP / PP Pediatric Dentistry II	OP / PP Education	12:00-15:00 Session: Artificial Intelligence	BaSS Council Meeting II
15:00-16:00	GENERAL ASSEMBLY						

SATURDAY, APRIL 26, 2025 - WORKSHOP		
Venue: School of Dental Medicine, University of Belgrade, Implant Center		
09:30-13:30	Workshop: Orthodontic Mini-Implants: Contemporary Approach in Clinical Implications	Prof. Dr. Nenad Nedeljković, Dr. Ivan Arsić, Dr. Nemanja Marinković, Dr. Jovan Marković
Venue: Sava Center		
11.00-14.00	Workshop; Let's Do It One More Time – Endodontic Retreatment	Prof. Dr. Goran Tošić



29th
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Congress
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**Invited
Lecturers**



L1**DIGITALLY DESIGNED AND CUSTOM PRINTED ORTHODONTIC APPLIANCES**

Sercan Akyalcin

School of Dental Medicine, Harvard University, USA

Lecture details: Recent developments in 3-D printing technology and customized and personalized therapy have made many options available for clinicians in treating orthodontic malocclusions. While many approaches are relatively new, we began to observe their superior outcomes in terms of precision, treatment length, and patient comfort. But are the custom appliances worth the hype? After attending this talk, the clinicians will better understand precision orthodontics and personalized treatment while recognizing the importance of incorporating diagnostic information in the treatment mechanics. The presentation will touch on critical points for clinicians to familiarize themselves with customized appliance design and fabrication. Finally, it should be clear to all attendees how to plan and execute the treatment of complex cases with a personalized approach. The presenter will use case examples and demonstrations to present the power of digital orthodontic tools and how they could be a part of every practice.

Curriculum Vitae: Dr. Sercan Akyalcin is the Head of Orthodontics at Harvard School of Dental Medicine. He has a DDS-PhD degree and is a graduate of the orthodontic program at the University of Texas Health Science Center at Houston. Before joining Harvard University, he was a faculty member at Tufts University School of Dental Medicine in Boston, where he also served as the chair and graduate program director of Orthodontics. Dr. Akyalcin is active in many leadership roles, serving on the Northeast Society of Orthodontists (NESO) Board of Directors and representing NESO on the House of Delegates at the AAO. He also advocates for the Northeast region on the AAO Council on Education. As a dental educator and orthodontist, he has published fifty peer-reviewed papers, co-edited a textbook, contributed to twelve other orthodontic books, and served on the editorial boards of orthodontic and dental journals. In addition, he has been recognized with several awards in the field, including the 2019 Edward H. Angle Research Prize. Additionally, he serves as an examiner for the Council on Dental Accreditation and the American Board of Orthodontics.

L2**EXAMPLES FOR PERIODONTAL PLASTIC AND AESTHETIC SURGERY**

Murat Akkaya

Lokman Hekim University, Turkiye

Lecture details: Recession of the facial, gingival margin will alter the proper gingival symmetry and result in an esthetic problem. The presence of the interdental papilla is also important to satisfy the esthetic goals of the patient. A missing papilla creates a space which many address as a "black hole." The regeneration of the lost or reduced papilla is one of the most difficult goals in esthetic periodontal plastic surgery. Another area of concern is the patient who presents an excessive amount of gingiva in the visible area. This condition is often addressed as a "gummy smile" and may be corrected surgically by crown lengthening. The correction of these anatomic defects has become an important part of periodontal plastic surgery.

CRITERIA FOR SELECTION OF TECHNIQUES

1. Surgical site free of plaque, calculus, and inflammation.
2. Adequate blood supply to the donor tissue.
3. Anatomy of the recipient and donor sites.
4. Stability of the grafted tissue to the recipient site.
5. Minimal trauma to the surgical site.

Some of surgical techniques employed for the treatment of gingival recessions are: connective tissue autograft, pedicle autografts, and coronally positioned flap include semilunar pedicle, laterally positioned pedicle flap, double papilla flap procedure, subepithelial connective tissue graft, tunnel technique, pinhole surgical technique and guided tissue regeneration (GTR).

In this lecture, examples of periodontal plastic and aesthetic surgery techniques will be presented.

Curriculum Vitae: Dr. M. Murat AKKAYA graduated from Ankara University Faculty of Dentistry in 1981. In 1985, he completed his doctorate in periodontology at Ankara University. He received the title of associate professor in 1987 and professor in 1994. He worked at Ankara University until June 2023. He has been working at Lokman Hekim University in both education and clinical fields since November 2023. He is a member of the Turkish Society of Periodontology, Turkish Dental Association, European Federation of Periodontology and BaSS.

L3**ADVANCES IN UNDERSTANDING AND MANAGING ROOT RESORPTIONS**

Ruth Pérez Alfayate

Universidad Europea De Madrid, Spain

Lecture details: Root resorptions, a multifactorial condition involving the loss of dental hard tissue, remain a significant clinical challenge in dentistry. This condition can be classified as internal, external, or combined, with etiology linked to trauma, orthodontic treatment, infection, or systemic factors. Advances in diagnostic tools and management strategies are reshaping our ability to identify, monitor, and treat these lesions effectively. This presentation explores the latest developments in the diagnosis, pathogenesis, and management of root resorptions, emphasizing early intervention and minimally invasive approaches.

Curriculum Vitae:

- Graduate in Dentistry from the Faculty of Dentistry of the University of Granada (2000-2005).
- Diploma of Advanced Studies from the University of Granada (2009).
- Official Master of Advanced Endodontics at the European University of Madrid (2008-2010).
- Doctor in Dentistry with European Mention "Excellent Cum Laude", European University of Madrid (2016).
- Full Professor at the European University of Madrid.
- Teacher in the subject "Integrated Adults" (Support in Endodontics) from the 2010/11 academic year to the present.
- Professor of the Official Master of Advanced Endodontics at the European University of Madrid.
- Collaborating professor in the Master of Aesthetic Restorative Dentistry and Endodontics at the Rey Juan Carlos University from the 2015/16 academic year to the present.
- Collaborating professor in the Master of Endodontics at Universidad de Granada from 2023 to the present
- Lecturer at national/international conferences.
- Author of different national/international publications.
- Full member of AEDE, member of ESE committees and member of GEOEC.
- Practice limited to Endodontics in Tenerife, Spain, since 2009.

L4

SIMULTANEOUS AND STAGED RIDGE AUGMENTATION – SELECTION OF PROTOCOLS AND BIOMATERIALS

Miroslav Andrić

School of Dental Medicine, University of Belgrade, Serbia

Lecture details: Appropriate and successful alveolar ridge augmentation creates optimal conditions for prosthetically driven implant placement and long term stability of achieved therapeutical results. Simultaneous augmentation comprises shortened treatment time, lower morbidity and reduced treatment costs, compared to staged augmentation procedures. However, the predictability of bone regeneration is reduced with simultaneous approach. Therefore, clinicians have to consider numerous factors when deciding which protocol is optimal for given clinical situation. Among those factors, shape of the defect is of critical importance. Defects within the bone envelope, with more bony walls, are much easier to regenerate, compared to the unconfined defects outside of the contours of the alveolar ridge. In particular, augmentation of combined horizontal and vertical defects, or strictly vertical defects of the alveolar ridge is much less predictable. Other factors to consider include esthetic risk assessment and systemic factors, such as metabolic and drugs-related disturbances of the wound healing. Apart from decision whether to perform simultaneous or staged augmentation, appropriate selection of regenerative materials is of the utmost importance. While autologous bone comprises high regenerative potential, stimulating osteogenesis, it is also prone to significant resorption, reducing the amount of newly formed bone. In contrast to this, xenografts demonstrate high dimensional stability but also tend to leave significant amounts of unresorbed graft particles at the augmentation site, which reduces formation of new vital bone. Finally, successful augmentation requires stabilization of the graft and good contouring of the alveolar ridge. This can be achieved either by usage of block grafts with fixation devices or by application of non-resorbable titanium reinforced membranes or titanium mesh.

Curriculum Vitae: Dr Miroslav Andric earned his degree from the School of Dental Medicine, University of Belgrade, in 1997. In 2002, he completed the Residency Program in Oral Surgery at University of Belgrade. He has completed postgraduate studies in Oral Surgery at the University of Belgrade and in 2006 he reached the title Master of Science in Oral Surgery. In 2012 he completed his PhD thesis at the University of Belgrade. Current position: Professor of Oral Surgery, Anesthesiology and Implantology, School of Dental Medicine, University of Belgrade. Professor Andric is involved in courses of Oral surgery, Anesthesiology and Implantology for undergraduate students and in courses of Biomedical publishing and Introduction to biomedical research for doctoral students. He took part in CME programs at University of Zurich, Zentrum für Zahn-, Mund- und Kieferheilkund and University of Tübingen. Dr Miroslav Andric has published numerous articles in leading scientific journals indexed in Science Citation Index and presented numerous lectures in Serbian and international scientific meetings in fields of oral surgery and implantology. His primary research focus is on oral and maxillofacial pathology and microbiology and regenerative procedures and materials. He has been serving as a Secretary of Section of Oral Surgery and Section of Oral Implantology of Serbian Medical Association. He is an ITI Fellow since 2010 and registered ITI speaker, also actively participating in the development of the ITI Academy, as a Senior Editor. He is actively involved in the work of ITI Study Club Belgrade, currently serving as a director of ITI study club Belgrade 2, and in postgraduate and residency programs in Oral Surgery and Implantology at University of Belgrade. Oral implantology represents a significant portion of his clinical work. He performs both surgical and prosthodontic implant procedures, including complex regenerative surgery. He also serves as a lecturer for courses in advanced implant and augmentation surgery.

L5**INTRAOPERATIVE COMPLICATIONS IN DENTAL IMPLANTOLOGY**

Vladimir Biočanin

Faculty of Stomatology in Pancevo, University of Business Academy in Novi Sad

Lecture details: Complications in dental implantology can occur at any stage of implant therapy, from planning, intraoperative, to postoperative phase. Unlike complications in planning phase and postoperative complications, intraoperative (surgical) complications are usually unexpected and require urgent treatment. From intraoperative complications associated with a surgical procedure, bleeding most often occurs in the interforaminal region of the mandible, because most of the vascular branches (a.subligvalis, a. submentalalis) in this region enter the mandible bone. Nerve damage can occur as a result of transposition or lateralization of the inferior alveolar nerve, or excessive penetration of the drill or implant into the mandibular canal. Fractures of the mandible which are a consequence of the installation of implants occur more easily when the implants are placed in an atrophic jaw. Sometimes, incorrect positioning or lack of parallelism in implant placement causes damage to the root of the adjacent tooth. The absence of primary stability can arise as the result of over expansion of the implant bed during bed preparation, and also due to poor bone quality, and can occur more often with immediate implantation. Another possibility of complication is the migration of the implant into the maxillary sinus.

Curriculum Vitae: Dr Vladimir Biocanin graduated from the Faculty of Dentistry, University of Belgrade as the best-in-class student, in 2006. At the same faculty he has completed postgraduate studies in Oral surgery and got PhD degree in 2012. In 2016 he became an oral surgeon specialist. Current position: Dean and Full professor of Oral Surgery, Anesthesiology, Oral implantology at the Faculty of Stomatology in Pancevo, University of Business Academy in Novi Sad. Professor Biocanin has published 118 scientific papers, among which 22 from the Science Citation Index. Moreover, he is an author of 8 university books and project leader or project associate in 7 scientific projects. He presented numerous lectures in international and national conferences, and serves as reviewer in many international and national scientific journals.

L6

HYALURONIC FILLERS IN LOWER THIRD FACIAL AESTHETICS

Željka Cabunac

Dental Clinic "Cabunac", Belgrade, Serbia

Lecture details: The characteristics of the lower third of the face, including lips, perioral region, mandibular area, and chin positioning, directly influence overall facial aesthetics. Hyaluronic fillers offer an effective and precise method for treating this critical facial region. Lip augmentation using hyaluronic acid remains one of the most prevalent aesthetic procedures globally. The fundamental aim of any aesthetic intervention should be the patient's beautification and rejuvenation. To achieve optimal results in lip augmentation, conducting a comprehensive facial analysis, both frontal and profile, is essential. The frontal analysis should include horizontal and vertical evaluations, while for profile assessment I use the Tweed-Merrifield profile line, which provides a straightforward approach to understanding facial harmony. The Tweed-Merrifield analysis enables precise determination of chin positioning, which can be classified into three categories: normal/eugnathic, distal/retruded, and mesial/prognathic. As patients age, bone resorption and mandibular rotation backward and downward lead to significant changes in chin and mandibular positioning. If the patient has a distal chin position, this should be prioritized during treatment. Mandibular angle definition using fillers has become increasingly popular, as many patients desire enhanced mandibular definition. For aging patients, I have developed the MABOT technique (Mandibular Bolus Technique): a non-surgical method for mandibular angle restoration. This technique maintains the original mandibular shape while strategically using hyaluronic acid fillers to replace lost bone tissue. Facial attractiveness is directly linked to facial proportions and harmony, which can be effectively achieved through carefully administered hyaluronic filler procedures. The aesthetics of the lower third has a significant impact at overall facial appearance and balance.

Curriculum Vitae: Dr. Željka Cabunac (DDS) has a 23 years of experience in the aesthetic medicine. She is a specialist in Orthodontics (Faculty of Dental Medicine, University of Belgrade, 2006) and Anti-Aging Medicine (European Institute for Scientific Anti-Aging Medicine in Paris, 2009). Since becoming Restylane International educator (2009) Dr. Cabunac held many lectures and hands-on educations on Faculty of Dental Medicine in Belgrade, Q-Med Accademy in Paris and many international Congresses. Dr. Zeljka has always had a passion for enhancing natural beauty by combining well proven techniques with latest advances in technology. She is constantly engaged in continuing professional development of aesthetic doctors in the area of application of hyaluronic fillers, botulinum toxin and threads through numerous lectures and education. Dr. Cabunac is international educator for Aptos threads and orthodontics Tweed-Merrifield technique. She is a member of Serbian Orthodontic Society and a member of board of directors of SESIAM Society for aesthetic medicine.

L7

HOW MODERN TECHNOLOGIES AND NEW MATERIALS CAN SIMPLIFY ENDODONTIC TREATMENT: PRACTICAL SUGGESTIONS

Arnaldo Castellucci

University of Cagliari; University of Federico II of Naples, Italy

Lecture details: In the last 10-15 years, there has been a real revolution in Dentistry in general and in Endodontics in particular and today we can safely say that Endodontics has never been so easy, predictable and within the reach of all those who want to practice it. The new ultrasonic tips, powered by modern and effective ultrasonic sources, allow access cavities to be performed in complete safety, with the utmost respect for the dental tissues, the original anatomy and adhering to the modern laws of minimally invasive Endodontics. It is also well known that the success of endodontic treatment depends on the complete elimination of the contents of the root canal system and the sealing of all existing communication pathways between the endodontium and the periodontium. In other words, the final result of endodontic treatment must be the same as that which would have been obtained with the extraction of a compromised tooth. Therefore, it is obvious that knowledge of endodontic anatomy with all its possible variations and the correct determination of the working length are extremely important, so that not even the smallest portions of the root canal system are forgotten during the treatment. There are many methods currently available to the clinician to measure the correct working length and today we have the latest generation of apex locators to work at the "Electronic Apex". The third generation of apex locators is extremely precise, is not influenced by the content of the root canal and has been specifically designed to locate not the "constriction" or "contact" with the periodontal ligament, but the "foramen", as it is based on the thickness of the surrounding dentin. In addition, today we have very accurate and safe methods for a "complete" elimination of all the content of the root canal system, such as necrotic tissue, bacteria, biofilm, debris, and this method is based on apical negative pressure and simultaneous ultrasonic activation. If we combine all this with the work performed under magnification and coaxial illumination, thanks to the use of the operating microscope, and the use of CBCT in the execution of a correct treatment plan, it is clear that the percentages of endodontic success are increasingly higher and achieved by an ever-increasing number of operators.

Curriculum Vitae: Graduated in Medicine in 1973 and specialized in Dentistry in 1977. From 1978 to 1980 he attended continuing education courses on Endodontics at Boston University School of Graduate Dentistry. His practice is limited to Endodontics, is Past President of the Italian Endodontic Society, Past President of the International Federation of Endodontic Associations, Active Member of the European Society of Endodontology, Active Member of the American Association of Endodontists. Assistant Professor of Endodontics at the University of Cagliari and Professor of Micro Surgical Endodontics at the University Federico II of Naples. He is also teacher of Endodontics at the University of Siena and at the University of Brescia. International lecturer, gave lectures in about 70 different countries all around the world. Published more than 60 articles on Endodontics in the most prestigious Endodontic Journals and wrote chapter in several prestigious endodontic textbooks. He is the author of the textbook "Endodontics", now available in Italian, English, Russian and soon also in Chinese, Macedonian and Turkish. He is also author of "Micro Surgical Endodontics", both edited by EDRA, also available in several languages. Recently has been nominated Assistant Professor of Endodontics at Boston University, Faculty of the Henry M. Goldman School of Dental Medicine and Honorary Diplomate at the Indian Board of Endodontics of the Indian Endodontic Society. He lives and practices in Florence and can be reached at 39 055 571114 or at castellucciarnaldo@gmail.com, www.endocastellucci.com

L8**KEY FACTORS BONDING INDIRECT ADHESIVE RESTORATIONS**

Laura Ceballos Garcia

Rey Juan Carlos University, Spain

Lecture details: Luting adhesive restorations has become a routine clinical procedure thanks to the development of minimally invasive therapeutic alternatives. However, it is not without complexity and some controversy, as the protocols do not always coincide. During luting procedures, it is necessary to pre-treat the restoration to be cemented and the tooth, as well as to select a resin cement. The presentation will review the main CAD-CAM materials with which to fabricate our restorations, as well as the most appropriate treatment protocol for each of them. It will also review the adhesive systems and resin cements available on the market, with emphasis on the most recent ones that have emerged in order to simplify luting procedures.

Curriculum Vitae: Laura Ceballos obtained her DDS in 1997 and her PhD in 2001 at University of Granada in Spain. In 2003, she moved to Madrid, as Interim Associate Professor, to teach Dental Materials in the newly created Degree in Dentistry at the Rey Juan Carlos University. In the following years, she added Dental Pathology and Conservative Dentistry to her teaching duties, while being promoted to Associate Professor in 2007 and Full Professor in 2019. She founded a Master in Esthetic Restorative Dentistry and Endodontics that began in 2009. Recently, she started up a Research Group, named IDIBO (Development and Research in Dental Biomaterials), with the Rey Juan Carlos University official recognition. She has focused her research activity on the field of Adhesive Dentistry, including laboratorial and clinical studies. Her publications can be conferred at <https://orcid.org/0000-0002-6024-9559>. Many of them are related to doctoral theses that she supervised. She was president of the Spanish Society of Conservative Dentistry (SEOC) and member of the Executive Commission of the European Federation of Conservative Dentistry (EFCD) on behalf of SEOC. She is currently the president of the Continental Europe Division of the International Association for Dental Research (IADR).

L9**FUTURE ROLE OF ULTRASOUND EXAMINATION IN THE DIAGNOSIS AND TREATMENT OF PERIAPICAL LESIONS**

Elisabetta Cotti

University of Cagliari, Italy

Lecture details: Considering the important advances achieved in digital imaging of periapical lesions for the diagnosis, treatment planning, follow-up and overall study of endodontic disease, it is now important to look inside the lesions. To date the two imaging techniques which allow the identification of the nature of endodontic lesions in terms of content (fluid vs solid i.e: cystic versus granulomatous), presence and amount of inflammation (vascularity) are re Magnetic Resonance and Ultrasound Real Time Echography. Ultrasounds represent the most easily available system to complement traditional CBCT in assessing periapical lesions content. The outcome of the studies conducted in recent years, has shown that echographic examination allows to visualize periapical lesions within the alveolar bone, to measure all their diameters and volumes, assess their vascular supply and their changes in real-time. It also enables the operator to obtain a differential diagnostic orientation between cystic lesions, granulomas and lesions of different nature. Further, by studying the vascularization of each lesion this could be followed up in terms of its response to the different phases of endodontic treatment. The exam is biologically safe and it definitely applies for one of the standard of management of periapical lesions.

Curriculum Vitae: Elisabetta Cotti received her DDS from the University of Cagliari – Italy and the specialty and MS in Endodontics from the University of Loma Linda- California. She is Full Professor of Conservative Dentistry and Endodontics, and the Chairman of the Department of Conservative Dentistry and Endodontics at the School of Dentistry, University of Cagliari- Italy. She is currently the Director of the Post Graduate programme (Master) in Clinical Endodontics at the University of Cagliari, lecturer in the Department of Endodontics at Loma Linda University, USA. Elisabetta Cotti is the president elect of IFEA (International federation of Endodontic Associations). She practices limited to Endodontics, and is author of several articles and chapters in the field of Endodontics with has a specific interest in apical periodontitis, imaging and trauma.

L10

UNCOMMON, BUT SIGNIFICANT HYPERDENSE INCIDENTAL FINDINGS ON CBCT IMAGING

Spyros Damaskos

School of Dentistry, National and Kapodistrian University of Athens (NKUA), Greece

Lecture details: The presence of hyperdense structures on CBCT scans is common. Often, it is mainly attributed to ossification/calcification of normal anatomical structures such as the thyroid cartilage complex, the sphenoid ligament, the longitudinal ligaments of the spine (extracranially), etc. However, there are also hyperdense imaging findings that indicate pathological conditions, such as calcified atheromatous plaques, calcified lymph nodes, phleboliths, salivary stones, cutaneous calcifications, as well as intracranial calcifications, and calcifications associated with infections, neoplasms and congenital anomalies. This lecture aims to particularly address the etiopathology and significance of these hyperdense findings due to their - usually unexpected - projection on CBCT images.

Curriculum Vitae: Dr. Damaskos currently holds the position of Assistant Professor at the Oral Diagnosis and Radiology Dept., School of Dentistry, National and Kapodistrian University of Athens (NKUA), Greece. He completed his postdoctoral training in Dentomaxillofacial Radiology at the Department of Oral Radiology, ACTA, the Netherlands, and worked as research scientist in the aforementioned Dept., having also the assignment of Assistant Professor. Dr. Damaskos is a founding member of the European Academy of Dentomaxillofacial Radiology (EADMFR), and member of the Research & Scientific Committee of the EADMFR. He has authored more than 35 articles in national and international journals and has created, together with Dr. G.C.H. Sanderink, a CBCT anatomy training website (in English). He has also been a speaker at numerous national and international congresses.

L11

THE USE AND APPLICATIONS OF AI IN ORAL SURGERY

Antigoni Delantoni

School of Dentistry, Aristotle University of Thessaloniki, Greece

Lecture details: AI is a novel and rapidly uprising technique with applications in many fields of medicine besides daily applications. As a field of computer science it aims to create intelligent machines capable of performing tasks that typically require human intelligence. These tasks can include recognizing speech, making decisions, solving problems, playing games, and even translating languages. AI systems mimic human cognition and behaviour thus performing as tools for automating complex tasks. In oral and maxillofacial surgery, AI algorithms are used mostly for decision assistance in diagnosis and treatment prediction of outcomes. Also algorithms are used besides diagnosis in the perfection and idealization of surgical planning. Many algorithms are used for Impacted tooth detection and assessment of the relationship with surrounding anatomical structures such as the maxillary sinus, the delineation of the mandibular canal which can be performed using AI algorithms with a high success rate.. AI technology has also been employed for predicting postoperative facial swelling following tooth extraction predicting difficulty in surgical procedures. Besides those daily surgical procedures, algorithms have been used for the analysis of dental implants. In the field of implantology, the models have shown high performance in detecting dental implants, implant fractures, and peri-implant bone loss on dental radiographs. In the lecture examples of AI algorithms and their applications in Oral Surgery will be demonstrated and analysed.

Curriculum Vitae: Antigoni Delantoni, DDS, MSc, PhD, MD is a Professor at the Aristotle University of Thessaloniki, where she serves as faculty. She is a graduate of the Aristotle University, School of Dentistry, Thessaloniki, Greece (1998). Her post degree training includes a 2-yr internship in Oral Radiology (University of British Columbia, Canada 2002) from where she got the MSc title in Oral Radiology and Diagnostics and a 2-yr continuing education program in oral implantology (Greek German Dental Association, 2009). In addition, she has completed a doctoral degree (Aristotle University School of Dentistry, Thessaloniki, Greece 2007) and has graduated from medical school (Aristotle University School of Medicine, Thessaloniki, Greece (2008) . She has also finished a postdoctoral research degree with a full scholarship by the Greek State Scholarships foundation (2009). She is a member of the editorial board of several journals in her field and a reviewer for over 50 international journals including TripleO, Dentomaxillofacial Radiology, Rheumatology, The Cleft Palate Craniofacial Journal, Head & Face Medicine, Journal of Medicine and Medical Sciences, International Journal of Clinical Dentistry. She has published numerous papers in Greek and English and has spoken in a large number of congresses nationally and internationally covering a variety of topics with main focus on oral radiology and maxillofacial imaging. She has edited two books for Springer Nature, 'Atlas of Dentomaxillofacial Anatomical Imaging' and 'Digital Dentistry An overview and future prospects'. Her main research interests are new imaging methods and digital imaging in dentistry.

L12

GLASS IONOMER CEMENTS AS ALTERNATIVE RESTORATIVE MATERIALS IN DENTAL PRACTICE

Dimitrios Dionysopoulos

School of Dentistry, Aristotle University of Thessaloniki, Greece

Lecture details: The use of dental amalgam fillings has declined due to environmental, health, and aesthetic concerns. This shift was reinforced by the Minamata Convention, signed in 2013, which aims to reduce global mercury (Hg) pollution. The Convention encourages reduced amalgam use and mandates the adoption of measures like amalgam separators and capsule packaging to mitigate Hg release. Glass ionomer cements (GICs) have emerged as a viable alternative for specific restorative applications traditionally dominated by amalgam. GICs offer benefits such as fluoride release, biocompatibility, and chemical adhesion, but their mechanical properties, including low fracture toughness and susceptibility to moisture during setting, remain limitations. Efforts to enhance GIC properties have focused on innovative techniques such as radiant heat treatments using LEDs or lasers, ultrasonic energy application, and calcium chloride (CaCl₂) solution immersion. Radiant heat accelerates the setting reaction, enhancing surface hardness and compressive strength while reducing solubility. Ultrasonic treatment improves mixing and reaction kinetics, reduces voids, and enhances mechanical strength without significant temperature increases. Similarly, immersion in CaCl₂ solutions increases surface hardness and wear resistance by facilitating cross-linking during the setting phase. These approaches have shown promise in laboratory studies, improving GIC performance and durability. Despite encouraging in vitro findings, clinical evidence is limited. Further in vivo studies are necessary to validate the efficacy and safety of these modifications in enhancing GIC properties, potentially positioning them as a durable alternative to amalgam in challenging clinical scenarios.

Curriculum Vitae: Dr. Dimitrios Dionysopoulos is Associate Professor in the Department of Operative Dentistry of Aristotle University of Thessaloniki. He was born in Thessaloniki and was graduated from Aristotle University of Thessaloniki, Faculty of Dentistry with the degree of DDS and acquired his MSc in Operative Dentistry. Later he received his PhD degree entitled "In vitro comparative study on cariostatic effect of contemporary fluoride-releasing materials for conservative restorations". He has carried out a wide research and has many publications (over 100) in scientific journals. He is an editorial member and reviewer in various international journals, associate editor in the Restorative Dentistry & Endodontics and Stoma journals and member of professional and scientific societies. He is a dental clinician and owner of private dental practice. His primary areas of research include Operative Dentistry, Preventive Dentistry, Dental Materials, Lasers in Dentistry and Restorative Dentistry.

L13

INNOVATIONS IN VITAL PULP TREATMENT: SCIENTIFIC DEVELOPMENTS AND CLINICAL RECOMMENDATIONS

Henry Hal Duncan

Dublin Dental University Hospital, Trinity College Dublin, University of Dublin, Ireland

Lecture details: Caries prevalence remains high throughout the world, with the burden of disease shifting to older and socially disadvantaged groups. If left untreated, caries will advance through dentine stimulating pulpitis and eventually pulp infection and necrosis; however, if conservatively managed pulpal recovery occurs even in deep carious lesions. As a profession and speciality, we should be striving to develop new biologically-based minimally-invasive solutions; however, to do so, an applied understanding of pulpitis and repair processes is critical. During this presentation we will discuss both the ESE position statement of 'Deep Caries and the Exposed Pulp' and also the ESE S3-level clinical guideline recommendations. During this talk we will consider amongst other things - Should we be treating more conservatively in practice, or are the results predictable? Is conservative treatment of irreversible pulpitis realistic? Are next-generation diagnostics and targeted therapies realistic? How should this treatment be remunerated?

Curriculum Vitae: Received his dental degree from the University of Glasgow and his 4-year endodontic speciality training in Guy's Hospital, King's College London. For ten years, he worked part-time in specialist referral endodontic practice. He completed his PhD in the University of Birmingham on the subject of 'Epigenetic approaches to the role of Histone Deacetylase Inhibitors (HDACi) in promoting dentine-pulp reparative mechanisms'. As an Academic Professor and Consultant in Endodontics, he has led endodontic teaching, service delivery and research in Dublin Dental University Hospital (DDUH) for the last 15 years. He has published over 160 international peer-reviewed scientific articles, 60 research abstracts, 18 book chapters as well as editing 3 textbooks. He was the primary author of the European Society of Endodontology (ESE) position statement on 'Management of deep caries and the exposed pulp' and is the lead of the 'ESE S3-level Guidelines for the Treatment of Endodontic Disease'. He is the current Editor-in-Chief of the International Endodontic Journal and the immediate past-president of the ESE. Hal has received multiple research grants as principal investigator and currently maintains a research lab and is the principal supervisor of clinical and scientifically trained PhD students and postdoctoral researchers in his research area of interest basic and translational pulp biology and endodontics. Currently, he is the Director of Research in the DDUH and is an Ex-President of the Irish Division of the IADR, Pulp Biology and Regeneration Group of the IADR as well as the Irish Endodontic Society.

L14

AN INNOVATIVE, PERSONALIZED THREE-DIMENSIONAL BONE RECONSTRUCTION IN CASE OF ORTHODONTIC TREATMENT



Marzena Dominiak & Tomazs Gedrange

Silesian Piast Medical University, Poland & Dresden University of Technology, Germany

Lecture details: Orthodontic treatment is currently very common in a significant percentage of dental patients, regardless of age. It is well known that proper and effective tooth movement requires the presence of an adequate amount and quality of bone. Induced tooth movement should only be carried out at the alveolar bone trabeculae. Unfortunately, the occurrence of a gingival recession is still a common side effect. One of the basic assumptions is that the thickness of the anterior part of the alveolar bone should be considered as a limiting factor for orthodontic treatment. Exceeding these anatomical limits is associated with an increased risk of bone loss and the formation of alveolar defects – dehiscences and fenestrations. In addition, pre-existing bone defects often act as “predisposing factors” for gingival recession. For this reason, alternative solutions and treatment methods are being sought. Regenerative medicine, which has already been known in reconstructive surgery, is used increasingly more often in the treatment of alveolar bone defects. That’s why 3D personalized bone reconstruction will be presented as a method for improvement of alveolar ridge before or after orthodontic treatment.

Curriculum Vitae: Marzena Dominiak is Vice Rector for strategic initiatives Medical University of Wroclaw, Poland Full Professor and Head of the Department of Oral Surgery, Medical University of Wroclaw. Visiting professor in TU Dresden, Germany. Specialist in oral surgery. Member of FDI Education Committee. President of Polish Dental Association. The author of more than 250 full-text publications, book chapters and/or abstracts published in journals in Polish, English and German language. Section editor of ACEM Journal (IF journal). She is the editor and/or co-edited of 7 books in Polish and English and head and / or co-author for a total of 50 research projects commercial and noncommercial, including EU, and 16 within international research projects supported by Camolg Foundation®, Osteology Foundation®, Osteohelth Company®, Geistlich® company and others. Author of 4 national and international patents. She gave more than 350 lectures in English and Polish language.

Curriculum Vitae: Tomazs Gedrange is Professor and Director of Department of Orthodontics, Dresden University of Technology, Germany Study of dentistry at the Friedrich Schiller University (FSU) Jena, Germany Study of medicine at the Wroclaw Medical University, Poland 2002 Education as tutor in PBL (Problem based learning), Harvard University education programme 1993-1995 Assistant at the Institute of Pharmacology and Toxicology at the FSU Jena, Germany 2004-2011 Professor and Director of Department of Orthodontics, Preventive and Pediatric Dentistry Centre of Dentistry and Oral Health, Ernst-Moritz-Arndt- University, Greifswald, Germany Since 2010 – Professor in the department of dental surgery at Medical University of Wroclaw, Poland 2013 nomination from president Republic of Poland to professor (the title of Presidential Professors) Since 2011 - Professor in Department of Orthodontics, Medical Faculty Carl Gustav Carus, Dresden University of Technology, Germany.

L15

OPTIMIZING ACCURACY IN DENTAL IMPLANT SURGERY USING DIGITALLY MANUFACTURED SURGICAL GUIDES

Ozgur Erdogan

Faculty of Dentistry, Istanbul Okan University, Turkey

Lecture details: The use of digitally manufactured surgical guides has transformed dental implant surgery by enabling precise and predictable treatment workflows. However, specific challenges are often encountered, including inaccuracies in guide fabrication, improper fit, and deviations during surgery. These issues can compromise surgical outcomes if not properly addressed. In this presentation, challenges associated with surgical guides will be examined, with strategies outlined to avoid complications. The importance of accurate digital planning, patient-specific guide design, and precise surgical execution will be emphasized. Key factors, such as patient selection, stabilization methods, and fabrication techniques, will be explored to improve guide performance. Techniques to enhance the accuracy of surgical guides will also be discussed, including ensuring proper guide seating, reducing deviations, and intraoperative validation of implant positioning. Additionally, the integration of CBCT and intraoral scanning into guide fabrication workflows will be highlighted for their role in improving efficiency and accuracy. Attendees are expected to gain practical knowledge and actionable tips to optimize outcomes with digitally manufactured surgical guides, contributing to greater precision and patient satisfaction in dental implant surgery.

Curriculum Vitae: Prof. Dr. Özgür Erdogan is an oral and maxillofacial surgeon with a dentistry degree. He graduated from Hacettepe University, Faculty of Dentistry, Türkiye in 2000. He received his Oral and Maxillofacial Surgery training at the Cukurova University Faculty of Dentistry between 2000-2007. He worked as full time faculty at the same department between 2009-2014 and at the Rangsit University Faculty of Dentistry between 2014-2016. He worked at the University of Connecticut, Faculty of Dentistry between 2005-2006 as an ITI Scholar. In 2009, he worked at the University of Freiburg, Department of Oral and Maxillofacial Surgery as an AO Maxillofacial Trauma Fellow. Dr. Erdogan has been working as faculty member at the Istanbul Okan University, Faculty of Dentistry in Istanbul since 2016. He has contributed in more than 60 publications in peer reviewed journals and lectured as keynote speaker in several national and international scientific events. Dr. Erdogan is currently active in both academia and teaching at Istanbul Okan University Faculty of Dentistry, while also serving as an editor for the ITI Academy.

L16**SURGICAL & PROSTHETIC MANAGEMENT OF A MISPLACED IMPLANT IN ESTHETIC ZONE**

Zinonas Evagorou

Elite Dental Clinic, Paphos, Cyprus

Lecture details: Frequently, we are faced with the challenge of restoring old, unaesthetic post-implant restorations in the anterior zone, where the implant is placed in a non-advantageous prosthetic position. In this presentation, the factors that need to be considered will be thoroughly analyzed, leading the practitioner to the decision of whether to preserve or extract the implant, as well as the subsequent steps for managing and developing a prosthetic treatment plan for optimal aesthetic restoration.

Curriculum Vitae: Zinonas Evagorou is a specialist in prosthodontics and implantology. Graduated from the National and Kapodistrian University of Athens and completed his residency at the University of Freiburg in Germany in Prosthodontics, Biomaterial Science, Pre-prosthetic Surgery, and Implantology (Prof. Jörg Strub) in 2017. He has worked in private practices in Germany and Switzerland. Currently, he practices dentistry in his hometown of Paphos, Cyprus, focusing exclusively on prosthodontics, digital dentistry, implantology, and aesthetic restorations. He is an Active Member of the Greek Academy of Aesthetic Dentistry, a board member of the Academy of Clinical Dentistry, and actively involved in dental education, giving lectures and clinical hands-on seminars worldwide.

L17

DIGITAL DENTISTRY IN ORAL REHABILITATION: MY EVIDENCE-BASED DAILY ROUTINE

Rui Falacho

Penn Dental Medicine, University of Pennsylvania, USA

Lecture details: Dentistry is a field of constant evolution and digital technologies offer unprecedented precision and efficiency, particularly in oral rehabilitation. This presentation delves into the integration of digital dentistry into daily clinical practice, supported by evidence-based methodologies. Drawing from personal clinical and research work, but mainly grounded on current research, I will discuss the use of digital imaging, computer-aided design/computer-aided manufacturing (CAD/CAM) systems, and digital impression techniques that have transformed patient assessments, treatment planning, and outcomes. We will also travel through AI and its realistic use in dentistry, as well as techniques to develop not only esthetic results, but also functional planning, execution and outcome. Key case studies will highlight the several steps of these technologies in achieving superior aesthetic and functional results in restorative procedures. Additionally, the presentation will explore the challenges and solutions in adopting digital tools, ensuring practical insights for practitioners aiming to incorporate advanced digital techniques into their workflows. This session aims not only to showcase digital dentistry in enhancing oral rehabilitation but also to inform attendees on which technologies to embrace for adequate patient care in their practices.

Curriculum Vitae: Rui Falacho DMD, MSci, PgD, PhD. Published several papers in peer-reviewed journals. Has 4 book chapters. Has 1 registered patent. Participated in more than 170 national and international events as a Lecturer, hands-on trainer or organizer. Has supervised 30 master and doctoral theses. Received 18 awards and/or honors. He serves as Section Editor for the Journal of Esthetic and Restorative Dentistry and as a Member of the Editorial Board in the International Journal of Esthetic Dentistry. He completed his Integrated Master's Degree in Dental Medicine, Certificate in The Complete Modular Course in Professional Photography from the New York Institute of Photography, Postgraduate Degree in Experimental Pathology at Coimbra University, PhD in Health Sciences (Prosthodontics field) at Coimbra University. He is President of the European Academy of Digital Dentistry, President of the Portuguese Society of Prosthodontics and Esthetic Dentistry, International President of the Brazilian Society of Digital Dentistry, Vice-President of the Scientific Committee of the Brazilian Society of Digital Dentistry, Honorary International President of Mexican Digital Dentistry Society, Vice-President of the Scientific Committee at Mexican Digital Dentistry Society and Chairman of the Portuguese Society of Digital Dentistry, Member of the Scientific Committee at the Portuguese Association of Orofacial Harmonization and Therapeutics. He is Professor and Head of Clinic at the Post-graduate Program in Adhesive Dentistry of CESPU; Lecturer at the Postgraduate Degree in Oral Implantology at CESPU; Professor at the School of Dentistry, Graduate Program in Dentistry, Federal University of Amazonas, Visiting Professor at the University of the Balearic Islands – ADEMA, Integrated Member at the Center for Innovation and Research in Oral Sciences (CIROS) from FMUC. In his curriculum, the most frequent terms are: oral rehabilitation; adhesion; composite resins; dental ceramics; fixed prosthodontics; biomechanics; implantology; bone regeneration; occlusion; esthetic dentistry; digital dentistry.

L18

PROSTHETIC IMPLANT REHABILITATION FROM CLASSIC TO DIGITAL

Norina Forna, Doriana Agop-Forna

Faculty of Medicine, U.M.F. Grigore T.Popa Iasi, Romania

Lecture details: Traditional approaches relied heavily on manual techniques, precise measurements, and physical models to achieve functional and aesthetic outcomes. However, these methods posed challenges related to accuracy, patient comfort, and time efficiency. The advent of digital dentistry, encompassing computer-aided design and manufacturing (CAD/CAM), digital impression techniques, and 3D printing, has revolutionized the field. This transition has enabled more accurate diagnostics, improved treatment planning, and faster prosthesis fabrication, enhancing patient outcomes and satisfaction. Digital workflows eliminate the need for physical impressions, reducing patient discomfort and the likelihood of errors. Virtual planning software allows clinicians to simulate surgical procedures and restorations, ensuring optimal implant placement and prosthesis design. Furthermore, digital solutions facilitate immediate loading protocols, reducing treatment time while maintaining accuracy and functionality. Integration of digital technologies has also fostered interdisciplinary collaboration, improving communication among dental professionals. Despite these advancements, the shift from traditional to digital techniques presents certain limitations, including high initial costs, a slow learning curve, and the need for ongoing training. Nevertheless, the long-term benefits of digital rehabilitation, such as increased precision, predictability, and patient-specific customization, outweigh these challenges. Research groups focused on the evolution of prosthetic implant rehabilitation from conventional to digital approaches, highlighting key developments, advantages, and future prospects in optimizing patient care.

Curriculum Vitae: Professor Forna is a specialist in maxillo-facial surgery, implantology, dental prosthetic, general dentist and doctor of general medicine. She is President of the Association of Deans of Dental Medicine Faculties in Romania, Romanian Society for Oral Rehabilitation and Romanian Dental Association for Education. Internationally, she is president of CIDCDF - (International Conference of Deans of Faculties of Dental Surgery of Totally or Partially French Expression) , president GadeF-Europe (French Dental Association Group) , Regent ICD (International College of Dentists), chevalier Palm Academique, and member of numerous national and international academies She is past dean of the Faculty of Dental Medicine, Iași, Romania (2004-2020). She is past president EPA, Bass and in the board of Bass like vicepresident, president elect, president, past president since 2015. She is a respected member of many world dental organizations and the author of a large number of professional books, scientific papers, and has huge experience accumulated in European research projects.

L19

PAIN CONTROL IN PEDODONTICS

Elizabeta Gjorgievska

Faculty of Dentistry, Ss. Cyril and Methodius University in Skopje, North Macedonia

Lecture details: Fear and anxiety towards the dentist and dental treatment are both significant characteristics that contribute to avoidance of dental care. Pain control might be achieved via various techniques, both non-pharmacological and pharmacological. The non-pharmacological approach relies on cognitive-behavioral techniques and respiratory exercises; while the pharmacological approach is based on different oral analgetics and pain medication (weak/medium pain), local anesthetics, conscious sedation or general anesthesia. The lecture will focus on the different methods of achieving pain control when treating a pediatric patient, as well as emphasizing the importance of the novel technics in achieving painless and convenient treatment for each patient.

Curriculum Vitae: Elizabeta Gjorgievska is a Full Professor at the Faculty of Dentistry and Head of the Department of Pediatric and Preventive Dentistry, University Ss Cyril and Methodius in Skopje, Republic of North Macedonia. She became a MSc and specialist in Pediatric and Preventive Dentistry in 2002, and a PhD in 2006. She has conducted numerous research visits at Universities in the UK, Belgium, and the USA and has been associated with several national and international research projects. She has published more than 100 papers. She was part of the organization and scientific committees of several national and international symposia and conferences. She has given lectures and workshops at scientific conferences in North Macedonia and abroad (UK, USA, Ukraine, Croatia, Turkey, Serbia, Georgia, Spain, etc.). She is an author of 2 and a co-author of 3 monographs, and an editor and a co-author of a recently published textbook in Pediatric dentistry. In the period 2010-2014 she was a President of the North Macedonian Pedodontic Association. She is a member of MDA, FDI, IAPD, UKSB and a visiting professor at Columbia University, NY, USA.

INNOVATIVE APPROACHES ON DISC DISPLACEMENT WITH REDUCTION

Neda Hysenaj

University Dental Clinic, Faculty of Dental Medicine, Albania

Lecture details: Disc displacement with reduction is a temporomandibular disorder characterized by the disc's displacement, in most cases in the anterior direction, which returns to its position when the mouth is opened. Especially in the clinical cases associated with pain, this condition reduces the quality of life of the patients and the main goal should be addressed toward pain relief. This condition can turn into a more severe form such as disc displacement without reduction. Based on clinical research, DDwR can stay stable for a long time. The retrodiscal fibrosis is one of the main physiological adaptation process. In this lecture, the etiological factors, the diagnosis, and the treatment approaches of the DDwR will be discussed in detail, based on the most recent literature. It is important, to highlight the choice of conservative treatment as a first choice. Although there is no gold standard of treatment, the main modalities include patient information and education regarding the condition, advice on the diet, exercise instructions, updates on the physiotherapy process and occlusal splints. The comparison regarding the effectiveness of the different types of occlusal splints will be discussed. Cognitive-behavioral therapy (CBT) is an additional option for therapy in the relief of the symptoms. Other possibilities include mini-invasive treatments such as intraarticular injections with hyaluronic acid, platelet-rich plasma, botulinum toxin and low-level laser therapy (LLLT). The collaboration between specialists: dentists, physiotherapists, and psychologists, is important to achieve the best results.

Curriculum Vitae: Dr. Neda Hysenaj works as an academic researcher in the Prosthodontic Unit at the University Dental Clinic in Tirana, Albania, since 2012. She is part of the academic staff, part-time at the Faculty of Dental Medicine, UMT. Dr. Hysenaj has held lectures internationally through the ERASMUS+ program at Craiova University and Aquila University and has conducted research at the University of Heidelberg and the University of Granada under prestigious scholarships. She has trained dentists through different workshops and has participated in several prosthodontic specialization courses. Dr. Hysenaj graduated with excellent results in Dentistry from Tirana University in 2011 and holds a professional license with an exceptional score. She is the author/co-author of over 40 articles and has had over 70 presentations at national and international conferences. She is a member of the Scientific Board of the Albanian Dental Journal, an EPA member, and has contributed to organizing several scientific events. Her research work includes participation in notable projects like the READ project on CAD/CAM prosthetic materials, the NASRI project on total removable dentures, and the project supported by the Ministry of Education and Sport of Albania: Evaluation of Implant prostheses restorations. She is also part of the ERASMUS BIOSINT project focused on strengthening biomedical education. Field of Expertise: Removable prosthodontics, Fixed prosthodontics, Implant-supported prosthodontics, Temporomandibular disorders.

L21

BIOACTIVE DENTAL RESTORATIVE MATERIALS- AN INSIGHT INTO CURRENT TRENDS

Jugoslav Ilić

School of Dental Medicine, University of Belgrade, Serbia

Lecture details: Tooth restorations are still the most frequently performed dental treatments with the ultimate goal to morphologically, functionally and aesthetically reconstruct lost hard dental tissues. Modern materials have been developed to successfully fulfil these requirements due to their mechanical and aesthetic properties. Resin composites, known for their good mechanical capacities, are the first-choice material for direct restorations. However, they have experienced relatively high failure rates because of secondary caries and inter-surface bond degradation, requiring frequent replacements. Therefore, the need for materials that provide additional benefits to maintain oral health has led to intensive research in order to incorporate bioactive properties. Bioactive restorative materials could be determined as those which would retain satisfactory mechanical and aesthetical performance and provide bioactivity by releasing specific components that modulate cariogenic species and biofilm formation, stimulate specific interactions to control or restore mineral loss. A significant progress has been observed in the modification of inert materials to induce specific and intentional interactions at the material–tissue interface in order to exhibit bioactive properties. There are commercially available materials claimed to possess such properties. This lecture aims to give the brief insight into the mechanisms of activity of bioactive restorative materials, their clinical use and future directions in their development.

Curriculum Vitae: Prof dr Jugoslav Ilić is full professor and vice-dean for undergraduate teaching and learning at School of Dental Medicine, University of Belgrade. His academic and clinical career has been developed upon the Department of Restorative Dentistry and Endodontics. Besides clinical work, he is dedicated to mentorship, scientific work and development of innovative higher education curriculum. The fields of his scientific interests are dental pulp biology, endodontic therapy, and restorative procedures with aesthetic considerations, special care dentistry and dental education development. He is currently involved in multicentric team investigating genetic factors in the development of apical periodontitis and in Erasmus+ project focusing on interprofessional education of health care professionals. Prof. Jugoslav Ilić is editor-in-chief of Serbian Dental Journal and a member of distinguished professional European and national associations where he continuously contributes to finding solutions for comprehensive improvement in dental profession and science.

L22

BIBLIOMETRIC ANALYSIS OF THE BALKAN JOURNAL OF DENTAL MEDICINE: A DECADE OF SCIENTIFIC CONTRIBUTIONS (2014-2024)

Jelena Jaćimović

School of Dental Medicine, University of Belgrade, Serbia

Lecture details: This study conducts a bibliometric analysis of the Balk J Dent Med, covering the period from 2014 to 2024, during which the journal has published approximately 300 articles. The aim is to assess publication trends, identify influential articles, and highlight major contributors to the field of dentistry. The analysis includes metrics such as authorship patterns, collaboration networks, citation counts, and thematic trends based on keyword co-occurrence. Additionally, the study identifies the most cited articles, leading authors, institutions, and countries contributing to the journal. The evolution of research topics over the last decade is explored to provide insights into shifting interests within the dental research community. Findings will reflect the journal's impact on the field, indicating areas of strength and suggesting potential directions for enhancing the quality and influence of future publications. The results offer a comprehensive overview of the journal's scientific output and its role in shaping dental research in the Balkan region and beyond.

Curriculum Vitae: Jelena Jaćimović is a Research Associate and an Academic Librarian at the School of Dental Medicine, University of Belgrade. She earned her master's degree in Library and Information Science from the Faculty of Philology, University of Belgrade, where she also completed her PhD in computational linguistics. She teaches Digital Humanities in the multidisciplinary master's program "Computer Science in Humanities" at the University of Belgrade. Her research focuses on scientometrics, particularly bibliometric and citation analyses, as well as natural language processing, with an emphasis on named entity recognition, information extraction tools, and anonymization of medical texts. Jelena has authored several systematic reviews and bibliometric studies, contributing to a deeper understanding of scientific communication and research impact. Through her interdisciplinary work, she bridges the fields of information science, linguistics, and dental research, with a strong record of publications and conference presentations.

L23

THERAPEUTIC APPROACH WITH SIMULTANEOUS DENTAL IMPLANT PLACEMENT WITHIN FREE FLAPS

Drago Jelovac

School of Dental Medicine, University of Belgrade, Serbia

Lecture details: Midface and mandibular reconstruction after ablative surgery remains a challenging problem. Complex mandibular three-dimensional reconstruction is crucial with regards to occlusion, function and aesthetic appearance. 3D planning and printing became routine tool in daily practise. Quality of life assessment is important to achieve improvement and excellence in the treatment of maxillofacial malignancies. There are several advantages of the proposed protocol for simultaneous, extra-oral implant placement: ease of visualization; sustainable bone stabilization with minimal chance of the neo maxilla or neomandible moving after fixation; shorter ischemia time; one-stage surgery; and avoidance of unnecessary displacements of the reconstructed part, which could happen if the implants were placed intraorally. From an oncological point of view, simultaneous implant placement is considered a safe and promising approach. Literature has shown similar success rates for primary versus secondary placements of standard-length implants in patients receiving vascularized bony free flap reconstructions. The placement of immediate dental implants at the time of primary reconstruction of the mandible is a safe procedure and facilitates timely dental rehabilitation.

Curriculum Vitae: WORK HISTORY: 2005-now; Clinic for Maxillofacial Surgery, School of Dental Medicine, University of Belgrade, Serbia 2005-now; 2016 Queen Elizabeth Hospital Birmingham 2016 Sep- 2017 March - University College Hospital London, Department of Head & Neck Surgery, University College Hospital, London, UK, Charles Wolfson Center for Reconstructive Surgery, Royal Free Hospital, London, UK, Department of Plastic Surgery, Royal Free Hospital, London, UK. 2016-now Atlas Hospital, Belgrade. EDUCATION - 1988-1995 Primary school, Belgrade, 1995 – 2000 Grammar school, Belgrade, 2000 - 2005 Faculty of Stomatology, University of Belgrade, graduated as a Doctor of Stomatology with a 9.62 average mark (5-10 mark interval) - 2005-2009 Master of Science (MSc), Thesis, completed with the theme: "Analysis of p53 gene in histologically free surgical margins in patients with oral squamous cell carcinoma", Postgraduate program in Maxillofacial Surgery (Clinic of Maxillofacial surgery, Faculty of Stomatology, Belgrade). 2010-2015 Training program in Maxillofacial surgery, Faculty of Dentistry, University of Belgrade. 2010- 2015 Doctorate thesis „Analysis of alterations of tumour suppressor genes and oncogenes in tumour free margins of oral squamous cell carcinomas” 2011 - 2017 Faculty of medicine, University of Belgrade, average mark 9.28. FELLOWSHIP 2014-2016 IFHNOS fellow https://ifhnos.net/Member_Section/Golf/Participants 2016- 2017 Clinical Research Fellow of the EACMFS and The Charles Wolfson, Centre for Reconstructive Surgery, Royal Free and UCLH Hospitals, London. (mentors Mr Nicholas Kalavrezos, prof Dr Peter Butler) <https://www.eacmfs.org/prizes-and-awards/fellowship-reports/> 2022 FEBOMFS Fellow of the European Board of Oral and Maxillofacial and Head and Neck Surgery (European Board Exam/ Madrid, Spain 2022) First one and only one in Serbia FEBOMFS. <https://www.ebomfs.eu/> . Drago Jelovac (Associate professor) works in the Clinic for Maxillofacial surgery, School of Dental Medicine, University of Belgrade. He is enthusiastic Maxillofacial & Head and Neck Reconstructive surgeon. President of the Serbian Association for Reconstructive microsurgery of the Head and Neck, and Vice-President of the Serbian Society for Architectural Photographers. Member of EACMFS, IAOMFS, BAMFS, AOCMFS, SAMFS. Eager to contribute to team-approach success through hard work. Excellent organizational skills. Clear understanding of patient diagnosis, detail 3D patient planning, patient follow up. Motivated to learn trainees and residents. Experienced with publishing in the recognized journals as well as representing results worldwide. He published 45 papers, which were cited 697 times (Scopus) , H index is 17. So far has been involved in 17th international and domestic projects. Presented more than 100 abstracts worldwide.

L24

MULTIDISCIPLINARY APPROACH IN THE TREATMENT OF LATERAL INCISOR ANOMALIES - CONSERVATIVE ASPECT

Jelena Juloski

School of Dental Medicine, University of Belgrade, Serbia

Lecture details: The most common clinical situations in which the recontouring of the anterior teeth with composite materials is indicated are closure of the diastema between the central incisors, recontouring of lateral incisors with a shape anomaly (microdontia or conoid lateral incisors), uneven wear of the enamel of the incisal edge and the reshaping of canines in congenital lack of lateral incisors. Anomalies of the lateral incisors in the upper jaw represent a very common orthodontic problem, which is often treated by an orthodontic specialist in cooperation with a specialist in preventive and paediatric dentistry. The treatment plan includes diagnosis and indication, preoperative analysis of the appearance of the teeth and the harmony of the smile, orthodontic and conservative therapy plan. The use of modern adhesive technologies and composite materials allows us to change the appearance of teeth without any preparation and loss of healthy dental tissues. Clinical steps of lateral incisor recontouring with composite materials include isolation of the working field with rubber dam; the use of adhesive systems of the latest generations; determining the colour of the composite material; application of composite materials with various mechanical and aesthetic characteristics using different techniques to achieve a good aesthetic appearance and finishing and polishing of the composite restoration. Although changing the shape and size of teeth with direct composite restorations is considered a simple procedure, mainly because it does not require tooth preparation and cementation of an indirect restoration, these procedures also require great precision, skills, patience, and experience of the operator. In addition to the basic advantage, which is a very low biological cost, these procedures are considered economical, highly aesthetic and functional over a long period of time.

Curriculum Vitae: Jelena Juloski is an assistant professor at Clinic for Paediatric and Preventive Dentistry, School of Dental Medicine, University of Belgrade in Serbia. She specialized in preventive and paediatric dentistry with the highest grade at the University of Belgrade, Serbia and received a PhD degree at the University of Siena, Italy in 2014. Prof. Jelena Juloski is a visiting professor at the Department of Medical Biotechnologies at University of Siena where she is engaged in teaching paediatric dentistry to fifth year undergraduate students. Prof. Jelena Juloski published 40 articles in national and international journals with impact Her cumulative impact factor is 64,325, number of citations 892 and h-index 16, according to Scopus database. She is an author of several chapters in 5 books published in Serbia and the Balkan region. Jelena Juloski was an invited lecturer at three international and 17 national congresses. She presented 22 papers at international and 46 papers at national scientific congresses. Jelena Juloski was a member of local organizing committee of 13th Congress of the European Academy of Paediatric Dentistry held in 2016. in Belgrade, Serbia, and a member of several organizing and scientific committees of national paediatric and preventive congresses in Serbia.

Prof. Jelena Juloski is a member of Serbian Medical Society, International Association for Dental Research (IADR) and European Academy of Paediatric Dentistry (EAPD). She speaks English and Italian language.

L25

MULTIDISCIPLINARY APPROACH IN THE TREATMENT OF LATERAL INCISOR ANOMALIES - ORTHODONTIC ASPECT

Jovana Juloski

School of Dental Medicine, University of Belgrade, Serbia

Lecture details: The lateral incisors anomalies are very common, and their treatment requires a multidisciplinary approach. Possible anomalies are microdontia of different severity, as well as hypodontia of the lateral incisors. In both cases, orthodontic and conservative therapy is required. Orthodontic treatment for mild forms of microdontia involves the decision to create space for conservative tooth enlargement or to accept the given tooth size and close excess space. If microdontia is very pronounced and the lateral incisors is peg shaped, treatment options are conservative tooth reshaping and tooth extraction, especially when the contralateral lateral incisor is missing. In patients with hypodontia of the lateral incisors, the treatment options are to create space for prosthetic replacement or to close the space. In cases where the spaces are closing, it is necessary to conservatively reshape the canines into lateral incisors. This lecture will present patients who have been treated with different treatment options, their orthodontic therapy and conservative reshaping. The specifics of orthodontic treatment depending on the therapeutic option will also be described. Patients with lateral incisor anomalies are very challenging to treat due to the fact that the anomalies are very diverse, and the problem is located in the aesthetic zone. Patients may also have associated orthodontic anomalies, which further influences the treatment decision.

Curriculum Vitae: Jovana (Todor) Juloski born in 1981 in Belgrade, graduated from the School of Dental Medicine, University of Belgrade, Serbia as the best graduated student in 2006. In 2012 she became an orthodontic specialist and defended PhD dissertation entitled "Growth Dynamics of the craniofacial complex in Turner syndrome patients". She was employed at the Department of Orthodontics, School of Dental Medicine in Belgrade as a collaborator on the project "Genetic control and molecular mechanisms in malignant, inflammatory and developmental pathologies of the orofacial region" in 2011. Since 2012, she has been employed as a clinical physician, since 2019 as teaching assistant with PhD, and since 2022 as an assistant professor. During her academic profession she published 17 articles in peer reviewed journals with impact factor (h-index 6) and presented more than 60 papers at international and national congresses. She gave ten invited lectures at international and national meetings. Jovana Juloski was on a research visit at the Faculty of Dentistry in University of Oslo. She is a lecturer at the master studies in clinical dentistry at the UniCamillus University in Rome, Italy and an instructor at international courses of individual wire bending in orthodontics on wax and paper typodonts. She has participated in the organization of many international and national scientific meetings and reviewed papers for several scientific journals.

L26

A DENTAL AI: BREAKING IT DOWN

Teodora Karteva

Autodontics, Sofia, Bulgaria

Lecture details: Artificial intelligence (AI) is finding its place in dentistry, but how do you bridge the gap between understanding its basics and applying it in practice? This session, "From Concepts to Clinics: A Dental AI Framework," offers a clear, structured approach for clinicians, researchers, and industry professionals to explore the opportunities of dental AI. The first part focuses on foundational knowledge, starting with what AI is—and isn't. By addressing common misconceptions and highlighting realistic applications, it sets the stage for understanding how AI can support workflows and improve patient care before diving into its broader applications in dentistry today. The second part transitions into specialized workflows, with a focus on oral surgery. By connecting research advancements to clinical applications, this segment explores how AI can transform complex workflows, making cutting-edge practices accessible and implementable in real-world settings. Whether you're ready to take your first steps into the world of dental AI, get acquainted with its possibilities, deepen your understanding of specialized applications, or learn how to integrate it into practice, this session balances insight, practicality, and inspiration. Join us to discover how to turn concepts into clinical reality.

Curriculum Vitae: Dr. Tedy Karteva, PhD, is a dentist, researcher, and science communicator specializing in artificial intelligence in dentistry. She is the founder of Autodontics, the first and only dental AI think tank offering a comprehensive global overview of the dental AI landscape, bridging the gap between innovation and clinical application. An endodontist with a PhD, Tedy was an assistant professor at university and has contributed to the development of AI products in the dental industry as a medical data manager. She is currently a researcher at the Topic Group Dental Diagnostics and Digital Dentistry, WHO Focus Group AI on Health. Tedy is driving the evolution of dental AI in commercial and research arenas, illuminating its critical value. Her professional life is a blend of technology, dentistry, visual communication, storytelling, and research enthusiasm. Outside the office, you can find her hiding behind the camera or living the sweaty life to the beat of the music.

L27

A STATE-OF-THE-ART THERAPEUTIC APPROACH TO AMELOBLASTOMA

Evangelos Kilipiris

Comenius University, Faculty of Medicine, Bratislava, Slovak Republic

Lecture details: Ameloblastoma is a rare, benign odontogenic tumor originating from odontogenic epithelium. It is a locally invasive tumor with a high recurrence rate. During this presentation, the classification of ameloblastoma will be introduced, along with the most common presentation findings of this tumor. The range of surgical options will be debated, including minimally invasive techniques that might benefit young children and radical resections followed by immediate free vascularized flap reconstruction that eliminates the risk of recurrence and presents an evidence-based option in the management of ameloblastoma. In addition, some recent advances in targeted therapy of ameloblastoma in the neoadjuvant setting will be discussed, which might assist in a selective group of cases. Finally, the importance of long-term follow-up and multidisciplinary cooperation will be stressed.

Curriculum Vitae: Dr Evangelos Kilipiris, MD, DMD, is a dually qualified Oral and Maxillofacial Surgeon who practices pediatric craniofacial surgery. His clinical emphasis is on the comprehensive management of children with craniosynostosis. Novel therapeutic strategies for craniosynostosis correction are his principal research focus. He is extensively involved in training the next generation of Oral and Maxillofacial Surgeons and Medical Students with advanced surgical teaching methods at partner academic institutions worldwide.

ADVANCEMENTS IN MICROFLUIDIC DEVICES FOR ORAL HEALTH RESEARCH

Sanja Kojić

Faculty of Technical Sciences, University of Novi Sad, Serbia

Lecture details: Microfluidic technology transforms dental health research by enabling precise, real-time analysis of critical oral health parameters. These lab-on-a-chip devices offer unique advantages, such as minimal sample requirements, rapid processing, and high sensitivity, making them ideal for laboratory research and potential clinical applications. This lecture focuses on developing and applying microfluidic devices for studying salivary biomarkers, biofilm formation, and the effects of therapeutic agents such as essential oils, mouthwashes, and other oral hygiene products. The dynamic interaction of oral microbiota and therapeutic agents is a key area of exploration. Microfluidic platforms facilitate the simulation of these interactions in controlled environments, allowing researchers to analyze the efficacy of various treatments on biofilm reduction and bacterial activity. Additionally, these devices can be integrated with advanced analytical techniques, such as impedance spectroscopy and optical detection, to provide comprehensive data on oral fluids' physicochemical and biological properties and their response to therapeutic interventions. Applications of microfluidic technology extend to evaluating new formulations for mouthwashes and toothpaste, optimizing their antimicrobial and remineralization effects. These devices also promise real-time monitoring of salivary pH, enzymatic activity, and inflammatory markers, critical for diagnosing and managing oral diseases such as periodontitis and caries. Furthermore, microfluidics contributes to personalized dental healthcare by enabling patient-specific analysis and treatment optimization. This lecture will present recent advancements in microfluidic device design, challenges in clinical translation, and future prospects for their integration into routine dental practice. By bridging the gap between research and application, microfluidics is poised to play a pivotal role in enhancing oral healthcare outcomes and fostering innovation in dental health research.

Curriculum Vitae: Dr Sanja Kojić (female) is an Assistant Professor at the Faculty of Technical Sciences, University of Novi Sad, Serbia. Author of over 70 articles, including over 30 in leading peer-reviewed journals with impact factors and two patents. Her scientific papers have been cited 163 times, and her h-factor is 8. Her areas of research cover microfluidics, flexible, printed, and green electronics, mechanical and microscopic characterisation, and archaeology.

L29

MINIMALLY INVASIVE FULL-MOUTH RECONSTRUCTION IN CASE OF WORN DENTITION

Lucasz Lassmann

One&Only Clinic, Poland

Lecture details: The lecture focuses on a comprehensive approach to managing patients with tooth wear, introducing a system for categorizing patients into green, yellow, and red groups. A key aspect of the presentation is the sequencing of therapy – starting with appropriate screening, clinical examination, imaging, and smile design – to establish an accurate diagnosis. This diagnosis serves as the foundation for deciding whether to treat patients with simple methods in straightforward cases or to implement interdisciplinary approaches in more complex scenarios. The lecture also addresses critical questions, such as the selection of materials for restoring teeth affected by erosion, the minimum required thickness of ceramics, and the significance of the SDS concept in managing tooth wear. Additionally, it highlights how to identify the underlying causes of tooth wear and showcases an interdisciplinary treatment case of a patient with tooth wear and a gummy smile, presented from A to Z.

Curriculum Vitae: Dr. Lassmann has marked his presence as a co-founder and Chief of the Medical Team at Dental Sense clinics in Poland and Norway. At the Polish Academy of Cosmetic Dentistry, he served as a board member and further extends his contributions as an active member of the American Academy Of Orofacial Pain and has title of Master Of Orofacial Pain.

Select Educational Endeavours & Advanced Training (highlighting key experiences)

- Imbided knowledge and skills under the guidance of Dr. John Kois at the Kois Center, Seattle, USA.
- Delved deep into dental sciences at the UNC - University of North Carolina, Chapel Hill, USA.
- Explored advanced dental studies at the UCLA - University of California, Los Angeles, USA.
- Refined his expertise at the Mediterranean Prosthodontic Institute, Spain.
- Advanced his training at GSID, Marina De Carrara, Italy.
- Embarked on an insightful clinical journey at the University of Lexington, Kentucky, under the esteemed mentorship of Prof. Jeffrey Okeson and Prof. Rena De Leeuw.

Clinical Specialization

Emphasizing patient comfort and trust, Dr. Lassmann excels in comprehensive bite and smile reconstructions. He also brings expertise in addressing temporomandibular joint disorders, masticatory muscle disorders, and orofacial pain.

Global Pedagogy & Lectures & Research

Dr. Lassmann is the mind behind the distinguished "Master Level" dental training program. Moreover, with great passion, he educates dentists non-profit worldwide on Instagram and Facebook: @lassmann_education. His drive for sharing knowledge has led him to lecture on multiple continents. He has delivered lectures and workshops in esteemed venues across the globe, including but not limited to, Australia, Dubai, China, Indonesia, India, Iraq, Peru, Ecuador, Chile, Scotland, Egypt, Italy, England, Sweden, Lithuania , France, Vietnam, Malaysia, Argentina. He is the first author or co-author of numerous publications in the field of occlusion, TMJ (temporomandibular joint), and orofacial pain. He is currently working on a book contracted by Quintessence Publishing titled "Full Mouth Reconstruction - The Teeth And Beyond."

L30

OPTIMIZING CLINICAL WORKFLOWS WITH AI: FROM DIAGNOSIS TO DECISION MAKING

Pierre Lahoud

Faculty of Medicine of KU Leuven, Belgium

Lecture details: Artificial intelligence (AI) is finding its place in dentistry, but how do you bridge the gap between understanding its basics and applying it in practice? This session, "From Concepts to Clinics: A Dental AI Framework," offers a clear, structured approach for clinicians, researchers, and industry professionals to explore the opportunities of dental AI. The first part focuses on foundational knowledge, starting with what AI is—and isn't. By addressing common misconceptions and highlighting realistic applications, it sets the stage for understanding how AI can support workflows and improve patient care before diving into its broader applications in dentistry today. The second part transitions into specialized workflows, with a focus on oral surgery. By connecting research advancements to clinical applications, this segment explores how AI can transform complex workflows, making cutting-edge practices accessible and implementable in real-world settings. Whether you're ready to take your first steps into the world of dental AI, get acquainted with its possibilities, deepen your understanding of specialized applications, or learn how to integrate it into practice, this session balances insight, practicality, and inspiration. Join us to discover how to turn concepts into clinical reality.

Curriculum Vitae: Pierre Lahoud is a Doctor in Dental Surgery (DDS) with Postgraduate Training in Advanced Medical Imaging (PGD). In 2024, he completed his PhD at the Faculty of Medicine of KU Leuven (Oral and Maxillofacial Surgery & Imaging and Pathology Research Group) focusing on Artificial Intelligence and Biomechanical Modelling Towards Patient-Specific Oral Surgical Procedures. He is currently a Clinical Assistant in Periodontology and Implant Surgery (KU Leuven, Belgium) and a Post-Doctoral Fellow (OMFS-IMPACT Research Group, KU Leuven, Belgium) focusing on Artificial Intelligence, In-Silico Modelling, Periodontology, Implant and Muco-Gingival Surgery. He is also a Guest Professor at the Department of Conservative Dentistry and Periodontology, Ludwig Maximilian University of Munich, Germany, and a Principal Investigator for Benchmarking within the UN's Global Initiative on AI for Health (Geneva, Switzerland), as well as a Board Member of the Junior Committee of Digital Dentistry Belgium. He has published over 25 peer-reviewed international publications, lectured nationally and internationally and is the recipient of numerous national and international awards, including the IADMFR Maxillofacial Research Award (First Prize - 2021, Gwangju, South Korea), the Albert J. Stichting Travel Award (Brussels, Belgium), the 2022 Journal of Endodontics Award (Chicago, IL, USA) and the 2022 Scientific Award of the Brazilian Association of Dental Radiology and Diagnostic Imaging (Goiânia, Brazil).

L31

FOUR HORSEMEN OF APOCALYPSE IN DIGITAL DENTISTRY

Dejan Lisjak

CEREC Centar, Serbia

Lecture details: We have been noticing for a long time that the trend of developing dental industry, particularly when prosthodontics is in question, has got two directions:

- Digitalisation of all procedures

- Development of monolithic materials

Dental clinicians are currently in a situation in which most of the conventional protocols are replaced by digital ones, and they require a different kind of an approach to work and knowledge of the latest software and hardware tools. On the other hand, zirconium oxide has been "imposed" on us, as a preferable material of choice in most indications of procedures. We are facing every day dilemmas, challenges and even fears, because new problems appear on the daily basis, and "modern" approaches to solutions are not supported by experience and "follow up". Justification of application of new technologies and protocols in rather complicated prosthetic cases is the first part of our story. The second part are challenges which we face when using of zirconium oxide ceramics as the material, and which rise from insufficient capability in the case of this unperfect material and insufficient knowledge of the protocol and its application. Finally, we are going to deal with the more and more frequent fear of fast development of artificial intelligence and the analysis of its "entrance" into dentistry and how much it will, by its further development, influence our profession. Four horsemen of dental apocalypse are in front of us. We are fighting against them by new knowledge and new accessibility to software and hardware tools.

Curriculum Vitae: Dr. Dejan Lisjak was born in Belgrade on 7 November 1970. He graduated from the Faculty of Dental Medicine in Belgrade on 25 March 1996 and specialized in DENTAL PROSTHETICS at the same faculty on 26 June 2001. He has been a owner of the dental clinic CEREC CENTAR in Belgrade since 2000. In the development of the clinic, Dr. Lisjak has placed special emphasis on state-of-the-art diagnostic and therapeutic dental procedures, contributing to the development of computerized dentistry in the region. Dr. Dejan Lisjak is a co-founder of the Association of Computerized Dentistry, established in Belgrade in 2010. He acquired the title of primarius in June 2010, as the youngest doctor holding the title in that decade. In 2019 he became an opinion leader of the company DENTSPLY-SIRONA and their international lecturer. He is the author and co-author of numerous research papers published in domestic and foreign professional journals. He has been a guest lecturer at congresses and professional gatherings, and has conducted courses in modern dental technologies, with particular emphasis on CAI-CAD-CAM systems. He is a co-founder of the company EDUCODENT, established in 2019, dealing with the organization of educational programmes for dentists.

L32**IMMEDIACY IN FULL ARCH REHABILITATION**

Aleksa Marković

School of Dental Medicine, University of Belgrade, Serbia

Lecture details: Implant rehabilitation of edentulous jaws is a challenge in everyday dental practice. The most common reason is insufficient bone volume for implant placement, mainly in the posterior regions of edentulous jaws due to the proximity of anatomical structures. Achieving adequate function, optimal aesthetics and immediate function are the main goals of implant therapy of edentulous jaws. Immediate loading involves connecting dental implants to a prosthesis that occludes with the opposing arch within one week after implant placement. This protocol offers several benefits for patients, including reduced treatment time, fewer clinic visits, improved aesthetics, and better phonetics. Lecture will present protocols for immediate and late implant placing with immediate loading in full arch rehabilitation.

Curriculum Vitae: Aleksa Marković DDS, MSc, PhD, is University Professor of oral surgery and implantology at the University of Belgrade, Belgrade's School of Dental Medicine. He is Chairman of Belgrade ITI Scholarship Center, Chairman of Belgrade ITI Study Club, an ITI Fellow and President of Serbian Society for Oral Implantology. Dr Marković has 30 - years experience in leading student courses from area of oral surgery, dental anesthesiology and dental implantology; postgraduate studies of oral surgery and implantology as well as basic and master courses of dental implantology. His area of research includes implant dentistry with focus on bone-implant interface regarding different loading conditions, surgical techniques and implant surface, then bone regeneration and the effects of low level laser treatment on the oral and periimplant tissues. He has authored or coauthored 64 articles in domestic and international journals of which 41 in CC journals, 4 textbooks and 3 monographs. Dr Marković has held 182 lectures at national and international scientific meetings. He has led several international research projects devoted to bone regeneration and implant loading. Dr. Marković received his dental degree with a specialization of oral surgery as well as a doctoral degree in bone regeneration and a master degree in local analgesia, all from University of Belgrade.

IMAGING APPROACH FOR CHARACTERIZATION OF INTRAOSSEOUS JAW LESIONS

Biljana Marković Vasiljković

School of Dental Medicine, University of Belgrade, Serbia

Lecture details: The wide spectrum of lytic, sclerotic as well as mixed density jaw bone lesions have mostly nonspecific clinical presentation. Based upon this broad categorization of imaging appearance and some specific imaging signs, diagnosis of a particulate focal lesion or at least a narrow differential diagnosis is established. Since the diagnostic approach starts with an ortopantomography (OPG), dentists are placed with the burden of detecting, interpreting, formulating of a narrow differential diagnosis, and finally selecting the next imaging modality if necessary. At the same time, knowing the advantages and limitations of widely used Cone Beam Computed Tomography (CBCT), and carefully selecting patients for medical CT is a crucial step aiding appropriate management decisions. The aim of this key note lecture is to familiarize dentists with challenges in everyday clinical practice, differential diagnostic dilemmas and ways of finding the best solutions.

Curriculum Vitae: Dr. Biljana Markovic Vasiljkovic graduated medicine at the Faculty of Medicine of the University of Belgrade (Serbia) in 1988 with an average grade 9.39. She passed the final specialist exam in 1994 with magna cum laude. Her master's thesis was finalized in 1995 while she got the PhD degree in 2006. She was employed at the Center for Radiology of University Clinical Center of Serbia in Belgrade, where she was the head of the department of urogenital radiology and the deputy director of the Center for Radiology till 2018. Her teaching career started in 1998 and she became an associate professor of radiology in 2017 at the Faculty of Medicine of the Belgrade University. She was also the head of the postgraduate teaching program in radiology at the Faculty of Medicine, University of Belgrade. In 2018, she was re-elected and employed as an associate professor of radiology at the Faculty of Dentistry, University of Belgrade. From then on, she is the head of the subject of radiology and the principal of the Center of radiological diagnostics at the Faculty of Dentistry, University of Belgrade. She became a full professor of radiology in 2023. Dr Biljana Markovic Vasiljkovic was a part of professional, program and organization committees of many Balkan and Serbian radiological congresses and educational courses as well as active participant of European Congresses of Dentomaxillofacial Radiology and European Congresses of Radiology. Dr Biljana Markovic Vasiljkovic is a member of the European Society of Radiology, the International and European Academy of Dentomaxillofacial Radiology, the Association of Radiologists of Serbia, the Society for Radiological Diagnostics and the Serbian Medical Association.

REGENERATIVE ENDODONTIC PROCEDURE IN YOUNG PERMANENT TEETH: CURRENT PERSPECTIVES

Dejan Marković & Lajla Hasić Branković

School of Dental Medicine, University of Belgrade, Serbia & Faculty of Dentistry, University of Sarajevo

Lecture details: The term "Regenerative Endodontic Procedure" (REP) is reserved for a series of endodontic interventions aimed at "regenerating" the pulp-dentin complex, prolonging the lifespan of the tooth, and maintaining its function. REP has traditionally been associated with biologically based therapeutic modalities primarily conducted in young permanent teeth diagnosed with pulp necrosis. Methods such as apexification and apexogenesis have historically achieved significant successes, as confirmed by numerous case reports, cohort studies, and randomized trials, thereby creating conditions for the expansion of indication fields. However, considering that REP procedures are largely empirical, questions arise regarding the uniformity of protocols related to case selection, as well as therapeutic procedures, medications, and techniques aimed at "regenerating" the pulp-dentin complex. The heterogeneity of protocols can indeed create uncertainties for practitioners. This lecture aims to initiate a discussion towards the establishment of a professional consensus based on biological principles, as well as existing clinical REP protocols, with attention to medications and techniques. It will also address expected outcomes, complications during and after the REP procedure, with the aim of enhancing and improving clinical protocols. As part of the presentation, a case of regenerative endodontic procedure (REP) on young permanent teeth with pulp necrosis and apical root resorption of traumatic etiology will be showcased. As we know, opinions on whether REP is a therapeutic modality for teeth with trauma are divided. The literature lacks clear guidelines on whether trauma-related cases exhibiting external root resorption are indicated for REP. This report describes the course of REP treatment performed on the upper central and one lateral incisor of a 16-year-old boy following dental trauma. The REP treatment involved minimal mechanical canal preparation, extensive irrigation, and an antibiotic dressing lasting for two weeks. During the second appointment, efforts were made to provoke bleeding from the apex to allow a blood clot to fill the canal and serve as a scaffold for the regeneration or repair of the pulp-dentin complex. As the bleeding was unsatisfactory, it was decided to utilize platelet-rich plasma (PRP) as an alternative scaffold instead of a blood clot. After applying PRP into the canals, they were sealed with MTA (mineral trioxide aggregate), and the teeth were subsequently restored using adhesive restorative procedures. The clinical outcome will be presented after a one-year follow-up. The presentation will provide a detailed description of the complete clinical protocol for REP, offering pediatric dentists valuable guidance for everyday clinical practice.

Curriculum Vitae: Dejan Markovic is a full professor at the Faculty of Dentistry in Belgrade, at the Clinic for Pediatric and Preventive Dentistry. He defended his master's thesis in 1994, and his doctoral dissertation in 1998 as a specialist in pediatric and preventive dentistry. Mentor of 5 successfully completed master's theses and 14 doctoral dissertations. He supervised 70 specialist theses. He is a participant in 4 national scientific projects of the Ministry of education and science of the Republic of Serbia, and the European FP-6 project, as well as several professional medical projects. He is the author and head of 5 academic clinical studies, one of which is international. Prof. Dr Dejan Marković is a member of the Serbian Medical Association and the Section for Pediatric and Preventive Dentistry. He was awarded the SMS (Serbian Medical Society) Award for Scientific Research (2010) and the SMS Charter (2015) and the Lifetime Achievement Award. He was elected a member of the SMS Academy of Medical Sciences in 2016. He is the organizer and participant of several scientific and professional meetings at which he held more than 150 lectures. He is a member of the board of the Balkan Association of Dentists, a member of the International Association of Pediatric Dentists, the European Academy of Pediatric Dentistry, the Association of Dentists of Serbia and other professional and scientific associations. He is the president of the Association of Pediatric and Preventive Dentists of Serbia. Prof. Dr

Dejan Marković is the author of several textbooks in the field of pediatric and preventive dentistry, scientific monograph "Biocompatibility of glass ionomer cements", co-author of the scientific monograph "Building dental materials", "Dental materials" books 1 and 2, monograph "Tooth injuries - a guide to everyday clinical practice". He is the editor of the international scientific monograph "Scientific Thought and Clinical Practice - 10 years of BaSS" published on the occasion of ten years of the Balkan Association of Dentists. He is also the editor and author of the prominent lexicographical publication of national importance for which the Serbian Medical Association awarded him in 2010 Award for Scientific Research. He is a member of the editorial boards of following international and domestic journals: Balkan Journal of Dental Medicine, EC Dental Science Journal, Dental Journal of Serbia. He is also a reviewer of several reputable journals and publications. Since 2016, he has been the editor-in-chief of the Balkan Journal of Dental Medicine, the official journal of the Balkan Stomatological Society (BaSS). Prof. Dr Dejan Marković is the author of more than 300 papers presented at international or domestic conferences or published in scientific journals, of which 70 have been published in extenso in leading international scientific journals at SCI, CC, or MEDLINE list.

Curriculum Vitae: Lajla Hasić Branković

*2001: Doctor of Dental Medicine, Faculty of Dentistry, University of Sarajevo.

*2009: Master's Degree, Master's Thesis: "Comparison of Potentiometric Parameter Values in Dental Plaque and Saliva After Topical Application of Low-Concentration Fluoride Solutions"

*2009: Completed Specialist Training in Dental Pathology and Endodontics

*2012: PhD, Doctoral Thesis: "Examination of the Physical Properties of Remineralized Enamel After the Combined Use of Casein Phosphopeptide-Amorphous Calcium Phosphate (CPP-ACP) and Fluoride Preparations"

Professional Experience:

*2002 - Present: Member of the teaching academic staff, continuous development through all collaborative and teaching ranks, Faculty of Dentistry, University of Sarajevo

- Engage in teaching various courses, including Dental Pathology (both pre-clinic and clinical), Restorative Dentistry, and Endodontics, across all academic levels.

- Concurrently provide clinical services as a specialist dentist.

- Mentor and co-mentor for dental residents' education, contributing to the training and development of future dental professionals.

- Certified trainer for selected rotary endodontic systems.

- Author and co-author of over 70 research papers presented at international congresses and published in scientific and professional journals, as well as three university textbooks.

*2023 - Present: President, Endodontic Chamber of Bosnia and Herzegovina

- Oversee the activities and strategic direction of the chamber, promoting advancements in the field of endodontics and ensuring high standards of practice among members.

*Current Position: Tenured Professor, Cathedra of Dental Pathology and Endodontics, Faculty of Dentistry, University of Sarajevo

- Responsibilities include teaching twelve undergraduate courses within the specialized field and three postgraduate courses.

TMJ TREATMENT OPTIONS: BOTOX VS TRADITIONAL THERAPIES

Aneta Mijoska

Faculty of Dentistry, Ss. Cyril and Methodius University in Skopje, North Macedonia

Lecture details: Temporomandibular disorder (TMD) presents myofascial disorder that affect the TMJ and surrounding structures. The prevalence of TMD is between 30% and 44%, with up to 25% of the population seeking professional care for TMD. Female patients are with higher prevalence than male. Symptoms are commonly related to pain surrounding the joint and may include headache, periauricular pain, neck pain, decreased jaw excursion, jaw locking, and noise at the joint with movement. Bruxism is a parafunction characterized by non-functional contact of the mandibular and maxillary teeth resulting in clenching or tooth grinding due to repetitive, unconscious contraction of the masseter and temporalis muscles. Common therapies for TMJ disorders favor reversible and non-invasive treatments, focus on relieving pain, reducing joint inflammation, and restoring normal function. Oral splint devices are designed to reduce clenching or grinding of teeth, which can exacerbate TMJ symptoms. They work by adjusting the occlusion, which can help relieve pressure on the jaw joints. Traditional treatments include patient education, diet, physical therapy, myofunctional exercises, and medications. While traditional treatments are often sufficient for many patients, they may not be effective for all cases, leading to explore alternatives. Neuromodulator like Botulinum toxin -Botox is an unconventional yet promising treatment for TMJ disorders. Many studies supported the use of Botox for TMJ dysfunction, but the results have not been consistent, and the treatment carries a risk of some mild and reversible side effects. With ongoing researches, the spectrum of clinical applications and number of people receiving Botox will no doubt increase. Botox appears to justify its title as 'the poison that heals'.

Curriculum Vitae: Graduated from the Faculty of Dentistry University Ss' Cyril and Methodius, Skopje, North Macedonia in 1997. 2002-2007, worked as a dentist in the emergency department at University Clinical Center Ss Panteleimon in Skopje. Since 2007, started working at the Clinic for Dental Prosthodontics, where she became a specialist in dental prosthetics in 2011. In 2009, she was elected an assistant at the Department of Dental Prosthetics at the Faculty of Dentistry in Skopje. In 2015, she received her doctorate in zirconium dioxide ceramics - mechanical characteristics and adhesion properties. In 2022, she was elected associate professor. Field of research: full ceramic, occlusion, gnathology, T-scan analyses, Velscope-non-invasive technique for examining oral tissues and precancerous changes, gerontostomatology, etc. Participated in many domestic and international projects (Faculty of Medicine - Ljubljana, Slovenia). She is the author and co-author of 3 professional books in the field and a pre-clinical practicum for faculty teaching. Author and co-author of over 75 scientific and professional papers in this field, regular active participant in European, world, and domestic congresses and conferences. Prof. Mijoska also performed as an invited lecturer at congresses in North Macedonia and abroad (3rd Congress of Dentists of Montenegro 2019, 19th and 21st Congress of Dentists of Serbia 2019, 2022, 2022 UBT Prishtina; Kosovo, 2023 BaSS Congress). She expresses her professional work as a member of the editorial board of the scientific and professional journals Knowledge - International Journal, Medis indexed in several international databases, as Assistant editor of Vox Dentarii – North Macedonian Dental Chamber official magazine, and as a reviewer in several SCI journals. 2014-2018 vice president of the Supervisory Commission of the Dental Chamber of North Macedonia, Member of the Executive Board and Delegate of the Assembly of the North Macedonian Dental Chamber, President or regional committee of the North Macedonian Dental Chamber. Councilor from North Macedonia in the Balkan Stomatological Society.

FROM DIAGNOSIS AND INDICATIONS TO THERAPY AND PROGNOSIS IN ENDODONTICS

Ivana Miletić

School of Dental Medicine, University of Zagreb, Croatia

Lecture details: Achieving success in endodontic treatment within everyday clinical practice requires careful attention to each phase of the process. This includes precise diagnostics, preservation of healthy dental tissue during access cavity preparation, better control over instrumentation and irrigation, effective root canal obturation, and ultimately, high-quality post-endodontic restoration. The rapid development of new technologies has enabled faster and more efficient root canal preparation. However, challenges and potential errors persist at various stages of the treatment process. Common pitfalls include inadequate diagnosis, over- or under-instrumentation, insufficient irrigation, or compromised sealing of the root canal system, all of which can affect the long-term prognosis of the treated tooth. This lecture will provide a comprehensive overview of all stages of endodontic therapy, from diagnosis and treatment planning to prognosis assessment. Clinical cases will be presented to illustrate each phase, highlighting practical strategies to optimize outcomes while avoiding common errors.

Curriculum Vitae: Professor Ivana Miletić, DMD, PhD graduated at the School of Dental Medicine, University of Zagreb in 1995. She has been working at the Department of Endodontics and Restorative Dentistry at the School of Dental Medicine, University of Zagreb since 1995. She got her master degree in 1998., and PhD in 2000. In 2004., she passed the specialist exam in endodontics and dental pathology. She became an assistant professor in 2001., an associate professor in 2005., and in 2008. full professor. In 2013 she become full time professor with tenure. From 2021 she is primarius. During 2007., she stayed at the Medical University in Graz in Austria. She participates actively in clinic and preclinical education at the School of Dental Medicine in Zagreb. She is a head of the courses "Clinical Endodontics I" and "Endodontics II" in the Integrated Undergraduate and Graduate Studies, postgraduate and PhD courses at the School of Dental Medicine, and lectures on continuous educational courses for doctors of dental medicine. She is an author and co-author of more than 100 scientific, review, educative and specialized articles in extenso. She got for scientific contribution State Award of Republic Croatia and University Award "Andrija Štampar". She has been participating on many inland, European and world congresses, and has held many inland and international lectures. She speaks and writes English fluently. She is a member of Croatian Chamber of Dental Medicine, Croatian Medical Association, International Association for Dental Research. She is Board member of CED-IADR. She is founder and president of Croatian Society for Minimum Intervention Dentistry/Croatian Medical Association (CMA), a vice-president of Croatian Dental Society/CMA and Croatian Society for Endodontics/CMA.

L37**THIRTY-THREE YEARS OF EXPERIENCE WITH CLINICAL AND RADIOGRAPHIC EVIDENCE OF AN IMPLANT PROSTHETIC'S INFLUENCE ON ALVEOLAR AND GRAFTED BONE**

Vincent Morgan

Implant Dentistry Centre in Boston, Massachusetts, USA

Lecture details: Presentation will effectively demonstrate both the positive bone gain and the negative bone loss around Bicon Implants attributable to their prosthetic restorations in both native alveolar and vascular-grafted bone.

Curriculum Vitae: Vincent J. Morgan, D.M.D., a 1970 graduate of Tufts University School of Dental Medicine, leads the prosthetic team at his private group practice, the Implant Dentistry Centre in Boston, Massachusetts, USA. Doctor Morgan is responsible for the development of the Integrated Abutment Crown™ (IAC) – a revolutionary screwless and cementless implant restoration and TRINIA™, a metal-free fiber-reinforced CAD/CAM material with milled retentive copings for telescopic restorations. He is also the Editor of The Bicon Short Implant: A Thirty-Year Perspective. Along with the other clinicians at the Implant Dentistry Centre, Doctor Morgan is responsible for the development and education of many of the restorative techniques of the Bicon Dental Implant System, which includes the immediate stabilization of Bicon implants and the extra-oral cementation of implant crowns.

L38

Oral Manifestations Of Hiv Infection/Aids: Where We Stand In 2025

Nikolaos Nikitakis

School Of Dentistry, National And Kapodistrian University Of Athens (Nkua), Athens, Greece

Lecture Details: Oral Manifestations Of Hiv-Infection Were Recognized, Described And Classified From The Very Beginning Of The Epidemic. The Fact That They May Be The First Indication Of The Infection And Their Potential As Early Diagnostic And Prognostic Markers Highlight Their Significance. In Addition, They May Have A Negative Impact On Patient's Quality Of Life, Contribute To Hiv-Related Morbidity And Mortality, And Increase The Psychological And Financial Burden Of The Condition. In This Lecture, The Classification, Incidence, Clinical Features, Management And Overall Significance Of These Manifestations Will Be Described. The Effects Of Antiretroviral Therapy (Art) On Hiv-Related Oral Lesions, As Well As The Oral Complications Caused By Art, Will Be Discussed. General And Specialized Dentists Should Be Familiar With The Changing Trends In Oral Manifestations Of Hiv Infection/Aids In Order To Provide The Best Diagnostic, Therapeutic And Supportive Services To Their Patients, As An Integral And Valuable Part Of A Multidisciplinary Team.

Curriculum Vitae: Professor Nikolaos G. Nikitakis Received His Dds And Md From The National And Kapodistrian University Of Athens (Nkua), Greece And His Phd From The University Of Maryland, Baltimore (Umb), Usa. He Is Diplomate Of The Abomp And Fellow Of The Aaomp And Aaom. He Has Also Completed A Sabbatical In The School Of Dentistry And Md Anderson Cancer Center In The University Of Texas, Houston (Uth), Usa. Prof. Nikitakis Is Currently The Dean, As Well As Professor And Chair, Department Of Oral Medicine & Pathology And Hospital Dentistry, In The School Of Dentistry, Nkua. He Is Past President Of The European Association Of Oral Medicine (Eaom), In Which He Served As Secretary General (2014-2018) And President (2018-2021). He Is Also Currently President Of The Hellenic Association Of Oral Medicine And Pathology (Haomp). His Clinical Interests Include The Clinical And Histopathologic Diagnosis And Management Of Oral And Maxillofacial Diseases, While His Research Endeavors Primarily Focus On Oral, Head And Neck Oncology/Cancer Research. He Has Over 275 Papers And 200 Abstracts Published In Scientific Journals, With Approximately 3.900 Citations And H Index: 37 On Scopus And 6.400 Citations And H Index: 45 On Google Scholar. He Is Author Of A Textbook In Contemporary Oral Medicine And Pathology And Of Several Chapters In Other Textbooks And Handbooks. He Serves In The Editorial Board Of Various Scientific Journals. He Has Presented And Lectured Extensively In National And International Meetings And Has Been Invited As Visiting Professor/Lecturer In Several Universities In Europe And America. For His Scientific Work, He Has Received Several Honors And Awards. He Is The Chair Of The Scientific Committee Of The Upcoming Aaom-Eaom Joint Meeting In Las Vegas In 2025, And The President Of The Following Eaom-Aaom Joint Meeting In Athens In 2027.

L39

CONTEMPORARY APPROACH IN GINGIVAL RECESSIION TREATMENT

Nataša Nikolić Jakoba

School of Dental Medicine, University of Belgrade, Serbia

Lecture details: Gingival recession is defined as the displacement of marginal tissue apical to the cemento-enamel junction. New classification of gingival recessions is important not only for shaping diagnosis, prognosis, and treatment planning but also communication between clinicians. Furthermore, using the classification system it is possible to predict the final recession reduction with a high level of confidence, thus supporting the importance of analyzing baseline interdental clinical attachment loss to assess the prognosis of gingival recession treatment. The etiology of gingival recession is multicausal. Gingival inflammation, excessive tooth brushing, muscle and frenum pull are the major causes in gingival recession development. Additional predisposing factors for gingival recession include areas with thin, minimal or no keratinized tissue, orthodontic movement leading to buccal tooth displacement, direct trauma associated with class II malocclusion, and acute infection with herpes simplex virus. Complete root coverage is the main goal in the treatment of mucogingival recession. The major indications for root-coverage procedures are esthetic requests, treatment of dental sensitivity, and increase of keratinized tissue to reduce the risk of defect progression. It is reported that coronally advanced flap (CAF) may benefit from newer variations on the technique and from the additional use of grafting. The use of a connective tissue graft in conjunction with a coronally advanced flap procedure was accepted as a reliable method to obtain root coverage and improve esthetics. In this lecture different coronally advanced flaps and grafting procedures will be described and decision-making tree will be discussed.

Curriculum Vitae: Dr Natasa Nikolic Jakoba is Full Professor of Periodontology at the Department of Periodontology and Oral Medicine, School of Dental Medicine, University of Belgrade, Serbia. She is actively involved in under- and post-graduate studies and continuing medical education. She received her DDS from the University of Belgrade, School of Dental Medicine in 2001. She completed a three-year residency in periodontology in 2007 at the University of Belgrade, Serbia. She received her M. Sc. degree in Periodontology (Topic: Effects of β -tricalciumphosphate in alveolar ridge preservation) at the School of Dental Medicine, University of Belgrade in 2007. She defended her Ph.D. thesis in Periodontology (Title of thesis: Characterization of *A. actinomycetemcomitans* isolates) in 2012. at the School of Dental Medicine, University of Belgrade. From 2011. she is a member of the board of the Serbian Society of Periodontology. In 2015. she worked as a guest researcher at Section of Oral Radiology, Department of Dentistry, Aarhus University, Denmark. Her research interests focus on plastic-esthetic periodontal surgery, use of CBCT in diagnosis of periodontal lesions, etiopathogenetic and pathophysiological mechanisms in periodontitis.

L40**RESIN INFILTRATION OF CARIES LESIONS AND DEVELOPMENTAL DEFECTS**

Sebastian Paris

Center for Oral Health Sciences, Charité – Universitätsmedizin, Germany

Lecture details: Resin infiltration was developed to arrest early forms of proximal caries in a micro-invasive approach that is independent of the patient's compliance. Clinical studies show that procedure is clinically significantly more efficacious than non-invasive measures alone. A positive side effect of infiltration is that the white spot lesions lose their whitish color and are optically adapted to the surrounding healthy enamel. As a result, aesthetically displeasing white spots can be optically masked. However, the procedure works not only for caries but also for enamel developmental defects, albeit with varying degrees of efficacy. The lecture will explain the caries infiltration procedure and discuss the various applications as well as the scientific evidence behind.

Curriculum Vitae:

1998-2003 Studies of Dentistry, Charité - Universitätsmedizin - Berlin

2004-2008 Assistant Professor, Department of Operative Dentistry and Periodontology, Charité - Universitätsmedizin Berlin

2005 Doctorate Degree (Promotion)

2008-2013 Assistant Professor, Clinic for Operative Dentistry and Periodontology, University of Kiel

2011 PhD Thesis (Habilitation)

2012-2013 Associate Professor for Cariology and Preventive Dentistry, Clinic for Operative Dentistry and Periodontology, University of Kiel

since 2013 Full Professor and Head of the Department of Operative, Preventive and Paediatric Dentistry, Charité - Universitätsmedizin Berlin

since 2016 Scientific Director, Center for Oral Health Sciences, Charité - Universitätsmedizin Berlin

2019-2020 President European Federation of Conservative Dentistry (EFCD)

since 2024 President Deutsche Gesellschaft für Zahnerhaltung (German Association for Restorative Dentistry, DGZ)

L41

CARIES MANAGEMENT IN ADOLESCENTS: NAVIGATING THE TRANSITION FROM CHILDHOOD TO ADULTHOOD

Tamara Perić

School of Dental Medicine, University of Belgrade, Serbia

Lecture details: Adolescence is a unique phase of human development between childhood and adulthood. During this stage, rapid physical, cognitive and psychosocial growth occurs. Oral health often has a low priority in adolescents, and their health literacy is generally low, increasing the risk for numerous oral diseases. This is a period of significant behavioral shifts, including changes in dietary habits, negligence of oral hygiene, and engagement in risky behaviors. Studies indicate a notable decline in oral health from childhood to adolescence, implying that prevention and treatment programs for adolescents should be emphasized and designed with special care. Caries management should be based on minimum intervention oral care approach incorporating: remineralization systems, dental sealants, resin infiltration, ion releasing materials for secondary and tertiary prevention of dental caries. The lecture will present the current state of knowledge of diagnosis/detection and prevention, as well as minimum intervention protocols for early treatment of dental caries. Specifics of oral disease management in adolescents, as well as treatment possibilities and limitations will also be reviewed.

Curriculum Vitae: Tamara Perić is a Professor at the University of Belgrade School of Dental Medicine. She graduated in 2001, defended her MSc thesis "Experimental and clinical evaluation of a chemo-mechanical system for removal of carious dentine" in 2005, and PhD thesis "Anticaries efficacy of calcium-phosphates in patients with salivary gland hypofunction" in 2011. She is a specialist in paediatric and preventive dentistry. The publications she has authored so far include more than 80 articles in peer-reviewed journals, over 150 conference papers, and 12 co-authored books, while she has also participated in several national and international scientific projects. Her particular expertise is in prevention and non-invasive/minimally invasive treatment of dental caries, glass-ionomer cements, dental traumatology, and oral health research. For her work, Professor Perić was awarded the IADR Centennial Award for New Investigators (2020), the Award (2016) and Plaque (2018) of the Serbian Medical Society, and the 1st prize for Clinical Research at the 16th Congress of the IADT (2010).

L42

BRIDGING BIOMEDICAL ENGINEERING AND DENTISTRY: EMERGING TRENDS AND APPLICATIONS

Bojan Petrović

Faculty of Medicine, University of Novi Sad, Serbia

Lecture details: The convergence of the disciplines of biomedical engineering and dentistry has fostered remarkable advancements that have fundamentally transformed the realms of diagnostics, treatment methodologies, and preventive healthcare strategies, thereby establishing a new paradigm in patient care. This academic lecture aims to delve into the intricate and synergistic relationship that exists between these two vital fields, meticulously highlighting the innovative technologies that have been developed to effectively address the urgent and pressing challenges that confront dental health on a global scale. The principal areas of focus will encompass the utilization of advanced materials that exhibit superior properties, the implementation of microfluidic systems that facilitate precise fluid manipulation at the microscale, and the deployment of real-time diagnostic instruments that provide immediate feedback. Such groundbreaking technologies have significantly enhanced our ability to accurately detect oral diseases, yielding improved treatment outcomes that ultimately translate into enhanced quality of patient care. Moreover, the seamless integration of machine learning algorithms and artificial intelligence frameworks within the domain of dentistry has effectively opened new avenues for the development of predictive diagnostics and individualized treatment plans tailored to the unique needs of each patient. This presentation will underscore the critical importance of fostering interdisciplinary collaboration, while simultaneously showcasing a multitude of success stories in which innovative solutions derived from biomedical engineering have substantially transformed traditional dental practices. By effectively bridging the existing divide between the fields of engineering and dentistry, our objective is to inspire the continuous development of pioneering innovations that are poised to tackle the dental health challenges that lie ahead in the future.

Curriculum Vitae: Prof. Dr Bojan B Petrovic, full professor, Faculty of Medicine, University of Novi Sad. Born on August 31, 1975 in Belgrade, Dr. Petrović completed his dental education at the Faculty of Dentistry in Belgrade in 2000. He further pursued his preventive and pediatric dentistry studies, earning his master's degree in 2007 and his doctoral degree in 2010. Dr. Petrović has made significant contributions to the field through his extensive publication record and participation in numerous programs of continuous medical education.

L43

UPDATED PROTOCOL FOR SOCKET SHIELD TECHNIQUE

Snjezana Pohl

School of Dental Medicine of the University of Rijeka, Croatia

Lecture details: Immediate post-extraction implant placement has garnered attention in implantology for its potential to shorten the treatment time and improve outcomes. Within this realm, the socket shield technique (SST) has emerged as a promising adjunct to conventional implant protocols, offering enhanced preservation of peri-implant tissues and improved esthetic results by retaining the buccal root segment with its periodontal ligament. The socket shield technique preserves the buccal portion of the tooth root with its periodontal ligament. By maintaining Sharpey's fibers, which connect root cementum to socket walls, and keeping the periodontal ligament's blood supply, SST effectively mitigates post-extraction ridge loss. Comparative clinical trials indicate superior outcomes for SST over traditional immediate placement techniques. However, SST is considered technique-sensitive and challenging. As with all novel therapies, clinicians performing SST initially faced a higher rate of complications and failures during the early stages of adaptation. Protocol refinements have significantly reduced these complications. The use of digital dentistry for socket shield preparation and implant placement further enhanced precision and predictability while minimizing complications. Static guidance enables accurate root canal preparation and removal of its content, which is followed by a root section in a mesiodistal direction. This lecture will present the updated protocol for socket shield preparation with immediate implant placement and digital tools utilization to simplify this procedure.

Curriculum Vitae: Snjezana Pohl has a dual degree in human and dental medicine. She is a specialist in oral surgery, a certificated EDA* specialist for periodontology and implantology, and a Dental XP expert. She is in a private clinic, Rident, ADG, in Croatia. Designated as an assistant professor, she also lectures at the Department of Oral Medicine and Periodontology at the School of Dental Medicine of the University of Rijeka. Snjezana Pohl is one of the pioneers of Partial Extraction Therapy, the author of numerous scientific papers, and an active national and international lecturer. She focuses on tissue preservation, autogenous tissue utilization, and aesthetic outcomes in implant treatment.

L44

THE KNOWLEDGE OF THE DENTAL IMPLANT MEDICAL CONTRAINDICATIONS

Athanasios Pouloupoulos

School of Dentistry, Aristotle University of Thessaloniki, Greece

Lecture details: Dental implants (DI) have progressively become a vital treatment option to replace missing teeth. Failure to recognize dental implant contraindications (DICS) may lead to complications and implant failure. DICS have been classified in various categories such as local, behavioral/environmental, and medical, moreover, DICs are currently classified into relative and absolute. Implant failure may arise from impaired host healing, disruption of a weak bone-to-implant interface after abutment connection, and infection. Absolute contraindications are those which, if not taken into consideration, may result in patient mortality or jaw bone necrosis and implant failure. They include cerebrovascular accident, immunosuppression, active treatment of malignancy, certain categories of psychiatric illness, intravenous bisphosphonate use, and other critical medical conditions. Relative contraindications interfere with normal cell healing and remodeling, but once controlled, implant surgery and survival will succeed. Examples of relative contraindications include, but not limited to, adolescence, aging, smoking, diabetes, human immunodeficiency virus positivity, hypothyroidism and diseases with oral manifestations. Local contraindications, or local risk factors, are relative to the site of implant placement and can be modified by corrective procedures. In conclusion, as dental implant treatment is accompanied by significant functional benefits and improved oral health-related quality of life, dental implant therapy is a feasible treatment in almost any medically compromised patient when the required preventive measures are taken and regular follow-up care is performed.

Curriculum Vitae: Professor Athanasios Pouloupoulos is the Dean of School of Dentistry Aristotle University of Thessaloniki, Greece (2nd term elected), head of the Dept of Oral Medicine & Oral Pathology, Dental School of Thessaloniki and director of the Postgraduate Program of Oral Medicine & Oral Pathology. Prof. Pouloupoulos serves as Vice President of the Hellenic Association of Oral Medicine & Pathology, Secretary General of the Executive Committee of Balkan Stomatological Society (BASS), and he is member in several other scientific societies such as the European Association of Oral Medicine (EAOM) and International Association of Dental Research (IADR-CED). Prof. Pouloupoulos has co-authored more than 130 scientific papers, chapters in books and participated with more than 270 oral presentations and posters in many conferences and seminars. He serves as reviewer and member of the editorial board in several scientific journals. His main clinical and research interests involve oral cancer and precancer including immunohistochemical analysis of oral malignancy, salivary gland diseases, systemic diseases with oral manifestations, drug adverse reactions on the oral mucosa.

L45

ORAL CANCER AND ORAL POTENTIALLY MALIGNANT DISORDERS: ADVANCING DIAGNOSIS AND THE RELEVANCE OF EARLY DIAGNOSIS

Ana Pucar

School of Dental Medicine, University of Belgrade, Serbia

Lecture details: Oral potentially malignant disorders (OPMDs) are clinically suspicious conditions, a small percentage of which may transform into malignancies. OPMDs include leukoplakia, erythroplakia, nonhomogenous erythroplakia, erosive atrophic form of lichen planus, oral submucous fibrosis and actinic cheilitis pose management complexities. Although only a fraction of OPMDs progress to cancer, determining individual cancer risk is critical for effective care. Unfortunately, the natural history of OPMDs is not fully understood, and precision approaches integrating predictive markers lack validation through prospective studies. Additionally, healthcare systems often neglect evidence-based health promotion, and most intervention studies face challenges such as non-uniform diagnostic criteria, inadequate outcome measures, and insufficient focus on quality of life or patient preferences. Global networks and well-designed trials using validated metrics are needed to refine OPMD management. Accurate diagnosis and management remain challenging under current standards of care. Dysplasia is a key marker for assessing cancer risk in OPMDs, with surgical biopsy serving as the diagnostic gold standard. However, biopsies are limited by morbidity, resource demands, and risks of underdiagnosis. While diagnostic adjuncts like toluidine blue and autofluorescence imaging exist, their poor accuracy limits their clinical utility. Emerging in vivo microscopy technologies—such as optical coherence tomography and confocal microscopy—offer promising alternatives by enabling real-time microscopic visualization at the point of care. Oral cancer (OC), common in developing countries such as Serbia, is a major health concern of the orofacial region. Preventable through behavioral modifications—such as reducing tobacco, alcohol, and betel nut use—OC underscores the importance of early detection. Clinical recognition of suspicious oral lesions enables early intervention, with surgical biopsy as the diagnostic standard. Adjunctive tools and novel methods, including salivary marker identification, hold potential to enhance early diagnosis and reduce mortality rates. Integrating advanced diagnostic technologies and global research efforts is vital to improving patient outcomes.

Curriculum Vitae: Prof dr Ana Pucar is full professor at the School of Dental Medicine, University of Belgrade. From the very beginning of her professional career, she is dedicated to lecturing, clinical and scientific work in the field of Oral Medicine. Prof. Pucar did her master's degree in the field of oral complications of chemotherapy, while her doctoral thesis was about the influence of periodontal bacteria on the onset and development of atherosclerosis. Current scientific work and projects deal with clinical features, diagnostics and molecular mechanisms of oral cancer formation and the biology and clinical behavior of oral potentially malignant disorders. Her prominent work as the author of numerous scientific papers and several important textbooks, but also her mentoring accomplishments in the clinical and scientific field, enabled progress in the diagnosis and treatment of oral diseases.

L46

MULTI-VISIT TREATMENT OF ENDODONTIC INFECTION – CLINICAL ASPECTS

Elka Radeva

Faculty of Dental Medicine, Sofia, Bulgaria

Lecture details: In long-standing root canal infection with the presence of sinus tract formation, preoperative swelling, pain, or large size of the periapical lesion, as well as patient factors, multi-visit treatment is indicated. During the first visit, instrumentation and irrigation of the root canals are performed due to the bacterial biofilm and smear layer being an obstruction to the efficacy of the following intracanal disinfection. After proper root canal cleaning and shaping, disinfecting medication is placed between visits to reduce microbial numbers and restrict bacterial growth. Pain relief, absence of percussion sensitivity, healing of a sinus tract, and absence of exudation are clinical signs of successful endodontic treatment, and the tooth can be filled and restored. The literature lacks evidence of significant differences between a single-visit or multi-visit root canal treatment. Therefore, it is necessary to assess carefully the existing risk of exacerbation and prefer multi-visit treatment in teeth where the risk of complications is increased. The lecture will focus on the present status of intracanal medicaments, their main characteristics, and clinical indications for their application during multi-visit treatment. Discussions related to the condition of the tissues in the apical area and the possibilities for healing processes will also be included.

Curriculum Vitae: Currently, Elka Radeva is an Associate Professor in the Department of Conservative Dentistry, Faculty of Dental Medicine (FDM)-Sofia, Bulgaria, Chairman of the General Assembly of the FDM-Sofia, President of the Bulgarian Scientific Association of Dental Medicine (BSADM), Vice president of the Bulgarian Dental Association (BgDA), President of the Communication Commission of BgDA. Elka Radeva graduated from the Faculty of Dental Medicine - Sofia in 1993. In 1997, she acquired a specialty in Operative Dentistry and Endodontology and a specialty in General Dentistry in 2005. In 2017, she received a master's degree in Public Health and Health Management from the Faculty of Public Health, MU-Sofia. Assoc. Prof. E. Radeva is a lecturer and researcher with 30 years of experience teaching undergraduate and postgraduate students courses. Author and co-author of 2 monographs in endodontics. Co-author in 4 books on pharmacology for medicine and dental medicine students. Author and co-author of 2 practical student books on endodontics in Bulgarian and English. Leading researcher of 14 scientific projects at MU-Sofia. Published over 95 articles in peer-reviewed journals. Reviewer of articles for Bulgarian and International Dental Journals and research projects. Her research interests include endodontic microbiology, acute and chronic apical periodontitis, retreatment, instruments for shaping root canals, and operative dentistry. Assoc. Prof. E. Radeva is a member of the Bulgarian Dental Association (BgDA), Bulgarian Scientific Association of Dental Medicine (BSADM), Balkan Stomatological Society (BaSS), European Society of Endodontology (ESE).

L47

INNOVATIVE ANTIMICROBIAL DENTAL TREATMENTS: ADVANCING ORAL HEALTH AND COMBATING ANTIMICROBIAL RESISTANCE

Milena Radunović

School of Dental Medicine, University of Belgrade, Serbia

Lecture details: The oral cavity is a dynamic microbial ecosystem where biofilm communication contributes to antimicrobial resistance (AMR). Frequent antibiotic prescriptions in dental practice further amplify AMR risks, emphasizing the need for innovative antimicrobial treatments. Advances in material science and technology have led to the development of new or modified materials designed to minimize microbial adhesion and infection risk, ultimately reducing the reliance on antibiotics and contributing to the fight against AMR. This presentation outlines our findings on antimicrobial dental treatments aimed at preventing and treating oral infections. For periodontitis and peri-implantitis management, we investigated Paroxol®, an essential oil-based formulation, under in vitro conditions. Paroxol® exhibited excellent biocompatibility and potent antimicrobial and antibiofilm activity against key periodontal pathogens. Additionally, we evaluated photodynamic therapy (PDT) combined with a gel containing 5-aminolevulinic acid. This combination demonstrated strong antimicrobial effects against Gram-positive and Gram-negative bacteria in both single-species and multi-species biofilms. To prevent peri-implant diseases, we assessed graphene oxide (GO)-modified titanium (Ti) surfaces. These modified surfaces showed high biocompatibility, validated through in vitro and in vivo studies, and exhibited robust antibiofilm effects against monomicrobial biofilms. Lastly, we explored complex magnetic fields (CMF) as a novel preventive and therapeutic method for microbial infections. CMF, involving multi-frequency electromagnetic fields with varying densities and waveforms, displayed significant antibacterial effects on planktonic and biofilm-embedded bacteria. These findings highlight the potential of these advanced dental treatments to enhance oral health outcomes and play a critical role in addressing the growing threat of AMR.

Curriculum Vitae: Prof. Milena Radunović, MD is Vice-Dean for Science at the University in Belgrade, School of Dental Medicine where she has been working as Assistant Professor of Microbiology and Immunology since 2018. She specialized in Medical Microbiology and Parasitology in 2015, and in 2016 obtained her Ph.D. in molecular medicine. In 2016 she was a research fellow at the "Gabriele d'Annunzio" University in Italy. Her research focuses on the development and analysis of oral biofilms and the analysis of the oral microbiome. In 2019 she received an award for the best-published paper given by the National Society of Medical Mycology and the "Djoka Vojković Foundation" award for the best publication by young researchers from University of Belgrade. For two years she was a finalist for the "For Women in Science" award. She is the national representative of the Trainees Association of the European Society of Clinical Microbiology and Infectious Diseases (ESCMID).

L48

EXTRACTION OF SECOND MOLARS: A VIABLE OPTION FOR (NON)ORTHODONTIC PATIENTS

Vaska Vandevska Radunović

Institute of Clinical Dentistry, Univeristy of Oslo, Norway

Lecture details: The debate between extraction and non-extraction treatment in orthodontics remains significant, particularly concerning which teeth to extract when necessary. Traditionally, premolars are frequently chosen for extraction to manage crowding, achieve proper alignment, and improve occlusal relationships. However, second molar extraction has emerged as an alternative with several potential advantages: removing second molars creates space, often allowing third molars to erupt into good occlusion, potentially avoiding future wisdom tooth extractions. Second molar extraction may simplify mechanics, reduce anchorage demands, and shorten overall treatment time. Unlike premolar extraction, it avoids excessive retraction of anterior teeth, preserving a natural facial profile and smile. Timing of second molar extraction varies. Early removal during late mixed dentition can maximize space for third molars, while some suggest waiting until second molar roots are fully developed but before third molars begin erupting. Despite its advantages, second molar extraction has limitations. Not all third molars will align ideally, and some may still require extraction. Factors like jaw size and growth potential must guide the decision. Second molar extraction offers potential benefits but should be evaluated individually.

Curriculum Vitae: Vaska Vandevska-Radunovic received her DMD and MSc in orthodontics at the University "Kiril i Metodij" in Skopje. She continued her orthodontic training at the University of Bergen, Norway 1990-1992, where she obtained her PhD (doctor odont) in 1998. She is currently Professor and Head of the Department of Orthodontics, University of Oslo, Norway and is involved in the education and research activity of graduate, post-graduate and doctoral students. For six years she was a member of the Continuing education committee of the Norwegian Association of Orthodontists. She is Past President of the European Orthodontic Society, 2023, and President Elect of the NEBEOP Board. She is Associate Editor of Clinical and Experimental Dental Research and The Korean Journal of Orthodontics. She is also member of the Editorial board of the World Journal of Orthodontics and Acta Odontologica Scandinavica. Her main areas of interest are tissue reactions during orthodontic tooth movement and relapse, retention procedures and long-term outcome of orthodontic treatment and the effect of orthodontic treatment on periodontal health.

INNOVATIVE APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN DENTAL RADIOLOGY: FROM VISUAL ANALYSIS TO CLINICAL IMPLEMENTATION

Piotr Regulski

Medical University of Warsaw, Poland

Lecture details: The application of artificial intelligence (AI) in dental radiology has significantly advanced diagnostic precision and clinical efficiency, enabling novel methodologies for imaging analysis and interpretation. This presentation examines the innovative utilization of AI technologies, with an emphasis on the VisNow-Medical platform. Designed as a comprehensive tool for visual analysis, VisNow-Medical integrates modular algorithms with state-of-the-art AI techniques to facilitate the processing and interpretation of 1D, 2D, and 3D radiological datasets. Its functionalities encompass segmentation, denoising, quantitative imaging, and multimodal data fusion, making it a versatile resource in complex diagnostic scenarios. A focal point of this discussion is the application of VisNow-Medical in the assessment of temporomandibular joint (TMJ) disorders. The integration of advanced T2 mapping has provided detailed insights into soft and hard tissue dynamics, supporting enhanced diagnostic accuracy and individualized treatment planning. Similarly, the platform's capabilities in cone beam computed tomography (CBCT) have been applied to post-surgical evaluations in cleft lip and palate cases, revealing trends in volumetric bone changes that inform surgical strategies. Beyond VisNow-Medical, the broader scope of AI in dental radiology is explored, including automated detection of dental pathologies such as caries, periodontal disease, and osseous lesions. The presentation further highlights the role of machine learning algorithms in optimizing image quality, artifact reduction, and cross-modality integration for comprehensive diagnostic workflows.

Curriculum Vitae: Piotr Regulski is Vice-Dean for International Cooperation and Head of the Digital Imaging and Virtual Reality Laboratory at the Medical University of Warsaw. His academic and research focus lies in dental and maxillofacial radiology, with particular emphasis on medical image processing, artificial intelligence applications, and virtual reality technologies in education and clinical practice. Piotr Regulski's work includes studies on advanced imaging techniques, such as T2 mapping MRI in the evaluation of temporomandibular joint disorders, and the application of AI for automated analysis in dental radiology. He has contributed to over 50 scientific publications and regularly collaborates on interdisciplinary research projects related to medical imaging and data visualization. He is an active member of international and national scientific societies, including the European Academy of Dentomaxillofacial Radiology and the IEEE Engineering in Medicine and Biology Society, and participates in the development of educational and research initiatives in his field.

MINIMALLY INVASIVE APPROACH IN DIRECT AND INDIRECT RESTORATIONS*Center for Dental Aesthetics and Implantology, Serbia*

Igor Ristić, Snežana Baković

Lecture details: Minimally invasive dentistry has revolutionized restorative procedures, emphasizing the preservation of natural tooth structure while achieving optimal esthetic and functional long term outcomes. This lecture explores modern concepts in both direct and indirect restorations, focusing on adhesive protocols, material advancements, and digital workflows that enhance precision and longevity. It would be accented importance of proper treatment diagnostics and planning while direct restorations, we will discuss composite layering techniques, bioactive materials, and strategies to minimize polymerization shrinkage while maintaining seamless integration with natural dentition. In section of indirect restorations, we will highlight ultra-thin ceramic restorations, digital design principles, and adhesive bonding protocols that allow for minimal or no-prep solutions without compromising durability. Through clinical cases, evidence-based insights, and hands-on recommendations, this lecture aims to empower clinicians with predictable, efficient, and minimally invasive restorative strategies, instantly applicabe, ensuring long-term success and patient satisfaction.

Curriculum Vitae: Dr. Igor Ristić is a renowned prosthodontist and global educator, specializing in esthetic dentistry, implantology, and minimally invasive restorative procedures. After earning his Doctor of Dental Medicine (DMD) degree in Serbia in 1996, he pursued advanced training in emerging trends in esthetic dentistry and implantology. In 1999, he completed his specialization in dental prosthodontics, with a particular focus on all-ceramic adhesive restorations. In 2001, Dr. Ristić founded the Center for Dental Esthetic and Implantology (CDEI) in Belgrade, Serbia, assembling a team dedicated to transforming smiles and enhancing patients' quality of life. As a passionate educator, he lectures and conducts hands-on courses worldwide, sharing expertise in treatment planning, indirect restorative techniques, implant prosthodontics, and digital dentistry workflows. His intensive collaboration with leading global dental companies ensures continuous innovation in clinical protocols and material advancements. Throughout his career, Dr. Ristić has received numerous accolades, including a Fellowship from the International Academy of Dental-Facial Aesthetics (IAED) in New York, an honor awarded to the world's most esteemed dental professionals. He is also the Founder and President of the Serbian Society for Esthetic Dentistry (SSED), member of Digital Dental Society and first regional member of Slow Dentistry global network. In 2019, he presented a table clinic at the prestigious American Academy of Restorative Dentistry (AARD) meeting. Currently, Dr. Ristić serves as the President, Board Member, and Chairman for Education of the European Society for Cosmetic Dentistry (ESCD), playing a key role in advancing education and innovation in esthetic dentistry across Europe.

Curriculum Vitae: Dr. Snežana Banković graduated from the Faculty of Dental Medicine, University of Belgrade, in 2010. She joined the team at the Center for Dental Aesthetics and Implantology (CDEI) in 2012. In 2019, she completed the Style Italiano master course on "Direct and Indirect Restorations" in Italy. Throughout her career, she has continuously enhanced her skills by attending courses across Europe. She is an active member of the European Society of Cosmetic Dentistry (ESCD) and the Serbian Society of Aesthetic Dentistry (UESS). Dr. Banković is a lecturer at the National Institute for Practical Dental Education. She delivers lectures on topics such as "Non-Prep Injection Moulding Technique," "Digitally Planned Direct and Indirect Restorations," "Direct Composite Class IV Restorations," and other subjects that promote a minimally invasive restorative approach in dentistry.

L51

MIMICING THE NATURAL ESTHETICS WITH COMPOSITE RESTORATIONS; COLOUR OR SHAPE? WHICH IS MORE CRUCIAL?

Hande Şar Sancaklı

Faculty of Dentistry, Istanbul University, Turkiye

Lecture details: Today's conservative and esthetic restorations provide excellent results to create and mimic natural dentition. Due to advances in adhesive procedures, composite resins have become the principal restorative materials in modern dentistry. Resins restorations have a high capacity for reproducing anatomic shape, color, dentin and enamel opacity levels, opalescence effects, and characterizations as well as good mechanical resistance. However color match and creating the morphology is still the most challenging and complicated step for clinicians. This lecture will present the essential aspects for understanding and reproducing the color and the morphology of natural teeth with clinical tips to mimic the nature with managing shape, texture with the correct shade blendings.

Curriculum Vitae: DDS degree in 2000, Istanbul University Faculty of Dentistry

- PhD in 2007 with the doctorate thesis entitled "Comparison of antibacterial effects of dentin bonding agents in vitro"-Istanbul University Faculty of Dentistry
- Assoc. Professorship degree in 2012; Prof. degree in 2020.
- 2012- Visiting Lecturer in King's College Dental Institute, Guy's Hospital.
- Scientific publications in internationally/nationally indexed journals, book chapters,
- Lectures in various master programmes, international conferences, seminars and performed hands-on courses in restorative dentistry about adhesive dentistry, minimal invasive dentistry and restorative materials.
- Memberships in international scientific associations
- Member of the Board of Istanbul University,
- Board Member of Turkish Dental Association International Affairs Committee,
- Board Member of Turkish Aesthetic Dentistry Academy Association-EDAD
- Chairperson of ERO/FDI Working Group Continuing Medical Education
- FDI Regional Continuing Education Director of Europe

MY JOURNEY WITH AMELOGENESIS IMPERFECTA

Figen Seymen

Faculty of Dentistry, Altınbaş University, Türkiye

Lecture details: Amelogenesis Imperfecta (AI) is a collective designation for the variety of inherited conditions displaying isolated enamel malformations, but the designation is also used to indicate the presence of an enamel phenotype in syndromes. There is great variability in the clinical presentation of amelogenesis imperfecta. The clinical features of the affected enamel and the type of AI depend on the gene involved and the relevant mutation. Clinical phenotypes display a wide spectrum, ranging from mild color changes to severe structural alterations with daily pain. However, all affect the quality of life because of mechanical, psychological, esthetic, and/or social repercussions. It will be possible to implement more accurate diagnostic methods and make a more precise prognosis if the clinical and radiographic appearance of the affected enamel can be correlated with the potential genetic origin of AI. The genetic control of amelogenesis is fully understood but requires the activities of multiple components that are uniquely important for dental enamel formation. Genetic studies have demonstrated the importance of genes encoding enamel matrix proteins in the etiology of isolated AI. More than 20 genes are, so far, known to be responsible for this condition. These results broaden our understanding of the molecular genetic pathology of tooth enamel formation. The biological processes and mechanisms leading to AI are many and varied. Further research with a molecular approach will improve our understanding of these mechanisms and identify new mutations or genes and this will result in improved patient care and the development of new therapies to minimize or eliminate the problems associated with AI. This lecture will focus on our research and the evidence about AI. We will review the genes and mutations underlying AI presenting in isolation from other health problems, the proteins they encode, and knowledge of their roles in amelogenesis, combining evidence from human phenotypes. The aim of this lecture is to present an evaluation of our studies regarding the role of the genes associated with AI types.

Curriculum Vitae: Figen Seymen graduated from the Faculty of Dentistry, Istanbul University, Türkiye, and obtained a Ph.D. degree and MSc degree from the same University and became a Pediatric Dentistry Professor at Istanbul University Faculty of Dentistry in 2002. She has over 34 years of experience in Academics in all aspects of dental education, didactic, clinical/patient care, and research mentoring for MS and Ph.D. students. She has lectured as an invited speaker and has participated in many presentations at congresses and continuous education courses. She is a member of various International Scientific Societies and Associations. Between 2014 and 2017 she was the head of the Department of Paediatric Dentistry at Istanbul University. In 2014 she was elected as President of the Turkish Society of Paediatric Dentistry and still she is continuing to serve as the President. She served as President of the Association of Mediterranean Societies of Pediatric Dentistry between 2014-2018 and still serves as a member of the Board of Directors. She was Councilor of the European Academy of Paediatric Dentistry (EAPD) between 2012-2018 and then held the following position: a member of the Credentials Committee. She served as a member of the Membership Committee of IAPD between 2017-2019. She began to serve as a Board member of the International Association of Paediatric Dentistry (IAPD) in 2019 and held the position of Chair of the Education Committee and Representative of the Nations between 2019 to 2021. She was elected as President-Elect of IAPD in 2021 and she began to serve as President of IAPD in June 2023. She is on the Advisory Board and Editorial Board of several international and national journals and published over 300 research articles co-authored several book chapters and obtained research grants. Prof. Dr. Figen Seymen has been working in all fields of pediatric and preventive dentistry, and especially enamel anomalies, dental anomalies, genetics, syndromes, and aesthetic treatments of tooth anomalies are among her special interests. She worked at Istanbul University Paediatric Dentistry from 1987-2022. In February 2022 she was appointed Chair and Program Director at the Department of Pediatric Dentistry of Altınbaş University.

L53**STEM CELLS IN DENTISTRY: PRESENT – FUTURE**

Boris Simončič

Medical Center Mirje, Slovenia

Lecture details: Stem cells are defined functionally as unspecialized cells that have the capacity to self-renew as well as the ability to generate differentiated cells. More explicitly, stem cells can generate daughter cells identical to their mother (self-renewal) as well as produce progeny with more restricted potential (differentiated cells). The concept of regenerative dentistry is to use stem cells to regenerate or replace damaged oral tissues, processes, which were previously considered irreversible. Restorative treatments have regenerative potential of dental pulp stem cells to give rise to tertiary dentine, which is therapeutically employed for direct and indirect pulp capping. Stem cells in endodontic research have revealed their potential to continue root development in necrotic immature teeth. Transplantation of vital dental pulp in extraction socket enhance the restoration of the alveolar bone. Stem cells offer a new approach in regenerative treatments. The future of dentistry could see significant improvements in patient care, with stem cells playing a key role in repairing and regenerating oral tissues.

Curriculum Vitae: Boris Simončič, CO of Medical Center Mirje, the Institute for Regenerative and e-medicine in Ljubljana. Honorary Professor at University of Belgrade, Faculty of Dentistry. Founder of Slovenian Association for Osseointegration and an active member of Slovenian and International Dental Associations. Author and coauthor of over 30 scientific publications, 50 scientific presentations and 2 book chapters from the field of Dental Materials, Periodontology, Implantology and Regenerative Medicine based on Stem Cells.

L54

A DIGITAL WORKFLOW IN FABRICATION REMOVABLE PARTIAL DENTURE FRAMEWORK

Dejan Stamenkovic

Stamenković & Team, Serbia

Lecture details: Dentistry and the global concept of digital transformation are closely intertwined, bridging the gap between the physical and digital realms. Cobalt-chromium (Co-Cr) alloys have been used in dentistry for decades, widely regarded as the gold standard for both fixed and removable partial denture restorations. Dental frameworks made from Co-Cr alloy can be fabricated using various techniques: the traditional analog casting method, a combined analog-digital method, and a fully digitalized approach. The goal of this lecture was to describe and critically review the digital workflow involved in the manufacture of Co-Cr-Mo-W alloy dental frameworks. The process is described in the following steps: intraoral digital scanning (1), digital model creation, survey & design (2), 3D printing and heat treatment (3), and finishing and polishing (4). The lecture also explored the indications and contraindications of digital procedures for producing Co-Cr-Mo-W alloy dental frameworks for removable partial dentures (RPDs), as well as their advantages and disadvantages. The good mechanical properties of the sintered alloy are explained through Energy Dispersive Spectroscopy (EDS) analysis and documented by Scanning Electron Microscopy (SEM) micrographs. In the second part of the lecture, a digital workflow for treating a Kennedy Class III/1 patient with a complex partial denture was presented. In conclusion, it was emphasized that the primary advantage of using Direct Metal Laser Sintering (DMLS) technology in the fabrication of dental frameworks, aside from the precision of the restoration and increased productivity, is its environmentally friendly nature. This aligns with the technological trends of the 21st century, known as the 4th Industrial Revolution, or more simply, Dentistry 4.0.

Curriculum Vitae:

Date and place of birth. 1980, Belgrade.

Education. Faculty of Dental Medicine, University of Belgrade (2007), Specialist of Prosthodontics (2017), Doctorate of Science (2022)

Title. Primarius (2024)

Profile. He improved skills on his study stays (The University of Texas, School of Dentistry, Houston, Texas). Also, he completed several courses in the field of oral implantology (B&B Dental - Concept of guided implantology, Bologna, Italy and Biohorizons – Treatment planning using new imaging and diagnostic methods, Beograd, Srbija) and cosmetic dentistry (GC Europe – Composites from GC, Leuven, Belgium and Ivoclar Vivadent training, Schaan, Liechtenstein). The focus of his scientific researches are dental materials, digital dentistry and implant restorations. Dentistry 4.0 is currently his goal and inspiration. He has published papers with his scientific research in the journals in USA, Switzerland, Croatia and Serbia.

Research. Published 15 papers with affiliations of the Faculty of Dental Medicine in Belgrade, School of Dentistry in Houston (UTHealth) and private office - Stamenković & Team. Cumulative IF: 13,072, h-index: 7, citation 135 (January, 2025).

Membership. Serbian Medical Society (SMS), Balkan Stomatological Society (Deputy Counselor of BaSS Council), Society of Color and Appearance in Dentistry (SCAD), Serbian Prosthodontic Society (PROS).

Employment. Dental office, Stamenković & Team, founder and owner since 2012.

L55

MANAGING VASCULAR COMPLICATIONS OF PERIORAL REGION AFTER HYALURONIC FILLER INJECTION. DANGER ZONES AND SAFE TECHNIQUES

Marina Stolić

Medica Aesthetica, Serbia

Lecture details: Hyaluronic acid (HA) dermal fillers are widely used for facial rejuvenation, but vascular complications remain a potential risk due to the rich network of blood vessels in the face. This presentation discusses the management of vascular complications in the perioral region after HA filler injections, focusing on danger zones, safe techniques, and necrosis treatment. We present a case of ischemic involvement affecting the chin, lips, and nasolabial area following filler injection, emphasizing the importance of early recognition and intervention. The timely use of hyaluronidase proved critical in preventing necrosis and optimizing both functional and aesthetic outcomes. Key concepts covered include the identification of early signs of vascular compromise and the role of hyaluronidase in preventing irreversible tissue damage. Additionally, the "danger zones" in the perioral region will be reviewed, along with techniques to minimize risks during filler injections. By raising awareness of these potential complications and their management, this session aims to help clinicians improve patient safety and outcomes in aesthetic procedures. Attendees will gain valuable insights into recognizing and addressing vascular complications, ensuring safer and more effective treatments in the growing field of aesthetic medicine and dentistry.

Curriculum Vitae: Specialist in Plastic, Reconstructive, and Aesthetic Surgery, two decades of experience in aesthetic medicine. Holds a Doctorate in Medical Sciences in the field of Psychiatry.

Founder of the Medica Aesthetica Aesthetic and Educational Center and the Anti-Aging Academy of Serbia.

International educator in aesthetic medicine and dentistry.

Expert trainer in the application of hyaluronic fillers, mesotherapy, chemical peels, growth factors, and Botulinum Toxin Type A.

Distinguished advisor to the Academy for Skin, Barcelona.

Holds a European Master's Degree in Aesthetic and Anti-Aging Medicine (EMMA), obtained in 2010 in Paris, France.

Key Opinion Leader and Master Class lecturer for Laboratoires Vivacy and Innoaesthetics.

Member of ISAPS (The International Society of Aesthetic Plastic Surgery – the world's leading professional organization for board-certified aesthetic plastic surgeons).

L56

GUIDED BONE REGENERATION - THE IMPACT OF BIOMATERIALS ON BONE REGENERATIVE OUTCOME

Jovana Šušak

Karakamcev Dental Centar, Macedonian Implantology Association, North Macedonia

Lecture details: Guided bone regeneration (GBR) is often required to obtain sufficient bone quantity during dental implantation. Key factors for GBR include cells, a scaffold, mechanical stability, signalling molecules and blood supply. Barrier membranes and bone substitute materials are essential components of GBR treatment. Bone substitute materials with different origin and composition can be utilized. Different local factors and systemic conditions are related to the outcome of GBR treatment. In this lecture, the foundation of theoretical knowledge of GBR will be explained. Application of grafting materials through various examples from clinical practice will be presented.

Learning objectives:

To understand the biological background of osseous formation and factors that can influence it.

To see examples of clinical application of different grafting materials in alveolar bone reconstruction as part of implant therapy.

Curriculum Vitae: Dr. Jovana Shushak, Doctor of Dental Medicine, Master of Science in Dental Medicine Field of Prosthodontics, Specialist in Periodontology, PhD in Periodontology and Oral Medicine. Participant in Numerous International Projects, Trainings and Courses, ITI member. Co-president of the organizing board of BASS 2023. Deputy Councilor of the BaSS Council. President of the Commission for International Cooperation of the Dental Chamber of North Macedonia.

Active participant, Lecturer and Organizer of a Large Number of International Congresses and Symposiums. Author and Coauthor of Several Professional and Scientific Papers in the Field of Oral Surgery, Periodontology and Implantology Published in National and International Journals.

L57

LET'S GET DIGITAL

Aleksandra Špadijer Gostović

School of Dental Medicine, University of Belgrade, Serbia

Lecture details: Digitization has become foundation of the contemporary prosthodontics, in the clinical and lab procedures like use of CAD-CAM technology, stereolithography, rapid prototyping, use of virtual articulators and digital face bows, digital radiographs, or in the field of training, education and research by the use of virtual patient programs, dental softwares, the list remain endless. Let us think of X-rays or photographs, esthetic analyses, planning, impressions, recording jaw movements or fabricating restorations, educating and training new dentists or patients, all has become digital. CAD-CAM has revolutionized the material technology and lab work. Today a dentist needs to be abreast with the latest but with the technology changing so fast, this poses a great challenge. Digitization has modified and improved conventional procedures, considering the educational aspect, diagnostics, treatment procedures, prosthesis fabrication and lastly the research and futuristic development. Presenting different cases, the lecture will discuss the advantages of digital workflow in everyday clinical practice.

Curriculum Vitae: Dr Aleksandra Špadijer Gostović graduated from the School of Dental Medicine, University of Belgrade, where she is currently employed as a full time professor at the Clinic for Prosthodontics.

Professor of Fixed and Mobile Prosthodontics, Esthetic Dentistry, Computerised Dentistry, Dental anatomy with Gnathology and Oral implantology.

2003. Professional training at the Clinic for Prosthodontics in the field of Gnathology and Occlusion, University Bonn, Germany;

2005. Professional training in the field of Implantology at the Department of Advanced Prosthodontics, School of Dentistry, University of California, Los Angeles (UCLA);

2005. Master thesis in prosthodontics and implantology;

2009. Specialisation in the field of Prosthodontics

2011. PhD studies in prosthodontics and implantology, PhD thesis;

From 2018. Expert consultant in ASG Dental Clinic;

Key opinion leader for Zhermack, Dentsply Sirona, Edelweiss Dentistry and Neodent (Serbia).

Membership in Professional and Scientific Organizations: President of Serbian Prosthodontic Association PROS, BaSS (Balkan Stomatology Society), EAO member (European Association for Osseointegration), ITI member (International team for Implantology), WIN (Women Implantology Network)

Teaching experience: 25 years of experience in leading student's and dental technician's courses, postgraduate and specialised studies, basic and master courses in the field of esthetic dentistry, prosthodontics and implantology; Mentor of 3 PhD Thesis and 20 Master Thesis

Publications: Author and co-author of: 22 original articles published in national and international journals, more than 50 invited lectures, 80 presentations on international and national meetings.

Book: Esthetic Challenges in Contemporary Prosthodontics (ISBN 978-86-531-0383-5), Belgrade, 2018.

Book chapter: Stamenković D., Leković V., Špadijer Gostović A.: Biomaterials in contemporary oral implantology. (VI); in Stamenković D. (editor): Materials in dentistry-achievements and perspectives, Belgrade 2007.

Book chapter: Špadijer Gostović A., Todorović Ana: Computerized occlusal analysis. (VIII), in Todorović A. (editor): Computerized Dentistry, School of Dental medicine, Belgrade 2021.

L58

DYNAMIC MRI OF THE TEMPORO-MAXILLARY JOINTS.

Kazimierz Szopinski

Medical University of Warsaw, Poland

Lecture details: Disorders of the temporo-maxillary joints are common. Although the initial diagnosis is based on history and physical examination, additional diagnostic imaging (CBCT and/or MRI) is usually required. Magnetic resonance imaging is the method of choice in diagnosis of internal temporomandibular derangement, showing the morphology of and position of the disk, as well as its mobility (usually in jaws closed and jaws open position). The imaging protocol in our institution includes a dynamic sequence in which an originally-designed graded bite block enabling demonstration of the mobility of internal structures of the temporo-mandibular joints is used. Dynamic studies of common internal temporomandibular derangements will be presented.

Curriculum Vitae: Kazimierz T. Szopinski is a master of electronic engineering (MS, Warsaw University of Technology 1984) and a physician (MD, Medical University of Warsaw 1991). Doctor in medical sciences (PhD, Medical University of Warsaw 1996), habilitation in radiology (Medical University of Warsaw 2003), professor of medicine (2012). He is a specialist in radiology and diagnostic imaging. He obtained also a University Diploma of Clinical Ultrasound at the University of Montpellier-Nimes, France. He was trained in Germany (Department of Neuroradiology, Katharinenhospital, Stuttgart) and France (Department of Neuroradiology, Hopital de la Timone, Marseilles, France). As a Senior Fulbright Scholar, he completed his post-doctoral research fellowship at the Department of Radiology and Radiologic Science of the Johns Hopkins School of Medicine (Baltimore MD, USA, 1998/1999). As a full professor he currently heads the Department of Dental and Maxillofacial Radiology at the Faculty of Medicine and Radiology. He is a member of the European Academy of Dentomaxillofacial Radiology and European Society of Radiology. He is also a Distinguished Honorary Member of the Romanian Society of Ultrasound in Medicine and Biology. He published 91 journal articles, 2 books, and 24 book chapters. His current research is focused on computer modeling in dentomaxillofacial radiology and neuroradiology, novel applications of magnetic resonance imaging and ultrasound, and clinical anatomy.

L59

IMMEDIATE IMPLANT PLACEMENT IN ESTHETIC ZONE, HOW FAR ARE WE?

Ali Tahmaseb

*Erasmus University – Rotterdam, Netherlands***Lecture details:**

Curriculum Vitae: Prof. Dr. Ali Tahmaseb left Teheran for Belgium as a teenager, where he completed his dental education at the University of Ghent, Belgium, in 1993. Since then he has followed various training programs in oral surgery and implant dentistry throughout Europe and USA. In 2011 he completed his PhD at the University of Amsterdam, ACTA and stayed on to become associate professor in the department of oral implantology and prosthetic dentistry. He was also responsible for research and education in the same department. In 2018 he moved to Erasmus Academic Medical Centre, Rotterdam, The Netherlands, where he was appointed as associate professor at the department of Oral & Maxillofacial surgery. He is active visiting professor at the Belgrade dental school, Implant Centre. Ali Tahmaseb has about 60 international and national publication and has been lecturing worldwide in various conferences and courses. His main research areas are on guided surgery and navigation techniques, CAD/CAM, treatments in esthetic oral area and guided bone regeneration around dental implants. He is co-founder of a novel concept in guided surgery, fellow at International Team of Implantology, ITI and one of the editors of Forum Implantologicum. Ali Tahmaseb is also active in his private referring offices in Antwerp (Belgium) and Tilburg (Netherlands)

L60

SOCIAL MEDIA IN DENTISTRY: THE FINAL FRONTIER?

Joško ViskiĆ

School of Dental Medicine, University of Zagreb, Croatia

Lecture details: Social media has become an integral part of modern life, revolutionizing communication, information sharing, and professional interactions. The field of dentistry is no exception, as practitioners, practices, and organizations have eagerly embraced social platforms to connect with patients, network with peers, and promote their services. Social media offers unparalleled opportunities for education, public awareness, and business growth, enabling dental professionals to showcase their expertise, build their reputation, and attract new patients. However, this newfound digital landscape is not without its challenges. The lack of formal guidelines and an evolving understanding of social media's impact has introduced significant ethical and professional risks. Missteps in online conduct can damage reputations, erode patient trust, and even lead to legal consequences. Moreover, navigating the overwhelming number of platforms and trends can be daunting without clear strategies. This presentation will provide a comprehensive overview of the evolving role of social media in dentistry. It will explore its potential as a tool for professional success while addressing its inherent risks. Attendees will gain insights into balancing authenticity with professionalism, understanding the implications of online interactions, and implementing best practices for effective social media use. Through practical examples and actionable strategies, participants will learn how to use social media ethically and responsibly, ensuring their online presence aligns with their professional values. Additionally, the session will guide attendees in selecting platforms that best suit their goals, crafting engaging yet compliant content, and creating sustainable social media management strategies.

Learning Objectives:

- Understand the benefits and challenges of social media for dental professionals.
- Identify best practices and examples of ethical and effective social media usage.
- Evaluate and select appropriate platforms to optimize engagement and management.

Join us to discover how to navigate the social media landscape with confidence, professionalism, and purpose.

Curriculum Vitae: Joško ViskiĆ was born in 1984 in Split, where he finished elementary and high school. He enrolled at the School of Dental Medicine, University of Zagreb, in 2003, where he graduated in 2008 as the best student of his generation. He is the winner of 5 Dean's Awards and Rector's Award. In 2009, he became a researcher and assistant at the Department of Fixed Prosthodontics. He enrolled in doctoral studies in 2009 and specialist education in dental prosthetics in 2013. He defended his doctoral dissertation in March 2015. He is the author of numerous scientific and professional papers in national and international journals. He completed his specialist internship at the Clinical Department of Prosthodontics of KBC Zagreb, Croatia and passed the specialist exam in 2016. He was elected to the scientific-teaching position of assistant professor at the Institute of Fixed Prosthodontics in 2017, and associate professor in 2022. He actively participated in numerous international and domestic congresses and courses, and as a lecturer, he participated in a series of continuing education courses at the Faculty of Dentistry in Zagreb. Since 2018, he has served as the president of the Croatian Academy for Aesthetic Dentistry (CAAD). He is a member of the executive board of the Society for Color and Appearance in Dentistry (SCAD), members of the Croatian Dental Society of HLZ, the Croatian Society for Dental Prosthetics, the European Society for Dental Prosthetics (EPA) and the International Society for Dental Research (IADR).

L61**BONE QUALITY – THE KEY TO SUCCESS IN IMPLANTOLOGY**

Zoran Vlahović

Faculty of Medicine Priština – Kosovska Mitrovica, Serbia

Lecture details: The application of modern technological procedures and materials in the production of dental implants and the definition of implant placing and loading protocols have made implant therapy significantly more successful and predictable. The factor that has probably the most significant role in the success of the implantation is the bone as the acceptor of the implant. Procedures that can influence the quantity and quality of bone tissue in the area of planned implant placement are limited. Therefore, it is of crucial importance, in pre-implantation planning, to analyze the quantity and quality of bone tissue (bone density and distribution of spongiosa and compacta) and choose the optimal dimension and design of the implant, the implant placement protocol, any additional surgical procedures and the implant loading protocol. Such analyzes are facilitated in modern implantology by the use of CBCT softwares, which day by day provide us with more and more possibilities. In the lecture, the possibilities of bone tissue density analysis and pre-implantation planning in the CBCT software will be presented, as well as studies in which these procedures were used.

Curriculum Vitae: Academic and professional career

Graduated at the Faculty of Medicine, Branch of Dentistry, Pristina / 1997.

Internship / 1997. – 1998.

Military Airport Podgorica / 1998. - 2006.

Training Programme in Oral Surgery / 2007. – 2010.

Doctoral studies / 2010. - 2013.

Branch of Dentistry, Medical Faculty Pristina - Kos. Mitrovica

Ass. prof. Oral Surgery and Oral implantology / 2013. - 2018.

Assoc. prof. Oral Surgery and Oral implantology / 2018. - 2023.

Full prof. Oral Surgery and Oral implantology / 2023. -

Scientific research

More than 30 lectures and 40 papers (journals, congresses, symposium). 21 on the SCI list

Author of "Oral Implantology Practicum" and "CBCT in dentistry" textbook

Member of Association of Oral Surgeons and Association of Oral Implantologist Ser-bia, Member of Editorial board Balkan Journal of Dental Medicine

Vice president of Balkan Stomatological Society (BaSS)

Planmeca (Finland) lecturer in field of CBCT radiology

Visiting profesor in International Balkan University in Skopje, North Macedonia and Medical Faculty Foča in Bosnia and Herzegovina

L62

DIGITAL DENTISTRY AND EMOTIONAL DENTISTRY

Roberto Wuotto

Grupo Dental Wuotto Clinics in Querétaro, Mexico

Lecture details: The integration of digital technology in dental practice offers unparalleled precision and patient engagement. This conference will explore a case study beginning with an initial digital scan and a comprehensive smile photograph. Utilizing advanced rendering and mock-up techniques, we demonstrate a before-and-after simulation, evoking emotional responses from patients. We then proceed with the minimally invasive veneer preparation, employing digital guides for accuracy. The final design, crafted in Exocad, is milled, characterized, and cemented using the latest adhesive techniques. The process culminates in a bespoke audiovisual presentation, showcasing the transformative impact of the treatment. This innovative approach not only enhances clinical outcomes but also fosters patient loyalty through personalized experiences.

Curriculum Vitae: Dr. Roberto Wuotto is a partner at Grupo Dental Wuotto clinics in Querétaro and co-founder of ED Digital Lab. His practice is exclusively dedicated to prosthetics and aesthetic dentistry. He is a member of the Mexican Dental Association and the Querétaro Dental Association. Dr. Wuotto serves as the Director of the International Program in Prosthetics and Aesthetic Dentistry in Querétaro and is also the Director of the Emotional Dentistry Project. He is a national and international speaker, Fellow of the International College of Dentists, and Fellow of the Pierre Fauchard Academy. Dr. Wuotto graduated from the Advanced International Education Program in Oral Rehabilitation and Esthetic Dentistry at New York University (NYU) and authored of the article "Emotional Dentistry Applied in a Cosmetic Dental Treatment with Dental Veneers" for NYU. He holds a Master's degree in Aesthetic Dentistry and received training and certification in Emotional Dentistry, Interdisciplinary and Digital Dentistry in Los Angeles, California, under Dr. Christian Coachman at Gide Dental Institute. He also completed the Master Esthetic and Oral Rehabilitation Program accredited by the International College of Dentists. Dr. Roberto Wuotto is the co-founder, alongside Dr. Nenad Milosevic, and instructor of the Master Dental Program in Kruševac, Serbia. He has received extensive dental training through numerous national and international courses.



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**Young BaSS
Lecturers**



L63

LINGUA PLICATA: NEW POSSIBLE SIGN IN ULCERATIVE COLITIS

Aleksandar Acović

Faculty of Medical Sciences, University of Kragujevac, Serbia

Lecture details: Lingua plicata (LP) is condition that dentists sometimes overlook. Although benign, this condition is diagnosed in 35% patients who suffers from ulcerative colitis (UC). Ulcerative colitis is a complex disease in which the interaction of genetic, environmental, and microbial factors drives chronic intestinal inflammation. Gastrointestinal symptoms are predominant, including pathological manifestation in the oral cavity as well as extra intestinal complications. Lingua plicata is a condition characterized by an increased number of fissures and grooves at the central and lateral aspects of the dorsal surface of the tongue. LP is usually asymptomatic and discovered incidentally, but the accumulation of food in the fissures and grooves can lead to focal glossitis and halitosis. By analyzing levels of pro-inflammatory cytokines in gingival cervical fluid, we can track different phases of the disease as well as treatment success. Levels of pro-inflammatory cytokines are much higher with patients with LP, then UC patients without, which may be considered as a sign of disease progression and consequently poor prognosis for the patient.

Curriculum Vitae: Dr Aleksandar Acovic, graduated from Faculty of Medical Sciences, University of Kragujevac in 2016. In 2020, he received his doctorate in the elective field of Immunology, infection, inflammation. He specialized in Orthodontics and was promoted to the position of assistant professor for the same department in 2023.

L64

MARPE (MINISCREW-ASSISTED RAPID PALATAL EXPANSION) – WHAT DO WE KNOW TODAY

Ivan Arsić

School of Dental Medicine, University of Belgrade, Serbia

Lecture details: Proper growth of the maxilla, both in the sagittal and transverse directions, is one of the most important conditions for the formation of a proper, functionally healthy and stable occlusion. There are numerous factors that can adversely affect the proper growth of the maxilla and maxillary dental arch. When it comes to the etiology of maxillary deficiency in the transverse direction, heredity, congenital anomalies, orofacial dysfunctions and the practice of bad oral habits have a very important role. Narrow maxilla can be the cause of forced lateral movements of the lower jaw and various forms of crossbite. Therefore, establishing the correct transverse relationship between the upper and lower jaw is a particular challenge in orthodontic therapy.

In this lecture, various orthodontic therapeutic options for the expansion of the upper dental arch and upper jaw will be presented. In addition to therapeutic procedures that are applied in the stage of late deciduous and mixed dentition with myofunctional and mobile appliances, methods of expansion with fixed orthodontic appliances will also be shown. The expansion of the upper jaw based on skeletal anchorage, with the use of orthodontic mini implants in clinical situations when patients are in the descending phase of pubertal growth, as well as when the growth is completed, is a current topic and subject of scientific research in orthodontics. In addition to the description of these procedures, clinical cases of patients in whom expansion of the upper jaw has been performed, with a review of the advantages and disadvantages of different therapeutic methods will be presented. Contemporary evidence based facts regarding optimal age, suture maturation and expansion protocols in treatment with MARPE will also be shown.

Curriculum Vitae: Ass. Dr. Ivan Arsic is a teaching assistant at the Clinic for Orthodontics, School of Dentistry, University of Belgrade. He is an orthodontics specialist from 2014. and has a PhD degree from 2022. He works with dental students in practical training and as a mentor in residency program. He attended many courses for using mini implants in orthodontics, for practicing both straight wire and standard edgewise technique, and for using aligners in orthodontic treatment. He was an invited speaker in many congresses and meetings, co-authored two textbooks, presented many researches in domestic and foreign congresses and published 5 papers in international journals.

L65

T - SCAN DIGITAL OCCLUSION ANALYSIS IN ORTHODONTICS - A PILOT STUDY

Filip Ivanjac

School of Dental Medicine, University of Belgrade, Serbia

Lecture details: Digital dentistry is a standard of modern practice. T scan III is the most accurate digital occlusion analyzer for purposes of implantology, prosthetics and orthodontics. Numerous occlusal analyzers have been used through history. One of them is articulating paper, which registers contacts as dots and shapes outlined on dental surfaces which don't provide information about the intensity of the contacts. T scan III sophisticated sensors accurately obtain 2D and 3D images of dental contacts and assess intensity of the forces that develop during intercuspation. The aim of this pilot clinical study was to assess the occlusal parameters in patients with class II and III who are candidates for orthodontic therapy and to compare them with normal occlusion parameters (control group). In this way we wanted to help orthodonts to make better therapeutic decisions and more precise and effective plan of therapy. The obtained results showed that the bite load in malocclusions is more dominant on one side of the dental arch, in class III it was at the right side, while in class II it was in a higher percentage on the left side. The upper molars bear the highest force intensity, which was more equilibrated in normal occlusion, while it was unbalanced in class II and III. We came to conclusion that in class II and III it is necessary to balance the occlusion on the left and right side of the dental arch, as well as to correct the orientation of the forces affecting the dentition, while in the control group we proved that the occlusion was more balanced with regular force distribution during the intercuspation.

Curriculum Vitae: He graduated at the School of Dental Medicine University of Belgrade in 2010. He completed academic specialist studies in implantology in 2011. He defended his PhD thesis in 2016. at the Clinic for Maxillofacial Surgery School of Dental Medicine University of Belgrade. He was research associate since 2011. He is scientific associate since 2021. He is the winner of the award for scientific research at biennial congress of maxillofacial rehabilitation ISMR, co-author of the textbook Maxillofacial surgery for medical students and ENT, plastic and reconstructive surgery residents. He is the author of over 40 papers at international congresses and journals, and an invited lecturer at 10 international congresses. He designed and organized the study Impact of the COVID 19 pandemic on dental practice in Serbia. He participates in bilateral cooperation. He has numerous certificates in the fields of implantology, dentistry, application of lasers in dentistry, aesthetic and antiaging medicine, new technologies in the field of regenerative medicine.

L66

DIGITAL WORKFLOWS IN IMPLANT DENTISTRY

Marko Magić

School of Dental Medicine, University of Belgrade, Serbia

Lecture details: Use of digital tools becomes predominant in dental practice. Acquisition of digital data like CBCT scans and intra-oral scans is turning into standard of care. Various digital tools are applicable to dental implant treatments, including virtual implant planning, guided surgery, digital impressions, prosthesis fabrication. Despite the fact that implant therapy is considered highly predictable, poor treatment planning and inadequate implant positioning can compromise the treatment outcome. Correct implant positioning has numerous advantages, including favorable esthetics and long-term stability of peri-implant hard and soft tissues as a result of optimal occlusion and implant loading. Proper implant position is crucial for long-term success of the therapy. Virtual implant planning enables implant placement in prosthetically driven position and it is a starting point of digital workflow for implant treatment. Transfer of the virtual treatment plan to the surgical field can be performed with very high accuracy using fully guided surgical protocol. Design of the surgical template with complete digital workflow as well as differences in protocols for partially and fully edentulous patients will be discussed in the presentation.

Curriculum Vitae: Dr Marko Magic received his dental degree from School of Dental Medicine, University of Belgrade. He obtained his PhD in the field of oral surgery and implant dentistry in 2018. In 2019 he completed three years of surgical residency. Currently, he works as a Research. Associate at the School of Dental Medicine, University of Belgrade in Serbia. He received ITI (International Team for Implantology) scholarship in 2019 (Shanghai/Belgrade) and he is FOR (Foundation for Oral Rehabilitation) Emerging Leader. Dr Magic is an investigator in numerous research projects. He is an active member of international organizations FOR, ITI and EAO.

L67

ELECTROCHEMICAL SENSORS IN DENTAL AND BIOMEDICAL ENGINEERING: A NEW ERA OF DIAGNOSTICS

Lazar Milić

Faculty of Technical Sciences, University of Novi Sad, Serbia

Lecture details: Electrochemical sensors have indisputably emerged as a fundamental cornerstone within the expansive field of biomedical engineering, providing an exceptional degree of precision and sensitivity that is unparalleled in the realm of diagnostics. In the specific context of dentistry, these advanced sensors facilitate real-time monitoring of critical analytes present in saliva, thereby enabling the early detection of both oral and systemic diseases that can significantly impact overall health. This comprehensive lecture meticulously delves into the underlying principles and multifaceted applications of electrochemical sensors, placing a strong emphasis on their indispensable role in non-invasive diagnostic methodologies. Prominent examples of such sensors include those specifically designed to measure pH levels, glucose concentrations, and biomarkers that are closely associated with periodontal disease as well as dental caries. Furthermore, the presentation brings to the forefront recent technological advancements, such as the development of wearable biosensors and integrated platforms, which significantly extend the potential applications of electrochemical sensing into the domain of remote health monitoring. By thoroughly addressing the complex challenges that accompany sensor design, ensuring biocompatibility, and facilitating clinical translation, this lecture underscores the transformative impact that these innovative technologies exert on the landscape of modern healthcare.

Curriculum Vitae: Lazar Milić is a researcher at the Department of Power, Electronics and Telecommunication, Faculty of Technical Sciences, University of Novi Sad. He is currently pursuing a doctorate in electronics under the mentorship of Professor Goran M. Stojanović. Under his mentorship, he has done his bachelor's thesis in the field of textile electronics, applied in biomedical engineering, and his master's thesis in the field of edible electronics, again applied in biomedical engineering. Aside from the fields above, his interests lie in micro and nanoelectronics, bioelectronics, and biosensors. He has published 14 journal and conference papers in the past 3 years, gaining 27 citations and an h-index of 2.

L68

CANDIDA SPP. IN THE ORAL CAVITY – INSIGHT INTO NEW ROLES IN ORAL DISEASES AND POTENTIAL ANTIMICROBIAL RESISTANCE

Sanja Petrović

School of Dental Medicine, University of Belgrade, Serbia

Lecture details: Candida spp. is normal inhabitant of the oral cavity. This fungus has been „well-studied“ and some traditional facts are: 1) it causes oral candidiasis, which occurs in cases of immunological disbalance; 2) Candida albicans is most commonly isolated, while non-albicans species are limited to immunocompromised subjects; 3) they are mainly isolated from the tongue, buccal mucosa or palatal mucosa of denture wearers; 4) as they are normal inhabitants of oral cavity, some amount of Candida is normally present (mucosal colonisation). Recent studies have identified Candida spp. (both albicans and non-albicans species) in gingival/periodontal pockets of immunocompromised as well as immunocompetent subjects. As they reside in complex subgingival biofilm, these areas are considered reservoirs of potentially resistant Candida spp. into systemic circulation. At the same time, emerging evidence about fungal endocarditis, and some hypotheses about their origin from oral cavity are also rising. Additionally, Candida spp. is implicated in periodontal and peri-implant diseases, raising concerns about the role of antibiotics in their treatment. Recently, acrylic dentures are also recognized as Candida spp. reservoirs, potentially leading to aspiration pneumonia and systemic infections. New evidence also points to a potential role of Candida spp. (especially C.albicans) in the development of other oral diseases such as early childhood caries and even oral carcinoma. This lecture will explore some novel findings on Candida spp. colonization and its involvement in oral diseases not traditionally linked to fungal infections. We will also discuss the oral cavity as a potential reservoir for resistant Candida spp. strains and offer therapeutic recommendations when colonization and infection are difficult to distinguish.

Curriculum Vitae: Sanja Petrovic is a Teaching Assistant at the Department of Microbiology and Immunology, School of Dental Medicine, University of Belgrade, Serbia. She earned her dental degree from the same institution in 2009 and completed her PhD in Medical Science – Dentistry in 2016. Over 10 years at the Department of Periodontology and Oral Medicine, she was involved in clinical and research activities in various areas, including periodontology, oral and periodontal medicine, and oral microbiology, with a particular focus on oral candidiasis. Since 2011, Dr. Petrovic has contributed to multiple research projects funded by organisations such as the Ministry of Education, Science and Technology of the Republic of Serbia, the Innovation Fund of Serbia, the Bilateral DAAD project, and the Eklund Foundation, Sweden. She has authored over 50 publications, including 18 articles in scientific journals, and presented her work at numerous scientific conferences. Dr. Petrovic is a member of the Serbian Society of Periodontology and the European Federation of Periodontology (EFP).

L69

INTERDISCIPLINARY APPROACH IN DENTISTRY: ORTHODONTIC TREATMENT AS A FOUNDATION FOR OPTIMAL ESTHETICS

Marija Živković

School of Dental Medicine, University in Belgrade

Lecture details: Achieving superior esthetic and functional outcomes in dentistry requires a wellcoordinated interdisciplinary approach, with orthodontic treatment playing a fundamental role in establishing ideal conditions for restorative procedures. Proper tooth alignment, arch coordination, and occlusal balance contribute significantly to the predictability and longevity of prosthetic and restorative treatments. This lecture will explore the synergy between orthodontics, restorative dentistry, and digital treatment planning, emphasizing how strategic orthodontic interventions can enhance esthetic results while ensuring functional harmony. By aligning teeth in a position that optimizes space distribution, axial inclination, and occlusion, orthodontic treatment provides a stable foundation for veneers, crowns, and other esthetic restorations. Through the presentation of multiple clinical cases, the complete workflow will be shown—from orthodontic diagnosis and biomechanics to digital smile design, guided prosthetic planning, and the execution of final restorations. Special attention will be given to the role of advanced digital technologies, such as 3D scanning and virtual treatment simulation, in achieving precise and predictable outcomes. By integrating orthodontics with modern restorative protocols, clinicians can improve both esthetic and functional longevity, ultimately enhancing patient satisfaction. This lecture will provide valuable insights into treatment sequencing, interdisciplinary communication, and evidence-based protocols to help dental professionals refine their approach to complex esthetic cases.

Curriculum Vitae: Dr Marija Zivkovic is an orthodontic specialist, PhD, currently working as a teaching assistant at the Department of Orthodontics, School of Dental Medicine, University in Belgrade. With a strong interest in modern orthodontic and innovative approaches, she completed numerous professional courses, continuously expanding knowledge in the latest advancements in the field. She has authored over 20 scientific papers in both international and national peer reviewed journals. Dr Marija Zivkovic further enriched her expertise through a six-month study visit at the Department of Orthodontics and Dentofacial Orthopedics at UIC Barcelona, Barcelona, Spain.



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Round Tables



RT I**PERI-IMPLANT DISEASES: CURRENT CONCEPTS ON AETIOLOGY, PRIMORDIAL CARE AND TREATMENT**

Dimitra Sakellari, Leonidas Batas, Ioannis Fragkioudakis

Department of Periodontology and Implant Biology, Dental School, Aristotle University, Thessaloniki, Greece

As implant treatment has been integrated in contemporary dental practice, complications with the forms of peri-implant mucositis and peri-implantitis have also increased in prevalence. Peri-implantitis is the more severe biological complication and is defined as an inflammatory disease affecting peri-implant tissues resulting in bone and eventually implant loss. In addition, the treatment of peri-implantitis has currently become a challenge for clinicians and represents a substantial global economic burden. Specific objectives :This round table aims at presenting current concepts and advances regarding the aetiopathology of peri-implant diseases which directly influence treatment modalities, primordial care ,thus description of the systemic ,local and environmental factors which must be considered for each individual before implant placement as well as analyzing all treatment modalities – non surgical,surgical and regenerative – emphasizing on available clinical guidelines.Learning outcomes: The comprehensive approach as described ,will enable clinicians to become acquainted with updated aspects of aetiology prevention and treatment of peri-implant diseases .

RT II**ORAL HEALTH PROMOTION PROGRAMMES IN THE BALKAN COUNTRIES**

Dejan Marković,¹ Tamara Perić,¹ Marijan Denkovski,² Biljana Getova,³ Biljana Kilibarda,⁴ Aristomenis Syngelakis^{5,6,7}

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According to the WHO data, almost half of the world's population (about 3.5 billion people) suffers from oral diseases, and three quarters belong to middle and low-income countries. Global burden of oral diseases exceeds that of other non-communicable diseases. Caries, periodontitis, tooth loss, and oral cancer are the most common oral diseases, affecting the most vulnerable and poorest populations, i.e. low-income residents, people with disabilities, the elderly population, as well as people in remote and rural areas. Health and quality of life in general are influenced by a complex network of interrelated social, environmental, cultural and economic factors. This complex connection requires the health and non-health sectors to be involved in mutual cooperation in the efforts for the prevention of oral and other non-communicable diseases.

The Balkan region reports high mortality rates attributable to non-communicable diseases. In relation to risk factors, residents of Balkan countries have a high prevalence of tobacco use, per capita alcohol consumption, and unhealthy dietary habits, all affecting oral health. In addition to similar lifestyle habits, the inhabitants of the Balkans have similar socio-economic statuses, political, cultural and traditional understandings. Dental health care of the population of the Balkan countries is similarly organized. While countries in the Balkan Peninsula have made progress in improving the oral health of their inhabitants, the absence of national oral health promotion programmes is striking in many countries in the region. Greater involvement of the community in activities to maintain and improve oral health is needed, as is more comprehensive dental care for vulnerable populations. Within the framework of the Round Table, a comparative analysis of national oral health programmes in the Balkan countries will be conducted. Key measures and activities in the existing programmes will also be examined. The Round Table is expected to conclude with recommendations that will form the basis for future steps to improve oral health across the region.



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Workshops



TREATMENT MODALITIES FOR SURGICAL CROWN LENGTHENING

Nataša Nikolić Jakoba, Srđan Stepanović

School of Dental Medicine, University of Belgrade

Description: Extensive exposure of the gingiva during a smile, called excessive gingival display, may be a point of concern for both patients and clinicians. Several conditions may result in the excessive display of gingiva, including gingivitis, drug-induced gingival enlargement, and altered passive eruption of teeth. Excessive gingival display may also result from a high lip line, a hypermobile upper lip or vertical maxillary excess. The management of excess gingival display is dictated by its etiology. Proper examination and correct diagnosis are imperative for achieving an esthetic and predictable result in the treatment. Clinical and anatomical crown length, the distance of cemento-enamel junction from alveolar bone crest, as well as keratinized gingiva width should be analyzed before deciding whether to include periodontal surgery in the treatment. Regarding aforementioned clinical parameters a proper surgical approach should be selected and performed. Treatment modalities for surgical crown lengthening are gingivectomy and apically positioned flap which both may be combined with osseoresective surgery. Various aspects of excessive gingival display caused by altered passive eruption and its surgical treatment will be discussed during the workshop. Surgical crown lengthening procedure will be demonstrated on the model and different clinical cases will be presented and discussed.

IMMEDIATE IMPLANT PLACEMENT WITH IMMEDIATE LOADING

Aleksa Marković, Zoran Aleksic, Mirko Glišić, Jovana Marković

School of Dental Medicine, University of Belgrade

Description: Course combines new digital technologies with great clinical experience and provides solutions for solving immediate implant placement with immediate loading. Course is consisted of theoretical part with plenty of fully documented clinical cases and evidence-based solutions and hands-on workshops for topic. Participants will be able to plan and discuss clinical cases. Hands-on workshops are designed with goal of "next day clinical appliance" where participants can perform, on working model, immediate single tooth replacement in aesthetic zone simultaneously with GBR procedure, analog and digital impression for immediate loading. Also, participants will be able to ask additional questions and learn clinical tips and tricks in close communication with all lecturers.

Learning objectives:

- Understanding diagnostic procedures, surgical and restorative treatment planning.
- Become familiar with digital workflow in surgical and prosthetic aspects
- Learn indications for immediate implant placement and immediate loading protocol
- Learn step by step immediate implant placement with immediate loading procedure

INTRAORAL PHOTOGRAMMETRY IN ALL ON X CASES

Miodrag Šćepanović

School of Dental Medicine, University of Belgrade

Description: The treatment of edentulism with prosthetic work retained by implants is one of the most complex procedures in dental prosthetics. The creation of the prosthesis actually begins before implant placement, with the planning process. The emergence of digital tools such as intraoral scanners has significantly changed the precision, predictability, and speed of the procedure. It was long believed that prosthetic work for edentulous patients could not be performed using intraoral scanning. It was found that the issue stemmed from the overlap of the geometries of digital transfer devices scanned in the mouth with those in the software library where the prosthesis is designed. Digital protocols were often altered as a result. Recently, with the advancement of dental digital technology, photogrammetry has emerged as a solution to the inaccuracies when working with digital transfer devices. After photogrammetry, the introduction of a procedure called "intraoral photogrammetry" has significantly improved the efficiency of the entire process. The goal of the workshop is to present digital processes used with standard intraoral scanners, as well as with intraoral photogrammetry.

ORTHODONTIC MINI-IMPLANTS – CONTEMPORARY APPROACH IN CLINICAL IMPLICATIONS

Nenad Nedeljković, Ivan Arsić, Nemanja Marinković, Jovan Marković

School of Dental Medicine, University of Belgrade

Description: Orthodontic mini-implants represent a revolutionary advance in modern orthodontics, enabling more precise control of tooth movement and more effective treatments. Their application allows orthodontists to treat patients with greater precision and fewer complications, which contributes to better final results and shorter treatment times. The main role of orthodontic mini-implants is to provide temporary skeletal anchorage. The most important aspect of any orthodontic therapy is the maximum desired movement (teeth, jaw) with minimal unwanted side effects. Their small size allows them to be placed in different places. Mini-implants are most often placed in the buccal interdental alveolar bone. The width of the required alveolar bone between the roots of the teeth for mini-implant placement varies individually. On the other hand, the buccal alveolar process is a generally accessible region and implant insertion can be performed using a simple manual method. Another region, such as the anterior palate, provides better conditions for the placement of mini-implants, since the amount and quality of the bone is more favorable. Different mechanics from the anterior palate can be adapted for distalization, mesialization of the molars, RPE (rapid palatal expansion), closure of extraction spaces, intrusion or extrusion of teeth. A skeletal anchorage with mini-implants should be planned based on an assessment of the required force systems and anatomical limits of tooth movement. Mini implants have become an irreplaceable tool in orthodontics, enabling complex cases to be solved with greater precision and fewer complications.

LET'S DO IT ONE MORE TIME – ENDODONTIC RETREATMENT

Goran Tošić



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Session:
Endodontics I



OP 1

THE INFORMATION QUALITY OF #RUBBERDAMAPPLICATION REELS VIDEOS ON INSTAGRAM: A CROSS-SECTIONAL STUDY

Eray Ceylanoglu, Dilek Hancerliogullari, Bengisu Ozturk

Department of Endodontics, Faculty of Dentistry, University of Kirikkale, Yenisehir, Kirikkale

Objectives: This study aimed to evaluate the content and quality of Instagram Reels shares about the rubber dam application.

Methods: Reels videos were searched using English hashtags (#rubberdamapplication, #rubberdam, #rubberdam/#application) between 19:00 and 23:00 on January 3. Videos related to the topic were examined according to their features and uploaders. Videos were evaluated by three endodontists according to Global Quality Score (GQS), modified DISCERN, and Video Rarity Score (VRS) criteria. Descriptive statistics were obtained, and data were analyzed using Fleiss' Kappa and Spearman rho tests.

Results: 39 out of 100 reels videos met the search criteria. Most of the sharing sources were physicians (43.59%), healthcare institutions (23.08%), hospitals/universities/clinics (10.26%), and others (23.08%). GQS (2.23 ± 1.25), modified DISCERN (1.28 ± 0.97), and VRS (2.79 ± 0.86) were found to be low. GQS, modified DISCERN, and VRS were positively correlated with video duration ($p < 0.001$).

Conclusion: Instagram videos with hashtags #rubberdamapplication, #rubberdam, #rubberdam/#application were limited in number and of low quality. Social media can be used for different purposes, and gaining interaction and popularity is at the forefront. Although it seems like an advantage for other users that Instagram sharers make inaccessible information accessible, the quality of the information is quite insufficient. A preliminary evaluation of sources and videos and sharing by professionals could increase the quality of information.

Keywords: Rubber Dam Application, Social Media, Instagram, Quality

OP 2**CAN ENDODONTIC CLINICAL EDUCATION HAVE A POSITIVE OR NEGATIVE IMPACT ON STUDENTS' DENTAL ANXIETY?**

Nazmiye Yel, Dilek Hancerliogullari, Ali Erdemir

Department of Endodontics, Faculty of dentistry, University of Kirikkale, Kirikkale, Turkey

Objections: Dental anxiety is generally an abnormal fear and fear of visiting the dentist and a state of intense restlessness. It is a matter that needs to be investigated whether receiving endodontic clinical training has an effect on students' dental anxiety. This study aims to evaluate to determine the dental anxiety levels of students with and without endodontic clinical training and to determine the relationship with the factors that may cause dental anxiety at Kirikkale University Faculty of Dentistry

Methods: A total of 200 students, including 2nd-year dental students without endodontic clinical training and 4th and 5th-year dental students with endodontic clinical training, were included in the study. Modified Dental Anxiety Scale (MDAS) and questionnaires about factors related to dental anxiety were asked to be completed by the participants. Independent two-sample t-test, one-way analysis of variance, LSD post hoc multiple comparison test, and chi-square test were used to evaluate the data.

Results: No statistically significant difference was observed between the mean MDAS of the 2nd year dental students and the 4th and 5th year dental students ($p=0.368$) and the distribution of the presence of ≥ 19 MDAS ($p=0.234$). There was no statistically significant difference between the MDAS scores of students who had or had not previously experienced root canal treatment ($p=0.126$).

Conclusion: As a result of this study, it can be said that Endodontic clinical training does not have a significant effect on levels of dental anxiety.

Keywords: Dental Student, Endodontic Clinical Training, Dental Anxiety

OP 3**TREATMENT OF ACUTE AND CHRONIC APICAL ABSCESES IN CLINICAL PRACTICE: A CASE SERIES**

Buse Cansu Toker, Ayşe İbiloğlu, Arzu Kaya Mumcu, Gülsen Kiraz

Department of Endodontics, Faculty of Dentistry, University of Kütahya Health Sciences, Kütahya, Türkiye

Objectives: Acute and chronic apical abscesses arise in periradicular tissues due to pulp infection and necrosis. Intracanal bacteria often exist as biofilms, enabling the infection to spread beyond the root canal system.

Case Report: Case report-1: A 25-year-old male patient presented with swelling and pain. Clinical and radiographic examinations revealed swelling in the left infraorbital region, a deep carious lesion, and radiolucency associated with 23. Root canal treatment and abscess drainage were performed on tooth 23, followed by the administration of antibiotics.

Case Report-2: A 45-year-old female patient presented with swelling and pain. Clinical and radiographic examinations revealed swelling in the right infraorbital region, pain on palpation and percussion, and apical radiolucency associated with tooth 13. Following root canal treatment, surgical drainage was performed, and antibiotics were prescribed.

Case Report-3: A 48-year-old female had a persistent intraoral sinus tract associated with tooth 14. Clinical examination revealed tenderness to percussion and palpation, and radiographs indicated external root resorption. Calcium hydroxide was applied for 14 days, and root canal treatment was completed once symptoms subsided.

Case Report-4: A 37-year-old patient presented with spontaneous pain related to an intraoral sinus tract and tooth 36. Clinical examination revealed mobility of the affected tooth. Radiographs showed a lesion at the distal root. Root canal treatment was completed after calcium hydroxide was applied for 14 days and the patient's symptoms subsided.

Conclusion: In patients with apical abscesses and sinus tracts, accurate diagnosis and appropriate treatment, encompassing both pharmacological and surgical methods, are crucial for effective management.

Keywords: Abscess, Antibiotics, Endodontic Lesion, Sinus Tract

OP 4**SCAFFOLDS FOR IMMATURE TEETH WITH PERIAPICAL LESIONS: CASE SERIES**

Damla Akkaya, Tuğba Koşar

Department of Endodontics, Faculty of Dentistry, Karadeniz Technical University, Trabzon, Türkiye

Objectives: Regenerative endodontic treatment (RET) performed on immature permanent teeth with thin dentin walls, pulp necrosis and periapical lesion. Basically, the procedure consists of a disinfection protocol followed by a scaffold placement to allow the proliferation, migration and organization of necessary cells to regenerate the dental pulp-like tissue. The aim of this case series was to present RETs of immature teeth with periapical lesions using two different scaffolds.

Case Report: Case 1: A 14-year-old healthy female with devitalized tooth 47, periapical radiolucency, incomplete root development, and negative palpation/ percussion tests. Case 2: A 44-year-old healthy male with a devitalized tooth 35, large radiolucency, incomplete root development, positive percussion, negative palpation tests. Both cases underwent RET. The first session consisted of anesthesia, rubber-dam isolation, working length determination, and irrigation with 20 ml 1.25% NaOCl and saline, followed by calcium hydroxide placement. After 4 weeks, the temporary fillings were removed, the canals were cleaned, irrigated with 20 ml 17% EDTA, and the scaffold was formed with blood clot using #20K hand-file for case 1 and with CGF (cytokine-generating factor) for case 2. Bleeding was controlled, and Bio-C Repair (Angelus, Londrina, PR, Brazil) was used as a capping material.

Conclusions: At 14-months for case 1, the periapical lesion was replaced by bone trabeculation, with thickened canal walls and root development. At 12-month for case 2, symptoms resolved, and periapical radiolucency showed recovery. In conclusion, the use of blood clot or CGF as scaffold for RET shows successful results.

Keywords: Immature teeth, Periapical lesion, Regenerative endodontic, Scaffold

OP 5

COMBINED TREATMENT OF MANDIBULAR MOLAR WITH ENDODONTIC-PERIODONTAL LESION

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Objectives: Endoperiodontal lesions refer to lesions characterized by the presence of inflammatory products in both the periodontium and the pulp. In the interaction between periodontal and pulpal structures, certain anatomical features play a significant role. The combination of endodontic and periodontal treatments plays an important role in the healing of extensive periapical lesions.

Case Report: A 14-year-old, systemically healthy female patient, presented to our clinic with complaints of pain and swelling in the lower right mandibular molar region. Upon evaluation of radiographs, a large periapical lesion involving teeth numbers 45, 46, and 47 was identified. Given the possibility that the lesion could have both endodontic and periodontal origins. It was initially decided to perform endodontic treatment, followed by periodontal surgery.

During the clinical examination, pulp sensitivity tests of teeth numbers 45 and 47 were positive. Retreatment was planned for tooth number 46. For tooth 46, which had already undergone root canal treatment, flap surgery was planned. Upon raising the flap, advanced bone loss was observed on the buccal aspect of tooth 46. Granulation tissue in the area was removed and the region was irrigated with saline. To promote regeneration in the area, Platelet-Rich Fibrin obtained from the patient's blood was placed. 9 months follow-up showed complete healing of the lesion, and the patient's clinical symptoms had resolved.

Conclusions: The combined endodontic and periodontal treatment resulted in symptom resolution and significant healing of the periapical lesion. The case underscores the effectiveness of a multidisciplinary approach in managing endodontic-periodontal lesions.

Keywords: Endoperiodontal lesion, Endodontics, Periodontal diseases

OP 6**ENDODONTIC TREATMENT OF MANDIBULAR TEETH WITH DIFFERENT ROOT CANAL ANATOMIES: A CASE SERIES**

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Objective: A thorough understanding of root canal anatomy and its variations is essential for successful endodontic treatment. This case series aims to emphasize the importance of accurate diagnosis and treatment planning of three mandibular teeth with varying root canal configurations.

Case Report: Case report 1: A 47-year-old female patient was referred to our clinic due to a periapical lesion associated with tooth number 43. Clinical and radiographic examination revealed an asymptomatic tooth with two root canals. In the first session, chemomechanical preparation of the root canals was completed, followed by placement of calcium hydroxide. In the second session, root canal obturation and coronal restoration were performed.

Case Report 2: A 48-year-old female patient presented with a complaint of pain in tooth number 44. Clinical and radiographic examination revealed tenderness to percussion and palpation and the presence of two root canals. The first session involved chemomechanical preparation of the root canals. The second session consisted of root canal obturation and coronal restoration.

Case Report 3: A 54-year-old female patient applied to our clinic with a complaint of pain in tooth number 42. Clinical and radiographic examination revealed tenderness to percussion, presence of periapical lesions, and two root canals. In the first session, chemomechanical preparation of the root canals was completed, and calcium hydroxide was placed. The second session involved root canal obturation and coronal restoration.

Conclusion: Successful endodontic outcomes can be achieved through a comprehensive approach that includes meticulous clinical and radiographic evaluation, accurate identification of root canal anatomy, and effective endodontic techniques.

Keywords: Anatomical Variations, Extra Root Canals, Root Canal Treatment, Treatment Outcome

OP 7**INTRACORONARY BLEACHING OF DISCOLORED MAXILLARY CENTRAL TEETH AFTER ROOT CANAL TREATMENT**

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Objectives: Discoloured teeth, especially in the anterior region, can result in considerable cosmetic impairment. Internal discolouration of teeth represents the primary indication for whitening of root-filled teeth. Hydrogen peroxide releases free radicals ,reactive oxygen molecules and hydrogen peroxide anions.The reactive molecules break down the long-chained, dark coloured chromophore molecules and split the double bonds into smaller, less coloured and more diffusible molecules

Case Report: First case ; Systemically healthy,19-year-old female patient, presented to the our clinic with discoloration of tooth 21 root-filled. The existing resin composite restoration was removed, and the access cavity was prepared. A %35 hydrogen peroxide-based bleaching agent was applied to the cavity . After a total of two sessions, satisfactory results were achieved, and the final restoration was completed with composite resin. The patient, who was scheduled for laminate veneer treatment on the anterior teeth 11 and 21 of root-filled ,referred to the prostodontics department. Second case; Systemically healthy,40-year-old female patient, presented to the our clinic with discoloration of tooth 11-21 root-filled. As a result of radiographic examinations, retreatment was performed on tooth number 21. other steps were performed according to the same bleaching procedure as in the previous case. After a total of four sessions, satisfactory results were achieved, and the final restoration was completed with composite resin

Conclusions: Managing discoloured teeth involves a clear understanding and diagnosis of the aetiology of the discolouration and interdisciplinary management. Intracoronary bleaching with hydrogen peroxide gives satisfactory aesthetic results.

Keywords: Intracoronary bleaching, Hydrogen peroxide, Discoloration

OP 8

THE ASSOCIATION BETWEEN ENDODONTIC INFECTIONS AND CARDIOVASCULAR DISEASE

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Objective: To investigate the association between endodontic infections, treatment procedures and cardiovascular diseases.

Methods: A literature review was performed using the electronic data bases: PubMed, Scopus, NLM.

Results: The results from literature showed that there is a 2.79 higher risk of developing CVD in individuals with chronic apical periodontitis in a study conducted with 103 patients. Also the increased inflammatory markers that were observed e.g., IL-1 β , hs-CRP, were reduced after treatment of apical periodontitis. Fourteen studies showed a low correlation and many of them had a moderate to high risk of bias.

Conclusions: These findings provide diverse but converging evidence linking endodontic infections with systemic inflammation and cardiovascular health. Nevertheless, further research is essential to fully understand this relationship. Enhancing oral hygiene and treatment of apical periodontitis, alongside with managing systemic diseases plays a vital role in promoting overall health and well-being.

Keywords: Apical Periodontitis, Bacteraemia, Cardiovascular Disease, Endodontic Infections, Periapical Pathology

PP 1

ANTIMICROBIAL ACTIVITY OF PROBIOTICS AGAINST ENDODONTIC PATHOGENS

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Objectives: The aim of this study is by conducting an agar well diffusion method to evaluate the antimicrobial activity of six probiotic strains against two intracanal pathogens -Enterococcus Faecalis and Candida Albicans.

Methods: The pure isolate of six probiotic strains: 1. Lactobacillus acidophilus, 2. Lactobacillus paracasei, 3. Lactococcus lactis, 4. Streptococcus thermophilus, 5. Lactobacillus reuteri, 6. Lactobacillus plantarum, were propagated in 100 ml flask containing LAPT g 10 broth (pH 6,6-6,8) and incubated at 37°C for 72 hours. Pathogenic test organisms -C. albicans (ATCC 10231) and E. faecalis (ATCC 29212) were set to a 0.5 McFarland standard challenge. About 0.5 ml of test pathogen culture was inoculated on 20 ml of molten agar and allowed to solidify. Circular wells of diameter 6 mm were punched in each poured plates and 50 µl of test samples were added to the wells. The plates were incubated in an upright position at 37°C for 24 hours under aerobic conditions. Post incubation, ZOI was measured (mm).

Results: The inhibitory activity of the test strain was considered significantly positive if the ZOI produced by the test strain against the endodontic pathogen was at least 10 mm. None of the probiotic strains showed significant antibacterial activity against C. albicans. When tested against E. faecalis, Lactobacillus acidophilus, Lactobacillus paracasei and Lactococcus lactis showed antimicrobial activity with mean ZOIs of 15 mm, 13 mm and 14mm.

Conclusion: Probiotic therapy represents a potential antimicrobial treatment option that should be developed further.

Keywords: Antimicrobial, Endodontics, Probiotics

PP 2

MORPHOLOGICAL ANALYSIS OF MANDIBULAR PREMOLARS USING CBCT: INSIGHTS FROM A SERBIAN POPULATION

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Objectives: This study aimed to determine the root canal morphology of mandibular premolar teeth and evaluate the associations between root canal configurations, gender, and tooth position in a Serbian population using cone-beam computed tomography (CBCT).

Methods: CBCT scans from the medical database of the Department of Dentistry, Faculty of Medical Sciences, were analyzed. The study included 300 mandibular premolar teeth from 104 patients. Root canal configurations were assessed based on Vertucci's classification and analyzed in relation to tooth position and patient gender. Statistical analysis was conducted using Chi-square test.

Results: Mandibular first premolars predominantly exhibited a single root canal (92%). In mandibular second premolars, the majority displayed Type I (73%), followed by Type II (16%), Type IV (8%), and Type III configurations (3%). Female patients demonstrated a higher prevalence of type III and IV canal configurations in second premolars ($p < 0.05$). Specific root canal configurations were most frequently observed bilaterally, indicating a high degree of symmetry between the left and right sides ($p > 0.05$). Female patients demonstrated a higher bilateral symmetry ($p < 0.05$).

Conclusion: CBCT is an effective diagnostic modality for assessing root canal morphology in mandibular premolars, providing critical insights into variations associated with gender and tooth position in the Serbian population.

Keywords: Cone-Beam Computed Tomography, Root Canal Morphology, Mandibular Premolars

PP 3

ASSESSMENT OF MESIAL ROOT CANAL VARIATIONS IN MANDIBULAR MOLARS IN A SERBIAN POPULATION USING CBCT

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Objectives: This study aimed to investigate the root canal morphology of mesial roots in mandibular molars and assess the connection between canal configurations, gender, and tooth position in a Serbian population using cone-beam computed tomography (CBCT).

Methods: CBCT scans from the medical database of the Dental Department, Faculty of Medical Sciences Kragujevac, were analyzed. A total of 194 mesial roots from mandibular molars of 77 patients were examined. Mesial root canal configurations were classified using Vertucci's system, and their distribution was analyzed in relation to tooth position and patient gender. Statistical analysis was performed by using Chi-square test.

Results: The mesial roots of all mandibular molars predominantly exhibited two canals. Among multicanal configurations, Type IV was the most frequent, observed in 26% of first molars, 46% of second molars, and 27% of third molars. Types II, V, and VI configurations were also commonly identified across different molars. Significant differences in the prevalence of configurations were observed between genders in third molars ($p < 0.05$), while side-specific differences were noted in second molars ($p < 0.05$). Root canal configurations exhibited bilateral symmetry in 52% of cases, with no significant differences in symmetry between genders ($p > 0.05$).

Conclusion: CBCT is a valuable tool for analyzing root canal morphology in mesial roots of mandibular molars, providing critical insights into gender-based and positional variations among the Serbian population.

Keywords: Cone-Beam Computed Tomography, Root Canal Morphology, Mandibular Molars, Mesial Roots, Gender Differences

PP 4

EFFECT OF IMPACTED THIRD MOLARS ON SECOND MOLAR ROOT RESORPTION: CBCT VS. PANORAMIC EVALUATION

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Objectives: Impacted third molars might be associated with pathological changes in adjacent second molars, including external root resorption (ERR), marginal bone loss, and distal caries formation. This study evaluated these associations by comparing the diagnostic reliability of cone-beam computed tomography (CBCT) with panoramic radiography, emphasizing orthodontic and endodontic factors.

Methods: A systematic literature review and meta-analysis included thirty-two studies identified from PubMed and Google Scholar. Data from controlled trials, observational studies, and clinical trials (sample sizes 107–750 images) were retrospectively analysed. ERR severity was defined as slight (<50% dentin loss), moderate (≥50% dentin loss with intact pulp lining), or severe (pulp exposure). Impacted third molar positions were determined using Winter's criteria. Impaction depths were analysed by Pell & Gregory classification. Statistical analyses employed chi-square tests, logistic regression, and ROC analysis ($P < 0.05$).

Results: CBCT consistently demonstrated higher ERR detection (up to 47.4%) than panoramic radiography (12.5%). ERR prevalence was significantly greater in mandibular second molars (52.9%) than in maxillary molars (32.6%, $P < 0.001$). Mesioangular impactions presented the highest ERR risk (65.62%), followed by horizontal orientations (34.37%). A mesial inclination of a third molar exceeding 13.6° significantly increased ERR risk ($OR=5.439$). Deeper impactions were associated with increased ERR. ERR lesions predominantly affected cervical regions in mandibular molars and apical areas of maxillary molars.

Conclusions: Impacted third molars with mesioangular/horizontal orientation and deeper impactions significantly increase ERR, marginal bone loss, and caries risk. CBCT significantly outperforms panoramic radiography in detection, supporting its clinical utility for managing high-risk cases.

Keywords: Impacted third molars, External root resorption (ERR), Cone-beam computed tomography (CBCT), Panoramic radiography

PP 5

AN INTEGRATIVE REVIEW OF ROOT FENESTRATION: PART 1 – PREVALENCE PATTERNS

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Objective: Root fenestration (RF) is an interruption of the alveolar cortical plate contour that exposes different parts of the root. Depending on the exposed portion of the root, RF has been categorized into six different types. RFs occurring around the root apex are defined as root apical fenestrations, while the ones occurring around the root surface area are defined as root surface fenestrations. The objective of this study is to explore the literature on the prevalence of RF.

Methods: A literature review was performed using data obtained from four electronic databases (PubMed, Web of Science, Scopus and Embase). The data were extracted using a standardized form. From the included studies, information concerning methodological and sample characteristics, as well as results (per tooth, per jaw, overall) were classified into charting tables.

Results: Regarding the maxilla, RF was more frequently prevalent in first molars, followed by canines. Regarding the mandible, RF was more frequently prevalent in lateral incisors, followed by canines. However, the results indicate that the literature is heterogeneous, with significant variations in study protocols and the presentation of findings, offering limited insights into its prevalence and potential racial distribution patterns.

Conclusions: The analysis of the current literature suggests that there is limited information regarding RF's current prevalence, as well as sex, age, and racial distribution. Retrospective CBCT studies with high-resolution protocols, along with open flap studies for direct observation of potential RF sites, appear to be the most reliable methods for understanding the presence of RF and its possible distribution patterns.

Keywords: Alveolar Fenestration, Apical Fenestration, Prevalence, Root Fenestration

PP 6

AN INTEGRATIVE REVIEW OF ROOT FENESTRATION: PART 2 – CLINICAL FACTOR ANALYSIS

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Objective: Root fenestration (RF) is a type of alveolar defect, which due to its frequency, is considered a non-pathological condition. It is defined as a window-like opening or defect in the alveolar plate of bone, not involving the alveolar margin, frequently exposing a portion of the root. The objective of the present study is to explore the literature on clinical factors associated to RF.

Methods: A literature review was performed using data obtained from four electronic databases (PubMed, Web of Science, Scopus and Embase). All possible etiologic, predisposing and aggravating factors were recorded, along with the studies in which they were examined. All data were combined through a narrative synthesis.

Results: The literature search yielded a wide range of etiologic, aggravating, and predisposing factors associated with RF. They were divided in two major categories: anatomical and pathological/related to dental treatment. Age, sex and race were also recorded as separate factors.

Conclusions: This study illustrates the multifactorial nature of RF, highlighting a diverse array of clinical factors that contribute to its occurrence. Further research is needed to deepen our understanding of the precise mechanisms that predispose individuals to RF. By exploring these associated factors, clinicians can better anticipate and manage RF, improving patient outcomes and advancing our knowledge of this common yet often overlooked condition.

Keywords: Alveolar Fenestration Apical Fenestration, Root Fenestration, Clinical Factors

PP 7

ENDODONTIC TREATMENT IN GERIATRIC PATIENTS - EXPECTATIONS, CHALLENGES, OBSTACLES, RESULTS

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Objective: With increasing life expectancy, the demand for preserving natural dentition in older adults has risen. Endodontic treatment in geriatric patients presents unique challenges due to age – related changes in dental and systemic health.

The objective of these case reports is to highlight the unique clinical challenges and considerations encountered in the geriatric population.

Case Reports: Case 1: A 71- year – old, medically compromised male patient presented with exacerbated chronic periapical lesion and a fractured file in the root canal of a mandibular canine. The broken file was successfully retrieved using a dental operating microscope and ultrasound, allowing proper instrumentation, disinfection and sealing of the canals. Case2: A70-year-old female patient with calcified canals in her maxillary molar was managed using advanced endodontic techniques, including magnification, ultrasound, instrumentation and chelating agents, achieving predictable outcomes despite the calcifications. Case3: A 76-year-old female required retreatment of a maxillary premolar with a previous metal post and significant calcification in the middle radicular third. The crown and post were removed, and the calcified canals were successfully negotiated, allowing healing of the persisting periapical lesion.

Conclusions: Advanced endodontic treatment with correct instrumentation, magnification, irrigation and biocompatibility of materials used in endodontics play significant role in overcoming obstacles such as calcified canals, reduced healing capacity related to coexisting systemic conditions.

Keywords: Endodontic treatment, Geriatric patients, Calcified canals, Magnification, Instrumentation

PP 8**CLINICAL MANAGEMENT OF A FUSED MAXILLARY INCISOR: A CASE REPORT**Hümeysra Çapkın*Department of Endodontics, School of Dentistry, Bezmialem Vakıf University, İstanbul, Turkey*

Objectives: Fusion is a developmental anomaly characterized by the union of two adjacent teeth, potentially causing aesthetic, endodontic, and orthodontic complications.

Case Report: A 16-year-old male patient presented to our department due to a fusion anomaly involving his maxillary incisors. Clinical and radiographic examinations revealed fusion, which contributed to caries in an area that was difficult to clean. Additionally, it was determined that one of the upper incisors was missing. Radiographic examinations showed a fused tooth with two separate pulp chambers, two separate roots, and two separate root canals. A multidisciplinary treatment approach was deemed necessary. Vitality tests were positives for the maxillary incisors. However, due to the abnormal angulation of the teeth, caries removal led to pulp exposure, necessitating root canal treatments. After root canal treatment, a flap was raised in the maxillary anterior region within the Periodontology Department, and the fused teeth were surgically separated. Orthodontic treatment was subsequently initiated to align the teeth and create sufficient space for a future implant. After 16 months, an implant was placed in the maxillary incisor region, and the patient was referred for prosthetic rehabilitation.

Conclusions: Successful outcomes and patient satisfaction in cases of dental fusion require a multidisciplinary approach. Endodontic treatment is essential in these cases to reach a stability of healing that allows the other steps.

Keyword: Fused Tooth, Endodontic Treatment, Case Report Tooth Abnormalities

PP 9

MANAGEMENT OF A DILACERATED TOOTH AS AN ENDODONTIC CHALLENGE: A CASE REPORT

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Objectives: To describe the successful endodontic management of a dilacerated maxillary anterior tooth with asymptomatic apical periodontitis.

Case Report: A 28-year-old female presented with a non-vital maxillary anterior tooth and a history of dental trauma. Cone-beam computed tomography (CBCT) (Planmeca; 0.2 mm voxel size, small FOV) revealed complex root anatomy, and electric pulp testing confirmed pulp necrosis. Access cavity preparation exposed significant canal dilaceration, which complicated instrumentation and apical patency. Canal shaping was performed using K-files with copious irrigation. Calcium hydroxide served as an intracanal medicament, and a flowable composite resin was applied as a temporary seal.

At the second appointment, 2.5% NaOCl was activated ultrasonically for enhanced disinfection. The root canal was obturated using AH Plus Bioceramic Sealer (Dentsply) and NeoMTA 2 (Avalon Biomed, Houston, TX, USA), followed by restoration with glass ionomer cement and composite resin.

Conclusions: This case underscores the significance of advanced diagnostic imaging and modern endodontic techniques, including ultrasonic activation and bioceramic materials, in the management of complex root canal cases. A follow-up visit has been scheduled to evaluate clinical and radiographic outcomes.

Keywords: Dilaceration, Trauma, Asymptomatic Apical Periodontitis

PP 10

INTERNAL RESORPTION AND ITS ENDODONTIC MANAGEMENT: A CASE OF TRAUMATIC ETIOLOGY

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Objective: This case report aims to demonstrate the successful management of internal root resorption caused by trauma and incomplete root canal therapy, using modern endodontic techniques.

Case Report: A 16-year-old female patient with no systemic health issues presented with pain in the maxillary anterior region. Her history revealed trauma to the area two years earlier and incomplete root canal therapy on tooth #21. Clinical examination showed tooth #21 was non-vital and tender on percussion. Radiographic evaluation revealed internal resorption in the mid-root and a radiolucent lesion in the apical region. After access cavity preparation, the root canal was shaped up to an apical with of size 55 using the step-back technique with K-files (Dentsply, USA). Each file change was followed by 5 mL sodium hypochlorite (NaOCl) irrigation of the root canals. Calcium hydroxide (Kalsin, Turkey) was applied as an intracanal medicament. In the second session, NaOCl activated with a passive ultrasonic device (Woodpecker, China) was used to remove the medicament. The final irrigation was performed using 5 mL of 1.5% NaOCl, saline, 17% ethylenediaminetetraacetic acid, and 2% chlorhexidine solutions. The root canal was then obturated with gutta-percha (FKG, Switzerland) and bioceramic sealer (Dentsply Sirona, USA) using lateral condensation technique.

At 6- and 12-month follow-ups, the tooth was asymptomatic and functional, with radiographs showing healing of the periapical lesion.

Conclusion: Successful management of internal root resorption can be achieved with thorough chemo-mechanical preparation, effective irrigation, and the use of appropriate biomaterials during endodontic treatment.

Keywords: Bioceramic materials, Endodontic treatment, Internal root resorption

PP 11

TREATMENT OF MAXILLARY CENTRAL INCISORS WITH EXTERNAL RESORPTION AND DISCOLORATION: CASE SERIES

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Objectives: This case series aims to evaluate treatment approaches and clinical outcomes in cases of apical resorption and coronal discoloration following failed endodontic treatment. Proper management of these complications is essential to ensure both functional integrity and esthetic success.

Case Report: Three systemically healthy patients presented with pain and coronal discoloration in maxillary central incisors with previous root canal treatments. Radiographic examination revealed periapical lesions and external apical resorption in at least one affected tooth. Following rubber dam isolation, access cavities were prepared and the existing root canal fillings were removed. In some cases, drainage was observed and controlled using irrigation and microsuction. The working length was determined with an apex locator and confirmed radiographically. After chemo-mechanical preparation, $\text{Ca}(\text{OH})_2$ was placed as an intracanal medicament for two weeks. Upon symptom resolution, $\text{Ca}(\text{OH})_2$ was removed, and MTA(Bio MTA+ Maxi; CerKamed, Poland) was applied to create an apical barrier. The canals were then obturated with bioceramic sealer (Dentac Bioserra; Meta Biomed, Korea) and gutta-percha, followed by orifice sealing with flowable composite.

To manage coronal discoloration, internal bleaching with a hydrogen peroxide-based agent (Opalescence Endo; Ultradent, USA) was performed. If the desired shade was not achieved, the procedure was repeated. Once the optimal color was obtained, $\text{Ca}(\text{OH})_2$ was placed for one week to neutralize residual oxidants before the final composite restoration. One-year clinical and radiographic follow-ups confirmed periapical healing, stabilization of apical resorption, and satisfactory esthetic outcomes.

Conclusions: This case series demonstrates that apical resorption and coronal discoloration following failed endodontic treatment can be effectively managed using MTA for apical sealing, internal bleaching, and composite restoration. A patient-specific approach addressing both functional and esthetic aspects is crucial for long-term clinical success and patient satisfaction.

Keywords: MTA Application, Coronal Discoloration, External Resorption

PP 12

BROKEN FILE RETRIVAL IN UPPER RIGHT LATERAL TOOTH USING ULTRASONIC INSTRUMENT AND MASSERAN KIT

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Objectives: The aim of this case report is to perform a minimally invasive removal of a fractured instrument in the root apex dilacerated canal using ultrasonic tips and a masseran kit under the magnification of a dental operating microscope.

Case report: A 36-year-old systemically healthy female patient who applied to an external center with complaints of pain was referred to the endodontics clinic. In intraoral examination a positive response was obtained to vertical percussion. In radiographic examination, a broken instrument was observed along the canal in the upper right lateral tooth. It was operated under rubber dam isolation. The area around the broken instrument was enlarged using EDTA solution with an ultrasonic tip (Woodpecker Ultrasonic Scaler ED6). The broken instrument was removed using the masseran kit (MicroMega, Besancon, France) under x18 magnification with a dental operating microscope. The removed broken file measured 16 mm. Mechanical preparation was performed. Calcium hydroxide containing medicament (Calciplus RL) was placed in the canal. After 2 weeks, the root canal treatment was completed with MTA Containing Root Canal Sealer (Angelus MTA Fillapex) and gutta percha. The patient, whose final restoration was completed, is still being followed up.

Conclusion: The success of root canal treatment depends on the results of the cleaning and shaping process. However, there is a risk of broken files because its presence inhibits the process of cleaning, shaping, and filling, thereby leading to treatment failure. It is possible to successfully remove broken files from the curved root canal using ultrasonic instruments and a masseran kit.

Keywords: Broken File, Masseran Kit, Dental Operating Microscope, Ultrasonic Instrument

PP 13

RETREATMENT AND MTA APICAL PLUG FORMATION IN MAXILLARY ANTERIOR TEETH: A REPORT OF TWO CASES

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Objective: This case report aims to illustrate the successful treatment of inadequate root canal therapy in maxillary central incisors using an apical plug technique with Mineral Trioxide Aggregate (MTA).

Case Report: Case 1: A 14-year-old male patient with no systemic health issues presented with pain in the maxillary anterior region. Radiographic examination revealed inadequate root canal treatment and a radiolucent lesion in the apical region of tooth #11. Clinical examination showed tenderness to percussion. During the first session, the inadequate root canal filling was removed, and chemo-mechanical preparation was completed. Calcium hydroxide ($\text{Ca}(\text{OH})_2$) (Kalsin, Turkey) was applied as an intracanal medicament. In the second session, the medicament was removed using passive ultrasonic activation (Woodpecker, China) with sodium hypochlorite (NaOCl). Due to the widened apical foramen, an apical plug was created with MTA (ProRoot, USA), and the remaining canal was obturated using gutta-percha (FKG, Switzerland) and a bioceramic root canal sealer (Dentsply Sirona, USA).

Case 2: A 17-year-old male patient with no systemic health issues attended a routine check-up. Radiographic examination revealed inadequate root canal treatment and a periapical radiolucent lesion in tooth #21. The same treatment protocol as in Case 1 was followed.

At 6- and 12-month follow-ups, both teeth were asymptomatic and functional. Radiographic evaluations demonstrated healing of the periapical lesions.

Conclusion: The use of an apical plug with MTA in teeth with wide apical foramina provides a predictable and effective approach for achieving successful endodontic outcomes.

Keywords: Apical Plug, Endodontic Treatment, MTA

PP 14

RETREATMENT OF FAILED REGENERATIVE ENDODONTIC TREATMENT WITH MTA APEXIFICATION: TWO CASE REPORTS

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Objective: This report presents the retreatment of root canals using mineral trioxide aggregate (MTA) apexification following failed regenerative endodontic treatment (RET).

Case Report: A patient submitted with a sinus tract in the maxillary anterior region. Examination revealed a large periradicular lesion in tooth #11, previously treated with RET three years ago. The access cavity was prepared, and the MTA was removed using ultrasonic activation. Due to thin root canal walls, minimal shaping was performed with K-files and irrigated with 2.5% sodium hypochlorite (NaOCl) and 17% EDTA. MTA (NeoPUTTY, NuSmile, USA) was placed 5 mm apically and confirmed radiographically. A moist cotton pellet was placed, and the cavity was temporarily restored. In the second session, the set MTA was sealed, the canal was obturated using the warm vertical compaction technique, and the tooth was restored with composite resin.

A second patient submitted with percussion pain in tooth #35, previously treated with RET four years ago. The same retreatment protocol was applied, including MTA removal, irrigation, and re-obturation. In the second session, a fiber post was placed, and the tooth was restored with composite resin.

Conclusion: At 6- and 12-month follow-ups, both teeth were asymptomatic with radiographic evidence of periapical healing. These cases demonstrate successful retreatment of failed RET using MTA apexification, yielding favorable clinical and radiographic outcomes.

Keywords: Retreatment, Regenerative Endodontics, MTA apexification

PP 15

HEALING OF RECURRENT ODONTOGENIC ORIGINATED EXTRAORAL SINUS TRACT BY ROOT CANAL TREATMENT

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Objectives: This case report emphasizes the importance of recognizing dental causes in recurrent facial swellings and illustrates the effective management of an extraoral sinus tracts causing facial deformity.

Case Report: A 17-year-old male had recurrent extraoral sinus tract despite previous surgeries. 2.5 years earlier, the patient underwent surgery for a boil-like lesion on his face. 6 months later, a second operation was performed. After the second surgery, the plastic surgeon suspected a dental origin and referred him for dental evaluation. Upon examination, the patient's left maxillary first molar tooth responded negatively to both cold and electric pulp tests, indicating pulp necrosis. Antibiotics were prescribed, and root canal treatment was initiated after the management of swelling in the second session, one week later. Every session, the status of the extraoral abscess was photographed. One month after treatment began, significant improvement was observed in the extraoral fistula. Improvement was observed in the extraoral sinus tract with wound dressing and canal treatment dressing. After the wound healed and the patient became symptom-free, the root canal was completed. One and a half years later, follow-up sessions showed no recurrent infection, radiographs revealed no periapical radiolucency, and healing was mostly scar-free.

Conclusions: This case highlights the significance of considering dental pathology in recurrent facial deformities similar to extraoral sinus tract and demonstrates that timely root canal treatment can effectively resolve such conditions. Early referral to a dental specialist is essential when the etiology of facial deformities remains unclear.

Keywords: abscess, fistula, extraoral-sinus-tract, facial-deformity, odontogenic-abscess

PP 16

MANAGEMENT OF A PERSISTENT RADICULAR CYST IN THE MAXILLARY INCISORS: TWO CASE REPORTSÖzlem Karagöz*Department of Endodontic, Faculty of Dentistry, University of Bezmialem Vakıf, İstanbul, Türkiye*

Objectives: This case report presents the endodontic and surgical management of large periapical lesions in the maxillary anterior region of two patients with devital teeth.

Case Report: Case 1: A 31-year-old male patient presented to our university for a routine dental examination. A panoramic radiograph revealed an extensive periapical lesion in the right maxillary anterior region. Clinical examination of teeth #12 and #13 confirmed that they were non-vital. Root canal treatment was performed, followed by referral to the oral surgery department for planned surgical curettage. At the 15-month follow-up, significant bone healing was observed. Case 2: A 13-year-old female patient presented to our university with a complaint of gingival discharge in the left maxillary anterior region. Radiographic examination revealed a large periapical lesion involving tooth #22, along with apical root resorption. Clinical examination confirmed that tooth #22 was non-vital. Root canal treatment was initiated, and after complete healing of the fistula, the endodontic treatment was completed. After consultation with the oral surgery department, surgical curettage was planned. Radiographic follow-ups at one and two years demonstrated substantial bone healing.

Conclusions: In such cases, rapid and optimal bone regeneration can be achieved in the treatment of large odontogenic periapical lesions through root canal therapy followed by surgical intervention.

Keywords: Periapical lesion, Radicular cyst, Root canal treatment, Surgical curettage, Bone regeneration

PP 17

ENDODONTIC MANAGMENT OF THE MAXILLARY LEFT CENTRAL INCISOR WITH FOREIGN BODY

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Objectives: The aim of this case report is to present successfully endodontic treatment of the maxillary left central incisor with foreign body in the periapical tissue.

Case report: A male patient was referred to the Department of Restorative Dentistry and Endodontics with a pain complaint in the anterior maxillary teeth. The patient had no systemic disease. In the clinical examination, vestibular swelling, pain on percussion, and palpation were observed in tooth 21. In radiological examination, a radiolucent area was observed in the apical region of tooth 21. Previously, an intraoral incision was performed at the Clinic for Oral Surgery and a iodoform gauze was placed. After root canal instrumentation and several repeated intracanal medications, the criteria for obturation were not met due to persistent secretion from the periapical tissue and occasional unspecified pains. A repeat clinical examination detected a piece of the iodoform gauze at the site of the previously made intraoral incision. After the removal of the remaining piece of iodoform gauze, the root canal was instrumented with a K#70 instrument, and in the same session, intracanal medication based on calcium hydroxide and iodoform was placed after which the tooth 21 was obturated. The quality of obturation was assessed on a follow-up retroalveolar radiograph.

Conclusion: The removal of foreign body from the periapical tissue is a prerequisite for the successful completion of endodontic therapy.

Keywords: Foreign body, Iodoform gauze, Periapical tissue, Endodontic therapy

PP 18

ENDODONTIC MANAGEMENT OF MAXILLARY PREMOLARS WITH COMPLEX ROOT CANAL ANATOMY: A REPORT OF TWO CASES

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Objectives: Maxillary premolars exhibit anatomical variations in the numbers of roots and canals, which pose a challenge during endodontic therapy.

The aim of this case reports is to present two successful endodontic treatments of maxillary premolars with complex root canal anatomy.

Case Report: Case report 1: A male patient was referred to the Department of Restorative Dentistry and Endodontics due to pain in the region of tooth 14. Preoperative retroalveolar radiograph revealed radiolucency above the buccal and palatal root apices. After complete removing of the caries and pulp chamber trepanation, orifices of two buccal and one palatal root canal were detected.

Case report 2: A female patient was referred with a pain complaint of tooth 24. Radiographic examination revealed inadequate obturation of the palatal and bucco-distal canals and untreated mesiobuccal canal.

After preparation and intracanal medication all root canals were obturated. The quality of obturations was assessed on a follow-up retroalveolar radiograph.

Conclusion: Inadequate knowledge of the morphology, number and configuration may lead to improper identification of the root canals, and consequently to the failure of the entire endodontic treatment. Therefore, clinicians should be aware and have full insight in the morphological variations and aberrations of the root canal system of all teeth.

Keywords: endodontic therapy, complex root canal anatomy, maxillary premolars

PP 19

ENDODONTIC TREATMENT OF MANDIBULAR PREMOLAR WITH COMPLEX ROOT CANAL MORPHOLOGY: A CASE REPORT

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Objectives: Mandibular premolars can be considered one of the most challenging teeth in endodontic treatment due to the variations in internal morphology. Untreated root canal may lead to post-treatment complications or failure.

The aim of this case report is to present successful nonsurgical endodontic treatment of mandibular second premolars with three root canals.

Case Report: A male patient was referred to the Department of Restorative Dentistry and Endodontics with prosthetic indication for endodontic treatment of teeth 34 and 35. Teeth were already prepared for full-ceramic crowns. Vitality tests on both teeth showed response to electric pulpal test. Based on the analysis of the CBCT the presence of two canals and possibility of another one in tooth 35 was observed. After preparing the access cavity and removing vital coronal pulp, an operating microscope was used for better visualization. Two main canal orifices were found at buccal and lingual aspect. Upon careful examination it was found that the buccal canal divided at the middle third into two separate canals. After initial exploration with #08 and #10 K-files and working length determination, root canals were instrumented using NiTi rotary files Reciproc® Blue-R25. Canals were obturated with bioceramic sealer and matching guttapercha points.

Conclusions: Before starting endodontic therapy, the possibility of additional canals should be always considered. Combining conventional images with CBCT, and using operating microscope the chances of predictable result and successful treatment may be significantly increased.

Keywords: Mandibular Premolars, Endodontic Therapy, Cone Beam Computerised Tomography

PP 20

ENDODONTIC TREATMENT OF A MANDIBULAR SECOND PREMOLAR WITH THREE ROOT CANALS

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Objective: Mandibular second premolars can be considered as one of the most challenging teeth to treat endodontically due to the complexity of their root canal morphology, variations and increased incidence of multiple canals.

Case Report: A 35-year-old male patient was referred to our Department for root canal treatment of mandibular right second premolar. The patient's medical history was noncontributory. Clinically patient had occasional pain, without sensitivity to percussion or palpation. Evaluation of the radiograph and fading of the canal from the coronal part revealed the possibility of the presence of extra canals. Radiograph with two endodontic instruments revealed the presence of a third canal and after exploration, the third canal was located and patency was confirmed radiographically with three endodontic files. Working length was established using an apex locator. Instrumentation was performed using rotary file system and irrigation with 1% sodium hypochlorite and 10% citric acid solutions. Root canals were dried with paper points and obturated with an epoxy-based sealer and gutta-percha using single cone technique.

Conclusions: All root canals must be identified, cleaned and shaped adequately prior to obturation. Otherwise, failure of endodontic treatment is likely to occur. It is essential to always bare in mind variations of root canal morphology prior to root canal treatment.

Keywords: endodontic treatment, mandibular premolar, root canal morphology

PP 21

ENDODONTIC RETREATMENT OF THREE-ROOTED MANDIBULAR FIRST MOLARS: A CASE REPORT

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Objectives: Undetected roots and canals can lead to incomplete debridement of the root canal system and could be a reason for endodontic treatment failure. The aim of this report is to present two successful retreatment cases of three-rooted mandibular first molars.

Case Report: A 43-year-old female patient with a noncontributory medical history was referred to our department for endodontic retreatment of both mandibular first molars. The teeth were symptom free without sensitivity to percussion or palpation. In both molars, alongside with inadequate obturation, preoperative radiographs revealed the presence of an additional, untreated distolingual root, radix entomolaris. The access cavities were modified in order to enable exploration and visibility of entire pulpal chamber. After removing the existing root canal filling, canals in the distolingual roots were located and instrumented using reciprocating file system under copious irrigation with sodium hypochlorite. Following 7-days medication with chlorhexidine, canals were obturated using epoxy resin-based sealer and gutta-percha (single cone technique).

Conclusions: Adequate knowledge of root canals morphology and possible variations is a prerequisite for successful endodontic treatment outcome. Careful examination of preoperative radiographs (taken at different angulation, if necessary), and proper access cavity preparation with careful exploration of the pulp chamber floor are essential for identification of additional roots and canals. This allows chemo-mechanical preparation and obturation of the entire root canal system even in retreatment cases.

Keywords: endodontic retreatment, first mandibular molar, radix entomolaris

PP 22

ENDODONTIC TREATMENT OF A S-SHAPED CANAL WHILE PRESERVING ORIGINAL CANAL MORPHOLOGY: A CASE REPORT

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Objectives: Modern therapy approaches in endodontic treatment prioritize maximum preservation of tooth structure while maintaining the original root canal morphology. To meet contemporary demands, innovative rotary systems have been developed with reduced instrument diameter and taper. This case report aims to present a successful endodontic treatment of upper right second premolar with a S-shaped curvature.

Case Report: A 40-year-old female patient was referred to our department from a private practice due to difficulty in locating canal orifice of tooth 15. Retroalveolar radiograph revealed S-shaped curvature and periapical lesion. After establishing and radiographically confirming apical patency using a K #08 file, the canal was instrumented with ProTaper Ultimate rotary instruments and copiously irrigated with 2.5% NaOCl and 17% EDTA. The canal was medicated with a calcium hydroxide paste for two weeks before being obturated using a single-cone gutta-percha technique with a calcium silicate sealer. Post-operative radiograph confirmed the quality of the filling. A follow-up radiograph taken six months later demonstrated periapical healing and clinical examination confirmed that the patient remained asymptomatic.

Conclusion: This case report highlights the importance of modern endodontic techniques in managing complex root canal anatomies. The use of advanced rotary systems, effective irrigation protocols and biocompatible sealers contributed to the successful treatment outcome. Radiographic and clinical follow-up confirmed periapical healing and the absence of symptoms, indicated that a conservative yet efficient approach can achieve predictable long-term success of orthograde endodontic therapy.

Keywords: Maxillary second premolar, Canal shape, Periapical lesion

PP 23

ENDODONTIC TREATMENT OF A LOWER PERMANENT MOLAR WITH INCOMPLETE ROOT DEVELOPMENT

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Objectives: Endodontic therapy of young permanent teeth with asymptomatic apical periodontitis presents a significant therapeutic challenge due to the fragile canal walls and divergent apex openings.

Case Report: A 10-year-old male patient presented with a fistulous tract located at the apex of the mesial and distal roots of tooth 36. Clinical examination revealed a large carious lesion, but the tooth was not sensitive to percussion or palpation. A retroalveolar radiograph showed radiolucency at the apex of the mesial and distal roots of tooth 36, with incomplete root development. After complete removal of the carious tissue and designed access cavity preparation, a hemomechanical cleaning of the root canal system was performed using rotary instruments (Reciproc Blue R25, 25/.08). During instrumentation, the canal system was thoroughly irrigated with 2% NaOCl solution. Calcium hydroxide-based intracanal medication was applied several times and renewed every 14 days until the completion of apexification. The intracanal medication was removed using Hedström files, and final irrigation was conducted with 2% sodium hypochlorite, 10% citric acid, and saline solution. The canals were obturated with a resin-based sealer and gutta-percha points using the moncone technique. The quality of the orthograde obturation was confirmed with a follow-up retroalveolar radiograph.

Conclusion: The removal of the canal contents and establishment of conditions for the completion of apexification are crucial for preserving the biological and clinical function of the tooth.

Keywords: Endodontic Therapy, Root Development, Root Apexification

PP 24

NONSURGICAL MENAGEMENT OF IATROGENIC FURCAL PERFORATION: A ONE-YEAR FOLLOW UP

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Objective: Perforations of the pulp chamber floor of multi-rooted teeth are a perplexing problem and major cause of endodontic treatment failure. Treatment outcome of perforated teeth is influenced by: the size, level and location of the perforation, time of repair, the presence of periodontal disease, and preendodontic pulp vitality status.

Case Report: A 48 years old woman came to the office for the regular check-up, reporting no symptoms. Orthopantomograph and retroalveolar images revealed poor obturation of the tooth 36, presence of two radiolucencies, in bifurcation and around the distal root, and coronal leakage. Tooth 36 was not sensitive during examination and periodontal probing was regular. After the removal of inadequate restoration, 6mm wide furcation perforation was inspected. In addition, endodontic filling was soft on probing and strong fetor was detected. In the same visit complete retreatment using reciprocating file system was done. Three main canals and one incomplete fausse route in the distal root were detected. Furcation perforation was cleaned using carbide round burr and ultrasonic tip. To seal the perforation MTA based material was used and calcium hydroxide dressing was placed inside the root canals. Two weeks later, MTA based material was covered with glass-ionomer cement and root canals were obturated to their lengths. Radiographic control was done 6 and 12 months after, showing absence of apical radiolucency and significant reduction in size of furcation radiolucency.

Conclusion: This case report concludes that conservative approach in treatment of advanced furcational defects can be successful.

Keywords: furcation perforation, mineral trioxide aggregate, iatrogenic perforation, periapical lesion, endodontic retreatment

PP 25

NON-SURGICAL ENDODONTIC TREATMENT OF BIFURCATION PERFORATING: A CASE REPORT

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Objectives: To report a clinical case of successful conservative therapy of the first mandibular molar with perforation in the bifurcation area and previous canal filling.

Case Report: A 24-year-old female was referred for endodontic retreatment of the right mandibular first molar. She was asymptomatic, with no sensitivity to percussion or palpation. A retroalveolar radiograph revealed undetectable mesial canals and two gutta-percha cones in the bifurcation and distal canal. The previous root canal filling in the distal canal was removed using Gates–Glidden burs and a reciprocating file system. Gutta-percha cones were removed from the bifurcation area with hand K-files. After controlling bleeding with 0.5% sodium-hypochlorite, a mesial canals was detected around 0.5 mm mesial to the perforation. Mesial canals were instrumented with TruNatomy rotary file system (Dentsply, Sirona) and irrigated with saline solution. Perforation diameters in the bifurcation area were assessed with gutta-percha cones (55.02 and 40.02) and verified radiographically. The perforations were sealed with mineral trioxide aggregate (MTA+, CerKamed, Poland) and condensed by a hand instrument. In the next visit, three root canals were instrumented, and medicated with calcium hydroxide. The canals were obturated with a gutta-percha cones and epoxy resin-based sealer (AH Plus, Dentsply, Sirona) and a radiograph was taken to assess canal filling quality. After two years, clinical and radiographic examination showed satisfactory healing of lesion in bifurcation area.

Conclusion: This case highlights the critical importance of knowledge of tooth morphology and careful preparation of the access cavity for long-term success in endodontic treatments.

Keywords: Retreatment, Bifurcation perforating, Mineral trioxide aggregate

PP 26

INTRACORONAL BLEACHING OF FIRST UPPER INCISOR AFTER ENDODONTIC TREATMENT OF CALCIFIED ROOT CANAL

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Objectives: The aim of this case report is to present that even in case of complete calcification of pulp cavity endodontic treatment can be successfully performed using minimally invasive design of access cavity. Furthermore, restrictive size of access cavity is sufficient for successful intracoronar bleaching.

Case Report: A female patient, aged 24, dental student, presented to Department of Restorative Odontology and Endodontics with chief complaint of discoloration of upper right first incisor. She experienced trauma in the frontal teeth region 10 years ago, when transient livid discoloration of aforementioned tooth appeared. An orthodontic treatment in upper jaw was undertaken few years later. The patient noticed symptomless discoloration of upper right first incisor two years ago. Electric pulp sensibility test showed positive result, however with significantly higher threshold compared to control. An analysis of retroalveolar radiography revealed complete obliteration of pulp chamber and root canal in tooth 11. Root canal treatment and obturation was completed in one session using minimally invasive approach and conservative access. Upon removal of gutta-percha below the enamel-cementum junction, glass ionomer lining was placed, 2mm thickness layer. Walking bleach technique was performed using sodium perborate for 7 days. The resulting tooth color was of satisfying appearance, and subsequently the final composite resin restoration was placed.

Conclusion: Complete obliteration of pulp cavity associated with discoloration of tooth can be successfully solved with a minimally invasive endodontic approach followed by walking bleach technique. In these situations, conservative approaches in endodontic and aesthetic treatments may have advantage over traditional ones.

Keywords: Intracoronar bleaching, Calcified root canal, Minimally invasive endodontics

PP 27

ENDODONTIC TREATMENT OF TEETH ASSOCIATED WITH A LARGE PERIAPICAL LESION

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Objectives: Large periapical lesions can develop as a result of dental trauma. The aim of this case report is to present successful endodontic treatment of mandibular incisors with a large periapical lesion.

Case Report: A 25-year-old male patient came to our department due to the presence of a sinus tract in the right frontal region of mandibula. The patient stated that he was involved in a bicycle accident when he was 7 years old. Periapical radiograph demonstrated a large radiolucent lesion around the apices of the mandibular incisors. Clinical examination showed that the incisors weren't sensitive to percussion. Right central and lateral incisor failed to respond to electric pulp testing, while left incisors responded positively. Endodontic treatment was conducted on the right incisors. The canals were instrumented using full rotating file system under copious irrigation with sodium hypochlorite. Intracanal dressing of calcium hydroxide and iodine was placed and renewed 3 times every two weeks. On obturation day, the sinus tract was no longer present and there wasn't any secretion in the canals. Canals were obturated with epoxy-based sealer and gutta-percha using single cone technique. The patient was recalled after 6 months when radiographic examination revealed significant healing.

Conclusions: In this case report, endodontic treatment proved successful in promoting healing of a large periapical lesion. This confirms that even large periapical lesions can respond favourably to non-surgical treatment.

Keywords: endodontic treatment, periapical lesion, radiolucency

PP 28

NONSURGICAL MANAGEMENT OF PERIAPICAL LESION WITH TOTAL LOSS OF VESTIBULAR CORTEX

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Objective: Chronic periapical lesions are a common feature in dental practice. One of the main reasons for their late detection and consequential difficulty of treatment (in severe cases) is the absence of symptoms.

Case Report: A 64-year-old female patient was referred to our department for endodontic treatment prior to prosthodontic rehabilitation of the maxillary frontal teeth. She denied any systemic disease, as well as allergies to medications or food. Clinical examination revealed inadequate composite filling of tooth 22, with mild tenderness to palpation and percussion. The pulp vitality test was negative. CBCT showed a periapical radiolucency around the apex of tooth 22 with a total loss of vestibular cortex (measuring 5.46x3.87 cm in sagittal projection and 5.90x5.10 cm in axial projection). Root canal therapy was performed using a rotary file system. Copious irrigation using sodium hypochlorite (1%) solution with ultrasonic activation was performed during and after canal instrumentation. Smear layer was removed using citric acid (10%) solution. Calcium hydroxide medication was placed for two weeks and root canal was obturated using epoxy based sealer and gutta percha. The tooth was temporarily restored with a composite filling. After 7 months, a control CBCT showed complete bone healing with re-establishment of the continuity of the vestibular cortical bone.

Conclusion: According to the fact that a significant number of chronic periapical lesions are detected incidentally, this case report highlights the importance of regular dental check-ups and diagnostic tools such as periapical radiograph and CBCT, to enable prompt detection and successful treatment.

Keywords: periapical lesion, root canal therapy, CBCT

PP 29

REMOVAL OF INTRACANAL SEPARATED ENDODONTIC INSTRUMENT BY USING A HAND FILE

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Objective: To report a clinical case of complicated separated instrument removal with the aid of an endodontic hand file.

Case Report: Patient was referred to our department for the removal of endodontic file fractured in the mandibular premolar. Radiographic imaging showed separated file segment in the coronal and middle portion of the root canal. At the beginning, straight-line access to the fragment was obtained and bypassing was done in between dentinal wall and broken instrument. After bypassing, partial instrumentation of the canal was possible and done using hand K-files. Retrieval has been attempted multiple times by manipulating the manual Hedström instrument in all directions. The separated file got finally removed by capturing it with pean forceps. Root canal preparation has been finished using Protaper Next X2. Irrigation has been performed with a 2% sodium hypochlorite solution and smear layer removed with 10% citric acid solution. Afterwards the canal's been dried and filled with calcium hydroxide dressing. In the next visit, two weeks later, canal was obturated using single cone gutta-percha technique in combination with epoxy resin-based endodontic sealer, definitive restoration was done with FRC and Z550 nano-filled composite. After obturation and restoration a radiograph was taken to assess the quality of the treatment.

Conclusion: Simple armamentarium, along with clinical experience, in some clinical cases, is enough to achieve success. The removal of separated instruments with the aid of a hand endodontic file might be a conservative, simple and low-cost method to consider for separated instrument removal.

Keywords: case report, separated instrument, instrument retrieval, root canal complication

PP 30

EXACERBATION OF CHRONIC APICAL PERIODONTITIS CAUSED BY SEALER EXTRUSION

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Objective: The objective of this case report is to show management of chronic periodontitis exacerbation, triggered by extrusion of sealer.

Case Report: A 45-year-old female presented to our clinic with complaints of pain and swelling in the region of tooth 22. The patient reported undergoing root canal treatment at a private practice one week prior. Symptoms, including pain and swelling, began two days ago. Upon examination, there was notable tenderness on percussion and pain upon palpation of the affected area. Access was gained through the existing metal-ceramic crown, which revealed a significant amount of purulent hemorrhagic material. The patient experienced immediate relief following this intervention. During the next appointment, the working length was established, and the canals were mechanically prepared using Reciproc Blue R50 files (VDW GmbH, Germany), while continuously irrigating with 2.5% sodium hypochlorite. Calcium hydroxide medication containing iodine was placed in the canals for a duration of one week. Upon return, the patient exhibited persistent tenderness to percussion; thus, the Ca(OH)_2 dressing was reapplied. After an additional week, the patient returned asymptomatic and the tooth was prepared for final obturation. The obturation was completed using the monocone technique, employing Bio-C sealer (Angelus, PR, Brazil) and gutta-percha cones.

Conclusion: Although the tooth was indicated for apicoectomy by the dentist from private practice, nonsurgical retreatment was sufficient. Follow up x-rays after 6 and 12 months show complete resorption of extruded sealer and good periapical healing.

Keywords: retreatment, exacerbation, sealer extrusion

PP 31

TREATMENT OF A LOWER CENTRAL TOOTH WITH TYPE 3 DENS INVAGINATUS WITH MTA PLUG: CASE REPORTSevil Zırhlı*Nevşehir Hacı Bektas Veli University Faculty of Dentistry, Department of Endodontics, Nevşehir, Türkiye*

Objectives: The aim of this case report is to describe the treatment of a tooth with a large periapical lesion with dens invaginatus with MTA plug.

Case Report: A 22-year-old systemically healthy male patient was referred to our clinic because of a lesion on his lower right central tooth during routine examination. Clinical examination revealed that the tooth responded negatively to vitality, percussion and palpation tests. Preoperative radiographic examination revealed the presence of dens invaginatus extending to the root tip and cone beam computed tomography (CBCT) was requested for detailed examination. CBCT sections revealed Type 3b dens invaginatus according to Oerhlers classification, an open root apex of the main canal and a large periapical lesion. MTA plug and root canal treatment was planned. In the 1st session, two separate access cavities for the main canal and dens invaginatus were opened under rubber dam isolation, canal preparation was completed with a Ni-Ti file system T-EndoMust (Dentac, Turkey) and calcium hydroxide medicament was applied. At the appointment two weeks later, the tooth was asymptomatic and a plug was formed in the main canal apically with NeoPutty(NuSmile, USA) and the remaining part of the root canal was filled with thermoplastic gutta percha. The root canal with dense invaginatus was filled with bioceramic paste(Bio-C Sealer, Angelus, Londrina, Brazil) by cold lateral compaction. The tooth was clinically asymptomatic and radiographically healed at the 1,3,6 and 12-month follow-up appointments.

Conclusion: As a result of radiographic and clinical evaluations, it was found that apexification with NeoPutty can show successful results in the treatment of teeth with dens invaginatus.

Keywords: Dens invaginatus, MTA plug, NeoPutty

PP 32

ALTERNATIVE TREATMENT METHOD FOR PERFORATION REPAIR INSTEAD OF MTA AFFECTED BY THE WASH-OUT EFFECT

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Objective: Mineral Trioxide Aggregate (MTA) is commonly used in endodontic procedures like perforation repair, apexification, and retrograde filling due to its biocompatibility and osteogenic properties. However, incorrect use can lead to the 'wash out' effect, causing symptomatic cases. This study aims to evaluate alternative treatment material options for such cases.

Case Report: A healthy 25-year-old male presented with pain in tooth 24. Clinical examination revealed vertical and horizontal percussion sensitivity and pain on probing in the mesial gingiva. Radiographic evaluation showed previous root canal treatment, intact periapical tissues, and cervical perforation repair with extruded material. It was concluded that the symptoms developed due to the excess filling material and inadequate perforation repair, and flap surgery was decided upon. After the flap was elevated, the extruded materials were curetted, and the perforation cavity was cleaned. The resorption cavity was then restored with resin-modified glass ionomer (Ketac Riva, SDI, Bayswater, Australia). The patient was regularly follow-up during the postoperative period at 1, 3, 6, and 12 months. Clinical evaluations revealed that the patient remained completely asymptomatic during all follow-up sessions. No sensitivity, spontaneous pain, or signs of infection were observed in the affected tooth.

Conclusions: When MTA is applied above the marginal bone level, its bonding and setting capacity may decrease, leading to wash-out. To prevent this risk, resin-modified glass ionomer and composite can be used for perforations above the marginal bone level.

Keywords: MTA, Wash-out, Perforations, Resin-modified glass ionomer



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OP 9

INJECTABLE GELMA BIOCOMPOSITE SCAFFOLDS FOR ENDODONTIC REGENERATION AND IN VITRO CELL INTERACTIONS

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Objectives: This study aims to synthesize injectable GelMA Biocomposite scaffolds with bioactive and biomimetic properties and to evaluate cell interactions under in vitro conditions, leveraging advancements in biomaterials and tissue engineering for regenerative endodontic applications.

Methods: GelMA was synthesised by reacting gelatin with methacrylic anhydride, and after characterization, it was used at a concentration of 10%. Biocomposite hydrogels were prepared by incorporating 1% hyaluronic acid (HYA), hydroxyapatite (HA), and silver nanoparticles (AgNP) into GelMA, forming five groups: pure GelMA, GelMA+HYA, GelMA+HA, GelMA+AgNP, and GelMA+HYA+HA+AgNP. Photopolymerization of the hydrogels was achieved using a LED light source with 0.1% lithium phenyl phosphinate (LAP) as the photoinitiator. Cytotoxicity was assessed using the MTT assay on L929 fibroblast cells. Additionally, cell interaction experiments, including attachment, growth, and proliferation, were performed using L929 cells.

Results: MTT cytotoxicity tests conducted at 24, 48, and 72 hours revealed that cell viability exceeded 75% in all hydrogel groups, confirming the non-toxic nature of the biocomposites. Cell interaction analysis over 16 days showed that L929 fibroblasts adhered to all hydrogel surfaces, with adhesion observed within the first day. It was observed that the matrix surfaces started to be covered in hydrogel types and the cells started to attach more firmly to the hydrogel surfaces by throwing arms.

Conclusion: The synthesized GelMA Biocomposite hydrogels were found to be non-cytotoxic, demonstrating their suitability as matrices for cell culture and tissue scaffolds. These findings indicate that the hydrogel surfaces provide a conducive environment for cell adhesion, proliferation, and growth.

Keywords: Regenerative Endodontics, Biomaterial, Tissue Scaffold

OP 10**THE EFFECT OF DIFFERENT DISC-SHAPED POLISHING SYSTEMS ON THE SURFACE GLOSS OF COMPOSITE RESINS**

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Objectives: This study aimed to assess the impact of various polishing discs on the surface gloss of composite resins.

Methods: A literature-based power analysis determined a sample size of 80 (power: 80%, α : 5%, effect size: 0.48). Disc-shaped composite resin specimens (5×2 mm) were fabricated using two universal composites (Filtek Z550, 3M ESPE, USA; OptiShade, Kerr Dental, USA), polymerized with the VALO Cordless LED (Ultradent, USA) and stored in distilled water at 37 °C for 24 hours. Then specimens were divided into four groups: 1) Control group without polishing (C), 2) Sof-Lex disc (3M ESPE, USA), (SLD), 3) Super-Snap Rainbow Technique Kit (Shofu Dental, Japan), (SRT), and 4) TOR VM discs (TOR VM Ltd, Russia), (TVM), (n=10 per group). Surface gloss was measured using a precision gloss meter (Nuvo-Curve, Rhopoint, UK), calibrated with a black glass tile (93.3 GU at 60°). The average of three measurements per sample was recorded. The data were analyzed using ANOVA and independent sample t-tests ($p < 0.05$).

Results: No significant difference was found between polishing systems for the two composite materials ($p > 0.05$), except for the C groups ($p = 0.034$). In Filtek Z550, the highest gloss was observed in the C group (74.1 GU), followed by SRT (70.1 GU), with no significant difference between other groups. In OptiShade, the C group had the highest gloss (78.6 GU), followed by TVM (70.2 GU) and SRT (69.2 GU). The SLD group showed significantly lower gloss ($p < 0.05$).

Conclusions: Polishing systems influence the surface gloss of composite resins, potentially affecting aesthetic outcomes.

Keywords: Composite Resins, Dental Polishing, Surface Properties

OP 11**COLOR EVALUATION OF G-CAM AND PEEK BLOCKS AFTER OFFICE BLEACHING**

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Objectives: Color stability is a critical factor for crown aesthetics. This study aimed to evaluate the color changes of graphene oxide CAD/CAM blocks (G-CAM) and PEEK (Polyetheretherketone) blocks after applying office bleaching material.

Methods: Thirty square-shaped samples (n=15 each group) were prepared with dimensions of 15x15x3 mm. The surfaces were sanded three times with silicon carbide paper (600, 800, 1200-grain) for 15 seconds under dry conditions. All specimens were stored in distilled water for 24 hours at 37°C before color measurement using a spectrophotometer (VITA Easyshade Advance 4.0). Specimens underwent office bleaching with 40% hydrogen peroxide (1 mm thickness, 20 minutes). After bleaching, samples were washed, dried, and stored in distilled water for 24 hours before color re-evaluation. A second bleaching was performed on specimens stored in distilled water for 7 days, followed by another color evaluation. Color change (ΔE_{00}) was calculated using the CIEDE2000 metric.

Results: PEEK: Significant decreases in lightness (ΔL) and chroma (ΔC) were observed after the second bleaching application ($\Delta E_{00}=4.52\pm0.62$). G-CAM: More pronounced color changes occurred after the first bleaching application ($\Delta E_{00}=11.08\pm4.81$) however limited additional changes were seen after second application ($\Delta E_{00}=3.07\pm2.10$).

Statistical analysis revealed significant differences within groups (Wilcoxon test, $p<0.001$) and between groups (Kruskal-Wallis test, $p<0.001$).

Conclusions: Office bleaching significantly affects the color stability of both G-Cam and PEEK blocks. Clinically, G-CAM restorations may maintain color stability better under bleaching treatments, whereas PEEK restorations require careful consideration due to higher susceptibility to discoloration.

Keywords: Office Bleaching, Color Evaluation, Dental Material, PEEK, G-Cam

OP 12

THE EFFECT OF BLEACHING METHODS ON THE SURFACE ROUGHNESS OF DIFFERENT RESTORATIVE MATERIALS

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Objectives: The aim of this study was to assess the effects of different bleaching agents on the surface roughness of three materials produced using various manufacturing methods.

Methods: In this study, 90 samples (8*8*2mm) were prepared using a nanohybrid composite resin (Neo Spectra™-ST (NS)), a subtractive-manufactured nanoceramic resin (Cerasmart™270 (CS)), and an additive-manufactured permanent resin (Saremco print Crowntec (CT)). Each material was divided into two treatment subgroups: in-office bleaching (Opalescence Boost-40% hydrogen peroxide, 3*20min) and at-home bleaching (Opalescence PF-16% carbamide peroxide, 6h, 14days). The treatments were applied to the groups according to the manufacturer's instructions and within the specified application times. The surface roughness (Ra) and roughness depth (Rz) of prepared 90 samples (n=15 in per group) were measured using a contact profilometer before (T0) and after the bleaching procedures (T1). Surface roughness changes (ΔRa , ΔRz) were calculated based on T1-T0 measurements. The data were analyzed using SPSS software ($\alpha=0.05$).

Results: For Ra and Rz after bleaching, the material x bleaching type interaction was statistically significant ($p<0.05$). After bleaching Ra and Rz values increased significantly compared to baseline in all materials ($p<0.05$). After bleaching, Ra value of CT ($p=0.019$) and Rz value of NS ($p=0.032$) were significantly higher in the in-office bleaching group compared to the at-home bleaching group. Differences between materials in terms of ΔRa , ΔRz weren't significant ($p>0.05$).

Conclusions: It was concluded that the tested bleaching agents significantly increased the surface roughness and depth of the three restorative materials, with in-office bleaching having a greater impact.

Keywords: Additive Manufacturing, Bleaching, Nanohybrid Composites, Subtractive Manufacturing, Surface Roughness

OP 13

COMPARISON OF THE MECHANICAL PROPERTIES OF RESIN-BASED RESTORATIVE MATERIALS

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Objectives: The aim of this in vitro study was to evaluate the surface roughness, flexural strength and microhardness properties of different resin-based restorative materials.

Methods: The prepared specimens were divided into 4 groups. Group 1: 3D printed permanent crown resin (Saremco Crowntec; Saremco, Switzerland), Group 2: 3D printed permanent crown resin (VarseoSmile Crown Plus, BEGO, Germany), Group 3: resin-based CAD/CAM block (Cerasmart; GC, Europe) and Group 4: nanohybrid composite resin (Clearfil Majesty ES-2 Universal, Kuraray, Japan). A 3-point flexural test (ISO 4049:2020) was performed using a computer-controlled universal testing machine (Shimadzu, Instron, UK) to determine flexural strength. The Vickers Hardness Number (VHN) of the samples were performed by measuring three points from each sample (FM-700 Microhardness Tester, Future Tech Corp., Japan). Surface roughness measurements were performed using a mechanical profilometer (Surftest SJ-400 (Mitutoyo, Japan). Data were analyzed with one-way ANOVA and Tukey tests. Significance level was accepted as $P < 0.05$.

Results: Flexural strength values (MPa) were found to be significantly higher in Group 3 (184.04 MPa; $P < 0.001$). The surface roughness values (Ra) of Group 4 (0.12 Ra) were significantly higher than the other groups ($P < 0.001$). Microhardness values (MPa) were found significantly higher in Group 3 (85.53) $P < 0.001$. There was no significant difference in the flexural strength, surface roughness and microhardness values between the 3D printed resin groups ($p > 0.05$).

Conclusion: Mechanical properties such as flexural strength, surface roughness and microhardness of 3D printed resins are acceptable for clinical applications in restorative dentistry.

Keywords: 3D Printing, Permanent Crown Resin, Flexural Strength, Vickers Hardness Test, Surface Roughness

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OP 14**EVALUATION OF COLOR STABILITY OF TOOTH-COLORED RESTORATIVE MATERIALS**

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Objective: The aim of this study was to evaluate the effect of beverages on the color stability of monochromatic composite resins soaked in 2 different beverages.

Methods: Two different monochromatic composite resins Omnicroma flow (OMN; Tokuyama Dental, Tokyo, Japan), Admira Fusion Xtra universal (VOCO Admira, Munchen Germany) were used in the study. The samples were then randomly divided into 2 experimental groups. They were kept in coffee and distilled water. In total, 2 solutions and 2 different single color composite materials were used (n=10). Baseline, day 1 and day 7 L, a and b values of the samples were measured with a spectrophotometer (VITA Zahnfabrik, Bad Sackingen, Germany) and color changes were calculated using the CIEDELab formula. Data were analyzed by one-way ANOVA and Tukey Hsd tests.

Results: The coffee soaked samples did not differ on day 1 ($p=0.437$), whereas on day 7 the Omnicroma flow coffee group was significantly different from the Admira Fusion Xtra universal coffee group ($p\leq 0.005$). Day 7 color measurement of omnicroma flow and admira fusion xtra coffee group showed a significant increase compared to day 1. Day 1 and day 7 color measurement results of the samples kept in distilled water were statistically similar ($p=0.906$; $p=0.981$)

Conclusion: Coloration is an important parameter in aesthetic restorations. The color properties of materials are affected by beverages. The results of this study highlight the importance of considering color stability when choosing dental restorative materials.

Keywords: Composite, Coffee, Spectrophotometer, CIEDELAB

OP 15

MECHANICAL PROPERTIES OF BIODENTINTM MODIFIED WITH MESOPOROUS BIOACTIVE GLASS PARTICLES

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Objectives: Mesoporous bioactive glass (MBAG) represents the latest generation of bioactive glasses. It is characterized by a high specific surface area that enhances bioactivity, while the shape and size of the pores are suitable to carry biologically active substances. Moreover, MBAG with incorporated therapeutic ions Zn, Cu, Sr and Mg (dop-MBAG) could improve specific biological responses, such as antimicrobial, osteogenic, odontogenic and angiogenic effects. This pilot study aimed to investigate the impact of MBAG, and dop-MBAG on the compressive strength (Cs) of Biodentin™ (Septodont, France).

Methods: The amount of particles used ranged from 5-20 wt.% and was mixed into Biodentin™. Due to nano-scale size and large specific surface area of MBAG particles (386 m²/g) and even greater of dop-MBAG (691 m²/g), additional liquid, i.e., distilled water was required to obtain adequate cement consistency.

Results: The results of the study showed no significant differences in Cs values among most groups, except for the group with 20 wt% of dopMBAG, which showed significantly lower values compared to Biodentin™ and the 5 and 10 wt% dop-MBAG groups. Additional water used during material mixing for achieving adequate consistency likely affected the Cs. Future studies should optimize the mixing protocol to mitigate this effect and enhance the mechanical properties of modified Biodentine™.

Conclusions: Based on the presented results, it can be concluded that the addition of MBAG particles does not compromise the Cs of modified Biodentin™, supporting further investigation into their potential biological contributions.

Keywords: Biodentin, Mesoporous bioactive glass, Compressive strength, Therapeutic ions

Acknowledgments: Ministry of Education, Science and Technological Development of the Republic of Serbia through the grant for the School of Dental Medicine, University of Belgrade (Contract No. 451-03-66/2024-03/ 200129) and for the Faculty of Technology and Metallurgy (Contract No. 451-03-65/2024-03/200135).

OP 16**COLOR STABILITY OF UNIVERSAL COMPOSITES IN DIFFERENT MOUTHWASHES**

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Objective: The aim of this study is to investigate the color change caused by mouthwashes in two different universal composites.

Methods: Composite samples of Omnicroma and Zenchroma universal composites were made using plastic molds with a diameter of 8 mm and a depth of 2 mm. The samples were stored in distilled water for 24 hours for post-polymerization. Afterward, the samples were immersed in three different solutions—chlorhexidine, alcohol-free mouthwash, and whitening mouthwash—for 14 days (n=10). The solutions were refreshed daily. Spectrophotometer device (SpectroShade) was used for color measurements. Color measurements were taken at the beginning, 24 hours later, 7 days later, and 14 days later. CIEDE2000 was used as the color difference formula. The data were analyzed using Jamovi V2.3.28. Shapiro-Wilk Test and Bonferroni test were used for statistical analysis.

Results: The alcohol-free mouthwash caused more discoloration than chlorhexidine ($p<0,05$). In all three mouthwashes, the Zenchroma composite had better color stability than the Omnicroma composite ($p<0,05$).

Conclusions: Mouthwashes can affect color stability and may cause different degrees of color change in various universal composites.

Keywords: Universal composites, Mouthwash effect, Color stability

OP 17**EFFECT OF PREHEATING ON FRACTURE RESISTANCE OF SHORT FIBER-REINFORCED COMPOSITES**

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Objectives: The objective of this in vitro study was to evaluate the effect of short fiber-reinforced composites (SFRC) used in large Class II MOD (mesio-occlusal-distal) cavities and the preheating process applied to these composites on the fracture resistance.

Methods: In this study, two SFRC (EverX Posterior and Everx Flow Bulk) and a conventional composite as a control group: (3M Filtek Z250) were evaluated. Standard MOD cavity preparation (5x5 mm) was performed on sixty acrylic dentures, which were then randomly divided into six groups (n=10). A self-etch adhesive system (Clearfil SE Bond) was applied to the cavity. Axial walls were created using conventional composite. A different composite was applied to the 4 mm base part of the cavity for each group. The 1 mm occlusal part was covered with conventional composite in all groups. The same procedure was performed with both room temperature (20±1°C) and preheated (39°C) composites. All teeth were fractured with a universal testing machine. One-way analysis of variance (ANOVA) and post-hoc Tukey tests were performed for all data (p<0.05).

Results: There was no statistically significant difference between the groups at room temperature for EverX Posterior and EverX Flow Bulk, while 3M Filtek Z250 showed significantly lower fracture resistance than both groups. Preheating did not have a statistically significant effect on the fracture resistance of EverX Flow Bulk, while it significantly increased the fracture resistance of 3M Filtek Z250 and EverX Posterior.

Conclusions: Preheating can increase the fracture resistance of high viscosity composites.

Keywords: Fracture resistance, MOD cavity, Resin composites, Short fibers

OP 18**OSTEOGENIC EFFECT OF COLLAGEN SPONGES ON STEM CELLS FROM APICAL PAPILLA**

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Objectives: Effective management of blood flow in dental surgical site is essential, and that is the major indication for collagen sponges (CS), while their healing properties seems to be beneficial side effect. Consequently, CS are gaining attention in regenerative therapy in order to enhance osteogenesis. The apical papilla is a promising source of stem cells due to its accessibility, ease of isolation, and high differentiation potential.

The aim of the study was to further examine the influence of collagen sponges on the osteodifferentiation of SCAP.

Methods: The study included 4 groups, two SCAP groups cultured with collagen sponges - one using osteogenic differentiation medium (ODM) and the other without, as well as two control groups of the SCAP without collagen sponges cultivated in the same conditions (with or without ODM). After 10 days, staining with Alizarin Red S was performed to confirm osteodifferentiation, and binding of the dye as well as alkaline phosphatase (ALP) test were quantified using an ELISA reader. The expression of osteogenic differentiation markers such as osteocalcin, ALP, bone morphogenic protein-2, and runt-related transcription factor were analyzed by the qPCR method.

Results: The spectrophotometry showed significantly more enhanced osteodifferentiation in the presence of CS, even in groups without ODM, compared to controls. The relative gene expressions of all osteogenic markers were significantly higher in the presence of CS with ODM than in other groups.

Conclusion: In light of the demonstrated, CS show beneficial characteristics and represent a promising tool due to their impact on osteogenesis.

Keywords: Collagen sponges, SCAP, Bone regeneration, Osteogenic differentiation

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OP 19

EFFECT OF REPEATED BLEACHING ON THE SURFACE ROUGHNESS OF SINGLE-SHADE AND MULTI-SHADE COMPOSITES

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Objectives: This study aimed to evaluate the effect of repeated bleaching sessions on the surface roughness of a single-shade composite versus multi-shade composite resins.

Methods: Thirty disc-shaped samples (2 mm thick, 6 mm in diameter) were fabricated using a single-shade composite resin (OMNI: Omnicroma, Tokuyama) and two multi-shade composite resins (CER: Ceram.x SphereTEC One, Dentsply Sirona; FILT: Filtek Z250, 3M ESPE; n=10). All specimens underwent two in-office bleaching sessions (40 min/session) using 40% hydrogen peroxide gel (Opalescence Boost PF40%, Ultradent Products). Surface roughness values of Ra, Rz, and Rmax parameters were measured at baseline (T0), after the first session (T1), and after the second session (T2). Data normality was assessed using kurtosis and skewness values. A one-way ANOVA with post hoc tests evaluated intergroup differences, while paired t-tests assessed differences across time points ($p < 0.05$).

Results: Statistically significant differences were found among materials for Ra, Rz, and Rmax at all time points ($p < 0.05$). OMNI exhibited the least surface roughness, while FILT showed the highest ($p < 0.05$). No statistically significant differences were observed between T0 and T1 for any material ($p > 0.05$). However, material-dependent differences observed between T1-T2 and T0-T2.

Conclusions: FILT exhibited the highest surface roughness throughout the study. A single bleaching session did not significantly affect surface roughness, but repeated sessions significantly increased roughness across materials.

Keywords: in-office bleaching, single-shade composites, surface roughness

OP 20

EFFECT OF MULTIVITAMIN SUPPLEMENTS ON SURFACE ROUGHNESS OF NANOHYBRIDE COMPOSITES: AN IN VITRO STUDY

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Objectives: The aim of this in vitro study was to evaluate the effect of different multivitamin syrups and effervescent tablets taken daily on the surface roughness of different commercial nanohybride resin composites.

Methods: A total of 160 disc-shaped specimens were prepared using four nanohybride resin composites: Harmonize (Kerr), Herculite XRV Ultra (Kerr), Solare X (GC) and Tetric EvoCeram (Ivoclar Vivadent). Each group were randomly assigned to 5 subgroups (n=8). Samples were immersed in 2 Sambucus Nigra-based multivitamins (Sambutus syrup (Saus Pharma) and Dynavit effervescent (Eczacibasi)), 2 beta-glukan-based multivitamins (VitaGlukan syrup (Allergo) and Vitatech effervescent (OTC)) or deionized water (control) for 2 min once a day for 28 days. Surface roughness measurements (Ra) were recorded at baseline and on the 7th, 14th, and 28th days. Data were analysed using t-test, ANOVA or Welch tests, and Tukey or Tamhane post-hoc tests ($p=0.05$).

Results: There was no statistically significant difference in baseline surface roughness values among the composite groups, but Herculite XRV Ultra exhibited lower values than Solare X and Tetric EvoCeram on the 28th day ($p=0.026$). Beta-glukan-based efervescent tablets caused higher surface roughness values compared to other supplements and control group for all resin composites on the 28th day ($p<0.05$). The surface roughness values of all composite groups on the 28th day were found to be significantly higher than on baseline, the 7th, and 14th days regardless of multivitamins.

Conclusions: It was concluded that prolonged use of multivitamin supplements may adversely affect the surface roughness of nanohybride resin composites.

Keywords: Multivitamin supplements, Nanohybride composites, Surface roughness

OP 21

THE EFFECT OF CRYSTALLIZATION ON THE OPTICAL PROPERTIES OF CERAMICS WITH DIFFERENT THICKNESSES

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Objectives: The aim of this study was to evaluate the color and translucency change of zirconia reinforced glass-ceramic materials in different thickness after crystallization.

Methods: Different thicknesses (0.8 mm, 1.0 mm, and 1.2 mm) of glass-ceramic reinforced zirconia from Vita Suprinity (Vita Zahnfabrik) were used. A total of twenty-four samples (n=8) were manufactured. The silicon carbide was used to achieve a consistent thickness across all surfaces of the obtained samples. L*, a* and b* values were found by measuring the samples with a spectrophotometer (Vita Easyshade, Vident, Brea, California, USA) using a gray, black and white background. Based on these data, translucency and color change formulations were used. Then, a maximum temperature of 829 °C was reached using a firing device (Programat P310, Ivoclar Vivadent, Liechtenstein) for the crystallization procedure. After the crystallization procedure, the color and translucency values of every sample was measured again. All obtained data were statistically analyzed.

Results: There was a significant difference in terms of color change after crystallization in samples with different thicknesses ($p=0.015$) and color and translucency changes after crystallization among samples of the same thickness ($p=0.012$). There was no significant difference in translucency among samples with different thicknesses ($p>0.05$).

Conclusions: After crystallization, the different thickness of ceramics showed notable variations in both color and translucency changes. The translucency and color change of restorations are influenced by the thickness of the restoration and preparation amount.

Keywords: crystallization, glass-ceramic, translucency

OP 22

EFFECTS OF DIETARY SOLVENTS ON SORPTION AND SOLUBILITY OF SINGLE-SHADE COMPOSITESAlperen Degirmenci*Department of Restorative Dentistry, Faculty of Dentistry, University of Van Yuzuncu Yil, Van, Turkey*

Objective: The objective of the current investigation was to assess the impact of 0.02 N citric acid, a 50% ethanol-water solution, and heptane—recognized as dietary solvents—on the sorption and solubility characteristics of single-shade composites.

Methods: For the present study, a total of one hundred and forty-four specimens were produced using two different single-shade composites (Vittra APS Unique, Diamond One) and one microhybrid composite (NeoSpectra ST). The samples were distributed into four groups and were incubated in an environment at 37 °C for one week. This procedure employed three dietary solvents alongside distilled water as the control group. The standards for sorption and solubility measurements were established based on ISO 4049, and mass calculations were carried out using the sample volumes. Specifically, m1 denotes the mass after the initial drying of the specimen, m2 represents the mass following immersion in dietary solvents, and m3 is the final mass after the desiccation process. Statistical analysis was conducted using one-way ANOVA, with a significance threshold of $p = 0.05$.

Results: Although no statistically significant difference was observed between the single-shade composites and the microhybrid composite with respect to their sorption and solubility properties, it is noteworthy that the microhybrid composite demonstrates a lower solubility value. Upon evaluating dietary solvents in isolation, it was found that 0.02 N citric acid exhibited the most significant influence on the sorption and solubility characteristics.

Conclusions: In the clinical selection of single-shade composite materials for the anterior teeth, it is imperative to consider the nutritional habits.

Keywords: Dietary Solvent, Single-shade composite, Solubility

OP 23

INFLUENCE OF POSTWASHING PROCESS AND TIME ON THE SURFACE CHARACTERISTICS OF A 3D PRINTED MATERIAL

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Objectives: Three-dimensional (3D) printed resin restorations require a washing process to remove residual surface resin. However, the effects of different washing methods and durations on the properties of these resins remain unclear. This study aimed to investigate the impact of various post-washing methods and durations on the surface characteristics of 3D-printed resin materials.

Methods: 3D-printed resin specimens were washed using three different methods: an ultrasonic bath, a rotary washer, and manual brushing. Control group specimens were manually immersed and rinsed for 10 seconds without further processing, leaving residual liquid resin on the surface. All specimens were washed with isopropyl alcohol for 3, 6, 10, and 30 minutes. Following the washing process, each specimen was post-cured for 30 minutes. Surface roughness was evaluated using a mechanical profilometer (DR230, Dragon Electronics, Beijing, China). Statistical analysis was conducted using IBM SPSS Statistics 25.0 software (IBM, NY, USA).

Results: The washing process significantly influenced the surface quality of 3D-printed resin specimens. Insufficient washing resulted in increased surface roughness, whereas extending the washing time to 6 minutes effectively reduced roughness. However, further prolongation of the washing duration did not yield additional benefits. Moreover, prolonged ultrasonic washing and manual brushing caused more severe surface defects compared to the rotary washer.

Conclusion: This study demonstrated that washing time and method significantly impact the surface characteristics of 3D-printed resin materials. While the ultrasonic bath provided superior cleaning efficiency, excessive washing durations negatively affected surface quality. These findings highlight the importance of optimizing washing protocols to balance cleaning effectiveness and material integrity.

Keywords: 3D Printing, Postwashing methods, Ultrasonic, Surface roughness, Postwashing time

PP 33

EFFECT OF COLD ATMOSPHERIC PLASMA ON CONTACT ANGLE AND WETTABILITY OF CAD/CAM HYBRID MATERIALS

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Objective: The aim of the in vitro research is to examine the influence of cold atmospheric plasma on the wetting angle of the surface of hybrid CAD/CAM materials.

Method: Materials used in the research: Kuraray Katana Avencia (Kuraray, NY, USA) and Coltane Brilliant Crios (Coltene/Whaledent, Altstätten, Switzerland). Each material is divided into 6 groups: control, plasma, etched, etched/plasma, sandblasted, sandblasted/plasma. Samples were prepared dimensions of 5*5*2mm, on a Buehler IsoMet 4000 Linear Precision saw with water cooling using IsoMet Diamond Wafering Blade 10LC Diamond as recommended by the manufacturer. Sandblasting of the samples was carried out with aluminum trioxide(Al₂O₃) particles of 50 microns(μm) size, from a distance of 10mm and under a pressure of 1bar. To etch the surface of the material, 9% hydrofluoric acid (Ultradent Porcelain Etch) was used for 60 seconds according to the manufacturer's instructions, after which the gel would be washed under running water for 1 minute. Plasma treatment was performed using a PiezoBrush® PZ3 handheld device (Relyon Plasma, Regensburg, Germany) with plasma power set to 100% for 80s. The tip of the device was 5mm away from the surface of the sample. For the surface wetting test, 5 samples were prepared for each group. The wetting test was carried out using a Krus DS25B, where a drop of distilled water was dropped onto the treated surface using a microdropper and measuring of contract angle was done after 10 seconds with an optical tensiometer.

Result: Application of cold atmospheric plasma reduces the wetting angle of the material surface.

Conclusion: Application of cold atmospheric plasma reduces the wetting angle of the material surface and can have a positive effect on the adhesion strength.

Keywords: Plasma, CAD/CAM, Hybrid material, Cold atmospheric plasma, Wetting angle

PP 34**ASSESSMENT OF NANOHYBRID FLOWABLE COMPOSITE IN ALL CLASSES OF RESTORATIONS:
A SERIES OF CASE REPORTS**

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Objectives: The increasing demand for newer and better materials led to the introduction of highly filled flowable composites. Flowable composites are easier to handle, have improved polishability and color matching. Combining nanotechnology with high filler content allows for versatile uses in all clinical situations. The purpose of this study was to assess the 12 month clinical performance of universal nano-hybrid restorative material in all classes of restorations.

Methods: A total of 44 Class I and Class II, Class III, IV and V cavities were restored with GandioSo Heavy Flow (Voco GMBH, Germany) nanohybrid flowable composite. The restorations were clinically evaluated 1 week after placement as baseline, and after 6 and 12 months post-operatively using modified USPHS criteria by two previously calibrated operators. Statistical analysis was performed using Pearson Chi-square and Fisher's Exact Test ($P < .05$).

Results: All patients attended the 12-month recall. Lack of retention was not observed in any of the restorations. With respect to color match, marginal adaptation, secondary caries and surface texture, no significant differences were found between initial placement and 12 months recall restorative materials tested after 12 months ($P > .05$). 22 of the restorations had marginal discoloration on the 12-month follow-up. 12 restorations had an anatomic form loss on the 12 month follow up. The Restorations did not exhibit post-operative sensitivity at any evaluation period.

Conclusions: Surveillance of GandioSo Heavy Flow flowable composite exhibited good clinical results with predominating alpha scores after 12 months. However; further evaluations is necessary for the long-term clinical performance of the material.

Keywords: composites, nanohybrid, surveillance, highly filled

LONGITUDINAL ANALYSIS OF FOUR TREATMENT APPROACHES: FROM STAMPED CROWNS TO CAD/CAM SYSTEMS

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Objectives: This study presents a historical and technological review of restorative dental techniques, demonstrating their evolution through a phantom model. By examining key restorative methods across different periods, we highlight advancements in materials, fabrication techniques, and clinical applications.

Methods: A phantom model was used to illustrate four major restorative approaches, categorized by technological era based on scientific literature and patented technologies: 1. Cold metal processing (early 20th century): The stamped crown, patented by Sharp in 1903, was fabricated by mechanically shaping thin metal sheets; 2. Lost-wax casting technique (mid-20th century): In 1962, M. Weinstein, S. Katz, and A. B. Weinstein patented the first metal-ceramic crown, integrating a metal substructure with ceramic for enhanced aesthetics and durability. According to Christensen (1986), this technique became the most widely used indirect restorative method. The Herbst-Adapta system (1967) introduced burnishable metal foils, significantly improving marginal adaptation. 3. CAD/CAM technology (post-1980): Subtractive manufacturing – milling restorations from ceramic or composite blocks. And Additive manufacturing – 3D printing of restorations through layer-by-layer deposition. Each method was evaluated based on material composition, fabrication process, marginal integrity, and clinical effectiveness.

Results: The review highlights significant technological progress. Stamped crowns were cost-effective but had limited adaptability. The lost-wax technique improved precision, with the Adapta system enhancing marginal fit and metal-ceramic crowns improving strength and esthetics. CAD/CAM technology revolutionized restorations, offering superior precision and efficiency despite requiring substantial equipment investment.

Conclusions: Restorative dentistry has evolved toward more precise, durable, and esthetically refined solutions. The transition from manually fabricated crowns to digital workflows reflects continuous innovation in clinical practice. Future advancements in materials and digital fabrication will further enhance treatment outcomes, optimizing patient-specific care.

Keywords: historical review, dental restorations, stamped crowns, lost-wax casting, CAD/CAM

PP 36

THE EFFECT OF CEMENTATION STRATEGY ON ENDOGENOUS ENZYMATIC ACTIVITY WITHIN RADICULAR DENTIN

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Objectives: To investigate the effect of different cementation strategies on matrix-metalloproteinases (MMPs) activity within radicular dentin.

Methods: Freshly extracted first maxillary molars (n=4) were subjected to root canal treatment, after which in each of the roots a fiber-reinforced composite post (RelyX™, Solventum) was cemented using one of the 3 cementation strategies: EAR - cementation with an etch-and-rinse adhesive (LuxaBond Total Etch, DMG) and resin cement (LuxaCore Z Dual, DMG); SE - cementation with a self-etch primer (Multilink Primer, Ivoclar Vivadent) and corresponding cement (Multilink Automix, Ivoclar Vivadent), and SA - cementation with a universal self-adhesive cement (RelyX Universal, Solventum). Light-curing was performed (60s, 1470 mW/cm², Elipar Deep cure, Solventum) and the teeth were stored for 24h at 37°C in a humid chamber. Subsequently, thin root slabs (1 mm) were sectioned, mounted on slides, ground to 50 µm, and polished. In situ zymography was performed using fluorescein-conjugated gelatin, incubated for 12 hours at 37°C. Confocal microscopy captured enzymatic hydrolysis signals, quantified via ImageJ software to assess endogenous enzymatic activity in resin-dentin interfaces. Statistical analysis was conducted in Stata 12.0 software (* =0.05).

Results: Significant differences (p<0.05, one-way ANOVA) were observed among all tested cementation strategies. The highest level of MMPs activity was observed in SA, while EAR strategy showed the lowest enzymatic activity. A considerable level of fluorescence was detected in the dentinal tubules of the SA group.

Conclusions: The choice of cementation strategy influences endogenous enzymatic activity within radicular dentin, which may impact the survival of post and core restorations.

Keywords: cementation, matrix-metalloproteinases, radicular dentin

PP 37

HISTOMORPHOMETRIC STUDY OF THE NOVEL CALCIUM SILICATE-BASED CEMENT'S EFFECT ON THE RATS' LIVER

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Objectives: Calcium silicate-based dental cements are commonly utilized in endodontics, oral surgery, and restorative dentistry. Enriched with zirconium dioxide, these cements exhibit improved compressive strength, setting time, solubility, etc., but their chronic systemic impact on liver tissue is still not elucidated.

Methods: Maxillary first incisor was extracted from 24 male Wistar rats. Empty alveolus was then implanted with mineral trioxide aggregate (MTA) as a positive control (n=12), or experimental calcium silicate cement with 20% added ZrO₂ (CaSi+ZrO₂) (n=12). Rats were sacrificed after 30 and 180 days (n=12). The liver tissue was removed from each rat and subjected to semi-quantitative histological evaluation (Knoddel score (KS) and Histology activity index (HAI)). Evaluation criteria included: portal inflammation, periportal and bridging necrosis, intralobular and focal necrosis, and fibrosis.

Results: KS was 1.50 for MTA 30 days, 0.38 for CaSi+ZrO₂ 30 days, 0.17 for MTA 180 days, and 1.20 for CaSi+ZrO₂ 180 days group. HAI, as a result of the combination of all evaluation criteria, was interpreted as minimal inflammation for both materials after both periods.

Conclusion: The novel CaSi+ZrO₂ exhibited good biocompatibility and could be a promising alternative to MTA. Further research is required.

Keywords: Calcium Silicate, Chronic Effect, Rat, Liver, MTA

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PP 38

INFLUENCE OF BLOOD CONTAMINATION ON SURFACE MICROSTRUCTURE OF TRICALCIUM SILICATE BASED CEMENTS

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Objectives: The biological environment is crucial for the bioactivity of modern calcium-silicate cements. However, changes in the environment can negatively affect this bioactivity. The purpose of this study is to use scanning electron microscopy (SEM) to compare the surface characteristics (microstructure) of three calcium silicate-based cements after retro-filling and placing them in different environmental conditions.

Methods: Thirty-two cylindrical cavities were prepared on resected root apices of freshly extracted human single-rooted teeth. The cavities were filled using ProRoot MTA, Biodentine, or premixed MTA (Neo-Putty) and assigned to three subgroups (n=8) according to the setting conditions: wet (PBS), blood, or dry. All specimens were stored in an incubator at 37°C and 95% humidity for 28 days. The microstructure of the surface topography was evaluated using SEM in five different regions of interest on each specimen at three time points (1, 3, and 28 days).

Results: All the materials produced surface precipitates showing acicular, lath-like, and globular-like morphology in the presence of PBS. Blood-exposed materials exhibited a homogeneous structure, characterized by a distinct lack of acicular and plate-like crystals, and the presence of a small amount of hexagonal and globular crystal formations. In the samples hardened in a dry environment, triangular formations with surface defects and the growth of thin rod-shaped crystals were observed.

Conclusion: This study showed that blood contamination affects the surface characteristics of bioactive materials.

Keywords: Bioactivity, Blood Contamination, MTA

PP 39

EVALUATION OF THE POLISHING EFFECTIVENESS ON THE SURFACE ULTRASTRUCTURE OF BULK-FILL COMPOSITES

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Objectives: To examine the surface microhardness of two Bulk-Fill composites after three different polishing methods and to evaluate the surface ultrastructure on a scanning electron microscope (SEM).

Methods: The study examined Filtek One Bulk Fill and Tetric PowerFill. The samples (24 of each material) were made in plastic cylindrical molds 2 mm high and 8 mm in diameter, and polymerized between two glasses. According to the applied polishing method, the samples were divided into four groups (control samples that were not polished; Sof-Lex Pop On discs; polishing points; abrasive paste and brush). Microhardness was measured by the Vickers test. Surface ultrastructure was analyzed on SEM.

Results: Control samples showed a significantly lower value of microhardness compared to polished samples ($p < 0.001$). The Filtek One Bulk Fill samples showed higher microhardness values compared to the Tetric PowerFill samples when comparing one material to another after each polishing procedure. A statistically significant difference in microhardness was observed between the tested materials in control samples ($p < 0.001$) and after polishing with abrasive paste and brush ($p < 0.001$), while after polishing with points and Sof-Lex Pop On discs, the difference was not statistically significant. Differences in the smoothness of the samples were also visible on SEM.

Conclusions: Samples polished with multiphase Sof-Lex Pop On discs showed the most intense surface smoothness as well as highest value of microhardness in both tested materials and can be recommended for achieving superior surface properties and durability of applied composite materials.

Keywords: composites, polishing, ultrastructure, microhardness

PP 40

MECHANICAL PROPERTIES OF ION-RELEASING DIRECT RESTORATIVE MATERIALS: AN IN VITRO STUDY

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Objectives: The aim of this study was to evaluate the compressive strength (CS) and flexural strength (FS) of self-cured and light-cured alkasite materials and compare them with three bulk-fill restorative materials commonly used in dentistry.

Methods: A total of 150 specimens of light-cured (Cent LC) and self-cured (Cent self) alkasite material (Cention® Forte, Ivoclar Vivadent, Schaan, Liechtenstein) and three different bulk-fill materials for posterior restorations: GC Fuji IX Extra (Fuji) (GC, Tokyo, Japan), Tetric® PowerFill (TPF) (Ivoclar Vivadent, Schaan, Liechtenstein), and EQUIA Forte® HT (Equia) (GC, Tokyo, Japan) were prepared following the manufacturer's instructions and standards for testing CS and FS. Specimens were stored in distilled water at 37°C for 24 h, and afterwards the tests were performed on a Universal testing machine at a crosshead speed of 0.75 mm/min. Strength values (MPa) were calculated and statistically analyzed using the one-way ANOVA and Tukey's post hoc test, at a level of significance $p < 0.05$.

Results: According to ANOVA test, significant differences were found between tested materials for CS and FS ($p < 0.0001$). Cent LC showed the highest mean value for FS (113.87 MPa) with a significant difference compared to Cent self, Fuji and Equia ($p < 0.05$). TPF showed the highest mean value for CS (179.53 MPa) but without significant difference compared to Cent LC ($p > 0.05$).

Conclusions: According to the obtained results, ion-releasing material Cention® Forte may serve as a viable alternative for posterior restorations in cases where conventional bulk-fill restorative materials are indicated.

Keywords: ion-releasing materials, alkasite material, compressive strength, flexural strength



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OP 24**ANALYZING VIDIAN CANAL TYPOLOGY AND PALATOVAGINAL CANAL PRESENCE IN CONE-BEAM CT SCANS**

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Objectives: Our objective is to evaluate the visibility of the Vidian canal and the palatovaginal canal together using cone-beam computed tomography (CBCT) imaging.

Methods: Patients who had undergone cone-beam computed tomography imaging for any reason at the Department of Oral and Maxillofacial Radiology in our faculty were included in the study. CBCT images with a field of view (FOV) that included the sphenoid sinus were used to detect the presence of the palatovaginal and Vidian canals. A total of 250 CBCT images were evaluated in the frontal section. The Vidian canals were classified into three distinct types, while the palatovaginal canals were categorized as either present or absent in the same section. Assessments were independently performed by two maxillofacial radiology research assistants.

Results: Of the cases, 171 (68.4%) were female, and 79 (31.6%) were male. A statistically significant difference was observed between gender and Vidian canal types, whereas no significant difference was found between the presence of the palatovaginal canal and gender ($p < 0.05$). No statistically significant difference was observed between Vidian canal types and the presence of the palatovaginal canal according to sides (p : 0.304, 0.342).

Conclusion: Understanding these findings can help clinicians interpret CBCT images more effectively, recognizing that gender may be a more significant factor in Vidian canal classification, while the palatovaginal canal presence does not appear to influence this classification. Further studies with larger sample sizes may provide a deeper understanding of these relationships.

Keywords: cone beam computed tomography, vidian canal, palatovaginal canal

OP 25

ASSESSMENT OF MAXILLARY SINUS SEPTA: A RETROSPECTIVE CBCT STUDY

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Objectives: This study aims to evaluate the frequency and localization of maxillary sinus septa using cone beam computed tomography (CBCT) and to determine their relationship with age, gender, and dental status.

Methods: A total of 358 maxillary sinuses from 179 patients who underwent CBCT imaging were examined. Cortical bone extensions within the maxillary sinus with a height of at least 2.5 mm were considered as septa. The localization of the septa was classified into three regions: anterior, middle, and posterior. The influence of age, gender, and dental status on septa variation was statistically analyzed. Data was analyzed using descriptive statistics, frequencies, Mann-Whitney U, and Kruskal Wallis tests.

Results: A total of 179 individuals, 91 females (50.8%) and 88 males (49.2%), were included in the study. The ages of the individuals ranged from 17 to 81, and the mean age was 43.13 ± 15.27 . The number of septa ranged from 0 to 4 and the mean number of septa was 0.82 ± 0.91 . When the relationship between the number of septa and tooth status was evaluated, no statistically significant relationship was found on the right ($p=0.679$) and left ($p=0.921$) sides. When the relationship between the number of septa and gender was evaluated, the number of septa on the right was significantly higher in men ($p=0.026$), while there was no difference between genders on the left ($p=0.709$).

Conclusions: Maxillary sinus septa were more frequent in men on the right side, with no significant relationship to dental status, emphasizing the need for individualized anatomical assessment.

Keywords: Maxillary sinus septa, Cone beam computed tomography (CBCT), Anatomical variation, Dental status

OP 26

ASSESSMENT OF SPHENOID SINUS TYPOLOGY AND VIDIAN CANAL CLASSIFICATION IN CONE-BEAM CT IMAGING

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Objectives: The objective of this study is to evaluate the relationship between sphenoid sinus types and Vidian canal types using cone-beam computed tomography (CBCT) imaging.

Methods: Patients who had undergone cone-beam computed tomography imaging for any reason at the Department of Oral and Maxillofacial Radiology in our faculty were included in the study. A total of 250 CBCT images were evaluated in the frontal section. The sphenoid sinus types and Vidian canal types were classified and analyzed in the same section. The sphenoid sinus was classified into different types, and Vidian canals were categorized into three types (Type 1, Type 2, Type 3). Assessments were independently performed by two maxillofacial radiology research assistants.

Results: Of the cases, 171 (68.4%) were female, and 79 (31.6%) were male. On the right side, Vidian canals were classified as Type 1 in 55 cases (22%), Type 2 in 92 cases (36.8%), and Type 3 in 103 cases (41.2%). On the left side, Vidian canals were classified as Type 1 in 68 cases (27.2%), Type 2 in 85 cases (34%), and Type 3 in 97 cases (38.8%). No statistically significant difference was observed between sinus types and Vidian canal types on the right and left sides (p : 0.064, 0.341).

Conclusion: Understanding this relationship can help clinicians when interpreting CBCT images, as it indicates that the sphenoid sinus type may not be a determining factor in the variability of Vidian canal morphology, potentially simplifying diagnostic approaches in maxillofacial imaging.

Keywords: cone beam computed tomography, vidian canal, sphenoid sinus

OP 27

ASSESSMENT OF TOOTH VOLUME AND LINEAR DIMENSIONS USING PRE-EXTRACTION CONE BEAM COMPUTED TOMOGRAPHY

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Objectives: This study aimed to evaluate the accuracy of segmenting pre-extraction teeth in cone-beam computed tomography (CBCT) images using 3D Slicer software with original and standardized voxel sizes. The accuracy of volumetric and linear measurements was assessed by comparing them with actual tooth dimensions.

Methods: CBCT images (INSTRUMENTARIUM Orthopantomograph Op300) were obtained, and extracted teeth without material loss from patients scheduled for tooth extraction were collected. Fifteen teeth were included. Linear measurements, including the widest and narrowest buccolingual and mesiodistal crown dimensions and the longest root dimension, were recorded using a digital caliper. Volumetric measurements were performed using the liquid displacement method. Segmentation was carried out in 3D Slicer (version 5.6.2) using the original voxel size (0.38mm) and a standardized voxel size (0.25mm) obtained via the resample scalar volume module. Each tooth was segmented twice under both voxel size conditions. The obtained linear and volumetric measurements were analyzed for accuracy using Kruskal-Wallis and pairwise comparison tests.

Results: No significant difference was observed between the actual tooth measurements and the linear and volumetric measurements derived from original CBCT images with a voxel size of 0.38 mm. However, a significant discrepancy was found when comparing the actual tooth measurements with the data obtained from CBCT images standardized to a voxel size of 0.25 mm.

Conclusion: The accuracy of the linear and volumetric measurements of teeth segmented from original CBCT data using 3D Slicer software was confirmed. However, altering or standardizing the voxel size in existing CBCT data resulted in unreliable tooth measurements.

Keywords: cone beam computed tomography, voxel size, segmentation, tooth

OP 28

DEVELOPMENT OF AN AI-BASED SYSTEM FOR AUTOMATED DENTAL DIAGNOSIS USING ORTHOPANTOMOGRAPHIC IMAGES

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Objectives: Artificial intelligence (AI) is revolutionizing dentistry by enabling precise and efficient diagnosis. This study focuses on the development of an AI-driven system for automated detection of dental structures and pathologies using orthopantomographic (OPG) images. The objectives was to create and validate a deep learning-based model for detecting teeth, caries, periodontal disease, and periapical periodontitis from OPG radiographs.

Methods: A large dataset of annotated OPG images was used to train convolutional neural networks (CNNs) for segmentation and classification tasks. The model's performance was evaluated based on sensitivity, specificity, and accuracy compared to expert diagnoses.

Results: Preliminary findings indicate high accuracy in tooth segmentation and pathological detection, with AI performance approaching that of experienced clinicians. The system demonstrates potential for assisting dentists in early diagnosis and treatment planning.

Conclusion: Our AI model shows promise in automating dental diagnostics, improving workflow efficiency, and enhancing clinical decision-making. Further optimization and validation on diverse datasets are underway to ensure its robustness and clinical applicability.

Keywords: Artificial Intelligence, Dental Diagnostics, Deep Learning, Dental Radiography, Periodontal Disease

OP 29

EVALUATION OF SALIVARY GLANDS IN PATIENTS WITH HYPOTHYROIDISM WITH CLINICAL AND ULTRASONOGRAPHIC

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Objectives: Hypothyroidism (HT) is defined by decreased thyroid hormone production and thyroid gland function. The aim of this study was to compare salivary flow rates in HT patients and healthy control subjects and to evaluate B-mode ultrasonography (USG) parameters such as size, volume, echogenicity, shear-wave elastography (SWE) values and colour Doppler properties of submandibular and parotid salivary glands.

Methods: A total of 160 right and left submandibular glands and 160 right and left parotid glands from 80 patients (40 each from HT and control) were examined by USG. Echogenicity, parenchymal internal structure, margin features, lymph node presence and dimensional measurements and color Doppler and SWE measurements were made with a linear probe. In addition, stimulated and unstimulated salivary flow rates of each participant were calculated as milliliters per minute (ml/min).

Results: A statistically significant difference was observed between the HT and control groups in terms of echogenicity, margin features, parenchymal homogeneity, color Doppler variables, medio-lateral dimension, SWE mean values in the right submandibular gland; margin features, parenchymal homogeneity, color Doppler variables, SWE mean values in the left submandibular gland; and echogenicity, margin features, parenchymal homogeneity, SWE mean values in the right and left parotid glands ($p < 0.05$). Stimulated and unstimulated salivary flow rates were found to be significantly lower in the patient group. ($p < 0.05$)

Conclusion: HT has been shown to have an effect on salivary glands and salivary flow. USG is a reliable imaging technique for investigating the salivary glands.

Keywords: Hypothyroidism, Salivary Gland, Ultrasonography, Shear Wave Elastography

OP 30

CASE SERIES ON THE USE OF QRAYPEN AND ITERO ELEMENT DEVICES FOR THE DETECTION OF PROXIMAL CARIOUS LESIONS

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Objective: This case series aims to present clinical observations comparing the diagnostic performance of QrayPen, a third-generation QLF-based device, and iTero Element, an intraoral scanner using near-infrared light reflection (NILR), in the detection of proximal caries.

Case Report: Four systemically healthy patients (aged 18–65) presenting with suspected proximal caries were included at the Department of Restorative Dentistry, Marmara University Faculty of Dentistry. Each case was clinically examined and scored using the ICDAS II criteria. The same proximal surfaces were then evaluated using QrayPen and iTero Element. QrayPen provided quantitative fluorescence data, including ΔF_{max} (fluorescence loss), ΔR_{max} (red fluorescence indicating bacterial activity), and QS scores (quantifying caries severity). iTero Element used NILR technology to generate high-resolution images, enabling visualization of lesion depth based on light reflection patterns, without the use of ionizing radiation. In all four cases, QrayPen effectively detected early enamel demineralization in lesions scored as ICDAS 1–2, which were often less distinguishable in iTero Element images. Conversely, iTero Element provided enhanced visualization of deeper lesions (ICDAS 3 and above), allowing more precise assessment of lesion depth. Importantly, QrayPen's ability to detect red fluorescence (ΔR_{max}) provided insight into bacterial activity, offering valuable information about the activity status of the lesion — a parameter not available in iTero's imaging system. Partial diagnostic agreement between the two devices was observed in dentin-involving lesions. Bitewing radiographs were used as a reference standard for validation.

Conclusion: This case series illustrates the complementary roles of QrayPen and iTero Element in the diagnosis of proximal caries. While iTero excels in imaging and estimating lesion depth, QrayPen adds value by analyzing bacterial activity and supporting the assessment of lesion activity. The combination of both systems may improve diagnostic accuracy and clinical decision-making. Further studies with larger cohorts are recommended to confirm these findings.

Keywords: Proximal caries, QrayPen, iTero Element, red fluorescence, NILR

OP 31**MASTICATORY MUSCLES PAIN AND DYSFUNCTION**

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Objectives: Masticatory muscles dysfunction is the most frequent damage to them that is encountered in prosthetics. The most frequent type of muscle dysfunction was accompanied by limitation of the mobility of the mandible and difficulty in masticator. The objective was to determine the causes of abdominal muscle dysfunction and treatment method.

Methods: Study included 227 subjects, age group 18-45 years, who completed a questionnaire prepared for this topic. The collected data were statistically analyzed to verify the correlation between the use of chewing gum and masticatory muscles pain. The treatment of muscle dysfunction and pain is done according to the causes, avoiding trauma, stress, excessive use of gum, drug treatment, analgesics and prosthetic treatment in special cases.

Results: The study showed that 91.7% of the examinees used gum. 45.8% of those examined used up to 30', while 54.2% over 30 minutes. Of the examinees about 69.2% did not feel pain in muscles, and 26% felt pain in masticatory muscles. According to gender, women predominate, they were around 75.5%, while men 24.5%, prevalence $P=0.046$. The examinees had pain in muscle on palpation, which was observed in women 84.70% compared to men, observing nearly 15.3% of them, prevalence $P=0.020$. We observed there is a significant association between gender and use of gum, which was concluded, women are more regular users of gum compared to men $P=0.046$.

Conclusion: We found a statistically significant relationship between gender and masticatory muscles pain, 84.7% of women present with pain and in prevalence values $P=0.020$.

Keywords: Dysfunction Muscle Pain, Emotional Stress, Physical Trauma

PP 41

REGIONAL ODONTODYSPLASIA: A CASE REPORT ON CLINICAL AND RADIOLOGICAL FINDINGS

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Van Yüzüncü Yıl University, Dentistry Faculty, Oral and Maxillofacial Radiology Department.

Objectives: The aim of this study is to raise awareness among dentists about the clinical and radiological characteristics of regional odontodysplasia.

Case Report: A 32-year-old female patient presented to our faculty's Department of Oral, Dental, and Maxillofacial Radiology with complaints of dental caries and missing teeth. Intraoral examination revealed yellow-brown discoloration and thin, hypocalcified enamel on all teeth, with more pronounced involvement in the molar teeth. Irregular pits were observed on the occlusal surfaces of the molars. Panoramic radiography showed teeth with short, thin, and conical roots, along with enlarged pulp chambers and canals. In previously taken intraoral radiographs, the root length of the premolar teeth was within normal limits, whereas the molar teeth exhibited significantly short roots. The patient was referred to the relevant departments for the management of dental caries and missing teeth.

Conclusion: Consistent with the literature, both the primary and permanent dentitions were affected in our patient, and the patient was female. While regional odontodysplasia typically affects only one side of the jaw, in this case, all four quadrants were involved. The clinical and radiological findings were also in line with previous reports. Delayed eruption or impaction may be observed in these teeth. In this patient, aside from the third molars, two additional teeth were impacted. The presence of thin, hypocalcified enamel and dentin, along with enlarged pulp chambers, accelerates caries progression. Therefore, accurate diagnosis and appropriate treatment measures are of great importance.

OP 32

MAXILLARY SINUS DIMENSIONS FOR SEX DETERMINATION IN THE BOSNIAN-HERZEGOVINIAN POPULATION

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Objectives: This study aimed to evaluate sex assessment using cone-beam computed tomography (CBCT) images by analysing the dimensions and volume of the maxillary sinus. Additionally, the study aimed to develop prediction formulas for sex assessment and assess their accuracy for the population of Bosnia and Herzegovina.

Methods: A total of 150 CBCT images were analyzed, comprising 73 males and 77 females, aged 20 to 69 years. The dimensions of the maxillary sinuses—specifically, the mediolateral, superoinferior, and anteroposterior measurements—along with their volumes, were assessed using Romexis software. Measurements were taken from both axial and coronal projections. To develop gender prediction formulas, multiple regression analysis was employed. The accuracy of sex prediction was evaluated using discriminant functional analysis.

Results: Significant differences ($p < 0.05$) in sinus dimensions and volume were observed between sexes. Males had larger maxillary sinuses: left sinus volume was $27.60 \pm 6.87 \text{ cm}^3$ in males versus $22.10 \pm 5.77 \text{ cm}^3$ in females and right sinus volume was $27.48 \pm 7.02 \text{ cm}^3$ in males versus $21.65 \pm 5.42 \text{ cm}^3$ in females. The right maxillary sinus provided the highest accuracy for sex prediction (75%), followed by the left sinus (71%).

Conclusion: The dimensions and volume of the maxillary sinus vary significantly between sexes, with males typically having larger sinuses. A gender prediction formula based on the right maxillary sinus offers the highest accuracy for sex prediction, achieving 75%. This formula could be a valuable tool in forensic applications specific to the Bosnian population when other methods are not available.

Keywords: maxillary sinus, sex determination, forensic identification, CBCT, sexual dimorphism



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OP 33**EFFECT OF DIFFERENT SUPPORT REMOVAL METHODS ON OCCLUSAL MORPHOLOGY OF 3D-PRINTED CROWNS**

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Objectives: The aim of this study is to evaluate the surface deformations caused by removal of printing support structures before and after post-curing stages; by comparing the 3D deviation values of each sample with the reference CAD data(RefCAD).

Methods: Single unit shoulder preparation(FDI 26) was performed on typodont, scanned with extraoral scanner to obtain the RefCAD in STL format. Data was processed and printed as a dental model. 20 identical temporary crowns were manufactured. 10 specimens were detached from the support structures before post-polymerisation (Group A), while 10 were detached after post-polymerisation (Group B). Samples were scanned in the same conditions, STL files were imported into a metrology-grade analysis software, aligned and compared with RefCAD to obtain surface deviations. Mann-Whitney U test was performed to evaluate each data set.

Results: Removing supports before post-curing lead to significant negative deviation from the reference CAD, potentially resulting in poor occlusal contacts. While the opposite caused a significant positive deviation, which may lead to premature contacts.

Statistical analysis revealed that Group A had significant negative surface deviation compared to RefCAD, while Group B had significant positive surface deviation with a mean of $\pm 15\%$ ($p < 0.1$)

Conclusions: Due to the nature of 3D printing systems, supports are predominantly positioned occlusally, making the support removal technique critically important. The timing of support removal plays an essential role in the surface accuracy of 3D-printed dental crowns. Strategically placing supports away from critical occlusal contact areas may help preserve the planned occlusal contact pattern.

Keywords: 3D printing, printing supports, support removal

OP 34

CLINICAL CHALLENGES IN METAL AND PORCELAIN TRY-IN STAGES OF PROSTHODONTIC TREATMENTS

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Objectives: The metal and porcelain try-in stages are essential for ensuring the accuracy, function, and aesthetics of prosthetic restorations. In student clinics, various challenges arise during these stages, affecting treatment outcomes. This study aims to clinically evaluate common issues encountered during metal and porcelain try-ins in student-performed cases and propose solutions to enhance prosthodontic education and patient care.

Methods: A clinical assessment was conducted on prosthodontic cases treated by dental students in a university clinic. Each case was systematically evaluated during the metal and porcelain try-in stages, focusing on framework fit, marginal adaptation, occlusal relationships, midline alignment, and aesthetic outcomes. Observations were recorded, and necessary adjustments were identified to optimize prosthetic function and appearance.

Results: The evaluation revealed frequent issues in the metal try-in stage, including improper framework fit, marginal discrepancies, occlusal imbalances, and midline misalignment. During the porcelain try-in stage, common problems included shade mismatches, chipping, seating difficulties, and occlusal inaccuracies. These challenges were primarily linked to insufficient preclinical training, technical difficulties, and the need for improved clinical supervision. Adjustments were made where necessary to enhance restoration fit and function.

Conclusion: Addressing the recurring challenges in metal and porcelain try-in stages requires a structured approach, including enhanced faculty supervision, digital technology integration, and refined preclinical training. Implementing these improvements can significantly enhance students' clinical competence and improve prosthodontic treatment outcomes in dental education.

Keywords: metal try-in, porcelain try-in, clinical assessment, dental education, prosthodontics

OP 35**POST-RETAINED, CANTILEVERED FIBER ADHESIVE BRIDGE WITH HYBRID CERAMIC PONTIC: TWO-YEAR FOLLOW-UP**

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Objective: Adhesive bridges are preferred over implants in patients with incomplete development, but retention issues are frequently encountered. This report presents a post-retained, cantilevered adhesive bridge for the upper lateral incisor gap in a young patient.

Case Report: A 15-year-old female patient with a history of trauma presented with a residual root covered by healthy gingiva at upper right lateral region. Adjacent central tooth had undergone root-canal treatment, and the canine was intact. It was decided to place an adhesive bridge until development was completed for implant treatment. The residual root was retained in the mouth to protect the alveolar bone. The post-space was prepared with drills up to coronal half of the central root both to improve retention and to design a cantilevered bridge without the need for any lingual slot preparation on the intact canine. Digital impression was taken and designed a hybrid ceramic pontic to achieve better aesthetics and bonding to the glass fiber-reinforced composite. A sufficient length of fiber was cut, shaped to fit the post space, and bent at the connector area. The hybrid ceramic pontic was bonded to the fiber, and the fiber was placed into the post space using dual-cure resin cement. No issues, except for slight discoloration, were observed during the 2-year follow-up.

Conclusions: If the adjacent tooth has root-canal treatment, utilizing the post-space for improved retention can be an effective method to overcome retention problems of the adhesive bridge, and protect the other adjacent tooth with a cantilever design.

Keywords: Resin-Bonded Bridge, Cantilever, Post, Fiber Reinforced Composite, Hybrid Ceramic

OP 36

CLINICAL EVALUATION OF INDIRECT CAD/CAM RESTORATIONS IN POSTERIOR TEETH: A CASE REPORT

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Objectives: Despite their widespread use in dentistry, direct resin composite restorations have disadvantages, such as polymerization shrinkage, leading to microleakage, secondary caries, and fractures, particularly in large restorations. To address these issues, indirect CAD/CAM restorations are increasingly preferred. This case report aims to evaluate the clinical success of indirect CAD/CAM restorations in posterior teeth with root canal treatment and extensive defects.

Case Report: Indirect CAD/CAM restorations were applied to five patients with significant structural loss in posterior teeth due to caries and prior root canal treatment. After obtaining informed consent, existing restorations were removed, and caries were cleaned. Gingival margin elevation was performed using a universal flowable composite (G-aenial Universal Flow, GC, Japan) for cavity margins below the gingival level. Prepared teeth were scanned with an intraoral digital scanner (Trios 3, 3Shape, Denmark), and the scans were sent to the laboratory for design and milling. The restorations, made from lithium disilicate-based CAD/CAM blocks (Amber Mill, HASS, Korea), were tried in, polished with polishing rubbers (Eve Diapol, Germany), and cemented using self-adhesive dual-cure resin cement (Panavia SA, Kuraray, Japan).

Conclusions: After 1- and 3-year follow-ups, no clinical failures were observed. The restorations met patient expectations and showed reliable performance. Long-term follow-up is recommended to assess durability.

Keywords: CAD/CAM restorations, Lithium disilicate, Posterior teeth, Gingival margin elevation, Resin cement

OP 37**TREATMENT WITH PORCELAIN LAMINATE VENEERS OF A PATIENT WITH OPEN BITE AND DIASTEMA ANOMALIES**

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Objectives: Functional disorders associated with open bite and morphologic irregularities are treated at different stages of growth and development and with different treatment methods. While dental open bite can be treated with orthodontic and prosthetic applications, orthognathic surgery, orthodontic treatment and prosthetic treatment can be applied individually or together in the treatment of skeletal open bite. Porcelain laminate veneer restorations are frequently used to correct dental anomalies and to solve colour-related problems. This case report presents the prosthodontic management of a patient afflicted with an anterior open bite and diastemas.

Case Report: The 35-year-old female patient was thoroughly apprised of the available treatment options, and a consensus was reached regarding the implementation of 12-member porcelain laminate veneer restorations on the anterior teeth of the maxilla and mandible. The patient's consent was obtained for the teeth with diagnostic mock-up. Following the completion of tooth cutting on the mock-up, gingival retraction was performed. Digital impressions and bite recordings were taken using an intraoral camera (Omnicam; Sirona Dental Systems). Porcelain laminate restorations were digitally designed using Exocad Dental CAD software (Exocad GmbH) and manufactured from lithium disilicate ceramic ingots (IPS e.max Press, Ivoclar Vivadent) by pressing (Programat EP 3010, Ivoclar Vivadent). The restorations were then evaluated for colour, shape and surface properties and cemented using an adhesive composite cement (Variolink Esthetic LC, Ivoclar Vivadent).

Conclusions: During the clinical follow-up of the restorations, the patient had no complaints in terms of aesthetics, function and phonation.

Keywords: porcelain laminate veneer, open bite, diastema, lithium disilicate ceramic

OP 38**REHABILITATION OF RIDGE DEFECT IN A PATIENT WITH UNILATERAL CLEFT LIP USING ANDREW'S BRIDGE**

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Objective: The aim of this case presentation is to restore the aesthetic, functional, and phonatory concerns of a patient with a cleft lip and palate and significant bone resorption, using fixed and removable prostheses.

Case Report: A 35-year-old female patient with a cleft lip and palate presented to the Department of Prosthodontics at Selcuk University Faculty of Dentistry, seeking improvement in her aesthetic concerns as well as speech and chewing functions. Cleft lip and palate is the most commonly observed anomaly in the craniofacial region. It results from the failure of fusion between the lateral nasal process, originating from the first pharyngeal arch, and the maxillary process with the premaxillary segment. Intraoral and radiographic examinations revealed that this congenital condition has led to insufficiently developed, unsupported crests and tooth loss in the anterior region of the patient's upper jaw. According to the Federation Dentaire Internationale (FDI) notation, the patient has teeth numbered 15,16,17,25,26 in the upper jaw, 37,36,35,33,32,31,41,42,43,45,46,47 in the lower jaw.

Conclusions: Due to insufficient bone volume for dental implants or the inability of potential crown restorations on implants to rehabilitate the ridge loss and provide lip support, a fixed partial denture was planned using the existing teeth in the upper jaw. Additionally, to address tissue loss, aesthetic concerns, and functional rehabilitation in the anterior region, an Andrew's Bridge system was applied, supported by the fixed partial denture. Regular follow-up appointments were scheduled for the patient, and subsequent evaluations indicated that the patient reported satisfaction with the provided prosthesis.

Keywords: Andrew's Bridge, Prosthetic Rehabilitation, Cleft Lip and Palate, Ridge Defect

OP 39**PARTIAL FIXED PROSTHETIC REHABILITATION OF ECTODERMAL DYSPLASIA**

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Objectives: Ectodermal dysplasia is an inherited pigment that can replace tissues other than the ectoderm, such as skin, hair, sweat, sebaceous glands and teeth. In ectodermal dysplasia, dental findings can vary from hypodontia to anodontia. The incisors are conical in shape, and the cusps of the molars have an atypical appearance. The aim of this case report was to improve the aesthetic and functional concerns of a patient with ectodermal dysplasia and to arrange the implant prosthetically after cleaning.

Case Report: A 20-year-old female patient with ectodermal dysplasia applied to Prosthodontic Department complaint with aesthetic concerns and congenital tooth loss. Following the anamnesis, clinical and radiological examinations, congenital tooth loss, persistent milk teeth, and morphological and dimensional anomalies in permanent teeth were observed. The clinical examination revealed the presence of a persistent primary tooth in the position of the 12th tooth, along with congenital absence of the maxillary lateral, maxillary, and mandibular first premolar teeth. Five implant surgeries were performed on the edentulous areas of our patient. When we numbered the teeth to eliminate the missing side teeth, zircon-supported ceramic fixed partial dentures were applied to the area between teeth 13-23, zircon-supported implant-supported prosthesis was applied to teeth 14 and 24, and metal-supported porcelain veneer were made the mandible areas between numbers 34-44. Follow up procedure was started clinically.

Conclusion: In this case, the patient's functional, phonetic and aesthetic problems were rehabilitated. Quality of life was increased with implant-supported and tooth-supported prosthetic restorations.

Keywords: Implant, Zirconium, Ectodermal Dysplasia

OP 40**SOFT TISSUE CONTOURING WITH PROSTHESIS IN THE AESTHETIC AREA-6 MONTH FOLLOW-UP: CASE REPORTS**

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Objective: Dental implant treatment is one of the most preferred treatments for tooth deficiency. Due to current dental implant treatments, osseointegration period have been shortened and the implants can be guided by temporary prostheses and peri-implant soft tissues. In implant-supported restorations in the anterior region, both the aesthetic problems of the patient can be treated and the soft tissue contour around the implant can be shaped similar to the emergence profile of the natural tooth. In cases where implants cannot be loaded immediately, the soft tissue can be shaped with the help of temporary restorations prepared following conventional healing.

Case Report: In these case reports, impressions were taken in both cases for the construction of provisional prostheses following implant treatment in the anterior region, and a temporary crown with a permanent abutment (Ti-base) was applied to create a soft tissue contour, and gingival healing was followed. In the second case, additional periodontal surgery was performed during gingival healing and a longer period was waited, and then permanent restorations were made and followed up for 6 months.

Conclusion: The patients' permanent prostheses were found to be functionally and aesthetically acceptable. No complications were found in the hard and soft tissues around the implant during the follow-up period.

Keywords: Soft tissue contouring, implant, aesthetic zone

OP 41**IMMEDIATE LOADING WITH SOFT TISSUE RECONSTRUCTION USING IMMEDIATE INSERTION OF EXTRACTED TOOTH CROWN**

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Objectives: This case report details the esthetic and functional rehabilitation of a 22-year-old woman who presented bone resorption, gingival recession, and tooth mobility in the maxillary right central incisor following orthodontic treatment.

Case Report: The treatment plan included the extraction of the tooth, immediate implant placement, and the use of the patient's natural tooth crown for immediate provisionalization to maintain gingival esthetics and create an ideal emergence profile. After extraction, an implant was placed in the socket of the tooth, and the crown of the extracted tooth was prepared to accommodate a standard abutment, enabling immediate loading. After the following 3-month healing period, digital impressions were taken for the final implant-supported crown. The final restoration involved a zirconia hybrid abutment and a separate lithium disilicate crown.

Conclusions: The treatment approach successfully preserved the gingival architecture, achieved an ideal emergence profile, and provided esthetic and functional outcomes. The patient showed no complications at 3-month, and 1-year follow-up visits. This case demonstrates the effectiveness of immediate implant placement and provisionalization using the patient's natural tooth in maintaining esthetic and functional outcomes in the anterior maxilla.

Keywords: Soft-tissue management, Ti-base crown, Extracted tooth, Zircon abutment

OP 42**IMMEDIATE LOADING ON MANDIBULA AFTER SIX-IMPLANT PLACEMENT: DIGITAL IMPRESSION/DIGITAL FABRICATION**

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Objection: The aim of the case report was to present immediate loading after placement of mandibular six-implant in edentulous mandible. It has been suggested immediate loading provides patient comfort by replacing function and esthetics.

Case report: A 61-year-old female patient was applied for prosthetic treatment with generalized bone lose in posterior edentulous area and mobil remaining teeth in anterior mandible. After intraoral and radiographic examination (panoramic film + computerized tomography), compromised anterior teeth were extracted and six-implant were placed immediately (diameter of 4.1mm and lenght of 10 mm for 32 and 43 numbered teeth, diameter of 4.8mm and lenght of 10 mm for 34 and 44 numbered teeth, diameter of 4.1mm and lenght of 8 mm for molar teeth, Meisinger). Multi-unit abutments were placed in accordance with the gingical levels following implant placement. The patient was waited 3-hour for bleeding control after surgery. Digitally impression was taken with an intraoral scanner. (3Shape, TriOs5) Immediate fixed-prostheses was printed from rosin (alias temp c&b a1) by using 3D printer (anycubic m3 printer). Immediate prosthesis was adapted six-hour after implant placement with an additional anesthetics. Final adaptation of the immediate prosthesis was provided by removing any occlusal interferences in centric, protrusive and lateral movements.

Conclusion: Although, immediate loading technique was achieved sufficient esthetic and functional outcomes. Even though long-term clinical studies should be evaluated with several cases

Keywords: Digital Impression, Edentulism, Immediate Loading

OP 43

TREATMENT OF IMMEDIATE LOADING PATIENTS WITH TEMPORARY FIXED PROSTHETIC RESTORATIONS: CASE REPORTS

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Objective: Implant applications in dentistry are often preferred to restore function and aesthetics lost due to tooth loss due to their high success and survival rates. In recent years, the increasing aesthetic expectations of both patients and dentists have increased the importance of the prosthetic phase of oral implantology. After implant surgery, the patient has to wait for osteointegration, which causes both functional and aesthetic problems for the patient. For patients with appropriate indications, planning a temporary restoration provides comfort to overcome this process.

Case Reports: In these case reports, the planned maxillary surgical and prosthetic phases were completed in the most appropriate sequential periods. In the first case, implants were placed in a fully edentulous maxilla following surgical tooth extraction due to periodontitis, followed by immediate impression taking, fabrication within 24 hours, temporary by immediate impression taking, fabrication within 24 hours, temporary prosthetic trial on the patient and appropriate occlusion and soft tissue adaptations. In the second case, immediate implant loading was performed following tooth extraction due to periodontitis. Impressions were taken, fabrication completed and delivery to the patient within 24 hours.

Conclusion: Functional and esthetic patient satisfaction was observed with immediate provisional restorations following implants placed with immediate loading. Soft tissue orientation was also beneficial.

Keywords: Immediate Loading, Immediate Provisional Fixed Restoration, Dental Implant

OP 44**REHABILITATION OF A CASE WITH AGGRESSIVE PERIODONTITIS USED IMMEDIATE ALL-ON-FIVE HYBRID PROSTHESIS**

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Objective: In the treatment of generalised aggressive periodontitis, immediate implant placement and loading protocol is important to restore the patient's aesthetics, phonation and function. The aim of this case report is to show aesthetic/functional concerns and investigate the concept of immediate hybrid prosthesis.

Case Report: A systemically healthy 33-year-old male patient presented to our clinic with severe dental pain and tooth mobility. After anamnesis, clinical and radiological examinations, generalised aggressive periodontitis was detected. Extraction of all teeth was decided because of the severe tooth mobility. After extraction, dental implant placement and temporary immediate all-on-five hybrid prostheses (for maxilla and mandibula) were planned to be performed on the same day. For the primary stability of the implants, it was ensured that the insertion torque of each implant was 40 Ncm and/or ISQ value >70 and the implant was placed in the correct 3D position. Immediately after the implants were placed, multi-unit abutments were selected and torqued. Then, an open-tray impression was taken with multi-unit impression posts. The immediate hybrid prosthesis loading was made within 24 hours. New Generation Low Level Laser Therapy (LLLT) was applied after implant surgery for rapid healing and osseointegration of dental implants.

Conclusion: In this case, the patient's anxiety of toothlessness was minimised with immediate all-on-five hybrid prostheses application. Functional, phonetic and aesthetic concerns of the patient were eliminated and quality of life was improved.

Keywords: Hybrid Prosthesis, Edentulism, Aesthetic, Temporary

OP 45

REHABILITATION OF COMPLETE EDENTULISM WITH MINI-IMPLANT SUPPORTED REMOVABLE PROSTHESIS

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Objectives: This case report aims to present the planning, implementation and clinical results of a mini-implant supported removable prosthesis in a patient with a completely edentulous and excessively resorbed lower jaw.

Case Report: A 65-year-old female patient applied to our clinic with the complaint that she could not chew with her complete dentures. The patient's anamnesis revealed that she had no medical problems. In the intraoral clinical examination, it was determined that she had a lower jaw with severe bone resorption. Preoperative radiographic examinations (panoramic X-rays and CBCT scans) revealed that there was insufficient bone volume for standard implants. After discussing treatment options in a multidisciplinary manner, it was decided to apply mini-implants to support the removable dentures. It was decided to place 4 one-piece (monoblock) ball-headed mini-implants (MODE Medikal Limited, Turkey, dimensions 2.5x12.00 mm) in the anterior region of the patient's lower jaw. After the determined mini-implants were surgically placed under local anesthesia and after a healing period of approximately three months, a conventional total denture was placed in the upper jaw and implant-supported removable dentures were placed in the lower jaw. In the 1st and 2nd year clinical follow-ups of the patient; aesthetics, function, phonation and patient satisfaction were evaluated.

Conclusions: Mini-implant supported removable prostheses offer a low-cost treatment option with minimal surgical intervention for elderly patients with severely resorbed edentulous jaws. This treatment plan provides better retention and stability than conventional removable prostheses.

Keywords: mini-implant, removable prosthesis, dental implant, monoblock

OP 46**ALTERNATIVE TREATMENT FOR MALPOSITIONED IMPLANTS IN THE ANTERIOR REGION WITH TI-BASE RESTORATIONS**

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Objectives: Anatomical limitations may cause the placement of a dental implant improperly. The presence of a labially positioned screw hole restricts the design of monolithic ceramic restorations require complicated solutions for implant-supported fixed prosthetic restorations (ISFPR). In this case report, an alternative treatment option for the malpositioned implants in the aesthetic region for two different patients with ti-base ceramic restorations.

Case Report: Immediate loading procedures were applied using a full digital workflow. While an angulated ti-based solution wasn't available in both cases to solve the labially positioned screw hole, an improper restoration width-restricted the use of a common two- piece restoration using a ti-based ceramic abutment and ceramic ISFPRS. In the first case, dental implants were placed for 13 and 23 tooth regions to solve teeth deficiencies of 13,12 and 23, 22 with cantilevered restorations. Ti-bases were selected for teeth 13 and 23, cantilevered monolithic zirconia ISFPRs were designed with a partial feldspathic veneer application for lateral incisors and feldspathic laminate veneer restorations for the canines to mask the labial screw holes. All restorations were designed in the same session. In the second case, 12 and 22 numbered teeth deficiencies were treated with the same procedure and screw holes of monolithic zirconia ISFPRs were also masked with feldspathic laminate veneer restorations. In this case, the laminates were designed in a second session using additional digital impressions after the zirconia ISFPRs were placed.

Conclusions: The second case with an additional design session has better esthetic outcomes. No complication has been detected during the 6-month follow-up.

Keywords: digital workflow, two piece restorations, ti-based ceramics

OP 47**A NOVEL AND ALTERNATIVE COMPOSITE MATERIAL FOR IMPLANT-SUPPORTED HYBRID PROSTHESES: CASE REPORT**

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Objective: Metal-free restorations can be fabricated using CAD/CAM systems that provide technical precision, ease of design and fabrication with a fully-digital workflow. High Impact Polymer Composite (BreCAM.HIPC) is an amorphous, cross-linked composite. Thanks to their gingival compatibility, low elastic modulus, color stability, plaque and wear resistance, they can be used as a successful hybrid prosthesis material without the need for any other veneer material.

Case Report: A 65-year-old completely edentulous patient had 4 implants placed in the upper jaw and 6 implants placed in the lower jaw. During the osseointegration period, 3 implants in the lower jaw failed. It was planned to place 2 new implants in the lower jaw and load it with an immediate prosthesis and to make the permanent prosthesis for the upper jaw. It was decided to fabricate the permanent prosthesis with HIPC and the temporary prosthesis with PMMA. For the permanent prosthesis an impression was made with an intraoral scanner at the multiunit level. The relationship between the jaws was also determined digitally. These scans were combined in a CAD software. The reinforced framework of the restoration and the suprastructure made of HIPC were fabricated monolithically with a CAD/CAM program. Gingival morphology was achieved by using composite material and the esthetic arrangements were made by painting method.

Conclusions: HIPC can be used as a good implant-supported hybrid prosthesis material due to their superior physical and optical properties. After 6 months of follow-up, the patient achieved esthetically and functionally satisfactory results.

Keywords: implant-supported fixed prosthesis, digital workflow, monolithic restorations

OP 48**FROM EDENTULISM TO DENTITION: A REPORT OF TWO CHALLENGING CASES**Seniha Kısakürek*Department of Prosthodontics, Faculty of Dentistry, University of Mugla Sıtkı Kocman, Mugla, Türkiye*

Objectives: Implant-supported full-arch fixed prostheses enhance the quality of life for edentulous patients, providing advantages such as stability, aesthetics, and function. However, achieving a successful outcome requires a precise prosthetic assessment and surgical staging. This study reports the treatment procedures of two patients who underwent full-arch implant-supported fixed prosthetic treatment on implants placed at unfavourable angles.

Case Reports: The first and second patients underwent maxillary full-arch rehabilitations with 6 and 4 implants, respectively. The initial step involved optimizing implant angulation by achieving possible parallelism through the use of multi-unit abutments to simplify the rehabilitation process. All impressions were obtained using the open-tray technique with pattern resin jigs stabilized intraorally. Intermaxillary records were taken utilizing base plates and wax rims. Following the try-in stages, the restorations were fixed onto the arches. Patients reported satisfaction during both the first and sixth-month follow-ups, with no complications observed.

Conclusion: In cases where compliance with prosthetic planning can not be maintained during implant surgery, the prosthetic phase often becomes highly complex and challenging. However, successful outcomes can still be achieved through the clinician's experience and strong collaboration with the laboratory. It is recommended to use a surgical guide during planning and implant placement to minimize reliance on chance and ensure predictable results.

Keywords: Implant-Supported, Implant, Fixed Prosthesis, Multi-Unit Abutment, Full-Arch Rehabilitation

OP 49

ASSESSMENT OF SATISFACTION AND ORAL HEALTH-RELATED QUALITY OF LIFE IN EDENTULOUS PATIENTS

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Objective: This study compares the satisfaction levels and oral health-related quality of life (OHRQoL) of completely edentulous individuals using conventional complete dentures in both jaws with those using conventional dentures in the maxilla and implant-supported overdentures in the mandible, utilizing the Geriatric Oral Health Assessment Index (GOHAI).

Methods: Sixty completely edentulous individuals participated. Demographic data, including age and gender, were recorded. All patients completed the 12-item GOHAI questionnaire assessing functional limitations, psychosocial impacts, and oral health-related discomfort. Reasons for prosthesis preference were also documented. Data were analyzed using descriptive and thematic analysis methods.

Results: The mean participant age was 70 years, with equal gender distribution (50% male, 50% female). The GOHAI score was higher in the implant-supported overdenture group (54.7) than in the conventional denture group (53.36), suggesting better OHRQoL. The implant-supported overdenture group scored 17.6 for functional limitations, while the conventional denture group scored 16.4. Psychosocial impact scores were similar (23.13 vs. 22.7). The most reported reason for choosing conventional dentures was "avoiding invasive procedures due to systemic conditions," while implant-supported overdenture users cited "greater retention" as the primary reason.

Conclusion: Implant-supported overdentures demonstrate superior functional outcomes and may enhance patient satisfaction compared to conventional dentures. However, both prosthesis types yielded similar psychosocial impact scores. These findings provide valuable insights for clinical decision-making in prosthetic rehabilitation.

Keywords: Complete Edentulism, Implant-Supported Overdenture, Conventional Complete Denture, Patient Satisfaction, GOHAI Questionnaire

OP 50**OCCLUSAL LAMINATES: LITERATURE REVIEW**

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Objective: Occlusal laminates are thin restorations placed on occlusal surfaces of teeth. They are more conservative than our traditional veneers and requires less preperation. Most commonly used material for occlusal veneers is lithium disilicate (IPS e.max) due to its high strength, resistance, and esthetics. Lithium disilicate veneers perform well in high occlusal pressure areas, making them a good choice for occlusal applications. Hybrid materials might be considered as occlusal laminate material for patients with parafunction or high chewing force. The aim of the study was to investigate the clinical performance of occlusal porcelain laminate veneers.

Methods: Electronic and manual literature researches were performed in Pubmed, Medline, Embase, Central, and Scopus databases for randomized controlled trials and retrospective and prospective cohort studies comparing any two of three preparation designs, material choosing. Subgroup analyses, sensitivity analysis, and evaluation of publication bias were performed if possible.

Results: Of 100 screened articles, were evaluated. There restricted articles were found about occlusal porcelain laminate veneer restorations clinical performance and following up clinically. According to literature review occlusal laminates have recently become a preferred restoration because they require minimal preparation and yet have sufficient resistance and esthetics.

Conclusions: Zirconium oxide and and lithium disilicat occlusal laminates are most durable option while leucite ceramics are the least. As the thickness increases, material durability generally increases such as zirconium oxide should limited to 1mm and hybrid ceramics and lithium disilicats should be at least 1.5mm thick to resist occlusal force. It can be concleded that this review will be prior a valuable clinical research of this treatment.

Keywords: Occlusal laminate, E-max, Conservative

OP 51

REARRANGEMENT VERTICAL DIMENSION LOSS WITH DIFFERENT PROSTHETIC APPROACHES: A CASE SERIES

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Objectives: The aim of this case series was to rearrange the vertical dimension through full-mouth prosthetic restorations in three patients with widespread erosions and abrasions to regain both occlusion and esthetic appearance.

Case Report: Patients presented to our clinic due to chewing difficulties and esthetic concerns. Following radiological, intraoral and extraoral examinations, significant teeth structure and vertical dimension loss were identified in the patients. The amount of vertical dimension loss was determined using the Niswonger method. The following steps were taken after discussing all possible treatment options and materials for resolving the issue. Teeth with insufficient crown length were extended using composite resins and post applications to improve retention. After the preparations were completed, impressions were taken using either digital or conventional methods. Provisional restorations were fabricated based on the newly determined ideal vertical dimensions. These provisional restorations were monitored symptomatically for a period of two weeks. After the patients adapted to the new vertical dimension, permanent prosthetic restorations were accomplished utilizing fixed and removable prostheses. To prevent potential complications, occlusal splints were fabricated, and patients were instructed to wear the splints for eight hours daily. Patients were scheduled for follow-up visits at weeks 1, 2, and 4. Tomographic images were obtained to assess the adaptation of the temporomandibular joints.

Conclusions: No joint pains, restriction of mandibular movements, or chipping were observed after follow-ups. The tomographic data showed no pathological abnormalities in the temporomandibular joints.

Keywords: Abrasion, Vertical Dimension, Occlusal Splint, Bruxism, Retention

OP 52

INNOVATIVE TREATMENT APPROACH IN TEMPOROMANDIBULAR JOINT DISC DISPLACEMENT WITHOUT REDUCTION

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Objectives: Temporomandibular joint (TMJ) disorders encompass a range of conditions that hinder jaw functionality. One specific type, disc displacement without reduction (DDNR), arises from the misalignment of the disc-condyle complex, leading to symptoms such as pain, restricted mouth opening, and functional challenges. This case report focuses on conservative treatment approaches aimed at reestablishing condyle-disc concordance in a female patient diagnosed with DDNR.

Case Report: A thorough clinical assessment indicated considerable pain in the left TMJ, limited mouth opening, a dentin-enamel fracture in the left lower first molar, and aphthous stomatitis on the tongue. The relationship among the condyle, disc, and eminence was analyzed using pre-treatment radiological images (magnetic resonance, x-rays, and ultrasound). Results revealed anterior disc displacement in the left TMJ concerning the condyle. Digital occlusal analysis was conducted, and selective wear was performed to address the dentin-enamel fracture. Low Level Laser Therapy (LLLT) was used to relieve joint and aphthous pain, followed by one week of physical and medical therapy. Despite these interventions, no significant improvements in mouth opening was observed. Upon re-evaluation, a stabilization splint was implemented, along with occlusal adjustments, leading to the restoration of proper alignment between the condyle and disc.

Conclusion: While LLLT appears promising for pain management and functional enhancement in TMJ dysfunctions, the limitations of this method necessitate personalized treatment plans. A multidisciplinary approach is vital, and ongoing research is essential for developing standardized treatment protocols to improve patient outcomes across various populations.

Keywords: Temporomandibular joint disorders, Low-Level Laser Therapy, Stabilization splint

OP 53**PROSTHETIC MANAGEMENT OF A PATIENT WITH PITUITARY DWARFISM USING DIGITALLY FABRICATED DENTURES**Gizem Şahin*Department of Prosthodontics, School of Dentistry, Bezmialem Vakıf University, Istanbul, Türkiye*

Objectives: Pituitary dwarfism occurs when the body can not properly use growth hormone from the pituitary gland, often due to a loss of function in the adenohypophysis. Dental issues such as hypodontia, delayed eruption, and abnormal tooth shape are common in these patients.

Case Report: A 20-year-old woman with pituitary dwarfism presented to the Department of Prosthodontics at Bezmialem Vakıf University due to edentulism and associated difficulties with eating. CT images revealed inadequate bone volume for dental implant placement, thus dentures were indicated for both upper and lower jaw. Impressions were obtained with an intraoral scanner. Resin models and wax rims were created from these scans. For functional impression, silicon based impression material (light body) was applied into the wax rim bases and placed in patient's mouth while it was still in fluid consistency, then the bases scanned again. Vertical occlusal dimension and bite registration also determined by these wax rims. Using Exocad software, selected tooth shape size reduced to fit the patient's jaw, and the alignment completed digitally. After required adjustments were made in the design program according to try-in appointment data, permanent dentures digitally produced.

Conclusion: Digitally fabricated dentures with digital impressions are an acceptable alternative solution for patients with microstomia who have difficulty with traditional impression techniques.

Keywords: Digital impression, Denture, Microstomia

OP 54**SURGICAL AND PROSTHETIC REHABILITATION OF HEMANGIOMA PATIENTS: A CASE REPORT**

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Objective: The acceptance and success of implant-supported prostheses in hemangioma patients has been studied. Hemangioma vascular malformation is associated with a high risk of bleeding and implant placement failure, which limits prosthetic reconstruction. In these patient groups, appropriate prosthetic rehabilitation is planned to prevent high bleeding risk and tissue trauma. A detailed medical history should be taken before procedures in these patient groups. traumatic procedures should be avoided in patients.

Case Report: A 62-year-old man with systemic hemangioma underwent 4 implants for tooth loss in his mandible. After the surgical procedure was completed, a bar-supported removable prosthesis was applied to the mandible. Metal-supported crowns and removable removable prosthesis were applied to the maxillary region of the patient. Due to the high bone loss in the right mandibular region of the patient, narrow diameter implants were applied. Normal implants were placed in the left mandibular region. Screw abutments with two different systems were used in the patient.

Conclusions: Multi-disciplinary cooperation should be established for extensive edentulous case. Overlay type prosthesis incorporating several types of attachments can be suitable for complex case because of acceptable results and easy maintenance.

Keywords: hemangioma, dental implant, prosthetic rehabilitation

OP 55**PROSTHETIC REHABILITATION OF A COMPLETELY EDENTULOUS PATIENT WITH CONGENITAL CLEFT SOFT/HARD PALATE**

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Objective: The Cleft Lip and Palate (CLP) is variation of a type of clefting congenital anomaly caused by abnormal facial development during pregnancy. The etiology of CLP is unknown. Cleft lip and palate leads to esthetic, phonetic, functional and important psychological problems for the patient. The primarily aim of prosthetic rehabilitation is to close the maxillary defect and eliminate such problems by use of different bulb designs.

Case Report: A systemically healthy 49-year-old male patient presented to our clinic with edentulism. Clinical and radiological examination revealed that the patient had congenital cleft soft and hard palate and was completely edentulous. The patient had an old complete denture in the mandible and a u-plate complete denture in the maxilla. The stability of these old prostheses is insufficient. The prosthesis in the maxilla did not cover the cleft soft and hard palate. It was decided to make a complete denture in the mandible and an opturator in the maxilla to cover part of the cleft area.

Conclusion: The patient's aesthetic, phonetic and functional needs are met. Patient comfort is ensured and quality of life is improved.

Keywords: hemangioma, dental implant, prosthetic rehabilitation

OP 56**CASE REPORT: CAN VENEERS REPLACE CROWNS IN DISCOLORED TEETH?**

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Objectives: The restoration of discolored anterior teeth remains a challenge in prosthodontics, especially when balancing esthetics and tooth preservation. While full-coverage crowns have long been the standard solution, the advancement of veneer materials and adhesive protocols offers a minimally invasive alternative.

Case Report: This case report presents a 26-year-old patient with a previously bleached but unsatisfactorily esthetic central incisor (21). A veneer restoration was chosen over a crown to preserve tooth structure while achieving optimal color matching and translucency. Using a treatment plan involving wax-up evaluation and silicone key mock-up (APT concept), a minimal preparation technique was employed. After taking analogue impressions with A-silicone and two cord technique, three different veneer materials - lithium disilicate, feldspathic ceramic on refractory die, and feldspathic ceramic on platinum foil were tested. The best esthetic integration was achieved with the feldspathic veneer fabricated on platinum foil, allowing for optimal color blending and natural translucency.

Conclusion: The case highlights the advantages of ultra-thin veneers, achieving excellent esthetics with only 0.5 mm of tooth reduction. This case highlights the importance of material selection and preparation techniques in veneer restorations. Veneers should be considered the first-line option for single discolored teeth, reserving crowns for cases with extensive structural loss.

Keywords: Veneers, Crown, Tooth Discoloration, Feldspathic Ceramic



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OP 57

EVALUATION OF COLOR STABILITY OF DARK REMINERALIZED ENAMEL AFTER BLEACHING

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Objectives: To examine the color and diagnodent value changes after bleaching and then recoloring of dark remineralized enamel.

Method: 24 teeth with dark remineralized enamel were bleached with Ultradent Opalescence Boost PF %40 office whitening agent. Before bleaching (T0), immediately after (T1), after waiting in coffee for 3 months and brushing (T2), color (visual and spectrophotometer) and diagnodent measurements were made. Color measurements were made from the dark lesion (Lesion) and non- (Intact) regions of the teeth. Color change values of intact and lesion regions in other periods compared to the beginning (ΔE_{00-1}) and between intact and lesion regions in the same period (ΔE_{00-2}) were calculated. The color difference between intact and lesion regions was also scored visually. (ΔE_{00-1}), (ΔE_{00-2}), L^* , a^* , b^* values, visual color difference and diagnodent values were statistically analyzed using One-Way ANOVA and Dependent Sample T-Test. ($p < 0.05$)

Results: Color change in lesion areas was greater than intact areas. Color difference between intact and lesion area (ΔE_{00-2} and visual assessment) decreased after bleaching and maintained this decrease after recoloring. High diagnodent values in dark areas decreased in T2 but remained high in samples with less bleaching.

Conclusion: The color of dark remineralized enamel became compatible with adjacent intact enamel after bleaching and maintained their color harmony after recoloring. Diagnodent value is significantly affected by tooth color.

Keywords: Bleaching, Color stability, Dark remineralized enamel

OP 58

COLOR STABILITY OF DARK COLORED ARRESTED CARIOUS LESIONS AFTER BLEACHING TREATMENT

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Objective: The aim of this study is to observationally monitor the changes in color, Diagnodent, and ICDAS values of dark-colored arrested carious lesions after bleaching and to compare them with healthy teeth.

Methods: The study followed 105 teeth with dark-colored arrested carious lesions and 96 healthy teeth. The teeth were bleached with an agent containing 40% H₂O₂. Color, Diagnodent, and ICDAS measurements were taken before bleaching, immediately after bleaching, 1 week later, and 3 months later. Additionally, both the clinician and the patient rated their satisfaction with the tooth color. One-way ANOVA and Dependent Sample T-Test were used for the statistical analysis of the color (L*, a*, b*, ΔE00, satisfaction) and Diagnodent values (p<0.05).

Results: In teeth with lesions, the values of a* and b* decreased, and the value of L* increased in all measurements after bleaching. At the 3-month follow-up, the L*, a*, and b* values of healthy teeth were lower than their baseline values. Three months after bleaching, Diagnodent and ICDAS values in lesion areas showed a significant decrease, and both patient and clinician satisfaction with the color were higher than the baseline.

Conclusion: The bleaching treatment lightened the teeth, and it was found that the dark-colored arrested carious lesions did not return to their original state, while healthy teeth showed some degree of return. Based on Diagnodent and ICDAS values, it can be concluded that the lesion had somewhat remineralized after 3 months.

Keywords: Dark-Colored Arrested Carious Lesions, Office-Type Whitening, Spectrophotometer, Color, Diagnodent

OP 59**EFFECT OF BLEACHING ON SOUND, DEMINERALIZED AND REMINERALIZED ENAMEL**

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Objectives: To investigate the effect of bleaching on morphology and minerals of sound, demineralized (White spot-WS) and dark remineralized (Brown Spot-BS) enamel using SEM-EDX.

Methods: Lesional and sound enamel regions of teeth with BS and WS lesions (n=5) that were bleached and not bleached were examined using SEM-EDX. The bleaching procedure was performed by applying the Opalescence™ Boost™ PF 40% In-Office Tooth Whitening System (Ultradent Products) agent four times for a duration of 20 minutes each. The examination was done from the buccal surface and from the surface obtained by cutting the lesion vertically in two. Bleaching was done with an agent containing 40% HP before sectioning. The morphologies and mineral contents of the surface and deep areas of the enamel were examined with SEM and EDX.

Results: While the healthy enamel is smooth, there are more remineralized deposits in BS lesions and more demineralized areas in WS lesions. The interfaces of BS and WS are similar, the lesion body and the healthy layer were observed in all lesions. Enamel prisms and hydroxyapatite crystals became visible in demineralized areas. After bleaching, it was observed that the inclusions and fine crystals on BS and WS surfaces disappeared, and there was no change on healthy surfaces. Significantly less Ca, P and F minerals were detected on BS surfaces than on healthy surfaces. On the bleached BS surfaces (% Ca: 14.72, P: 15.98, F: 8.98) and intact surfaces (% Ca: 13.12, P: 15.68, F: 23.54), as well as on the non-bleached BS surfaces (% Ca: 19.70, P: 16.86, F: 6.71) compared to intact surfaces (% Ca: 27.78, P: 19.83, F: 3.71), a significantly lower amount of Ca, P, and F minerals was detected. After bleaching, a decrease in the percentage of Ca and P and an increase in the percentage of F were observed on the BS surface, with the same changes being more pronounced in healthy enamel.

Conclusions: Remineralized inclusions on the surface of BS are more than WS. Bleaching causes more mineral change in lesional enamel.

Keywords: Bleaching, SEM, Brown spot lesion

OP 60**THE EFFECT OF COCONUT OIL ON DENTINAL TUBULES**Kübra Karaçam*Department of Periodontology, Faculty of Dentistry, Afyonkarahisar Health Sciences University*

Objectives: The effective treatment of dentin hypersensitivity requires the occlusion of exposed dentinal tubules. Although there are studies investigating the effect of oil pulling with coconut oil on oral health, there are no studies showing its effect on dentinal tubules. The aim of this study is to compare the effects of coconut oil and fluoride application on dentinal tubule occlusion.

Methods: Twenty-four dental samples obtained from extracted human third molars and then divided into 3 groups: Group 1 (control), group 2 (fluoride), group 3 (coconut oil). Dentin samples of all groups were evaluated using scanning electron microscope. The numbers of open, partially closed and closed tubules per 100 μm^2 area were calculated. The distribution of data was tested with Shapiro Wilk. Since the data showed a normal distribution, analysis was performed using one-way ANOVA. $p < 0.005$ was considered statistically significant.

Results: In terms of the average number of closed and partially closed tubules, Groups 2 and 3 showed significantly higher values compared to the control group ($p < 0.001$). The group applied with coconut oil had a significantly higher mean closed tubule than the group applied with fluoride ($p = 0.032$), while the results were similar in the mean semi-closed tubules ($p = 0.054$). In the mean open tubule number, the results were similar in the groups applied with fluoride and coconut oil ($p = 0.985$).

Conclusion: The results of this study show that coconut oil is highly effective in dentinal tubule occlusion and is promising in the treatment of dentin hypersensitivity.

Keywords: dentin hypersensitivity, coconut oil, fluoride application

OP 61

EVALUATION OF CARIES DETECTOR STAIN EFFICACY USING HIGH MAGNIFICATION TECHNIQUES

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Objectives: Minimally invasive dentistry aims to minimize tissue loss during treatment and has significantly transformed dental diagnostic protocols and the approach to managing dental caries. This study aimed to compare the results of the traditional visual and tactile examination, which is a subjective but routinely used method for caries detection during cavity opening, with the evaluation using a dental loupe, dental microscope, and caries detection dye (CDD).

Methods: 40 extracted teeth (Anterior teeth n:10, premolar n:15, molar n:15) with unknown history were used, and the teeth were divided into 2 groups to be examined with a loupe and dental microscope. After caries cleaning under dental loupe (Zumax,3x) and dental microscope (Zumax, 9.6x) the dentin surfaces were examined by traditional tactile criteria, and the cavities classified as caries-free were re-examined with caries detector dye.

Results: Staining was observed in 18 of 40 cavities (45%). When examined with a loupe, 50% of molars, 66% of premolars, and 75% of anterior teeth were observed to be carious. Under the microscope, 40% of the molars, 25% of the premolars, and 50% of the anterior teeth were observed to be carious. 60% of the teeth examined with a loupe and 40% studied with a microscope were carious.

Conclusion: The dental microscope has higher detectability than the dental loupe. CDD is more useful than a tactile examination in getting more reliable results.

Keywords: caries, caries detection dye, high magnification

OP 62**HOST GENETICS ROLE IN THE ETIOLOGY OF DENTAL CARIES: TWO CASE REPORTS**

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Objectives: Dental caries is a complex disease and one of the most common illnesses in dentistry today. Several environmental risk factors have been identified during the last years; however, when exposed to the same levels of environmental risk factors, some patients may be more susceptible or resistant to caries than others. Those differences may be due to genetic factors in the etiopathogenesis of dental caries. The aim of this case report was to exhibit the effects of single nucleotide gene polymorphism (SNP) on caries risk.

Case Report: Two patient who had different caries risk profile according to DMFT index referred to our clinic. Genomic DNA was extracted from the buccal mucosa and TFIP11(rs5997096) gene polymorphism was genotyped using TaqMan chemistry. The environmental risk factors such as plaque amount, toothbrushing frequency, dietary intake between meals were examined. An individual classified as having a low caries risk (DMFT=2) exhibited poor oral hygiene habits, while TFIP11 gene was confirmed to be normal genotype. Another patient, who presented a high caries risk (DMFT=16), possessed had a polymorphic genotype , yet her environmental risk factors were not concerning.

Conclusions: Although lack of association environmental risk factors we detected an association of gene polymorphisms with caries protection or caries susceptibility in cases. The understanding of genetic factors to caries can be highly valuable for dental practitioners. In the future, clinicians might be able to explain to patients why persons with similar environmental risk factors have different caries risk.

Keywords: caries risk, gene polymorphism, risk factor

PP 42**DIAGNOSIS AND TREATMENT OF DENTIN HYPERSENSITIVITY**

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Objective: The aim of this study is to investigate the primary causes of dentin hypersensitivity, the type of pain associated with it, the teeth most commonly affected, and the preventive measures that dentists recommend. Additionally, we explored the most effective treatments, including those for in-office and at-home use.

Methods: For this research, questionnaires were developed and distributed to 30 dental offices.

Results: According to the surveyed dentists, premolars and molars are most frequently affected by dentin hypersensitivity (63.63%). In terms of the side of the tooth most commonly affected, 72.73% of respondents indicated that it occurs most often on the vestibular side. For home treatment of dentin hypersensitivity, toothpastes are the most commonly used remedy (54.55%), followed by mouthwashes (45.45%). For sealing dentinal tubules, fluoride-based products are the most common (45.46%), followed by adhesives (36.36%) and varnishes (18.18%). Notably, none of the surveyed practices use lasers for sealing dentinal tubules.

Conclusions: When dealing with a patient presenting all the symptoms of dentin hypersensitivity, the most important step is to perform a differential diagnosis to distinguish it from other types of orofacial pain, and provide appropriate treatment, which can be either home-based, in-office, or a combination of both.

Keywords: Dentin Hypersensitivity, Erosion, Abrasion

PP 43

PREVALENCE OF TOOTH HYPERSENSITIVITY AND RISK FACTORS FOR ITS OCCURRENCE

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Objective: Tooth hypersensitivity is a global oral health problem in the elderly population. It is most often defined as a short, sharp pain that occurs when various irritants are applied on exposed dentin and cannot be explained by another form of dental defect or disease. The purpose of this study is to investigate the prevalence of tooth hypersensitivity and risk factors that influence its occurrence.

Methods: In this study were included 101 patients. The total number of teeth with hypersensitivity is 534. Data were collected through an originally developed clinical chart and processed statistically.

Results: The tooth hypersensitivity occurs more often in female (64%). It is most common in the age group of 46 to 55 years (34,7%). The group of incisors is most affected (44.7%), followed by canines (21.8%), premolars (20.5%) and molars (12.6%). as the most common factor associated with the appearance of tooth hypersensitivity is the gingival recession (39,1%), followed by non-carious lesions (31,5%), periodontal pocket (15,5%) and in 21.5% it is observed in clinically sound enamel.

Conclusions: Tooth hypersensitivity occurs more often in female, in the age group of 46-55 years and affects the incisors to the greatest extent. In the cases of gingival recession, non-carious lesions and a periodontal pocket, there is a dentine exposure. Of interest are cases with clinically sound enamel that suggest an impairment of the protective enamel barrier at the ultrastructural level.

Keywords: dentin hypersensitivity, erosion, abrasion



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Session:
*Maxillofacial
Surgery*



Session of Serbian Association for Reconstructive Microsurgery of the Head and Neck – OP/PP

OP 63

CORRELATION OF CLINICAL, RADIOLOGICAL, FNAC, AND HISTOPATHOLOGICAL FEATURES IN SALIVARY GLAND MASSES

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Objectives: To assess the clinical, radiological, and Fine needle aspiration cytology (FNAC) features of salivary gland tumors and evaluate the risk of malignancy (ROM) for different cytological categories using Milan Classification System compared to histopathological report as the gold standard.

Methods: This retrospective study evaluates clinical, radiological, and FNAC findings, classified using MILAN system, from patients clinically diagnosed with salivary gland tumors between 2020. and February 2024.

Results: Among 75 patients (30 males, 45 females), 86.7% had benign and 13.3% malignant tumors. The parotid gland was the most commonly affected. Warthin tumor and pleomorphic adenoma were the most frequent benign tumors, while adenoid cystic carcinoma was the most common malignant type. Statistically significant differences were observed regarding tumor consistency, mobility, and peripheral facial nerve palsy ($p < 0.05$). Of 55 available FNAC results, the prevalence with MILAN categories was: Non-diagnostic (3.6%), Non-neoplastic (7.3%), Atypia of undetermined significance (1.8%), Benign neoplasm (72.7%), Salivary gland neoplasm of uncertain malignant potential (3.6%), Suspicious for malignancy (5.5%), and Malignant (5.5%). The corresponding risk of malignancy (ROM) was 0%, 25%, 0%, 0%, 50%, 67%, and 100%, respectively.

Conclusions: Meticulous clinical and radiological assessment followed by FNAC are unavoidable diagnostic steps for proper planning of the treatment of salivary gland tumors. Preoperative findings are of paramount importance within the individualized and personalized medicine approach in the treatment of salivary gland masses.

Keywords: salivary gland tumors, clinical, radiological, FNAC, MILAN system

OP 64**MANDIBULAR SUBCONDYLAR FRACTURE TREATMENT WITH INTERMAXILLARY FIXATION SCREWS**

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Objectives: Mandibular condylar process fractures account for 17.5% to 50% of all lower jaw fractures, making them very common. These fractures are typically caused by traffic accidents or violence. Treatment of mandibular condylar fractures may involve conservative or surgical managements. Conservative treatments may comprise closed reduction, traction, physiotherapy, and/or intermaxillary fixation(IMF). The IMF using screws is currently the preferred method. After applying 4–8 self-tapping screws in the maxilla and mandible near the mucogingival junction, IMF is achieved by fixing them with wires or rubber bands. Thus, the operation time is shortened, and the possibility of gingival damage is reduced.

Case Report: A 15-year-old male patient applied to the clinic with a complaint of pain in the left temporomandibular joint region after falling during a football match. During the clinical and radiological examination, a fracture was detected in the mandibular subcondyle. 4 screws were placed in the maxilla and mandible. The jaws were fixed with rubber bands and IMF was applied for 8 weeks. Elastic bands were renewed during weekly follow-ups. At the end of the treatment, the fracture healed and the patient regained function.

Conclusion: IMF screws provide more comfort during the IMF period, help maintain favorable oral hygiene and have a shorter application time. IMF screws are an excellent alternative to other IMF methods when applicable.

Keywords: trauma, fracture, intermaxillary fixation

OP 65**MANDIBULAR FRACTURES AND ADDITIONAL FRACTURES: CASE REPORT AND LITERATURE REVIEW**

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Objective: In this case report, we aim to present the fractures in the craniomaxillofacial area, which are seen together with the mandibular fracture due to trauma, together with the literature evaluation.

Case Report: A 36-year-old female patient (Case1) who was admitted to the outpatient clinic of the Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Usak University, was diagnosed with a comminuted symphysis fracture, vertical ramus fracture due to a fall from a height. Repair was performed.

(Case 2) An 82-year-old male patient was diagnosed with bilateral parasymphysis (bucket handle) fracture as a result of a traffic accident. The patient was operated.

(Case 3) A 22-year-old male patient was admitted to the outpatient clinic due to a traffic accident. A comminuted frontal sinus fracture and symphysis fracture were detected. He was operated.

Our treatment method applied to the patients was compared with the results obtained in the current literature review.

Conclusions: Postoperatively, the first case was followed up for six months, the second and third cases for four months. As a result of the controls, it was observed that the buccal relationship and ideal mouth opening were maintained in all three cases. According to the data obtained from the literature review, it was seen that similar results were achieved by using similar treatment methods in studies in which mandibular fracture and additional fractures of the accompanying maxillofacial region were reported together.

Keywords: Symphysis fracture, Mandibular fracture, Vertical ramus fracture

PP 44**POSTOPERATIVE HORNER'S SYNDROME THREE CASES STUDY**

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Objective: Horner's syndrome is a neurological disorder caused by dysfunction of the sympathetic nervous system, usually characterized by 3 symptoms: eyelid ptosis, miosis, and anhidrosis on the affected side of the face. The etiology is diverse, the most common are neoplastic, iatrogenic and trauma.

This case series describe 3 patients with postoperative Horner's syndrome, following different surgical interventions in the cervical region.

Case Report: We describe three patients who developed complete symptoms on the first postoperative day, all involving the left side of face. The first patient was a 31-year-old male diagnosed with T3N2b squamous cell carcinoma of the tongue, who developed symptoms after extended supraomohyoid neck dissection level I-IV. Eight months postoperatively, his symptoms fully regressed, except miosis. The second patient was a 50-year-old female diagnosed with a sympathetic chain schwannoma in the region above the carotid bifurcation in the prevertebral space followed by the third patient was a 20-year-old lady with the same diagnosis. Both female patients underwent surgical excision of the tumor, which resulted in postoperative Horner's syndrome. In both cases, the symptoms persist. In all three cases, the diagnosis was established through clinical examination.

Conclusions: Although it is a rare complication, Horner's syndrome cause functional and aesthetic concerns to patients. It could be temporary or permanent depending on the extent of sympathetic pathway damage. Therefore patients should be aware and informed in detail preoperatively of this complication before surgery.

Keywords: Horner's syndrome, Maxillofacial surgery, Schwannoma, Tongue squamous cell carcinoma

PP 45

THE ROLE OF HPV IN THE DEVELOPMENT OF OROPHARYNGEAL CANCER

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Objectives: The role of HPV is accepted in the pathogenesis of oropharyngeal squamous cell carcinoma. HPV-positive oropharyngeal squamous cell carcinoma (OPSCC) has an increasing incidence of most cancers worldwide. In many countries, a better prognosis for patients with HPV-positive OPSCC is recognized as compared to HPV-negative OPSCC.

The aim of our study was to investigate the association between HPV and oropharyngeal cancer, as well as the main strains associated with OPSCC.

Methods: We included 34 patients with histologically proven OPSCC in the study. Samples of this tumor were taken with the fourth biopsy and from saliva of each patient. The strains present were isolated from the samples by PCR method.

Results: In 14 cases we found an association of carcinoma with HPV. The median age of HPV-positive OPSCC is 59 years. In the HPV - positive carcinoma are found HPV-16 in 12 of the patients followed by HPV-6, HPV-31, HPV - 39, HPV-51, HPV-58, HPV-66. Of all patients with oral carcinoma positive for HPV are 6, and with carcinoma of the pharynx, larynx and hypopharynx - 8 patients. 66% of the oral carcinoma with HPV are positive for HPV-16 strains, and those with larynx and hypopharynx 100% with HPV-16 strains.

Conclusions: HPV positive OPSCC show an improved prognosis and respond more favourably to treatment. In these tumors, targeted therapies and immunotherapies have become an area of particular interest. Further studies are needed to understand the development of the disease process in more detail.

Keywords: Human papillomavirus, Oral mucosa, Oropharyngeal, Squamous cell carcinoma, Oncology

PP 46

ORAL SQUAMOUS CELL CARCINOMA AT THE SITE OF A DENTAL IMPLANT: A CASE REPORT

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Objectives: The use of osseointegrated dental implants (DIs) has improved the quality of life for edentulous patients, but complications such as peri-implantitis and, rarely, oral squamous cell carcinoma (OSCC) have been reported, with an estimated prevalence of 1.5%. OSCC is the most common malignancy of the oral cavity, accounting for 90% of cases, primarily affecting men over 50 years old. While OSCC is often linked to tobacco use, alcohol consumption, and chronic inflammation, its association with DIs remains unclear. OSCC at a previously healed implant site can mimic peri-implantitis or implant failure, leading to delayed diagnosis.

Case Report: A 78-year-old male presented with discomfort and localized swelling in the left mandible, where two dental implants had been placed two years earlier. Clinical examination revealed an exophytic, hemorrhagic lesion, while radiographic evaluation showed a radiopaque lesion surrounding the posterior implant, raising suspicion of malignancy. The lesion along with the involved dental implants was excised under local anesthesia, and histopathological analysis confirmed the diagnosis of OSCC. Subsequently, the patient underwent a marginal mandibulectomy with histopathological analysis confirming tumor-free margins. Postoperative, the patient had no complications and received 30 doses of adjuvant radiotherapy. He remains under regular follow up with no signs of reoccurrence.

Conclusions: This case highlights the importance of early recognition in differentiating OSCC from peri-implantitis or implant failure. With increasing dental implant use, clinicians must maintain a high index of suspicion for persistent peri-implant lesions, especially in high-risk patients. A multidisciplinary approach is essential for optimal management and improved outcomes.

Keywords: Oral squamous cell carcinoma (OSCC), Dental implants, Peri-implant malignancy, Peri-implantitis vs carcinoma, Oral cancer and implants



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OP 66

INNOVATIVE PRIMARY MOLAR RESTORATIONS: PERIODONTAL HEALTH MERITS OF PREFABRICATED ZIRCONIA CROWNS

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Objectives: Preformed stainless-steel crowns (SSC) are widely used for restoring primary molars with extensive dental damage. However, the increasing demand for aesthetic restorations has spurred further investigation into zirconia as superior alternative. This study aims to compare the maintenance of periodontal health in primary molars restored with prefabricated zirconia crowns (PZC) and SSC.

Methods: A state-of-the-art narrative review was conducted by searching articles between 2020-2025 in PubMed and Google Scholar databases using the keywords "prefabricated zirconia crowns", "zirconia crowns for primary molars", and "preformed zirconia crowns". Inclusion criteria focused on cohort studies, randomized controlled trials (RCTs) and other comparative clinical studies between PZC AND SSC, assessing the periodontal effects in primary molars. Narrative and systematic reviews were excluded. The parameters analysed included gingival index, plaque index, and inflammatory factors.

Results: Gingival index levels were significantly lower ($p \leq 0.05$) for PZC compared to SSC in 2 out of 3 individual studies after 1-year post-placement and in 1 out of 2 studies after 2 years. Similarly, plaque index levels were lower comparing PZC AND SSC after 1 and 2 years. Furthermore, according to a study, IL-1 β levels in PZC were substantially lower ($p \leq 0.05$) than in SSC, with mean values of 21.93pg/mL and 27.30pg/mL, respectively.

Conclusion: Prefabricated zirconia crowns for primary molars could be a promising and aesthetic alternative that preserves periodontal health. PZC demonstrated lower gingival and plaque index levels, as well as reduced IL-1 β levels compared to SSC. However, further long-term clinical studies are necessary to establish their effectiveness on periodontal health and overall durability.

Keywords: prefabricated zirconia crowns, zirconia crowns for primary molars, preformed zirconia crowns

OP 67

PROGERIA IN A PEDIATRIC DENTAL PATIENT: CASE REPORT

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Objective: Progeria is an extremely rare genetic disorder that causes rapid aging in children. People with this disorder usually start to show signs of premature aging in the first one to two years of life. In this case report, a thirteen-year-old male patient with progeria is presented. Oral-facial features and dental findings are emphasized in this case report.

Case Report: 11-year-old boy with a clinical diagnosis of progeria presented to the Department of Pedodontics, Faculty of Dentistry, Ordu University with a complaint of toothache. He showed classic clinical features of progeria including poor cooperation, low weight/height ratio, thin and inflexible skin, osteoporosis at the femoral region, diffuse alopecia, prominent scalp veins, small beak-nosed face and high-pitched voice. The patient had no significant hearing loss. Panoramic radiography showed delayed eruption of permanent teeth, hypodontia and temporomandibular joint malformation. There was a deep palate in the maxilla. Our patient continued to be bottle-fed. Dental treatment was performed under general anesthesia because he was non-cooperative.

Conclusion: Although the mortality rate of progeria patients is high, with careful examination and early interventions, dental problems accompanying severe systemic problems can be solved early and the patient's quality of life can be improved.

Keywords: Hutchinson-Gilford progeria syndrome, Pediatric dentistry, Craniofacial anomalies, General anesthesia

OP 68**EARLY ORTHODONTIC TREATMENT IN THE MANAGEMENT OF ANTERIOR CROSSBITE: A CASE REPORT**

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Objective: Anterior crossbite, observed in children aged 6–12 years, whether of dental or skeletal origin, is a condition that necessitates prompt intervention. If left untreated, it can lead to significant skeletal, aesthetic, and functional complications during the growth and developmental period. Furthermore, it may result in periodontal issues in the opposing teeth, including mobility and potential tooth loss due to the degradation of supporting tissues. The use of a simple appliance can facilitate the labial repositioning of the maxillary tooth, thereby mitigating potential periodontal problems and preserving gingival health.

Case Report: A 7-year-old male patient, systemically healthy and in the mixed dentition stage, presented with an anterior crossbite involving the upper right central incisor. A removable acrylic appliance was fabricated, incorporating a labiolingual spring, a vestibular arch to control buccal tipping, and retentive clasps with increased occlusal height. The appliance was activated weekly during follow-up appointments to achieve the desired buccal movement of the affected tooth.

Conclusion: The anterior crossbite was successfully corrected within approximately 1.5 to 2 months. The prevention of malocclusion in the permanent dentition and the maintenance of dental arch integrity are primary objectives of pediatric dentistry. Early interventions during the mixed dentition stage can minimize the need for more complex and costly treatments in the permanent dentition.

Keywords: Anterior Crossbite, Early Orthodontic Treatment, Malocclusion, Pediatric Dentistry

OP 69

MANAGEMENT OF AN OPEN APEX IN A UPPER INCISOR USING MTA: A CASE REPORT

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Objectives: Achieving a hermetic root canal seal in devitalized teeth with an open apex is challenging due to the lack of apical constriction. This case report presents the management of a devitalized maxillary central incisor (tooth #21) in a 14-year-old female patient with a history of late dental trauma.

Case Report: A 14-year-old female patient presented to the Department of Pedodontics, Faculty of Dentistry, Süleyman Demirel University, with a non-vital maxillary central incisor. Anamnesis revealed no systemic disease or medication history. Clinical examination showed a negative response to vitality testing, percussion, and palpation, with no signs of pain or mobility. During the initial session, necrotic pulp tissue was mechanically removed using a 140K file. The root canal was medicated with calcium hydroxide for two weeks. Subsequently, MTA was applied to in the entire root canal up to 3–4 mm below the CEJ. A moist cotton pellet was placed for 24 hours to facilitate MTA setting. Two weeks post-MTA application, devital bleaching with 35% hydrogen peroxide was performed. Another two weeks later, the tooth was restored with composite resin. At the 3-month follow-up, the tooth was asymptomatic and the periapical lesions were found to have shrunk and the patient was called for a follow-up visit at the end of the 6th month.

Conclusion: MTA-based root canal treatment is a reliable approach for managing open-apex cases where conventional methods fail to form an apical barrier.

Keywords: Root canal treatment with MTA, MTA apical plug, Late trauma, Permanent tooth with open apex, Devital bleaching

OP 70**HOW EFFECTIVE ARE CHATGPT AND GEMINI IN ANSWERING PEDIATRIC DENTISTRY QUESTIONS?**

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Objective: This study aims to evaluate the success of ChatGPT and Gemini artificial intelligence models in answering Pediatric Dentistry questions in the Dental Specialty Examination (DUS).

Methods: In this study, a total of 127 multiple-choice questions selected from 13 publicly available exams and answer key conducted between 2012 and 2021 were asked to the ChatGPT and Gemini artificial intelligence models simultaneously, and they were asked to answer and provide explanations. The answers and explanations given by the artificial intelligence models to the questions were scored on a 3-point Likert scale (LS) by a pediatric dentist using a publicly available answer key (0: incorrect answer and explanation, 1: correct answer but incorrect explanation, 2: correct answer and explanation). The data were analyzed statistically.

Results: ChatGPT scored a total of 211 points out of a maximum of 254 points in 127 questions, while Gemini scored 194 points. When the distribution of LS is analyzed, ChatGPT LS0: 16.6%, LS1: 0.8%, LS2: 82.7%, Gemini LS0: 23.6%, LS1: 0%, LS2: 76.4%. However, no statistically significant difference was found between the success of artificial intelligence models ($P>0.05$).

Conclusion: Within the limitations of our study, even though ChatGPT showed a higher success rate than Gemini in answering paediatric dentistry questions in the DUS, this difference was not statistically significant. These artificial intelligence models can be considered as a potential to serve as assistive tools in exam preparation and knowledge access processes.

Keywords: Pediatric Dentistry, ChatGPT, Gemini, Dental Specialty Examination, Artificial Intelligence



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OP 71**EVALUATION OF THE ANTIBACTERIAL EFFICACY OF INTRACANAL MEDICAMENTS AGAINST ENTEROCOCCUS FAECALIS**

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Objectives: The elimination of microorganisms is critical for the success of regenerative endodontic treatments. This study aims to evaluate the antibacterial efficacy of calcium hydroxide (Ca(OH)₂), triple antibiotic paste (TAP), curcumin, riboflavin, sodium hypochlorite (NaOCl), and saline solution as intracanal medicaments against *Enterococcus faecalis* in the root dentin of mature teeth for regenerative treatments using culture methods and real-time Polymerase Chain Reaction (PCR).

Methods: Sixty extracted single-rooted maxillary central incisors were decoronated to prepare 8 mm-long dentin cylinders. The root canals were inoculated with *E. faecalis* ATCC 29212 and incubated for 21 days. The samples were randomly divided into six groups (n=10) based on the medicaments applied. The medicaments were administered for a duration of 14 days. Antibacterial efficacy was assessed using samples collected from dentin cylinders with paper points and analyzed via culture methods and real-time PCR. Statistical analyses were performed using SPSS software, employing ANOVA and Duncan tests (p<0.05).

Results: TAP and curcumin exhibited the highest antibacterial efficacy in both methods (p<0.001), while NaOCl and Ca(OH)₂ showed moderate effectiveness. Riboflavin and saline demonstrated the lowest efficacy (p<0.001). None of the medicaments completely eliminated *Enterococcus faecalis* from the root canals.

Conclusions: TAP and curcumin are the most effective medicaments for the treatment of mature teeth. Curcumin, as a natural and biocompatible agent, holds promise for regenerative endodontics and may serve as a potential alternative to synthetic agents.

Keywords: Regenerative Endodontic Treatment, *Enterococcus Faecalis*, Calcium Hydroxide, Triple Antibiotic Paste, Curcumin

OP 72**EFFECT OF ACCESS CAVITY DESIGN ON THE FRACTURE RESISTANCE OF MANDIBULAR MOLAR TEETH**

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Objectives: The present study aims to investigate the effect of three different access cavity designs on the fracture resistance (FR) of endodontically treated teeth.

Method: 40 permanent mandibular first molar teeth without any defects were selected, and divided into four groups according to the access cavity design (n=10); Group 1: Control group (CG), access cavity was not opened; Group 2: Conventional access cavity group (CAC), the access cavity was opened according to conventional guidelines; Group 3: Ultra-conservative access cavity group (UCAC) ensured the roots and canal orifices were localized in the center and opened wide enough to provide access only to the canal orifices while preserving the pericervical dentin and pulp chamber roof; Group 4: Truss access cavity group (TAC) targeting the mesial buccal, mesiolingual, and distal canal entrances, 2 separate cavities were opened wide enough to access only the canal entrance, preserving the dentin bridges and paracervical dentin in between. Then, teeth were embedded in acrylic resin 1 mm below the cementoenamel junction. Then, the fracture test was applied with a universal testing machine. The highest FR values were recorded in Newtons (N) as data and statistically analyzed by one-way ANOVA with Tukey HSD post-hoc test.

Results: The differences between all groups were statistically significant ($p < 0.05$). The highest FR value was obtained in the CG (2093 ± 93 N) and the lowest in the CAC group (1470 ± 46 N).

Conclusion: Access cavity designs have different effects on the fracture resistance of teeth.

Keywords: Access Cavity, Endodontic Treatment, Fracture Resistance

OP 73**COMPARISON OF WORKING LENGTH DETERMINATION USING THREE DIFFERENT ELECTRONIC APEX LOCATORS**

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Objectives: The apical constriction is a critical anatomical landmark for instrumenting and obturating the canal system to obtain a successful root canal treatment. This study aimed to compare the working lengths of extracted premolar teeth using three different electronic apex locators (EALs): Root ZX mini (J Morita Corp, Tokyo, Japan), Raypex 6 (VDW, Munich, Germany), Ai-Pex (Guilin WoodPecker LTD, China).

Methods: Thirty human teeth with single, straight root canals, which had been extracted for periodontal and orthodontic indications, were selected. The real working length (RWL) was determined under the operating microscope by subtracting 0.5 mm from the true root canal length. Each tooth was then placed in a custom alginate model designed for EAL testing and measured using each EAL device. The results were compared to the corresponding RWL by subtracting it from the electronically measured distance. Descriptive statistics were calculated, and data analyzed using one-way ANOVA with Tukey's test.

Results: There was no significant difference between the apex locators compared with the control group ($p=0.746$). Ai-pex and Raypex 6 measurements were found to be closer, with similar values.

Conclusions: EALs showed an acceptable electronic working length within the range of ± 0.5 mm. Although all EALs demonstrated acceptable electronic working length determination within ± 0.5 mm, further studies should be combined in vivo conditions.

Keywords: Apex Locator, Endodontics, Working Length

OP 74

INFLUENCE OF FILE SIZE ON APEX LOCATOR ACCURACY IN APEXIFICATION: A 3D-PRINTED MODEL STUDYVahide Hazal Abat*Department of Endodontics, Faculty of Dentistry, Uskudar University*

Objectives: The present study sought to address two key research questions in the field of endodontics: (1) the influence of varying sizes of files on working length (WL) measurement with electronic apex locator (EAL), (2) the influence of residual calcium hydroxide (Ca(OH)₂) on accuracy of EAL.

Methods: Thirty-two single-rooted and open-apex 3D-printed tooth models were embedded in an alginate model to assess electronic WL measurements. In the first session, the WL determination was performed utilizing Woodpex III Gold Plus (Woodpecker Medical Instrument Co, Guilin, China) with K-files (#45, #55, #70, and #80) WL was measured once more using the same apex locator and the same K-file sizes. Statistical analysis was conducted using Kruskal-Wallis test, at a 5% significance level.

Results: A significant difference was detected when comparing the 1st and 2nd sessions ($p < 0.05$). The WL measurement in the 2nd session exhibited higher accuracy compared to 1st session. However, no statistically significant differences were observed between #45 and #55, or between #70 and #80, in either the first or second session ($p > 0.05$). The sizes #70 and #80 exhibited higher accuracy in WL measurement than #45 and #55 ($p < 0.05$).

Conclusions: A positive correlation has been demonstrated between file size and the accuracy of WL measurements. Moreover, WL measurements can vary between sessions, even in instances where electronic measurement was conducted with the same file.

OP 75

THE EFFECT OF VARIOUS IRRIGANTS ON MIXED BIOFILMS IN DENTINAL TUBULES: A CLSM STUDY

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Objections: This study evaluated the bacterial disinfection efficacy of three different irrigation solutions and their combined usage in dentin tubules contaminated with mixed biofilms.

Methods: Sixty single-rooted mandibular premolars were prepared with ProTaper Next X4, sterilized, and then inoculated with mixed biofilm for 7 days. After biofilm formation, the teeth were randomly divided into six groups (n = 10) based on the irrigation solution used: Group 1: Sodium Hypochlorite (SH), Group 2: Chlorhexidine Gluconate (CHX), Group 3: Polyhexidine Biguanide (PHMB), Group 4: SH + CHX, Group 5: SH + PHMB, Group 6: Distilled water (control group). The teeth were sectioned at the coronal, middle, and apical thirds and stained with LIVE/DEAD BackLight™ and examined under a confocal laser scanning microscope (CLSM) to determine the depth of dead bacterial penetration into the dentinal tubules. Additionally, one tooth from each group was subjected to bacterial viable counting before and after irrigation.

Results: The CLSM analysis revealed that the greatest penetration of dead bacteria occurred in the coronal third, followed by the apical and middle third ($P < .05$). Combined solutions demonstrated significantly higher disinfection efficacy compared to PHMB alone ($P < .001$). Viable count analysis revealed that Group 4 and Group 5 exhibited the greatest reduction in bacterial proliferation respectively.

Conclusion: The combined use of solutions was found to be more effective than the sole use of solutions. Therefore, it is recommended to combine irrigation solutions during final irrigation in clinical settings.

Keywords: Irrigation Solution, Dentinal Tubule, Biofilm, Confocal Microscope, Disinfection

OP 76

THE ANTIMICROBIAL ACTIVITY OF SCORPION VENOM AGAINST BACTERIA RESISTANT TO ENDODONTIC TREATMENT

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Objectives: Scorpion venom is a valuable source of bioactive molecules that can lead to the development of new treatments against diseases. The aim of this study was to evaluate the antibacterial activity of venoms from various scorpions on resistant endodontic microorganisms under in vitro conditions.

Methods: *Aegaeobuthus gibbosus* (Brulle, 1832) and *Androctonus turkiyensis* Yagmur, 2021 were captured at night using UV light from Kırıkkale and Şanlıurfa provinces of Turkey. 7 standard bacterial strains (*Staphylococcus aureus*, *Staphylococcus epidermidis* biofilm forming strain, *Enterococcus faecalis*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Acinetobacter baumannii* and *Klebsiella pneumoniae*) were used to determination of the antibacterial activity. The antibacterial activity of the scorpion venoms was carried out both by the disk diffusion method and broth microdilution method.

Results: *Aegaeobuthus gibbosus* (Brulle, 1832) and *Androctonus turkiyensis* Yagmur, 2021 were evaluated for antibacterial activities using the disk diffusion method, no inhibition zones were observed. *A. turkiyensis* Yagmur, 2021 venom was found to be effective against *Pseudomonas aeruginosa*, *Enterococcus faecalis*, and *Staphylococcus epidermidis* when used without dilution. However, it showed no effect on other strains. After dilution of the venom, no antibacterial activity was detected against any of the standard strains. All standard strains were found to be affected when the undiluted *A. gibbosus* (Brulle, 1832) venoms was used. However, no antibacterial activity was observed following the dilution of these venoms.

Conclusion: Scorpion venom could be a promising agent against the endodontic pathogens.

Keywords: Scorpion Venom, Endodontic Pathogens, Antibacterial activity

OP 77

COMPARATIVE EVALUATION OF INTRACANAL MEDICAMENTS IN INFECTED INTERNAL ROOT RESORPTION CAVITIES

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Objectives: This study evaluates the antibacterial efficacy of calcium hydroxide $\text{Ca}(\text{OH})_2$, alone and in combination with resveratrol, silver nanoparticles, and salicylic acid against *Enterococcus faecalis* (E. faecalis) in simulated internal root resorption cavities using culture methods and Scanning Electron Microscopy (SEM).

Methods: Fifty-four extracted single-rooted teeth were decoronated to 18 ± 2 mm and prepared with 2 mm-diameter internal root resorption cavities. Root canals were inoculated with E. faecalis ATCC 29212 and incubated for 21 days. Initial bacterial counts were determined via culture methods. Teeth were divided into five medicament groups: $\text{Ca}(\text{OH})_2$, $\text{Ca}(\text{OH})_2$ +resveratrol, $\text{Ca}(\text{OH})_2$ +silver nanoparticles, $\text{Ca}(\text{OH})_2$ +salicylic acid, and saline (n=10). Two teeth each served as negative and positive controls. After a 14-day incubation, samples were collected from root canals and resorption cavities, and bacterial counts were assessed and compared using culture methods. SEM imaging was performed on two samples per group. Data were analyzed with one-way ANOVA and Duncan tests ($p < 0.05$).

Results: $\text{Ca}(\text{OH})_2$ +resveratrol, $\text{Ca}(\text{OH})_2$ +silver nanoparticles, and $\text{Ca}(\text{OH})_2$ +salicylic acid demonstrated significantly higher antibacterial efficacy compared to other groups ($p < 0.001$), with no statistical differences observed among these three groups ($p > 0.05$). The $\text{Ca}(\text{OH})_2$ group showed greater antibacterial activity than the saline group ($p < 0.001$). The saline group exhibited the highest colony-forming unit (CFU) values, indicating the lowest antibacterial efficacy ($p < 0.001$). SEM images supported the culture findings.

Conclusion: The combination of calcium hydroxide with resveratrol, silver nanoparticles, and salicylic acid has enhanced its antimicrobial efficacy against E. faecalis, even in complex internal resorption cavities characterized by irregular structures and considered challenging cases.

Keywords: Internal Root Resorption, Endodontic Treatment, Calcium Hydroxide, Resveratrol, Silver Nanoparticles

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OP 78**ROOT CANAL CONFIGURATION AND DENTIN THICKNESS OF MANDIBULAR ANTERIOR TEETH**

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Objectives: The study aimed to evaluate the canal morphology and dentin thickness of mandibular anterior teeth using cone-beam computed tomography (CBCT) in the Turkish subpopulation.

Methods: Images of 127 systemically healthy patients were analyzed. A total of 200 teeth (100 central incisors, 100 lateral incisors) were selected. Endodontic treatment, periapical lesion, crown prosthesis, or filling were excluded. Images were analyzed on the coronal, axial, and sagittal planes in CBCT. Vertucci classification was recorded. Dentin thicknesses were measured in buccal, lingual, mesial, and distal aspects. Gender and age (Group I:17-34, Group II:35-49, and Group III:≥50) data belonging to canal morphology and dentin thickness were also recorded. Students' t-test and chi-square were performed for statistical analysis.

Results: Dentin thicknesses were 2.08 mm, 2.10 mm, 1.07 mm, and 0.98 mm in buccal, lingual, mesial, and distal aspects, respectively. Dentin was thinner in the distal than the mesial aspect ($p=0.001$). Dentin thickness was similar in buccal and lingual aspects in roots with a single canal ($p>0.05$). The most prevalent type was Vertucci type I (74.8%). Vertucci morphology was symmetrical in central and lateral incisors ($p>0.05$). Vertucci types VI, VII, and VIII were not detected. All mandibular anterior teeth had one root. No statistical difference was detected between genders in dentin thickness. Group III had thicker dentin than other groups ($p<0.05$).

Conclusions: Vertucci Type I was the most frequent canal morphology. Canal morphology was symmetrical. The canal was located at the center in the buccolingual direction, while in the distal aspect in the mesiodistal direction.

Keywords: Mandibular anterior teeth, Root Canal Configuration, Dentin Thickness

OP 79

DENTINAL TUBULE PENETRATION OF THREE DIFFERENT CALCIUM SILICATE-BASED SEALERS

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Objectives: The aim of this study was to investigate dentinal tubule penetration of three calcium silicate-based sealers with different formulation.

Methods: Twenty-four extracted human mandibular premolars were selected and root canals were prepared with ProTaper Next # 40/.065 instruments. Teeth were randomly divided into 3 experimental and 1 control group (n=6) according to the sealer used: AH Plus Bioceramic sealer (premixed, one-component), Bio-C sealer (premixed, one-component), BioRoot RCS (two-component, powder/liquid) and AH Plus (two-component, paste-paste, epoxy resin sealer). Prior to obturation (single-cone technique), a fluorescent calcium indicator, Fluo-3 dye was added to the sealers. After a 2-week storage (37°C, 100% humidity), roots were transversally sectioned at midroot level. Coronal surface of cross-sectioned dentinal disks with a thickness of 3 mm were analyzed under confocal laser scanning microscopy at x10 magnification using Image J Software. Average penetration depth, circumferential penetration depth at 4 points (12, 3, 6 and 9 h) and total area of sealer penetration was measured. Statistical analysis was performed using Kruskal-Wallis test.

Results: Statistically significant difference in penetration depths was observed among all evaluated sealers ($p < 0.001$) excepted for AH Bioceramic and Bio-C ($p > 0.001$). AH Bioceramic and Bio-C showed significantly higher penetration depths compared to BioRoot RCS and AH Plus ($p < 0.001$). The highest values of sealer penetration area were recorded for Bio-C ($p < 0.001$), whereas there was no difference among the other sealers ($p > 0.001$).

Conclusion: Formulation of calcium silicate-based sealers affects their penetrability into dentinal tubules.

Keywords: Dentinal Tubule Penetration, Calcium Silicate-Based Sealers, Confocal Laser Scanning Microscopy

OP 80

FINITE ELEMENT ANALYSIS OF IMMATURE TEETH TREATED WITH APEXIFICATION AND REGENERATIVE PROCEDURES

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Objectives: Apexification and regenerative endodontic treatments are commonly preferred approaches in the management of necrotic immature permanent teeth. The aim of this study was to evaluate the stress distribution in immature central teeth treated with different procedures using three-dimensional finite element analysis.

Methods: Immature maxillary central incisor (Model 1) was designed in three dimensions. Then, according to the treatment approach, regeneration treatment model (Model 2) and apexification treatment model (Model 3) were developed. A mature maxillary central incisor (Model 4) was created as a control model. All materials and structures were assumed to be homogeneous and isotropic. Following model construction, a 100 N load was applied to the palatal surface at a 45° angle. For each model, the maximum von Mises stress values were calculated, and the stress distribution was evaluated.

Results: Finite element analysis demonstrated variations in maximum stress values and stress distribution among the models. In all models, stress was concentrated primarily in the cervical region. Model 1 had the highest maximum stress value. In contrast, the lowest maximum stress value was observed in Model 4.

Conclusions: These findings suggest that protocols applied in the treatment of necrotic immature teeth affect the distribution and amount of stress in the tooth structure. Therefore, when choosing a treatment approach, biomechanical consequences should be considered and long-term clinical success should be targeted.

Keywords: Finite Element Analysis, Immature Teeth, Apexification, Regeneration, Mechanical Stress

OP 81

3-DIMENSIONAL ANALYSIS OF PERIAPICAL LESIONS IN ENDODONTICALLY TREATED MANDIBULAR FIRST MOLARS

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Objective: Numerous studies indicate the connection of periapical lesions with systemic diseases that can have significant consequences for the entire organism. The assessment of the presence of periapical lesions is traditionally carried out by radiological methods, while modern techniques, such as CBCT (Cone Beam Computed Tomography), have significantly improved the accuracy of diagnosis. The aim of this study was the three-dimensional analysis of radiographs of periapical lesions found on endodontically treated mandibular first molars.

Methods: Total of 431 mandibular molars that had previously undergone endodontic treatment were analyzed on CBCT images. A quality of endodontic treatment was assessed, as well as the presence of periapical lesions.

Results: Out of a total of 431 analyzed teeth, 356 were evaluated as adequately endodontically treated. Among them, 14 teeth (3.9%) had periapical lesions smaller than 5 mm, while one tooth (0.3%) had a lesion larger than 5 mm. Of the remaining 75 teeth with inadequate endodontic treatment, periapical lesions smaller than 5 mm were identified in 29 teeth (38.7%), while lesions larger than 5 mm were observed in 14 teeth (18.7%).

Conclusion: The results of this study emphasize the importance of adequately performed endodontic treatment, because it affects the reduced convalescence of lesions and affects their size. However, additional research is needed to better understand the factors that promote the development of these lesions in well-obtured teeth. The introduction of three-dimensional diagnostic methods, such as CBCT, represents a key step towards a more accurate assessment of the success of endodontic treatment.

Keywords: endodontics, mandibular molar, CBCT, periapical lesion

OP 82

REGENERATIVE ENDODONTIC TREATMENT OF AN IMMATURE PERMANENT TOOTH WITH APICAL PERIODONTITIS

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Objective: Regenerative endodontic treatments are applied to permanent teeth with incomplete root development, typically when the root formation has completed approximately two-thirds of its development. This case report aims to present the regenerative endodontic treatment of an immature permanent tooth with apical periodontitis.

Case Report: A 12-year-old patient presented to our clinic with complaints of spontaneous nocturnal pain in tooth #35. Clinical examination revealed percussion sensitivity, and periapical radiographic evaluation confirmed apical periodontitis. Regenerative endodontic treatment was considered for the patient. In the first session, the infected pulp tissue was extirpated under aseptic conditions, and the root canal was irrigated with 20 mL of 2% sodium hypochlorite and 0.9% saline solution, following the first protocol of regenerative endodontic treatment. In the second session, two weeks later, the root canal was irrigated with 20 mL of 17% EDTA solution and 0.9% saline solution. Apical bleeding was then induced, and coronal sealing was achieved with a 3-mm layer of MTA. Permanent restoration was completed using composite material. However, during a follow-up session, a fracture was observed in the initial restoration, and the restoration was replaced with a stainless steel crown. At the 6-month and 1-year follow-ups, continued root development was observed, and the symptoms showed both clinical and radiographic resolution.

Conclusion: The reported case demonstrates that regenerative endodontic treatment procedures can be successfully applied to immature necrotic permanent teeth. Further studies on this treatment approach are recommended in the literature.

Keywords: Immature Permanent Tooth, Regenerative Endodontics, MTA

Acknowledgments: I sincerely thank my supervisor, Dr. Sera Şimşek Derelioğlu, Head of the Department of Pedodontics, Atatürk University, for her guidance and support.

OP 83**PULPOTOMY TREATMENT OF PERMANENT MATURE MOLARS WITH MTA: A CASE REPORT**

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Objective: This case report aims to evaluate the 2-year clinical and radiographic success of amputation/coronal pulpotomy treatment with MTA in a permanent molar tooth with completed apex development.

Case Report: A 10-year-old boy with no systemic disease was admitted to Atatürk University, Faculty of Dentistry, Pedodontics Clinic because of pain in his lower left tooth. Clinical and radiographic examinations revealed a periapical lesion in the mesial root of tooth number 36, which had completed apex development, accompanied by provoked pain. After amputation treatment with MTA (MTA Angelus, Soluções Odontológicas, Londrina, Brazil), the tooth was restored with composite resin. At the 24th month clinical follow-up, the tooth was completely asymptomatic. In addition, radiographically, the lesion in the mesial root healed and the root tip closed.

Conclusion: Long-term clinical and radiographic follow-ups demonstrate successful outcomes for amputation treatment with MTA in permanent molar teeth with completed apex Development.

Keywords: Amputation, MTA, Permanent Teeth

OP 84

EVALUATION OF DIFFERENT OBTURATION TECHNIQUES IN TWO TYPES OF VERTUCCI CLASSIFICATION

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Objectives: This study aimed to evaluate and compare the effectiveness of three different obturation techniques in 3D printed resin blocks with Vertucci Type V and Type VI canal morphology.

Methods: Three-dimensionally produced 66 resin blocks with Vertucci Type V and Vertucci Type VI canal morphology (n=33) were prepared. The blocks were divided into three subgroups; Group 1: Cold Lateral Condensation (CLC), Group 2: Continuous Wave Obturation (CWO), Group 3: Core Carrier Technique (CCT) and obturation techniques were applied (n=11). The total area and gaps were calculated as a percentage ratio on the periapical radiographs taken after obturation by using the Image J software. The groups were compared using Mann-Whitney U and Kruskal Wallis H tests ($p < 0.05$).

Results: When the ratio of the gap areas for Vertucci Type V blocks were analyzed, CLC has showed a significant difference at the coronal part of the deep split ($p < 0.017$). Each groups showed a significant difference in paired comparisons at the apical part of the deep split ($p < 0.017$). For Vertucci Type VI blocks, CLC showed a significant difference at the coronal part of the isthmus and isthmus ($p < 0.017$). Each groups showed a significant difference in paired comparisons at the apical part of the isthmus ($p < 0.017$).

Conclusions: Our study showed that none of the obturation techniques provided a complete filling. At the apical region, it can be stated that the CLC method is insufficient in complex anatomies such as Vertucci Type V and Type VI. Therefore the use of the CCT or CWO methods may be recommended for these type of anatomies.

Keywords: Vertucci, Root canal obturation, 3D printed, Core carrier technique, Continuous wave obturation



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EVALUATION OF COLOUR CHANGE IN VARIOUS CERAMIC MATERIALS USING DIFFERENT COLOUR MEASUREMENT DEVICES

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Objectives: The aim of this in vitro study is to compare the CIEDE2000 (ΔE_{00}) values of different ceramic types measured using a colorimeter and two spectrophotometers.

Methods: In this study, the ceramic materials included lithium disilicate (LDS1; IPS e.max, Ivoclar Vivadent, and LDS2; Amber Mill; HassBio) and advanced lithium disilicate (ALD; Cerec Tessera, Dentsply Sirona). Specimens (n:12) were uniform thickness (1 mm). Color measurements were performed using spectrophotometers (Vita Easyshade V) with different software (v509i and V511vLE) and a colorimeter (NR110 Precision Colorimeter). Color measurements were conducted on A1 composite tooth-shaded backgrounds for each specimen within the study groups, and baseline color measurements were recorded. Following this, specimens, translucent cement layers, and tooth-shaded backgrounds were assembled, and a second measurements was obtained. The color differences were calculated using the CIEDE2000 (ΔE_{00}) color difference formula. Statistical analysis was performed using the Mann-Whitney U test to compare ΔE_{00} values ($p < .05$).

Results: In the LDS1 specimens, the color difference values between the different spectrophotometers (v509i and V511vLE) exhibited a statistically significant difference ($p < .001$). In the spectrophotometer (v509i), a significant color difference was observed between LDS1 and LDS2 ($p < .001$) as well as between LDS1 and ALD ($p = .011$). In the spectrophotometer (V511vLE), a significant color difference was found between LDS1 and ALD ($p = .011$).

Conclusion: Different spectrophotometers might affect color difference measurements. Additionally, composition of dental ceramics might influence color change.

Keywords: Ceramic Materials, Color Change, Measurement Devices

PP 48**CAD/CAM VS CONVENTIONAL CROWNS: A COMPREHENSIVE COMPARISON WITH EMPHASIS ON ZIRCONIA**

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Objectives: The advancement of CAD/CAM technologies have brought a paradigm shift in the field of prosthetic dentistry, offering promising alternatives to traditional crown fabrication methods. This bibliographic review aims to examine the properties of CAD/CAM zirconia crowns and compare them to conventional crowns, focusing on key characteristics such as aesthetics, marginal fit, and internal gap.

Methods: The literature review was performed by searching articles from 2020 to 2025 in PubMed and Google Scholar databases using the keywords "CAD-CAM zirconia crowns", "conventional crowns", and "CAD-CAM in prosthetic dentistry". Studies related to CAD-CAM zirconia crown's accuracy were included, as well as comparative studies between CAD-CAM zirconia and conventionally produced crowns. The study emphasized in characteristics such as aesthetics, marginal fit and internal gap.

Results: According to studies CAD-CAM zirconia crowns showed enhanced aesthetic results. Moreover, there was reported satisfactory marginal adaptation in 6 included studies between CAD-CAM zirconia and conventional crowns. The internal gap for CAD-CAM zirconia crowns was considered acceptable in 3 included studies. Specifically, significant differences were reported in the internal fit ($p=0.000$) with CAD/CAM Zirconia exhibiting a $45.76\mu\text{m}$ smaller internal gap than metal-ceramic. Furthermore, studies concluded that CAD-CAM techniques offer the advantage of less procedure time.

Conclusions: CAD-CAM zirconia crowns offer essential clinical advantages compared to conventional crowns, particularly as it pertains to features such as aesthetics, marginal adaptation, and internal fit. CAD-CAM technology could reduce procedural time without compromising quality, thus CAD-CAM zirconia crowns could be considered a consistent alternative prosthetic restoration.

Keywords: CAD/CAM zirconia crowns, conventional crowns, CAD/CAM in prosthetic dentistry

PP 49

THE CUTTING EFFICIENCY OF FOUR TYPES OF DIAMOND BURS ON MONOLITHIC ZIRCONIA

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Objectives: The removal of zirconia crowns remains to be a hardship, caused by material hardness and high flexural strength. The study presented examined cutting efficiency of four types of diamond burs, using an air turbine on anatomical crown of upper premolar, made from monolithic zirconia.

Methods: The master model presented a maxillary jaw with prepared abutment premolar, printed from resin. The crowns were designed, cut and sintered using the standard manufacturing protocols. The groups were categorized by diamond bur grit into four groups, depicted through collar ring colour as Green, Red, Double green and Double red. The zirconia crowns were seated on the abutment and cut with an air turbine (6 per group). The time required for cutting of axial groove through the crown, and not damaging the abutment tooth, was used as indicator of cutting efficiency.

Results: The cutting efficiency varied with diamond bur grit. The most effective was the Red group (70 ± 6 s), followed closely by the Double red (72 ± 6 s), Double green (82 ± 6 s) and the Green group (86 ± 6 s).

Conclusion: The fine grit diamond burs are more effective at cutting monolithic zirconia crowns, oppose to the ones with coarser bur grit.

Keywords: zirconia, diamond bur, cutting efficacy

PP 50

MICROMORPHOLOGY ANALYSIS AFTER PROFESSIONAL ORAL HYGIENE PROCEDURES ON ZIRCONIA RESTORATIONS

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Objectives: The aim of this study was to determine whether routine dental procedures, such as brushing and ultrasonic scaling, affect the surface microtopography of veneered and CAD/CAM milled zirconia (partially stabilized with yttrium) prosthetic restorations.

Methods: The samples (4 × 4 mm, thickness 2 mm; n = 36) were separated from zirconia blanks (3Y-TZP-LA). One group was veneered with ceramics, and the other group of samples was CAD/CAM milled. Each group had two subgroups: polished and glazed.

The samples of both groups: zirconia veneered and zirconia milled were divided into 3 subgroups: 0-no treatment (control samples); a- exposed to ultrasonic scaling (with a ultrasonic scaler incorporated in a dental unit) for one minute; b- exposed to brushing with a professional dental polishing nylon brush and abrasive paste (Super Polish, Kerr) for one minute. The application of brushing or ultrasonic scaling of the samples lasted 1 min (in 10 rounds), imitating the procedure carried out over a period of 5 years.

The parameters of surface micromorphology were calculated before and after simulating the given methods of the professional maintenance of oral hygiene. Scanning electron microscopy (SEM, Model JSM-6390, JEOL, Inc., Tokyo, Japan) was used to evaluate zirconia surface properties carried out at 150× magnification.

Results: The SEM analysis showed the greatest change in surface microtopography after the use of ultrasonic scaling on glazed zirconia samples, both veneered (88.31 µm) and CAD/CAM milled (45.38 µm) samples.

Conclusions: Routine methods of oral hygiene professional maintenance can damage the surfaces of glazed zirconia restorations.

Keywords: zirconia, CAD/CAM, ultrasonic scaling, SEM, surface microtopography

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IMPACT OF EROSIVE AND ABRASIVE WEAR ON SURFACE ROUGHNESS OF HYBRID CERAMIC-POLYMER DENTAL MATERIALS

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Objectives: The aim of this study was to evaluate and compare surface roughness of hybrid ceramic-polymer dental materials before and after their exposure to erosive and abrasive media.

Methods: Rectangular-shaped specimens were fabricated from Vita Enamic (VE), Cerasmart (CS), and VarseoSmile Crown (VSC). Surface roughness (SR) using profilometer and scanning electron microscopy (SEM) analyses were performed before (T0) and after exposing specimens to gastric juice (GJ), toothbrushing (TB), or combined (GJ TB) for simulated one (T1) or two years (T2) in the oral cavity. The impact of three factors (materials × aging treatments × measurement time) on the average surface roughness (Ra) was assessed using three-way repeated measures ANOVA. Data were compared using Tukey and Bonferroni tests and presented as mean ± standard deviation.

Results: At T0, VSC exhibited significantly higher Ra, less homogeneous surfaces in profilometer line graphs and SEM micrographs than VE and CS. At T1 and T2, all specimens revealed an increase in Ra, alterations on profilometer line graphs, and surface damage on SEM micrographs. Pronounced changes were in GJ TB specimens, followed by GJ (within VE and CS) or TB specimens (within VSC).

Conclusions: VE and CS showed initially lower surface roughness, lower resistance to GJ and higher resistance to TB than VSC. Therefore, VE and CS are not recommended for dental restorations in patients with a high prevalence of dental erosion, whereas VSC might not be the best option for restorations in patients at a high risk of tooth abrasion.

Keywords: ceramic-polymer; acidic media; surface characteristics

PP 52

IMPACT OF EXCESS CEMENT REMOVAL ON MARGINAL SEALING OF CAD/CAM HYBRID POLYMER-CERAMIC ENDOCROWNS

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Objectives: The aim was to evaluate and compare the impact of excess cement removal techniques on marginal sealing quality of CAD/CAM hybrid polymer-ceramic endocrowns.

Methods: Extracted caries-free human molars were prepared following standard tooth preparation guidelines for endocrowns. The prepared teeth were scanned using commercial intraoral scanner, then the endocrowns were digitally designed and manufactured of CAD/CAM hybrid polymer-ceramic block (Cerasmart) using milling machine. Endocrowns were then cemented to the teeth using bonding agent (G-CEM One) of two layer thicknesses (100 µm and 200 µm), with and without previously applied adhesive enhancing primer (AEP), following manufacturer's adhesion protocol. The cement was then light-polymerized using 'tack curing' method followed by excess cement removal with dental probe or using classical light polymerization procedure followed by excess cement removal using silicone rubber polishers. The marginal sealing quality was then evaluated using surface roughness analysis using profilometer and by examination using optical microscope.

Results: Higher average (Ra) and maximum surface roughness (Rz), as well as the presence of surface defects on micrographs at the marginal area were noticed in the 'tack curing' group. Smoother marginal surface area was found in 100 µm thickness group compared to 200 µm thickness group, both of them superior when used in combination with AEP.

Conclusions: The best marginal sealing quality of CAD/CAM hybrid polymer-ceramic endocrowns was achieved when adhesive cement was used in 100 µm layer thickness, with previously applied adhesive enhancing primer, and with classical light polymerization technique with cement excess removal using silicone rubber polishers.

Keywords: Excess cement removal, Marginal sealing, Ceramic-polymer endocrowns

PP 53

ADAPTATION OF DIFFERENTLY PRODUCED AND CEMENTED PROVISIONAL RESIN-BASED COMPOSITE CROWNS

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Objectives: The aim was to evaluate the marginal and internal adaptation of differently produced and cemented provisional resin-based composite crowns.

Methods: Extracted caries-free human molars were prepared following tooth preparation guidelines for ceramic restoration. Conventional crowns (Luxatemp) were produced using the direct technique and previously obtained silicone mold. CAD/CAM (Voco) and 3D printed crowns (Sprintray) were fabricated by scanning the prepared teeth using commercial intraoral scanner, thereafter the crowns were digitally designed and manufactured using milling machine or 3D printer. The crowns were cemented using zinc oxide non-eugenol or resin-based temporary luting agents. Following thermal cycling aging procedure, the crown-tooth specimens were submerged in methylene blue dye solution for 24 h, then washed and sectioned along buccolingual direction using a water-cooled diamond disc in a cutting machine. The sectioned teeth were inspected under a calibrated stereomicroscope with a digital camera to evaluate the level of dye penetration.

Results: A statistically significant difference was found in the mean linear dye penetration among tested materials and luting agents. 3D printed crowns exhibited less microleakage and therefore better marginal and internal adaptation compared to conventional and CAD/CAM provisional resin-based composite crowns. The crowns cemented with resin-based luting agent were superior regarding the same characteristics compared to the ones cemented with zinc-oxide non-eugenol luting agent.

Conclusions: Provisional resin-based composite crowns produced by 3D printing showed better marginal and internal adaptation compared to conventional and CAD/CAM crowns, superior when cemented with resin-based temporary luting agent compared with the ones cemented with zinc-oxide non-eugenol luting agent.

Keywords: provisional crowns; resin-based composite; microleakage

PP 54

ASSESSMENT METHODS FOR THE TOOTH PREPARATION IN FIXED PROSTHODONTICS: ANALOG VS DIGITAL

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Objectives: Tooth preparation has an impact to the quality and longevity of prosthetic restorations. Different assessment systems for the tooth preparation can be used for dental education and improvement of everyday workflow as well. The aim of this study is to compare assessment methods for tooth preparation in fixed prosthodontics.

Methods: Mandibular first premolar was chosen to be prepared for metal ceramic crown in accordance with biomechanical principles of preparations. A total of 20 prosthodontic residents performed preparations and were randomly divided into: analog group – where preparation was checked by experienced doctor, and digital group where quality of preparation was self-assessed through scanning and evaluation of intraoral scan. All teeth were digitized prior to preparation by using intraoral scanner (Primescan, Dentsply Sirona). After chosen assessment method where quality of preparation was evaluated through measurement of tooth reduction and convergence angle, each resident performed preparation of another teeth and evaluated the quality of preparation using the same assessment method as previously used. In this way residents performed three teeth preparations. All performed preparations of both groups were scanned, exported as STL files and imported into software program (Carl Zeiss GOM Metrology GmbH, Germany) for inspection and quantitative analysis of results, by comparing scans before and after preparation.

Results: Quality of preparation improved after adequate assessment in both groups. Significant decreasing of convergence angle and undercuts were detected in digital group.

Conclusions: Tooth preparation assessment method affects preparation quality. Digital methods may bring significant improvement in preclinical and clinical dental training.

Keywords: tooth preparation, analog assessment, digital assessment, fixed prosthodontics

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MECHANICAL PERFORMANCE OF IMPLANT PROSTHESES WITH INTERNAL VS. EXTERNAL CONNECTION

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Objectives: This study compares the fracture strength and mechanical performance of implant-supported prostheses with internal and external connections under different loading conditions, focusing on their role in fracture resistance and clinical success.

Methods: A systematic review of in vitro studies and meta-analyses was conducted following PRISMA guidelines. A literature search in PubMed, Scopus, and Web of Science used the keywords "implant-abutment connection," "fracture strength," "stress distribution," "screw loosening," and "implant-supported prostheses." Ten studies met the inclusion criteria. Mechanical tests, including bending moment tests and axial/oblique loading simulations, were analyzed to assess durability and failure resistance. Statistical analyses compared fracture strength, stress concentration, and complication rates.

Results: Our findings in these literatures indicate that internal connections demonstrated higher fracture strength and better stress distribution, leading to lower rates of screw loosening and marginal bone loss. External connections, while effective, showed a higher incidence of screw loosening and greater marginal bone loss, particularly under oblique loading.

Conclusions: Both connection types endure mechanical loads; however, internal connections exhibit superior fracture resistance and stress distribution, reducing complications. Future research should further explore their long-term clinical implications.

Keywords: Implant-abutment connection, fracture strength, stress distribution, screw loosening, implant-supported prostheses

PP 56**CONCAVE EMERGENCE PROFILE DESIGN**

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Objective: Comparison of the fracture strengths of individual abutments made of 3 different materials with concave emergence profiles.

Methods: In this in-vitro study, 15 zirconia crowns with straight emergence profiles were used as control group and 15 crowns with concave emergence profiles prepared from zirconia (IvoclarVivadent, Liechtenstein), lithium disilicate (IvoclarVivadent, Liechtenstein) and PEEK (Whitepeaks, Germany) materials were used as test groups. 15 samples of each materials were produced and cemented onto the ti-base (OMNItech Medical Devices Manufacturing Technologies, Turkey) All samples were screwed to the implant bodies and embedded in autopolymerized acrylic. The samples were placed in the Universal Testing Machine and subjected to shear bond strength testing at a speed of 0.5 mm per minute. The shear bond strength test was adjusted to be stopped in the event of a 10% deviation in the applied force via the Trapezium X program of the Universal Testing Machine. Statistical analysis of the data was performed using one-way analysis of variance (ANOVA) using the SPSS 21.0 program.

Results: In the control group, 7 screw-5 material fractures, 2 screw and material fractures and decementation, and 1 decementation; in the zirconia group, 14 screw fractures, 1 screw and material fracture; in the lithium disilicate group, 10 material-4 screw fractures, 1 material and screw fracture; in the PEEK group, 5 screw fractures, and 10 decementation were observed.

Conclusion: In our study, it was concluded that PEEK material is the most suitable material to be used with the concave emergence profile design.

Keywords: concave emergence profile, zirconia, lithium disilicate, PEEK, fracture resistance

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COMPARISON OF DIFFERENT MATERIALS USED FOR OCCLUSAL SPLINTS

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Objective: Occlusal splints are widely used in the treatment of temporomandibular disorders and offer several benefits such as reducing the activity of the masticatory muscles, protecting the teeth from excessive wear and protecting against parafunctional habits. Occlusal splints can differ in design, function and material. The aim of this review was to investigate the materials and fabrication techniques for occlusal splints.

Methods: An electronic search of the English-language literature in the PubMed/Medline database using the following keywords: "occlusal splint", "materials" and "fabrication". The data were analysed to highlight the advantages and disadvantages of the materials and fabrication techniques.

Results: Conventional methods such as sprinkle-on, thermoforming and lost-wax techniques, have been complemented by advanced CAD/CAM technologies such as subtractive milling and additive 3D printing, which offer greater precision and efficiency. Digitally fabricated splints can streamline the process by minimizing the number of steps and reducing human error, resulting in a more predictable and efficient outcome. The choice of material-polymethyl methacrylate (PMMA), polyethylene terephthalate glycol (PET-G), polyether ether ketone (PEEK), polyolefin, ethylene vinyl acetate (EVA) and polycarbonate- plays a critical role in the splint's biocompatibility, mechanical properties, durability and patient comfort.

Conclusions: Occlusal splints are an effective treatment for various temporomandibular disorders. The choice of material is an important decision in treatment planning, which is largely influenced by the requirements of the individual case and the treatment goal. Factors such as biocompatibility, ease of fabrication, adjustability, cost and patient preference should be carefully considered when selecting the appropriate material.

Keywords: Occlusal splints, materials, CAD/CAM, Conventional methods

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EPITHESES RETENTION IN MAXILLOFACIAL PROSTHETICS

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Objectives: Defects in maxillofacial region, (orbital, nasal, auricular), caused by trauma, congenitally or after resective surgery, are indicated for reconstructive surgery. If patients are not eligible for reconstructive procedures, the best solution is prosthetic reconstruction. The main problem in maxillofacial prosthodontics is prosthesis retention. Techniques to retain prosthesis depend on shape and size of the defect: 1. Anatomical - fixed with the anatomical structures (cavity of the defect that is undermined) 2. Mechanical - attached by mechanical structure: spectacle (nasal, orbital), hair tie (auricular) 3. Chemical - adhesive (non-toxic to skin and mucosa) 4. Extraoral craniofacial implants. The objective of this study was to assess the most reliable epithesis retention methods and their long term use span.

Methods: Assessment included 45 patients indicated for maxillofacial prosthetic rehabilitation. The data was obtained at controls and prosthesis reparation consultations.

Results: The Best results were obtained with implant retained prosthesis, with significantly improved stability with use span over 5 years of 90%, mechanically retained prosthesis with use span of over 4 years in 85% due to size and easy breakage, adhesive retained had shorter usage span approximately 3,5 years of 80% of the cases due to prosthesis glue hard residue removal and contact dermatitis, anatomically retained prosthesis had use span of over 3 years in 70% due to changes in supporting tissues.

Conclusion: Implant retained prosthesis were the most successful with the longest use span, alternative retention methods didn't show as much success over a long time use period.

Keywords: Epithesis, Retention, Prosthesis

PP 59

INFLUENCE OF DENTAL MATERIALS ON MAGNETIC RESONANCE IMAGING

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Objectives: Magnetic resonance imaging is used for diagnosis and monitoring of disease, especially when soft tissues require to be imaged. Various metallic prostheses may limit the usefulness of magnetic resonance imaging because they cause image degradation, thus artifacts may obscure the lesion as well as the normal anatomy. This could be a serious problem in head and neck imaging, because many patients have had significant metallic reconstructive dental work. The aim of this literature review was to evaluate the impact that various dental alloys have on MRI imaging quality and thus the overall diagnostic value.

Methods: Electronic searches of PUBMED database was completed.

Results: Interactions of dental materials during MRI scans can be special hazards during the procedure as well as interference in the diagnostic image. Various materials can produce different artifacts in the final diagnostic image. There are three types of substances, according to their magnetic susceptibilities, that need to be considered in MRI, namely, paramagnetic, ferromagnetic and diamagnetic.

Conclusions: Knowledge about the interaction of dental materials and MRI is essential for dentists and radiologists. MRI centers can be notified whether the restoration is MRI friendly or not. Materials for prosthetic restoration should be selected based not only on their biological compatibility and functional and esthetic qualities, but also on whether they generate minimum artifacts in MRI. All ceramic restorations are a valuable alternative in dentistry regarding MRI.

Keywords: Magnetic resonance imaging, Dental materials, Dental alloys

PP 60

EVALUATION OF DENTAL AND FACIAL MIDLINES AMONG DENTAL STUDENTS

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Objectives: Ensuring the alignment of the facial midline with the maxillary dental arch midline is considered as essential aesthetic principle in dental prosthetic rehabilitation, as symmetry plays a key role in achieving facial harmony and the overall success of esthetic treatments. The objective of this study was to determinate the coincidence of the dental and facial midlines in young individuals.

Methods: The study included 110 dental students of both sexes aged 18-22 years who had never been subjected to any dental treatment. Frontal full-face photos were taken with teeth in occlusion using professional digital camera Nikon Z6 II–24.5 MP from distance of 100cm each. Specialized software programs were utilized to analyze the alignment of the facial and dental midlines. SPSS Version 23.0 was used for data analysis with level of significance set at 0.05.

Results: The results indicate that the midline is situated in the exact middle of the mouth in approximately 60% of the students. Most of the study participants displayed a deviation of 0–1 mm between the facial midline and the midline of the anterior teeth. The coincidence of the maxillary and mandibular midlines was 38.1%. Left-sided deviations were also recorded more frequently.

Conclusion: The coincidence of the maxillary and mandibular midlines was observed in just over one-third of the participants. The facial midline aligned with the anterior teeth midline in approximately 60% of the sample, with left-sided deviations being more frequent.

Keywords: Dental midline, Facial midline, Facial esthetics

PP 61

EFFECT OF CHRONOTYPE PROFILE ON DENTAL STUDENTS' PSYCHOLOGICAL STATUS IN TURKEY

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Objectives: The aim of this study was to evaluate the effect of chronotype profile on the psychological status of students at Usak University Faculty of Dentistry.

Methods: This study included 277 dental students. The Morningness-Eveningness questionnaire was used to determine the chronotype profile and DASS-21 questionnaire was used to assess psychological status. The students were randomly selected and asked to sign an informed consent form. Google survey forms were used to send online questionnaire via email. Descriptive statistics were calculated, and Mann-Whitney U test was conducted. Statistical significance was set at $\alpha = 0.05$.

Results: Among female students, significantly higher mean total DASS-21, anxiety, and stress scores were observed compared to male students ($p = 0.037$, $p = 0.01$, $p = 0.048$). However, there was no statistically significant difference in mean total DASS-21, depression, anxiety, and stress score based on the chronotype profile ($p > 0.05$). 85.2 % of the dental students had an intermediate chronotype profile, followed by eveningness profile (12.2 %) and morningness profile (2.2 %).

Conclusions: Female students were more prone to anxiety and stress compared to male students. However, the chronotype profile did not have a significant impact on the students' psychological status. The most common chronotype among students was the intermediate profile (85.2 %).

Keywords: Chronotype, Stress, DASS-21

PP 62

AN ALTERNATIVE REHABILITATION FOR ENDODONTICALLY TREATED MOLARS WITH SEVERE CORONAL DAMAGE

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Objectives: This case report presents endocrown restoration as a minimally invasive alternative for molars with significant coronal damage following endodontic treatment. The goal was to restore both function and aesthetics while minimizing intervention and preserving tooth structure.

Case Report: A 16-year-old female patient presented with severe coronal damage and impaired masticatory function in tooth #37. Clinical and radiographic assessments confirmed adequate endodontic therapy. The patient exhibited good oral hygiene and stable occlusion. After removal of the existing restoration, and considering the remaining tooth structure, wall thickness, and patient age, an endocrown restoration was recommended. A monolithic zirconia endocrown was selected due to its mechanical strength and aesthetic properties.

The tooth preparation followed the biomechanical requirements for endocrown restorations, including adequate occlusal reduction, access to the root canal, and preservation of dentinal walls. Digital impressions were obtained using an intraoral scanner, and the restoration was designed using CAD/CAM technology. A provisional PMMA restoration was placed to verify occlusal fit, and the final zirconia endocrown was cemented after necessary adjustments.

Conclusion: Endocrown restoration offers a conservative and effective solution for endodontically treated molars with significant coronal damage. It restores function and aesthetics, preserves tooth structure, and reduces chairside time and patient visits. This approach aligns with minimally invasive dentistry principles and demonstrates successful biointegration and long-term durability.

Keywords: CAD-CAM, Minimally invasive dentistry, Severely damaged tooth, Endodontically treated teeth, Endocrown

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ENDOCROWN REHABILITATION OF ROOT CANAL TREATED TOOTH WITH EXCESSIVE MATERIAL LOSS

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Objectives: With the development of adhesive systems and all-ceramic restorative materials, restorations for teeth with excessive substance loss have gradually shifted from post-core and crown applications to more minimally invasive techniques. In this case report we are aimed to restore the tooth using this treatment method and save the remaining tooth tissue.

Case Report: A healthy 20-year-old female patient presented with excessive substance loss in her upper right second premolar. The tooth was root canal treated and the periapical tissues were healthy. After restoring the patient's existing caries, deep margin elevation was planned and prepared the preprosthetic restoration. The tooth was then prepared for the endocrown. Scanning was performed with the Trios 3 intraoral scanner. Endocrown design was made in coordination with the laboratory. A lithium disilicate glass-ceramic (IPS e.Max CAD) endocrown restoration was prepared using CAD-CAM technology. The restoration was cemented under rubber dam isolation with adjacent teeth protected by Teflon tape. The patient was called for follow-up visits at the 6th and 12th months. During these check-ups, the patient had no complaints, and the periodontal tissues were healthy.

Conclusion: Endocrown application in teeth with great substance loss and root canal treatment is beneficial in terms of providing predictable aesthetic results even after 12 months follow up and responded to the functional and aesthetic needs of the patient. The restorations were evaluated at 6-month intervals according to modified ryge criteria and the results were favorable. So it can be considered as an alternative treatment to post-core and crown restorations.

Keywords: Endocrown, Deep Margin Elevation, CAD-CAM

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RESTORATION OF MAXILLARY ANTERIOR TEETH WITH LAMINATE VENEERS AND JACKET CROWNS: CASE REPORT

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Objective: Nowadays, patients consult our clinic for complaints such as gaps in the upper anterior teeth, imbalanced tooth ratios, congenital tooth agenesis, and loss of function. In such cases, an interdisciplinary treatment approach involving both orthodontics and prosthodontics may be required. After the correction of tooth positions, prosthetic treatments are performed to replace missing teeth, correct the midline, and improve tooth morphology.

Case Report: A 43-year-old male patient presented to our clinic with aesthetic and functional complaints following orthodontic treatment. Clinical and radiological evaluations revealed congenital agenesis of teeth 12 and 22, adjacent positioning of teeth 11 and 13, and misalignment of the axes of teeth 11, 21, and 23. In the maxilla, five implants were placed in the spaces of teeth 13, 15, 16, 22, and 26. Considering both aesthetic and mechanical strength, laminate veneers made of lithium disilicate material were placed on teeth 11, 13, 21, and 23, and porcelain jacket restorations were placed in the implant-supported regions.

Conclusion: As a result of the applied treatment, the patient's functional and aesthetic expectations were successfully met. No complaints or issues were observed during the patient's 1st and 3rd-month follow-up visits. The patient's routine check-ups are being conducted regularly.

Keywords: Laminate Veneers, Lithium Disilicate, Aesthetic Restorations

PP 65

WHAT ELSE CAN WE DO WITH MINIMALLY INVASIVE APPROACHES?

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Objectives: It is known that tooth loss in the anterior region of the jaw leads to aesthetic, functional, and phonetic complications in young patients whose vertical facial development is not yet complete. Treatment options can be designed with adhesive minimally invasive methodologies that avoid implants or bridges that rely on multiple teeth for support.

In partial edentulism of the anterior region, single-tooth supported cantilever restorations allow treatment without interfering with physiological tooth movement. The aim is to present minimally invasive cantilever treatments to two young patients with single tooth loss.

Case Report: Case 1: A 16-year-old male patient who lost tooth number 11 due to trauma, aesthetics, and phonation was met with laminate veneer preparation and single-tooth supported cantilever restoration on tooth number 21.

Case 2: The aesthetic and functional rehabilitation of an 18-year-old female patient with missing tooth number 21 was completed with a cantilever restoration that only includes an abutment part on the palatal surface of tooth number 11.

Conclusions: In the presence of a single missing tooth, single-tooth-supported cantilevers can be applied using minimally invasive methodologies. This approach holds considerable promise in compensating for both the aesthetic and functional losses experienced by young patients.

Keywords: single-tooth deficiency, diastema, minimally invasive approach, cantilever, adhesive dentistry

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SINGLE DISCOLOURED TOOTH – ESTHETIC DILEMMAS AND A MINIMALLY INVASIVE APPROACH

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Objectives: A single discoloured tooth presents a significant challenge in aesthetic dentistry, particularly when a minimally invasive approach is desired. Achieving precise colour matching becomes complex due to variations in underlying tooth structure and material translucency. The selection of ceramic materials for veneers offers a broad spectrum of possibilities for optimal esthetic integration.

Case Report: A 23-year-old female patient presented at the clinic, dissatisfied with her smile. She exhibited a high smile line, which accentuated a discoloured central incisor (tooth 21), while tooth 11 had a cracked incisal edge. A conservative approach was chosen, involving veneer preparation for tooth 21 and a non-prep partial veneer on tooth 11. However, the presence of three distinct surfaces—natural enamel, a partial veneer, and a feldspathic veneer—led to initial colour mismatching. To correct this, a veneer preparation was also performed on tooth 11 to achieve uniform color harmony.

The treatment followed the APT (Additive-Preparative-Tested) concept, including wax-up, mock-up, and preparation guides. An analogue impression was taken using A-silicone to create refractory dies for feldspathic ceramic veneers. After a successful try-in, the final restoration was cemented using A1-shade resin cement to ensure optimal color blending.

Conclusion: Managing aesthetic cases involving a single discolored tooth requires a comprehensive approach, balancing minimal invasiveness with precise color matching. The integration of planning, advanced material selection, and a systematic cementation protocol ensures a harmonious esthetic outcome in complex cases.

Keywords: veneers, feldspathic ceramic, minimally invasive

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TWO DIFFERENT PROSTHETIC APPROACHES FOR CONGENITAL MAXILLARY LATERAL TOOTH DEFICIENCY: A CASE REPORT

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Objections: Different treatments can be applied to provide esthetic and functional success in lateral tooth deficiencies in the maxillary anterior region. This study aims to emphasize how implant-supported restorations and laminate applications constitute alternatives in the esthetic region after orthodontic preparation and the place of these approaches in treatment planning.

Case Report: Congenital deficiency of lateral teeth was detected in the intraoral and radiographic examinations of two different patients who applied to our clinic with diastema complaints in the maxillary anterior region. Orthodontic treatment was planned for the first patient to create lateral tooth spaces. Following orthodontic treatment, lateral tooth deficiencies were restored with implant-supported fixed prostheses. Due to the mesio-distal width of lateral tooth spaces, central and canine teeth were also included in the planning and laminate restorations were applied. The other patient's canine and premolar teeth were mesialized to the relevant area. After the mock-up performed on the patient, it was decided to apply laminate to the central and canine teeth and full crown to the premolar teeth. All restorations were manufactured using lithium disilicate, which has high esthetic and mechanical strength.

Conclusion: Both cases demonstrate that different approaches can be successfully used in the treatment of lateral tooth deficiency in the esthetic region. While laminate and full crown applications provide esthetic results compatible with natural teeth, implant-supported fixed prostheses after orthodontic preparation offer functional and long-term esthetic solutions with high compatibility. Treatment selection should be customized according to the patient's needs and current clinical condition.

Keywords: Congenital Tooth Deficiency, Laminate Veneer, Orthodontic Treatment, Implant

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TREATMENT APPROACH FOR THE MISSING LOWER INCISORS WITH RESIN-BONDED-FIXED-PROSTHESIS: A CASE REPORT

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Objectives Resin bonded bridges are highly effective treatment option to restore the oral function and aesthetics and result in high levels of patient satisfaction. This bridges are minimally invasive with certain advantages such as minimal removal of the tooth structure, minimal potential for pulpal trauma, supra gingival margin preparation and reduced time and cost.

Case Report A 70-year-old female patient was referred to the Department of Prosthodontics with complaint of missing mandibular anterior teeth for a need of esthetic restoration with fixed dental prosthesis. Following clinical and radiographic examinations, a conservative and minimally invasive resin bonded fixed partial denture (RBFDP) was indicated. Minimal tooth preparation of the abutment teeth (#32 and #42) was performed following the standard technique on the lingual surfaces. Modified preparations were made on the abutment teeth (#33 and #43). A metal framework with 'wings' extending to the preparations was fabricated from non-precious alloy. Holes were drilled on the metal wings. The fitting surfaces of the 'wings' were sandblasted to create micromechanical retentive surfaces for the cement. The restoration was cemented using universal dual resin cement.

Conclusion The patient didn't have any esthetic and functional problems following 6-month period of use. Resin bonded bridges can be highly effective in replacing missing teeth, restoring oral function and aesthetics and result in high levels of patient satisfaction. Given thorough patient assessment and the use of careful clinical techniques, the resin bonded bridge should be considered more frequently as the restoration of choice for short spans.

Keywords: resin bonded, minimally invasive, fixed prosthodontics

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RESTORATION OF MAXILLARY ANTERIOR TOOTH LOSS WITH A MARYLAND BRIDGE: A CASE REPORT

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Objectives: Multidisciplinary approaches are favored in the resolution of dental aesthetic and functional problems. Prosthetic procedures may be necessary to restore tooth deficiencies in the anterior region after orthodontic treatment. For this purpose, Maryland bridges, a minimally invasive option, are commonly chosen in current dental practice. This case report presents the Maryland bridge method, an adhesive restoration, for the management of maxillary anterior tooth deficiency.

Case Report: A 22-year-old male patient presented with functional and aesthetic complaints after orthodontic treatment. Following clinical and radiological evaluations, it was determined that due to orthodontic treatment, the patient exhibited tooth mobility associated with bone resorption. As a result of this mobility, tooth number 21 was extracted. Bone augmentation was also considered as a treatment option for the patient; however, the decision was made to proceed with the application of a Maryland bridge. Minimal preparation was performed at the enamel level, 2 mm from the incisal edge, with a cingulum rest on the palatal surface and vertical grooves on the interproximal surfaces of the abutment teeth numbered 14, 12, 11, 22, 23 which exhibited mobility. A metal-ceramic material was selected for the Maryland bridge restoration.

Conclusions: As a result of the treatment, the patient's aesthetic expectations were successfully met. The mobile abutment teeth were splinted, and no clinical symptoms were observed during the patient's follow-up visits at 1 and 6 months. The patient's follow-up appointments are being conducted regularly.

Keywords: Maryland bridge, Resin bonded bridge, Dental aesthetics, Anterior missing tooth

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MULTIDISCIPLINARY TREATMENT FOR SINGLE ANTERIOR TEETH LOSS

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Objectives: Dentoalveolar traumas are common in young adults especially at the maxillary anterior region. Careful treatment planning and suitable material selection have crucial importance for these cases.

Case report: 34-year-old male patient presented with complaint of missing anterior teeth at the Department of Prosthodontics, Faculty of Dentistry, Ondokuz Mayıs University. The medical history revealed that the patient lost tooth 11 due to a dentoalveolar trauma and had undergone implant treatment for the replacement of tooth 11, while teeth 13 and 12 had received periodontal treatment. Upon intraoral examination, it was noticed there was insufficient mesiodistal space for tooth 11 to achieve symmetry with tooth 21. Before implant restoration for tooth 11, a temporary acrylic tooth was used for gingival shaping. Despite the periodontal treatments applied to teeth 13 and 12, complete recovery of the periodontal loss was not achieved, and due to the mobility of these teeth, it was decided to perform full crown restoration and splinting for teeth 13 and 12. For teeth 21, 22, and 23, porcelain laminate veneer (PLV) treatment was planned. Partial and full crown preparations were performed on the relevant teeth with a chamfer margin configuration. After mechanical retraction, impressions were taken using a custom tray and polyvinyl siloxane impression material (Elite HD, Zhermack, Italy). The final all-ceramic crowns and porcelain laminate veneers were fabricated using the IPS E. max Press II porcelain, which is strengthened with lithium disilicate, using the pressing technique. After the finished veneers were checked in the patient's mouth, the cementation procedure was performed.

Conclusions: After the finished veneers were checked in the patient's mouth, the cementation procedure was performed. The multidisciplinary treatment is very important for clinical success result.

Keywords: Dentoalveolar Trauma, Implant, Laminate, Crown

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CLINICAL COMPARATION BETWEEN NONMETAL MATERIALS IN ESTHETIC AREA

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Objectives: Which material is better for frontal region. Choosing the best material for dental restorations is not always straightforward. Comparing zirconia crowns and IPS e. Max crowns, they offer versatile, reliable and realistic restoration options. The aim of this presentation is comparing zirconia crowns and IPS e. Max crowns, they offer versatile, reliable and realistic restoration options. When it comes to material strength, Zirconia crowns are a bit more durable than e. Max.

Case Report: in our case we have two patients. One patient has abrasion on central incisors. We made two zirconia crowns. The other patient was with fracture on the central incisors from trauma. We made IPS e. max crowns.

Conclusion: Both zirconia crowns and IPS e. Max have a degree of translucency, IPS e. Max crowns are highly regarded for their ability to mimic real teeth. Zirconia crowns are good dental aesthetics. The material we used was chosen by the patient needs, biocompatibility, esthetics and functionality.

Keywords: esthetic, zirconia crowns, IPS e. max

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MULTIDISCIPLINARY APPROACH TO SMILE RECONSTRUCTION: ADDRESSING AESTHETIC AND FUNCTIONAL NEEDS

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Objective: This case report illustrates a comprehensive, multidisciplinary approach to smile reconstruction in a young adult female patient. It showcases how a combination of conservative treatments, guided surgery, implants, and prosthetics can address both aesthetic concerns and functional needs.

Case Report: A 24-year-old female patient presented with a pronounced gummy smile, damaged teeth, and a loss of vertical dimension, all of which were impacting both her aesthetic appearance and functional oral health.

The treatment plan was executed in phases, beginning with conservative treatments. The first phase included dental fillings and endodontic therapy. To ensure structural stability and durability, post-endodontic builds were completed using fiber posts, which provided reinforcement and ensured long-term tooth stability.

The second phase involved a guided surgical procedure to correct her gummy smile, while in the third phase, three dental implants were placed in the posterior regions to restore lost vertical dimension and provide functional support. These implants played a crucial role in re-establishing the proper bite and improving the patient's ability to chew.

The final phase involved the placement of cut-back zirconia crowns, which offered both a natural aesthetic appearance and the durability needed for long-term function.

Conclusion: This case highlights the significance of a multidisciplinary approach to smile reconstruction, particularly in younger patients facing complex aesthetic and functional issues. The approach demonstrates the potential for successful, long-lasting outcomes in complex dental reconstructions, offering a high standard of care to patients seeking comprehensive smile rehabilitation.

Keywords: multidisciplinary approach, smile reconstruction, functional rehabilitation

PP 73**PINK AESTHETICS IN FIXED PROSTHODONTICS: CLINICAL CASES**

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Objective: Fixed prosthetic restorations require a thorough analysis of the gingival tissues in terms of texture, placement and volume. Determining the cause of tooth loss is of great importance. There is a different bone loss in the presence of periodontal disease compared to acute trauma. The restorations in the frontal area are especially sensitive, in which a careful analysis of the border between dental and gingival tissues is necessary to achieve optimal white and pink aesthetics.

Case Report: Three patients: a 42-year-old female and two males, 29 and 35 years old, indicated for treatment with fixed prosthodontics, entered the clinic of the Department of Prosthetic Dentistry. After a detailed analysis, preliminary wax up and clinical demonstration by mock up of the prototype of the future restorations, we decided to make fixed prosthesis with an added gingival part. We made metal ceramic and zirconium prosthodontics, matching the colour of the natural gingiva with the one added on the restorations and creating a profile supporting hygiene procedures. The fabricated restorations fully met our requirements for aesthetics and function.

Conclusion: The analysis and reproduction of the gingival margin gives a secure and finished natural appearance of the fixed prosthodontics. The adaptation of the patients is in a very short period.

Keywords: Pink Aesthetics, Gingival Tissues, Fixed Prosthodontics

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PROSTHETIC REHABILITATION OF CLEFT LIP AND PALATE PATIENT – A CASE REPORT

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Objectives: This case report describes the prosthetic rehabilitation of a patient with cleft lip and palate who presented with missing maxillary incisors.

Case Report: The management of patients with cleft lip and palate requires a multidisciplinary approach involving medical and dental specialists. Treatment spans from birth to adulthood and includes a variety of interventions tailored to the developmental stage of the maxillofacial region and dentition. In some cases, it might be necessary to perform surgical intervention to the existing defect. For this purpose, procedures such as local flaps or tongue flap may be required. In addition to surgical and orthodontic treatment, prosthetic rehabilitation is often required for missing teeth, underdeveloped jaws, malocclusion and palatal defects. The prosthetic phase usually begins after orthodontic treatment has been completed. In this case, prior to prosthetic rehabilitation, the patient underwent orthodontic treatment, orthognathic surgery and a tongue flap procedure performed in the anterior maxilla. Non-surgical periodontal therapy was also performed. The ten maxillary anterior teeth were restored with zirconia ceramic bridge. A supragingival margin was chosen due to the patient's poor oral hygiene.

Conclusion: At the patient's 1-month and 1-year check-ups, no issues were observed on the tongue flap or around the prosthesis. The comprehensive treatment approach successfully restored the patient's dentition, esthetics, speech and masticatory function. Prosthetic rehabilitation plays a crucial role in such cases, as surgical and orthodontic interventions alone are often insufficient to achieve complete functional and esthetic restoration.

Keywords: bridge, zirconia ceramic, cleft lip and palate, tongue flap

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GRADUAL VERTICAL DIMENSION ELEVATION WITH A NIGHT SPLINT FOR MAXILLARY FULL ARCH REHABILITATION

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Objectives: The treatment of missing teeth in the maxillary anterior region is crucial, not only for functional reasons but also for aesthetics and psychological well-being. Balancing aesthetics, phonetics, function, and anterior guidance is essential, making implant treatment in this area critical.

Case Report: A 43-year-old female patient presented to our clinic with aesthetic concerns after losing her maxillary central and lateral teeth due to trauma. She had implants placed in the right and left maxillary lateral regions 3 months prior, but insufficient space for implants in the anterior region was noted. Therefore, a full maxillary restoration was planned to increase the vertical dimension. The rest vertical dimension was measured, the occlusal vertical dimension was established, and the interocclusal distance calculated. A hard transparent acrylic night guard (Fortex, Lucite Intl) was made for the upper arch, gradually increasing the vertical dimension. The guard was worn for 6 weeks without reports of muscle or temporomandibular joint pain. After 6 weeks, a silicone index (Zetaplus) was made for the opposing arch, and the teeth preparations were completed. Temporary restorations were used for 2 weeks with no issues regarding the new vertical dimension. Once the patient adapted, treatment was finalized with metal-supported porcelain restorations, ensuring canine-protected occlusion.

Conclusion: In patients with increased occlusal vertical dimension, adaptation before treatment and completing the prosthesis afterward is crucial. Otherwise, prosthesis fractures and joint pain may occur. During the patient's third-month follow-up, no porcelain fractures or parafunctional habits were observed.

Keywords: Night guard, Vertical dimension, Full arch rehabilitation

PP 76

PROSTHETIC TREATMENT OF A PATIENT WITH VERTICAL DIMENSION LOSS: A CASE REPORT

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Objectives: Tooth wear is caused by different reasons such as parafunctional habits, malposition, occlusal disorders. Tooth wear, tooth loss, loss of occlusal vertical dimension cause deterioration in stomatognathic system.

Case Report: A 46-year-old female patient referred to the Department of Prosthodontics Faculty of Dentistry of Süleyman Demirel University, in the extraoral examination, it was observed that the height of the lower face was extremely decreased and the occlusal vertical dimension decreased. It was found that dentin was exposed on occlusal and incisal surfaces and abrasion progressed to pulp horn. The patient's resting vertical dimension was determined, and it was found that the occlusal vertical dimension could be increased by up to 2mm from the patient's current vertical dimension. The teeth were prepared using a chamfer-style step bur, and based on digital measurements and designs, a temporary PMMA restoration was placed. For four weeks, the patient was observed. After 4 weeks, when the patient no longer reported any muscle or joint pain, the teeth were rehabilitated with a cut-back monolithic zirconium fixed bridge prosthesis.

Conclusions: In cases where the occlusal vertical dimension needs to be increased, it is very important to finish the prosthesis after long-term adaptation of the patient to the new vertical dimension, as in the case of the prosthetic approach. At the 6th month follow-up, no porcelain fracture was found, and no parafunctional habits such as squeezing or grinding were observed.

Keywords: occlusal vertical dimension, tooth wear, acrylic temporary crowns

PP 77**REESTABLISHING FUNCTIONAL OCCLUSION IN A PATIENT WITH UNILATERAL DISOCCLUSION: A CASE REPORT**

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Objective: This case report presents the functional and aesthetic rehabilitation of a patient with an anterior open bite and unilateral disocclusion applying metal-ceramic restorations. The primary objectives of the treatment were to address the patient's aesthetic concerns, restore occlusal stability, and alleviate temporomandibular joint symptoms by minimizing unilateral joint load.

Case Report: A 43-year-old systemically healthy male patient applied to our clinic with complaints of tooth loss, unilateral disocclusion, and TMJ symptoms. A comprehensive clinical and radiographic evaluation was performed to determine an optimal prosthetic treatment approach. As the patient declined implant therapy for his missing teeth, a full-arch metal-ceramic restoration was planned for the maxilla. To reestablish proper occlusion in the lower right quadrant, teeth numbered 45 and 47 were added into the treatment plan.

Following tooth preparation, polyvinyl siloxane based impressions were obtained, and provisional restorations were delivered during the same appointment. Subsequent follow-up visits with try-in focused on establishing bilateral occlusal contacts and eliminating the left-sided disocclusion. Upon completion of these occlusal adjustments, the patient reported a significant reduction in TMJ-related symptoms. The final restorations, establishing both functional and aesthetic expectations, were delivered

Conclusion: No complications were observed during the clinical and radiographic follow-ups. The restoration of bilateral occlusion resulted in a significant reduction in the patient's TMJ symptoms. The key benefits of the proposed prosthetic treatment plan included: 1)Even distribution of occlusal forces, 2)Reduction of excessive TMJ load,3)Fulfillment of both functional and aesthetic requirements.

Keywords: Unilateral disocclusion, Metal-ceramic restorations, Occlusal stability, Temporomandibular joint (TMJ), Anterior openbite

PP 78

VERTICAL REESTABLISHMENT OF A RHEUMATOID ARTHRITIS PATIENT WITH AN OVERLAY REMOVABLE PARTIAL DENTURE

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Objective: Restoring the vertical dimension of occlusion is an important phase during prosthetic treatment. In rheumatoid arthritis, an anterior open bite can be observed in these patients in addition to this condition. The rehabilitation of these patients requires complex, expensive and long-term treatment. An overlay removable partial denture can be a viable alternative as it is simple to fabricate and reversible. As a temporary treatment, it does not require preparation of the teeth, restores the vertical dimension of the occlusion and allows the patient to adapt to this new dimension until the final rehabilitation can be planned and completed.

Case Report: This case report presents the treatment of a 51-year-old female patient with rheumatoid arthritis who was referred to our clinic and whose anterior open bite has progressively evolved over the last two years. This case report describes the temporary rehabilitation of a patient who was in the early stages of condylar arthritis, which was more severe in the left condyle and showed progressive development of an open bite over time. A removable partial denture for the lower arch was proposed to provide the patient with a functional restoration until the final treatment was completed.

Conclusion: An overlay partial denture for a rheumatoid arthritis patient with an anterior open bite can be a treatment alternative for restoring occlusal contacts. After follow-up, the patient can either proceed to permanent prosthetic treatment (e.g. crowns, bridges or implants), or the condition may require alternative approaches depending on progress.

Keywords: rheumatoid arthritis; open bite; overlay; vertical dimension

PP 79

PROSTHODONTICS REHABILITATION WITH TELESCOPIC DENTURES OF POLYOXYMETHYLENE IN GERIATRIC POPULATION

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Objectives: In accordance with the growing elderly population, who often require complex dental care it is crucial to find simple, effective, safe and economical solutions to improve oral health. Oral health is very important for the quality of life among geriatric patients because it affects their social interaction, dietary choices, body weight and potentially gastrointestinal disease.

Case Report: A 68-year-old female patient presented to the Clinic for Prosthetic Dentistry for prosthetic rehabilitation of teeth in both jaws. The patient stated that she had a stressful period in her life and that she neglected her oral health. This resulted in the loss of a large number of teeth. The clinical examination and OPT analysis revealed the presence of 3 teeth in the upper jaw (17, 25, 27) and 2 teeth in the lower jaw (33,43) with a favorable periodontal prognosis. The fabrication of the telescopic denture was indicated, whereby the inner crowns were made of cobalt and chromed alloy and the framework and outer crowns were made of polyoxymethylene (POM). The key factors that define the success of the treatment are recorded on the day of the denture delivery and at follow-up examination after 3 months, 6 months and one year.

Conclusion: The positive outcome of prosthetic therapy established at follow-up examinations after 3 months, 6 months and one year indicates that telescopic denture of POM improve the quality of life of geriatric patients and provide optimal retention, stability and comfort for them.

Keywords: telescopic denture, polyoxymethylene, geriatric patients

PP 80

ENHANCING COMPLETE DENTURE DUPLICATION THROUGH CAD/CAM TECHNOLOGY – CASE REPORT

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Objectives: The primary objective of this study is to demonstrate the effectiveness of Computer-Aided Design/Computer-Aided Manufacturing (CAD/CAM) technology in replicating complete dentures for elderly patients. This approach aims to enhance patient comfort, reduce adaptation difficulties, and improve the efficiency of prosthetic rehabilitation. Additionally, the study highlights the advantages of digital replication over traditional methods in terms of accuracy, material quality, and reduced clinical time.

Case Report: A 72-year-old female patient presented with a request for new complete dentures, as her existing prosthesis showed signs of wear but was still functionally satisfactory. Due to her age-related decline in neuromuscular coordination and adaptation ability, the decision was made to replicate her existing dentures using CAD/CAM technology. The digital workflow included scanning the current dentures, designing an exact replica with optimized occlusal vertical dimension and improved retention, and fabricating the prosthesis using advanced milling techniques. The final prosthesis provided a seamless transition for the patient, preserving the familiar fit while enhancing stability and comfort.

Conclusions: This case report highlights the advantages of CAD/CAM technology in complete denture replication, offering a precise and efficient alternative to traditional fabrication methods. Digital replication ensures a better-fitting, highly stable prosthesis with reduced patient discomfort and minimal clinical visits. The findings support the growing role of CAD/CAM in prosthodontics, demonstrating its potential to improve treatment outcomes and patient satisfaction in elderly populations.

Keywords: complete dentures, CAD/CAM, replica dentures

PP 81

EXAMINATION OF THE MICROCIRCULATION IN THE SUPPORTING MUCOSA OF UPPER COMPLETE DENTURE WEARER

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Objectives: The aim of this case report is to present changes in the microcirculation of the palatine artery, in a patient with an upper complete denture using a laser Doppler flowmeter (LDF).

Case Report: A 67-year-old female patient was indicated for both complete dentures. The patient had been wearing both dentures previously, was a nonsmoker, and was systemically healthy. A detailed medical history was recorded, followed by a clinical examination. The new complete dentures were fabricated with adherence to all clinical and laboratory stages. To measure changes in microcirculation, the master model was duplicated, and a retainer made of 2-mm-thick thermoplastic foil was fabricated on the master model. This retainer included specific perforations for placing the LDF device probe. Measurements were taken at three reference points: the mucosa of the alveolar ridge at the level of the incisive papilla, the anterior buccal fold, and the area between the second and third molars. The LDF measures capillary perfusion, blood cell velocity, and the volume of blood illuminated by the laser beam, with results expressed in blood perfusion units (BPU). Before starting measurements, the LDF device was properly calibrated, and the patient was positioned semi-reclined. Measurements were taken before wearing the upper complete denture, after 15 minutes of wear, and after 30 minutes. The obtained values were recorded in BPUs.

Conclusions: The most significant changes in microcirculation occurred after 15 minutes of denture wear, particularly in the mucosa of the alveolar ridge near the anterior buccal fold (10.85 ± 2.32 BPU).

Keywords: Microcirculation, Laser Doppler, Upper Denture, Retainer

PP 82

PROSTHETIC REHABILITATION OF MISSING POSTERIOR TEETH, SEVERE ATTRITION, AND VERTICAL DIMENSION LOSS

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Objectives: This case report presents the prosthodontic rehabilitation of a patient with vertical dimension loss, severe anterior attrition and missing posterior teeth. The treatment plan aims to restore aesthetics, function, and occlusal balance by integrating both restorative and prosthetic approaches.

Case Report: A 63-year-old female patient was admitted to our clinic with complaints of chewing difficulties, reduced vertical dimension, and dissatisfaction with her dental aesthetics. Clinical examination revealed severe anterior tooth wear, missing posterior teeth, and a reduced occlusal vertical dimension (OVD). To increase the OVD, endodontic access cavities were reopened in the maxillary anterior teeth, which were radiographically confirmed to have undergone root canal treatment. This approach aimed to enhance the retention of the restorative material used for crown lengthening, thereby ensuring the durability of the prosthetic rehabilitation. The patient's maxillomandibular centric relation was measured, and the OVD was increased for optimal occlusal balance. Tooth preparations and silicone impressions were completed, and metal-ceramic crowns were temporarily cemented for one month to allow temporomandibular joints adaptation. Afterward, removable partial dentures (RPD) were fabricated for the missing posterior teeth. Fixed prostheses were permanently cemented using polycarboxylate cement and final occlusal adjustments were made to achieve functional and aesthetic goals.

Conclusions: The prosthodontic rehabilitation successfully restored the patient's vertical dimension, occlusal balance, and aesthetics. The combination of crown lengthening, metal-ceramic crowns and removable partial dentures (RPD) provided functional and aesthetic advantages. The patient reported improved chewing function and overall satisfaction. This case shows a tailored, multi-step approach can address complex dental challenges effectively.

Keywords: vertical dimension loss, attrition, prosthodontic rehabilitation, crown lengthening

PP 83

REHABILITATION OF WORN DENTITION & PARTIAL EDENTULISM WITH PRECISION ATTACHMENT DENTURE A CASE REPORT

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Objectives: In patients with partial edentulism, metal components can negatively affect aesthetics, particularly during smiling, which is a significant concern for those with high aesthetic expectations. This case report discusses the rehabilitation of a patient with partial edentulism in the upper arch and worn teeth using a precision attachment prosthesis, following crown lengthening procedures.

Case Report: A 61-year-old male patient presented with functional and aesthetic concerns. Clinical examination revealed worn teeth (#13-#22) and a reduced vertical dimension by 3 mm. The patient was referred to the periodontology department for evaluation. Pocket depths were measured, and the bone correction required to maintain biological width was determined. After performing gingivectomy for crown lengthening, bone reduction was carried out in the necessary areas, followed by gingivoplasty.

Once the sutures were removed, crown preparations were revised, and a temporary restoration impression was taken to adapt to the new vertical dimension. Temporary crowns were cemented. After 8 weeks, the patient showed no TMJ issues and had adapted to the new vertical dimension. Fixed metal-supported porcelain restorations (#15-#22) were completed, followed by the removable prosthesis stages. After bite registration at the metal skeleton stage, dental proofing and finishing were done.

Conclusions: Precision attachments improved both the stability and aesthetics of the prosthesis. The metal clasps' visual disturbance was eliminated, leading to a more stable, aesthetically pleasing removable prosthesis with enhanced function. No complaints were reported during the one-year follow-up.

Keywords: Precision attachments, partial edentulism, vertical dimension, rehabilitation

PP 84

IMMEDIATE LOADING IN FULL MOUTH IMPLANT RESTORATION: A CASE REPORT

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Objective: Immediate implant placement and loading have become widely adopted treatment options, addressing patients' aesthetic and functional needs while preserving peri-implant tissues. This report aims to present a structured surgical and prosthodontic protocol for the immediate loading of dental implants, enabling patients to receive a fixed implant-supported prosthesis within hours.

Case Report: This report details the surgical, prosthodontic, and laboratory procedures involved in the immediate functional loading of implants for a 40-year-old systemically healthy female patient with aesthetic and functional deficiencies resulting from tooth loss. Following comprehensive clinical and radiological evaluations, a treatment plan was developed to place dental implants and provide immediate restoration. A provisional acrylic prosthesis was fabricated based on the patient's impressions prior to surgery.

Seven implants were placed in the maxilla and six in the mandible, with the provisional prosthesis delivered during the same session. After a three-month healing period, the provisional prosthesis was replaced, and definitive impressions were obtained using impression posts and silicone material for the final restoration. A porcelain restoration supported by a metal framework was fabricated and delivered after thorough clinical evaluation and adjustments.

Conclusion: The patient's clinical and radiographic follow-ups revealed no complications and high levels of patient satisfaction. Compared to traditional implant protocols, the immediate loading approach offers several key advantages: 1) fewer office visits, 2) reduced treatment time, 3) lower costs, 4) no need for a removable interim prosthesis, and 5) improved patient acceptance, while ensuring predictable outcomes in managing edentulism.

Keywords: Dental Implants, Immediate Loading, Full Mouth Restoration, Aesthetic Rehabilitation

PP 85

CASE PRESENTATION: FULL ARCH REHABILITATION THROUGH IMPLANT PROSTHETIC RESTORATIONS

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Objectives: This case report aims to demonstrate the workflow of the implant-prosthetic restorations step by step and highlight the importance of the patient's satisfaction through the questionnaire by evaluating the function and the aesthetic.

Case Report: This is a clinical case presentation of a 52-year-old edentulous patient. He had held total removable dentures for three years but he was uncomfortable with the function and the aesthetic as well. He was seeking a fixed solution. After a careful clinical and radiographic examination, where sufficient bone was present for implant placement, a treatment plan of fixed restoration over 8 implants for the upper arch and fixed restoration over 6 implants for the lower arch was decided. After osseointegration, the multi-unit abutments (MUA) were placed. The transfer of the MUA-s was situated and the open tray technique was conducted. Individual trays were used, and the impression was taken with a combination of heavy and light silicone. The splinted technique was preferred. The centric occlusion record was recorded. The accuracy of centric occlusion was checked through the printed dentures. The aesthetic was evaluated as well. Final dentures with titanium bar connected to the upper part of the MUAs, with pink resin for gingival imitation, were constructed. The patient satisfaction was evaluated through the respective questionnaire.

Conclusions: This case has a follow-up of 5 years and it highlights the importance of planning carefully each individual case, especially in the prosthetic field.

Keywords: Implant, Prosthetic, Restoration, Satisfaction, Denture

PP 86

MANAGEMENT OF SLEEP BRUXISM IN A MAXILLARY FULL-ARCH IMPLANT-SUPPORTED FIXED PROSTHESIS: CASE REPORT

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Objectives: Rehabilitation of the edentulous maxilla is challenging due to bone resorption and altered maxillomandibular relationships. While full dentures were traditionally used, implant-supported prostheses now offer a successful alternative. This case report highlights the prosthetic management of a sleep bruxism patient with a maxillary full-arch implant-supported fixed prosthesis, focusing on occlusal planning and protective measures like canine guided occlusal splint and facebow transfer to improve prosthesis longevity and patient satisfaction.

Case Report: A 67-year-old female patient was referred to the Department of Prosthodontics three months after receiving seven maxillary implants at the surgical department, requesting full-arch maxillary rehabilitation with a fixed prosthesis to address esthetic and speech concerns. A metal-ceramic fixed prosthesis was fabricated on cement-retained abutments. Following comprehensive clinical and radiographic examinations, combined with subjective data obtained from the patient's anamnesis, a diagnosis of sleep bruxism was confirmed. To protect the implants and manage the occlusal forces associated with sleep bruxism, a canine guided occlusal splint was prepared. The splint was designed using a facebow transfer to ensure precise occlusal alignment and was subsequently adjusted intraorally to achieve optimal fit and function.

Conclusions: The successful rehabilitation of an edentulous maxilla in a sleep bruxism patient highlights the importance of precise prosthetic planning and occlusal control. A metal-ceramic fixed prosthesis on cement-retained abutments, combined with facebow transfer and canine guided occlusal splint design, effectively managed the functional stresses of bruxism. At the one-month follow-up, the patient showed high satisfaction with improved esthetics and speech, and no complications were observed.

Keywords: dental implant, canine guided occlusal splint, full arch rehabilitation, facebow transfer

PP 87

FULL MOUTH REHABILITATION WITH SCREW RETAINED IMPLANT-SUPPORTED FIXED PROSTHESIS: A CASE REPORT

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Objectives: Rehabilitation of the edentulous maxilla is difficult due to advanced bone resorption and impaired maxillomandibular relationships. While traditional full dentures were previously used for these patients, implant-supported treatments can now be an alternative. Implant-supported fixed prosthesis are a treatment option that stands out with high success and minimal postoperative complication rates.

Case Report: A 52-year-old man presented to our clinic with a complaint of missing teeth in both arches, requesting a fixed prosthesis to restore aesthetics and speech problems. After clinical and radiographic examination, the replacement of the existing lower bridge (abutment teeth were 43, 33, 34, 37) was deemed necessary due to improper crown length. Bilateral sinus lifting and implant placements were performed 3 months earlier in the Oral and Maxillofacial Surgery Department. After determining the occlusal vertical dimension, a polymethyl methacrylate interim fixed restoration made with CAD-CAM was used for three weeks. No temporomandibular joint complaints were observed, and permanent rehabilitation was completed with porcelain-fused-to-metal crowns. Due to the patient's oral hygiene, a screw-retained implant-supported fixed prosthesis with multi-unit abutments was performed on the upper jaw. A cemented 4-unit implant-supported fixed partial prosthesis and cemented teeth-supported bridge were made with a metal-ceramic crown for the lower jaw.

Conclusions: During the follow-up period, no aesthetic or functional complications were identified. A multidisciplinary approach is essential for accurate diagnosis and successful full-mouth rehabilitation. Additionally, implant-supported prostheses require patients' commitment to maintaining optimal oral hygiene.

Keywords: dental implant, screw retained, fixed prosthesis, full mouth rehabilitation

PP 88

RESTORATION OF THE COMPLETELY EDENTULOUS PATIENT WITH FULL MOUTH IMPLANTS

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Objective: One of the treatment methods for completely edentulous patients is implant-supported applications. The purpose of this case presentation is to describe the rehabilitation of a patient with complete edentulism in both the upper and lower jaws, using metal-supported porcelain restorations based on clinical and radiological assessments.

Case Report: The patient, who presented to our clinic with complaints of complete edentulism, was found to have undergone tooth extractions in the surgical department. A total of 12 immediate implants were placed, 6 in the upper jaw and 6 in the lower jaw. After prosthetic and radiological examinations, a treatment plan was developed. Given the aesthetic considerations, a metal-supported porcelain prosthesis was selected for cementation. A single-piece restoration was planned for the upper jaw, while a three-piece restoration was designed for the lower jaw. Anatomical abutments were selected according to the gingival contour. Due to immediate loading, soft tissue shaping could not be performed.

Conclusion: By eliminating the screw visibility on cemented abutments, more aesthetic restorations were achieved. Since the restoration also involved the anterior region, a cemented abutment was preferred, resulting in an aesthetic full mouth immediate implant restoration.

Keywords: full mouth restoration, dental implant, edentulous patient

PP 89

FULL-ARCH IMPLANT REHABILITATION WITH STRATEGIC MULTIUNIT SELECTION: A CASE REPORT

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Objectives: This case report presents the prosthetic rehabilitation of a completely edentulous maxilla using six implants and strategic multiunit abutment selection, considering the limitations of available components from the manufacturer. Additionally, the mandible was restored with a fixed prosthetic approach between the 36 and 46 regions to optimize occlusion and function.

Case Report: A 78 year-old female presented with complete maxillary edentulism and partial mandibular edentulism. The treatment included placing six maxillary implants and selecting multiunit abutments to optimize prosthetic alignment, load distribution, and soft tissue adaptation. However, the limited availability of abutment options posed challenges in achieving ideal angulation and emergence profile, requiring clinical adjustments to ensure passive fit and prosthetic stability. Despite these constraints, a full-arch fixed prosthesis was successfully fabricated and delivered.

In the mandible, a fixed prosthetic restoration was planned between the 36 and 46 regions to establish a harmonized occlusion with the maxillary prosthesis. During the metal framework trial, occlusal adjustments were made to compensate for abutment constraints, ensuring balanced contacts and proper vertical dimension.

Conclusions: This case highlights the impact of component limitations in implant-supported restorations and the importance of adapting treatment plans accordingly. Despite constraints in multiunit abutment availability, careful clinical modifications enabled a functionally and aesthetically successful outcome. The mandibular fixed restoration contributed to balanced occlusion, enhancing function and comfort. This case underscores the need for flexibility in prosthetic planning and meticulous occlusal adjustments when faced with manufacturer-imposed limitations.

Keywords: Full-arch implant rehabilitation, Multiunit abutment selection, Fixed prosthesis, Occlusal adjustment, Implant-supported restoration

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IMPLANT-SUPPORTED FIXED AND REMOVABLE PROSTHETIC RESTORATION IN MANDIBULAR EDENTULISM: A CASE REPORT

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Objective: This case report aims to develop a personalized prosthetic treatment plan for a patient with complete mandibular edentulism and four placed implants, where anatomical and surgical limitations prevented the application of standard prosthetic treatment options. Factors such as insufficient anteroposterior distance, limited implant placement regions, and reduced interocclusal space restricted routine prosthetic approaches. Consequently, an alternative prosthetic solution was designed to meet the patient's functional and aesthetic needs.

Case Report: A 50-year-old female patient with complete mandibular edentulism presented to our clinic with complaints of compromised masticatory function and aesthetic concerns. Clinical and radiological examinations revealed complete edentulism in the mandible, while the maxillary teeth were observed to be intact. Surgical evaluations identified insufficient bone volume in the mandible, leading to the decision to place four implants in the region between the mental foramina. Following implant placement, considerations of insufficient anteroposterior distance and reduced interocclusal space necessitated a treatment plan involving an eight-unit cement-retained implant-supported fixed prosthesis in the 34-44 region, combined with a precision attachment-supported removable prosthesis. During the treatment process, an open-tray impression technique was used to take the implants impression. After completing the fixed restoration, an irreversible hydrocolloid impression was taken for the precision attachment framework. Subsequent stages included framework try-in, dentin trial, tooth setup trial, culminating in the delivery of the final prosthesis with patient satisfaction.

Conclusion: At the end of the treatment process, the personalized prosthetic solution successfully restored the patient's masticatory function and aesthetic appearance to meet expectations, achieving patient satisfaction.

Keywords: Implant-supported, Complete edentulism, Precision attachment

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RESTORATION OF COMPLETE EDENTULOUS WITH TITANIUM-BASED MODIFIED HYBRID PROSTHESIS: A CASE REPORT

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Objectives: Implant-supported hybrid prostheses are one kind of implant-supported fixed prosthesis. The rehabilitation of a patient with a fully edentulous upper and lower jaw using a modified hybrid prosthesis is detailed in this case report.

Case Report: A 74-year-old male patient with a completely edentulous jaws applied to Süleyman Demirel University, Faculty of Dentistry, Department of Prosthodontics due to the retention problem his previous complete dentures. A titanium-based implant-supported hybrid prosthesis for both jaws were determined to be the most suitable plan for him given his situation and desires. 4 implants (MACROS dental implant systems, Ankara, Turkey) were placed in the patient's upper and lower jaws. Following a radiographic examination, prosthetic procedures were initiated three months later. Implant measurements were taken from the patient with the open tray impression method in a single stage using additional type silicone impression material (Zhermack Elite HD+, Zhermack SpA, Italy). Due to the buccal position of the screw holes in the anterior region, the zirconium substructures for teeth 11, 12, 21, and 22 were prepared as laminate veneers. A Toronto style prosthesis was torqued in place, and lithium disilicate veneer crowns (IPS e.max Press) were cemented to complete the restoration.

Conclusions: Full mouth rehabilitation was achieved with a hybrid prosthesis that met the patient's esthetic and functional expectations.

Keywords: modified hybrid prosthesis, titanium, implant-supported fixed prosthesis

PP 92**4 IMPLANT-SUPPORTED BAR-RETAINED MANDIBULAR OVERDENTURE**

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Objective: Implant-supported overdentures are an effective treatment option for edentulous patients. These overdentures are designed to eliminate the problems associated with complete dentures by providing adequate retention with a small number of implants in the edentulous mandible. The aim of this case report is to describe the rehabilitation of a patient who underwent a bar-retained overdenture supported by four implants in the edentulous mandible and maxillary complete denture, based on clinical and radiological evaluations.

Case Report: The patient was admitted to the clinic with the complaint of mobility in the mandibular complete denture. Following the collection of medical, dental and social history, clinical and radiological examinations were performed. The patient was found to have undergone bone resorption in the mandible, and as a result, four implants were placed and a bar-retained overdenture was planned for the mandible. However, due to the patient's financial situation and the bone insufficiency in the maxilla, a complete denture prosthesis was fabricated in the maxilla.

Conclusion: In the lower jaw, bar-retained overdentures were used, and the patient's functional problems, such as the inability to chew and difficulty in speaking, were eliminated.

Keywords: Implant, Bar-retained overdenture, edentulous mandible

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BAR-RETAINED IMPLANT OVERDENTURE IN THE EDENTULOUS MANDIBLE: A CASE REPORT

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Objectives: Total edentulism remains a significant challenge due to reduced retention and stability, especially in the mandible. This case report aims to demonstrate the successful rehabilitation of a completely edentulous male patient with four integrated Camlog implants in the mandible using a bar-retained overdenture.

Case Report: A 76-year-old male patient was presented to the Department of Prosthodontics at the University of Belgrade with four previously placed Camlog implants in the mandible (positions 32, 34, 42, 44). The patient requested a functional and esthetic prosthetic solution. Following radiographic and clinical evaluation, a bar-retained implant overdenture was indicated. A conventional implant-level impression was taken using vinyl polysiloxane impression material. Models were used to prepare bite wax to establish intermaxillary relationships, followed by a teeth setup and an intraoral try-in. Extraoral scanning of the models—both with and without teeth—enabled the digital design and fabrication of a custom-milled implant bar with three attachments and a removable overdenture featuring a CAD-CAM metal framework, preserving the confirmed vertical dimension. The VDO (Vertical Dimension of Occlusion) and the teeth setup were re-evaluated. The prosthesis was then fabricated from polymethyl methacrylate (PMMA) with individualized characteristics. The final evaluation confirmed the fit of the implant bar, the overdenture, as well as the function and esthetics.

Conclusions: Bar-retained implant overdenture can provide an esthetic and functional solution for completely edentulous patients. This approach enhances patient satisfaction by improving oral function, comfort, and quality of life. Furthermore, the technique ensures long-term durability and boost patient confidence.

Keywords: Bar, Overdenture, Implants, Edentulism, Prosthetics

PP 94

REHABILITATION OF A MAXILLECTOMY PATIENT USING FIXED DENTAL PROSTHESES RETAINED SUPPORTED OBTURATOR

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Objective: Maxillary defects lead to severe impairments in chewing, swallowing, and speech functions. Therefore, tissue loss should be compensated to restore function and improve quality of life. The "obturator" prostheses for maxillary defects improve chewing and swallowing functions, support phonation, restore facial contours, and reduce exudate flow.

Case Report: A 64-year-old male patient who underwent partial maxillectomy, including the soft palate, due to a malignant tumor presented to our clinic for prosthetic rehabilitation. The patient's medical history revealed that he had undergone surgery six months ago and received radiotherapy and chemotherapy. A feeding plate was initially applied to support wound healing and maintain nutrition. After three months, a permanent prosthesis was planned. In the intraoral examination, advanced wear was observed on the anterior teeth, and the teeth were prepared after composite restorations and gingivectomy. The anterior region was rehabilitated aesthetically and functionally with metal-ceramic fixed prostheses. Impressions were taken using a custom-made impression tray, and the model, including the defect area was obtained. The obturator, supported by a metal framework, was fabricated. Retention was provided from teeth restored by metal-ceramic restorations using clasps of the framework, and acrylic part of the obturator provided oronasal separation.

Conclusion: Obturator prostheses restore the lost functions of chewing, swallowing, and speech, as well as aesthetics. The combination of fixed prostheses and metal-supported obturator prostheses successfully provides aesthetic and functional rehabilitation, improving the patient's nutrition and social quality of life.

Keyword: Aesthetic, Maxillectomy, Obturator

COMPARISON OF BAR AND MAGNET RETENTION FOR IMPLANT-SUPPORTED AURICULAR PROSTHESES: TWO CASE REPORTS

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Objectives: Auricular defects may result from trauma, congenital malformations, or oncologic surgery. Prosthetic rehabilitation using implant-supported auricular prostheses offers functional and esthetic advantages. Bar and magnetic attachments are commonly used retention systems with specific benefits and drawbacks. This case report compares these two systems in terms of clinical outcomes.

Case Report: Two patients with auricular defects were rehabilitated using implant-supported prosthetic retention systems. Case 1: A 14-year-old patient lost his ear due to a traffic accident. Three craniofacial implants were placed, and a magnet-retained auricular prosthesis was fabricated. Case 2: A 62-year-old patient had a large auricular defect involving the zygomatic and temporal bones after a traffic accident. A bar-retained auricular prosthesis was fabricated. Implants were placed along an arc posterior to the external auditory meatus and left to heal for three months. Abutments were connected in the second stage, followed by impression-taking and prosthesis fabrication using silicone material. Patients were evaluated at three months and one year postoperatively. Both prostheses demonstrated good retention, and the peri-implant skin remained healthy.

Conclusions: Bar attachments provide strong retention, making them suitable for large defects, but they pose challenges in hygiene maintenance, increasing the risk of peri-implant soft tissue complications. Magnetic attachments offer easier cleaning and insertion, making them preferable for younger patients with ongoing skeletal growth. Both systems effectively support auricular prostheses, and the selection should be based on patient-specific factors such as defect size, hygiene capacity, and anatomical considerations.

Keywords: Maxillofacial prosthesis, Bar retained auricular prosthesis, Implant supported auricular prosthesis, Craniofacial implants, Magnet retained auricular prosthesis

PP 96

REHABILITATION OF ATROPHIC MAXILLA WITH ZYGOMATIC IMPLANTS: A CASE REPORT

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Objective: Rehabilitation of an atrophic maxilla is challenging due to insufficient bone volume and limited denture-supporting surfaces, complicating the placement of endosseous implants. Zygomatic implants offer a promising alternative to bone grafting, providing significant benefits, including the elimination of donor site morbidity and a reduction in treatment time—typically by six months—compared to traditional grafting and implant approaches.

Case Report: A 51-year-old male presented with functional and aesthetic concerns. Clinical examination revealed significant bone loss in the posterior maxilla, extending from the canine region. Preoperative assessments included evaluating jaw dimensions, bone volume, density, intermaxillary distance, occlusion, and the condition of the opposing dentition. Panoramic radiography and cone-beam computed tomography (CBCT) were used to assess anatomical structures and potential maxillary pathologies.

Due to the extensive bone loss, the treatment plan involved the placement of two zygomatic implants in the posterior maxilla, two anterior maxillary implants, and six implants in the mandible to support a fixed prosthesis. After implant placement, a three-month healing period was allowed, followed by the completion of the fixed prosthetic restoration. The patient received prosthesis care instructions, and the three-month follow-up showed no complications.

Conclusion: Rehabilitation of an atrophic maxilla is challenging due to insufficient bone volume and limited denture-supporting surfaces, complicating endosseous implant placement. Zygomatic implants offer a promising alternative to bone grafting, providing benefits such as eliminating donor site morbidity and reducing treatment time typically by six months compared to traditional grafting and implant methods.

Keywords: Zygomatic implants, Atrophic maxilla, Implant-supported restoration

PP 97

PLACEMENT OF ZYGOMATIC IMPLANTS IN SEVERELY ATROPHIC MAXILLA

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Objective: Surgical and prosthetic rehabilitation of edentulous patients with severe maxillary bone loss poses significant challenges. This rehabilitation aims not only to correct esthetics but also to restore chewing, speech, and other oral functions. However, the placement of traditional implants can be difficult due to insufficient bone volume. Zygomatic implants emerge as a graftless alternative, reducing the number of surgeries and treatment duration in the rehabilitation of atrophic maxilla. Therefore, zygomatic implants offer an alternative solution for patients with atrophic maxilla.

Case Report: A 39-year-old male patient presented to our clinic due to complete edentulism. Despite being systemically healthy, he had lost his teeth at a young age due to periodontal problems. Radiographic examination revealed severe resorption of the maxillary bone. Four endosteal implants were placed in the anterior region, while two zygomatic implants were placed in the premolar region. Four months later, screw-retained fixed prosthetic rehabilitation of the implants was performed using multiunit abutments.

Conclusion: Recent clinical reports demonstrate successful outcomes with these implants in edentulous patients. Zygomatic implants can shorten the treatment duration by eliminating the need for bone grafts. No issues were observed during the patient's 1-week, 1-month, and 3-month follow-up visits. Zygomatic implants represent a satisfactory treatment option for patients with atrophic maxilla.

Keywords: Atrophic Maxilla, Zygoma, Dental implant

PP 98

LASERS AS A THERAPEUTIC TOOL FOR CRANIOMANDIBULAR DISORDERS

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Objectives: Temporomandibular disorders (TMD) often involve muscle pain, temporomandibular joint (TMJ) pain, and limited range of motion. Lasers are devices that produce monochromatic, polarized light, either continuously or in pulses. They have been used for 2 decades in the treatment of TMD, due to their ability to reduce inflammation and pain and accelerate tissue healing. This study aimed to evaluate the effectiveness of low-level laser therapy (LLLT) compared to conventional treatments for CMD.

Methods: An electronic and a hand search of PubMed, Google Scholar, Embase, and Scopus databases was conducted by two independent reviewers following PRISMA guidelines. Search terms included: "temporomandibular disorders, myofascial pain, low level laser therapy". Inclusion criteria were English language and publication date from 2010 to 2025. Reviews and case reports were excluded. Studies comparing LLLT to other TMD treatments and assessing pain and/or range of motion were considered. Following the screening process, 31 articles were selected for the final analysis.

Results: Evidence suggests that LLLT is more effective than anti-inflammatory drugs for CMD-related pain. LLLT appears to have similar effectiveness to stabilization splints in cases of myofascial pain with masticatory muscle trigger points. Furthermore, combining LLLT with occlusal splints or acupuncture may offer greater pain relief than monotherapy.

Conclusion: LLLT shows promise as a non-invasive, complementary treatment for CMD, offering potential benefits for pain reduction and improved joint function. Further high-quality randomized controlled trials are needed to optimize LLLT parameters and establish clinical guidelines for its safe and effective implementation in TMD management.

Keywords: craniomandibular disorders, temporomandibular disorders, myofascial pain



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OP 85**POSITION OF INCISORS IN THE EYES OF ORTHODONTISTS AND IN ORTHODONTIC ANALYSES**

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Objectives: The aim was to examine and compare the assessment of incisors position by observing semi-profile smiling photographs and dental casts with the findings in orthodontic analyses.

Methods: Residents of Department of Orthodontics assessed the position of the upper and lower incisors on 3D model and the position of the upper incisors on face photographs of 100 patients, by classifying them as retroinclined, normoinclined, or proinclined. The evaluation results were compared with the results obtained on cephalograms and 3D models.

Results: The highest agreement was in the assessment of the 3D model of the upper teeth, where the analysis findings matched the residents' impressions in 66 patients. The agreement of the residents was extremely high in 48%, very good in 27%, and satisfactory in 24% of these patients. In the assessment of photographs, the analysis findings matched the residents' impressions in 59 patients, while the agreement among the residents was extremely high in 36%, very good in 44%, and satisfactory in 20% of patients. The agreement was lowest in the assessment of the 3D model of the lower teeth. The analysis findings matched the residents' impressions in 46 patients, while the agreement of the residents was extremely high in 35%, very good in 43%, and satisfactory in 22% of patients.

Conclusions: The impressions of the residents regarding the assessment of the position of the upper and lower incisors in patients by observation, largely coincide with the results of orthodontic analyses of cephalograms and 3D models.

Keywords: incisors, analyses, assessment, position of incisors, residents

OP 86**DIFFERENCE BETWEEN TRADITIONAL BRACES AND FAST BRACES**

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Objectives: The field of orthodontics has made significant strides over the past few decades, offering patients solutions that promise faster, more effective results. Fast braces are one of the newer options that claim to cut down treatment time while delivering similar or better results compared to traditional braces. Traditional braces work by gradually shifting teeth into their desired positions over time, usually within 18 months to 2 years. Aim is to compare which is better option and their pros and cons.

Methods: Literature review was performed using electronic search on Google, Pubmed and Research gate.

Results: The disparity between traditional braces and fast braces is evident in several aspects such as treatment duration, mechanics, force application, effectiveness, comfort level and costs.

Conclusions: The choice between traditional braces and fast braces ultimately depends on individual preferences and orthodontic needs. Traditional braces offer reliability and versatility, while fast braces provide the advantage of shorter treatment duration and enhanced comfort.

Keywords: Fast braces, Traditional braces, Orthodontic treatment

PP 99

FACIAL INDEX VARIATION IN PATIENTS WITH DIFFERENT MALOCCLUSIONS

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Objectives: The facial index plays a key role in orthodontics, as it relates to different types of faces. Based on this, an orthodontic treatment plan is developed. The aim of this study was to evaluate the facial index in patients with different malocclusions.

Methods: A total of 60 participants (25 male, 35 female), aged 16 to 35, were included. They were divided according to the type of malocclusion into three subgroups, each consisting of 20 participants. A photogrammetric analysis was performed using Olympus cellSens Standard software (2011 Olympus Corporation). The facial index was determined for all participants.

Results: For $p < 0.05$, a significant difference was found between the three classes of malocclusion with $F = 10.037$; $df = 2$; $p = 0.0001$. According to the Tukey HSD test ($p < 0.05$), this was due to a significantly higher value for this parameter in Class III malocclusion ($95.37 \pm 6.20\%$) compared to Class I malocclusion ($89.37 \pm 3.06\%$) with $p = 0.0001$ and Class II malocclusion ($90.16 \pm 3.96\%$) with $p = 0.001$. For $p > 0.05$, no significant difference was found between Class I and Class II malocclusion with respect to this parameter, with $p = 0.587$. Regarding gender, a non-significant higher facial index was observed in men compared to women in Class II ($t(12) = 1.128$; $p = 0.274$) and Class III ($t(18) = 1.966$; $p = 0.065$), while a non-significantly lower index was observed in men in Class I ($t(18) = 1.806$; $p = 0.088$).

Conclusion: Based on the type of malocclusion and the gender of the participants, there are different facial types in patients with sagittal discrepancies.

Keywords: Analysis, Index, Macroesthetics, Malocclusion

PP 100

EARLY TREATMENT OF CLASS II DIVISION 1 USING ACTIVE PLATE AND MYOFUNCTIONAL APPLIANCES

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Objectives: In this retrospective study dentoalveolar and skeletal changes after one year of treatment of Class II/1 in mixed dentition using the active plate and myofunctional appliances were evaluated and compared.

Methods: 34 patients aged 9 ± 1.54 years, diagnosed Class II/1 were included in the investigation. Inclusion criteria were upper incisors proclination with overjet more than 5mm, absence of previous trauma, and previous orthodontic treatment. All patients were divided into two groups. First group was treated with removable myofunctional appliance, the LM activator. In second group, an active plate for upper arch expansion was used, based on the assumption that the narrow maxillary arch would further prevent the mandible from moving forward during growth. Dentoalveolar and skeletal changes were evaluated from pretreatment and post treatment cephalograms. Treatment changes were compared inside and also between groups.

Results: In group 1, after treatment SNB angle significantly increased (74.21 ± 3.91 to 76.05 ± 4.33 , $p = .028$), and ANB decreased (6.51 ± 2.2 to 5.35 ± 2.59 , $p = .004$). In both groups LsEI increased, (0.33 ± 2.35 to -1.25 ± 1.76 , $p = .025$) in group 1, and (0.02 ± 1.82 to -0.77 ± 1.75 , $p = .038$) in group 2. Between groups there were post treatment differences for SN/MP angle ($p = .044$) and IMPA ($p = .002$). In group 1, the SN/MP decreased (34.69 ± 5.51 to 32.08 ± 6.369), while IMPA increased (96.42 ± 7.65 to 98.57 ± 7.99). Conversely, SN/MP angle increased (35.65 ± 4.62 to 36.6 ± 5.84), and IMPA decreased (91.85 ± 4.23 to 91.55 ± 4.03) in group 2.

Conclusion: Myofunctional appliances induce more sagittal changes in comparison to active plates. Both appliances could be effective in improving upper lip position to the esthetic line. Treatment type should be chosen based on the comprehensive diagnostic procedure with patient follow up during active growth.

Keywords: Class II malocclusion Division 1, removable orthodontic appliance, mixed dentition

PP 101

PREVALENCE AND DISTRIBUTION OF NON-SYNDROMIC OFC SUBTYPES IN VOJVODINA REGION

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Objectives: Orofacial clefts (OFC) are a common birth defect worldwide. Characterized by incomplete fusion of the facial structures, OFCs significantly impact an individual's appearance, speech, and overall quality of life. This prospective study aimed to analyze the frequency and distribution of various non-syndromic OFCs subtypes among patients presenting to the Clinic of Dentistry of Vojvodina, between October 2024 and January 2025.

Methods: Data were collected prospectively from patient records at the Department of Jaw Orthopedics, Clinic of Dentistry of Vojvodina. Each patient diagnosed with a non-syndromic OFC during the specified period was included in the study. The type of OFC, categorized as cleft lip and palate (CLP), cleft lip only (CL), and cleft palate only (CP), was recorded for each patient.

Results: A total of 29 patients with non-syndromic OFCs were identified during the study period. CLP was the most prevalent subtype, observed in 18 patients (62.1%). CL was diagnosed in 4 patients (13.8%), while CP was present in 7 patients (24.1%). These findings align with previous research conducted in the Vojvodina, which consistently demonstrate CLP as the most common type of OFCs. This study provides valuable insights into the prevalence and distribution of OFC subtypes among patients seeking treatment in Vojvodina. Further research is warranted to investigate the longer period of time in Vojvodina region.

Conclusions: Among the 29 patients who presented to the Clinic of Dentistry of Vojvodina within a three-month period, CLP was the most common type of non syndromic OFCs observed.

Keywords: Orofacial Cleft, Non-Syndromic, Birth Defect

PP 102

THE INFLUENCE OF THE WAY OF FEEDING AT AN EARLY AGE ON THE OCCURRENCE OF MALOCCLUSIONS

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Objectives: Feeding habits during early childhood are crucial for the development of dental arches, jaws, and proper tooth alignment. This study focuses on the relationship between early feeding practices and the occurrence of dental and jaw misalignments. The primary objectives were to determine the prevalence of various types of malocclusions and to identify potential causal links between feeding methods and oral health issues in children.

Methods: The study included 48 children, evenly distributed by gender (52.1% male and 47.9% female), aged 3 to 6 years. The majority of participants (56.3%) were 4 or 5 years old. Data collection involved evaluating oral functions such as swallowing, breathing, chewing, and the articulation of certain sounds. Additionally, assessments of occlusal conditions, caries presence, and malocclusions were conducted using orthodontic indices.

Results: The findings showed that 20.83% of children had no incisal step due to the destruction of upper anterior teeth caused by caries. Impaired phonation was observed in 31.25% of children. While 81.3% exhibited a normal jaw relationship, 8.3% had a reverse bite, and 6.3% displayed lateral open bites. Tooth rotation was common, potentially linked to poor oral habits. Furthermore, the absence of diastema in 52.08% of children suggested potential jaw development issues.

Conclusions: The study concluded that proper feeding practices in early childhood significantly reduce the risk of malocclusions. Parental education on the benefits of breastfeeding, limiting bottle and pacifier use, and introducing solid foods is essential for promoting optimal oral development in children.

Keywords: jaw development, malocclusion prevalence, feeding methods

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EFFECTS OF GRR LASER AND LED PBM THERAPY ON CRANIOFACIAL STRUCTURES TREATED WITH TWINBLOCK APPLIANCE

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Objective: This study aims to evaluate the effects of LED photobiomodulation and GRR laser therapy on condylar growth using lateral cephalometric radiographs in pubertal patients with mandibular retrognathia treated with a twin-block appliance.

Methods: Thirty-one patients were randomly divided into three groups. Group 1 (n=10, 5 females, 5 males; mean age: 14.97 ± 0.81) received treatment with the twin-block appliance only. Group 2 (n=11, 5 females, 6 males; mean age: 15.19 ± 0.72) received twin-block treatment combined with GRR laser therapy applied to the temporomandibular joint region to stimulate bone formation and regeneration. Group 3 (n=10, 5 females, 5 males; mean age: 13.97 ± 0.61) received twin-block treatment combined with LED photobiomodulation therapy.

Results: T0 (pre-treatment) and T1 (post-treatment) values obtained from lateral cephalometric radiographs were analyzed using paired t-tests, while treatment differences (T1-T0) were assessed with Student's t-test. Changes in all three groups reflected a combination of skeletal and dental effects. Compared to the control group, the GRR laser group showed slightly greater skeletal and soft tissue changes.

Conclusion: This study has shown that the lasers we used have a limited effect on condylar growth. More comprehensive studies are needed to produce different results and to define the optimal dose, energy, and application duration.

Keywords: Twin-block, GRR Lazer, LED Photobiomodulation Therapy

PP 104

DEMOGRAPHIC ANALYSIS OF ADULT PATIENTS APPLYING TO THE DENTISTRY HOSPITAL FOR ORTHODONTIC TREATMENT

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Objectives: In Turkey, adult patients over 18 bear the costs of orthodontic treatment and materials. Faculty hospitals provide orthodontic services through dentists in specialty training, supervised by specialist orthodontists. This study aims to analyze the demographic characteristics and reasons for choosing Süleyman Demirel University's orthodontic clinic among individuals aged 18 and older.

Methods: Between October 1-31, 2024, 207 cases (116 females, 91 males; mean age 21.0 ± 4.4 years, min: 18, max: 40) applied to the SDU orthodontic clinic. Data on oral hygiene, dental crowding, skeletal malocclusion types, application reasons, and socio economic status were recorded by dentists in specialty training. Descriptive statistics (percentage, mean, standard deviation) and Pearson correlation analysis were used.

Results: Most applications came from the Mediterranean (116) and Aegean (26) regions. Oral hygiene was moderate in 80.1% of cases. Patients presented with Class I (48.3%), Class II (21.2%), and Class III (20.7%) skeletal malocclusions. Only 6.2% applied for clear aligners. Among patients, 24.1% required orthognathic surgery, and 61.3% needed fixed orthodontic treatment. Impacted teeth were observed in 9.1% of cases, with the most commonly impacted teeth being (#13) and (#35).

Conclusions: Adults often prefer faculty hospitals for complex cases like orthognathic surgery. Most patients sought fixed treatment and lacked awareness about clear aligners. Educational initiatives on orthodontic options should be expanded.

Keywords: Adult Patients, Demografik Study, Orthognathic Surgery

PP 105

DEMOGRAPHIC STUDY OF ORTHODONTIC APPLICATION IN CHILDREN APPLYING AT THE DENTISTRY HOSPITAL

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Objectives: In Turkey, state health insurance covers orthodontic treatment for individuals under 18 at university-affiliated dental faculty hospitals if the malocclusion's ICON analysis value exceeds 43. These services are provided by specialized dentists and expert orthodontists. This study aims to present a demographic analysis of individuals under 18 who applied to the orthodontics department at Süleyman Demirel University in Isparta and nearby areas. **Methods:** From 1-31 October 2024, 859 cases (492 girls, 367 boys, average age 11.92 ± 2.62 years) registered at the SDÜ Faculty of Dentistry Orthodontics clinic. Oral hygiene, crowding, skeletal malocclusion type, application reasons, and socio economic status were recorded by trained dentists. Descriptive statistical methods and Pearson correlation analysis were used.

Results: Most applications came from the Mediterranean (651) and Aegean regions (79). Oral hygiene was moderate in 79.04% of patients. Skeletal malocclusion types were 37.95% Class I, 32.59% Class II, and 13.50% Class III. Functional orthodontic treatment was needed in 40.74% of cases, while 62.74% required fixed orthodontic treatment. Orthognathic surgery was needed in 4.07%, and 8.9% had impacted teeth, mostly maxillary canines and mandibular second premolars.

Conclusion: Awareness of orthodontic treatment needs is high among 8-16 year olds in the region. Emphasizing oral hygiene habits and educating families about early orthodontics is crucial.

Keywords: demographic study, orthodontic treatment, children

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ORTHODONTIC PROSTHETIC TREATMENT OF HELIOGNATHOPALATOSCHISIS IN AN ADULT PATIENT

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Objectives: The incidence of primary and secondary cleft palate ranges from 1:750 to 1:1000 depending on the author. This congenital anomaly is present in a large number of orofacial syndromes. Complete dental treatment of these patients is an individual and very complex process.

The aim of the paper is to present the results of orthodontic therapy in a female patient with unilateral cleft lip and palate, followed by prosthetic rehabilitation.

Case Report: This paper describes a case of orthodontic therapy in a 25-year-old female patient with unilateral cleft lip and palate and Class III dental and skeletal malocclusion due to maxillary hypoplasia. In addition, there was a bilateral crossbite, hypodontia of the upper left lateral incisor, crowding of the upper dentition and irregular shape of the upper jaw. Orthodontic treatment was performed using the fixed straight arch technique. Alignment of the teeth was performed, which was followed by transferal and sagittal expansion of the maxilla using post-traction arches. After the orthodontic treatment was completed, fixed prosthetic work was performed, which at the same time maintained the stability of the achieved orthodontic treatment and provided a satisfactory functional and aesthetic effect.

Conclusion: Combined orthodontic prosthetic treatment achieved a satisfactory functional and aesthetic result.

Keywords: Mesiodens, Complications, CBCT scan

PP 107

FUNCTIONAL TREATMENT FOLLOWING MYOFUNCTIONAL APPLIANCE IN A PATIENT WITH CLASS II/1 MALOCCLUSION

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Objectives: The aim of this study is to evaluate the effects of using a myofunctional appliance during the prepubertal period, prior to functional orthopedic treatment, in a patient with Class II Division 1 malocclusion associated with mandibular retrognathia.

Case Report: A 9-year-old patient was referred to our clinic with complaints of lip incompetence and protrusive upper incisors. During the clinical and radiographic examinations, parafunctional habits were eliminated, and the patient was diagnosed with skeletal Class II malocclusion due to mandibular deficiency. Treatment was initiated during the prepubertal period using a myofunctional appliance designed to assist in regulating muscle functions and the dental arch structure. After an 18-month period, the effects of the appliance on dentofacial structures were evaluated. The patient then underwent functional orthopedic treatment and fixed orthodontic therapy to ensure retention.

Conclusions: The use of a myofunctional appliance prior to functional orthopedic treatment was found to be effective in stimulating muscle activity and regulating dentoalveolar structures.

Keywords: myofunctional, functional treatment, Class II division 1 malocclusion

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ALTERNATIVE ORTHODONTIC MECHANICS FOR IMPACTED CANINE FROM TAD FAILURE TO SUCCESSFUL TOOTH EXTRUSION

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Objectives: This case report aims to demonstrate the mechanics and therapeutic possibilities for the orthodontic treatment of impacted canines. Managing impacted teeth is a clinical challenge that requires careful planning to ensure effective biomechanics while minimizing side effects.

Case Report: A 13-year-old male patient was diagnosed with bilateral impacted maxillary canines and a single impacted mandibular canine. Initially, treatment of lower canine involved the use of temporary anchorage devices (TADs) as direct anchorage, combined with console made out of a 0.017" × 0.025" TMA wire. However, due to anatomical structures and poor oral hygiene, the TADs failed, necessitating an alternative approach. A successful strategy was subsequently implemented, utilizing a 0.017" × 0.025" stainless steel (SS) wire to increase the number of teeth involved in anchorage. Additionally, a new console was made from a 0.017" × 0.025" TMA wire and employed to generate an extrusion force to facilitate the eruption of the impacted mandibular canine. This approach effectively allowed controlled movement and successful repositioning of the impacted tooth.

Conclusions: The case highlights the importance of adapting mechanics when initial treatment plans fail. While TADs can provide effective direct anchorage, their success is dependent on anatomical factors and patient compliance with oral hygiene. The alternative method of increasing dental anchorage with SS wires and employing a TMA console proved to be a viable and effective solution. This case underscores the need for flexibility in orthodontic treatment planning to achieve favorable outcomes in cases of impacted canines.

Keywords: impacted canine, temporary anchorage devices, biomechanics

PP 109

ORTHODONTIC AND ORTHOGNATHIC TREATMENT OF A CLASS II PATIENT WITH A 10 MM GUMMY SMILE

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Objective: Orthognathic surgery corrects skeletal deformities and malocclusions by repositioning the jaws, improving function and aesthetics. Class II malocclusion, affecting one-third of the population, often includes mandibular retrusion and a gummy smile. This case report details the treatment of a skeletal Class II patient with a 10 mm gingival display.

Case Report: A 21-year-old female patient with protrusive teeth and a 10 mm gummy smile presented to our clinic. Clinical and radiological examination confirmed skeletal Class II malocclusion with a convex profile, 10 mm overjet and Class II molar relationship (SNA: 76.1°, SNB: 70°, ANB: 6.1°).

The treatment plan included non-extraction fixed orthodontics and orthognathic surgery. Orthodontic treatment involved leveling, decompensation, and implant planning. Surgically, the maxilla was advanced 4 mm and impacted 10 mm via Le Fort I osteotomy, while BSSO provided a 5 mm mandibular advancement with auto-translation. Additionally, the chin was advanced 10 mm.

Postoperative cephalometric analysis showed improved measurements: SNA: 80°, SNB: 76°, ANB: 4°

Results: Following surgery, the 10 mm overjet was corrected, achieving Class I molar and canine relationships. Maxillary impaction (10 mm) improved vertical measurements, and cephalometric analysis (SNA: 80°, SNB: 76°, ANB: 4°) indicated a straight profile

Conclusion: Fixed orthodontics and orthognathic surgery improved aesthetics and function in a skeletal Class II patient with a 10 mm gummy smile, ensuring high satisfaction.

Keywords: gummy smile, orthognathic surgery, class2 malocclusion, mandibular retrognath, gingival display

PP 110

THE MULTIDISCIPLINARY APPROACH: COORDINATING ORTHODONTICS AND RESTORATIONS FOR OPTIMAL RESULTS

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Objectives: This case report underscores the critical importance of a multidisciplinary, growth-centered, and patient-focused strategy in addressing a complex malocclusion with bilateral posterior crossbite compounded by Molar-Incisor Hypomineralization (MIH), deleterious oral habits, tonsillar and adenoidal hypertrophy, mouth breathing, open-mouth sleeping, and snoring.

Case Report: The patient, presenting with a caries-prone early mixed dentition and multiple restorations, underwent adenoidectomy and tonsillectomy before Phase One orthodontic treatment. Rapid palatal expansion (RPE) was employed to correct maxillary transverse deficiency and posterior crossbite, followed by retention with lingual plates. Noncompliance led to relapse. Preformed metal crowns placed on the maxillary first molars due to gross post-eruptive hard tissue breakdown were improperly cemented and over contoured, obstructing the eruption of the maxillary second molars in later age. Combined with the compromised endodontic treatment of the mandibular left first permanent molar, this contributed to exacerbating periapical pathology. Management included crown removal, endodontic retreatment, and definitive restorations, alongside strategic primary tooth extractions to guide the eruption of permanent successors. Relapse of maxillary transverse correction and an impacted maxillary canine necessitated Phase Two orthodontics during the pubertal growth spurt, combining repetition of RPE and fixed appliance therapy. Subsequent diastema closure and space management facilitated the guided eruption of the impacted canine. Functional and speech therapy complemented treatment and optimized muscular balance.

Conclusions: This comprehensive, patient-engaged treatment plan achieved stable, aesthetic, and functional occlusion, preserving dentition integrity. Beyond improved oral health, the patient experienced enhanced self-confidence and overall quality of life, demonstrating the transformative potential of interdisciplinary collaboration.

Keywords: Multidisciplinary Management, Growth-Centered Approach, Molar-Incisor Hypomineralization (MIH), Rapid Palatal Expansion (RPE), Restorative Considerations

PP 111**COMBINED SURGICAL AND ORTHODONTIC TREATMENT OF IMPACTED TEETH IN RARE POSITIONS**

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Objectives: Impacted teeth in uncommon positions present significant challenges in orthodontics, requiring precise diagnosis and customized treatment strategies. These teeth fail to erupt normally due to obstruction, ectopic positioning or developmental anomalies. The most frequently impacted teeth are wisdom teeth and maxillary canines, but in rare cases, premolars, incisors and even molars may be affected. Accurate localization using radiographic techniques, such as panoramic x-rays, CBCT scans and intraoral imaging, is essential for treatment planning. Management approaches vary depending on tooth's position, angulation and potential risks to adjacent structures. Common strategies include surgical exposure followed by orthodontic traction using fixed appliances or aligners. Challenges associated with impacted teeth in rare locations include prolonged treatment time, root resorption risks and periodontal complications. Early detection and interdisciplinary collaboration between orthodontists, oral surgeons and periodontists improve treatment outcomes. Recent advances, including 3D imaging, customized biomechanics, and minimally invasive surgical techniques, have enhanced the efficiency and predictability of treatment. Proper patient education and long-term follow-up are crucial to maintaining results and ensuring optimal function and aesthetics.

Case reports: On our presentation we show you 3 patients with impacted teeth in rare positions that were treated with variable surgical techniques combined with orthodontic braces.

Conclusion: Successful orthodontic management of impacted teeth in rare positions requires a tailored, evidence-based approach to minimize complications and achieve favorable outcomes.

Keywords: Impacted teeth, surgical exposure, orthodontic traction

PP 112

MANAGEMENT OF CONSTRICTED MAXILLA IN PATIENT WITH BILATERAL CLEFT LIP AND PALATE USING FAN-TYPE EXPANDER

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Objectives: One of the phases in the management of patients with bilateral cleft lip and palate (BCLP) includes palatal expansion before second bone grafting (SBG). However, there is still controversy surrounding the choice of expansion appliances used. In patients with BCLP, the maxillary transverse deficiency is typically more severe in the anterior region, leading to insufficient space for the premaxilla which overlaps the collapsed lateral segments. A fan-type palatal expander may be preferable to a hyrax type palatal expander as it allows for different degrees of expansion in the frontal and posterior regions. The ultimate goal of treatment is to create a well-aligned maxillary alveolar arch, which in turn facilitates SBG. This report aims to highlight the suitability of expanding maxillary segments with fan-type expander as an essential component of orthodontic pretreatment before SBG.

Case Report: Presurgical orthodontic treatment aiming to facilitate SBG in an 8-year-old boy with BCLP is presented. A fan expander (8mm) was bonded to primary molars and extended to the canines with slow activation (1 mm/week). Lateral segments of the maxilla were expanded, posterior cross-bite was corrected, and the premaxilla was aligned with the lateral segments enabling successful SBG on both sides.

Conclusion: Expansion before second bone grafting surgery should be evaluated on an individual basis. A fan-type expander may be the preferred appliance for widening the lateral segments in BCLP patients, which can help ensure the successful SBG surgery.

Keywords: cleft lip and palate, fan-type expander, expansion

PP 113**COMBINED ORTHODONTIC AND SURGERY TREATMENT OF SKELETAL CLASS III – CASE REPORT**

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Objective: To present a combined orthodontic-orthognathic surgical treatment option for correction of skeletal Class III malocclusion of 22-year-old patient.

Case Report: Prior to orthodontic treatment, study cast, panoramic radiograph, profile cephalogram and intraoral and extraoral photographs were examined. Patient had severe skeletal Class III (ANB - 12°, Witts - 15mm), normoinclination of the upper and retroinclination of the lower incisors, forward facial rotation and longer corpus of the lower jaw (+3.2mm). Patient had severe concave profile caused by maxillary retrognathism and mandibular prognathism. In order to prepare for orthognathic surgery, he received both upper and lower fixed orthodontic appliances. Surgical treatment included intervention on both jaws. Following surgery, fixed appliances were used as part of the treatment to align the teeth. After the removal of the fixed appliance, the patient's occlusion was stable in Class I, with proper transversal and vertical relation. On the end of treatment profile cephalogram revealed skeletal Class I (ANB 1°), while Witts was - 4 mm, with forward facial rotation and correct position of the upper and lower incisors.

Conclusion: Severe mandibular prognathism and skeletal Class III malocclusion in young adults could be effectively corrected with a combination of fixed appliances treatment and bimaxillary surgery.

Keywords: Class III, Orthognathic surgery, Fixed appliances

PP 114

ORTHODONTIC TREATMENT OF SEVERE OPEN, DISTAL AND CROSS BITE – CASE REPORT

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Objectives: Patient in this case was girl in the age of 17 years, in permanent dentition. Analyses of study cast, lateral cephalogram, orthopantomograph and photos showed severe malocclusion in all directions: transversal, vertical and sagittal.

Upper jaw was distinctly narrow (-10mm). ANB angle was 7°, with backward rotation of the lower jaw (48°), forward rotation of the upper jaw (8°), skeletal open bite (40°) and backward facial rotation (Bjork 407°, Jarabak 59.8%).

Case Report: According to plan of treatment patient wore hyrax screw for transversal expansion of the upper jaw, In the second phase patient wore fixed appliance in the upper and lower jaw. The patient refused surgical treatment due to an extremely severe form of diabetes.

In the beginning of treatment overjet was 7mm and overbite -6mm. In the final phase of orthodontic treatment patient wore intermaxillary elastics for Class II and vertical correction in frontal and posterior segments.

Now patient is in period of retention. She wear splints every night. She has stable occlusion in Class I with overjet 2mm and overbite 2mm.

Conclusion: Using of intermaxillary elastics in the final phase of treatment by fixed appliances can provide stable occlusion if we have good compliance with patient.

Keywords: Open bite, Cross bite, Fixed appliances

PP 115

AN ORTHODONTIC SUCCESS: CORRECTING IMPACTED CANINE AND CONGENITALLY ABSENT LATERAL INCISORS IN A 17-YEAR-OLD FEMALE

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Objective: The maxillary permanent lateral incisor is one of the most common congenitally absent teeth. The permanent maxillary canine is the second most frequently impacted tooth in the dental arch after the third molars. Therefore, this case report aims to present the treatment of a patient with these two dental malocclusions by closing the space.

Case Report: A 17-year-old female patient applied to our clinic complaining of spaces between her teeth and an impacted tooth. As a result of examination; It was determined that the right maxillary canine was impacted in an oblique position, congenitally bilateral absent maxillary lateral incisors.

Results: In treating the patient, the impacted maxillary right canine tooth was surgically exposed, and a gold chain button was placed. Orthodontic traction was applied. After the impacted tooth had erupted, alignment and leveling were applied in the maxillary arch, and it was planned to close the diastemas by reshaping the maxillary left and right canines in place of the congenitally absent maxillary lateral incisors.

Conclusion: Orthodontic traction of the impacted tooth and closing the spaces of congenitally missing teeth have provided both aesthetically and functionally successful results. The option of orthodontically treating the patient without needing prosthetic, restorative, or surgical (dental implant, etc.) approaches should be considered.

Keywords: impacted tooth, congenitally absent teeth, congenital missing lateral

PP 116

DELAIRE FACEMASK TREATMENT OF CLASS III MALOCCLUSION

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Objective: Angle Class III malocclusion has been a challenge and one of the most difficult malocclusions concerning diagnosis, prognosis and treatment. Diagnosis, treatment planning and prognosis depend on patient age, growth potential and severity of malocclusion. The aim of this case report was to describe and discuss the treatment of a patient with skeletal Class III malocclusion with Facemask as orthopedic appliance.

Case Report: Female patient, age 9 years with skeletal Class III malocclusion was treated with the Facemask as a specialized orthodontic appliance, which applies controlled, continuous forces to the facial structure, aiding and promoting optimal jaw development. The SNA angle had increased while SNB decreased resulting in a normal jaw relationship (ANB = 2°), permitting growth redirection, mainly when the maxilla is the primary etiologic factor.

Conclusion: Maxillary intramembranous growth has a better response to orthopedic treatment, based on growth control and redirection, thus contributing for early intervention success. Early intervention, adequate indication of appliances, and patient compliance are key factors for good outcomes.

Keywords: Angle Class III malocclusion, interceptive treatment, Delair Facemask

PP 117

ORTHODONTIC AND ORTHOGNATHIC SURGICAL TREATMENT OF A PATIENT WITH CLEFT PALATE: CASE REPORT

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Objectives: Orthognathic surgery is a treatment method that repositions the maxilla and mandible to correct severe skeletal deformities and malocclusions, thereby improving anatomical relationships, functionality, and facial aesthetics. Studies have reported that Class III malocclusion is observed in 73.9% of patients with an isolated cleft palate. The aim of this case report is to present the orthodontic and orthognathic surgical treatment stages and outcomes of a patient with Class III malocclusion and an isolated cleft palate.

Case Report: The patient's treatment plan included fixed orthodontic treatment with the extraction of teeth 15 and 25, followed by orthognathic surgery. During the fixed orthodontic treatment, the maxillary and mandibular arches were leveled, and decompensation was achieved, after which the patient underwent orthognathic surgery. In the surgical procedure, the maxilla was advanced by 6 mm using a single-piece Le Fort I osteotomy. Post-treatment cephalometric analysis yielded the following findings: SNA: 81.3°, SNB: 80°, ANB: 1.3°, SNGoGn: 27.4°, and IMPA: 86.4°

Conclusions: The aesthetic and functional dentofacial improvements achieved through fixed orthodontic treatment and orthognathic surgery in a patient with skeletal Class III malocclusion and an isolated cleft palate resulted in successful outcomes with high patient satisfaction.

Keywords: orthodontics, orthodontic surgery, cleft palate, maxillary advancement

PP 118

FRACTAL ANALYSIS OF CONDYLE, ANGLE, AND SYMPHYSIS IN PATIENTS WITH RME AND FACEMASK THERAPY

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Objective: This retrospective study aims to investigate the effects of different maxillary expansion and facemask therapy protocols on bone density in the condyle, mandibular angle, and symphysis using fractal analysis. The study evaluated whether rapid maxillary expansion (RME) and miniscrew-assisted rapid palatal expansion (MARPE) with facemask therapy led to changes in the bone structure of these three anatomical regions.

Methods: This retrospective study consists of three groups: (1)Control group: Individuals without orthodontic treatment (11 subjects), (2)Conventional rapid maxillary expansion (RME) with facemask therapy group (15 subjects), (3) Miniscrew assisted rapid palatal expansion (MARPE) with facemask therapy group (15 subjects). T0 and T1 panoramic radiographs were retrospectively evaluated for all groups. Fractal analysis was performed using ImageJ software, selecting 54x54 pixel regions of interest (ROI) in the condyle, mandibular angle, and symphysis to assess bone density.

Results: In both treatment groups, a significant change wasn't observed in the condylar region compared to the control group.

Conclusion: FD analysis demonstrated that the mandibular regions evaluated underwent no significant change in the trabecular pattern in subjects treated with protraction facemask therapy.

Keywords: Fractal analysis, Rapid maxillary expansion (RME), Facemask therapy

PP 119

ARTICULATION IN CHILDREN WITH DIFFERENT TYPES OF MALOCCLUSIONS

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Objective: This pilot study aimed to evaluate the impact of various malocclusions, early childhood habits, and tongue position on articulation disorders in children.

Methods: The study was conducted at the Department of Orthodontics, January - March 2025. Seventy-nine (79) children (39 males and 40 females), aged 6 to 12 years and diagnosed with orthodontic anomalies, were included. Data were collected on the types of malocclusions (sagittal, vertical, and transversal), early childhood habits, previous speech and orthodontic therapies, and articulation performance. The Triage Articulation Test was used to assess pronunciation accuracy, classifying pronunciation of different consonants as correct, omitted, distorted, or substituted. Statistical analysis was performed using IBM SPSS Statistics Data 26.

Results: A significant association was found between the type of malocclusion and articulation performance ($p < 0.05$). Specifically, children with mesial occlusion demonstrated distorted pronunciation of affricates (Č, Dž, and Ž), whereas those with vertical malocclusions exhibited distortions in the articulation of fricatives (S, Z, and C). Overall, the presence of orthodontic anomalies correlated with difficulties in articulating several sounds, including S, Z, C, T, D, Č, Ć, Đ, Š, Ž, and R.

Conclusions: The findings indicate that children with malocclusions are more likely to experience articulation disorders. This underscores the necessity for multidisciplinary collaboration between speech pathologists and orthodontists, as well as the importance of raising public awareness regarding early intervention and treatment options.

Keywords: orthodontic anomalies, malocclusions, Triage Articulation Test, pronunciation accuracy

PP 120**STUDY OF THE MANDIBULAR ASYMMETRY IN CHILDREN WITH UNILATERAL POSTERIOR CROSSBITE**

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Objective: This study aims to examine the effect of unilateral posterior crossbite on the height of the condyle and ramus of the mandible.

Methods: The research was conducted using 35 antero-posterior cephalograms of children aged 7-17 years with unilateral posterior crossbite (UPC). The method of All Kiki, Nihat Kilic, and H.Oktay, who conducted their research using orthopantomography, was adapted and applied to AP cephalograms.

Results: Measurements of AP cephalograms in children with UPC aged 7-12 years revealed condylar asymmetry in 86.66% of cases and ramus asymmetry in 60% of cases.

In the 13-17 age group with permanent dentition, the respective percentages were 90% and 75%.

Conclusion: Transverse occlusal deviations significantly impact condylar symmetry and mandibular ramus morphology in growing individuals.

Keywords: condylar asymmetry, crossbite, posterior crossbite, antero-posterior cephalogram

PP 121

ORTHODONTIC SURGICAL TREATMENT OF IMPACTED MESIODENS WITH COMPLICATIONS – CASE REPORT

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Objectives: Mesiodens is the most common type of supernumerary teeth, which usually develops in the anterior maxillary region unilaterally or bilaterally. The aim of the paper is to present the orthodontic-surgical therapy in a patient with an impacted mesiodens on the root of which a cyst was formed, which later affected the root of the upper central incisor.

Case Report: A 12-year-old patient was diagnosed with dental caries. A routine orthopantomograph showed the extremely unclear (suspicious) presence of an impacted mesiodens in the region of tooth 21, as well as cysts in the region of the root and regular tooth and mesiodens, which was confirmed by a CBCT scan of the maxilla. In the patient, the mesiodens was surgically removed and an apicotomy of tooth 21 was performed. After that, orthodontic therapy was carried out using a fixed orthodontic appliance, with the aim of first fixing the apicotomized tooth, and then correcting the orthodontic anomaly. After the orthodontic therapy, the apicotomized tooth was fixed, and the orthodontic anomaly was corrected.

Conclusion: For the treatment of mesiodens, a preliminary thorough clinical and radiological examination is necessary. The exact criteria for planning mesiodens treatment have not been agreed upon. Removal of supernumerary teeth is indicated when there are problems with the eruption of regular teeth, malposition of adjacent teeth, accompanying pathology (cysts, root resorption...) and if there is interference with orthodontic movement.

Keywords: Mesiodens, Complications, CBCT scan

PP 218

STUDY OF MANDIBULAR GROWTH IN GROWING RATS AFTER UNILATERAL MASSETER MUSCLE RESECTION

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Objective: This study aimed to compare mandibular growth in growing rats subjected to unilateral masseter muscle. Additionally, the investigation examined the effects of a soft versus hard food diet on mandibular growth.

Methods: Forty-eight male Wistar rats, aged six weeks, were randomly assigned to either the control or experimental group, with each group further divided into subgroups based on diet. In the experimental group, unilateral resection of the masseter muscle was performed, whereas the control group remained unoperated and was only categorized based on diet. At the 10th week, all animals were sacrificed. Cone-beam computed tomography (CBCT) scans were conducted at the beginning of the study and immediately before sacrifice to assess morphological changes.

Results: Three-dimensional radiographic analysis revealed significant differences in the anteroposterior dimensions between experimental and control subgroups. A significant difference in the vertical component of mandibular and ramus height was observed on the experimental side of the experimental group ($p < 0.005$) where the masseter muscle resection was performed. Regardless of diet (hard or soft), the experimental group exhibited a restriction in both total mandibular length and mandibular body length compared to the control group ($p < 0.005$).

Conclusions: Unilateral resection of the masseter muscle in growing rats affects mandibular morphology and results in the development of a smaller mandible. Understanding of bone growth mechanisms may contribute to the development of therapeutic protocols for patients with muscle atonia or asymmetry.

Keywords: masseter muscle resection, mandibular growth, soft diet, hard diet, Wistar rats

Acknowledgments: The research described received partial financial support from the Dental Association of Attica.

PP 122

MANDIBULAR SYMPHYSEAL DISTRACTION OSTEOGENESIS WITH DIGITALLY DESIGNED ORTHOPEDIC APPLIANCE

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Objectives: The aim of this presentation is to facilitate the transverse expansion of the mandible utilizing a digitally designed distraction device.

Case Report: A 22-year-old female patient presented to our center with complaints of lower incisor misalignment. Initially, the axes of the central incisors were orthodontically corrected. Following soft tissue dissection, the distraction device, designed digitally using 3D scanning, was gently adapted to the symphyseal region. After a 7-day latent period, the patient activated the appliance until the desired width was achieved.

Conclusions: In individuals who have completed skeletal development, mandibular midline distraction is a more successful technique for the treatment of mandibular transverse deficiency characterized by anterior dental crowding, when digital planning is used.

Keywords: osteogenesis, digital orthodonti, distraction



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OP 87

A COMPARISON OF 3D-PRINTED RESINS AND COMMERCIAL MODELS USING CHATBT40

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Objectives: This study aimed to evaluate the usability of STL dental models provided by Medeasoft (Tr) in dental anatomy education by comparing them with 3D-printed models produced using two different resins and commercially available models using artificial intelligence.

Methods: A total of 12 dental models, including mandibular and maxillary canines, first premolars, and first molars, were fabricated using two different resins on an Acurrretta 3D printer. Photographs of the buccal, palatal, occlusal, mesial, and distal surfaces of each model were taken with professional equipment, and individual files were created for each tooth. Presentations were prepared using references from Wheeler's Dental Anatomy, Physiology, and Occlusion (9th edition). Artificial intelligence was used to assess the models for anatomical accuracy, compatibility, and educational usability.

Results: White resin models produced using STL files from Medeasoft demonstrated the highest performance in educational usability and anatomical accuracy, significantly enhancing the learning process compared to traditional materials. Red resin models provided advantages in visual emphasis but showed limitations in anatomical accuracy. Commercially available models were found to have limited educational value due to lower anatomical accuracy but were preferred for their economic and accessibility advantages.

Conclusions: White resin models exhibited superior anatomical accuracy and educational utility, making them ideal for dental anatomy education. Red resin models were effective in highlighting visual differences, aiding in structural comprehension. Despite their limitations, commercially available models offer affordable and accessible options. Integrating digital technologies in dental education can positively impact academic and clinical outcomes.

Keywords: 3D-printer, Dental Models, ChatGPT4o,

Acknowledgments: Thanks to Mededasoft (TR)

OP 88

AI-CHATBOT PERFORMANCE IN LAMINATE VENEER QUESTIONS FROM PROSTHETIC DENTISTRY PERSPECTIVE

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Objective: The purpose of this study was to evaluate the accuracy and adequacy of responses provided by seven different AI-based-chatbots to questions regarding laminate-veneers.

Methods: A set of nine open-ended-questions on laminate-veneers was developed by a prosthodontist and a restorative dentistry specialist. These questions were posed by a prosthetic dentistry resident to the following chatbots: ChatGPT-3.5, ChatGPT-4, ChatGPT-mini01, ChatGPT-preview-(OpenAI), Bing-(Microsoft), Claude-(Anthropic), Gemini-(Google-DeepMind). The questions were asked over three consecutive days at three different times each day, for a total of nine interactions per chatbot. The responses were recorded and subsequently evaluated by the prosthodontist and restorative dentistry specialist using a Likert scale. Differences in chatbot performance in answering the open-ended-questions were statistically analysed with the Fisher-Exact chi-square test ($p < 0.05$).

Results: Significant differences were observed in the quality of responses provided by the chatbots to laminate-veneer-related questions ($p < 0.05$). ChatGPT-4 and Gemini consistently demonstrated higher accuracy and adequacy compared to the other chatbots. Although Claude and Bing frequently provided correct answers, their responses were often deemed insufficient in terms of detail and relevance ($p < 0.001$). In contrast, ChatGPT-mini and ChatGPT-preview exhibited lower accuracy, with a considerable proportion of their responses classified as partially correct or inadequate ($p < 0.05$).

Conclusion: ChatGPT-4 and Gemini emerged as reliable tools for obtaining accurate and comprehensive information on laminate-veneers. However, the responses provided by Claude and Bing were frequently found to lack sufficient detail and were thus considered inadequate from a clinical perspective.

Keywords: Artificial Intelligence Chatbot, Laminate Veneers, Prosthetic-Dentistry

OP 89**CHATBOT ACCURACY IN EMERGENCY DENTISTRY: A STUDY ON AVULSED TOOTH MANAGEMENT**

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Objectives: This study evaluates the accuracy of chatbot responses regarding avulsed permanent and primary teeth management. It compares ChatGPT 3.5 and ChatGPT 4.0 using a structured questionnaire of 15 questions covering key aspects of dental trauma management.

Methods: A questionnaire with 15 multiple-choice questions on avulsed tooth management was used. ChatGPT 3.5 and 4.0 responses were assessed using a global quality scale (1 to 5). Statistical analysis, including t-tests, was performed to compare chatbot performance.

Results: ChatGPT 4.0 had significantly higher accuracy than ChatGPT 3.5 ($p < 0.0001$). The mean rating for ChatGPT 4.0 was 5.00, while ChatGPT 3.5 scored 4.23. ChatGPT 4.0 excelled in immediate reimplantation, antibiotic selection, and splinting protocols.

Conclusions: ChatGPT 4.0 provided more accurate responses in avulsed tooth management, demonstrating its potential as an educational tool. However, improvements are necessary, particularly in nuanced clinical scenarios where misinterpretation could impact decision-making.

Keywords: Dental Trauma, Avulsed Tooth Management, Chatbot Accuracy

OP 90

INFLUENCE OF AMBIENT LIGHTING ON INTRAORAL SCANNER ACCURACY

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Objectives: This study aimed to evaluate the effect of different ambient lighting conditions on the accuracy (trueness and precision) of intraoral scanners and to identify optimal lighting for scanning maxillary-mandibular arches.

Methods: A maxillary and a mandibular typodont model (Frasaco GmbH) was used in the study. Digital impressions of the typodonts were obtained using two different intraoral scanners (iTero Element 5D and TRIOS 3) under five different lighting conditions: no-light, daylight, room light, low-unit light and high-unit light. 10 digital scans per each group and a total of 200 scans were performed (n=10). The maxillary and mandibular typodonts were also digitized using a laboratory scanner (3Shape E1) and the reference standard tessellation language (STL) files were obtained. The digital scans and the reference STL files were superimposed using Geomagic Design X software to analyze accuracy. Trueness was assessed via root mean square (RMS) values, and precision was determined using interquartile range (IQR) data.

Results: Statistically significant differences were found among scanners, jaws, and lighting conditions ($p < 0.001$). iTero Element 5D exhibited lower RMS values, indicating higher trueness than TRIOS 3. The mandibular arch showed greater accuracy than the maxillary arch ($p < 0.001$). Room light provided the most accurate results, while dark conditions yielded the lowest trueness ($p < 0.001$). Scanner performance varied under different lighting conditions, with iTero Element 5D consistently outperforming TRIOS 3.

Conclusions: Ambient lighting significantly affects intraoral scanner accuracy, with room light providing the most reliable results. The mandibular arch demonstrated higher scanning accuracy. Optimizing lighting conditions is crucial for improving digital impression accuracy in clinical and laboratory settings.

Keywords: Accuracy, IOS, Lighting

OP 91**COMPARISON OF LLLT WITH DIODE LASER AND TGO GEL APPLICATION IN THE MANAGEMENT OF RAU**

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Objective: Triester glycerol oxide gel (Protefix® Queisser Pharma, Germany) is a topical agent that has the property of adherence to the oral mucosa to reduce oral tissue moisture loss and inflammation. Topical application of TGO gel could decrease pain intensity, accelerate ulcer healing. Low-level laser therapy (LLLT) in order of 0.1-0.6 watts, found effective in the treatment of oral aphthous ulcers. The aim of this clinical trial was to compare the efficacy of TGO gel with LLLT in the treatment of RAU.

Method: The study was designed as a randomized clinical trial and included 110 patients with RAU. Patients were randomly assigned to one of two groups and they were treated according to two different treatment protocols; the TGO gel were used for treatment in group 1 and LLLT with diode laser was applied once in a day for sequential three days (Day 0,1,2) in group 2. Pain levels were recorded for every single day for 7 days and the ulcer sizes were measured on days 0, 3, 5, 7 by the same investigator.

Results: Efficacy index and improvement rate of laser group, was higher than TGO group and the reduction in ulcer size was statistically higher in laser group than TGO groups at day 3 and 5.

Conclusion: We conclude that application of LLLT with diode laser once in a day for sequential three days is an effective, easy applied and non-invasive treatment model for RAS and more effective than topical TGO application.

Keywords: LLLT (Low Level Laser Theraphy), Recurrent Aphthous Ulcer, TGOgel, treatment

PP 123

DIGITAL IMPRESSION AND ARTIFICIAL INTELLIGENCE IN PROSTHODONTICS

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Objectives: This study aimed to evaluate the effectiveness of Intra-Oral Scanners (IOS) compared to conventional impression materials, explore the clinical applications of Artificial Intelligence (AI) in prosthodontics, and assess the role of Haptics in dental education.

Methods: An electronic search was conducted by 3 independent reviewers using PubMed, Google Scholar, Embase, and Scopus databases. The search strategy followed the Preferred Reporting Items for Systematic Reviews and Meta- Analyses (PRISMA) guidelines. Inclusion criteria included publication date and English language. Exclusion criteria comprised reviews, animal studies and case reports.

Results: This review demonstrates that IOS offer comparable clinical outcomes to traditional impression materials while providing digitized data that streamlines CAD/CAM workflows, potentially reducing time and costs. While trueness and precision of IOS are generally acceptable for fixed prosthodontics, their accuracy may be limited for removable and maxillofacial prosthetics. AI significantly enhances the design and customization of restorations, offering improved diagnostic accuracy and treatment planning. AI can also streamline digital impression processing, including margin identification and color grading. Haptics present a promising tool for dental education, enabling students to experience clinical scenarios without real patients and potentially replacing traditional typodonts in preclinical training.

Conclusions: Intra-Oral Scanners represent a valuable advancement in dental practice, offering numerous benefits over conventional methods. AI has the potential to revolutionize various aspects of dental care, from diagnosis and treatment planning to restoration design and fabrication. Haptics show promise as an innovative educational tool, although further research and validation are necessary to fully assess its effectiveness.

Keywords: Intra-Oral Scanner, Digital Impression, Artificial Intelligence, Haptics, Prosthodontics

PP 124

DIGITAL REHABILITATION OF EDENTULOUS MANDIBLE WITH IMPLANTS USING PHOTOGRAMMETRY AND INTRAORAL SCANNING

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Objection: Photogrammetry technology enables clinicians to obtain three-dimensional (3D) measurements from photographic images, accurately representing the implant's position. These images use an extraoral receiver to capture geometric properties of objects and their surroundings. However, photogrammetry (PSG) does not capture soft tissue, requiring a second STL file in the workflow. While PSG records the implant's position using XYZ axes, the intraoral scanner (IOS) captures soft tissue. In this clinical case, we used an intraoral scanner with a photogrammetry option, allowing us to determine the implant's exact position.

Case Report: A 60-year-old male patient was presented with an edentulous mandible. He had a complete denture but wanted a fixed prosthetic restoration. Clinical examination and CBCT (Cone Beam Computed Tomography) revealed sufficient bone volume in the mandible for four implants. After implant placement, the patient was given a complete denture as a temporary solution during the four-month osseointegration period. Registering the bite for patients with no teeth is challenging with digital protocols. In this case, we used the complete denture, reduced and fixed with temporary abutments. After osseointegration, multi-unit abutments were placed, and the patient was scanned for the definitive FP3 prosthetic reconstruction.

Conclusion: By combining photogrammetry and intraoral scanning, it is possible to fully digitally rehabilitate an edentulous jaw with implant support.

Keywords: Photogrammetry, Intraoral scanning, Implants, FP3, Prosthodontics

PP 125

TOOTH COLOR MATCHING WITH INTRAORAL SCANNER

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Objectives: Traditional methods of shade selection in dentistry have been criticized for their precision and subjectivity. Intraoral scanners have emerged as a promising alternative, offering digital precision in capturing tooth colour. This study aims to assess the precision of the 3SHAPE TRIOS 3 intraoral scanner in matching tooth colour.

Methods: Each shade tab, from a new VITA Classical Shade Guide, was scanned 10 times using the TRIOS 3 IOS to ensure repeatability and consistency in colour capture. The colours of the scanned shade tabs were analysed using the CIE Lab system. The colour differences between the scanned values and VITA shade values were calculated using the ΔE formula. The data were analysed employing descriptive statistics and ANOVA to assess mean differences and overall precision.

Results: The mean ΔE values and percentages for each shade tab were A1($\Delta E=1.23,93.7\%$) A2($\Delta E=1.45,92.9\%$) A3($\Delta E=1.67,91.5\%$) A3.5($\Delta E=1.70,91.2\%$) A4($\Delta E=1.95,89.8\%$) B1($\Delta E=1.10,95.1\%$) B2($\Delta E=1.40,92.3\%$) B3($\Delta E=1.55,91.0\%$) B4($\Delta E=1.85,90.0\%$) C1($\Delta E=1.50,92.5\%$) C2($\Delta E=1.75,90.6\%$) C3($\Delta E=1.90,89.0\%$) C4($\Delta E=2.15,87.5\%$) D2($\Delta E=1.80,90.5\%$) D3($\Delta E=2.00,89.0\%$) D4($\Delta E=2.10,88.0\%$). ANOVA results indicated significant differences among mean colour differences for various shades ($p < 0.05$). Post hoc tests(Tukey HSD) revealed that the scanned colours for A1 and B1 were statistically more accurate compared to darker shades such as D4.

Conclusions: The precision of this intraoral scanner in tooth colour matching demonstrates high levels of accuracy and the findings support the use of digital scanning technology in this process. The mean ΔE values suggest that the scanner is particularly effective for lighter shades, while performance decreases slightly for darker shades.

Keywords: Digital Dentistry, Shade Matching, Shade Guide

PP 126

OVERLAY CAD-CAM RESTORATIONS

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Objectives: Overlay restorations are an alternative approach to full crown restorations as a conservative treatment option that preserves the remaining intact structure of the tooth. The purpose of these case reports is to evaluate the overlay restorations of posterior molar teeth with crown damage using the CAD-CAM system.

Case Report: As a result of radiographic and introral examination of patients who applied to Department of Restorative Dentistry, it was observed that there was excessive crown damage on the patients' posterior teeth. It was decided to rehabilitate these 5 posterior molars with CAD-CAM overlay restorations. All overlay restorations were fabricated with Formlabs permanent resin and then the restorations were bonded with a light-cured and self-curing (dual cure) adhesive cement. Patients were called for follow-up after 3 months.

Conclusion: By choosing the CAD-CAM system, aesthetic and tooth-like indirect restorations were obtained in a single session. After 3 months of clinical follow-up, no secondary caries, fracture, discoloration or any structural integrity deterioration was observed.

Keywords: overlay, CAD-CAM, resin, dual cure cement



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OP 92

EFFECT OF CONVERGENCE ANGLES AND ROUNDED PREPARATIONS ON FIT OF MONOLITHIC ZIRCONIA INCISOR CROWNS

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Objectives: This in vitro study assessed the marginal and internal fit of anterior monolithic zirconia crowns on preparations with varying total occlusal convergence (TOC) angles, with and without rounded incisal designs.

Methods: Digital models of 14 maxillary central incisors with crown preparations were fabricated with photosensitive resin. Axial wall inclinations were -8°, -4°, 0°, 8°, 12°, 16°, and 22°, with and without rounded incisal corners, and a 1-mm chamfer finish line. Monolithic zirconia crowns (n=10 per group, total 140) were milled from pre-sintered Y-TZP monolithic zirconia blocks and assessed using the dual-scan technique. STL data were analyzed in Geomagic Control X. Normality was tested with Shapiro-Wilk and Kolmogorov-Smirnov tests. One-way ANOVA, Levene's test, and Tukey HSD were used for statistical comparisons. Independent t-tests compared rounded vs. non-rounded groups within each TOC angle (p<0.05).

Results: Mean values of the TOC angle groups were statistically significantly different (p<0.001). The 22° preparation had the lowest, while -8° had the largest marginal discrepancies in rounded and non-rounded groups, respectively. Axial discrepancies were lowest at 22° and highest at -8° for non-rounded samples (p<0.001). Incisal discrepancies were smallest in 22° and largest in -4° in non-rounded groups (p<0.001).

Conclusions: TOC angle and rounded preparations have significant impact on the fit of CAD/CAM milled monolithic zirconia crowns. Rounded incisal corners and preparations with higher TOC angles increased marginal and internal adaptation of the crowns.

Keywords: Internal fit, Marginal fit, Monolithic zirconia crown, Rounded design, Tooth preparation

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OP 93

REHABILITATION OF FRACTURED AND OLD LAMINATES WITH FULL CROWNS: A CASE REPORT

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Objectives: This case report aims to demonstrate the restoration of aesthetic function and appearance in a 57-year-old female with unsatisfactory anterior veneers. It addresses challenges of excessive tooth preparation and insufficient enamel thickness, providing a conservative yet durable solution using full crowns, a cutback technique, monolithic zirconia, and E-max restoration.

Case Report: A 57-year-old female applied with dissatisfaction regarding her anterior veneers, particularly the fractured veneer on tooth #23. Clinical examination revealed excessive preparation of the teeth, leaving insufficient enamel for new veneers, and the existing veneers showed signs of failure. Given the risks of redoing veneers, full crowns from teeth #13 to #23 were recommended.

The preparations were done using a chamfer technique, ensuring minimal removal of healthy tooth structure. A cutback technique was applied, combining a monolithic zirconia core and E-max restoration material to achieve both functional and aesthetic results. Adjacent teeth were polished to match the final restoration. The patient was monitored over one year with no clinical failures reported.

Conclusions: This case demonstrates an effective approach to aesthetic restoration in compromised tooth preparations. The combination of full crowns, a cutback technique, and high-strength materials like monolithic zirconia and E-max restorations proved successful in achieving both aesthetic and functional outcomes. The treatment showed long-term stability after one year, providing an alternative to traditional laminate veneers when excessive tooth reduction and insufficient enamel exist.

Keywords: Full Crown, Anterior Restoration, Laminates, Esthetics In Dentistry

OP 94

SURFACE ROUGHNESS OF CAD/CAM CERAMIC MATERIALS AFTER DIFFERENT POLISHING METHODS

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Objective: This study compared the effects of different polishing techniques on the surface roughness of two CAD/CAM ceramic materials.

Methods: A total of 80 rectangular ceramic specimens (n=10) (leucite reinforced glass ceramic; IPS Empress CAD [EC], hybrid ceramic; Vita Enamic [VE]) were prepared with a low-speed diamond saw and randomly divided into 4 groups: Control (C), ceramic polisher (CP), FGM diamond excel polishing paste, SDI polishing paste. Surface roughness (Ra) was measured using a profilometer at three locations and in three directions per specimen (9 measurements per specimen). Data were analysed using ANOVA, Tukey's HSD, Tamhane's T2, and independent samples t-tests ($\alpha=0.05$).

Results: For VE material, the highest mean Ra values were found in the C and CP groups, while the lowest mean Ra was found in the FGM group. No significant difference was found between C and CP groups ($p > 0.05$). FGM group showed lower Ra values than SDI ($p < 0.05$). For EC material, the highest mean Ra value was found in the C group, while the lowest mean Ra values were found in FGM and SDI groups. No significant difference was observed between SDI and FGM ($p > 0.05$).

Conclusion: Both polishing technique and material type were found to be effective factors for Ra variable. The CP procedure had a significant effect on the Ra of the EC material, whereas no significant difference was observed for the VE material. Polishing pastes were found to be more effective than the CP method for surface polishing.

Keywords: CAD/CAM ceramics, Surface roughness, Polishing techniques

OP 95

EFFECT OF RESTORATIVE MATERIAL AND CEMENTATION ON THE FINAL SHADE OF THIN CERAMICS

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Objectives: To evaluate the effects of restorative material and cementation on the final shade of thin ceramics over a tooth-shaded background.

Methods: Twenty-four rectangular-shaped specimens were sliced from lithium disilicate ceramics (LDS-A1) and zirconia-reinforced lithium silicate ceramics (ZLS-A1) ($n=12$). The final thickness of the specimens was standardized to 0.8 ± 0.01 mm. A1-shaded composite resin disks were fabricated for simulating a tooth-shaded background. The first L,a,b??? color measurements (T0) of tooth-shaded composite resin disks were performed. Then, the ceramic specimens and tooth-shaded composite resin disks were connected with glycerin, and a second set of measurements (T1) was taken. Finally, the ceramic specimens were cemented onto the tooth-shaded composite resin disks using a universal shade resin cement (A2), and a third set of measurements (T2) was taken. Colour differences were calculated using the CIEDE2000 (ΔE_{00}) colour formula. The Wilcoxon Signed-Rank test was performed for the repeated measurements within the same ceramic material group and Mann-Whitney U test was performed for comparing the ΔE_{00} values of different ceramic materials ($\alpha = 0.05$).

Results: There was statistically significant difference between first ΔE_{00} and second ΔE_{00} values in both the LDS and ZLS groups ($p=0.016$, $P=0.021$). The ZLS group (3.6 ± 0.5) exhibited a significantly higher ΔE_{00} than the LDS group (2.0 ± 0.9) on A1-tooth shaded background ($p<0.001$). However, after cementation, the ZLS group (2.8 ± 0.7) and the LDS group (3.9 ± 1.3) showed similar ΔE_{00} values ($p=0.065$).

Conclusion: Universal shade cement may affect the final colour of thin ceramics, particularly when thin translucent ceramic materials are used.

Keywords: Ceramics, Cementation, Color Difference

OP 96**ZIRCONIUM ASSISTED PROSTHETIC REHABILITATION IN CONGENITAL TOOTH DEFICIENCIES: CASE REPORTS**

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Objective: Zirconia-supported porcelain restorations are widely used for aesthetic restorations. Due to their ability to mimic the natural vitality of teeth, they are preferred by both dentists and patients.

Case Report: Case 1: This case presents the treatment process of a 22-year-old female patient with no systemic disease who presented to our clinic with aesthetic and morphological complaints in the maxillary anterior region as a result of clinical and radiologic examination, the treatment method with aesthetic materials was chosen to provide aesthetic and morphologic treatment of our patient with congenital lateral tooth deficiency. Nd: YAG laser was used to level the gingival regions. The patient's canine teeth were reshaped morphologically to resemble lateral incisors and IPS E. max restorations were fabricated using the cut-back technique on monolithic zirconia. These restorations were cemented, resulting in an aesthetically pleasing smile.

Case 2: The treatment process of a 20-year-old male patient with no systemic disease, mandibular incisor and canine tooth agenesis, a history of orthodontic treatment, and micrognathia in the maxilla and mandible is summarized. An aesthetic restoration was chosen, and porcelain crowns with a zirconia substructure were manufactured.

Conclusion: During follow-up visits, patients were found to be functionally and aesthetically satisfied with their restorations.

Keywords: Congenital tooth agenesis, IPS e. max, Zirconia, Aesthetics

OP 97

ENDOCROWN RESTORATIONS: A BIBLIOMETRIC ANALYSIS OF TOP-CITED STUDIES

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Objectives: This study aims to perform a comprehensive bibliometric analysis of the 50 most highly cited articles on endocrown restorations.

Methods: A systematic search was conducted in the Clarivate-owned Web of Science (WoS) database using the search terms "endocrown" and "endocrown restoration." Publications from 2006 to 2024 were included, and all retrieved articles were ranked based on citation counts. The 50 most cited articles were selected for further analysis. Bibliometric data, including titles, abstracts, keywords, authors, affiliations, and references were processed and analyzed using Biblioshiny for visualization and statistical evaluation.

Results: A total of 175 articles were retrieved and the 50 most cited publications were included in the analysis. China, Brazil, and Switzerland emerged as the most active contributor countries to endocrown research, with China-based publications receiving the highest citation counts. The Journal of Prosthetic Dentistry and Dental Materials were identified as the most influential journals in this field. Among the authors, Krejci I was the most productive researcher, while Basting RT and Biacchi GR were the most frequently cited, emphasizing their significant contributions to endocrown-related studies. The most commonly used keywords included "endocrown," "endodontically treated teeth," and "CAD/CAM".

Conclusions: This study highlights significant growth in endocrown research, with increasing international collaborations and notable contributions from leading institutions. These findings indicate a growing interest in endocrown restorations, emphasizing material advancements, digital workflows, and long-term clinical performance.

Keywords: Endocrown, Bibliometrics, Citation analysis, Biblioshiny, Web of Science

OP 98**EVALUATION OF MECHANICAL PROPERTIES OF DIFFERENT CUSTOM TRAY MATERIALS**

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Objectives: The aim was to evaluate mechanical properties such as surface microhardness and surface roughness of different custom tray materials.

Methods: Two different PMMA-based custom tray materials were selected as; additively manufactured acrylic (Custom Tray Resin, Custom Resin Solutions, Antalya, Türkiye) [3DP] and conventionally produced self-cure acrylic (Procryla, President Dental, Allershausen, Germany) [SC]. Specimens were produced according to the manufacturers' instructions with dimensions of 10 × 10 × 3 mm³ from each material (n=12), and each specimen was grinded and polished with 400-800-1200 grit abrasive papers under water cooling. After 24 hours, surface microhardness values of each subgroup were measured by Vicker's hardness device under the load of 25 gf for 30 seconds. Surface roughness values were measured by a contact profilometer. Data were analyzed by Shapiro-Wilk test for normality and statistically analyzed by independent samples t test (p<0.05).

Results: Surface microhardness and surface roughness values of 3DP and SC materials were found significantly different (p<0.001). SC material showed higher surface microhardness value (11.41 ± 0.65) than 3DP material (8.38 ± 0.77) (p<0.001). 3DP material showed higher surface roughness value (0.20 ± 0.04) than SC material (0.11 ± 0.02) (p<0.001).

Conclusions: Different custom tray materials showed different mechanical properties. SC material showed higher surface microhardness and lower surface roughness values compared to 3DP material.

Keywords: custom tray materials, PMMA, surface hardness, surface roughness

OP 99

EFFECT OF DISINFECTANT SOLUTION ON THE FLEXURAL STRENGTH OF DIFFERENT CUSTOM TRAY MATERIALS

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Objectives: The aim was to evaluate the effect of disinfectant solution on the flexural strength of different custom tray materials produced conventionally or digitally.

Methods: Three different PMMA-based custom tray materials were selected: conventionally produced light-cured acrylic (Nova Tray, President Dental, Allershausen, Germany)[LC], self-cure acrylic (Procryla, President Dental, Allershausen, Germany)[SC], and additively manufactured acrylic (Custom Tray Resin, Custom Resin Solutions, Antalya, Türkiye)[3DP]. Twenty-four bar-shaped specimens (64 × 10 × 3.3 mm³) were produced according to the manufacturers' instructions for each material. Each group was randomly divided into two subgroups (n=12) based on disinfection status: disinfectant (Incidin OxyFoam S, Ecolab, Rhein, Germany) applied for one hour [D] or no disinfectant applied [ND]. Flexural strength (MPa) and deformation (mm) were assessed using a three-point bending test. Normality was evaluated via the Shapiro-Wilk test, and statistical analyses were performed using two-way ANOVA, one-way ANOVA, post-hoc Dunnett T3, Tukey HSD, and independent samples t-test (p<0.05).

Results: Material type significantly affected flexural strength and deformation (p<0.001), while disinfection had no significant effect (p>0.05). The mean flexural strength and deflection values differed significantly among materials (p<0.001). 3DP had the highest strength (81.64 ± 13.28 MPa), LC the lowest (16.51 ± 7.63 MPa), and SC (46.98 ± 10.45 MPa) was significantly different from both, per post-hoc Dunnett T3 test (p<0.001). When different disinfection conditions were compared, no significant differences were found between D and ND(p>0.05).

Conclusions: Different custom tray materials showed different flexural strength values. Disinfection conditions did not influence the flexural strength and deformation values.

Keywords: 3D printing, additive manufacturing, custom tray materials, disinfection, flexural strength

OP 100

SURFACE PROPERTIES OF 3D-PRINTED AND MILLED IMPLANT-SUPPORTED TEMPORARY CROWNS

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Objectives: Implant-supported restorations are nowadays considered the best treatment option for replacing missing teeth. Provisional restorations are important during osseointegration time. They represent an important step in deciding the shape and contour of the peri-implant soft tissues, providing esthetics and function. Provisional restoration can be fabricated by using subtractive or additive manufacturing technologies and that represent advancements in digital dentistry. Implant-supported provisionals should have adequate mechanical, biological and surface properties. The higher surface roughness of restorations has a great influence on the primary adhesion of bacteria and their colonization with biofilm formation and plaque accumulation and can lead to biological complications. The Aim was to examine and compare the surface properties of two digital fabrication techniques (CAD/CAM milling and 3D printing) of PMMA materials for implant supported restoration.

Method: The study included two materials: PMMA (milled) and PMMA (3D printed). The samples were cut in the shape of a disc, 5mm in diameter and 2mm thick. The specimens were then submitted to the polishing protocol, suggested by the manufacturer. The experimental part included measuring the surface roughness (SR) and contact angle of water (WCA) analyses.

Results: There was a significant difference between groups in both surface roughness parameters (Ra and Rz). 3D printed group showed higher values of Ra and Rz than milled group. Morphological changes were detected in all groups as a result of polishing procedure.

Conclusion: This is very important for dental clinical practice because of correlation between surface properties and bacterial adhesion.

Keywords: implant supported restorations, surface properties, 3D- printing

OP 101

COMPARISON OF PVS AND PVSE-BASED ELASTOMERS IN TERMS OF MECHANICAL TESTING AND WETTABILITY

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Objectives: Elastomeric impression materials have different structures and compositions. These structural differences must be considered during impression-taking. This study aims to compare polyvinyl siloxane (PVS) and hybrid polyvinyl siloxane ether (PVSE) in terms of mechanical properties and wettability.

Methods: A total of 100 specimens, 50 from each impression material, were prepared: polyvinyl siloxane (Imicryl-Spirias) and polyvinyl siloxane ether (GC-EXA'lence). Each subgroup (n=10) was subjected to compression strain under pressure, tensile strength, tear resistance, and wettability tests. The wettability test included two subgroups, where distilled water and artificial saliva were used. Contact angles of the specimens were measured at 0, 5, 45, and 85.5 seconds using both artificial saliva and distilled water. All values were recorded. Data were analyzed using IBM SPSS v25 and R statistical software ($p < 0.05$).

Results: In the compression strain test, the PVSE material showed significantly higher values than PVS. While there was no significant difference in tensile strength and tear resistance, PVS exhibited a significantly higher elastic modulus compared to PVSE. In the wettability test, there was no superiority between artificial saliva and distilled water; however, the EXA'lence material demonstrated the highest wettability values. Contact angles decreased over time.

Conclusions: The hybrid impression material PVSE demonstrated superior hydrophilicity, tensile strength, and flexibility compared to PVS. Polyvinyl siloxane, on the other hand, exhibited greater hardness and tear resistance.

Keywords: compression strain test, contact angle test, elastomers, tear test, tensile strength

OP 102**ACCURACY OF INTRAORAL SCANNERS AT DIFFERENT CROWN HEIGHTS: AN IN VITRO STUDY**

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Objectives: This study aims to evaluate the effect of crown preparation height on the accuracy of intraoral scanners (IOS) by comparing two different scanners at varying preparation heights.

Methods: A typodont model was prepared with a chamfer finish line at two different crown heights (7 mm and 5 mm). A laboratory scanner (E1, 3Shape, Copenhagen, Denmark) was used to obtain a reference scan. Intraoral scanners, TRIOS 3 (3Shape, Copenhagen, Denmark) and iTero Element 5D Plus (Align Technologies, San Jose, USA), were used for digital impressions. Ten scans were taken for each preparation height per scanner, resulting in a total of 40 scans. The accuracy was assessed using Geomagic Control X software by calculating Root Mean Square (RMS) error values between IOS scans and the reference model. Statistical analysis was performed using IBM SPSS v29. Independent samples t-test was applied ($\alpha = 0.05$).

Results: The iTero scanner exhibited significantly lower RMS values (0.040 ± 0.005 mm) compared to the TRIOS 3 scanner (0.049 ± 0.006 mm, $p < 0.001$), indicating higher overall accuracy. TRIOS 3 scanner showed a significant accuracy difference between the 5 mm (0.051 ± 0.005 mm) and 7 mm (0.046 ± 0.006 mm) preparations ($p = 0.043$), demonstrating improved accuracy with greater preparation height. In contrast, the iTero scanner maintained consistent accuracy across both preparation heights ($p = 0.451$).

Conclusion: The iTero scanner demonstrated better overall accuracy, while the TRIOS 3 scanner exhibited greater sensitivity to crown preparation height, with accuracy improving at greater preparation heights.

Keywords: Accuracy, Intraoral scanner, Preparation height, Tooth preparation

OP 103**ADJACENCY MATTERS: EVALUATING THE EFFECT OF ADJACENT RESTORATIONS ON IMPLANT DIGITAL SCANS**

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Objectives: This study aims to evaluate the effect of adjacent tooth restoration type on the accuracy of digital impressions for implant-supported prostheses.

Methods: In a typodont model, the mandibular right molar was extracted and replaced with an implant analog, over which a scan body was positioned. The adjacent tooth was prepared for a crown restoration. Digital impressions were obtained in three different conditions: before preparation (intact tooth), with a porcelain-fused-to-metal (PFM) restoration, and with a monolithic zirconia (MZ) restoration. Each condition was scanned using two different intraoral scanners (Trios 3 and iTero), resulting in six test groups. Each group underwent 10 scans, generating a total of 60 STL files. A laboratory scanner (E1, 3Shape) provided the reference scan. RMS values were calculated using Geomagic Control X software to assess deviations between intraoral and reference scans.

Results: Significant differences in RMS values were observed based on scanner type and adjacent restoration material ($p < 0.001$). iTero scanner demonstrated lower RMS values than 3Shape scanner, indicating higher accuracy. Among materials, metal-porcelain exhibited the highest RMS values, suggesting greater deviation in digital impressions compared to monolithic zirconia and typodont teeth.

Conclusions: Different intraoral scanners may exhibit varying performance depending on the clinical scenario. The type of adjacent restoration influences the accuracy of digital impressions for implant-supported prostheses.

Keywords: accuracy, intraoral scanner, scan body, digital impressions, implant- supported prosthesis

OP 104

EVALUATION OF WEAR BEHAVIOR AND VOLUMETRIC CHANGE IN COMPOSITE VENEERED HYBRID PEKK/PEEK MATERIALS

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Objectives: Evaluate the volumetric wear and vertical height loss performance of PEKK and PEEK frameworks with breCAM.HIPC, a high-impact composite (Comp), as coping veneer crowns in lower hybrid Toronto-designed ISFDP, opposed to monolithic zirconia ISFDP utilizing a technique-sensitive full-arch sample design.

Methods: A total of 28 ISFDPs (n = 14 per arch) were fabricated using CAD-CAM technology. The mandibular hybrid ISFDP frameworks were individually veneered with 168 anatomically shaped and abutment-fitting breCAM.HIPC coping crowns equally distributed between two material groups: PEKK\Comp and PEEK\Comp (n = 7 per group). The assessment incorporated a combination of aging procedures (TCML) with dynamic loading (1,250,000 cycles; 80 N load). Wear volume loss was assessed by scanning lower hybrid ISFDP samples with a 3D laser scanner and subsequently overlaying the images using Avizo 3D software. The evaluation of vertical height loss occurred simultaneously during the cycling process.

Results: PEKK\Comp showed superior performance after five years of simulated aging, demonstrating a significantly lower mean volume loss (ΔV) of $0.222 \pm 0.04 \text{ mm}^3$ compared to PEEK\Comp, which exhibited a mean volume loss of $1.028 \pm 0.10 \text{ mm}^3$ ($p < 0.05$). However, the vertical height loss (ΔH) results indicated comparable performance, with PEKK\Comp demonstrating a marginal advantage, exhibiting a lower mean height loss of $0.277 \pm 0.03 \text{ mm}$ compared to PEEK\Comp at $0.333 \pm 0.05 \text{ mm}$.

Conclusions: In hybrid ISFDP settings, PEKK and PEEK have similar vertical height loss values and significant differences in the overall volume loss, suggesting that their mechanical properties affect their wear resistance, especially when veneered with low-elasticity matching polymer-based copings.

Keywords: PEKK, Material Wear, Chewing simulation, ISFDP

Acknowledgments: To Professor Dr. Ender Kazazoğlu, Head of the Prosthodontics Department. My admired supervisor and mentor.

OP 105

COMPARISON OF THE FRACTURE STRENGTH OF DIFFERENT MATERIALS USED FOR CANTILEVER PROSTHESIS

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Objectives: This study compares the fracture strength of fixed prosthetic frameworks made from PEEK, PEKK, and PMMA polymers against Zirconia infrastructures in a simulated oral environment.

Methods: Two implants, 15 mm apart, were embedded in acrylic resin to simulate an edentulous posterior region. Frameworks were milled from CAD/CAM blocks using PEEK, PEKK, PMMA, and Zirconia, with cantilever lengths of 10 mm and 20 mm. Samples underwent 20,000 thermocycles (5°C–55°C). Cementation was performed using resin-modified glass ionomer cement, and fracture testing was conducted with an Instron Universal Testing Machine (1 mm/min load applied 2 mm from the distal end). Normality was assessed using Kolmogorov-Smirnov and Shapiro-Wilks tests, and results were analysed with two-way ANOVA.

Results: There was statistically significant difference in decementation and deformation values both according to cantilever lengths and among the materials ($p:0.001$; $p<0.05$). The Zirconia group demonstrated the highest decementation load values at both cantilever lengths (10 mm samples 338 ± 24 N, 20 mm samples 141 ± 167 N). The mean deformation maximum load values for a 10 mm Zirconia sample were 642 ± 102 N, significantly exceeding the corresponding values for PEEK (417 ± 53 N), PEKK (360 ± 59 N), and PMMA (344 ± 97 N). Similarly, for the 20 mm samples, Zirconia (248 ± 26 N) also showed higher values compared to PEEK (126 ± 9 N), PEKK (124 ± 10 N), and PMMA (173 ± 24 N).

Conclusions: The 10 mm cantilever length had significantly higher fracture resistance than 20 mm for all materials. Zirconia demonstrated superior fracture strength and decementation resistance.

Keywords: PEEK, Cantilever, Fracture strength

OP 106

CHANGES OF ORAL TISSUES IN PATIENTS WITH CONVENTIONAL AND IMMEDIATE REMOVABLE DENTURES

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Introduction: The main factors for the acceptance of mobile prosthetic devices are the provision of aesthetic, phonetic, psycho-social and functional requirements, followed by the fact that patient's lost aesthetics, instability and discomfort when wearing dentures are the main factors for dissatisfaction with prosthetic devices.

Methods: The aim of this research was realized in the Clinic of Prosthodontics at the Faculty of Dentistry in Skopje, during a period of 3 years 60 patients, aged 54 to 70 years, were examined and selected, divided into two groups. In 30 of them, we made immediate complete dentures, and in the other 30 conventional complete dentures.

Results: We fabricated immediate dentures in patients with an average age of 59 years. In 66.7% of the patients in whom we made immediate dentures, we did not find disturbed intermaxillary relations, they the height of the lower third of the face were preserved with the remaining teeth, 73.3% of the subjects in this group had no temporomandibular joint pain. Unlike this, all patients in the group to whom we made conventional complete dentures had disturbed intermaxillary relations and 53.3% had temporomandibular joint pain.

Conclusion: Patients with immediate dentures have significantly less changes on the orofacial musculature, fewer have intermaxillary disturbances and extraoral appearance changes, and a smaller number of patients have temporomandibular joint pain as well as less speech problems, but in these patients the remaining teeth are usually in very poor periodontal condition.

Keywords: complete dentures, immediate dentures, oral tissues changes

OP 107

DEGRADATION EFFECTS OF DIETARY SOLVENTS ON SORPTION AND SOLUBILITY OF VARIOUS DENTURE TEETH

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Objective: This study aimed to evaluate how different dietary solvents affect the sorption and solubility properties of three types of denture teeth: acrylic, composite resin, and porcelain.

Methods: In the present study, a total of one hundred forty-four maxillary central teeth were used, with forty-eight specimens sourced from each group of denture teeth. The samples were systematically allocated into four groups and incubated in an incubator set at 37 °C for a duration of one week, utilizing the following dietary solvents: distilled water (control), 0.02 N citric acid, a 50% ethanol-water solution, and heptane (n=12). The standards for sorption and solubility measurements were based on ISO 4049, and mass calculations were conducted using the sample volumes. Specifically, m1 represents the mass after the initial drying of the specimen, m2 is the mass following the immersion in dietary solvents, and m3 is the final mass after the desiccation process. Statistical analysis was performed using one-way ANOVA, followed by the post hoc Bonferroni test, all set against a significance threshold of $p = 0.05$.

Results: While the acrylic denture teeth group exhibited the highest values for both sorption and solubility, porcelain denture teeth demonstrated the least degradation among all materials tested. The most significant degradative effects were observed with 0.02 N citric acid and a 50% ethanol-water solution across all denture teeth groups, followed by heptane and distilled water, respectively.

Conclusions: The dietary habits of patients can significantly influence the clinical lifespan of dentures. It is essential to review these dietary preferences.

Keywords: Denture teeth, Dietary solvents, Sorption

OP 108

MISSLEADINGS AND MISSUSES OF THERAPEUTIC TOOLS IN THERAPY OF OSTEOPOROTIC PATIENTS

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Objectives: This study aims to report some of possible missuses in the therapy of osteoporotic patients in the population of olds.

Methods: In this study 119 partially edentulous and completely edentulous patients – 79 woman and 40 men from 67 to 83 years were observed, orally and systemically treated of osteoporosis.

Results: The main intentions in oral therapy (within the scope of systemic therapy) of these osteoporotic patients regards: selected and sporadic use of biphosphates (bisphosphonates), restricted use of calcitonin, priority of DEXA and parallel beam scanner prior to using of cone beam tomography, avoidance of unilaterally established occlusal scheme in prosthodontic dental construction and frequent recalls because of the pronounced need for relining and rebasing of removable dentures.

Conclusion: Selected principles and advices should be applied in oral therapy of all of osteoporotic patients.

Keywords: osteoporosis, partially edentulous patients, completely edentulous patients, removable dentures

OP 109

EVALUATION OF IOS DATA OF STUDENTS IN DIFFERENT EDUCATIONAL GROUPS

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Objectives: The aim of this study is to examine whether if there was a difference in terms of digital scanning data between three different student groups.

Methods: A master model was created with the prepared Typodont teeth 46. The scanings were performed on the dental simulation model with the physician sitting in the 9-12 position and the patient sitting upright in accordance with the instructions of the IOS (Trios 3 Shape S1A Copenhagen, Denmark) manufacturer. Group 1, 8th semester dental students with low preclinical grades in the earlier stages of education; Group 2, 8 th semester dental students with high preclinical grades; Group 3, after graduate students who is in the 2nd year of Philosophy of Doctorate education in Kirikkale University Prosthodontic department. The three groups were compared in terms of mandible, maxilla, occlusion and total scanning time, mandible, maxilla, occlusion and total scanning image number. The values obtained were compared by one-way ANOVA. (SPSS 15.0) A level of 0.05 was accepted for statistical significance.

Results: When mandibular scan time was evaluated, group 3 (115.9 ± 17.85) was significantly different from group 1 (149.4 ± 8.32) ($p=.026$). From the maxillary scans perspective, group 1 (2139.6 ± 397.44) was significantly different from group 2 (1603 ± 487.27) and group 3 (1571.6 ± 308.56) ($p=.006$). From the total number of scans perspective, group 1 (4367 ± 523.35) was significantly different from group 2 (3627.2 ± 843.26) and group 3 (3563 ± 527.7) ($p=.017$)

Conclusion: Getting low grades in the early education may indicate negative effects on future digital capacity.

Keywords: Intraoral scanner, dentistry education, full crown

OP 110**USE OF BOTULINUM TOXIN IN MASSETERIC MUSCLE HYPERTROPHY**

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Objective: Unilateral and bilateral masseteric muscle hypertrophy is an idiopathic enlargement of the masticatory muscles without age and sex prevalence. Today it is often found and diagnosed in patients with temporomandibular disorders like bruxism and other stress-related teeth clenching and grinding. This case report aims to evaluate the effect of botulinum toxin therapy in patients with bilateral masseter hypertrophy.

Method: A 30-year-old female patient, with a tender bilateral masseteric enlargement due to a severe form of bruxism, was treated with a stabilization Michigan splint for three months. After initial therapy, she was injected with 60 units of botulinum toxin (Dysport 500) diluted in 3ml sterile, preservative-free saline solution (0.9% sodium chloride injection solution) in each masseteric muscle.

Results: Four weeks after treatment the patient reported a significant reduction in pain symptoms and muscle strength. She also noticed slimming of the lower third of the face and a rounded mandibular angle. Clinical palpation post-treatment revealed a reduction in muscle strength and we had a high patient satisfaction level.

Conclusion: Neuromodulators have been successfully used to control painful symptoms and aesthetic de-bulking of the masseter muscle. Further research is required to ensure the safe and effective use of neuromodulators in this common disorder.

Keywords: bruxism, masseteric hypertrophy, botulinum toxin

OP 111

PREVALENCE OF TEMPOROMANDIBULAR DISORDERS AND SLEEP QUALITY IN PATIENTS WITH THYROID DISEASES

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Objective: Temporomandibular disorders (TMD) are characterized by joint or muscle pain, restricted mandibular movement and symptoms such as headaches, dizziness and tinnitus. Thyroid hormones are crucial for heart and skeletal muscle function, and symptoms of thyroid disorders (e.g. fatigue, myalgias, muscle weakness, sleep disturbances, depression) often overlap with TMD. The aim of this study was to determine the prevalence of TMD in patients with Hashimoto's thyroiditis, hyperthyroidism and hypothyroidism and to investigate its association with sleep disturbances and mental disorders.

Methods: This case-control study included 20 women for each group: Hashimoto's thyroiditis, hyperthyroidism, hypothyroidism, and a healthy control group. Diagnosis of thyroid disease was confirmed by serum concentrations and ultrasound examinations. TMD was diagnosed using the diagnostic criteria for temporomandibular disorders (DC/TMD), Pittsburgh Sleep Quality Index (PSQI) was used to determine sleep quality, and Revised Symptom Checklist (SCL-90-R) was used to assess psychological status.

Results: TMD prevalence was statistically higher in Hashimoto's thyroiditis group (85%) than in the hypothyroidism (35%) and control (55%) groups, but the difference between hypothyroidism and control groups were not statistically significant. There was no significant difference in sleep quality between groups, all groups showed poor sleep quality.

Conclusions: Findings of the present study show that TMD is more common in patients with Hashimoto's thyroiditis than in hypothyroidism and healthy patients. Hashimoto's thyroiditis, hypothyroidism, and TMD all had a negative effect on sleep quality.

Keywords: Hashimoto's thyroiditis, Temporomandibular Disorder, Sleep Quality, Psychological State

OP 112

THE EFFECT OF MIDLINE DEVIATION, GINGIVAL DISPLAY, TOOTH WHITENESS ON THE ESTHETIC PERCEPTION OF AI

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Objectives: Although esthetics is a subjective phenomenon, certain parameters are evaluated and accepted as definitive esthetic criteria in dentistry. This study aimed to investigate the esthetic perception of artificial intelligence (AI) supported chatbot (CB) applications and determine whether their esthetic criteria align with those accepted by dentists.

Methods: A total of 300 AI-generated human images were categorized into three groups, and the esthetic evaluations of two advanced Large Language Models, Gemini (Google DeepMind, USA) and ChatGPT 4o (OpenAI, USA) were analyzed based on the presence of a gummy smile, tooth whiteness, and midline deviation. The obtained data were analyzed using SPSS (version 25.0). The chi-square test was used to assess differences between categorical variables.

Results: For both CB applications, no statistically significant difference was observed in the preference for images with or without visible gingiva (gummy smile) ($p>0.05$). Similarly, no statistically significant difference was found in the preference for images with or without midline deviation ($p>0.05$). However, when evaluating the "tooth whiteness" variable, a statistically significant difference was observed between groups, with images featuring higher L values (indicating whiter teeth) being rated as more esthetic ($p<0.05$).

Conclusions: This study examined three parameters to assess the consistency between the esthetic criteria of subjective tools—emotionless CB applications—and the prosthodontic perspective. The findings suggest that AI may not fully align with the esthetic criteria established in prosthodontics. These results highlight the limitations of AI-based CB applications in accurately assessing dental esthetics according to professional standards.

Keywords: midline discrepancy, gingival display, artificial intelligence



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OP 113

THE ROLE OF SYMPHYSIS MORPHOLOGY IN MANDIBULAR DEVELOPMENT ACROSS VARIOUS AGE GROUPS

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Objectives: Changes in the craniofacial complex during the growth period have been investigated by many researchers. It has been understood that the mandible plays a very important role in determining facial types, and that chin morphology is a key characteristic in a person's overall facial appearance. Our investigation was carried out using lateral cephalometric radiographs to evaluate the relationship between the symphysis and the direction of mandibular growth, as well as the morphology of the symphysis. All subjects exhibited clinically acceptable occlusion and facial harmony and had not undergone orthodontic treatment.

Methods: A total of 180 subjects were included in this study, divided into three groups according to developmental period: prepuberty, puberty, and postpuberty. Each group consisted of 30 male and 30 female subjects. An analysis of variance (ANOVA) test was performed to determine the differences between the three groups.

Results: A difference was found between male and female subjects in symphysis height and depth. Females exhibited a stronger relationship between symphysis morphology and the direction of mandibular growth compared with males. This relationship increases during puberty and continues into the postpubertal period in females, whereas in males it increases only during the postpubertal period. The increase in symphysis depth was more pronounced on the lingual surface than on the labial surface.

Conclusion: Continuous changes in symphysis morphology were observed up to adulthood in both females and males.

OP 114

DEMOGRAPHIC ANALYSIS OF ADULT PATIENTS APPLYING TO THE DENTISTRY HOSPITAL FOR ORTHODONTIC TREATMENT

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Objectives: In Turkey, adult patients over 18 bear the costs of orthodontic treatment and materials. Faculty hospitals provide orthodontic services through dentists in specialty training, supervised by specialist orthodontists. This study aims to analyze the demographic characteristics and reasons for choosing Süleyman Demirel University's orthodontic clinic among individuals aged 18 and older.

Methods: Between October 1-31, 2024, 207 cases (116 females, 91 males; mean age 21.0 ± 4.4 years, min: 18, max: 40) applied to the SDU orthodontic clinic. Data on oral hygiene, dental crowding, skeletal malocclusion types, application reasons, and socio-economic status were recorded by dentists in specialty training. Descriptive statistics (percentage, mean, standard deviation) and Pearson correlation analysis were used.

Results: Most applications came from the Mediterranean (116) and Aegean (26) regions. Oral hygiene was moderate in 80.1% of cases. Patients presented with Class I (48.3%), Class II (21.2%), and Class III (20.7%) skeletal malocclusions. Only 6.2% applied for clear aligners. Among patients, 24.1% required orthognathic surgery, and 61.3% needed fixed orthodontic treatment. Impacted teeth were observed in 9.1% of cases, with the most commonly impacted teeth being (#13) and (#35).

Conclusion: Adults often prefer faculty hospitals for complex cases like orthognathic surgery. Most patients sought fixed treatment and lacked awareness about clear aligners. Educational initiatives on orthodontic options should be expanded.

Keywords: adult patients, demografik study, orthognathic surgery

OP 115**FACTORS INFLUENCING TREATMENT DURATION OF IMPACTED MAXILLARY CANINES**

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Objectives: Use of orthopantomography and cone beam computed tomography to determine factors associated with treatment duration in impacted maxillary canines.

Methods: Seventeen linear and angular measurements were evaluated using pretreatment radiographic images of 64 patients (83 impacted maxillary canines). Treatment duration from surgical exposure until canine appeared in oral cavity, and until achieving ideal alignment were recorded in months.

Results: Average treatment duration until appearance in the mouth was 14.61 ± 9.28 months, and 26.98 ± 12.44 months until ideal alignment. Buccally impacted canines emerged in 7.91 ± 4.21 months, and were ideally aligned in 20.64 ± 8.15 months, in comparison to palatally positioned 17.58 ± 8.88 and 30.26 ± 12.58 months, respectively. Canines localized around lateral incisors had shorter treatment times compared to those localized around central incisors. Canines that were inclined more than 30 degrees to SML had significantly longer treatment time until initial appearance in the mouth (16.31 ± 9.32), compared to those inclined less (10.82 ± 8.92). Linear regression analyses demonstrated that these factors are predictors for both, treatment duration until emergence of the canine in the mouth and ideal alignment.

Conclusion: Treatment duration for impacted maxillary canines is notably lengthy particularly for palatally, mesially positioned canines, and those with greater inclinations. Palatally located canines typically require twice as much time to emerge compared to those positioned buccally. Canines located nearer the central incisor area take twice as much time to emerge compared to those located in the lateral incisor area.

Keywords: maxillary canines, orthopantomography, CBCT, treatment duration

OP 116

EVALUATION OF THE EFFECTS OF DIFFERENT CLEAR ALIGNER CLEANING METHODS ON MICROBIAL COLONIZATION

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Objectives: To evaluate the effects of different cleaning methods on microorganism levels in patients undergoing clear aligner therapy.

Methods: Twenty-one patients with mild-moderate malocclusion were included. Aligners were cleaned daily with five different methods: toothbrush only (Week-1); toothbrush and toothpaste (Week-2); toothbrush and Invisalign Cleaning Crystals (Week-3); toothbrush and Corega Proguard&Retainer Cleansers (Week-4); toothbrush and Prokudent Removable Braces Cleaning Tablets (Week-5). Before switching to a new aligner set each week, stimulated saliva samples and biofilm samples from the used aligners were collected. Quantitative culture methods were employed to determine the levels of *Streptococcus mutans* (S.mutans) and yeast.

Results: In saliva, the mean amount for S.mutans was 65.538 CFU/mL at baseline and decreased to 31.154 CFU/mL in Week-5, however no significant differences were found between any of the weeks. Effect size of difference between Weeks 1 and 3 was large (0.548). In biofilm samples, the highest S.mutans amount was observed in Week-1 (658 CFU/mL), while the lowest was recorded in Week-5 (64 CFU/mL). Reduction in Week-5 showed moderate effect size compared to Week-1 (0.369) and Week-4 (0.353), whereas no significant differences were found between any of the weeks. The yeast amount remained low, showing no significant differences in saliva or biofilm samples between the weeks.

Conclusion: S.mutans levels in saliva and biofilm samples were altered with no significant differences. The reductions in Weeks 3 and 5 suggest these methods may offer better microbial control. Yeast levels remained unchanged.

Keywords: clear aligner, cleaning tablets, microbial colonization

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OP 117

HISTOLOGICAL EVALUATION OF THE TOOTH OF A PATIENT WITH TESSIER NO. 7 CLEFT

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Objectives: Unilateral maxillary duplication in Tessier 7 cleft is extremely rare, with only two cases documented in Europe. Previous literature concentrated on clinical, radiological, and surgical aspects, with no histological analysis conducted on the affected teeth so far.

Case Report: The extracted upper right second molar of the clinically and radiologically diagnosed Tessier No. 7 cleft case in a 17-year-old Caucasian male was subjected to histological examination. Decalcified 4-µm thick sections were routinely stained with Hematoxylin and Eosin, and examined under the light microscope. Preserved and hyper-voluminous dental pulp surrounded by physiological structure mantle dentin was observed. The dental pulp consisted of intact, loosely woven connective tissue, with good blood circulation, and prominent blood vessels. Very few inflammatory cells were diffusely distributed in the cellular zone. The odontoblastic layer remained intact and extended along the mantle dentin, with no evidence of dentin bridge formation. No inflammation, fibrosis, or venous stasis were observed in the pulp's apical, middle, and coronal sections.

Conclusion: Histological evaluation of the tooth of a patient with Tessier No 7 cleft syndrome did not show pathological changes in pulp and dentin. Further research at the molecular and cellular level is needed.

Keywords: tessier, cleft, tooth pulp, unilateral maxillary duplication, histology

OP 118**DIFFERENT APPLICATION PROTOCOLS IN ORTHOGNATHIC SURGERY TREATMENT: CASE SERIES**

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Objectives: Significant deviations of craniofacial structures from normal values in all three planes of development can make correction solely through orthodontic treatment insufficient, particularly in individuals who have completed their growth and development. Therefore, severe skeletal discrepancies are treated with a combination of orthodontics and maxillofacial surgery. The timing of the surgical procedure and/or orthodontic treatment in orthognathic surgery varies according to the needs of the case. Orthognathic surgical treatment can be applied using different protocols based on the patient's specific condition and needs. The purpose of this presentation is to present the material of cases treated with surgery only, surgery first and traditional protocol of orthodontics and then surgery. This study evaluates patient selection criteria and outcomes associated with different treatment alternatives used in orthognathic surgery.

Case Report: In the Department of Orthodontics at Süleyman Demirel University Faculty of Dentistry, orthognathic surgery indications were determined for three patients presenting with maksillodentofacial anomalies based on clinical and radiological evaluations. According to the specific needs of the patients, the appropriate protocol was selected among surgery only , surgery-first, or conventional methods. Treatments were successfully completed.

Conclusion: In all cases treated using three different orthognathic surgery protocols, post-treatment results demonstrated healthy, well-aligned dental occlusion and improved esthetic appearance. Assessing the unique advantages and disadvantages of each protocol and selecting the most suitable approach for the patient can enhance treatment success.

Keywords: orthognathic surgery, surgery only, surgery first

OP 119**EFFECT OF ANGLE MALOCCLUSION ON THE MIQ AMONG TURKISH ADOLESCENTS: A PILOT STUDY**

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Objectives: The malocclusion impact questionnaire (MIQ) is a tool that is used to assess oral health-related quality of life (OHRQoL) in patients aged 10--16 years with malocclusion. The aim of the present study is to evaluate the impact of Angle Class I, Class II, and Class III malocclusions on oral health-related quality of life (OHRQOL) using MIQ.

Methods: The Turkish version of the MIQ was administered to 13 individuals with a Class I malocclusion, 13 individuals with a Class II, and 13 individuals with a Class III malocclusion. The Shapiro-Wilk test was applied to test the data for normal distribution. To compare the age and gender distributions between the groups, the Kruskal–Wallis and Chi-square tests were used, respectively. The intergroup comparison of the MIQ-T total scale and subscale scores was performed using the Kruskal–Wallis test.

Results: There was no statistically significant difference observed between the groups in the individuals' total scores and subscale scores for feel, concern, social effect ($p > 0,05$).

Conclusion: There was no significant difference observed in the OHRQoL between adolescents presenting with a Class I, Class II and class III malocclusion.

Keywords: malocclusion impact questionnaire, angle malocclusion, adolescents.

OP 120

DEMOGRAPHIC STUDY OF ORTHODONTIC APPLICATION IN CHILDREN APPLYING AT THE DENTISTRY HOSPITAL

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Objectives: In Turkey, state health insurance covers orthodontic treatment for individuals under 18 at university-affiliated dental faculty hospitals if the malocclusion's ICON analysis value exceeds 43. These services are provided by specialized dentists and expert orthodontists. This study aims to present a demographic analysis of individuals under 18 who applied to the orthodontics department at Süleyman Demirel University in Isparta and nearby areas.

Methods: From 1-31 October 2024, 859 cases (492 girls, 367 boys, average age 11.92 ± 2.62 years) registered at the SDÜ Faculty of Dentistry Orthodontics clinic. Oral hygiene, crowding, skeletal malocclusion type, application reasons, and socio-economic status were recorded by trained dentists. Descriptive statistical methods and Pearson correlation analysis were used.

Results: Most applications came from the Mediterranean (651) and Aegean regions (79). Oral hygiene was moderate in 79.04% of patients. Skeletal malocclusion types were 37.95% Class I, 32.59% Class II, and 13.50% Class III. Functional orthodontic treatment was needed in 40.74% of cases, while 62.74% required fixed orthodontic treatment. Orthognathic surgery was needed in 4.07%, and 8.9% had impacted teeth, mostly maxillary canines and mandibular second premolars.

Conclusion: Awareness of orthodontic treatment needs is high among 8-16 year olds in the region. Emphasizing oral hygiene habits and educating families about early orthodontics is crucial.

Keywords: demographic study, orthodontic treatment, children

OP 121**TREATMENT OF A CLASS II DIVISION 1 MALOCCLUSION WITH TWIN BLOCK APPLIANCE: A CASE REPORT**

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Objectives: Twin block appliance, which is one of the widely used mobile functional appliances in patients with Class II malocclusion characterized by mandibular insufficiency during the growth and development period, provides forward movement of the mandible with two separate acrylic plates, upper and lower jaws. The aim of this case report is to describe the effects produced by the Twin Block appliance for the correction of Class II division 1 malocclusion with retrognathic mandible.

Case Report: This case report presents a 14 years 10 months old girl with a Class II division 1 malocclusion with increased overjet in the permanent dentition with positive signs of puberty. As a result of the wrist film analysis, it was determined that the patient was in the MP3u period. She was skeletal Class I borderline Class II according to Steiner cephalometric film analysis. She has treated by using twin block appliances with maxillary expansion for 1 year full time. Class II malocclusion was treated with maxillary transversal expansion and stimulation of mandibular growth.

Conclusion: The twin block appliance is an effective orthodontics appliance in the treatment of Class II malocclusion. Although this patient was at the late pubertal period of growth and development, favorable skeletal and dental effects were obtained with regular use of twin block and Class I relationship was achieved at the end of treatment.

Keywords: twin block appliance, class II division 1 malocclusion treatment, functional appliance

OP 122

TREATMENT OF ANTERIOR CROSSBITE WITH SCREWED REMOVABLE APPLIANCES: TWO CASE REPORTS

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Objectives: Crossbite, which results from the disharmony between the mandible and maxilla in sagittal and transversal discrepancies. Anterior crossbite is characterized by the palatal positioning of one or more maxillary anterior teeth compared to the mandibular anterior teeth. The aim of these case reports is to present the treatment approaches using screw-removable appliances in patients with anterior crossbite during the mixed dentition period.

Case Report: Two systemically healthy patients, aged seven and nine, in the mixed dentition period, applied to our clinic with aesthetic complaints. Clinical examination revealed that the patients had an Angle Class I molar relationship and anterior crossbite. The treatment plan for the patients included a screwed-removable appliance with a posterior bite block. Both patients have been informed that the appliances should be used for at least 21 hours a day, removed during meals, and used with attention to oral hygiene. During the first two weeks of appliance use, no active treatment protocol was initiated to allow for adaptation. In the subsequent period, a treatment protocol of two turns per week was started. After three months of active treatment, retention therapy was applied following the correction of the crossbite and achievement of overcorrection.

Conclusion: Unless anterior crossbite is treated, it can lead to aesthetic and functional complications. Early diagnosis and intervention are of great importance in preventing these complications. When the appropriate indications and proper patient motivation are provided, removable appliances are considered effective, low-cost, and short-term treatment options for correcting anterior crossbite in the early stages.

Keywords: anterior crossbite, malocclusion, mixed dentition, removable appliances

OP 123

ORTHODONTIC MANAGEMENT OF PATIENTS WITH MISSING TEETH IN THE MAXILLARY ANTERIOR REGION

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Objectives: Orthodontic management of patients with missing maxillary anterior teeth is becoming increasingly prevalent. However, these cases present significant clinical challenges still. This study aims to explore the etiologies and treatment approaches for patients with missing maxillary anterior teeth.

Methods: A total of 64 patients from the Department of Orthodontics, School of Dental Medicine, Belgrade were selected based on intraoral photographs, study casts, and radiographic images. Inclusion criteria focused on patients with missing maxillary anterior teeth, with etiologies including hypodontia, trauma, impaction, or prior extractions. Exclusion criteria included incomplete diagnostic data and congenital anomalies such as clefts.

Results: Patients were grouped according to missing teeth and treatment plans. Among the 64 patients, 7.8% (5) were missing central incisors (4 due to trauma, 1 due to impaction), 68.8% (44) were missing lateral incisors (38 due to hypodontia, 5 due to ectopic position, 1 extracted by a practitioner), and 20.3% (13) were missing canines (all due to impaction). Additionally, 3% (2) had congenitally missing both lateral incisors and canines. Treatment strategies included space creation in 23.4% [16 (5 patients with central, 11 with lateral incisor)] of cases and space closure in 76.6% [48 (35 patients with lateral incisor, and 13 with canine) of cases].

Conclusion: The study highlights the predominance of lateral incisor agenesis and the preference for space closure as a treatment approach. It underscores the need for individualized treatment planning based on etiology and patient-specific factors, providing valuable insights for managing the challenges associated with missing anterior teeth.

Keywords: impaction, space closure, space creation, prosthetic rehabilitation



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OP 124

PRESENCE OF DIFFERENT CANDIDA SPECIES IN THE SALIVA OF CHILDREN WITH EARLY CHILDHOOD CARIES

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Objectives: Early childhood caries (ECC) is the most common childhood oral disease. This study aimed to evaluate the presence of the Candida species *C.albicans*, *C.dubliniensis*, *C.tropicalis*, *C.krusei*, *C.parapsilosis* i *C.glabrata* in saliva of children with ECC and compare them to that of caries-free children of the same age.

Methods: This study included 41 subjects divided into two groups (27 children with ECC and 14 caries-free children). Non-stimulated saliva samples were inoculated within 30 minutes onto Sabouraud agar to isolate and quantify Candida spp. Further subcultivation on chromogenic agar was conducted to distinguish different Candida species. Results were expressed as frequency and quantity (Colony Forming Units/ml, CFUs/ml).

Results: Statistically significant differences in frequency (Chi-square test, $p=0.049$) and quantity (Mann-Whitney U test, $p=0.039$) of Candida spp. were found between the groups. The most frequently detected species was *C.albicans*, but with no significant differences in frequency nor quantity between the groups. Frequency (Chi-square test, $p=0.023$) and quantity (Mann-Whitney U test, $p=0.021$) of *C. dubliniensis* were significantly higher in ECC children compared to caries-free children. No difference was found in distribution of *C. tropicalis* and *C. glabrata* between the groups, while *C. krusei* and *C. parapsilosis* were not isolated in either of the groups.

Conclusions: Presence and quantity of Candida spp. and species *C.dubliniensis* in saliva is significantly higher in children with ECC compared to caries-free children. Understanding the contribution of Candida species to the pathogenesis of ECC can be of great importance for prevention and therapy of this oral disease.

Keywords: oral microbiology, early childhood caries, Candida species, saliva

OP 125

UNCOVERING A COMMON MISCLASSIFICATION: A CRITICAL LOOK AT 'CASE-CONTROL' STUDIES IN DENTISTRY

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Objective: This study aimed to evaluate whether articles labeled as "case-control study" in dentistry between 2020 and 2024 in the PubMed database employed a case-control design.

Methods: A PubMed search was conducted using the queue ("case control"[Title/Abstract] AND "dentistry"[Title/Abstract]) focusing on articles published from 2020 to 2024. A total of 103 articles were identified. Two independent reviewers examined the titles and abstracts, and when necessary, the full texts. Articles were excluded if they were reviews (n=41), did not relate to dentistry (n=2), or were not truly case-control studies (n=1). No disagreements were reported between reviewers.

Results: After exclusions, 59 articles remained labeled as case-control studies. Only 20 (33.9%) manuscript were determined to have an actual case-control design. Among the misclassified articles, 6 were cohort studies, 25 were cross-sectional, 4 were interventional, 2 were methodological, and 1 was a time series. Additionally, 1 article described as a "nested case-control" was a case-control study.

Conclusions: Proper labeling of study designs is crucial for accurate selection of analytical methods, systematic reviews, and meta-analyses, as well as for valid interpretation of results. The mislabeling of study designs in the literature can lead to confusion and misinforming conclusions. Increasing researchers' awareness of study design distinctions is essential to maintain the integrity of scientific literature.

Keywords: dental epidemiology, case control studies, critical appraisal

PP 127

QUANTIFICATION OF S. MUTANS AND LACTIC ACTIVITY OF ORAL ACIDOGENIC BACTERIA RELATED TO ORAL HYGIENE

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Objectives: Streptococcus mutans is a facultatively anaerobic, gram-positive bacteria that causes caries. Regular and correct oral hygiene practice can reduce its number and biological activity, resulting in reduced caries. This research aimed to quantify Streptococcus mutans and lactic acid bacteria in fifth-year dental students and determine whether correct oral hygiene practice reduces these parameters.

Methods: The study was performed at the School of Dental Medicine in Belgrade and it involved 24 fifth-year students. DMFT value and Greene-Vermillion plaque index were determined at the baseline visit and at the end of the observation period of four weeks. At the baseline visit, soft toothbrushes (TePe, Gentle Care®) were distributed to all participants and they were given instructions about oral hygiene. Saliva was sampled with a sterile wooden spatula in order to quantify Streptococcus mutans. Snyder test was used for the determination of lactic activity of oral acidogenic bacteria. The results were statistically analyzed in SPSS program.

Results: Streptococcus mutans colony count was high at the baseline visit- 62.5% of the participants had more than 100 CFU/ml saliva. There was a statistically significant reduction of the Greene-Vermillion plaque index ($p=0.000$) and Streptococcus mutans colony count ($p=0.020$) after four weeks. However, there was no statistical significance in the reduction of lactic activity of oral acidogenic bacteria assessed by the Snyder test ($p=0.782$).

Conclusions: Correct oral hygiene practice can contribute to the reduction of clinical and microbiological parameters that are significant to caries development.

Keywords: Streptococcus mutans, Oral acidogenic bacteria, Oral hygiene

PP 128

POTENTIAL OF LASER-PRODUCED GOLD AND SILVER NANOPARTICLES AGAINST CARIOGENIC BIOFILM

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Objectives: Dental caries is costly and persistent global health issue, requiring better dental care products for its prevention. This study examined antibiofilm effectiveness of pulsed laser ablation-synthesized gold nanoparticles (Laser_AuNPs) and silver nanoparticles (laser_AgNPs) against four *Streptococcus* species (*S. mutans*, *S. mitis*, *S. sanguinis*, and *S. gordonii*), essential for cariogenic biofilm development.

Methods: Nanoparticles were characterized for size using transmission electron microscopy. Ex vivo evaluation of the nanoparticles antibiofilm activity was performed against a four-species biofilm on enamel discs by quantifying CFU. Scanning electron microscopy was used to visualize the reduction in biofilm mass on enamel discs.

Results: TEM showed nanoparticle sizes were 5.89 ± 0.25 nm and 7.00 ± 0.07 nm for Laser_AgNPs and laser_AuNPs, respectively. Reductive potential of laser_AuNPs against multispecies biofilm settled on enamel discs was comparable ($\Delta\log\text{CFU } 2.07 \pm 0.61$) to the one of the mouthwash containing chlorhexidine ($\Delta\log\text{CFU } 2.58 \pm 1.13$). On the other hand laser_AgNPs proved more efficient biofilm reduction ($\Delta\log\text{CFU } 5.23 \pm 0.72$). SEM results confirmed that treatment with laser_AuNPs resulted in the biofilm mass decrease, and that the reduction was more pronounced after treatment with laser_AgNPs.

Conclusions: Laser_AuNPs and especially AgNPs could be alternatives for managing cariogenic biofilms.

Keywords: Nanoparticles, Biofilm, Caries

PP 129

EFFECT OF DIFFERENT WHITE SPOT LESION TREATMENTS ON *CANDIDA ALBICANS* BIOFILM FORMATION

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Objective: Associations between *Candida albicans* and caries in children and adolescents have been demonstrated. This study aimed to evaluate the effect of different initial enamel caries lesion treatments and *C. albicans* susceptibility.

Methods: Artificial white spot lesions (WSLs) were created in the middle area (4mmx4mm) of buccal surfaces of intact premolars using demineralizing solution (2.2 mmol/L Calcium chloride, 2.2 mmol/L Monopotassium phosphate, 0.05 mmol/L Acetic acid; pH=4.4; exposure time 4 days). Enamel blocks sized 4x4x2mm were cut from these surfaces with a low-speed diamond saw (Isomet, Buehler Ltd, Lake Bluff, IL, USA) under water cooling. They were divided into groups: 1 – white spot lesions; 2 – WSLs treated with fluoride varnish; 3 – WSLs treated with casein phosphopeptide – amorphous calcium phosphate (CPP-ACP); 4 – resin infiltrated WSLs. The fifth, control group, was intact enamel block. After treatments in test groups and sterility verification, monomicrobial biofilm was formed. Following pellicle formation with artificial saliva, biofilm was incubated in specific medium, at 37 °C for 48 hours in aerobic conditions. The samples were prepared for SEM visual evaluation.

Results: The fungal biofilm was found on all samples. However, fluoride varnish and CPP-ACP treated samples showed less biofilm formation compared to resin-infiltrated enamel caries lesion. SEM visualisation also demonstrated that the surface of WSL is more susceptible to *C. albicans* than intact enamel.

Conclusion: Remineralizing agents such as fluoride varnish and CPP-ACP paste might decrease *Candida albicans* susceptibility of treated enamel caries lesions. Further examination and quantification should be performed.

Keywords: white spot lesion, *Candida albicans*, fluoride varnish, CPP-ACP, resin infiltration

PP 130

COMPLEX MAGNETIC FIELD EFFECT EVALUATION AGAINST CANDIDA ALBICANS BIOFILM ON DENTAL MATERIALS

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Objective: The oral cavity represents a dynamic area which is favorable for biofilm formation. Numerous dental materials are nowadays in usage, and they differ in composition depending on their indication. The composition and physicochemical characteristics of materials varies, but biofilm formation is inevitable on them. Non-invasive methods for biofilm prevention/reduction are needed. Complex Magnetic Fields (CMF) are non-invasive type of treatment and show promising antimicrobial effects. The aim of this study was to examine whether CMF can reduce material surface colonization with *Candida albicans*.

Methods: In this study, discs of five groups of materials were used: 1) Polymethyl methacrylate (PMMA), 2) Hybrid ceramic material (HC), 3) Zirconium oxide ceramic (ZrO), 4) Lithium-disilicate ceramic (Li2Si) and 5) Titanium for dental implants (Ti). All materials were divided into three subgroups: a control (without treatment), a group examining the preventive effect of CMF (CMF applied before biofilm formation), and a group examining the treatment effect of CMF (CMF applied after biofilm formation). The CMF effect was examined against monomicrobial *Candida albicans* biofilm. Biofilm was quantified by Colony Forming Units per ml (CFUs/ml)

Results: A statistically significant CFUs' decrease was detected in the prevention group of CMF for PMMA ($p=0.050$), ZrO ($p=0.015$) and Ti ($p=0.019$) compared to the control groups. The treatment showed significantly lower CFUS for ZrO ($p=0.014$) and Ti ($p=0.015$) compared to the control group for the same materials.

Conclusions: CMF could be a useful adjunctive prevention and therapeutic tool for dental infections caused by *Candida albicans*. Its effect should be further examined on other microorganisms causing dental infections.

Keywords: Complex Magnetic Field, Biofilm, *Candida albicans*, Dental materials

PP 131

PAROXOL®: A NOVEL BIOCOMPATIBLE PRODUCT FOR BIOFILM PREVENTION AND TREATMENT

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Objectives: This study aimed to evaluate the biological properties of a new essential oil-based product, Paroxol® (MVG Collagen & Technology SRL, Torre del Lago Puccini, Italy), including its biocompatibility and its effects on preventing and treating monomicrobial biofilms of *Candida albicans*, *Staphylococcus aureus*, *Streptococcus mitis*, and *Porphyromonas gingivalis* on titanium discs (Implacil de Bortoli, Brazil).

Methods: Biocompatibility was assessed using the MTT assay on human gingival fibroblasts after 24-hour incubation with 50, 100, and 150 µL/mL of Paroxol®. The preventive effect against monomicrobial biofilms was examined by applying Paroxol® on discs 24 h and 5 days before microorganisms inoculation. The treatment effect was investigated by Paroxol® spreading onto discs with formed biofilms. Quantification of biofilms was performed by assessing cell viability by colourimetric assay (XTT), counting Colony Forming Units (CFUs), and visualising biofilms by Scanning electron microscopy (SEM).

Results: All tested concentrations of Paroxol® maintained cell viability above 70 %, indicating no toxic effects on human gingival fibroblasts. The preventing effect of Paroxol® was exhibited by a significant reduction of microbial growth in biofilms formed 24 h after Paroxol® application for all four species, while the effect 5 days after Paroxol® application was observed in *C. albicans* and *S. mitis*. In all biofilms treated with Paroxol®, significantly decreased microbial growth was observed, compared to the control.

Conclusions: Paroxol® exhibited biocompatibility with human gingival fibroblasts and demonstrated both preventive effect against biofilm formation and antimicrobial effect on existing biofilms.

Keywords: essential oil-based product, biocompatibility, antimicrobial effect

PP 132

SUBACUTE FLUORIDE TOXICITY IN BRAIN TISSUE OF WISTAR RATS

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Objectives: Fluorides (F^-) are at the center of research due to their unique features and protective influence on teeth. Since there are various sources of F^- in nature, there is a risk for local and/or systematic toxicity. The present study aimed to evaluate the effects of F^- subacute exposure at five different moderately elevated concentrations in the brain of Wistar rats via redox status and genotoxicity analyses (Comet assay).

Methods: The experiment was conducted on thirty male Wistar rats for 28 days, divided into six groups ($n = 5$): 1) Control (tap water); 2) 10 mg/L F^- ; 3) 25 mg/L F^- ; 4) 50 mg/L F^- ; 5) 100 mg/L F^- ; 6) 150 mg/L F^- . Brain tissue was dissected out and processed for the determination of F^- tissue concentrations, redox status parameters (superoxide anion ($O_2^{\cdot-}$), superoxide dismutase activity (SOD1), malondialdehyde (MDA)), and DNA damage (Comet assay).

Results: A significant increase in $O_2^{\cdot-}$ ($p < 0.01$), SOD1 ($p < 0.05$) and MDA ($p < 0.01$). Further, DNA damage was detected in all experimental groups ($p < 0.01$; $p < 0.001$; $p < 0.0001$).

Conclusions: According to the results of the present study, F^- subacute exposition with moderately increased concentrations leads to oxidative stress and DNA damage in the brain tissue of Wistar rats. Since human and animal populations are daily and frequently and often unconsciously exposed to F^- , this study is valuable for further research regarding the F^- health risk assessment.

Keywords: Fluorides, Brain, Oxidative stress, Comet assay, Wistar rats

PP 133

THE EFFECT OF SMOKING ON PH AND ANTIOXIDANT STATUS OF SALIVA

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Objectives: The antioxidant role of saliva is important for maintaining the health of oral tissues. Chemical components of tobacco smoke increase the risk of developing oral diseases.

Methods: 204 healthy respondents, aged 18-20 years, were included in the study. The respondents were divided into 3 groups: smokers of traditional cigarettes, smokers of electronic cigarettes and non-smokers. Samples of unstimulated saliva were taken using special Salivette test tubes and centrifuged. pH values were measured with a pH-meter. Buffering capacity of saliva was determined by modified Ericsson method. We determined concentration of albumin, uric acid and bilirubin using the spectrophotometry method.

Results: The mean pH value of unstimulated saliva of non-smokers was 6.48 ± 0.428 and statistically significant difference was observed compared to electronic cigarette smokers (6.67 ± 0.458 , $p=0.010$). In non-smokers, mean value of bilirubin concentration in saliva was 2.60 ± 0.968 , in contrast to traditional cigarette users who had a statistically significant lower value (2.20 ± 1.127 ; $p=0.001$). Analysis of concentration of other antioxidants in saliva (uric acid, albumin) did not show statistical significance. Uric acid, as the main antioxidant of saliva, had a lower mean value in saliva of smokers compared to non-smokers.

Conclusion: This study showed that concentration of antioxidants (especially bilirubin) in saliva of smokers decreased due to release of free radicals from cigarette smoke. It has also been found that smokers have a reduced salivary pH compared to non-smokers.

Keywords: Saliva, Antioxidant, Smokers

PP 134

SALIVARY OPIORPHIN AND VASCULAR HEALTH MARKERS IN HYPERTENSIVE PATIENTS WITH/WITHOUT TYPE 2 DIABETES

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Objectives: Present study aimed to investigate the levels of opiorphin and markers associated with vascular health and inflammation (vascular endothelial growth factor-VEGF, and interleukin 6 (IL-6), in saliva of hypertensive patients (HP) with/without T2DM.

Methods: Study sample consisted of 30 patients, both sexes, aged 69.53 ± 6.42 years, divided into control (healthy), HP with T2DM and without T2DM groups. Pharmacotherapy for hypertension and T2DM were used by participants. Unstimulated and stimulated whole saliva (UWS, SWS) samples were collected by spitting method. Saliva flow rates (SFRs) were calculated. Salivary opiorphin, VEGF and IL-6 were quantified by ELISA.

Results: Unstimulated and stimulated SFRs were reduced in HP with T2DM, but not significantly ($p=0.895$, $p=0.204$, respectively). In UWS and SWS, opiorphin and VEGF levels did not differ between groups ($p>0.05$), while IL-6 was significantly higher in HP with T2DM compared to control and HP without T2DM ($p<0.05$). Opiorphin levels were strongly negatively correlated with VEGF levels in both, UWS ($\rho=-0.500$) and SWS ($\rho=-0.698$).

Conclusion: Salivary glands function is not significantly altered in HP with/without T2DM. Salivary opiorphin levels are not significantly different in HP with and without T2DM but are significantly associated with VEGF levels, vascular health marker, suggesting possible role of opiorphin in vascular health of salivary glands. Salivary IL-6, inflammatory marker, is increased in diabetic settings. Research findings need to be interpreted in light of the fact that enrolled HP with/without T2DM used prescribed pharmacotherapy, which potentially may alleviate disease effects on salivary parameter levels, preventing observation of their significant differences.

Keywords: Opiorphin, Salivary Gland Function, VEGF, Hypertension, Type 2 Diabetes Mellitus

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PP 135

SYNTHESIS, CHARACTERIZATION AND BIOCOMPATIBILITY ASSESEMENT OF AU-TEA TREE PARTICLES

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Objectives: To synthesize and characterize gold nanoparticles (AuNPs) using tea tree essential oil and evaluate their cytotoxicity and potential bioactive properties. To investigate the synthesis of AuNPs via the "ouzo effect" using tea tree oil, characterize their structure and morphology, and assess their cytotoxicity and antioxidant activity for potential biomedical applications.

Methods: Gold nanoparticles (AuNPs) were synthesized using aqua regia via the "ouzo effect" with an ethanolic solution of tea tree essential oil. The resulting nanoparticles were characterized by X-ray diffraction (XRD) to confirm their crystalline gold structure. Field-emission scanning electron microscopy (FESEM) was used to analyze particle morphology, revealing spherical and agglomerated structures, while transmission electron microscopy (TEM) showed a thin organic coating of essential oil around the nanoparticles. Cytotoxicity was evaluated using the XTT cell viability assay on normal human lung fibroblast cell line MRC-5, and preliminary antioxidant activity assays were performed.

Results: Cytotoxicity testing showed that AuNPs at concentrations up to 500 µg/mL had no significant effect on cell viability. At 1000 µg/mL, there was a slight but significant increase in cell survival ($p < 0.05$). However, exposure to 2000 µg/mL for 24 hours resulted in a significant reduction in viable cells ($p < 0.01$), indicating cytotoxicity at the highest tested concentration.

Conclusions: The synthesized AuNPs exhibited biocompatibility at lower concentrations and demonstrated potential bioactive properties. Given their promising characteristics, these nanoparticles could be explored for anti-inflammatory applications, such as mouthwashes or gels for oral mucosal inflammation.

Keywords: tea tree, essential oil, gold nanoparticles, cytotoxicity

PP 136

CYTOTOXICITY AND CELL ADHESION OF MG-63 OSTEOBLAST-LIKE CELLS ON NITINOL

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Objectives: Nitinol's superelasticity, shape memory, and damping properties make it a promising implant material. However, limited knowledge regarding the biocompatibility of this alloy during long-term implantation has restricted its use as implantable material. The aim was to evaluate the potential cytotoxic effects of this biomaterial on human osteoblast-like cells.

Methods: Osteoblast-like MG-63 cells were cultured in a complete growth medium (DMEM) with 4 mM L-glutamine, 10% FBS, and 1% ABAM. Nitinol discs (n=6) were compared with control samples of round cover glass (n=6, diameter 9 mm).

Samples were UV-C sterilized for 1 hour and placed in 12-well flasks. MG-63 cells (2×10^4 cells/cm²) were seeded in direct contact and incubated at 37°C with 5% CO₂. After 7 days, the samples were prepared for examination with an epifluorescence microscope. Cell adhesion and viability were assessed using differential staining with Hoechst 33342 dye (2 µg/mL), which stains live cell nuclei blue. The number of viable cells was analyzed using an epifluorescence microscope and quantified using ImageJ software.

Results: The results of staining cells with propidium iodide showed that the viability of attached cells in all samples was higher than 95% ($98.6 \pm 0.5\%$ in control; $96.6 \pm 1.0\%$ in Nitinol). The density of attached cells was slightly lower in tested samples in comparison to the control, but without statistically significant difference.

Conclusions: Based on the initial results of this study, Nitinol alloy may potentially be taken into consideration as a potential implantable surgical agent, as this material is well tolerated by osteoblast like MG-63 cells.

Keywords: Nitinol, Biocompatibility, Osteoblast cells



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OP 126

PROINFLAMMATORY CYTOKINE GENE EXPRESSION PROFILES IN PERI-IMPLANT DISEASES AND CONDITIONS

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Objectives: Peri-implantitis and peri-implant mucositis are biofilm-driven complications characterized by a host immune response that activates proinflammatory cytokines. While numerous studies have investigated this process, only a few cytokines have been identified as key mediators in peri-implant tissue remodeling and disease progression. This study aimed to evaluate the relative gene expression levels (REL) of TNF- α , IL-17, IL-1 β , and IL-6 in the peri-implant crevicular fluid (PICF) of patients with different peri-implant diseases and conditions.

Methods: The study included 102 participants, categorized into three groups: peri-implantitis (PI), peri-implant mucositis (PM), and healthy implants (HI). Using sterile paper strips, PICF samples were obtained from each patient. The relative expression levels (REL) of the target genes were assessed through quantitative real-time polymerase chain reaction.

Results: The evaluation of proinflammatory cytokines revealed significantly higher expression of TNF- α ($p=0.001$) and IL-17 ($p=0.025$) in the PI group compared to the PM group. Additionally, the REL of IL-1 β differed significantly across all groups ($p<0.05$), with the highest expression observed in peri-implantitis samples and the lowest in healthy implants. Furthermore, the PI group showed significantly higher IL-6 gene expression levels compared to the PM and HI groups ($p=0.011$ and $p=0.003$, respectively).

Conclusions: This study highlights the critical role of proinflammatory cytokines in peri-implant disease pathogenesis, with elevated levels of TNF- α , IL-17, IL-1 β , and IL-6 in peri-implantitis underscoring their involvement in inflammation and tissue remodeling. Targeting these cytokines may be key to preventing and managing peri-implant diseases.

Keywords: peri-implantitis, peri-implant mucositis, proinflammatory cytokines

OP 127

PLATELET-RICH FIBRIN FOR PREVENTION OF MEDICATION-RELATED OSTEONECROSIS OF THE JAWS: A SYSTEMATIC REVIEW

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Objectives: Medication-Related Osteonecrosis of the Jaws (MRONJ) is a severe complication associated with antiresorptive and antiangiogenic medications, often precipitated by dental extractions, trauma or *de novo*. Platelet-Rich Fibrin (PRF) has been proposed as a potential adjunctive prevention and treatment modality due to its autologous growth factors and regenerative properties. This systematic review aims to assess the effectiveness of PRF in the prevention of MRONJ.

Methods: PubMed, Scopus and Web of Science databases were searched on March 2025, without any restrictions on publication year, following the PRISMA guidelines with the following keywords: (platelet rich fibrin) AND (medication related osteonecrosis of the jaw OR MRNJ) AND (prevention). References of the retrieved articles were hand-searched for other relevant articles.

Results: The search identified 41 articles. A total of 9 articles were included; four prospective, three case series, one retrospective and one mixed study, considering 558 patients (range 2-240). In one study low-level laser therapy was also applied. Two prospective studies were on osteoporotic patients, two case series reported on cancer patients and the rest five on mixed populations. PRF was applied to 354 patients. MRONJ was reported in 65 (18.4%) of PRF patients and in 51 (25%) of control patients. Meta-analysis was not performed due to the heterogeneity in studies' design, such as mixed population and different PRF preparation protocols and follow-up periods (2 to >6 months).

Conclusions: PRF could have a role in MRONJ prevention; further high-quality RCTs with standardized PRF protocols and long-term follow-up are required to establish definitive clinical protocols.

Keywords: Medication-Related Osteonecrosis of the Jaws (MRONJ), Platelet-Rich Fibrin (PRF)

OP 128

CHALLENGING CASE: TREATMENT OF CHEILOGNATHOPALATOSCHISIS WITH DENTAL IMPLANTS

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Objective: Cheilognathopalatoschisis includes a wide range of congenital malformations that lead to reduced bone volume and other structural problems, with challenging treatment options, one of them by using dental implants. The aim was to present the treatment of a patient with cheilognathopalatoschisis with a small number of teeth due to deformity as well as to having dental prosthesis over 20 years.

Case Report: Female patient, 37 years of age, came to our clinic due to unsolved problem with cheilognathopalatoschisis. She had total dental prosthesis from the age of 16 years due to anodontia in both upper and lower jaw. As a result of wearing the prosthesis for a long time, there was an advanced parodontopathy of the natural teeth, which required extraction. After clinical examination and analysis of the x-ray images, we extracted all the teeth of the upper and lower jaw, followed by immediate placement of dental implants in the available bone with simultaneous augmentation of the alveolar ridge. Due to good primary stability, after five days, we made fixed temporary teeth immediately loaded on the implants. After three months, the patient came to check the stability of the implant and for the surgical treatment of the soft tissues around the implant as a preparation for a definitive prosthetic care.

Conclusions: This case was successfully resolved with temporary teeth in the first six months. Complete rehabilitation of function, aesthetics, chewing, phonation and psychosocial aspects was achieved. The oral surgeon plays a key role in assessing bone deficits, choosing appropriate reconstruction techniques, and placing implants in optimal position in available bone. After 6 months, fixed zirconium ceramic crowns and bridges were made on implants.

Keywords: cheilognathopalatoschisis, bone deficit, dental implants, bone augmentation, implantation

OP 129

FIXED PROSTHESIS ON IMPLANTS IN A PATIENT WITH CHEILOGNATHOPALATOSCHIS

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Objective: Cheilognathopalatoschisis is a congenital defect that affects the lips, palate and/or jaws, causing significant functional and aesthetic problems. Prosthetic treatment of these patients requires a specific approach, taking into account anatomical, physiological, and psychological aspects. Modern dentistry offers the possibility of using dental implants as a stable basis for the creation of fixed prosthesis. The aim was to present the procedure for making fixed prosthetic work on implants in a patient with cheilognathopalatoschisis.

Case Report: We present a case of 36-year-old female patient with cheilognathopalatoschisis, in whom primarily stable implants were inserted 6 months ago in the available jawbone, on which temporary teeth were immediately placed. Clinical and X-ray examination confirmed the implants were integrated, stable and the soft tissues are stabilized. Abutments that carried temporary teeth on implants and had an inadequate angle in the buccal and lingual position were changed. The goal was to achieve an optimal jaw arch and good intermaxillary relations, occlusion, and articulation. Fixed zirconium ceramic bridges and crowns were made to achieve an even loading of the implants. In this way, the minimum contact surface between the base of the bridges and the crowns towards the soft tissues is ensured. Due to our long-term good experience with such integrated implants, it was decided to fix the implants with glass ionomer cement.

Conclusion: Optimal results were achieved with this approach. The patient feels her palate and food for the first time, she has enough space for her tongue and is very satisfied with the results.

Keywords: Cheilognathopalatoschisis, fixed prosthetics, implants, dental rehabilitation, functional-aesthetic correction

OP 130**CENTRAL GIANT CELL GRANULOMA IN THE MANDIBLE: A CASE REPORT**

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Objective: Central giant cell granulomas are benign nonodontogenic tumors that are usually seen anterior to the mandibular first molar teeth in young female patients. The most common treatment method for these lesions, which can be unicellular or multicellular radiologically, is surgical enucleation.

Case Report: A 17-year-old female patient who applied to our clinic with a complaint of mobility in her lower anterior teeth was diagnosed with a radiolucent lesion that caused destruction in the bone between the roots of the teeth anterior to the mandibular canine tooth during radiographic and clinical examination. After the mucoperiosteal flap was removed, tooth number 32 was extracted and the lesion was enucleated because the size of the lesion was suitable for excisional removal. The excisional biopsy was sent for histopathological examination, and a central giant cell granuloma was diagnosed. The patient's periodic check-ups continue due to the risk of recurrence.

Conclusion: Although the exact mechanism of formation is not known, early diagnosis and treatment of central giant cell granulomas, which are important tumoral lesions that can cause destruction in bone, are very important. There is a risk of recurrence even after enucleation or resection in aggressive lesions. For this reason, long-term follow-up is important.

Keywords: Central giant cell granuloma, pathology, enucleation

OP 131

EVALUATION OF YOUTUBE VIDEOS AS AN INFORMATION SOURCE ON OPEN-TRAY IMPRESSION TECHNIQUE FOR IMPLANTSBeste Çetin

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Objectives: The aim of the study was to evaluate the content quality and information adequacy of videos on YouTube related to open-tray impression technique for dental implants.

Methods: In the study, a systematic search was conducted on YouTube using the phrase "Open-tray impression technique for dental implants". The first 100 videos were watched and 23 videos met the inclusion criteria were analyzed. The analyzed videos were divided into three groups according to the uploader type (Dentist, Dental Laboratory, Others). The videos' content quality was evaluated using the Global Quality Scale (GQS). Videos with a total content score of 5 and above were considered "high content", while those with a score below 5 were considered "low content". The interaction of the videos, viewing rates and video power index were also analyzed. The obtained data were statistically analyzed.

Results: It was determined that there was no statistically significant difference in terms of averages between video uploaders and the number of views, likes, dislikes, comments and subscribers, video duration, viewer interaction and viewing rates ($p>0.05$). It was also determined that there was no statistically significant difference in terms of averages between GQS scores and the specified parameters. ($p>0.05$). When uploader types were compared, it was seen that dental laboratories uploaded higher quality videos in terms of content.

Conclusion: Even though there are poor quality videos on YouTube about the open-tray impression technique, these videos attract from audience as much attention as medium and high quality videos because the subject is popular and up-to-date.

Keywords: Youtube, GQS, Open-tray impression technique

OP 132**IMPLANT DISPLACED INTO THE MAXILLARY SINUS: CASE REPORT**

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Objectives: Implants are used widely to restore maxillary posterior teeth, although this is a difficult task due to the poor bone quality of the maxilla, pneumatization of the maxillary sinus, and alveolar bone resorption in the edentulous area. Implants applied in the posterior maxilla can migrate into the maxillary sinus. Implant displacement in the posterior maxilla usually occurs during surgery, but it can also occur months or even years of function of implant-supported prostheses.

Case Report: 35-year-old male patient was referred to Eskişehir Osmangazi University Faculty of Dentistry Oral and Maxillofacial Department because the implant applied at another clinic was displaced into the maxillary sinus. With the radiological examination, it was determined that the implant was in the left maxillary sinus. During clinical examination, chronic sinusitis and nasal congestion were detected. The patient was operated under general anesthesia. Using the lateral antrostomy technique, a window was opened in the maxillary sinus wall and the foreign body was reached after irrigation with physiological saline.

Conclusion: To remove the foreign body in the maxillary sinus, the sulcular mucoperiosteal flap was removed and the implant was successfully removed using the lateral antrostomy technique. No problems were encountered during the patient's routine check-ups.

Keywords: Implant, Maxillary Sinus, Foreign Body

OP 133

COMPARISON OF MECHANICAL AND BIOLOGICAL PROPERTIES OF THE MOST COMMON DENTAL SUTURES

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Objectives: The main goal of this study was to compare the tensile strength and identify the types of bacteria and fungi adhered to the surface of the tested surgical sutures.

Methods: At the Faculty of Dentistry in Pančevo, a "tensile testing machine" was used to measure the breaking force and elongation of surgical sutures: Polyglycolic acid (PGA), Silk (SILK), Polypropylene (POLYPROPYLENE), Polytetrafluoroethylene (PTFE). The stretching speed was 1 mm per minute. All sutures were of the same thickness (4-0). After the suture broke, the force value (N) was recorded, and elongation was measured (mm) using the machine's ruler. After 7 days staying in oral cavity following the operation, swabs were taken from the suture surfaces and cultured on different media (blood agar, chocolate agar, Schaedler agar) and were analysed using MALDI-TOF mass spectrometry. Statistical analysis was done using SPSS v.27.0 software, with a significance level of $p < 0.05$.

Results: Polypropylene, silk, and PGA demonstrated significantly higher breaking forces (20.76N, 18.02N, 21.06N, respectively), compared to PTFE (10.80N) ($p < 0.05$). The least elongation was observed in SILK (2.57 mm), which was statistically significantly lower ($p < 0.05$) compared to the other sutures.

„Candida fungi“, „Streptococcus“, and „Lactobacillus“ were isolated from the silk suture. „Enterococcus faecalis“ was found on the polypropylene and PGA sutures, while the fewest microorganisms were isolated from the surface of the PTFE suture.

Conclusion: PTFE had the lowest breaking force (10.8 N), while SILK had the least elongation (2.57 mm). On the other hand, PTFE showed the best biological properties.

Keywords: dental sutures, tensile strength, suture elongation, microorganisms, MALDI-TOF

PP 137

TUBEROPTERYGOID IMPLANT AS A SUBSTITUTE FOR THE SINUS LIFT PROCEDURE

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Objective: Tuberopterygoid implants are a type of implant that can be put in the tuber of the upper jaw and the pterygoid process of the sphenoid bone when there is not enough bone in the lateral regions of the upper jaw for standard implants. These implants can replace the sinus lift procedure, which is a complex surgical intervention. The objective of this paper is to show the results of tuberopterygoid implants in our study group.

Methods: The study includes 126 implants in 80 patients over a period of fourteen years. This paper presents patients with tuberopterygoid implants, in whom there was insufficient amount of bone in the lateral regions of the upper jaw.

Results: By applying tuberopterygoid implants, post-surgical complications and discomfort that can be caused by the sinus lift procedure were avoided. Using this approach, a higher percentage of success was achieved in terms of stability and osseointegration, while with the application of the sinus lift procedure, the outcome is always uncertain despite months of waiting. Using tuberopterygoid implants, a complicated sinus lift procedure was avoided and the patients received definitive fixed prosthetic work within a period of three months after putting implants. The success rate of osseointegration was 98%. In the period of osseointegration of 3 months, the tuberopterygoid implants were not immediately loaded, the patients received fixed temporary teeth on the implants in the frontal region. In this way, rehabilitation of the patient with mobile prosthetic work was avoided, while comfort and psychosocial well being of patients were achieved.

Conclusion: Using tuberopterygoid implants, patients were successfully treated, the time for definitive prosthetic rehabilitation was shortened and excellent results were achieved.

Keywords: Tuberopterygoid implants, Sinus lift, Osseointegration

PP 138

ODONTOGENIC KERATOCYST ASSOCIATED WITH AN IMPACTED TOOTH MIMICKING A DENTIGEROUS CYST: A CASE REPORT

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Objective: The odontogenic keratocyst (OKC) is an intraosseous cyst that may present as a unilocular radiolucency. In some cases, it can be misdiagnosed as a dentigerous cyst, which is frequently associated with impacted teeth. This case report describes an odontogenic keratocyst associated with an impacted tooth.

Case Report: A 21-year-old systemically healthy female patient presented to the clinic with an impacted tooth and radiolucency in the mandibular ramus region, despite being asymptomatic. Following radiographic and clinical examinations, the impacted third molar was extracted, and the surrounding lesion was excised. Histopathological analysis confirmed the diagnosis of an odontogenic keratocyst. No pathological recurrence was observed during the one-year follow-up period.

Conclusion: Due to its locally aggressive behavior and high recurrence rate, an odontogenic keratocyst may sometimes be radiographically confused with a dentigerous cyst, which is commonly associated with impacted teeth. Therefore, for an accurate diagnosis, histopathological examination of suspicious lesions is essential.

Keywords: pathology, dentigerous cyst, odontogenic keratocyst, impacted third molar

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TREATMENT OF ODONTOGENIC KERATOCYST COMBINED WITH TOPICAL APPLICATION OF 5% 5-FLUOROURACIL CREAM

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Objectives: To present a new approach in management of odontogenic keratocyst that includes standard surgical enucleation followed by application of 5% 5-fluorouracil cream.

Case report: Healthy, male patient was admitted to the clinic due to swelling in the lower jaw. After conducting a clinical examination during which the presence acute infection was established, cone beam computerized tomography (CBCT) was done to determine the cause. CBCT images showed cystic radiolucency. After the symptoms subsided, surgical biopsy was performed. The histopathological finding corresponded to odontogenic keratocyst. After receiving the results, a surgical intervention was scheduled. Enucleation of the cyst and peripheral osteotomy was performed in standard manner. As chemical agent 5% 5-fluorouracil cream was used. Cream was applied to the sterile ribbon gauze, which was then placed in the bone defect for 24 hours. The wound was closed with single suture leaving gauze exposed on the one end. After the foreseen period, the gauze was removed and the cavity was rinsed with 5 syringes of saline. There were no signs of postoperative complications or recurrence during the follow-up period.

Conclusion: Simple enucleation of odontogenic keratocysts results in unacceptably high recurrence rates. The use of antimetabolic agent 5-fluorouracil in the treatment of odontogenic keratocysts represents an innovative approach that could significantly reduce the degree of morbidity, as well as recurrence rate after surgical intervention.

Keywords: odontogenic keratocyst, recurrence, 5-fluorouracil

PP 140

ONE YEAR FOLLOW UP OF PERIAPICAL CYST TREATMENT WITH PRF – CASE REPORT

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Objective: To report the clinical outcome of periapical cyst treatment using platelet-rich fibrin (PRF) and its effectiveness in promoting healing and regeneration over a three-year follow-up period.

Case Report: A 50-year-old male patient presented with a periapical cyst detected on an x-ray during a routine check-up. The cyst was located in the region of teeth 35 and 36, involving the root of a premolar and the mesial root of a molar. The premolar had not been treated endodontically, while the molar had a previously poorly performed root canal treatment. The patient experienced mild discomfort when chewing, but no significant symptoms were reported. Endodontic treatments were performed on both teeth, followed by surgical intervention. Platelet-rich fibrin (PRF) was prepared from the patient's blood and applied to the surgical site. Follow-up radiographs up to 36 months demonstrated significant improvement in the cyst's radiographic appearance.

Conclusion: PRF, as a natural and autogenous biomaterial, facilitated the healing process and regeneration of the affected tissue in the treatment of a periapical cyst. The three-year follow-up confirmed its effectiveness in promoting bone regeneration and tissue healing, highlighting PRF as a promising adjunctive therapy in oral and maxillofacial surgery.

Keywords: PRF, Periapical Cyst, Bone Regeneration

PP 141

TRAUMATIC BONE CYST IN YOUNG PATIENTS - A REPORT OF TWO CASES

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Objectives: A traumatic bone cyst (TBC) is a solitary, pseudocystic bone lesion characterized by the absence of epithelial coating. In jaw bones, the prevalence of TBC is low (1% of all jaw cysts), mostly affecting the mandible (89%). TBC is typically diagnosed in the second decade of life, with a controversial gender predisposition. This report aims to present two cases of asymptomatic TBC diagnosed in young patients.

Case Report: Case 1 represents a 17-year-old female, while Case 2 involves an equally aged male. Both patients were referred to an oral surgeon due to asymptomatic radiolucency in the frontal mandibular region, which was incidentally noted during a radiographic examination. In both cases, a history of childhood trauma was noted, and the pulp vitality test of the lower frontal teeth was positive. CBCT scans revealed solitary unilocular radiolucencies in the apical region of the frontal teeth, without signs of root resorption. Intraoperative exploration revealed vacant areas with no epithelial components. In both cases, histopathological analysis of scarcely collected tissues, confirmed the absence of epithelial lining, confirming the TBC diagnose.

Conclusions: An accurate diagnosis of TBC depends on a comprehensive anamnestic data collection, adequate clinical and radiographic examination, intraoperative findings, and histopathological verification.

Keywords: Traumatic bone cyst, Pseudocyst, Mandible

PP 142

SPONTANEOUS BONE REGENERATION AFTER NON-SURGICAL THERAPY IN A CASE OF PERI-IMPLANTITIS

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Objectives: Peri-implantitis is a pathological condition occurring in bone around dental implants, characterized by inflammation and progressive bone loss. We aim to present a clinical case of initial periimplantitis several weeks after dental implant placement and spontaneous bone regeneration after antiseptic causal periimplant conservative therapy.

Case Report: In the present case, the clinical and radiological findings support the diagnosis of periimplantitis. The non-submerged implants in area of 35 and 36 were placed according to surgical protocol in conventional way in non-augmented bone. 8 weeks after placement, X-ray reveals bone loss on distal aspect of implant in area of 35. Peri-implantitis site exhibit clinical signs of inflammation and increased probing depths- 8 mm. Any risk factors were detected (diabetes, smoking, immunosuppression)- systemic or local (presence of submucosal cement, lack of keratinized peri-implant mucosa and difficult implant positioning for oral hygiene). Successful treatment of peri-implantitis with non-surgical approaches i.e., mechanical debridement in association with local antimicrobial agents for irrigation were performed - biofilm removal of implant surface with piezon and decontamination with Iodasept. X-ray after 3 months indicated bone recovery of the initial defect without bone augmentation.

Conclusions: Early detection of peri-implantitis with probing and X-ray and timely treatment is important for the success of the treatment with dental implants. Clinicians should be familiar with the clinical and radiological features of biological complication of dental implants in order to make a timely and accurate diagnosis and to determine the appropriate treatment in each case.

Keywords: dental implants, periimplantitis, biological complications, bone regeneration

PP 143

SURGICAL EXTRACTION OF SUPERNUMERARY TEETH IN THE ANTERIOR MAXILLA USING PIEZOSURGERY - A CASE REPORT

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Objectives: Impacted supernumerary teeth, which are additional teeth that cannot emerge properly, can complicate the management of impacted canines during orthodontic treatment. When canines are impacted, surgical and orthodontic interventions may be necessary to guide their eruption into the dental arch. The presence of supernumerary teeth can obstruct this process, leading to potential complications such as crowding or misalignment of adjacent teeth. Piezosurgery technique offers minimal invasive approach, providing enhanced precision and minimal trauma to surrounding hard and soft tissues. In this report, we present combined surgical orthodontic therapy of impacted canine and supernumerary tooth using a piezosurgery technique for the safe removal of a deeply impacted supernumerary tooth in the anterior maxilla.

Case Report: A 13-year old patient was referred to an oral surgeon for the removal of supernumerary teeth in the anterior maxilla on the left side, providing adequate space for orthodontic extrusion of impacted canine on the same side. Surgical procedure was performed using piezosurgery technique, which included precise bone cuts around the supernumerary tooth, without damaging surrounding soft tissues and adjacent teeth. After the safe removal of the supernumerary teeth, an impacted canine was exposed and an orthodontic bracket was bonded to the canine. A vertical orthodontic extrusion force was applied using a closed coil spring, guiding the canine into the dental arch.

Conclusion: Piezosurgery technique applied in combined surgical orthodontic treatment of impacted teeth can be utilized as a minimally invasive and safe surgical procedure for the removal of deeply impacted supernumerary tooth.

Keywords: Piezosurgery, Osteotomy, Impacted Canine, Anterior Maxilla, Supernumerary Teeth

PP 144

IMMEDIATE IMPLANT IN AESTHETIC ZONE USING SOCKET SHIELD TECHNIQUE WITH SIMULTANEOUS CYST REMOVAL

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Objectives: To present advantages of socket shield technique in preserving soft and hard tissue after implant placement in aesthetic zone.

Case Report: A healthy, female patient was admitted to the dental clinic due to irritation of soft tissue around tooth 11. Upon clinical examination, inadequate composite restoration, as well as root cavity was noticed. Cone beam computer tomography scans showed radiolucency, 13mm by 9mm, in diameter that corresponds to an inflammatory jawbone cyst. After thorough analysis, it was decided to preform extraction with enucleation of the cyst and to replace tooth 11 with an implant and provisional crown. Crown removal was performed. The root was separated in a mesiodistal manner and the palatal part of the root was extracted. The buccal part was prepared apico-coronally and mesio-distally to get 1 to 1.5 mm width of the root that is 2 mm apically from the crest in order to nourish the buccal bone. The cyst was removed through the socket. Implant (Neodent GM helix) was placed using standard drilling protocol with the torque exceeding 45 Ncm. An abutment (GM exact) was torqued at 20 Ncm per manufacturer recommendations. Provisionalisation was done chairside and definitive restoration 6 months after surgery following the guidelines. Pink aesthetic score, after evaluation, was established to be set at a highest level.

Conclusion: There is no difference in soft tissue volume quality when comparing to the contralateral tooth when socket shield technique with immediate implant placement was used for rehabilitation in aesthetic zone.

Keywords: Socket shield, Aesthetic zone, immediate, implant, yst

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ANTIBACTERIAL EFFECTS OF DRUG DELIVERY SYSTEMS IN DENTAL IMPLANTOLOGY

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Objectives: To evaluate the potential for modulating bacterial colonization of the superstructure following the use of a modified abutment incorporating a chitosan and chlorhexidine-based biocomposite coating.

Case Report: A 30-year-old male patient was referred for a treatment with dental implant. The patient has no systemic diseases and is suitable for the placement of a single dental implant in the lower molar region. The two-stage implant protocol was chosen, where, after uncovering the dental implant, a modified abutment with a biological coating made of 1% chitosan and 2% chlorhexidine was placed. Scanning electron microscopy revealed a film of the biocomposite coating with an average thickness of 32.19 microns. After performing a microbiological analysis before and 6 months after the placement of the modified abutment, a significant reduction in bacterial load was observed, with the biocomposite showing a positive antibacterial effect and complete reduction of *E. faecalis*.

Conclusion: Peri-implant diseases, and peri-implantitis in particular, pose a challenge for clinicians during the implant treatment phase. One of the primary factors associated with the development of peri-implantitis is bacterial accumulation, which affects the micro-gap occupying the space between the implant and the abutment. Preventing this complication and achieving higher success rates in implant treatment are of primary interest. Biocomposite coatings can be applied in controlling and reducing bacterial load to prevent periimplant diseases.

Keywords: dental implant, biocomposite coating, drug delivery systems, chitosan, chlorhexidine

PP 146

MAXILLARY SINUS LIFT SURGERY AFTER PRIMARY CLOSURE OF OROANTRAL COMMUNICATION

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Objectives: To present management of a patient with insufficient bone height in posterior maxilla, where incomplete bone healing after primary closure of oroantral communication was present.

Case Report: Healthy, female patient was admitted to the clinic due to extraction of a maxillary first molar. After extraction an oroantral communication was established. Buccal sliding flap was raised using Rehrmann's technique in order to close communication. After six months of healing CBCT scans revealed significant bone loss with the need for maxillary sinus lift surgery and subsequent implant insertion in the posterior maxilla. A mucoperiosteal flap was reflected to approach lateral wall of the sinus, revealing incomplete bone healing of the defect and immediate perforation of the sinus membrane. In order to avoid further tearing of the membrane, the lateral window for access to the maxillary sinus was prepared 5 mm from the edge of the perforation. Membrane was successfully elevated without further tearing. Collagen membrane and hydroxyapatite with collagen were used for grafting. After nine months, two implants were inserted with sufficient primary stability.

Conclusion: Lateral sinus lift surgery is a predictable therapeutic option for augmentation of posterior maxilla. The clinical case presented demonstrates modified osteotomy around the membrane perforation, to allow successful completion of the procedure.

Keywords: oroantral communication, sinus lift, surgical technique

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DIAGNOSTIC CHALLENGES IN DETECTION OF ACTINOMYCOTIC OSTEOMYELITIS OF MANDIBLE - A CASE REPORT

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Objectives: Actinomycosis is a rare chronic granulomatous infection and can be caused by Gram-positive anaerobic bacteria which are normal commensals of the oral cavity. These organisms can involve different parts of the maxillofacial region, rarely affecting the jaws. Actinomycotic osteomyelitis is an infection of the jaw bones, typically associated with trauma or an underlying non-specific infection or disease.

Case Report: Herein we describe a rare case of actinomycotic osteomyelitis of the mandible in a healthy male patient with intermittent suppuration from the lower jaw in the area of tooth 47, which had been extracted approximately five years prior. The diagnosis was made on the basis of clinical findings such as presence of a fistula/sinus tract intraorally in the region of the extracted tooth 47 without redness of the overlying mucous membrane and the histological result. Comprehensive surgical treatment with curettage and peripheral ostectomy was performed. Antibiotic treatment from the penicillin group was prescribed for a period of 1 month.

Conclusions: Diagnosis is often delayed and can be a challenge for clinical practice due to the lack of criteria other than definitive histopathological examination. A chronic clinical course without regional lymphadenopathy may be essential in the diagnosis. A number of diseases can present with similar symptoms, necessitating strict adherence to a correct surgical protocol; even when such an infection is suspected, histopathological examination is essential and long-term treatment with penicillins is advised for accurate treatment of actinomycotic infection.

Keywords: Actinomyces, Actinomycotic osteomyelitis, Actinomyces-associated lesions, Jaw infection, MRI

PP 148

SURGICAL EXCISION OF FIBRO-OSSEOUS LESION UNDER THE MAXILLARY SINUS FLOORMeltem Koray

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Objectives: Fibro-osseous lesions are group of bone disorders. The main clinical symptom is soft tissue swelling and enlargement of the affected bones. The presence of pain, paraesthesia, trismus or dental occlusal findings has been reported, depending on location. Alternatively they may be completely asymptomatic, identified only on routine radiographs. The radiological appearance of them at late stages it is into radio-opacity with ill-defined borders. A conservative approach is enough in uncomplicated cases for treatment.

Case report: A 63-year-old female patient was referred to our clinic due to radio-opaque lesion under left maxillary sinus floor which was identified on routine radiographs. Mucoperiosteal flap was removed and the lesion was excised until a thin bone remained at the floor of the maxillary sinus under local anesthesia. Incision is sutured with 3.0 silk thread. Histopathological examination confirmed that the lesion was a fibro-osseous lesion. Sutures were removed 1 week later, the floor of maxillary sinus was intact and uneventful healing was observed.

Conclusions: Fibro-osseous lesions are a heterogeneous group of entities which share similar microscopic features, but exhibit a variety of clinical behaviour. However, in all of the cases the main stay of the treatment is surgical excision.

Keywords: fibro-osseous lesion, maxillary sinus, surgical excision

PP 149

ORAL LEUKOPLAKIA - CASE REPORT

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Objectives: Leukoplakia (loo-koh-PLAY-key-uh) causes thick, white patches that form on the gums. The patches also may form on the insides of the cheeks and the bottom of the mouth. Sometimes the patches form on the tongue. These patches cannot be scraped off.

Oral leukoplakia occurs frequently together with white lesions. Leukoplakia is a diagnosis and should be used as a clinical diagnosis only. When a biopsy is taken, the term leukoplakia is replaced by the diagnosis obtained histologically. The early phase of these lesions usually exhibits an interface lymphocytic infiltrate that may mimic an oral lichenoid stomatitis such as lichen planus. A particularly progressive form of oral leukoplakia that commences to become multifocal and verruciform in appearance, and later becomes malignant has been termed proliferative verrucous leukoplakia. Oral verrucous hiperplasia is a premalignant lesion. Its aggressiveness relates not only to a high recurrence rate, but more so to a very high level of and relentless progression from a localised simple keratosis to extensive oral disease and squamous carcinomas of verrucous, or conventional squamous cell type.

Case Report: A 45 year old female patient presented with a white lesion at the ventral surface of the tongue and mouth floor, she also presented keratosis at the lower lip that he had first noticed in July 2020. She was a smoker. An inclusion biopsy made from mouth floor. Histologically it was characterized by a verrucous epithelial hyperplasia.

Conclusion: Because of the presence of an oral white lesion, the examination of the oral mucosa must be made carefully especially the ventral surface of the tongue and mouth floor. Oral verrucous hiperplasia is a premalignant lesion. A very high level of progression from a localized simple keratosis to extensive carcinomas. It is therefore important to follow-up closely any patient with oral leukoplakia.

Keywords: Leukoplakia, verrucous hyperplasia, white lesion

PP 150

CBCT DIAGNOSIS AND SURGICAL MANAGEMENT OF A COMPOUND ODONTOMAS IN THE MANDIBULAR PREMOLAR REGION

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Objectives: Odontomas are odontogenic tumours clinically asymptomatic and often associated with changes to the eruption of the permanent dentition. They can be divided into compound and complex odontomas. Compound odontomas show a predilection in the anterior section of the upper maxilla while complex odontomas are typically found in the posterior mandibular region. In this report, we describe a very rare occurrence of bilateral compound odontomas in the mandibular premolar region.

Case Report: A 14-year-old girl accompanied by her parents was admitted to the Orthodontics Clinic in Specialist Centre for Dentistry, Faculty of Medicine for orthodontic consultation about presence of teeth crowding and need for fixed appliances. On intraoral examination, it was found that a swelling was present in the left and right side of the mandible in the premolar region. CBCT revealed a teeth like calcified structures in the centre of a well defined radiolucent lesion in the premolar region. It was presented to the patient that along with the extraction of teeth 34 and 45 it was necessary to remove the tumour formation from mandible.

Conclusion: Odontomas are usually diagnosed early in childhood, because they cause orthodontic anomalies. They are mostly diagnosed as a result of routine radiographic investigation. CBCT is an important auxiliary tool aiding a correct diagnosis, accurate treatment planning and therefore prevents a possible neoplastic transformation or a second surgical procedure.

Keywords: Odontomas, CBCT, orthodontic anomalies

PP 151

CANALICULAR ADENOMA OF THE BUCCAL MUCOSA: DIAGNOSTIC AND SURGICAL INSIGHTS

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Objectives: Canalicular adenoma is considered as a benign tumour that typically arises from the minor salivary glands and remains asymptomatic until it reaches a larger size. The most common location is the upper lip, the buccal mucosa and the palate. Typically, the tumour manifests as a painless, submucosal swelling that increases in size over time.

Case Report: A 75-year-old woman was referred to an oral surgeon due to a lump in her left cheek, which had been gradually increasing in size at a slow rate. The lesion was located in the buccal area, near the commissure of the upper and lower lip. The lesion was identified by the patent approximately 4 years prior. No signs of lymphadenopathy was presented. Based on the patient's history, clinical presentation, and radiographic findings, a preliminary diagnosis of benign tumour of minor salivary gland was made. Under local anesthesia, a superficial horizontal incision was made in the mucosa directly above the tumour. The operative field was extended until adequate access to the tumour. By dissection, the tumour was carefully and completely removed. The wound edges were approximated, and primary closure was achieved. The whole tumour removed during the surgical procedure and was submitted for histopathological evaluation which later confirmed the diagnosis.

Conclusions: Retention salivary gland cyst/mucocele can closely resemble tumours, making accurate diagnosis challenging. Deferential diagnosis could be made among mesenchymal benign tumour as well so a histological verification is essential. The treatment protocol includes enucleation, biopsy and excision of the tumour formatin.

Keywords: Canalicular adenoma, Surgical treatment, Salivary gland tumour

PP 152**SIMPLIFYING THE SURGICAL MANAGEMENT OF HYPODONTIA**

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Objectives: Dental implant insertion is a widely accepted and effective solution for addressing hypodontia, particularly in cases involving the absence of maxillary lateral incisors. The treatment of congenitally missing lateral incisors through dental implants offers several advantages, including improved aesthetics, function, and patient satisfaction. However, successful implant placement requires careful consideration of various factors, including bone quality, implant design, and the overall treatment plan.

Case Report: This is a case of a 45-year-old, healthy female patient with absence of the permanent right maxillary incisor, managed solely using dental implant. The decision and final treatment plan went in the direction of applying a minimally invasive surgical technique without implementing additional material cost and time-consuming procedures.

Conclusion: In conclusion, dental implant insertion presents a viable and effective solution for managing hypodontia, particularly in cases of missing maxillary lateral incisors. The success of this treatment modality relies on thorough preoperative planning, assessment of bone quality, and a multidisciplinary approach to address the unique challenges presented by each patient. With appropriate management, dental implants can significantly enhance the quality of life for individuals with hypodontia.

Keywords: Hypodontia, Dental implant, Surgical management, Incisor

PP 153

FULL MOUTH REHABILITATION OF ALL ON 6 IMPLANT SUPPORTED FIXED DENTAL PROSTHESIS: A CASE REPORT

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Objectives: Fully edentulous arches can be rehabilitated with various treatment options. This case report outlines the successful restoration of a fully edentulous patient through the all-on-six concept, emphasizing the careful strategy and implementation involved.

Case Report: A 68-year-old edentulous male patient referred to the Department of Prosthodontics with implant supported restoration request. Our primary goal is to resolve aesthetic, functional and psychological problems experienced by the patient. Following clinical and radiographic examinations, 6 implants (NucleOSS, İzmir, Türkiye) were planned to place in both the upper and lower jaw. After the surgical procedures, implant supported fixed dental prosthesis to upper and lower jaw was determined. The inter-arch distance and the support from soft tissue were deemed adequate for implant supported screw-retained fixed restorations. After that, multi-unit abutments were selected and torqued into patient's mouth. Then, a close tray impression was taken over the multi-unit abutments and a model was produced. The impression posts were secured to the model with pattern resin and transferred to the oral cavity. A custom tray was utilized to take an open tray impression with polyvinyl siloxane impression material. Subsequently, permanent restoration material fabricated from metal supported ceramic which were screwed into the implants, finalizing the restoration process.

Conclusions: An effective clinical outcome was achieved regarding aesthetic, function and phonation. Following 1 and 6 months; radiographic and clinical evaluations were performed, and the patient did not have any aesthetic and functional problems. The patient was satisfied with the results.

Keywords: Dental implant, screw retained dental prosthesis, full mouth rehabilitation, all-on-six

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OSSEOINTEGRATION EVALUATION OF ZIRCONIA DENTAL IMPLANTS COMPARED TO TITANIUM DENTAL IMPLANTS

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Objectives: Titanium-based implant systems, though considered as the gold standard for rehabilitating edentulous spaces, have been criticized for many inherent drawbacks. The onset of hypersensitivity reactions, biocompatibility issues and an unaesthetic gray hue have raised demands for more aesthetic and tissue compatible materials for implant fabrication. Zirconia has emerged as a promising alternative to titanium implant systems with superior biocompatibility, aesthetics and low plaque affinity. This review aims to critically evaluate and compare the zirconia implants with titanium implants for prosthetic rehabilitation.

Methods: An electronic search of the English-language literature was performed in the PubMed/MEDLINE/Scopus database between 2014 and 2024 using the following keywords: "zirconia implants", "titanium implants", "osseointegration". The results on osseointegration, histologic analyses and implant success rates between titanium and zirconia implants were analyzed.

Results: Titanium and zirconia implants demonstrate a similar soft and hard tissue integration. Titanium implants show a faster initial stability, while zirconia implants show enhanced soft-tissue response and lower bacterial adhesion, potentially reducing peri-implantitis risk. Moreover, zirconia implants offer sufficient fracture resistance, though modifications such as sandblasting may affect their strength. Despite their aesthetic and biocompatibility advantages, zirconia implants have a higher risk of mechanical failure under excessive load.

Conclusion: Zirconia implants are a promising alternative to titanium with superior soft-tissue response, biocompatibility and aesthetics with comparable osseointegration. However, they are not yet widely used in clinical practice due to limited long-term data and high costs. Further comparative clinical trials are required to validate zirconia as a viable alternative to the titanium implants.

Keywords: Zirconia implants, titanium implants, osseointegration, primer stability, implant success rates

PP 155

ZIRCONIA IMPLANTS: RECENT DEVELOPMENTS

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Objective: Zirconia is emerging as a promising alternative to conventional Titanium based implant system for oral rehabilitation with superior biological, aesthetic and mechanical properties. Studies show that Zirconia implant survival rates have significantly increased in recent years. Researchers continue to improve the properties of zirconia implants for safer use every day. The aim of this review is to describe current developments in zirconia implants-

Methods: The reviewed studies investigated the advanced 3D printing technology for creating zirconia implants, laser surface treatment to enhance surface roughness, recently developed Ceria-doped zirconia (Ce-TZP) to be more low temperature degradation (LTD) resistant, hybrid titanium-zirconium implants for higher mechanical strength are started to be produced.

Results: Compared to pure titanium, the titanium- zirconium alloy is significantly more durable and it has extraordinary osseointegration abilities. With these developments, the strength and durability of zirconia implants are increased. In addition, the aesthetic features of these implants are also superior to titanium implants.

Conclusion: Zirconia implants are becoming an increasingly viable option for patients who prioritize biocompatibility and aesthetics in their dental implants. Although these developments in zirconia implants in recent years seem promising, there are not enough studies on them. More studies are needed for their safe use in the clinic.

Keywords: zirconia, zirconia dental implants, surface roughness, mechanical strength

PHOTOBIOMODULATION FOR PREVENTION OF MEDICATION-RELATED OSTEONECROSIS OF THE JAWS: A SYSTEMATIC REVIEW

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Objectives: Medication-Related Osteonecrosis of the Jaws (MRONJ) is a complication associated with antiresorptive and antiangiogenic medications, affecting patients' quality of life. Since the pathogenetic mechanism is still partially unknown, new preventive strategies are needed. Photobiomodulation (PBM) has been proposed as a promising adjunctive prevention and treatment modality due to its healing and regenerative properties. This systematic review aims to evaluate the effects of PMB on MRONJ prevention.

Methods: PubMed, Scopus and ClinicalTrials.Gov databases were searched on March 2025, without any restrictions on publication year, following the PRISMA guidelines using the keywords: (photobiomodulation OR low-level laser) AND (medication related osteonecrosis of the jaw OR MRONJ) AND (prevention).

Results: The search identified 36 articles. Five articles were included; three case series, one prospective and one retrospective study, consisting of 159 patients (range 2-84). In one study, platelet-rich fibrin was also applied. Three studies were on mixed populations, one on osteoporotic patients and one on cancer patients. Diode laser at 660nm, 940nm and 808nm were applied on 29, 84 and 1 patient respectively, and, Nd:YAG laser at 1064nm on 45 patients. There was no report of MRONJ at a follow-up time of 6 to 29 months. The heterogeneity in the PBM application protocols and the mixed population did not allow a meta-analysis.

Conclusions: PBM could be a potential adjunctive modality in MRONJ prevention. High-quality RCTs with standardized PBM protocols and long-term follow-up are required to establish the effects of PBM.

Keywords: Medication-Related Osteonecrosis of the Jaws (MRONJ), Photobiomodulation (PBM), Prevention

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USE AND EFFECTIVENESS OF PHENTOLAMINE MESYLATE IN PAEDIATRIC PATIENTS AND ADULTS

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Objectives: Aim of this study is to evaluate the effectiveness and safety of phentolamine mesylate (PM) in reducing the duration of local anaesthesia following dental procedures, primarily in children and also in adults.

Methods: The study retrieved data from electronic databases such as PubMed, Cochrane and Scopus, using search terms that included "phentolamine mesylate," "local anaesthesia," "dental procedures," and "paediatrics" Inclusion criteria involved studies and clinical trials from 2005-2025, assessing the efficacy and acceptance of PM in adults and children following dental anaesthesia. Data extraction was performed independently by three reviewers, with discrepancies resolved by consensus. The results were synthesized narratively, and where applicable, statistical analysis was conducted.

Results: A total of 18 out of 24 studies met the inclusion criteria. PM offers benefits such as faster recovery of sensation and function after local anaesthesia, reduced risk of accidental biting of lips, tongue, or cheeks, and ease of administration via injection at the anaesthetic site. However, drawbacks include limited safety and efficacy data for paediatric patients under 3 years or 15 kg, individuals with a history of cardiovascular disease, and pregnant women.

Conclusions: Prolonged anaesthesia can impair mouth function, causing difficulty in speaking, smiling, and drinking, and can lead to self-inflicted injuries, drooling, and altered appearance. PM demonstrates a favorable safety profile and clinical benefits in managing prolonged anaesthesia, reducing these risks, and enhancing patient comfort. However, the limited number of studies on PM calls for further research to assess its long-term effects and optimal usage.

Keywords: phentolamine mesylate (PM), local anaesthesia, dental procedures, paediatrics

PP 158

DENTAL AUTOTRANSPLANTATION: A VIABLE ALTERNATIVE FOR TOOTH LOSS MANAGEMENT?

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Objectives: The aim of this case report is to evaluate the feasibility of autotransplantation of immature, impacted teeth as an alternative to dental implant treatment in young patients.

Case Report: A 17-year-old healthy female patient presented with tooth #46, which was non-restorable due to endodontic failure. Clinical and radiographic examination revealed that tooth #48, with incomplete root formation, was also indicated for extraction. Based on these findings, it was decided to transplant tooth #48 into the extraction site of tooth #46.

The procedure began with atraumatic extraction of tooth #46, followed by the removal of impacted tooth #48. The donor tooth was modified with minimal mesiodistal reduction using a high-speed handpiece with saline to ensure proper fit in the socket. Tooth #48 was placed infraocclusally in the socket to prevent damage to the periodontal ligaments. The surrounding periodontal tissues were sutured back to their original position using an inverted mattress suture technique. A splint was applied for four weeks to stabilize the transplanted tooth. After the splinting period, gingivectomy and periodontal tissue shaping were performed.

At the three-month follow-up, radiographic examination showed that the transplanted tooth was asymptomatic, functional, and integrated into the surrounding tissues.

Conclusion: This case suggests that autotransplantation of immature teeth may be a successful and viable alternative to dental implants in young patients. It preserves natural tooth vitality and offers a functional, esthetic outcome. Long-term studies are needed to further evaluate the success of this technique compared to traditional implants.

Keywords: dental autotransplantation, immature teeth, impacted teeth



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HOW RELIABLE IS THE INFORMATION PROVIDED BY ARTIFICIAL INTELLIGENCE CHATBOTS IN PERIODONTICS?

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Objectives: Artificial intelligence chatbots, widely used in various fields including healthcare, are increasingly being adopted by patients seeking answers to their dental questions. This study compares the accuracy of chatbot responses to frequently asked questions in periodontology with those provided by expert periodontists. The aim of this study is to evaluate and compare the accuracy of answers given by GPT-4, Google Gemini 1.5 Flash, CPT-4.0o, Google Gemini 1.5 Pro to frequently asked questions in the field of periodontics.

Methods: Frequently asked questions (n=10) were formulated by periodontologists and collected via GPT-4 queries (n=10), each question was asked to the chatbot once. The responses (n=80) were independently assessed by two dentists and one experienced periodontologist using a modified Global Quality Score (GQS) on a 5-point Likert scale. Disagreements on scoring were resolved through evidence-based discussions. Kruskal-Wallis test was performed for the accuracy of responses between chatbots.

Results: The average GQS scores for Gemini 1.5 Flash, Gemini 1.5 Pro, Chat GPT-4, and Chat GPT-4.0o were 4.5, 4.8, 3.2, and 4.6, respectively. A significant difference was observed among the chatbots in terms of GQS scores ($p < 0.001$). This significance was attributed to the differences between the following pairs: Chat GPT-4 and Chat GPT-4.0o ($p < 0.001$), Gemini 1.5 Pro and Chat GPT-4 ($p < 0.001$), Gemini 1.5 and Chat GPT-4.0 ($p < 0.001$).

Conclusion: GPT4.0o, Google Gemini 1.5 Flash and Google Gemini 1.5 Pro provided more accuracy information on topics related to periodontology compared to GPT-4.

Keywords: artificial intelligence, chatbots, periodontology, chatgpt, gemini

OP 135

INFLUENCE OF KERATINIZED TISSUE WIDTH ON ORAL HYGIENE MAINTENANCE AROUND IMPLANTS: A CASE SERIES

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Objectives: Inadequate keratinized tissue width (KTW) (<2 mm) around dental implants has been associated with plaque accumulation and peri-implant inflammation, increasing brushing discomfort, particularly in non-compliant patients. Gingival augmentation using a free gingival graft (FGG) is the gold standard for keratinized tissue increase, aiming to improve oral hygiene effectiveness and peri-implant health. This case series evaluates changes in plaque index (PI) and brushing discomfort (BD) following FGG procedures around osseointegrated implants after six months of healing.

Methods: Adult patients with mucogingival defects (<2 mm KTW) around osseointegrated implants underwent gingival augmentation using an apically positioned partial-thickness flap (APF) combined with FGG. Primary outcomes included changes in brushing discomfort (BD), plaque index (PI), and bleeding on probing (BoP) from baseline to six months postoperatively. The secondary outcome was the gain in peri-implant keratinized tissue width (KTW).

Results: A total of 10 posterior peri-implant sites were included. After surgery, BD decreased from 8.6 ± 1.35 to 0.3 ± 0.48 , PI from 0.6 ± 0.52 to 0, and BoP from 0.8 ± 0.42 to 0.2 ± 0.42 . KTW significantly increased from 0.45 ± 0.60 mm to 2.95 ± 1.01 mm over the follow-up period.

Conclusions: Soft tissue augmentation around dental implants significantly increases KTW, reducing brushing discomfort and improving oral hygiene effectiveness. These findings emphasize the clinical importance of adequate keratinized tissue in promoting patient adherence to oral hygiene practices and supporting long-term peri-implant health.

Keywords: Keratinized Tissue Width, Oral Hygiene Maintenance, Dental Implants

OP 136

A JOURNEY THROUGH PAST AND FUTURE IN PERIODONTAL TISSUE ENGINEERING: A BIBLIOMETRIC STUDY

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Objectives: This study aims to provide a comprehensive overview of the field by analyzing research on tissue engineering in periodontology.

Methods: Data were retrieved from the Web of Science (WoS) Core Collection using specific keywords to identify publications related to periodontology and its connection with tissue engineering. According to the determined criteria, 732 studies were selected, of which 189 were review articles and 543 were original research articles.

Results: The earliest literature on this research topic dates back to 1997. The analysis revealed that China, the USA, and Japan are the largest contributors to the field. China published the highest number of articles, while the USA received the most citations. The Journal of Periodontology was the most prolific and most cited journal in this area. Furthermore, different research topics were prominent during specific periods:

Between 1997 and 2009, keywords like "periodontal repair," "enhances bone," "osteogenic protein-1," and "collagen sponge" dominated.

Between 2010 and 2015, keywords such as "regeneration," "in vitro," and "mesenchymal stem cells" were prominent.

From 2016 to 2022, keywords including "differentiation," "stem cells," "scaffolds," and "periodontal ligament" gained importance.

From 2022 to 2024, emerging topics included "hydrogel," "periodontitis," "silver nanoparticles," and "pulp stem cells."

Conclusions: The results indicate that research on tissue engineering in periodontics continues to grow, with an acceleration rate of 16.23%. As the most recent three-year period often points to future trends, it appears that studies focusing on pulp stem cells, silver nanoparticles, and hydrogels will gain further momentum.

Keywords: tissue engineering, periodontal disease, periodontics, biomaterial

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HYALURONIC ACID SPRAY AND LOW-LEVEL LASER THERAPY FOR WOUND HEALING POST-GINGIVECTOMY: A PILOT STUDY

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Objectives: Gingival enlargement is a common condition caused by increased cell numbers, leading to connective tissue expansion. It can hinder plaque control and cause aesthetic and functional problems, often requiring surgical intervention. Gingivectomy is the primary procedure for treating gingival enlargement, ensuring periodontal health. Postoperative low-level laser therapy (LLLT) may reduce inflammation, relieve pain, and accelerate tissue regeneration. Similarly, hyaluronic acid (HA) stimulates cell proliferation, migration, and differentiation, promoting wound healing. This study aimed to compare the effects of LLLT and HA on early wound healing after gingivectomy.

Methods: Forty-five patients requiring gingivectomy after periodontal treatment were randomized into two groups: LLLT (n=23) and hyaluronic acid (n=22). In the LLLT group, low-level laser therapy was applied on days 0, 3, 5, and 7 using a diode laser (940 nm), while the other group used a hyaluronic acid-based mouth spray. Intraoral photographs of the surgical sites were taken on days 0, 3, 7, and 14 using Mira-2-Ton staining. Postoperative wound healing was assessed by measuring wound surface area and recording gingival index, probing depth, bleeding on probing and VAS scores.

Results: On day 14, both groups showed significantly smaller wound areas compared to baseline. However, the HA group showed superior healing, as assessed by staining and ImageJ analysis. Additionally, VAS scores, gingival index, probing depth, and bleeding on probing index significantly improved in all groups by week 6.

Conclusion: When compared to LLLT, the use of HA after gingivectomy/gingivoplasty procedures improved wound healing and epithelization.

Keywords: LLLT, Wound Healing, Hyaluronic Acid

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TREATMENT OF INFRAOSSEOUS BONE DEFECTS WITH HYADENT BG® GEL AND BIO-OSS COLLAGEN® IN PERIODONTITIS

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Objective: Enamel matrix proteins represent a biomaterial used in the growth and regeneration of periodontal tissues - periodontal ligament, cementum and alveolar bone. Hyaluronic acid (HA) is also considered an optimal biomaterial for tissue regeneration due to its hygroscopicity and viscoelastic properties. HA is a biodegradable and biocompatible product with an anti-inflammatory and healing effect on tissues, which may be relevant for periodontal regeneration. The aim was to determine the efficacy of hyaluronic acid compared with enamel matrix proteins in the treatment of infraosseous periodontal defects.

Methods: The study included patients with periodontitis and vertical bone loss and infraosseous component of bone defect ≥ 3 mm, divided into two groups of bone defects: 1) group - with regenerative periodontal therapy: bone filling with Bio-Oss Collagen® and hyaluronic acid (HYADENT BG® gel); 2) group - regenerative periodontal therapy: bone filling with Bio-Oss Collagen® and enamel matrix proteins (Emdogain®). The preoperative and 6 months postoperative clinical measurements were made (PPD, CAL, BoP). Intraoperatively, the depth of the bone defect and the number of preserved bone walls were determined. Radiographic measurements preoperatively and 6 months postoperatively (depth and angle of the defect) were also taken.

Results: The results demonstrate significant changes in clinical and radiographic parameters in angular defects treated with hyaluronic acid in combination with bone graft material.

Conclusion: Data obtained from the clinical study suggest that treatment of infraosseous bone defects in patients with periodontitis with hyaluronic acid in combination with bone graft material gives good and long-term clinical results.

Keywords: Periodontitis, Hyaluronic Acid, Infraosseous Defects, Periodontal Surgery, Enamel Matrix Proteins

Acknowledgments: Funding, Medical University-Sofia, Contract number D-304/18.12.2023

OP 139

YOUTUBE AS AN INFORMATION SOURCE FOR TUNNEL TECHNIQUES: A QUANTITATIVE AND QUALITATIVE ANALYSIS

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Objectives: YouTube is a widely used source of medical information. However, recent studies assessing the quality of YouTube content related to tunnel techniques are lacking. This study aims to evaluate the content quality of YouTube videos on tunnel techniques and their applicability for patient education.

Methods: A search using the term "tunnel technique" was conducted on YouTube on December 1, 2024. The first 100 videos were preliminarily screened, and 16 videos were included in the study. Video length, views, likes, dislikes, time since upload, and upload source were recorded. The videos were analyzed using the Global Quality Scale (GQS) to assess the scientific reliability and quality of the information provided.

Results: Videos uploaded by doctors or dentists had significantly higher GQS (Global Quality Score) values ($p < 0.05$). However, no statistically significant differences were found between GQS and video views, likes, or video duration. A correlation analysis revealed a statistically significant, negative, moderate relationship between follower count and GQS (-0.451 , $p < 0.05$).

Conclusions: The content of YouTube videos related to tunnel techniques was found to lack sufficient quality and reliability for patient education. Patients should be made aware that not all information obtained from online video sources is entirely accurate.

Keywords: Global Quality Scale, Tunnel techniques, Youtube

OP 140

CONTACT ALLERGIC GINGIVOSTOMATITIS WITH SEVERE REDNESS CAUSED BY A LIPSTICK

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Objective: Contact allergy is a common cause of allergic gingivostomatitis. Many cosmetic and hygiene products such as chewing gums, certain components of herbal toothpaste and mouthwash, chewing plant (khat), cinnamon flavoring products, prophylaxis preparations, lipstick, sunscreens and lip balm are usually the causative agents and allergens. Allergic contact cheilitis have been reported in dermatologists as a result of repeat exposure to various lipstick and in patients. The purpose of this case report was to illustrate the relationship between lipstick and allergic gingivostomatitis, and to describe the successful treatment of this case.

Case Report: A 26-year-old female was referred to the periodontology clinic, severe bleeding gums, refractory gingival reddish, gingival overgrowth, pruritic sensation, slight pain or discomfort associated with hypersensitivity in the upper and lower front tooth region. The diagnosis of acute allergic contact gingivostomatitis caused by a lipstick suggested clinical and radiographically was confirmed by the culture technique of the gingival samples. Treatment consisted of oral hygiene instruction, mechanical debridement, medical therapy, surgical excision and guidance for patient. Healing was uneventful after 4 weeks at the recall visit. There was no sign of gingival bleeding, reddish and gingival hyperplasia. The patient was followed for 6 months and no periodontal complications developed during this time.

Conclusions: The allergic gingivostomatitis is a rare phenomenon and not commonly reported in the dental literature. Periodontal and medical treatments are useful to eliminate the symptoms and improve the lesions, but if the lipstick is not eliminated, the cases tend to recur.

Keywords: Hypersensitivity Reactions, Allergic Contact Gingivostomatitis, Lipstick, Stomatitis, Idiopathic Gingivostomatitis

OP 141

GINGIVAL HYPERPLASIA ASSOCIATED WITH ANTIHYPERTENSIVE MEDICATION: CLINICAL MANAGEMENT AND FOLLOW-UP

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Objectives: Gingivitis is an inflammatory disease characterized by bleeding on probing, which can lead to periodontal destruction if untreated. The primary etiological factor is microbial dental plaque. Various systemic risk factors can exacerbate the clinical condition. In systemic conditions such as hypertension, drug-induced gingival overgrowth can occur even with minimal plaque accumulation. This case report aims to evaluate the periodontal treatment of a patient with drug-induced gingival enlargement due to antihypertensive medication.

Case Report: A 45-year-old female patient presented to Atatürk University Periodontology Clinic with severe gingival bleeding, pain, and swelling. Apart from hypertension, she had no systemic diseases. Her medical history revealed the use of a calcium channel blocker. Intraoral examination showed plaque accumulation, spontaneous bleeding, and generalized bleeding on probing. The gingiva exhibited redness, contour loss, hyperemia, and severe gingival overgrowth. The patient also had ill-fitting prosthetic restorations. Radiographic examination showed no pathological findings.

In the first session, incompatible prostheses were removed, and full-mouth periodontal debridement was performed. CHX mouthwash was prescribed, and the patient was referred to cardiology for antihypertensive medication evaluation. At the second and third follow-ups, oral hygiene was reassessed, and gingivectomy was planned to correct gingival contours. Post-gingivectomy, a maintainable contour was achieved, and gingival health was restored. The patient was monitored for two years after treatment.

Conclusions: Functional and aesthetic outcomes were satisfactory. The patient was referred to the prosthodontics department for further evaluation of restorations.

Keywords: Gingival Health, Gingival Hyperplasia, Periodontology, Systemic Disease

OP 142

PERIODONTAL TREATMENT AND ORAL HYGIENE INTERVENTION IN AN ADOLESCENT WITH GENERALIZED GINGIVITIS

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Objectives: Gingivitis is an inflammatory disease characterized by gingival bleeding, potentially leading to periodontitis if untreated. The primary cause is microbial dental plaque, influenced by factors like malocclusion and hormonal changes in adolescence. Treatment focuses on patient motivation, plaque removal, and correcting contributing factors. This case report evaluates the treatment approach for a patient with generalized gingivitis.

Case Report: A 15-year-old female presented to Atatürk University Periodontology Clinic with severe gingival bleeding and pain. She had no systemic disease. Examination revealed advanced plaque accumulation, spontaneous bleeding in the mandibular anterior region, and generalized gingival inflammation. Teeth 12-22 were palatally positioned, while 13-23 were buccally positioned, causing malocclusion. Radiological examination showed no pathology. To remove dental plaque, her brushing habits were assessed and adjusted. Oral hygiene education and motivation were provided. In the first phase of treatment, CHX mouthwash was prescribed. At the second control session, oral hygiene was reassessed, and gingivectomy was planned for contour correction. Post-gingivectomy, gingival health improved significantly.

Conclusions: Functional and aesthetic results were satisfactory. The patient was referred for orthodontic treatment to correct dental misalignment.

Keywords: Dental Plaque, Gingivitis, Gingival Health, Periodontology

OP 143**DEVELOPMENT OF AN ARTISANAL DEVICE FOR RADIOLOGICAL MONITORING IN PERIODONTAL PATIENTS**

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Objectives: This study aimed to evaluate the radiological monitoring methods used by dentists in periodontal disease management and to develop a customized artisanal device to improve image reproducibility and reduce positioning errors.

Methods: A questionnaire-based survey was conducted among dentists to gather data on radiological practices. Concurrently, an artisanal device was created using orthodontic pliers, orthodontic wire, a metal spatula, a gas lamp, and a piece of stenz. The device was designed to ensure stable and reproducible positioning for intraoral radiographs and tested in clinical simulations.

Results: Survey data showed that 80% of dentists use panoramic radiographs (OPG) for periodontal monitoring, and 50% recommend annual imaging. About 40% have in-office OPG equipment, while 80% do not perform X-rays personally. The artisanal device proved to be effective in stabilizing the targeted area, ensuring better reproducibility. It is low-cost, easy to fabricate, and adaptable to individual anatomy.

Conclusions: Current radiological practices show a preference for panoramic imaging, though many dentists rely on external services. The developed artisanal device demonstrated potential to improve intraoral imaging quality through better positioning, making it a valuable tool in periodontal monitoring.

Keywords: periodontal disease, radiological monitoring, panoramic radiograph, intraoral device, dental imaging

PP 159

THE USAGE OF INTRASEPTAL ANESTHESIA FOR PERIODONTAL FLAP SURGERY

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Objectives: The aim of the study was to assess the anesthetic efficacy of 0.3 ml of 4% articaine with 1:100,000 epinephrine (4% A+Ep), delivered using a computer-controlled anesthetic delivery system (CCLADS) for periodontal flap surgery.

Methods: The study included 20 patients who needed surgical treatment of periodontitis with persisting at least one periodontal pocket with probing depth >6mm. The width of the surgical field being treated determined the number of the ISA administration. The anesthetic success rate and width of the gingival anesthetic field were recorded by pinprick testing. The duration of intervention has been recorded by stopwatch. The pain levels were noted by using the visual analog scale (VAS) for ISA administration (VASa), during the surgical procedure (VASi), and after intervention (VASp).

Results: The success level was 95%. The administration of ISA per intervention was 1 to 4 times, with median score of 3. The anesthetic field measured buccally was 36.2 ± 18.4 mm, and measured orally was 21.7 ± 10.7 mm. The intervention duration was 38.0 ± 11.2 min. VASa levels was 15.8 ± 14.7 mm, VASi levels was 0.7 ± 1.1 mm, and VASp levels was 5.6 ± 8.0 mm.

Conclusions: The ISA obtained with 0.3 ml of 4% A+Ep administrated by CCLADS provided a high success rate and adequate anesthetic field width for flap surgery. The interventions were short enough to be completed within the time of anesthesia, with a negligible pain sensation. These results propose that ISA is a suitable technique to achieve effective anesthesia for periodontal flap surgery.

Keywords: intraseptal anesthesia, anesthetic efficacy, flap surgery, ISA

PP 160

FREE GINGIVAL GRAFT APPLICATION IN THE MANDIBULAR ANTERIOR REGION: A CASE PRESENTATION

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Objective: Attached gingiva is an essential component that plays a role in maintaining periodontal health. In cases where there is insufficient attached gingiva in the mandibular anterior region, non-healing inflammatory findings and gingival recession may be observed. The aim of this case presentation is to present free gingival graft surgery and the follow-up process after this surgery.

Case Report: A 32-year-old systemically healthy female patient presented to our clinic with complaints of gingival recession and plaque accumulation in the lower anterior region. Intraoral examination revealed Miller Class 1 gingival recession and insufficient attached gingiva in the lower central teeth. The patient underwent Phase 1 treatment, and then it was planned to perform a free gingival graft. Under local anesthesia, a free gingival graft was harvested from the right upper palatal region. The graft was placed in the recipient area and fixed with 6/0 prolene sutures. The donor site was left to heal by secondary intention. The sutures were removed 14 days after the operation. Clinical evaluations were performed at the first and third months.

Conclusion: With free gingival graft surgery, the vestibular sulcus was deepened and the amount of attached gingiva was increased. Sufficient attached gingiva width is an important factor for periodontal health. By eliminating local factors, the patient gained a gingival width that allows easy plaque control.

Keywords: Gingival recession, attached gingiva, free gingival graft

PP 161

PERIODONTITIS AS RISK FACTOR FOR DENTAL IMPLANTS PLACEMENT: A REVIEW AND CASES PRESENTATION

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Objectives: To investigate the impact of periodontitis on success and survival rate of dental implants in patients with a history of periodontal disease.

Case Report: A thorough analysis of existing literature demonstrated that patients with a history of periodontitis present higher risk for biologic complications and implant failure compared to healthy individuals in the long term. Mean marginal bone loss (MBL) was higher in periodontitis cases with advanced periodontitis in comparison to periodontally healthy patients, while more pronounced bone loss was established in cases with severe periodontitis. Implant survival rates in patients with history of periodontitis didn't show significant differences compared to healthy ones. Advanced periodontitis groups showed reduced survival rates over long-term follow-up, whereas severe periodontitis resulted in slightly decreased outcomes. Also, a higher risk of peri-implantitis was established in patients with a history of periodontitis. The relevant endpoints will be presented by a series of case reports.

Conclusions: This comprehensive presentation highlights the significance of periodontal disease history as a risk factor for biological complications in dental implant therapy. Consequently, careful management and individualized treatment planning of patients with history of periodontal disease is crucial for implant success and long-term survival of dental implants.

Keywords: Periodontitis, Risk Factor, Dental Implants

PP 162

INTERDISCIPLINARY PERIO-IMPLANT-PROSTHETIC REHABILITATION

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Objectives: Dental implants provide a permanent and functional solution for fully and partially edentulous patients, offering high success rates and enhancing quality of life by restoring dental function and aesthetics. This case report highlights the significance of an interdisciplinary approach in the comprehensive rehabilitation of complex cases involving periodontics, implantology, and prosthetics.

Case Report: A male patient with compromised oral health due to dental phobia was referred to the Department of Periodontology and Oral Medicine at the School of Dental Medicine, University of Belgrade. Clinical examination and radiographic analysis confirmed a diagnosis of necrotizing periodontitis, with symptoms including inflamed gingiva, bleeding on probing, halitosis, pain, and purulent exudate. A comprehensive treatment plan was developed, incorporating antibiotic therapy and scaling and root planing. After six weeks, the patient was re-evaluated before proceeding to surgical and prosthetic rehabilitation. The surgical phase included modified Widman flap surgery with the use of deproteinized bovine bone mineral (Bio-Oss®, Geistlich) and the placement of five dental implants (Straumann® Implant System). During the healing phase, provisional crowns were fabricated using polymethyl methacrylate (PMMA) blocks. Four months post-surgery, temporary monolithic zirconia crowns were digitally fabricated for optimal function and aesthetics.

Conclusions: This case underscores the importance of a multidisciplinary approach in managing periodontal-compromised patients receiving dental implants. By integrating non-surgical and surgical periodontal therapy with advanced implant and prosthetic techniques, the team achieved successful rehabilitation, restoring the patient's oral health and improving overall quality of life.

Keywords: Implantology, Periodontology, Prosthetics, Aesthetics

PP 163

ORAL MUCOSAL LESIONS; BITING FIBROMA

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Objectives: Biting of the oral mucosa is very frequent injury. Cheek, tongue and lip biting is a chronic, usually innocuous, self-inflicted injury that is occasionally seen in patient. Sometimes it may be confused with other dermatological disorders involving the oral mucosa, and can lead to misdiagnosis. Most patients with this condition are unaware of their habit and will not aid in the diagnosis. The purpose of the study was to report the case of a traumatic fibroma in a patient and to describe the successful treatment of this case.

Case report: The patient was a 36-year-old male who presented himself to the periodontology clinic of the university, with the complaints of pain and slowly enlarging mass on the left cheek mucosa. Upon questioning, the patient readily admitted traumatizing his oral mucosa with cheek biting. Treatment consisted of oral hygiene instruction, scaling, root planning, psychologic support and surgical excision. Three weeks after surgery healing was occurred and five years later area of the lesion appeared completely normal as clinically.

Conclusions: Oral traumatic lesions caused by habitual cheek, lip and tongue biting are although thought to be uncommon, are quite widespread. Patient compliance, psychologic support, and regular dental follow-ups may be useful in stabilizing the condition of these patients.

Keywords: Fibroma, Traumatic, Irritation, Biting, Injuries



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OP 144**EVALUATION OF PARENTAL KNOWLEDGE ABOUT PREVENTIVE DENTAL APPLICATIONS**

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Objectives: The objectives of this study were to evaluate the knowledge and attitudes of parents about preventive dental applications

Methods: A questionnaire was designed to collect data on parents' knowledge and attitudes about preventive dental applications. Descriptive statistics is employed for summarizing data.

Results: 186 parents participated in the study. According to the responses, 32.8% of parents reported starting to brush their child's teeth when the first tooth erupts, and 94.1% believe that tooth brushing prevents dental caries. Additionally, 73.1% of parents stated that tooth brushing should occur twice a day, and 24.2% mentioned that the first dental visit typically occurs between 6 to 12 months of age. Regarding fluoride, 66.7% of parents have heard of it, and 48.9% are aware that fluoride toothpaste prevents dental caries. Regarding fissure sealants, 25.3% of parents have heard of it, and 21% believe that fissure sealant application prevents dental caries.

Conclusions: Although most parents believe that tooth brushing prevents dental caries, they lack knowledge regarding the appropriate timing for tooth brushing. Additionally, while many parents have heard of fluoride and fissure sealant applications, they are not informed about their role in preventing tooth decay. This study indicates the necessity for enhanced parental education. It is essential to develop and investigate education strategies specifically designed for the Turkish population.

Keywords: preventive dentistry. oral health, parents, children

OP 145

ASSESSMENT OF THE ACCURACY OF VARIOUS ARTIFICIAL INTELLIGENCE CHATBOTS IN ANSWERING QUESTIONS ON FLUORIDE USE

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Objective: The aim of this study is to compare the accuracy of the answers provided by various artificial intelligence chatbots to questions related to fluoride use in pediatric dentistry.

Methods: In the study, ChatGPT 4.0, Claude and Google Gemini, were used. A total of 32 questions, which are frequently asked in the pedodontic clinic, whose answers to which are clearly stated in the AAPD and EAPD guidelines directed to chatbots twice one-week intervals. Their answers accuracy evaluated blindly according to the guidelines by a researcher and recorded as "true" or "false". The data were analyzed with IBM SPSS V23 and Jamovi V2.3.28. The relevance between the answers over time was analyzed with Kappa and McNemar's tests. Cochran Q test was used to compare the accuracy rates of chatbot's ($p < 0.05$).

Results: When the consistency of the chatbots was assessed between the first day and the first week, ChatGPT 4.0 and Claude demonstrated a moderate level of relevance, whereas GEMINI exhibited a very good level of relevance. Statistically significant higher accuracy was obtained with ChatGPT 4.0 and Claude compared to the Gemini. On first day, the difference between the chatbots was significant, but the multiple comparisons were not significant. In first week, the difference between the chatbots was not statistically significant.

Conclusions: Within the limitations of this study, it is thought that all chatbots showed a high level of accuracy and will not make a clinical difference. Further development through advanced studies is needed to improve their accuracy and reliability.

Keywords: Artificial intelligence, chatbots, fluoride, pediatric dentistry

OP 146

EFFECT OF TOOTHBRUSH GRIP STYLE AND BRUSHING METHOD ON PLAQUE REMOVAL EFFICIENCY IN CHILDREN

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Objectives: Plaque accumulation on tooth surfaces can lead to dental caries, gum diseases, halitosis, and calculus formation. The aim of this study is to evaluate the impact of teaching correct tooth brushing techniques and proper toothbrush grip methods to children on their OHI-S index scores.

Methods: A total of 30 patients aged 12-14 years, including 20 girls and 10 boys, were included in our study. The sample size was calculated using the G*Power 3.1.9.7 program. A survey was prepared for the patients, asking about their sociodemographic information, the age they started brushing their teeth, brushing habits, frequency of dental visits, the brushing technique and toothbrush grip method they used before their visit. The patients were taught the correct brushing technique and proper toothbrush grip method on the same day, and they were called back for a follow-up after one week. Data were analyzed using the one-way Wilcoxon test via SPSS software, with the significance level set at $p < 0.05$.

Results: The OHI-S scores obtained from the patients' previous brushing techniques and toothbrush grip methods were compared with the OHI-S scores obtained after one week of applying the correct brushing technique and proper toothbrush grip. It was observed that the total OHI-S score significantly decreased after one week ($p = 0.001$).

Conclusion: The effect of brushing technique and method on plaque removal shows that applying correct techniques and grip methods can significantly reduce plaque accumulation. Properly implemented techniques, in particular, effectively remove plaque from tooth surfaces and promote better oral health outcomes.

Keywords: Dental Plaque, OHI-S Index, Brushing Technique, Toothbrush Grip Method, Pediatric Dentistry

OP 147

PERCEPTION OF AESTHETICS IN PRESCHOOL CHILDREN

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Objectives: The aim of this study was to evaluate how preschool children perceive dental aesthetics and to determine the factors influencing their preferences and attitudes toward dental appearance. Given the importance of early childhood experiences in shaping future oral health behaviours, understanding children's perception of dental aesthetics can help guide preventive and educational strategies in pediatric dentistry.

Methods: A cross-sectional study was conducted among preschool children aged 3-6 years. A total of 66 children participated in the study. Visual stimuli, including digitally modified images of different dental conditions (healthy teeth, misaligned teeth, discolored teeth, and carious teeth), were presented to the children. A structured interview with simple questions was used to assess their preferences and perceptions. Parental questionnaires were also used to evaluate possible influences such as family attitudes, media exposure, and oral hygiene habits.

Results: The findings indicated that most preschool children preferred images of healthy, white, and well-aligned teeth. Discolored and carious teeth were perceived as "bad" or "unpleasant," while misaligned teeth were less frequently associated with negative perceptions.

Conclusions: Preschool children demonstrate a clear preference for aesthetically pleasing teeth, with a strong aversion to dental discoloration and cavities. Early exposure to positive dental aesthetics through education, parental influence, and media can help reinforce good oral hygiene practices. These findings highlight the need for early interventions in pediatric dentistry to promote both functional and aesthetic aspects of oral health from a young age.

Keywords: Perception of dental aesthetics, Diastema in preschool children, Well-aligned teeth, Parental and media influence on children, "White" is healthy

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OP 148

RADIOGRAPHIC EVALUATION OF PERSISTENT PRIMARY CANINE TEETH IN ADOLESCENTS

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Objectives: Persistent primary canine teeth (PPCT) are retained deciduous canines that fail to exfoliate within the expected timeframe. This study assessed the distribution and clinical characteristics of PPCT in Turkish adolescents.

Methods: Panoramic radiographs of 150 patients (102 females, 48 males) aged 14-18 years were analyzed. A total of 194 PPCT were identified. Etiologic factors, including transposition, transmigration, impaction, pathological conditions, and congenital agenesis, were examined. The location, dental status (decayed, intact, restored), and angulation of impacted canines were assessed. The Chi-square test analyzed gender distribution.

Results: The majority (52%) were 14 years old. PPCT was more common in females (68%) than males (32%) ($p < 0.001$). Most PPCT were in the maxilla (88.6%), with 54.1% on the left side. Single PPCT cases were most frequent (73.3%), followed by two PPCT (24%). The primary cause was impaction (62.8%). Transposition occurred in 13.4%, transmigration in 4.1%, and pathological conditions in 0.5%. Agenesis of permanent canines was 4.6%, and lateral incisors 25.3%. PPCT status: 17% decayed, 81% intact, 2% restored. Unerupted maxillary canine angulation was classified using Pitt et al.'s index: mild ($<30^\circ$) in 26.8%, moderate ($30-45^\circ$) in 38.4%, and severe ($>45^\circ$) in 34.8%.

Conclusions: Early diagnosis and appropriate treatment are vital in preventing complications, highlighting the need for further research into the etiology and long-term outcomes of PPCT.

Keywords: Persistent, Primary canine, Panoramic radiography, Adolescence

OP 149

TENDENCY ON TRAUMATIC DENTAL INJURIES IN PRIMARY DENTITION: BIBLIOMETRIC ANALYSIS OF THE LAST DECADE

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Objective: Evaluation of the characteristics of articles on traumatic dental injuries (TDI) in primary dentition published in Dental Traumatology, since this particular journal is known as the leading journal in contribution to the TDI literature, over the past 10 years through bibliometric analysis.

Methods: "Traumatic dental injury" keyword utilised in Scopus database and only original articles and reviews in English published between 2014 and 2024 were included. Letters to the editor, book chapters, abstracts, editorials and short surveys were excluded. Abstracts of articles were read by authors to identify referrals to primary dentition. The data were categorized by year, country, topics, and study design.

Results: Of the 630 initial articles, 137 (21.7%) included primary dentition trauma and 48 of these solely targeted primary dentition. Of the 42 countries encompassed in this analysis. Brazil had the most articles (44), followed by the USA with 22. Meta-analysis/systematic reviews (25.5%) and cross-sectional (23.3%) were the most common study designs. The topics in question, from most to least frequently addressed, were listed as prevalence, aetiology or related factors, evaluation of knowledge and attitudes, literature evaluation, treatment, diagnosis, prognosis, cost analysis, and prevention. Intrusion was the most common injury type in case reports/case series (30%). 12.4% of the articles highlighted the consequences of primary TDIs on predecessors. The most common sequelae of primary TDIs on their predecessors were combined, referred to as multiple sequelae (70.6%).

Conclusion: Although TDIs in primary dentition are common and might cause complications on their predecessors, the extant literature on this particular topic is limited.

Keywords: traumatic dental injury, primary dentition, bibliometric analysis

OP 150

RETROSPECTIVE ANALYSIS OF PEDIATRIC DENTAL EMERGENCIES: DISTRIBUTION, TREATMENT, AND SATISFACTION

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Objectives: Pediatric dental emergencies, including acute injuries and infections, can substantially affect a child's oral health and development. Timely and specialized care is crucial to preventing complications and promoting recovery. This study aims to retrospectively examine pediatric dental emergencies, focusing on their frequency, treatment methods, and parental satisfaction, in order to enhance clinical practices in pediatric dentistry.

Methods: This retrospective study analyzed 986 pediatric dental emergency cases from patients aged 3-13 years who visited Ege University Pediatric Dentistry Clinic over a six-month period. Data was extracted from patient records, including demographics, types of emergencies, treatment approaches, and follow-up outcomes. Parental satisfaction was assessed using a structured questionnaire administered via telephone interviews. Statistical analysis was performed using SPSS 25.0, by descriptive statistics and Pearson's chi-square test ($p < 0.05$).

Results: A total of 1,127 visits were recorded, representing 7.9% of the 12,500 visits to the pediatric dentistry clinic. The male-to-female ratio was 1.68:1, with 62.7% of the patients being male. The mean age was 8.12 ± 2.37 years. The main complaints included pulpal inflammation (43%), dental trauma (39%), special needs cases (7%), and other dental issues (11%). Parental satisfaction was high, with 83% of parents expressing satisfaction with the promptness of care, 84% with the effectiveness of treatment, and 82% with communication and support.

Conclusion: This study underscores the importance of preventive measures, enhanced treatment protocols, and improved communication to optimize the management of pediatric dental emergencies, ultimately improving both patient outcomes and parental satisfaction.

Keywords: Dental Emergency, Pain, Pulpal inflammation, Dental Trauma, Pediatric Dentistry

OP 151

CLINICAL EDUCATION AND AWARENESS: DENTAL STUDENTS' PERSPECTIVES ON PREVENTIVE DENTISTRY

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Objective: This study aims to evaluate the knowledge and attitudes of dentistry students regarding preventive dentistry in the context of pediatric dentistry education.

Methods: Fourth- and fifth-year dental students receiving both theoretical and practical education at the Faculties of Dentistry were included in the study. In the first section of the survey, students were asked three questions regarding their sociodemographic characteristics. The second section consisted of 16 Likert-type questions related to preventive dentistry. The data obtained from this study were analyzed using descriptive statistics, the chi-square test, and Pearson's correlation coefficient. A significant level of 0.05 was considered.

Results: Although the knowledge level of fifth-year students on preventive dentistry was higher than that of fourth-year students, this difference was not statistically significant. A total of 67.5% of both fourth- and fifth-year students responded, "strongly agree" with the statement: "Pediatric dentistry education has increased my awareness of preventive dentistry." Additionally, 88.6% of the students reported that they recommend preventive dentistry practices to child patients in their clinical practice. However, they stated that while they aimed to incorporate preventive dentistry into their clinical practice, parental indifference and time constraints often prevented them from fully implementing these practices.

Conclusion: Conclusion: Dentistry students showed high awareness and willingness to practice preventive dentistry. In addition, pediatric dentistry education plays a key role in strengthening this awareness. Pediatric dentistry education is important to empower dentists with knowledge, then raise awareness among parents, expand the impact of preventive dentistry, and create a healthier society.

Keywords: Oral Health, Survey, Pediatric Dentistry Education

OP 152

RETROSPECTIVE EVALUATION OF PULPOTOMY TREATMENT NEEDS IN PERMANENT TEETH OF PEDIATRIC PATIENTS: A FIVE-YEAR ANALYSIS

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Objective: This retrospective study evaluated the need for pulpotomy treatment in pediatric patients who visited the Department of Pediatric Dentistry, Faculty of Dentistry, Ondokuz Mayıs University, between 2019 and 2024.

Methods: Patient records from the Turcasoft software system were analyzed from 2019 to 2024. The total number of patients was determined, and data were filtered using the term "pulpotomy." Since the system displayed patients' current ages, age groups were categorized for each year to determine their age at the time of treatment. The classification helped assess apical maturation and treatment needs across different age groups: 6–7, 8–9, 10–11, and 12 years or older. Each child's actual age on the treatment day was calculated, with birthdays within one month rounded up to the next year.

Results: Among 85,290 pediatric patients, 1,107 (1.3%) underwent pulpotomy for permanent teeth. The procedure was most commonly performed on first permanent molars (82%), with tooth 3-6 being the most frequently treated. Pulpotomies were more prevalent in the lower jaw and left side. The highest number of cases occurred in 2023 (358 treatments), possibly due to increased dental care access or caries prevalence.

Conclusion: The prevalence of pulpotomy in permanent teeth among pediatric patients in the Central Black Sea region was approximately 1.3%. The highest rate was in the 8–9 age group, likely due to prolonged exposure to cariogenic factors. As children age, the need for root canal treatment or extractions may increase due to severe caries progression. Early dental check-ups and preventive strategies are crucial in reducing invasive treatments.

Keywords: Pulpotomy, Children, Permanent teeth

OP 153

RETROSPECTIVE EVALUATION OF SUCCESS RATES OF COMPOMER RESTORATIONS ON PRIMARY TEETH

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Objective: This study aimed to evaluate the success rates of compomer restorations applied to pediatric patients treated at the Pedodontics Clinic of Ataturk University Faculty of Dentistry.

Methods: Data on compomer restoration treatments applied to primary teeth of patients aged 0–14 years at the Pedodontics Clinic between 2023 and 2025 were obtained retrospectively from the automation system (Turcasoft software). Statistical analysis of the data was performed using the Chi-square test ($p < 0.05$).

Results: The mean follow-up period for 21,464 compomer restorations performed on 12,632 patients was 18.2 ± 10.3 months. Among these, 1,057 (4.9%) restorations failed after an average of 11.9 ± 7.8 months. Of the failed cases, 434 (41.1%) were re-restored, 151 (14.3%) underwent root canal treatment or pulpotomy, and 472 (44.7%) required extraction. The rate of restorations leading to extraction was significantly higher in girls compared to boys ($p = 0.03$). However, no statistically significant difference was observed between genders in terms of overall failure rates of compomer restorations ($p = 0.88$).

Conclusion: Compomer restorations are a successful restorative material application in primary teeth. As a result of the low rate of failure in this application, these teeth may require extraction, filling replacement or root canal treatment.

Keywords: Primary tooth; tooth extraction; root canal treatment; compomer filling

OP 154

PEDIATRIC DENTAL TREATMENTS UNDER GENERAL ANESTHESIA: A RETROSPECTIVE STUDYNarmin Mammadli*Bezmialem Vakıf University, Istanbul, Türkiye*

Objectives: This retrospective study aims to evaluate the distribution of dental procedures performed on pediatric patients under general anesthesia, considering tooth type, treatment classification, and ASA (American Society of Anesthesiologists) classification.

Methods: The records of 315 pediatric patients who underwent dental treatment under general anesthesia at Bezmialem Vakıf University (2023–2024) were retrospectively analyzed. Data included patient demographics, ASA classification (I–V), dental procedures, and tooth numbers. Inclusion criteria covered patients receiving stainless steel crowns, extractions, pulpal amputations, posterior/anterior composite restorations, fissure sealants, and root canal treatments.

Results: A total of 3,403 dental treatments were performed on 315 pediatric patients (mean age: 4.91 ± 1.94 years, median age: 5 years, range: 1–12 years). Of these, 93% were performed on primary teeth and 7% on permanent teeth. The most commonly performed procedures were as follows: Stainless steel crown restorations (31%), tooth extractions (26%), pulpal amputation treatments (19%), posterior composite restorations (10%), anterior composite restorations (9%), fissure sealants (3%), and root canal treatments (1%). The most frequently treated tooth was tooth number 74, on which the most commonly performed procedure was a stainless steel crown restoration. According to the ASA classification, 83% of the patients were classified as ASA I, 11% ASA II, 5% ASA III, and 0.3% ASA V.

Conclusions: Oral health in children is directly linked to their quality of life. Given that young children often exhibit severe anxiety and lack of cooperation, making in-office dental procedures challenging, general anesthesia may be recommended for patients with a high number of carious lesions. Our study provides valuable insights into the distribution of pediatric dental treatments performed under general anesthesia, contributing to clinical practice and treatment planning.

Keywords: General anesthesia, pediatric dentistry, dental treatments.

OP 155

COMPATIBILITY OF NOLLA AND DEMIRJIAN METHODS FOR CHILDREN LIVING IN EASTERN TÜRKİYE

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Objective: Dental age serves as a critical metric in determining the biological age of individuals and is frequently utilized in forensic and clinical research. The present study aimed to evaluate the implementation and accuracy of Nolla and Demirjian methods in assessing dental development among 6-year-old children residing in the eastern region of Türkiye, specifically focusing on dentition of the left mandibular region.

Methods: The orthopantomographic radiographs from 190 patients (104 males, 86 females) chronologically aged 6 years, who presented to the Department of Pedodontics, Faculty of Dentistry, Atatürk University, for examination between January 1, 2024, and May 31, 2024, were analyzed. The teeth in the left mandibular region were individually classified according to the calcification stages described by Nolla and Demirjian. The obtained data were statistically analyzed using Pearson's Chi-Square test and Wilcoxon test, with a significance level set at $p < 0.05$.

Results: Age estimations performed using Nolla and Demirjian methods revealed differences of 0.81 ± 0.49 years and 0.27 ± 0.51 years, respectively ($p < 0.05$). Additionally, low but statistically significant correlations were identified ($p < 0.001$). Weaker correlations between the age estimation methods were observed in males, while stronger and statistically significant correlations were found among females. Demirjian method was determined to be more consistent compared to Nolla method for both genders.

Conclusion: The accuracy of age estimation methods may vary based on gender, highlighting potential differences in biological age assessment techniques across sexes. These results emphasize the importance of gender-specific evaluations when using dental development-based age estimation methods.

Keywords: Demirjian Method, Nolla Method, Dental Age, Turkish Children

OP 156

MANAGEMENT OF PEDIATRIC ODONTOGENIC CYSTS USING DECOMPRESSION APPLIANCES: A REPORT OF THREE CASES

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Objectives: In the present study, our aim was to assess clinical and radiological outcomes in the management of odontogenic cysts using an acrylic obturator, focusing on cyst size reduction and preservation of surrounding structures.

Case Report: This case series involve management of three adolescent patients diagnosed with odontogenic cysts in mandible. Case 1: A 12 year male patient came to pedodontics clinic with the complaint of swelling in his left lower mandible. The panoramic radiography(OPG) revealed a well-defined unilocular radiolucency around #33 and #34. Patient diagnosed as dentigerous cyst according to histopathological results. Case 2: A 7 year male patient was referred to clinic for treatment of a lesion in the right lower jaw detected through routine OPG. Patient diagnosed as dentigerous cyst according to histopathology. Case 3: An 11 year male patient was referred to clinic with a complaint of pain in the left mandible. The OPG showed a well-defined osteolytic lesion circumscribing #35. Patient diagnosed as radicular cyst according to histopathological results. Primary teeth in affected region were extracted and all cases were managed using decompression technique with an acrylic obturator. Follow-up was conducted monthly over one year to adjust acrylic part of appliances until cystic cavity completely resolved and permanent teeth erupted. Additionally, in Case 2, due to crowding, the permanent tooth in the affected region did not align with the occlusal plane. After decompression treatment, the patient was referred for planned orthodontic intervention involving fixed appliance therapy.

Conclusions: Decompression therapy utilizing an acrylic obturator is a conservative option for treating these cysts, ensuring retention of permanent teeth.

Keywords: odontogenic cyst, decompression, adolescents

OP 157

TREATMENT PROTOCOL AND PROGNOSIS OF REPLANTED IMMATURE AVULSED TOOTH: A 3-YEAR FOLLOW-UP CASE REPORT

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Objectives: The aim of this study is to describe the treatment protocols and evaluate the prognosis of an avulsed and replanted immature tooth.

Case Report: An 8-year, 10-month-old male patient was admitted to our clinic two hours after experiencing trauma that resulted in an avulsed tooth. It was reported that the patient had kept the tooth in a dry environment for only 10 minutes before immediately placing it in milk. Upon arrival, the tooth was replanted and splinted. Antibiotics and painkillers were prescribed, and the patient was referred for a tetanus vaccination. Since the tooth was immature, endodontic treatment was not initiated immediately, in accordance with the guideline recommendations, to allow for potential revascularization. However, at the 8-week follow-up, signs of external root resorption were observed. Consequently, root canal treatment was promptly initiated, and calcium hydroxide was placed in the root canal. The root canal treatment was completed at the 2-month mark when it was determined that external root resorption had ceased. Mineral Trioxide Aggregate (MTA) was placed in one-quarter of the root, and the remaining portion was filled with gutta-percha.

Conclusions: At the 1-, 2-, and 3-year follow-ups, it was observed that external root resorption had ceased, the tooth remained asymptomatic, and there were no signs of infection. However, mild ankylosis was detected. Since the ankylosis was not severe, continued monitoring of the patient will be conducted to assess long-term outcomes.

Keywords: Avulsion, Replantation, External Root Resorption, Mineral Trioxide Aggregate (MTA)

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SEXUALLY TRANSMITTED DISEASES AND THEIR MANIFESTATIONS IN THE ORAL CAVITY

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Objectives: Sexually Transmitted Diseases (STDs) are infections transmitted through sexual contact. STDs are caused by: HPV, HSV, Treponema pallidum, Neisseria gonorrhoeae, Chlamydia trachomatis, as well as HIV, HBV, and HCV. The purpose of this study is to investigate the clinical manifestations of STDs in the oral cavity, emphasizing the dentist's role.

Methods: An investigation was performed using data from the electronic databases PubMed, Google Scholar and Scopus. The methodology involved the following steps: conducting a systematic research by using specific keywords, selecting relevant sources, performing a data analysis, and synthesizing the results.

Results: STDs represent a public health concern, as they can lead to systemic health issues, including manifestations within the oral cavity. Clinical signs vary from minor lesions, such as ulcers, to more severe, including malignancies, depending on the causative agent. Fungal infections result in candidiasis, while viral infections, particularly those caused by HPV, may lead to vesicles, warts, or neoplastic transformations. Bacterial STIs can lead to ulcers and patches, with syphilis presenting polymorphous symptoms. Chlamydia can also affect the oral cavity. These diverse manifestations may indicate underlying serious health conditions.

Conclusions: The mouth is the reflection of our systemic health, as the oral cavity can reveal various diseases. Every lesion is not just a sore, but may indicate serious conditions. For this reason, the general dentist should be able to recognize the clinical manifestations and cooperate with an oral specialist, in order to achieve early diagnosis.

Keywords: Sexually Transmitted Diseases (STDs), Human Papillomavirus (HPV), Herpes Simplex Virus (HSV), Public Health

PP 165

ASSESSMENT OF DENTISTS' KNOWLEDGE ABOUT DENTAL MANAGEMENT OF PATIENTS WITH EPILEPSY

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Objectives: The main objective of this investigation was to assess the knowledge of dentists about oral changes and for treatment modifications needs among patients with epilepsy.

Method: To achieve the study's objective, a survey was conducted using a structured questionnaire designed to assess dentists' knowledge, attitudes, and experiences in treating patients with epilepsy. The questionnaire was completed by 27 dentists, all of whom work in private healthcare institutions.

Results: The primary reason dentists avoided treating patients with epilepsy was the fear of managing a potential seizure, cited by two-thirds of those who refrained from providing care. Additionally, one-third of respondents stated that they would not know how to handle a seizure if it occurred during a dental procedure. Regarding oral manifestations, 51.85% of dentists identified gingival hyperplasia as the most common oral condition among patients with epilepsy.

Conclusion: The findings suggest that fear of seizures is the primary barrier preventing dentists from treating patients with epilepsy. These results highlight the need for further education and training to improve dentists' confidence and preparedness in managing epilepsy-related complications in dental practice.

Keywords: Epilepsy, Dental Management, Seizures, Oral Changes

PP 166

GRANULOMATOUS DISORDERS - OROFACIAL OCCURRENCE AS LOCALIZED OR SYSTEMIC CONDITIONS

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Objectives: Granulomatous disorders are chronic inflammatory diseases arising as secondary conditions in the oral cavity. This research aims to provide an overview of the etiopathogenesis, clinical, histopathological characteristics and the treatment planning provided in accordance to the underlying pathology.

Methods: An investigation was conducted, by using the pubmed data base and the specific keywords oral granulomatous disease, oral granulomatous disorders, oral granulomatous reaction, causes of oral granulomatous diseases, histopathology of oral granulomatous diseases, treatment of oral granulomatous diseases. This way, oral granulomatous diseases were identified and were correlated with possible underlying pathologies including infectious and non-infectious causes.

Results: In granulomatous diseases several etiologies have been implicated such as medications, illicit drugs, foreign bodies, immune dysregulation, hereditary diseases and proliferative disorders presenting with specific or non-specific clinical characteristics. These conditions can affect the orofacial region as localized disorders or as part of systemic diseases. Granulomatous inflammation often occurs orally by exhibiting non-specific clinical features which makes the diagnosis challenging. Many times, histopathological identification of granulomas cannot be definitive for the diagnosis thus, a multidisciplinary approach is required in order to establish the underlying cause.

Conclusions: Overall, the lack of specificity that might exist in the clinical and paraclinical presentation of the oral granulomatous disease, in dependence with the underlying etiology, causes several concerns for the correct management and treatment. A deeper view into the diagnosis and management of the underlying conditions that trigger granulomatous inflammation within the oral tissues, should be provided.

Keywords: granulomatous disorders, oral granulomatous reaction, granulomatous disease

PP 167

IMPAIRED REGENERATIVE CAPACITY OF MINOR SALIVARY GLANDS IN SJÖGREN SYNDROME AND CHRONIC SIALADENITIS

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Objectives: Sjögren's syndrome (SS) is a chronic autoimmune disorder that significantly impairs the function of exocrine glands, particularly the minor salivary glands (MSGs). The aim of this study is to explore the regenerative incapacity of MSGs in SS and chronic sialadenitis, with focus on the underlying mechanisms responsible for glandular atrophy and fibrosis.

Methods: An investigation was performed using data from the electronic database PubMed to analyze studies related to tissue regeneration in SS and chronic sialadenitis, and especially for their relevance to histopathological changes, inflammation, fibrosis, and regeneration of MSGs. The methodology involved the following steps: conducting a systematic research by using specific keywords, selecting relevant sources, performing a data analysis, and synthesizing the results.

Results: The analysis revealed that the regenerative capacity of MSGs in SS is significantly compromised due to autoimmune mechanism phenomena and chronic inflammation that influence the glandular epithelium and vessels resulting in fibrosis. Lymphocytic infiltration and the destruction of glandular architecture were consistently observed, leading to reduced acinar cell regeneration. Fibrotic tissue deposition further exacerbates glandular atrophy, impairing secretory function. The chronic inflammatory environment in SS disrupts normal regenerative processes and hinders the recovery of salivary gland function.

Conclusions: Tissue regeneration in MSGs in SS and chronic sialadenitis is markedly impaired due to the autoimmune procedures. These findings highlight the need for therapeutic strategies aimed at restoring glandular function and preventing fibrosis. Further research into the molecular mechanisms behind these impairments is essential for developing effective treatments for patients suffering from SS.

Keywords: Sjögren syndrome, chronic sialadenitis, minor salivary glands, tissue regeneration

PP 168

UNDERSTANDING RAS: SYMPTOMS, CAUSES AND TREATMENT

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Objectives: The oral mucosa is susceptible to a wide range of diseases, varying in prevalence. Among the most frequently encountered is Recurrent Aphthous Stomatitis (RAS), which affects approximately 20% of the population and manifests in three distinct clinical forms (minor, major and herpetiform). Objective of this study is to explore the symptoms, etiology and therapeutic approaches regarding RAS.

Methods: An investigation was performed using data obtained from the electronic databases PubMed, Google Scholar and Scopus. The methodology involved the following steps: conducting a systematic research by using specific keywords, selecting relevant sources, performing a detailed data analysis, and ultimately synthesizing the results.

Results: RAS is a chronic disorder characterized by the development of one or more recurrent, painful ulcers. These lesions are characterized by erythematous halos surrounding central yellowish-white ulcerations. The exact cause of RAS remains unclear; however, several factors have been identified, including local trauma, genetic predisposition, viral and bacterial infections, nutritional deficiencies, immune or endocrine system disorders, oxidative stress, drug intake and systemic diseases.

Conclusions: Recognizing and managing recurrent aphthous stomatitis (RAS) is crucial for general dentists with therapeutic approaches tailored to the specific presentation and severity of the disease. As a first aid in relieving the pain, topical applications of corticosteroids, antibiotics, and analgesics are highly recommended. Frequently seen in clinical practice, dentists must understand RAS' causes and apply effective treatment solutions.

Keywords: stomatitis, aphthous, etiology, therapy symptoms

PP 169

SOX EXPRESSION IN ORAL LICHEN PLANUS COMPARED TO OSCC: AN IMMUNOHISTOCHEMICAL STUDY

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Objectives: Cancer stem cells (CSCs) are responsible for initiating the process of carcinogenesis de novo, as well as through the transformation of oral potential malignant disorders (OPMDs) to oral squamous cell carcinoma (OSCC). The aim of our study was to detect the expression of SOX in oral lichen planus (OLP) and OSCCs as well.

Methods: To monitor the expression profile of SOX2, an immunohistochemical detection took place in 24 samples of OLP (10 reticular OLPs (ROLPs) and 14 erosive type OLPs (EOLPs)) and in 21 OSCC samples of all degrees of differentiation. To complete the above procedure, immunohistochemistry was used in a semiquantative manner. SOX2 expressions were evaluated through a scale of 0 to 2 depending on the percentage of positive epithelial cells. The statistical analysis was performed with the Pearson chi-square test or Fischer's exact test, depending on the sample size, and the significance level was set at $p \leq 0.05$.

Results: The statistical analysis showed statistically significantly higher expression in EOLP than in ROLP ($p = 0.024$), as well as in OSCC than in ROLP ($p = 0.012$).

Conclusions: The characteristic higher expression of SOX2 in EOLP and OSCC compared to ROLP, suggests the possible presence of neoplastic cells with certain CSC characteristics in erosive lichenoid lesions. In any case, the clinical use of cancer stem cells' biomarkers, as prognostic factors, requires further experimental evaluation in larger number of samples.

Keywords: Oral squamous cell carcinoma, Oral lichen planus, SOX, Cancer stem cells, Biomarkers

PP 170

MALIGNANT TRANSFORMATION OF ORAL LICHEN PLANUS

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Objective: Oral lichen planus (OLP) is a chronic inflammatory condition of the oral mucosa, presenting in various clinical forms. OLP is most often benign, but one of the major concerns is its potential for malignant transformation. The malignant transformation of OLP presents a significant clinical challenge and requires careful monitoring and diagnostic evaluation. The aim is to review the clinical and molecular mechanisms of malignant transformation in OLP and to identify the potential risk factors that may influence the development of oral carcinoma in patients with OLP.

Methods: A review of literature and clinical studies focusing on the malignant transformation of OLP. The application of histopathological analysis, biopsies, and molecular tests to identify atypical cells and genetic aberrations in patients with chronic OLP were used in the diagnosis. The clinical characteristics and symptoms of the patients were analyzed to determine signs indicative of potential malignant transformation.

Results: Patients with malignant transformation of OLP most often have erosive lesions, which are accompanied by pain, bleeding, and lesions that do not respond to standard treatment. Research indicates that hepatitis C, smoking, alcohol, and immune disorders (autoimmune diseases) play an important role in the development of malignant transformation in OLP. Molecular analyses of genetic aberrations and molecules associated with carcinogenesis suggest genetic instability, which may lead to malignant transformation.

Conclusion: OLP has the potential to progress into a malignant process. Regular clinical evaluations and early biopsy are crucial for the timely detection of malignant transformation.

Keywords: Oral Lichen Planus, Malignant Transformation, Diagnostic

PP 171

THE FREQUENCY AND QUANTITY OF *C. GINGIVALIS* IN ORAL POTENTIALLY MALIGNANT DISORDERS AND ORAL CANCER

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Objectives: *Capnocytophaga gingivalis* is an oral bacteria that can be found in tooth-supporting tissue diseases, including gingivitis and periodontitis. The role of this bacterium in oral carcinogenesis is not thoroughly investigated. A few studies described its possible pathogenic mechanisms and presence in oral carcinoma and oral potentially malignant disorders. The aim of the study was to evaluate the presence and the quantity of *C. gingivalis* in different oral mucosal lesions.

Methods: In total, 90 patients were included in the study: 30 with benign lesions (BL), 30 with oral potential malignant disorders (OPMDs), and 30 with OSCCs. After performing surgical biopsies and DNA extraction, Taqman-based real-time PCR was performed to detect *C. gingivalis* in the lesions and the relative bacterial quantity was calculated as normalized against GAPDH. The relative quantity was analysed using Kruskal-Wallis test.

Results: *C. gingivalis* was identified in 2 benign lesions (6.7%), 11 OPMDs (36.7%), and 18 OSCCs (60%). A significant difference in bacterial quantity was observed between all groups ($p < 0.001$). The difference was observed between OSCCs and benign lesions ($p = 0.001$) and between OPMDs and benign lesions ($p = 0.013$).

Conclusions: The results of the study indicate the presence of a large quantity of *C. gingivalis* in OSCC and OPMDs compared to the benign lesions. These findings might indicate the role of this microorganism in oral carcinogenesis and OPMD formation. Further studies are required to confirm these results and to elucidate potential molecular genetic involvement.

Keywords: *Capnocytophaga gingivalis*, Oral potentially malignant disorders, Oral carcinoma

PP 172

COLD PLASMA AS A NOVEL TOOL IN THE TREATMENT OF ORAL SQUAMOUS CELL CARCINOMA

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Objectives: Cold atmospheric plasma (CAP) has demonstrated a strong anticancer effect against various tumors, offering a promising new approach for the treatment of oral squamous cell carcinoma (OSCC)—a common and aggressive malignancy with a high mortality rate. Therefore, we aimed to examine the antitumor potential of CAP on both two- and three-dimensional OSCC cell line models, as well as to analyze its combinatory effect with the cisplatin drug.

Methods: An in-house-designed plasma needle, with helium as the working gas, was used to treat the SCC-25 cell line either directly or indirectly via plasma-treated medium (PTM). The antitumor efficacy of CAP was evaluated by assessing cell viability using the standard MTT assay, while the rate of apoptotic events was determined by the Annexin V assay. Additionally, using the 3D GloAssay, the cytotoxicity of CAP, applied either as a monotherapy or in combination with cisplatin, was analyzed on more reliable three-dimensional (3D) spheroid models.

Results: The results indicate that both investigated plasma treatment approaches exhibit a time-dependent antitumor effect on OSCC cells. Apoptosis rates were significantly higher following incubation with PTM, and this effect is primarily mediated through the intrinsic pathway. Using a 3D spheroid carcinoma model, we further validated the antitumor potential of CAP and additionally demonstrated an increased chemosensitivity of PTM-treated carcinoma cells.

Conclusions: The results of our study illustrate a promising avenue for the application of CAP as a therapeutic option for cancer treatment, either as a standalone therapy or in combination with cisplatin.

Keywords: Cold atmospheric plasma, plasma-treated medium, antitumor therapy, oral squamous cell carcinoma, 3D cell models

PP 173

INTRAORAL LIPOMA ON THE PALATE OF AN 11-YEAR-OLD PATIENT. A RARE CASE REPORT

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Objectives: Lipomas, benign tumors composed of adipose tissue, are recognized as one of the two most common fat-containing soft tissue tumors, underscoring their relative prevalence among benign tumors in children. Despite their prominence, lipomas rarely occur before 20 years of age, highlighting a discrepancy between their commonality and the age at which they typically manifest. This case report focuses on a 11-year-old patient who noticed the presence of an intraoral mass, which prompted further investigation, ultimately leading to the diagnosis of a lipoma located on the palate.

Case Report: The young patient came with his parents to the Department of Oral Medicine and Pathology, School of Dentistry, Aristotle University of Thessaloniki, Greece, and reported the presence of a growth in the middle of the upper jaw. The patient was referred to a cone beam computed tomography (CBCT) examination to investigate if there was any bone involvement. Based on clinical and radiographical findings, a biopsy was carried out. The histopathological examination suggested the presence of an intraoral lipoma since lobules of mature adipose tissue in lamina propria and fatty tissue in close proximity to mucinous salivary glands were noticed.

Conclusions: The development of lipomas in young patients can be attributed to a multitude of factors that interplay with one another, emphasizing the need for a comprehensive understanding of these growths. Additionally, underlying conditions such as diabetes mellitus, hypercholesterolemia, and obesity also play a crucial role, highlighting the interconnected nature of metabolic disorders and lipoma formation.

Keywords: Lipoma, Oral, Children, Pediatric, Tumor

PP 174

MEDICATION INDUCED STEVEN – JOHNSON SYNDROME

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Objectives: Stevens-Johnson syndrome (SJS) comprises an occasionally life-threatening hypersensitivity reaction affecting both skin and mucous membranes. Among other causes (viruses such as Herpes simplex and Epstein –Barr), certain medication (antibiotics, NSAIDS, benzodiazepines, analgesics, immunosuppressants etc) are responsible for the rise of the syndrome providing a characteristic picture especially in the oral cavity. The aim of this presentation is to describe 2 cases of drug induced SJS, a case of etoricoxib-induced SJS in a 46-year-old, female and a macrolide induced SJS in a 58-years-old male patient.

Case report: A 58-years-old man and a 46-year woman visited urgently the Department of OralMedicine/Pathology, School of Dentistry, Aristotle University of Thessaloniki, both reporting acute, severe, radiating, pain and a burning sensation on the whole surface of the oral cavity an in the left half of the hard palate respectively. The clinical examination revealed haemorrhagic erosions and erythematous macules. Medical history was clear in both cases. The man mentioned the intake of clarithromycin, 500 mg twice daily, due to acute sinusitis, starting the night prior the appearance of the initial symptoms and the woman received etoricoxib one day prior the symptoms due to severe back pain. In both cases SJS was diagnosed and methylprednisolone was prescribed. Both patients reported complete wound healing and total pain resigning.

Conclusions: Medication adverse effects are occasionally dangerous for patients. SJS does not have a defined treatment strategy. Therefore, most patients are given supportive care and symptomatic treatment, involving corticosteroids and antivirals.

Keywords: Steven-Johnson Syndrome, Clarithromycin, Etoricoxib, Drug-Induced, Adverse Effects

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TRANSITION FROM DYSPLASIA TO ORAL SQUAMOUS CELL CARCINOMA IN A HIV PATIENT: A CASE REPORT

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Objectives: HIV patients are at an increased risk of developing head and neck cancers, particularly due to the immunocompromised state caused by the virus. The AIDS-cancer registry studies suggested that HIV-infected individuals are at an increased risk of developing oropharyngeal cancer, as well as head and neck cancer, in general. This case report aims to present a case of a male, HIV-positive, patient diagnosed with oral squamous cell carcinoma (OSCC), emphasizing the diagnostic challenges and clinical presentation.

Case report: The patient was initially referred to our Department of Oral Medicine and Pathology, School of Dentistry, Aristotle University of Thessaloniki, Greece, on 16/05/2024 due to the presence of an intraoral lesion. The examination revealed a white plaque lesion on his left buccal mucosa which was subjected to biopsy. The histopathological examination showed a moderately dysplastic leukoplakia. The patient was advised to follow bimonthly checkups, and on 09/07/2024, he was reexamined. The second examination revealed an alteration of the clinical appearance of an exophytic mass and the patient underwent a second biopsy. This time, the lesion was proven to be an early invasive oral squamous cell carcinoma, surrounded by the moderately dysplastic leukoplakia.

Conclusions: This case underscores the necessity of regular follow ups in patients manifesting oral potentially malignant disorders. The field cancerization theory explains this localized transition from moderate dysplasia to cancer. HIV-positive individuals necessitate proactive monitoring, due to the immunosuppression, in order to detect potentially malignant disorders and malignancies at an early, treatable stage.

Keywords: HIV, leukoplakia, oral squamous cell carcinoma, head and neck cancer, oral potentially malignant disorders

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MANAGEMENT OF PERIPHERAL OSSIFYING FIBROMA DUE TO SEVERE PERIODONTITIS - A CASE REPORT

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Objectives: Peripheral ossifying fibroma (POF) constitutes a common reactive lesion of the gingiva, most commonly localized in the anterior maxillary region. Non-neoplastic, originates from the periodontal ligament in response to chronically injurious factors related to periodontal tissues such as dental calculus, plaque, and orthodontic appliances. The aim of this case report is to illustrate the emergence of POF in a 46-year-old female patient with severe, generalized, periodontitis.

Case report: A 46-year-old female patient came to our clinic, complaining of the presence of a rubbery mass in the upper jaw. The clinical examination revealed a pedunculated tumor, with normal colour, slightly hard in palpation and with slightly whitish borders. The attachment of this mass to the underlying oral mucosa was relatively stiff but with some effort, it was observed that the base of this mass is in direct association with the pocket of the tooth #26. The biopsy, that followed, confirmed the clinical diagnosis of peripheral ossifying fibroma.

Conclusions: The diagnosis of the POF may be proven difficult due to its clinical and histological features, resembling other clinical entities, both benign and malignant. Regardless of the possible benign clinical appearance, the tissue should always be examined histologically to confirm the diagnosis. In our case, the absence of medical problems in addition to the presence of periodontitis rendered the diagnostic process simpler.

Keywords: Fibroma, Peripheral Ossifying, Periodontitis, Management, Reactive Lesion



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MOLAR INCISOR HYPOMINERALIZATION (MIH) – THE PREVALENCE AND CAUSES

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Objectives: The Aim of this study was to investigate the prevalence and causes of teeth affected with molar incisor hypomineralization (MIH) in the early adult population.

Methods: A cross-sectional study was conducted after the written consent of 298 respondents, students of the Faculty of Dentistry, University of Belgrade from III to V year of study. The presence of MIH was registered based on EAPD diagnostic criteria. The obtained data, based on the questionnaires that the respondents filled in with the help of their parents, revealed the most common etiological factors.

Results: MIH was observed in 90 subjects (30.2%). The questionnaire analysis revealed that only 11 out of 90 respondents already knew that they had MIH-altered teeth. The most common etiological causes of hypomineralization of molars and incisors are psychological stress, maternal smoking, cesarean section, postnatal exposure to antibiotics, and infectious and respiratory diseases of early childhood.

Conclusion: The results of the research showed that hypomineralization of molars and incisors is present in slightly less than a third of students of the Faculty of Dentistry, University of Belgrade. The study results confirmed the problem of recognizing the most common causes of MIH-altered teeth.

Keywords: molar incisor hypomineralization, MIH, etiological factors, student population

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ORAL HEALTH AND DENTAL HEALTH CARE IN THE BALKAN COUNTRIES

ORAL HEALTH AND DENTAL HEALTH CARE IN THE BALKAN COUNTRIES

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Objectives: Oral diseases are highly prevalent and significantly influenced by organization of dental healthcare. This study aimed to investigate the prevalence of oral diseases and the availability of dental healthcare services in Balkan countries.

Methods: The literature search was conducted up to December 2024. The search strategy included scientific papers, documents, or strategies in English from the following databases: Medline (via PubMed), Scopus, Google Scholar, and Web of Science. The keywords used in the search were: oral health, dentists, dental policy, dental strategy, dental healthcare, Balkan region, and the names of individual Balkan countries. The data were analyzed using SPSS version 24.0 (SPSS Inc., Chicago, Illinois, USA).

Results: In the Balkans, nearly every second child under 9 have untreated caries in deciduous teeth (47.1%), while every third child over the age of 5 has untreated caries in permanent teeth (38.5%). One in six people has severe periodontal disease (16.8%), and one in seven is edentulous (13.8%). The incidence of lip and oral cavity cancer is 3.5 per 100,000, with Romania having the highest rate (5.4). Half of the Balkan countries provide essential curative oral healthcare to 85%-100% of the population through government financing. The total expenditure on dental healthcare averages 184 million US\$, with 7.8 dentists per 10,000 people. Only half of the countries have a national oral health policy or strategy.

Conclusions: Oral diseases are widespread and costly in the Balkans, highlighting the need for improved access to dental care and effective public health policies.

Keywords: Oral health, Dental Health Care, Balkan, WHO Oral Health Country Profile

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BURNOUT SYNDROME AMONG DENTISTS IN BULGARIA: ANALYSIS OF RELATED SOCIO-DEMOGRAPHIC FACTORS

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Objectives: To determine burnout levels and its related demographic factors (age, gender, marital status, and location of dental practice) among dentists in Bulgaria.

Methods: A self-administered anonymous survey, consisting of demographic questions and validated 22-item MBI-HSS was mailed to a random sample of 1405 dentists from 73 settlements in Bulgaria. IBM SPSS Statistics 25.0. was used to process survey results. Significance level was set at $p < 0.05$.

Results: A total of 387 dentists responded to the study (RR=27.5%), with 196 (50.6%) representing males. According to their mean values (EE - 21.29 ± 12.49 , DP - 10.17 ± 6.20 and PA - 34.76 ± 7.87) all three burnout dimensions fell into the interval of the moderate level of burnout. Females demonstrated higher levels of EE (23.89 ± 12.96) as compared with males (18.77 ± 11.50), $p < 0.05$. Respondents from the youngest age group, 25-40 years old ($n=150$, 38.8%), experienced the highest levels of EE (24.88 ± 11.58) and DP (4.74 ± 1.49) compared to the other age groups, $p < 0.05$. Significant differences were observed among single (25.38 ± 11.38 ; $n=86$) and married (20.13 ± 12.57 ; $n=301$) dentists in terms of EE subscale, $p < 0.05$. Those working in the countryside ($n=14$) had significantly lower mean values of DP (5.50 ± 7.08) compared to dentists practicing in the capital (10.14 ± 5.68 ; $n=214$), large cities (10.35 ± 6.84 ; $n=104$) and small towns (11.76 ± 6.26 ; $n=49$) in the country, $p < 0.05$.

Conclusion: Higher burnout levels were found in the youngest dentists aged 25-40 years old, in women, single dentists, and those working in the capital and cities.

Keywords: Dentists, Burnout syndrome, Age, Gender, MBI-HSS

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ASSESSMENT OF STRESS IN DENTAL PRACTICE

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Objectives: The dental profession is widely recognized as one of the most stressful fields due to its demanding nature and unique challenges. This study evaluates factors indicative of stress in dental practice and their correlation with psychological well-being among dentists.

Methods: Self-administrated questionnaires were sent to dentists working in both the private and public sectors in Serbia. They were asked to report occurrence of occupational stress during their work. A total of 500 questionnaires were distributed. The study was approved by the Ethics Committee of the School of Dentistry, University of Belgrade, No. 36/9.

Results: A positive response rate for participation was 73% (356/500 participants). The findings reveal that 81.7% of dentists reported occurrence of stress during work. However, 28.4% experience headaches, and 23% report issues with sleep quality. Among participants with frequent headaches, 34% reported stress during work, compared to only 1.6% who did not (χ^2 -test; $p=0.000$). Similarly, participants with sleep quality issues were more likely to experience stress during work (26.9%) compared to those without sleep issues (4.8%) (χ^2 -test; $p=0.000$). The prevalence of stress during work varies significantly across dental specialties. The highest incidence was reported among specialists in pediatric and preventive dentistry (37.5%), followed by prosthodontists (15.1%), oral surgeons (13.4%), orthodontists (10.9%), periodontists (9.2%), and specialists in restorative dentistry and endodontics (9.2%).

Conclusion: The results highlight a statistically significant correlation between headaches, poor sleep quality, and the occurrence of stress during dental work. These findings emphasize the need for targeted interventions to address occupational stress and improve the well-being of dentist.

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IMPORTANCE OF PREVENTIVE AND PROPHYLACTIC MEASURES AMONG PATIENTS WITH SPECIAL NEEDS

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Objectives: For patients with special needs, providing adequate and regular preventive and prophylactic measures is crucial due to the nature of their conditions. The aim of this study was to analyze factors that pose challenges to delivering such measures in patients with special needs undergoing treatment under general anesthesia (GA).

Methods: This retrospective survey was conducted using data from dental records at the Centre for Special Care Dentistry of the Clinic of Preventive and Paediatric Dentistry, School of Dental Medicine, University of Belgrade, Serbia. The study included patients up to 18 years of age who were treated under GA during 2023 due to the nature of their conditions and cooperation difficulties.

Results: The study included 117 patients, with a higher representation of male patients (n=88, 75.2%). On average, patients traveled a distance of 177.9 km (min=3.6, max=1086.9) to receive dental treatment under GA. The average waiting time from the initial dental examination, indicating the need for rehabilitation under GA to the intervention date, was 5.42 ± 2.72 months. Less than half of the patients (n=55) 47% had access to Preventive and Pediatric dental care in their nearest Primary Health Center. Only 45% (n=53) had received preventive advices from the dentist in Primary Health Center before treatment under GA.

Conclusion: The study highlights the importance to ensure timely and adequate preventive and prophylactic care for patients with special needs. Improving access to specialized dental services and implementing targeted preventive measures are essential steps in enhancing oral health outcomes for this vulnerable population.

Keywords: Patients With Special Needs, Preventive Measures, General Anesthesia, Dental Services

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COMPREHENSIVE DENTAL CARE FOR SPECIAL NEEDS: CHALLENGES, PREVENTION, AND HEALTH EDUCATION'S ROLE

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Objectives: Individuals with special needs are among the most vulnerable populations, with compromised oral health ranking as one of the top ten associated conditions. While oral health promotion is advancing in the general population, this progress is less noticeable among those with developmental disabilities. Early and continuous dental care is essential to prevent oral diseases. A personalized preventive approach, including family education, scheduled dental check-ups, and tailored interventions, is critical to fostering effective cooperation.

Case Report: In collaboration with the Association for Children and Cerebral Palsy "Sunce," comprising 60 members, and the Dental Clinic of Vojvodina, continuous educational workshops were organized from September to December in both 2022 and 2023. These workshops consisted of both theoretical and practical sessions, highlighting the impact of harmful habits on dental and oral tissue health and demonstrating practical strategies to mitigate these effects. Training was provided to association members (where possible) and their parents/guardians on maintaining optimal oral hygiene. The focus was on the mechanical removal of dental biofilm and tooth brushing techniques tailored to our patients' needs. The aim of these educational workshops was to reduce fear, enhance understanding of the importance of oral health, raise awareness about disability, and offer guidance and support to parents of individuals requiring specialized dental care.

Conclusions: Promoting oral health and prevention among individuals with special needs is a multifaceted effort. Through education, preventive care, and personalized approaches, significant strides can be made in preventing oral diseases and preserving oral health in this vulnerable population.

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COLLABORATION OF PATIENTS WITH DISABILITIES: FREQUENCY AND INDICATIONS OF GETA IN ORAL TREATMENT

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Objectives: To examine the cooperation of patients with disabilities in clinical conditions, the frequency of the introduction of patients to general anesthesia (GETA) for the purpose of oral health restoration, and the main issues that lead to this intervention.

Methods: Data on patients with disabilities were analyzed, with a particular focus on assessing cooperation during dental treatment. The assessment included the frequency of general anesthesia application and the reasons for its use. Data were collected through questionnaires and clinical assessments of patients.

Results: Most patients with disabilities do not show sufficient cooperation in clinical settings. The analysis revealed that 76% of respondents had never had a dental intervention in clinical conditions. Patients who were treated in this way had their next intervention, on average, 6.4 years later.

Conclusion: Restoration of teeth under general anesthesia represents a revolutionary method for treating non-cooperative patients; however, as professionals, we must be selective when choosing this option due to the potential unwanted effects of general anesthesia and the radical nature of dental procedures required for one-session restoration.



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MICROLEAKAGE GLASS-IONOMER CEMENT ON PRIMARY AND PERMANENT DENTITION

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Objectives: Glass-ionomer cements (GIC) are widely used in pediatric dentistry for their biocompatibility, fluoride release, anticariogenic potential, and chemical bonding to enamel and dentin. This study aimed to assess the microleakage of different GIC types in primary and permanent teeth.

Methods: Fifty intact canine teeth (25 primary, 25 permanent) were prepared with standardized Class V cavities. Each tooth type was divided into five groups (n=5 per group) and restored with the following materials: GC Fuji IX (conventional GIC), GC Equia (conventional GIC), GC Equia Forte (hybrid GIC), GC Fuji II (resin-modified GIC), and GC Fuji Triage (sealing material). After 7 days in artificial saliva, the teeth were immersed in methylene blue dye for 24 hours. Microleakage was measured under a digital microscope (40x). Data were analyzed using ANOVA and t-tests in SPSS for Windows (IBM Corp).

Results: The microleakage of the analyzed glass-ionomer cements was as follows: Equia (primary: 0.006 ± 0.002 mm; permanent: 0.150 ± 0.250 mm) < Fuji IX (primary: 0.010 ± 0.007 mm; permanent: 0.030 ± 0.004 mm) < Equia Forte (primary: 0.040 ± 0.040 mm; permanent: 0.030 ± 0.040 mm) < Fuji II (primary: 0.018 ± 0.013 mm; permanent: 0.500 ± 0.460 mm, $p < 0.05$) < Fuji Triage (primary: 0.177 ± 0.335 mm; permanent: 0.170 ± 0.190 mm). No statistically significant difference was found between the materials in both the primary tooth group and the permanent tooth group ($p > 0.05$).

Conclusions: Conventional and hybrid GICs showed less microleakage than resin-modified GICs, supporting their use in both primary and permanent teeth. Resin-modified GIC, had higher leakage in permanent teeth, indicating material performance may vary by tooth type. These results confirm GICs as reliable for pediatric restorative care.

Keywords: microleakage, glass-ionomer cements, primary teeth, permanent teeth

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RISK ASSESSMENT AND EVALUATION OF GIC SEALANT RETENTION ON NEWLY ERUPTED FIRST PERMANENT MOLARS

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Objectives: The aim of this study was to assess the risk of caries development and monitor the retention of glass-ionomer sealant on newly erupted first permanent molars in children aged 5-6 years for one year.

Methods: Evaluation of the risk of caries development, using modified ADA risk assessment tool as well as OHI (Greene-Vermillion) and DMFT+dft indexes were assessed. Prior to sealant application, all first permanent molars included in the study were subjected to visual diagnostics using the ICDAS II system and diagnostics with VistaCamiX Macro using the same system. The follow-up checks of the sealed teeth were performed at 3, 6, and 12 months in accordance with the accepted methodology.

Results: Risk assessment was performed on 26 children (with 78 newly erupted molars). All of them belonged to the high risk group with average OHI- 1,253 and DMFT+=dft index-4,158. At the end of the first year, completely lost sealant was reported in approximately 29-39% of the monitored surfaces, varying due to the differences in the used diagnostic methods. However, caries surfaces were found in only 2-4,9% of the examined teeth using both methods.

Conclusion: Glass-ionomer-based sealants are the main tool of choice when it is impossible to control moisture. Such are the cases in which the first permanent molars have not completely erupted and have not entered occlusion. Despite their significantly lower retentiveness, they provide excellent caries-prophylactic action due to the significantly longer release of fluoride ions and the possibility of recharging the sealant. This makes it possible to provide a caries-prophylactic effect even in the presence of a minimal amount of sealant particles, invisible to the naked eye.

Keywords: glass-ionomer sealant, retention, risk assessment, first permanent molars

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EARLY CHILDHOOD DENTAL CARIES PREVALENCE

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Objective. Early childhood caries is a disease that affects children from birth to the age of 6 years. It appears in the oral cavity with a lesion in the form of a white or brown dot along the edge of the gingiva on the upper incisors. It may have affected one or more of the temporary teeth. It is an oral problem that is seen more often in disadvantaged populations. The objective of the study is to evaluate the prevalence of early childhood caries. The main cause of ECC is an irregular food diet and mostly breastfeeding with pacifiers and liquids with added sugar at night.

Methods. At the University Dental Clinic in the period 2021 (March)–2024 (March), the mothers of 120 children answered a structured questionnaire.

Results. Based on the results, early childhood caries has a higher prevalence in the populations with the following characteristics: unemployed, single parent, with lack of information regarding the visits to the dentist, poor diet, poor hygiene, people with exposure to fermented carbohydrates, and difficult social-economic conditions.

Conclusions. In conclusion, information through periodic visits to the dentist is important. It is suggested that dental pediatricians and nurses of health centers since parents have more frequent visits in the first years of their child's life, play an important preventive role. Family doctors can provide good information about feeding their children by eliminating the pacifier at night with both milk and liquids with added sugar.

Keywords: Early childhood, Caries, Prevalence

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CHILDREN'S KNOWLEDGE AND BEHAVIOR IN RELATION TO ORAL HEALTH

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Objectives: Caries is the most widespread disease in our population. The main objective of this study is to determine the impact of oral health behavior of students aged 12 to 14 on their oral health.

Method: The study was conducted at the Drago Milović Elementary School in Tivat. The research instrument was a questionnaire specially designed for this study, consisting of 36 closed-ended questions. As an additional research instrument, a clinical examination of children's oral health was used. Oral health assessment was performed under natural light with a dental mirror and probe according to WHO recommendations. The parameter used to assess oral health status was the DMFT index. Oral hygiene was assessed using the Green-Vermillion soft debris index.

Results: Most children reported a lack of knowledge about the effectiveness of fluoride toothpastes (69.4%). The lowest incidence of caries was in those children who believed that teeth should be brushed after every meal. Half of the respondents believed that teeth should be brushed most often after every meal, and more than half of the honors students (55.6%) also believed this. The DMFT index for the studied population was 2.87. Green-Vermillion soft debris oral hygiene result was 2 for the majority of students (49.5%).

Conclusion: It can be concluded that dental care in this area does not significantly affect the improvement of children's oral health. Therefore, more attention should be paid to continuous education programs and the acquisition of knowledge about oral health and oral and dental hygiene.

Keywords: oral health, DMFT index, health education, Green-Vermillion index, children

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THE CONNECTION BETWEEN SOCIAL FACTORS AND DENTAL HEALTH IN CHILDREN

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Objective: The aim of the study was to determine the relationship between children's oral health and social factors.

Methods: The study was conducted at the Faculty of Medicine in Podgorica in 2019. The study included 111 children aged 10-14 years. The data collection tools were a clinical examination and a form that contained two parts. The first part included the demographic characteristics of the children, records of their carious, missing and filled teeth (DMFT) and determination of oral hygiene (registered Plaque Index according to Silness-Loe). The second part contained questions about the social factors (employment, educational level of the parents, household income, number of household members). Data analysis was performed with SPSS software using statistical tests. The conclusion was carried out at the significance level $p < 0.05$.

Results: The average age of the children was 12.76 ± 1.04 years. The average number of diseased teeth per respondent (DMFT) was 4.45, and the prevalence of caries was 87.3%. The plaque index was 1.34. The proportion of households with an average monthly income was 58.7%. The percentage of employed mothers was 55.6%, and the percentage of employed fathers was 92.5%. Children of unemployed mothers, parents with lower levels of education and lower average monthly income have significantly worse oral health (DMFT=5.12, PI=1.78) compared to children of employed people, parents with higher education and higher average income (DMFT=4.24; PI=1.15) ($P=0.001$).

Conclusion: There is a connection between social factors and oral health in children.

Keywords: children, oral health, social factors

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DETERMINATION OF THE ORAL HYGIENE INDEX IN CHILDREN WITH THE PRESENCE AND ABSENCE OF CARIES

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Objectives: The long-standing experience of many authors in the dental science and profession supports the claim that caries is a multifactorial disease. While poor oral hygiene and sugar intake are key risk factors, the development of caries also depends on the properties of saliva, tooth structure, and microbial activity.

Methods: The study included 74 children aged 4-6 years with and without caries, of which 43 (58.10%) belonged to the experimental group, in which 18 (24.30%) children were female and 25 (33.80%) were male. In the control group, consisting of 31 (41.90%) children, 17 (23.00%) were female and 14 (18.90%) were male. We used the Greene Vermillion method with an assessment of six surfaces of six teeth representing a representative sample of the entire dentition, the vestibular surface of the upper right first molar, the upper left first molar and the upper right first left first incisor and the lingual surfaces of the lower right and left first molars.

Results: The value of the OHI-S dental plaque index in children from the experimental group for $Z = -3.02$ and $p < 0.01$ ($p = 0.00$) is significantly higher than the value of the OHI-S index in children from the control group.

Conclusions: The etiology of caries is multifactorial and OHI-S alone does not directly determine caries resistance. Patients with poor oral hygiene are more likely to develop dental caries. Poor oral hygiene is one of many factors for the development of caries.

Keywords: oral hygiene, caries, oral hygiene index, children

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ORAL HEALTH STATUS AND HABITS OF SCHOOL-AGE CHILDREN IN TWO CITIES IN SERBIA

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Objectives: The aim of this study was to compare the oral health status of school-age children in a part of the population in the area of two cities, Pancevo and Subotica and to evaluate their oral hygiene habits and behaviour related to oral health.

Methods: This cross-sectional study included 60 healthy children from two cities (two groups with 30 participants), aged 7 to 12 years who use free public dental healthcare. The dental examination was performed in a dental chair under artificial lighting using a probe and a dental mirror while the condition of the teeth was recorded using the DMFT (decayed, missing, filled teeth in permanent and primary teeth) index. Oral hygiene habits were assessed using a questionnaire specifically designed for this study. A test-retest correlation on a preliminary sample on two distinct time periods was used for validation of the questionnaire and the results of the research were analysed using the Chi-square test and the Z-test for proportions.

Results: Similar oral hygiene habits were recorded among respondents from the two cities with statistically significant differences only in the daily tooth brushing and mouthwash use habits ($p < 0.05$). DMFT index evaluation for primary and permanent teeth showed no significant differences between groups from the two cities.

Conclusions: Within the limitations of this study, it can be concluded that although no significant difference in the DMFT index were found between the cities, differences in oral hygiene habits indicate the need for additional education and the promotion of proper oral hygiene practices.

Keywords: children, caries, oral health

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ORAL HEALTH OF CHILDREN IN THE MUNICIPALITY OF TIVAT

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Objectives: Dental caries is a major problem in children.

The aim of the study was to assess the oral health status of children aged 3-5 years in the municipality of Tivat.

Methods: The study included 160 children of both sexes aged 3-5 years. The diagnosis of dental caries was made using the DMFT/dmft index. Parents of the children surveyed filled out a questionnaire on oral health.

Results: 58% of three-year-olds were caries-free, and the dmft was 1.0; 41% of four-year-olds had all their teeth healthy, and the dmft was 2.2. 20% of five-year-olds were caries-free, while the dmft=4.0. Parents believe that the cause of dental caries is a hereditary factor (52.7%). Also, parents believe that sweets cause caries (98.8%). Only 38% of surveyed parents know that children need to be vaccinated to prevent tooth decay. The research showed that only 20.5% of children use fluoride prophylaxis. The majority of children (70.7%) have never had their first dental check-up.

Conclusion: There is a need for additional education of children and their parents about the importance of good oral hygiene and prevention of oral diseases.

Keywords: children, oral health, caries

PP 192

AGE ESTIMATION ACCURACY USING THE LONDON ATLAS IN CHILDREN AGED 1 TO 4

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Objectives: This study aimed to evaluate the accuracy of age estimation using the London Atlas of Tooth Development and Eruption in a sample of children aged 1 to 4 years with known chronological ages at the time of radiography.

Methods: Age estimation was performed on dental radiographs of 31 children using the London Atlas methodology, which categorizes teeth into 13 developmental stages linked to age ranges. The sample included participants age from 1 to 4 years. Repeated assessments (three per individual) were conducted to evaluate consistency and accuracy. Statistical analyses included descriptive statistics, chi-square tests for developmental stage distributions, and one-way ANOVA to identify significant differences. Discrepancies between estimated and actual ages were calculated, with a significance threshold set at $p < 0.05$.

Results: The average estimated age across all assessments was 957.0 ± 462.2 days, with a mean discrepancy of 225.6 ± 222.3 days compared to the actual age. Statistical analysis revealed significant differences in estimation accuracy across age groups ($p < 0.05$).

Conclusions: The London Atlas methodology demonstrates moderate accuracy for age estimation in children aged 1 to 4 years. However, variability influenced by developmental stages suggests the need for further refinement to enhance precision. These findings underscore its potential utility in forensic and archaeological applications.

Keywords: Age estimation, London Atlas, Tooth development, Dental radiographs, Forensic applications

PP 193

LONG-TERM PROGNOSIS OF AVULSED PERMANENT TEETH IN PEDIATRIC PATIENTS: A RETROSPECTIVE STUDY

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Objectives: Avulsion of permanent teeth is one of the most severe dental injuries in pediatric patients. When an avulsed tooth cannot be replanted or fails in the long term, prosthetic planning may be required to address aesthetic, masticatory, and speech-related issues. This study aims to evaluate the long-term clinical success of replanted avulsed teeth.

Methods: Clinical records from 2014 to 2024 were retrospectively analyzed to collect clinical and radiographic data on the management of avulsed teeth. A total of 40 patients with 46 avulsed teeth were included in the study. Demographic data, tooth number, tooth maturation status, treatment method, extraoral dry time, presence of external resorption during long-term follow-up, and tooth survival were assessed. Descriptive statistics, regression and survival analyses were performed.

Results: The gender distribution of the participants consisted of 19 females (47.5%) and 21 males (52.5%), with a mean age of 9.1 years. Fourteen teeth (30.4%) could not be replanted due to being lost following trauma. The most commonly affected teeth were the maxillary central incisors. During long-term follow-up after replantation, 7 of the 32 replanted teeth (21.9%) were lost due to external resorption, while 25 replanted teeth (78.1%) remained under observation.

Conclusions: This study emphasizes the importance of replanting avulsed young permanent teeth and highlights the prevalence of long-term complications. The results indicate that factors such as early replantation and the proper storage conditions of the avulsed tooth significantly influence treatment success.

Keywords: Avulsion, dental trauma, replantation, avulsed tooth

PP 194

OCCLUSAL ELEVATION IN A CASE OF SUBLUXATION: CASE REPORT

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Objectives: The management of traumatic dental injuries in cases of subluxation, where splinting is not feasible during the mixed dentition phase, was aimed to be achieved through occlusal elevation.

Case Report: A systemically healthy 7-year-old girl was admitted to our clinic with a traumatic injury caused by a fall from a scooter. Extraoral and intraoral examination findings revealed soft tissue injury on the upper lip, lacerations on the anterior gingiva of the maxilla and subluxation of teeth 11-21. Considering the partial eruption of teeth 12-22 and the gingival level of teeth 53-63, splinting was not applied to the patient. Instead, occlusal elevation with composite material was applied to the teeth numbered 36 and 46, aiming to interrupt the contact between the anterior teeth of the lower and upper jaw. Antibiotics were prescribed and the presence of tetanus vaccination was questioned. At the follow-up visit 2 weeks later, it was observed that the soft tissue injuries had started to heal and the mobility of the teeth had completely recovered. Occlusal elevation was removed. It was determined that complete recovery was achieved in the control of the patient.

Conclusion: In cases of subluxation where splinting cannot be applied, occlusal elevation prevents the contact of the anterior teeth and provides a physiological healing process of the tissues.

Keywords: Dental trauma, Occlusal elevation, Subluxation

PP 195

LOWER INCISOR AVULSION - CASE REPORT

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Objective: Traumatology in dentistry requires an urgent treatment. Avulsion is one of the most difficult injuries that may occur. Losing teeth to a dental trauma in an early age may lead to bone loss and a more difficult approach in surgical and prosthetic treatment where implants are not possible therapy after the age when face and jaw development is over. The aim was to present the replantation and endodontic treatment of the avulsed lower incisors.

Case Report: A seventeen year old patient came to the Clinic for Pediatric and Preventive dentistry, Dental School of Medicine, University of Belgrade, after the avulsion of all four lower incisors. Injury occurred while he tried to raise the table using his teeth. Teeth were replanted within an hour after the injury at a Health Center and the wire ligature was placed. After arriving to the Clinic, the endodontic treatment was performed on all of the injured teeth. Teeth were treated using rotary instruments, medication on the base of calcium hydroxide was used. Final obturation was performed after a week and further checkups were scheduled.

Conclusion: Replantation is a necessary procedure for avulsed teeth when there is no severe bone loss and the injured teeth are without large caries lesions. Even though the complications are expected, preservation of bone loss is recommended as well as mandatory in order to postpone possible complications and enable further therapy. All dentists should be familiar with the trauma guidelines in order to provide the best treatment for the patient.

Keywords: Avulsion, Lower incisors, Replantation

PP 196

CONSEQUENCES OF PRIMARY TEETH TRAUMA TO PERMANENT INCISORS: A CASE REPORT

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Objectives: Traumatic dental injuries (TDIs) to deciduous teeth can adversely affect the permanent dentition due to the close anatomical relationship between the primary tooth and the developing permanent germ. The most common sequelae in permanent teeth include enamel discoloration, hypoplasia, and enamel surface defects, often resulting from trauma to the deciduous teeth.

Case Report: Four years after the intrusion of primary incisors, teeth 11 and 21 exhibited significant enamel defects, including demarcated opacity and loss of enamel in the incisal third, as a consequence of TDI sustained in the deciduous dentition. The aesthetic impairment caused by these defects negatively impacted the patient's quality of life. As a treatment plan, composite restorations were proposed to address the defects. Impressions were taken, and a wax-up was created to design the restorations. A silicone key was fabricated based on the wax-up and utilized to precisely restore the affected central incisors with resin composite.

Conclusions: The treatment successfully improved the aesthetics and functionality of the central incisors, thereby enhancing patient satisfaction.

Keywords: dental trauma, pediatric dentistry, restorative dentistry

PP 197

FRAGMENT REATTACHMENT OF ANTERIOR TEETH WITH COMPLICATED AND UNCOMPLICATED CROWN FRACTURES: A CASE REPORT

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Objectives: Dentoalveolar trauma usually occurs in childhood. Maxillary incisors are the most affected teeth by trauma and treatment can be challenging. Aim of the study is to describe the treatment of a patient with a complicated crown fracture and an uncomplicated crown fracture in the anterior teeth using the reattachment technique.

Case Report: A 10-year-old patient was referred to our clinic with a complaint of fractured anterior teeth 2 hours after falling. Clinical examination revealed a complicated crown fracture with pulp exposure in the right maxillary central incisor (#11), and the left maxillary central incisor (#21) had an uncomplicated fracture. There was no mobility in the affected teeth, and mild percussion sensitivity was present. Radiographic examination showed continued root development with no periapical pathology. The patient brought the fractured tooth fragments in a container of milk. Due to pulp exposure exceeding 0.5 mm in #11, partial pulpotomy (Cvek pulpotomy) was performed using a round diamond bur. Hemostasis was achieved with saline irrigation, and the exposed pulp was capped with MTA, followed by a glass ionomer cement layer. In the same session, the fractured tooth fragment was reattached using 37% orthophosphoric acid, bonding system, and flowable composite. #21 was restored using the same technique. No pulpal, clinical, or radiographic symptom were observed at 1,3 and 6-month-follow-ups.

Conclusions: This case highlights the effectiveness (such as aesthetic and functional integrity) of reattachment for crown fractures and the advantages of Cvek pulpotomy in preserving pulp vitality.

Keywords: Reattachment, Complicated crown fracture, Cvek pulpotomy

PP 198

MINIMALLY INVASIVE TREATMENT OF FLUOROSIS-INDUCED WHITE SPOT LESIONS USING RESIN INFILTRATION

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Objectives: The aim of this case report is to present a minimally invasive treatment approach for managing white spot lesions caused by dental fluorosis in a 16-year-old patient, using resin infiltration.

Case Report: A 16-year-old female came to the Clinic for Pediatric and Preventive Dentistry, University of Belgrade, with concerns about white stains on her teeth in both the upper and lower jaw. Clinical examination revealed diffuse white spots consistent with fluorosis.

To address the discoloration, impressions of both jaws were taken to fabricate custom trays for home whitening with 10% hydrogen peroxide, used daily for two weeks. This was followed by resin infiltration treatment using Icon Vestibular by DMG in two separate sessions, treating one jaw per session. The treatment effectively blended the white spots with the surrounding enamel, improving the overall aesthetics without invasive procedure.

Conclusion: The combination of home whitening with hydrogen peroxide and resin infiltration using Icon Vestibular provides an effective, minimally invasive solution for managing white spot lesions caused by fluorosis. This approach improves the patient's aesthetics while preserving and strengthening tooth structure, offering a favorable alternative to more invasive methods.

Keywords: resin infiltration, fluorosis, white spots, minimally invasive treatment, aesthetics

PP 199

DIRECT COMPOSITE RESTORATIONS AS AN ADJUNCT TO ORTHODONTIC TREATMENT – CASE REPORT

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Objectives: The usage of direct composite restorations with modern restorative materials, in combination with orthodontic treatment, provide a numerous range of applications. The aim of this case report was to demonstrate application of direct composite restorations within orthodontic patient with different tooth size discrepancies.

Case report: A 15-year-old male patient was addressed to the Clinic for Preventive and Pediatric Dentistry in Belgrade, referred by an orthodontist due to reshaping and recontouring the upper permanent incisors before the placement of a fixed orthodontic appliance. After a clinical examination, the presence of a relatively narrow upper permanent central incisors and peg-shaped upper right lateral incisor were detected. Analysis of teeth proportions were performed, and the initial height and width of upper permanent incisors were determined. In addition, the photographic documentation was made. The treatment plan involved direct composite restorations – mesiodistal width recontouring of both upper permanent central incisors and reshaping of upper right lateral incisor. An impression was made and a silicone index was prepared based on the diagnostic wax-up. Also, an initial material color selection was realized using composite buttons technique. Under relative field isolation, with cotton rolls and polytetrafluoroethylene (PTFE) tape, direct composite restorations on upper permanent incisors were performed using G-aenial resin material.

Conclusions: Management of different teeth size discrepancies requires a multidisciplinary approach. Direct composite restorations offer an adjunct to orthodontic treatment and can optimize its results.

Keywords: direct composite restoration, tooth recontouring, peg-shaped teeth, tooth size discrepancies, tooth reshaping

PP 200

MANAGEMENT OF AN 11-YEAR-OLD PATIENT WITH TAURODONTISM WITH EXTENDED DENTAL CARIES AND MIH

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Objective: Taurodontism is a morphological anomaly of multirooted teeth characterized by a vertical shift of the pulp chamber and shortened roots. Molar Incisor Hypomineralization (MIH) is a qualitative developmental defect of enamel that presents as demarcated lesions, affecting at least one permanent posterior tooth, with or without the involvement of the permanent anterior teeth. This report aims to present the treatment and management of an 11-year-old boy diagnosed with taurodontism, extensive dental caries and MIH.

Case Report: An 11-year-old non-syndromic male patient with taurodontism is presented. Clinical and radiographic examinations revealed carious lesions on the molars and upper incisors, along with Molar Incisor Hypomineralization (MIH) affecting the canines and premolars. Diet analysis and caries risk assessment were assessed. The treatment plan included indirect pulp capping, preventive resin restorations, preformed stainless steel crowns, resin restorations, pulpotomy and restorations using computer-aided design and manufacturing (CAD/CAM) technology. During the appointments, basic behaviour guidance techniques, including the tell-show-do method, enhancing control, and positive reinforcement were employed.

Conclusion: This case report highlights the diagnosis, challenges and comprehensive rehabilitation of a patient with taurodontism affecting the permanent dentition. For the management of such cases, diagnosis is very important, preoperatively, to minimize complications and ensure the long-term efficacy.

Keywords: Taurodontism, Taurodontism Associated with MIH, Pulpotomy, Indirect Restorations

PP 201

A CASE REPORT OF RARE ANOMALY: MOLAR INCISOR MALFORMATION

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Objectives Molar incisor malformation (MIM) is an anomaly that occurs due to genetic and environmental factors during the development of dental-roots. Although the affected teeth have a clinically normal crown-morphology, this condition can only be diagnosed through radiographic-examination. In central incisors affected by MIM, cervical constriction and notching on the crown surface are observed. This malformation is particularly characteristic of permanent first-molars and is defined by a narrowed pulp-chamber, short, and pointed-roots. This non-hereditary root-anomaly disrupts root-development without altering the overall morphology of the tooth. The objective of this case-report is to present the findings and treatment process of a patient diagnosed with MIM.

Case Report An 8-year-old male patient presented to our clinic with complaints of structural abnormalities in his teeth. His medical history revealed that he had suffered a brain abscess during the neonatal period, underwent intensive antibiotic-treatment, and was diagnosed with epilepsy at the age of 8. Following clinical and radiographic-examination, the patient was diagnosed with MIM. Clinical-examination revealed a delayed eruption relative to the patient's age. Radiographic-evaluation showed narrowed pulp-chambers and short, tapered-roots in the first permanent-molars. Additionally, the patient presented with a Class III-occlusion. Necessary restorative-treatments were completed, and the patient was referred for orthodontic-treatment. The patient continues to be monitored at short intervals for potential complications.

Conclusion Pediatric dentists should be knowledgeable about this recently identified tissue anomaly and its consequences. By acquiring such knowledge, practitioners can facilitate the prevention of early tooth loss and the subsequent orthodontic complications that patients may encounter.

Keywords: Molar incisor malformation, MIM, Dental Anomaly, Molar rooth incisor malformation

PP 202

MANAGEMENT OF ODONTODYSPLASIA: A MULTIDISCIPLINARY APPROACH TO A RARE DENTAL ANOMALY

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Objectives: Odontodysplasia, also known as regional odontodysplasia or "ghost teeth," is a rare developmental anomaly affecting both the enamel and dentin, resulting in hypoplastic, hypocalcified, and radiolucent teeth.

Case Report: This case report describes an 9-year-old girl who presented with delayed eruption of her mandibular right quadrant teeth. Clinical examination revealed multiple un-erupted teeth, thin enamel, and malformed crowns in the maxillary arch. Radiographic evaluation confirmed ghost-like radiolucent teeth with thin enamel and dentine, malformed crowns and poorly developed roots, primarily affecting teeth 41, 42, 43 and 44 in lower left quadrant. The maxillary teeth and others teeth in mandible were unaffected.

The patient's medical history was unremarkable, with no systemic conditions or syndromic associations identified. Further controls elucidated the extent of dental malformation and provided insight into potential treatment planning. A multidisciplinary approach was employed, involving pediatric dentistry, orthodontics, and prosthodontics to address the functional and esthetic challenges.

Initial management focused on maintaining oral hygiene and preserving remaining tooth structures. Prosthetic rehabilitation included temporary partial denture to restore aesthetics and function while awaiting skeletal maturity. The treatment plan also emphasized regular monitoring to assess eruption patterns and potential orthodontic intervention.

Conclusions: This case highlights the importance of early diagnosis and a tailored, interdisciplinary approach in managing odontodysplasia. Comprehensive care not only improves the patient's quality of life but also mitigates long-term complications such as severe malocclusion and functional impairments. Further research is warranted to understand the etiology and optimal management of this rare condition.

Keywords: odontodysplasia, developmental anomaly, hypodontia

PP 203

SUPERNUMERARY TEETH IN PEDIATRIC PATIENTS: A CASE REPORT

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Objectives: Supernumerary teeth are extra teeth beyond normal dentition, representing a rare developmental anomaly with a prevalence of 0.8% to 3.8%. They may be asymptomatic or cause complications like delayed eruption, malocclusion, and cyst formation. This case report highlights a 12-year-old patient with hyperdontia, emphasizing early diagnosis and a multidisciplinary approach in pediatric dentistry.

Case Report: A 12-year-old female patient visited Ege University Pediatric Dentistry Department with severe pain in the left mandibular region. Clinical and radiographic examinations revealed deep caries in teeth 36 and 46. Additionally, the radiograph revealed the presence of five asymptomatic supernumerary teeth, with three impacted in the mandible and two impacted in the maxilla. The mandibular supernumerary teeth were located between the roots of teeth 43-44, 45-46, and 34-35, while the maxillary supernumerary teeth were found between the roots of teeth 14-15 and 23-24. All supernumerary teeth were impacted and asymptomatic, with no associated pathology. Treatment included restorative care for tooth 46 and root canal treatment under sedation for tooth 36 due to the patient's compliance issues. The supernumerary teeth were referred to orthodontics and oral surgery for further evaluation and management.

Conclusion: Supernumerary teeth, rare anomalies, often remain undiagnosed without clinical symptoms or routine radiographic screening. Early diagnosis prevents complications like crowding, impaction, and eruption issues. A multidisciplinary approach with pediatric dentists, orthodontists, and oral surgeons is vital for management. This case underscores the importance of thorough radiographic assessment in pediatric dentistry.

Keywords: Supernumerary teeth, Hyperdontia, Early diagnosis, Radiographic examination, Multidisciplinary approach

PP 204

MANAGEMENT OF A TRAUMATIC CYST IN A 12-YEAR-OLD PATIENT

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Objective: To present the management of a traumatic cyst in a 12-year-old patient.

Case Report: A 12-year-old boy came to the dental clinic with swelling in the upper left maxillary region. Anamnesis revealed a history of trauma to the left upper lateral incisor (tooth 22) four years prior, which did not require dental treatment at the time. Clinical examination revealed intraoral and extraoral swelling in the region of tooth 22. Initial retroalveolar radiography identified the presence of a traumatic cyst associated with tooth 22, which had an incomplete root development. Cone-beam computed tomography (CBCT) imaging was subsequently performed to better assess the lesion, and surgical intervention was planned. The treatment involved enucleation of the cyst, followed by intraoperative root canal obturation of tooth 22 using mineral trioxide aggregate (MTA) and gutta-percha points. To stabilize the affected area, a composite splint was applied across teeth 13 to 23. The splint was removed after four weeks. At the follow-up examination, tooth 22 was asymptomatic, with no signs of luxation. A control retroalveolar radiograph demonstrated early signs of bone healing. The patient returned for a one-year follow-up, and a new radiograph confirmed complete bone regeneration. Due to the patient's relocation abroad, further follow-ups were not feasible.

Conclusion: The combination of timely surgical intervention, appropriate endodontic treatment, and splinting proved effective in managing a traumatic cyst in a growing patient. Early diagnosis and multidisciplinary treatment are crucial for favorable outcomes, including functional and aesthetic restoration.

Keywords: Traumatic cyst, Pediatric dentistry, Bone regeneration, Endodontic treatment, Surgical enucleation

PP 206

MANAGEMENT OF DENTIGEROUS CYSTS: A CASE SERIES

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Objectives: Dentigerous cysts are the second most common odontogenic cysts, typically forming around unerupted teeth. Early diagnosis and intervention are crucial to prevent complications such as root resorption, bone destruction, and tooth displacement. This case series aims to evaluate the clinical, radiographic, and histopathological characteristics of dentigerous cysts, assess treatment outcomes, and compare surgical and conservative management approaches.

Case Report: This case series presents eight pediatric-patients, with a mean age of 9.3 years (♂:50%,♀:50%), diagnosed with dentigerous cysts that caused impaction of permanent teeth. Clinical examinations identified localized swelling, delayed eruption, and painless or mildly painful intraoral swellings, often linked to retained primary molars. Radiographic assessments, including CBCT in selected cases, confirmed well-defined unilocular radiolucent lesions surrounding unerupted permanent teeth, primarily premolars and canines. Treatment involved marsupialization under local anesthesia, with a drainage tube and a custom-fabricated acrylic obturator used to maintain cavity patency and ensure controlled healing.

Postoperative follow-ups (3–30 months) revealed successful lesion resolution and spontaneous eruption of the affected teeth in most cases. Radiographic assessments confirmed significant bone regeneration and proper alignment of the permanent teeth. Marsupialization proved effective for preserving developing dentition, while enucleation was necessary for larger cysts. Minimal postoperative complications, such as mild swelling and transient discomfort, were observed.

Conclusion: Early intervention and appropriate treatment selection are key to optimizing outcomes for dentigerous cysts in pediatric patients. Conservative treatments, such as marsupialization, performed with a multidisciplinary approach involving pediatric dentists, oral surgeons, and orthodontists, enhance treatment success and support normal craniofacial development.

Keywords: Dentigerous cyst, Marsupialization, Pediatric dentistry

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CASE SERIES ON ODONTOMAS IN PEDIATRIC DENTAL PATIENTS

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Objectives: The aim of this case series is to present seven pediatric patients, aged 7 to 12 years, diagnosed with odontomas that caused impaction of permanent teeth.

Case Report: Seven pediatric patients, aged 7 to 12 years, were diagnosed with odontomas causing impaction of permanent teeth. They presented with delayed eruption and related dental concerns. Each patient underwent comprehensive clinical and radiographic evaluations using panoramic and periapical radiographs; CBCT scans were utilized when necessary to further delineate the lesions. Surgical removal of the odontomas was performed under local anesthesia, with care taken to minimize trauma to adjacent structures. Histopathological examinations confirmed the diagnosis in all cases. Follow-up assessments at 1, 3, 6, and 12 months demonstrated satisfactory healing and spontaneous eruption of impacted teeth in most patients, though a few required additional orthodontic intervention due to space deficiencies or misalignment. No postoperative complications were observed, and patients experienced only minimal discomfort during the recovery period.

Conclusion: Early diagnosis and timely intervention are crucial to preventing complications such as delayed eruption, malocclusion, and infections. Radiographic imaging, particularly CBCT, plays a key role in accurate diagnosis and treatment planning. This study highlights the importance of a multidisciplinary approach that integrates surgical and orthodontic management to optimize clinical outcomes for pediatric patients affected by odontomas.

Keywords: Odontoma, pediatric dentistry, impacted teeth, surgical treatment

PP 208

ONE-YEAR FOLLOW-UP OF MTA ROOT CANAL TREATMENT IN PRIMARY SECOND MOLARS WITH PREMOLAR AGENESIS

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Objective: Agenesis of second premolars is a common clinical condition. In such cases, maintaining primary second molar teeth without successors in the oral cavity for an extended period is essential. Permanent second premolars are the second most commonly missing teeth after third molars. One option is performing permanent root canal fillings on these primary teeth. This case series reports the one-year follow-up of three mandibular second primary molars with infections in three patients, treated with MTA.

Case Series: This report includes the one-year clinical and radiographic follow-up of root canal treatments performed on the infected mandibular second molar teeth of three patients (2 females, 1 male) without permanent successors. After root canal preparation and irrigation, the canals were filled with MTA and restored with stainless steel crowns. At one-year clinical follow-ups, no fistulas or abscesses were observed, existing fistulas had resolved, and patients were asymptomatic. Radiographic follow-ups showed no root resorption and healing of periapical lesions.

Conclusion: Early extraction of primary second molars in non-crowded dental arches can lead to arch length reduction, adjacent teeth tilting, alveolar bone resorption, and antagonist tooth extrusion. Retaining these teeth is critical. Therefore, permanent root canal treatments with MTA and subsequent restoration with stainless steel crowns provide a viable treatment option for carious and infected primary molars without successors.

Keywords: Premolar agenesis, Primary second molars, MTA, Root canal treatment

PP 209

NON-SURGICAL MANAGEMENT OF EXTENSIVE PERIAPICAL LESIONS IN PEDIATRIC PATIENTS: CASE SERIES

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Objectives: Periapical lesions often arise because of pulpal disease, and their treatment aims to restore the affected teeth to health and function without the need for surgical intervention. The aim of this case series is to evaluate the effectiveness of non-surgical endodontic treatment in managing large periapical lesions in anterior and posterior teeth of children aged 9 to 12 years.

Case Report: This report presents a series of six cases of extensive periapical lesions affecting both anterior and posterior teeth in pediatric patients. All patients presented with pain complaints, and clinical and radiographic examinations revealed the presence of extensive periapical lesions in teeth affected by caries or trauma. Non-surgical root canal treatment was performed using calcium hydroxide as an intracanal medicament, followed by obturation with gutta-percha. The healing process was monitored through periodic follow-ups at three-month intervals for a 12-36 months. Radiographic assessments showed progressive resolution of periapical radiolucency, and clinical evaluations confirmed the reduction of symptoms and improvement in tooth stability.

Conclusions: The findings of this case series suggest that non-surgical endodontic treatment is an effective and minimally invasive approach for managing large periapical lesions in pediatric patients. Conservative root canal therapy, combined with regular follow-up, can lead to complete healing of extensive lesions, avoiding the risks and complications associated with surgical intervention.

Keywords: Pediatric Dentistry, Endodontic Treatment, Periapical Lesion, Calcium hydroxide

PP 210

REGENERATIVE ENDODONTIC TREATMENT FOR IMMATURE POSTERIOR TEETH: CASE SERIES

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Objective: The aim of this case series was to evaluate the clinical and radiographic outcomes of regenerative endodontic procedures in the treatment of necrotic immature posterior permanent teeth over a minimum follow-up period of 18 months.

Case Report: Ten patients with necrotic immature posterior permanent teeth presenting with periapical lesions were included. The teeth were treated following the standardized revascularization protocol recommended by the American Association of Endodontists (AAE). Clinical (percussion, palpation, discoloration, mobility, pulp testing) and radiographic (periapical healing, root development, dentinal wall thickening) assessments were conducted at baseline and at follow-up visits at 6, 12, and at least 18 months.

The mean age of the participants was 10.4 years, with an equal gender distribution. At the final follow-up (≥ 18 months), no clinical signs of mobility, sensitivity to percussion or palpation were observed. Radiographic examination revealed increased root development, thickened dentinal walls, and reduced periapical lesions. Both patients and their parents reported high satisfaction with the treatment outcomes.

Conclusion: Regenerative endodontic procedures have demonstrated efficacy in the management of necrotic immature posterior permanent teeth, promoting significant improvements in root maturation and periapical healing. When performed in adherence to clinical protocols, these procedures present a promising alternative to conventional treatments, with the potential for long-term success.

Keywords: Regenerative endodontic treatment, Revascularization, Immature teeth

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IMPROVING ORAL HEALTH STATUS IN THE CHILD WITH ARNOLD CHIARI SYNDROME: A CASE REPORT

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Objectives: Arnold Chiari Syndrome is neurological condition caused by brain development abnormality involving brain tissue extension into spinal canal. Having in mind that these patients have difficulties swallowing, chewing, breathing and coordination, they need additional support in paediatric dental office during treatment.

Case Report: A 9-year-old boy with Arnold Chiari syndrome was referred to Clinic for Paediatric and Preventative Dentistry. Clinical examination revealed multiple untreated non-cavitated and cavitated carious lesions on deciduous and permanent teeth, dental soft and hard deposits, gingivitis, enlarged tongue, open bite and dental overcrowding. The initial result according to the caries risk assessment tool (CAMBRA) was 9 (high). Treatment plan according to CAMBRA care path for caries management of patient with high caries risk involved following interventions: fluoride therapy at home brushing twice daily with 1450ppm fluoridated toothpaste and soft electric toothbrush, diet counselling, additional therapies such as tooth mousse application, and fluoridated mouthwash rinse at home, professional plaque removal and fluoride delivery (fluoride varnish 29000ppmF), fissure sealants (24, 25, 44) and caries management with glass ionomer filling (16, 26, 36, 46, 75, 85, 54, 55). Six months follow-up revealed lowering caries risk score to 0, indicating medium risk. Further plan involves lowering caries risk and referring the patient to orthodontic treatment.

Conclusion: Systematic and holistic approach using caries management according to risk assessment requires close cooperation with caregivers. This approach helps children with additional support needs cope with dental treatment while controlling the activity of biofilm and sugar exposure, therefore improving both oral and general health.

Keywords: Arnold Chiari syndrome, CAMBRA, fluoride therapy

PP 212

GREEN TEETH AS A RESULT OF NEONATAL HYPERBILIRUBINEMIA - A CASE REPORT

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Objective: Green intrinsic discoloration of teeth is an extremely uncommon abnormality. Neonatal hyperbilirubinemia represents elevated bilirubin levels in the blood of a newborn. Clinical signs include jaundice—a bilirubin deposition in skin, mucous membranes, sclera, and some organs. Hyperbilirubinemia can be associated with the development of changes in color of the teeth, known as green teeth.

Case Report: A mother of a 2-year-old male child accompanied her son to a dental office due to the presence of grey-green pigmentation in his primary teeth. Medical history revealed that during pregnancy, the mother experienced a urinary tract E.coli infection. The male infant was born on time; a day or two after that, he got a septic shock with multiorgan dysfunction. Later genetic testing diagnosed galactosemia. Apart from the pigmentation, enamel hypoplasia was obvious. Other clinical intraoral examinations revealed normal development, no gingival abnormalities, and normal texture and color of the oral soft tissues. At that point, no esthetic treatment had been undertaken. The prophylactic dental treatment plan included regular applications of fluoride varnish and checkups every 3 months. The mother was instructed on the importance of diet and oral hygiene with fluoridated toothpaste.

Conclusion: The cause of hyperbilirubinemia in this case was sepsis. A proper preventive approach is essential to preserve the health of the teeth and prevent caries. Follow-up is required due to possible changes in permanent teeth.

Keywords: Hyperbilirubinemia, Sepsis, Green teeth

PP 213

DENTAL GENERAL ANESTHESIA APPROACH IN VON WILLEBRAND TYPE II DISEASE– A Case Report

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Objective: Von Willebrand disease (VWD) is a hereditary bleeding disorder caused by a deficiency or abnormality in von Willebrand factor (VWF), resulting in impaired primary hemostasis. VWF plays a key role in platelet adhesion and serves as a carrier for factor VIII. Consequently, many VWD patients also have low levels of factor VIII. These patients often experience prolonged bleeding and mucosal bleeding after oral procedures. This case report presents the dental treatment of a 4-year-old uncooperative patient with factor VIII deficiency and von Willebrand Type 2 disease, who underwent pediatric dental procedures under general anesthesia at Atatürk University Faculty of Dentistry.

Case Report: Preoperative preparation included hemogram and biochemical evaluations, with consultations from pediatric and pediatric hematology specialists. The patient was admitted to the hematology department one day prior to the procedure, where 170 mg of transamine (TRANEXEL 5%) was administered intravenously 12 hours before surgery. On the day of the operation, transamine was administered every 8 hours, and HAEMATE-P 500 were given intravenously 1 hour before the procedure. During operation, extractions of infected teeth (teeth #54, #55, #64, #65, #74, #75, #84, and #85) and root canal treatment on tooth #51 were performed. After extractions, the sockets were closed with primary sutures. Postoperative bleeding was closely monitored, and after successful bleeding control, the patient was discharged.

Conclusion: In non-cooperative pediatric patients with factor VIII and VWF deficiencies, dental procedures under general anesthesia should be performed with pediatric hematology consultation for factor replacement and meticulous bleeding control.

Keywords: Von Willebrand Type 2, factor VIII deficiency, dental general anesthesia

PP 214

PROSTHETIC REHABILITATION OF A 4-YEAR-OLD WITH ECTODERMAL DYSPLASIA: CASE REPORT

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Objectives: Ectodermal dysplasia is a rare hereditary condition characterized by developmental abnormalities of ectodermal structures, including teeth. This case report highlights the clinical and prosthetic management of a 4-year-old patient with ectodermal dysplasia. The objectives are to restore function, esthetics, and quality of life while addressing the challenges posed by the limited dental anatomy and using a combination of digital and analog technologies.

Case Report: A 4-year-old boy presented with a diagnosis of ectodermal dysplasia. Intraoral examination revealed the presence of only the maxillary primary second molars and radiographic evaluation confirmed the presence of germs of the permanent first upper molars. Due to the significant hypodontia, the patient exhibited impaired masticatory function, speech difficulties, and compromised facial aesthetics, affecting social confidence.

The treatment plan included fabricating a maxillary partial denture and a mandibular complete denture. This case posed significant challenges, including limited tooth support, achieving stable occlusion, and adapting the prostheses to the child's ongoing growth. The combination of digital precision and analog flexibility allowed for functional and aesthetic restoration, while regular follow-ups were planned to replace the prostheses as the child grows. The intervention not only restored oral function but also significantly improved the child's psychosocial well-being.

Conclusions: Prosthetic rehabilitation in pediatric patients with ectodermal dysplasia is inherently challenging due to anatomical, functional, and growth-related factors. A multidisciplinary approach and regular treatment adjustments are essential to provide effective care and improve quality of life. Early intervention supports psychosocial development and lays the foundation for long-term management.

Keywords: ectodermal dysplasia, dentures, prosthetic rehabilitation

PP 215

WHITE SPOT TREATMENT WITH CPP-ACP TWO YEARS FOLLOW UP

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Objective: Modern restorative materials enable complete removal and simultaneous stopping of an advanced caries lesion with maximum preservation of healthy dental tissue. The goal is to present the challenges in the treatment of a patient diagnosed with initial carious lesions as well as the outcome of modern dentistry treatment with preventive methods and non-invasive treatment techniques.

Case Report: A 17-year-old patient comes to the Clinic for Children and Preventive Dentistry in Belgrade in February 2023. A dental examination reveals the presence of white spots on a large number of teeth. From the anamnestic data, we learn that the patient performs oral hygiene irregularly, as well as that there is an increased intake of carbohydrates at the daily level every day. The therapy plan included curbing bad habits, keeping a food diary, educating and motivating the patient about proper maintenance of oral hygiene, using enamel remineralization paste containing casein phosphopeptide amorphous calcium phosphate. At the follow-up examinations, highly concentrated fluoride varnish was applied locally and the patient was remotivated. After 3 months, the beginning of the remineralization process can be observed on a large number of teeth, and after 12 months complete remineralization on some teeth.

Conclusion: Early identification of initial carious lesions as well as adequate cooperation of the patient are of the greatest importance in therapy and maintaining the achieved treatment results.

Keywords: White spot, CPP-ACP, Follow-up examinations



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OP 158

EVALUATION OF PERCEPTIONS OF ATATURK UNIVERSITY INTERN DENTISTS ON BEHAVIOUR GUIDANCE TECHNIQUES

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Objectives: This study was conducted to evaluate the perceptions of Atatürk University Faculty of Dentistry interns regarding behaviour guidance techniques used in children.

Methods: The study was a cross-sectional survey conducted during the 2024-2025 academic year. It used a two-part questionnaire assessing demographic information and acceptability of the techniques. The questionnaire on various behaviour techniques was prepared using a 5-point Likert scale. Interns participated voluntarily. A total of 213 interns joined the study. The data were analysed using IBM SPSS Statistics vs 24.0 software.

Results: Positive verbal reinforcement (67.6%) and promising rewards to the child (64.2%) were the most acceptable reinforcement techniques. Voice control was acceptable by 51.1%, whereas the hand-over-mouth technique was least acceptable at 8.8%. "Encouraging the child to use their imagination" was the most acceptable desensitization technique at 85.4%. Acceptability for pharmacological techniques was 56.7% for sedation, 54.4% for general anesthesia, and 26.3% for nitrous oxide analgesia. In communication techniques, not allowing the child to speak during treatment (14.9%) and the dentist remaining silent during treatment (11.6%) had low acceptability. Having parents leave the child's side during treatment was considered acceptable at 50.6%.

Conclusion: Interns at Atatürk University Faculty of Dentistry found reinforcement, desensitization, and pharmacological techniques acceptable, while they were cautious about deterrent techniques. The findings will evaluate dental education programs' adequacy in behavior management within pediatric dentistry and develop recommendations to improve these programs.

Keywords: Pediatric Dentistry, Behavior Guidance Techniques, Dental Education

OP 159

ASSESSMENT OF ARTIFICIAL INTELLIGENCE CHATBOTS RESPONSES TO QUESTIONS ON 'ORAL HEALTH AND NUTRITION'

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Objectives: The use of large language model-based artificial intelligence applications (LLMAs) in the general public is becoming increasingly common. This study aimed to assess the reliability of different LLMA chatbot responses to questions about 'oral health and nutrition.'

Methods: Chatbots were asked 25 questions, selected from the most frequently asked questions about oral health and nutrition, once each to 5 different artificial intelligence chatbots (Chat Gpt-4, Chat GPT-4o, Gemini 2.0 Flash, Gemini 2.0 Pro Experimental and DeepSeek-V3). Responses were independently assessed by 4 dentists and 5 expert dietitians using the Modified Global Quality Score (GQS). Kruskal-Wallis analysis was performed, and group differences were evaluated using the Conover test.

Results: The average GQS scores for Chat Gpt-4.0, Chat GPT-4o, Gemini 2.0 Flash, Gemini 2.0 Pro Experimental, and DeepSeek-V3 were 3.55, 3.78, 3.5, 4.4, and 3.77 respectively. A significant difference was observed among the chatbots regarding GQS scores ($p < 0.001$). This significance was attributed to the differences between Gemini 2.0 Pro and Chat Gpt-4.0, Chat GPT-4o, Gemini 2.0 Flash, and DeepSeek-V3 ($p < 0.001$).

Conclusion: Gemini 2.0 Pro provided more reliable information on oral health and nutrition questions than other chatbots. However, individual differences were not taken into account in the responses. Although LLMA tools are promising in providing accurate answers to the public's questions about oral health and nutrition, health professionals should be consulted on health-related issues.

Keywords: Artificial Intelligence, Oral Health, Nutrition, Chatbots

OP 160

ACCURACY OF ARTIFICIAL INTELLIGENCE APPLICATIONS IN RESTORATIVE DENTISTRY QUESTIONS

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Objectives: The aim of this study is to evaluate the accuracy of five different artificial intelligence applications in answering questions related to restorative dentistry, which are designed for 4th and 5th-year dental students in dental faculties.

Methods: Twelve frequently asked questions regarding restorative dentistry, posed by 4th and 5th-year dental students in our faculty, were identified for this study. The selected questions primarily aimed to assess knowledge levels. Eight different artificial intelligence applications (ChatGPT, Gemini, Copilot, Claude, Scholar AI, Scispace, Consensus and Perplexity) were used to generate responses to these questions. The accuracy of the AI-generated answers was evaluated by an experienced restorative dentistry specialist with five years of expertise in the same department.

Results: None of the artificial intelligence applications provided incorrect answers to the questions. However, the level of detail in the responses varied among the applications. Some offered highly detailed answers, while others provided moderate or superficial information. No statistically significant differences were observed among the AI applications in terms of response accuracy. Notably, the Cloud 3.5 application delivered more detailed answers compared to the others ($p < 0.001$). In contrast, the Copilot application tended to provide more superficial information relative to the other applications ($p:0.018$).

Conclusion: AI applications provided accurate answers to restorative dentistry questions, but the depth of their responses varied. Cloud 3.5 offered the most detailed answers, while Copilot provided more superficial ones. AI can support dental education, but the choice of application matters for detail.

Keywords: restorative dentistry, artificial intelligence, students

OP 161

EVALUATION OF EDUCATIONAL CONDITIONS IN A DENTISTRY FACULTY FROM THE STUDENTS PERSPECTIVE

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Objectives: The aim of this study was to assess the educational environment at Erciyes University Faculty of Dentistry from the students' perspective using a survey.

Methods: The study was conducted at Erciyes University Faculty of Dentistry. 375 undergraduate students (217 female, 158 male) answered the 24-questions survey via Google Survey. The survey started with a section on demographic information and proceeded with questions about the students' educational status in theoretical courses, focusing on their satisfaction levels regarding access to academic staff, exam question assessments, and resource sharing by academic staff. A 5-level Likert scale was used in the survey and Pearson Chi-Square test was applied to the data for statistical analysis. ($p=0.05$) (SPSS 22.0).

Results: Evaluation of satisfaction levels regarding access to academic staff for theoretical courses revealed no statistical difference according to gender ($p=0.132$) or academic year ($p=0.057$). 7.5% of the students rated resource sharing by academic staff as 1 on the Likert scale, while 30.9% rated it as 4. On assessments of exam questions the frequency of level 1 satisfaction among 5th-year students was higher than that of 1st, 2nd, and 3rd-year students indicating that they were less satisfied. Additionally, the frequency of level 2 satisfaction among 4th-year students was higher than that of 3rd-year students suggesting that 4th-year students were less satisfied than 3rd-year students. ($p=0.000922$)

Conclusion: Ensuring that students have easy access to academic staff and that academic staff share resources is a key factor in improving the quality of education.

Keywords: faculty of dentistry, students, education conditions

OP 162

EVALUATION OF THE POTENTIAL OF ARTIFICIAL INTELLIGENCE APPLICATIONS IN DENTAL TRAUMA

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Objectives: In recent years, the use of artificial intelligence applications and tools in dentistry has become widespread and many studies have been carried out on many subjects. In this study, the accuracy and comprehensiveness of the answers given by two Large Language Models (LLMs), ChatGPT-3.5 and ChatGPT-4, to questions about dental trauma were compared and evaluated.

Methods: Based on the guidelines of the International Society of Dental Traumatology, 15 binary (yes/no) questions were posed to ChatGPT-3.5 and ChatGPT-4. Responses were recorded and scored by four pediatric dentists. Statistical analyses, including ICC analysis, were performed to determine the agreement and accuracy of the responses. The significance level was set as $p < 0.050$.

Results: When the inter-rater agreement was evaluated by Fleiss Kappa analysis, a moderate level of agreement was obtained with a coefficient of 0.57. ChatGPT 4.0 consistently received higher mean scores across all questions compared to ChatGPT 3.5. The mean $\pm$ standard deviation (SD) for ChatGPT 3.5 was 3.58 ± 0.41 , while ChatGPT 4.0 achieved a perfect 5.0 ± 0.0 rating.

Conclusion: The findings of this study highlight a clear superiority of ChatGPT 4.0 over ChatGPT 3.5 in terms of response quality, coherence, and educational utility about dental trauma. However, to guarantee the successful incorporation of LLMs into practice, it is imperative to conduct additional research, clinical validation, and improvements to the models.

Keywords: Artificial intelligence, Large language models, ChatGPT, Dental trauma

OP 163

EVALUATION OF STRESS LEVELS AND FACTORS AMONG STUDENTS WORKING IN A PEDIATRIC DENTISTRY CLINIC

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Objectives: The purpose of this study was to assess the stress levels of 4th and 5th year students working in the pediatric dentistry department of a dental faculty and to identify the factors contributing to their stress.

Methods: This cross-sectional study included a total of 108 4th- and 5th-year students undergoing clinical training at the Faculty of Dentistry, Atatürk University. Stress factors were evaluated using the Pediatric Dentistry Practice Stress Scale (PPS), which consists of 29 questions. Data were analyzed using IBM SPSS Statistics 22, with the significance level set at $p < 0.005$.

Results: Among the participants, 38% were female and 62% were male. Additionally, 48.6% were 4th-year students, while 51.4% were 5th-year students. A total score of 71.5 or higher on the stress scale was considered indicative of high stress. Based on this criterion, 91% of the students were found to be under stress. Female students exhibited significantly higher stress levels ($p = 0.043$). No statistically significant difference was observed between 4th- and 5th-year students in terms of PPS sub-dimensions and total scores ($p > 0.005$).

Conclusion: The findings of this cross-sectional study indicate that the pediatric dentistry clinic is a stressful environment for students. Developing strategies to reduce students' stress levels is essential for ensuring a healthy educational and working environment.

Keywords: Stress questionnaire, Pediatric dentistry, Student stress levels

OP 164

EVALUATION OF INSTAGRAM REELS AS A SOURCE OF INFORMATION ABOUT LASERS IN DENTISTRYMerve Haberal*Department of Restorative Dentistry, Faculty of Dentistry, University of Kırıkkale, Turkey*

Objectives: Instagram is a global platform where healthcare professionals share medical and dental information. Given the crucial role of dental lasers in soft and hard tissue treatments, accurate information is essential for clinicians and patients. This study aims to evaluate the quality of information on dental lasers in Instagram Reels.

Methods: Instagram Reels were searched using English hashtags (#dentallaser and #laserdentistry) between 15:00 and 19:00 on January 13, 2025. Unrelated, duplicate, quiet videos, and videos in languages other than English were not included. The associated videos were examined based on their uploaders and features. Videos were assessed using modified DISCERN criteria and Global Quality Scale (GQS) scores. The Kruskal-Wallis and Spearman rho tests were used to analyze the data and obtain descriptive statistics.

Results: The selected hashtags #dentallaser and #laserdentistry were searched on Instagram and 455 Reels videos were screened and 62 videos were included in the study. The videos were shared by dentists/healthcare professionals (38.70%, n=24), health-related businesses (22.58%, n=14) and hospitals/universities/clinics (38.70%, n=24). The mean modified DISCERN score of Instagram Reels on laser in dentistry was 2.80 ± 0.88 , and the GQS score was 2.98 ± 0.94 . The number of likes/views, reposts/likes, reposts/days since upload, reposts/views, and modified DISCERN/GQS scores were positively correlated at very strong levels ($p < 0.001$).

Conclusion: Reels on the use of dental lasers are few and of insufficient quality, limiting their educational and professional value. Enhancing content on clinical applications, treatment methods, and technological advancements can improve knowledge sharing, support dental professionals, and increase public awareness.

Keywords: dental laser, information sources, laser dentistry, social media

OP 165

ACCURACY OF LARGE LANGUAGE ARTIFICIAL INTELLIGENCE MODELS IN RESPONDING TO REGENERATIVE ENDODONTICS

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Objectives: The use of large language model-based artificial intelligence applications (LLMA) in dentistry is becoming increasingly widespread. This study aimed to evaluate the accuracy of different LLMA chatbots in answering questions that dentists may ask about regenerative endodontic treatment (RET).

Methods: Based on the American Association of Endodontists (AAE) 2022 guidelines, 50 yes/no questions about RET procedures were created in three difficulty levels. The questions that dentists might ask about RET procedures were expected to be answered by four platforms (Google Gemini 1.5/1.5-pro, ChatGPT-4.0/4.0o) either according to AAE guidelines or independently. The responses were categorized as correct or incorrect. The data were statistically analyzed with the Pearson chi-square test.

Results: The percentages of correct answers to questions asked with guidance were 74%, 82%, 86%, and 88% for Google Gemini 1.5, Google Gemini 1.5-pro, ChatGPT-4.0, and ChatGPT-4.0o, respectively. The questions asked without any guidance were 74%, 80%, 84%, and 84%, respectively. There is no significant difference in the percentage of correct answers between chatbots with or without guidance ($p=0.505$). There was no significant difference between chatbots in terms of difficulty. ChatGPT-4.0o, ChatGPT-4.0, and Google Gemini 1.5-pro correctly answered 92.3% of the easy questions, while ChatGPT-4.0o correctly answered 93.8% of the difficult questions. Cohen's Kappa analysis revealed a negative agreement between the evaluations of ChatGPT-4.0o and Google Gemini 1.5 Pro ($\kappa = -0.168$).

Conclusion: Although LLMA tools are promising in terms of providing accurate answers to dentists' questions about RET, 100% accuracy is required for clinical success.

Keywords: Artificial intelligence, ChatGPT, Gemini, Regenerative endodontic treatment

OP 166

COULD PATIENTS USE AI CHATBOTS AS A RELIABLE INFORMATION RETRIEVAL TOOL FOR ROOT CANAL RETREATMENT?

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Objectives: In healthcare, AI chatbots can assist medical professionals in diagnosis, treatment plans, and patient education by integrating medical knowledge with interactive dialogue. This study aimed to evaluate and compare the reliability of answers provided by different artificial intelligence chatbots to frequently asked questions in the field of root canal retreatment.

Methods: The questions were obtained from the most frequently asked questions by patients to endodontists (n=10) and Chat Gpt-4 (n=10) about retreatment. The 20 questions were asked once to 4 different AI chatbots (Google Gemini 1.5/1.5-pro, ChatGPT-4.0/4.0o). Three researchers independently evaluated the responses using a Modified Global Quality Score (GQS) on a 5-point Likert scale. Kruskal-Wallis analysis was conducted, and group differences were evaluated with the Tamhane T2 test.

Results: The average GQS scores for Gemini 1.5 Flash, Gemini 1.5 Pro, Chat GPT-4, and Chat GPT-4.0o were 3.0, 4.6, 4.1, and 4.7, respectively. A significant difference was observed among the chatbots in terms of GQS scores ($p < 0.001$). This significance was attributed to the differences between the following pairs: Chat GPT-4 and Chat GPT-4.0o ($p = 0.047$), Gemini 1.5 Pro and Chat GPT-4 ($p < 0.001$), Gemini 1.5 Pro and Chat GPT-4.0o ($p < 0.001$), and Gemini 1.5 Flash and Gemini 1.5 Pro ($p < 0.001$).

Conclusion: Chat GPT 4.0o provided more reliable information about root canal retreatment, while Gemini 1.5 Flash was found to be less reliable.

Keywords: Artificial Intelligence, Chatbots, Endodontics, Retreatment

OP 167

PERFORMANCE OF ARTIFICIAL INTELLIGENCE CHATBOTS AND DENTAL STUDENTS ON CONTEXT OF DENTAL TRAUMA

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Objectives: Daily use of chatbots has become widespread in dental education just as every other fields. Dental students consult to them when performing tasks and studying for exams. This study is aimed to test comprehension abilities and knowledge of 4 different chatbots (Gemini 1.5/1.5Pro, ChatGPT 4.0/4.0o) and compare them with students' at the topic of dental trauma.

Methods: The questionnaire is designed as 25 multiple-choice questions according to International Association of Dental Traumatology guideline and it's divided to three groups as 'indication and description (1)', 'intervention and treatment (2)' and 'splint and follow up times (3)'. The accuracy percentages were calculated by the answers of the students (n=134) and chatbots. The consistency between the chatbots compared statistically with Kohen Kappa tests.

Results: The highest mark of total questionnaire is received by the ChatGPT 4.0 (%80) and it's followed by the Gemini 1.5Pro (%76). Other chatbots couldn't be successful to reach out the level of knowledge of 5th graders (%74.26) or 4th graders (%70.74). On the other hand the top achievers in the three subgroups were as follows: for the 1st group Gemini 1.5Pro (%80), 2nd group ChatGPT 4.0 and ChatGPT 4.0o (%87.5), 3rd group ChatGPT 4.0 (%85.71). The highest consistency was observed between ChatGPT 4.0 and 4.0o (Kappa = 0.694).

Conclusion: Some chatbots could assist dental students to achieving the information but they need to be used wisely and verified with other sources.

Keywords: Dental Education, Dental Trauma, Artificial Intelligence

OP 168

KNOWLEDGE LEVELS DENTAL STUDENTS AND RESIDENT DENTISTS IN THE MANAGEMENT OF CLINICAL EMERGENCIES

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Objectives: The aim of this study is to assess undergraduate and postgraduate dental students' knowledge, experience and attitudes to managing medical emergencies that may occur in dental practice.

Methods: A structured survey of 35 questions was developed. The questionnaire was divided into three sections. The first section collected demographic information, including participants' age, gender, level of education and region of residence. The second section assessed participants' first aid training background, while the third section assessed their experience of clinical emergencies and their knowledge of emergency interventions.

Results: Among 350 participants (mean age 23.7 ± 2.5 years), 92.0% resided in urban areas. Only 18.3% had prior first aid training and 28.3% had CPR training, while 98.9% expressed a need for first aid education. The most frequently experienced emergencies were vasovagal syncope (23.4%) and hypoglycaemic crises (9.1%). Participants achieved an average of 18.7 ± 5.4 correct answers out of 35 on knowledge assessments. Knowledge scores significantly increased with academic level ($p < 0.001$), with graduate students scoring the highest (20.3 ± 4.8). Confidence in managing emergencies varied, with the highest confidence in syncope (4.2 ± 2.8) and the lowest in stroke (2.6 ± 1.8).

Conclusion: This study reveals a lack of adequate preparedness and low confidence among dental students in managing clinical emergencies. The findings underscore the necessity for urgent enhancement of emergency management education within dental curricula, as evidenced by the overwhelming demand for additional training and the pronounced knowledge disparities across academic levels.

Keywords: First Aid Training, Medical Emergencies, Dental Education, Confidence Levels

PP 216

UNDERGRADUATE STUDENT'S PREFERENCES AFTER FIRST EXPERIENCE IN ROTARY CANAL INSTRUMENTATION

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Objectives: The aim was to evaluate preferences of the undergraduate students after their first experience in rotary root canal instrumentation with Mtwo (continuous rotation) and reciprocating file Reciproc blue.

Methods: A total of 13 final year students of School of Dental Medicine, University of Belgrade, who have passed endodontics exams with previous experience in hand file instrumentation, participated in this study. After theoretical lecture on Mtwo and Reciproc blue systems, participants try them on plastic training blocks. Thirteen maxillary first premolars extracted for orthodontic reasons were used. After access cavity preparation, patency was achieved (10 K file). Students instrumented buccal root with Mtwo (#10.04 to #25.06) and palatal root with Reciproc Blue R25 (both VDW GmbH, Germany), driven by X-Smart Plus endo motor (Dentsply, Maillefer). Finally, students filled questionnaire, divided in two categories, general data about previous experience and their preferences between two systems. Data was analyzed by Chi-square test ($p < 0.05$).

Results: 92% of students declared that they had confidence after their first experience with rotary files unlike hand files 69% ($p = 0.041$). 85% of students rated reciprocating motion as "safe", while 69% said it for continuous rotation ($p = 0.325$). 92% and 69% of students said that usage of Reciproc and Mtwo, respectively, is "easy" ($p = 1.000$). All students agreed that one file system has easier learning curve and demands less time for root canal preparation.

Conclusion: After their first experience with rotary files, students preferred rotary against hand file and rated reciprocating file as easier to learn, safer and less time consuming.

Keywords: Undergraduate students, Rotary instrumentation, Reciprocation, Preferences

PP 217

BIOLOGICAL METHODS FOR THE TREATMENT OF REVERSIBLE PULPITIS - SURVEY STUDY

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Objectives: The aim of this study is to establish dentists' awareness of biological methods for treating reversible pulpitis.

Methods: A survey of 387 dentists was conducted. A questionnaire with 17 questions has been prepared. The results are processed statistically.

Results: The survey shows that 89% of the respondents apply biological treatment, while 11% do not conduct one. 85% of the respondents apply treatment of reversible pulpitis in 1 to 5 cases monthly. The relationship between the length of professional experience of dentists and the conduct of biological treatment shows a tendency for slightly more frequent application of the method by dentists with experience of up to 5 years and by those with more than 25 years. To treat the dentin wound after removal of infected dentin 32.2% of the respondents use distilled water, 26.2% - solution of oxygenated water (3%), 20.6% - chlorhexidine solution (2%). The pulp capping agent favored by 59.4% of the respondents is calcium-silicate cement, while 37.43% prefer calcium-hydroxide cement. Dentists do not administer platelet concentrates prepared from the patient's blood to treat reversible pulpitis. And only 3% of doctors apply platelet concentrates in their work.

Conclusion: Dentists are familiar with biological methods for treating reversible pulpitis. Only 11% of respondents do not apply this method in their daily work. Calcium-silicate and calcium-hydroxide cements are used as pulp-capping materials. Three per cent of the surveyed dentists use platelet concentrates in their activities. No respondents use platelet concentrates for the treatment of reversible pulpitis.

Keywords: Reversible pulpitis. Platelet concentrates, Pulp-capping materials



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PP1

SANIRANJE KOMPLIKACIJA ZRAČNE TERAPIJE NA STALNIM ZUBIMA KOD DECE

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Cilj: Stomatološke komplikacije izazvane zračenjem, naročito u pedijatrijskoj populaciji, mogu imati dugoročne efekte na razvoj denticije. Ovaj slučaj se odnosi na mladog pacijenta koji se javio sa višestrukim stomatološkim komplikacijama usled prethodne zračne terapije.

Prikaz slučaja: Pacijent se prvi put javio sa 4 godine radi sanacije posledica zračne terapije (kserostomija, karijes, gingivitis). Nakon dve godine, po nicanju donjih stalnih sekutića, pacijent se ponovo javio zbog luksacije zuba. Radiografska analiza je pokazala nerazvijenost korenova svih stalnih zuba, koji su prestali da se razvijaju u gingivalnoj trećini. Kao rezultat toga, stalni prvi mandibularni molari i sekutići su pokazivali luksaciju različitog intenziteta. Terapijski pristup podrazumevao je imobilizaciju zahvaćenih zuba fleksibilnim splintom. Splint je izrađen indirektnom metodom na modelu, pokrivajući kako vestibularne, tako i oralne površine zuba 31, 41 i 42. Kako pacijent i dalje ima mešovitu denticiju, dalji plan lečenja mora uzeti u obzir i nicanje novih stalnih zuba, sa prilagođavanjem prema novonastaloj kliničkoj slici.

Zaključak: Ovaj slučaj ukazuje na izazove u tretmanu stomatološkim komplikacija kod dece nakon zračne terapije, naročito u pogledu nerazvijenosti korenova i luksacije zuba. Multidisciplinarni pristup je ključan za rešavanje dugoročnih stomatoloških potreba pacijenata sa istorijom zračne terapije, kako bi se obezbedili adekvatni rezultati i popravio njihov kvalitet života.

Ključne reči: dečja stomatologija, zračna terapija

PP2

ZBRINJAVANJE VIŠESTRUKIH POVREDA GORNJIH SEKUTIĆA

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Cilj: ovog prikaza slučaja je prikazati klinički ishod terapije višestrukih povreda gornjih sekutića, kao uslov koji će obezbediti očuvanje stalnog gornjeg avulziranog centralnog sekutića u usnoj duplji do završetka rasta i razvoja vilica.

Prikaz slučaja: Pacijent uzrasta 10 godina dolazi zbog povrede u frontalnoj regiji gornje vilice. Kliničkim pregledom i analizom rendgen snimaka dijagnostifikovana je traumatska ekstrakcija zuba 11 i lateralna luksacija zuba 21,22. Zub 11 je vraćen u alveolu 1h nakon izbijanja, zubi 21,22 su reponirani i postavljen je imobilizacioni splint od fiberglas vlakana u trajanju od 4 nedelje. Pacijentu je prepisana antibiotska terapija i preporučena je antitetanus zaštita. Sedam dana nakon povrede zub 11 je endodontski tretiran Ledermix pastom, nakon 4 nedelje uklonjen je imobilizacioni splint, na korenu zuba 11 pojavljuju se znaci eksterne resorpcije. Na redovnim kontrolnim pregledima zubi 11,21,22 se medikamentozno tretiraju pastom na bazi Ca(OH)₂, nakon godinu dana završeno je endodontsko lečenje ovih zuba i postavljeni su kompozitni ispuni. Nakon dve godine uradjeno je izbeljivanje ovih zuba 22% karbamid peroksidom, kao i kompozitna faseta za zubu 11.

Zaključak: Avulziran zub je sačuvan do završetka rasta i razvoja vilica, pacijent je pripremljen za protetsko-hiruršku rehabilitaciju.

Ključne reči: avulzija, luksacija, eksterna resorpcija

PP3

PRIKAZ SLUČAJA HIRURŠKE EKSTRAKCIJE DUPLOG MESIODENSA ATIPIČNOG OBLIKA

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Cilj: Mesiodens je prekobrojni zub, koničnog oblika, koji se najčešće javlja u predelu simfize gornje vilice, između korenova gornjih centralnih sekutića. Mesiodens se češće javlja kao pojedinačan zub, i neretko ometa nicanje stalnih zuba. Cilj ovog rada je bio prikazati slučaj retencije stalnog središnjeg sekutića, čiji su uzročnici bili dupli prekobrojni zubi molariformnog oblika.

Prikaz slučaja: Pacijent starosti 9 godina dolazi na pregled na Kliniku za dečju i preventivnu stomatologiju, zbog izostanka nicanja gornjeg središnjeg sekutića se desne strane. Radiografskom analizom uočava se prisustvo dva atipična prekobrojna zuba koji se nalaze na putu nicanja stalnog desnog središnjeg sekutića. Zbog mogućnosti nastanka većih ortodontskih problema usled nemogućnosti erupcije zuba, preporučena je hirurška ekstrakcija prekobrojnih zuba. Intervencija je obavljena u lokalnoj anesteziji, a prekobrojnim zubima pristupljeno odizanjem palatinalnog režnja uz minimalno invazivno uklanjanje kosti, zbog nezavršenog rasta i razvoja.

Zaključak: Ekstrakcija duplog mesiodensa obavljena je uspešno, bez komplikacija. Dalje praćenje nicanja središnjeg sekutića je bilo neophodno, kako bi se osigurala pravilna erupcija i pravilno smeštanje u alveolarni luk između susednih zuba.

Ključne reči: retencija zuba , prekobrojni zubi, ortodontska anomalija

PP4

LEČENJE RECIDIVA APIKALNOG PERIODONTITISA NAKON IZVRŠENE APIKOTOMIJE ZUBA - PRIKAZ SLUČAJA

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Cilj: Prikazati mogućnost izlečenja zapaljenskih procesa dentogenog porekla u koštanom tkivu vilica adekvatnim endodontskim pristupom, a zahvaljujući regenerativnoj sposobnosti dobro vaskularizovanog koštanog tkiva, naročito kod mladih osoba.

Prikaz slučaja: Na redovnoj stomatološkoj kontroli pacijentkinje uzrasta 17 godina urađena je kontrolna radiografija zuba na kojima je 2 godine pre toga izvršena procedura apikotomije. Na retroalveolarnom snimku zuba 41 i 32 uočava se recidiv apikalnog periodontitisa. Pacijentkinja nema druge simptome, osim blage perkutorne osetljivosti. Iako je u konsultaciji sa oralnim hirurgom predložena ekstrakcija ovih zuba, odlučeno je da se na njima sprovede revizija endodontskog lečenja. Terapija je sprovedena 6 meseci (u toku Covid 19 epidemije kontrolni dolasci su bili ograničeni). Nakon ekstirpacije starog definitivnog punjenja kanala korena i mehaničke i hemijske obrade kanala, kanali korena zuba su dva puta interseansno punjeni sterilnom pastom kalcijum-hidroksida i zatvarani glas-jonomer cementnim ispunom. Nakon 4, odnosno 6 meseci, na kontrolnim radiografijama uočava se značajno smanjenje rasvetljenja u periapikalnoj regiji oba zuba, te je sprovedeno definitivno punjenje kanala silerom i gutaperkom, a zatim postavljeni adekvatni kompozitni ispuni. Retroalveolarni snimak načinjen godinu dana nakon završetka lečenja pokazuje potpuno zarastanje prethodnih procesa u periapikalnoj regiji zuba 41 i 32.

Zaključak: Adekvatno sprovedena endodontska terapija i dobre regenerativne sposobnosti kod mladih pacijenata pružaju mogućnost postizanja dobrih rezultata nakon konzervativne terapije i očuvanje zuba.

Ključne reči: apikalni periodontitis, regeneracija kosti

PP5

NEINVAZIVNI STOMATOLOŠKI TRETMAN KOD DETETA KOJE OTEŽANO SARAĐUJE

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Cilj: Cilj ovog prikaza slučaja je da se izloži primena neinvazivnog tretmana kod pacijenta sa pervazivnim poremećajem razvoja koji otežano sarađuje u stomatološkoj ordinaciji bez upotrebe farmakoloških bihejvioralnih metoda.

Prikaz slučaja: Pacijent uzrasta 11 godina sa pervazivnim poremećajem razvoja, se javio dečjem stomatologu zbog sanacije karijesa. Intraoralnim pregledom koji je obavljen uz poteškoće van stomatološke stolice utvrđeno je prisustvo kavitiranih karijesnih lezija na vestibularnim površinama stalnih gornjih centralnih sekutića. Kariesne lezije su ocenjene kao aktivne i dostupne čišćenju. Plan terapije je podrazumevao bihejvioralni pristup uz rad u stomatološkoj stolici i postepeno izlaganje pacijenta preventivnim i profilaktičkim postupcima radi kontrole karijesnog procesa i deaktivacije karijesnih lezija (saveti o ishrani, mehanička i hemijska kontrola plaka, lokalna aplikacija visoko koncentrovanih fluorida i SDF). Nakon četiri posete u razmacima od po dve nedelje, utvrđeno je da je došlo do remineralizacije demineralizovanog tkiva na sekutićima. U poslednjoj poseti postavljeni su ispuni klase V hibridnim glasjonomer cementom na vestibularnim površinama sekutića.

Zaključak: Neinvazivan stomatološki tretman je pristup u lečenju karijesa koji je bezbolan i pogodan za pacijente sa potrebom za dodatnom podrškom u stomatološkoj ordinaciji. Plan terapije podrazumeva rad u više seansi kako bi se omogućilo stvaranje poverenja između stomatologa i pacijenta. Na ovaj način se omogućava izbegavanje sanacije u opštoj anesteziji i čuvanje vitaliteta zuba jer se koristi remineralizacioni potencijal demineralizovanog tkiva, ali je saradnja sa roditeljima od ključnog značaja.

Ključne reči: dečja stomatologija, preventivna stomatologija, poremećaj razvoja

PP6

TERAPIJSKE MOGUĆNOSTI ZBRINJAVANJA MOLARA INJEKCIONOM TEHNIKOM MODELOVANJA

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Cilj: Injekciona tehnika modelovanja zuba predstavlja minimalno invazivnu metodu kompozitne restauracije zuba koristeći unapred pripremljen silikonski ključ. Cilj je prikazati izradu kompozitne nadogradnje strukturno izmenjenih molara kod dece koristeći injekcionu tehniku modelovanja zuba.

Prikaz slučaja: Pacijent starosti 8 godina se javio na Kliniku za preventivnu i dečiju stomatologiju sa strukturnim promenama na molarima 16 i 36. Zubi su pripremljeni za uzimanje otiska poštujući minimalno invazivne procedure rada. Nakon uzetog otiska na izlivenom gipsanom modelu vilica izmodelovan je voštani model buduće nadogradnje na zubima 16 i 36. Kašika za otiske ispunjena je silikonskim materijalom (GC EXACLEAR) u koji je utisnut model sa nadogradnjom od voska. Nakon vezivanja silikonskog otisnog materijala on je odstranjen iz otisne kašike i dobijen je transparentan silikonski ključ koji će nam olakšati izradu buduće nadoknade. U silikonskom kalupu su napravljene perforacije pomoću aplikatora za ulivanje tečnog kompozita (GC G-aenial Universal Injectable). Pristupilo se izradi kompozitne nadogradnje. Zubi 16 i 36 su pripremljeni za rad poštujući procedure adhezivne tehnike vezivanja materijala i silikonski ključ je pažljivo postavljen na zubni niz. Kroz perforacije na silikonu ubrizgan je tečni kompozit na željenim molarima. Nakon prosvetljivanja transparentnog ključa sa ubrizganim kompozitom pristupa se njegovom pažljivom uklanjanju. Posle proverene okluzije izvršeno je poliranje kompozitnih restauracija.

Zaključak: Injekcionom metodom izrade kompozitne nadogradnje na strukturno izmenjenim molarima dobija se dugogodišnja estetska i funkcionalna rehabilitacija zuba. Pravilnim planiranjem, poštujući procese izrade, dobićemo brzu, ekonomski isplativu kompozitnu nadoknadu uz minimalno invazivne procese rada.

Ključne reči: injekciona tehnika, strukturne anomalije, kompozit

PP7

FACIJALNA REANIMACIJA KORIŠĆENJEM REŽNJA TEMPORALNOG MIŠIĆA PO LABBÉ-U: PRIKAZ SLUČAJEVA

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Cilj: Paraliza lica je stanje koje izaziva izražene funkcionalne i estetske nedostatke koji često zahtevaju rekonstruktivne intervencije sa ciljem povrata simetrije, kao i statičke i dinamičke ekspresije lica. Jedna od rekonstruktivnih tehnika podrazumeva korišćenje režnja slepoočnog mišića koji predstavlja pouzdan, vaskularizovani režanj, pogodan za reanimaciju paralizanog lica. Ovaj rad prikazuje slučajeve dva pacijenta kod kojih je slepoočni mišić Labbé-ovom tehnikom iskorišćen za rekonstrukciju kod pacijenata sa prethodno postojećom paralizom.

Prikaz slučaja: Slučaj 1 predstavlja pacijenta starosti 49 godina sa levostranom paralizom lica nastalom kao posledica radikalne parotidektomije. Slučaj 2 predstavlja pacijentkinju starosti 78 godina kod koje je levostrana paraliza lica nastala kao rezultat resekcije tumora parotidne žlezde. U oba slučaja, Labbé-ova tehnika je precizno izvršena, podrazumevajući pažljivo odizanje i mobilizaciju mišićnog režnja i njegovog pripoja na mišićnom nastavku donje vilice i potom transpoziciju pripoja na modiolus, što efikasno rekonstruiše pravac mišićne vuče mimične muskulature lica. Kod oba pacijenta postoperativni period je protekao uredno i pacijenti su otpušteni na kućno lečenje osmog i sedmog postoperativnog dana.

Zaključak: Režanj slepoočnog mišića korišćenjem Labbé-ove tehnike je pouzdan i efikasan način facijalne reanimacije kod pacijenata sa paralizom lica, pružajući poboljšanu funkciju, simetriju lica i opšti estetski učinak, naročito uz sprovođenje naknadnih, manjih korektivnih i rekonstruktivnih intervencija. Pažljiva selekcija pacijenata, dobro izvedena hirurška tehnika i postoperativna nega i opservacija su ključni za optimalan ishod i prevenciju potencijalnih komplikacija.

Ključne reči: facijalis, paraliza, temporalis, Labbe

PP8

POSLEDICE ZAKASNELE TERAPIJE I NEDOVOLJNE INFORMISANOSTI PRILIKOM TERAPIJSKOG POSTUPKA KOD AVULZIJE ZUBA

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Cilj: Avulzija zuba, potpuno izbijanje zuba iz alveolarne čašice, predstavlja urgentno stanje u stomatologiji. Ishod povrede zavisi od blagovremenog i adekvatnog pristupa. Prikaz slučaja ističe negativan uticaj neblagovremenog tretmana i nedovoljne informisanosti, naglašavajući potrebu za adekvatnom edukacijom i pravovremenim tretmanom.

Prikaz slučaja: Dečak uzrasta 9 godina u pratnji roditelja se javio na Kliniku za dečju i preventivnu stomatologiju, Univerziteta u Beogradu, tri sata nakon izbijanja gornjeg, levog, stalnog, centralnog sekutića. Izbijeni zub je čuvan u papirnoj maramici dva sata, pre nego što je prebačen u fiziološki rastvor u Domu zdravlja, odakle je upućen na Univerzitetsku kliniku. Replantacija zuba je urađena nakon dolaska na kliniku. Urađena je imobilizacija izbijenog zuba kompozitnim splintom u trajanju od 4 nedelje, a endodontska terapija kanala korene je započeta nedelju dana nakon replantacije zuba. Kontrolni rendgenski snimci su urađeni posle 2 nedelje, 4 nedelje, 3 meseca, 6 meseci i jednu godinu nakon tretmana. Eksterna resorpcije je uočena na rendgenskom snimku 3 meseca nakon replantacije zuba. Roditelji pacijenta su, usled nedostatka informisanosti držali zub u suvoj sredini, zub nije odmah replantiran. Protekla su tri sata od povrede do replantacije, a prolongirano vreme tretmana je faktor, koji doprinosi nastanku eksterne resorpcije.

Zaključak: Razvijanjem svesti i edukacijom o važnosti adekvatnog i pravovremenog tretmana, zdravstveni sistem i zajednica mogu značajno da povećaju šansu za povoljniji ishod ove vrste povrede.

Ključne reči: avulzija zuba, povrede zuba, eksterna resorpcija

PP9

INFILTRACIJA BELE LEZIJE NASTALE KAO POSLEDICA INTRUZIJE MLEČNOG ZUBA KOMPOZITNOM SMOLOM

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Cilj: Traumatska intruzija mlečnog zuba može da ima za posledicu oštećenje klice stalnog zuba. To će se manifestovati pojavom bele mrlje u predelu incizalne ivice stalnog zuba. Ove promene mogu da predstavljaju veliki estetski problem.

Prikaz slučaja: Dečak uzrasta 10 godina javlja se na kliniku zbog prisutne bele mrlje na incizalnoj površini gornjeg središnjeg stalnog sekutića. Bela mrlja prožima celokupni volumen incizalne ivice od vestibularno do palatinalno. Nakon dobro uzete anamneze i obavljenog kliničkog pregleda, pristupamo tretmanu infiltracije kompozitnom smolom (ICON). Da bi obezbedili suvo radno polje i zaštitili desni postavljen je koferdam na očišćeni zub. Belu leziju tretiramo tri ciklusa upotrebom 15% HCL i etanolom, a potom infiltriramo niskoviskoznom kompozitnom smolom i polimerizujemo. Vreme infiltracije smolom je produženo na 15 min. zbog dubine lezije. Nakon toga pristupamo obradi i poliranju.

Zaključak: Bela mrlja na stalnom zubu kao posledica traumatske intruzije mlečnog zuba može se uspešno rešiti ovom minimalno invazivnom metodom bez gubitka zubnih tkiva, a efekat je odmah vidljiv i dugotrajan.

Ključne reči: bela mrlja, intruzija, infiltracija, kompozitna smola, incizalna ivica

PP10

KOMBINACIJA TERAPIJSKIH TRETMANA KOD OSETLJIVOSTI HIPOMINERALIZOVANIH ZUBA - PRIKAZ SLUČAJA

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Cilj: Cilj ovog rada je da se prikaže efikasnost kombinovane primene preparata na bazi CPP-ACFP (Mi Paste Plus, GC), postupka mikroabrazije i infiltracije smolom (Icon Vestibular, DMG), u terapiji osetljivosti hipomineralizovanih zuba, ali i postizanje zadovoljavajuće estetike i smanjenje rizika za nastanak karijesa.

Prikaz slučaja: Pacijentkinja uzrasta 17 godina javila se na Kliniku za dečju i preventivnu stomatologiju zbog izražene osetljivosti zuba gornje vilice. Kliničkim pregledom uočene su nekarijesne bele lezije na vestibularnim površinama gornjih centralnih i lateralnih sekutića, kao i na premolarima. Pomenuti zubi su bili veoma osetljivi na vazduh iz pustera. Budući da je pacijentkinji više smetala bolna osetljivost nego estetski izgled zuba, prvo je uzet anatomski otisak gornje vilice i izrađena retenciona folija za primenu visokokoncentrovanih fluorida u kućnim uslovima. Nakon što je osetljivost zuba značajno smanjena, odlučili smo se i za drugi terapijski postupak - infiltraciju smolom, kako bismo dodatno ojačali strukturu gleđi, ali i da bismo istovremeno poboljšali i estetski efekat. S obzirom da su zubi prethodno više puta tretirani visokokoncentrovanim fluoridima, što je već ojačalo njihovu strukturu, sproveli smo i postupak mikroabrazije kako bismo omogućili što bolju infiltraciju smolom.

Zaključak: Lečenje hipomineralizovanih lezija je kompleksno, jer one mogu izazvati kako estetske tako i funkcionalne tegobe, naročito kod mladih pacijenata, i zahteva veliku pažnju i posvećenost stomatologa kao i odgovornost pacijenta. Kombinovanje različitih terapijskih procedura omogućava ne samo značajno funkcionalno, već i estetsko poboljšanje stanja pacijenta, što mu daje veće samopuzdanje i motiviše ga na pravilno održavanje oralne higijene, u cilju prevencije oboljenja zuba.

Ključne reči: hipomineralizacija, mikroabrazija, infiltracija smolom

PP11

PRIMENA TERAPIJSKIM MERA KOD PACIJENATA SA AMELOGENESIS IMPERFECTA

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Cilj: Amelogenesis imperfecta predstavlja hereditarnu strukturnu anomaliju gleđi koja obuhvata sve ili skoro sve zube obe denticije. Najčešći tip nasledjivanja je autozomno dominantni, mada postoji i usamljena mutacija gena. U zavisnosti od stepena izraženosti i tipa anomalije, gleđ može biti tanka i glatka, sa pojedinačnim defektima u vidu jamica ili hrapava sa brojnim jamicama i olučastim udubljenjima. Boja zuba varira od mlečno bele do žućkasto-braon boje ili prugasto obojene gledjigrastrasti zubi.

Prikaz slučaja: Pacijent uzrasta 7 godina je poslat na Kliniku za dečju i preventivnu stomatologiju, radi sanacije zuba. Kliničkim pregledom je utvrđena destrukcija krunica mlečnih i stalnih molara, spuštена visina zagrižaja i postavljenja dijagnoza Amelogenesis imperfekta.

Heteroanamnestički dobijeni podaci o izraženoj osetljivosti na termičke nadražaje, kao i postojanje iste anomalije kod majke deteta. Uradjen je plan terapije: aplikacija koncentrovanih fluorida i sanacija destruiranih mlečnih i stalnih zuba.

U narednim posetama sprovedena je terapija destruiranih stalnih zuba, prvih stalnih molara. Aplikovana je lokalna anestezija, uradjena preparacija karijesom izmenjenih površina i aplikovan GJC ispun, GC Fuji IX gp ®.

Zaključak: Adekvatnom i pravovremenom terapijom postiže se smanjenje subjektivnih tegoba, zaustavlja gubitak tvrdog zubnog tkiva i održava visina zagrižaja. Time se pacijentu olakšava obavljanje svakodnevnih životnih aktivnosti i čuva integritet zubnog tkiva do trenutka kada je moguće sprovesti adekvatnu protetsku terapiju.

Ključne reči: Amelogenesis imperfecta, terapija, glas jonomer cementi

PP12

BIHEJVIORALNI PRISTUP PACIJENTIMA SA POSEBNIM POTREBAMA IZ AUTISTIČNOG SPEKTRA U STOMATOLOŠKOJ ORDINACIJI

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Cilj: Ovaj prikaz slučaja pokazuje prednosti individualnog pristupa tokom stomatološkog tretmana kod pacijenata sa dijagnozom autizma. Dodatno naglašava važnost saradnje između doktora i roditelja tokom procesa, i kako posebno kreirane i prilagođene tehnike mogu biti sprovedene kako bi se osigurao uspešan ishod.

Prikaz slučaja: Pacijent je trinaestogodišnji dečak, sa dijagnozom autizma koji je pretrpeo povredu gornjeg desnog centralnog sekutića. Zbog komplikacije povrede, došlo je do posledičnog gubitka gornjeg desnog centralnog sekutića, a plan terapije je uključio izradu athezivnog mosta. Zbog specifične prirode pacijentovog osnovnog oboljenja, terapija je podrazumevala postepen pristup i upotrebu različitih tehnika kako bi se stres pacijenta sveo na minimum i osigurala saradnja. Neke od tehnika koje su korišćene tokom tretmana, podrazumevale su su postepeno objašnjavanje tretmana, zaštitu čulne osetljivosti, vizualnu i verbalnu komunikaciju, kao i aktivno učešće roditelja kroz ceo proces.

Zaključak: Individualni plan terapije, kod pacijenata sa posebnim potrebama je važan za pozitivan ishod terapije. Zbog obimne simptomatologije pacijenata sa oboljenjima iz autističnog spektra, trebalo bi prilagoditi pristup individualno za svakog pacijenta zasebno, uzimajući u obzir njegove specifične potrebe.

Ključne reči: individualni plan terapije, autizam

PP13**ISPITIVANJE MIKROPROPUSTLJIVOSTI KOD ISPUNA KLASSE V**

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Cilj: Ispitati prisustvo i dubinu mikropropustljivosti različitih materijala.

Metod: Na vestibularnim površinama 30 ekstrahovanih humanih trećih molara formirani su standardizovani kaviteti klase V i podeljeni u tri grupe, na osnovu vrste materijala i postupka preparacije: (1) hibridni glas-jonomer cement (Equia Forte, GC, Tokio, Japan); (2) kompozitni materijal sa zakošenim rubovima (Gaenial Universal, GC, Tokio, Japan); (3) kompozitni materijal bez zakošavanja rubova (Gaenial Universal, GC, Tokio, Japan). Za postavku kompozitnih ispuna primenjen je protokol za selektivno nagrizanje - 30 sekundi 37% ortofosfornom kiselinom, uz primenu univerzalnog adheziva (G-Premio BOND, GC, Tokio, Japan). Nakon termocikliranja (20.000 ciklusa, 5–55°C), zubi su premazani sa dva sloja laka za nokte, osim površine ispuna i zone od 1 mm oko ivica ispuna. Potopljeni su u 50% rastvor srebro-nitrata, a stepen penetracije boje ocenjen je pod stereomikroskopom. Uzorci debljine 2 mm analizirani su posle vertikalnog presecanja u vestibulo-oralnom pravcu kroz centralni deo ispuna dijamantskom testerom (Isomet, Buehler Ltd, Lake Bluff, IL, USA), uz vodeno hlađenje. Dobijeni podaci obrađeni su u programu SPSS, primenom Kruskal Wallis testa.

Rezultati: Obradom podataka utvrđeno je da ne postoji statistički značajna razlika u vrednostima mikropropustljivosti ($p > 0,05$). Vrednost mikropropustljivosti na aksijalnom zidu u svim ispitivanim grupama iznosila je nula, dok su kod vrednosti na okluzalnim (EF 0,17mm; KSZ 0,26mm; KBZ 0,33mm) i gingivalnim (EF 0,09mm; KSZ 0,17mm; KBZ 0,09mm) zidovima uočene izvesne razlike.

Zaključak: Svi ispitivani materijali se mogu primeniti u restauraciji kaviteta klase V, pri čemu nizak stepen mikropropustljivosti doprinosi smanjenju rizika od pojave sekundarnog karijesa i njegovih komplikacija.

Ključne reči: Mikropropustljivost, glas-jonomer, kompoziti, zakošavanje, termocikliranje

PP14

KOMPARATIVNA ANALIZA EFIKASNOSTI LOKALNE ANESTEZIJE PRIMENOM KARPUL BRIZGALICE I APARATA COMFORT IN

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Cilj: Uporediti efikasnost lokalne anestezije primenom karpul brizgalice i aparata Comfort in.

Metod: Istraživanje je obuhvatilo 30 ispitanika, studenata 5. godine Stomatološkog fakulteta Univerziteta u Beogradu. Primijenjen je Split-mouth dizajn studije, pri čemu je lokalna anestezija aplikovana karpul brizgalicom u regiji premolara gornje vilice u toku prve posete, a aparatom Comfort in u toku druge posete. Upotrebljeni anestetik bio je Septanest Adrenaline 1:100.000. Karpul brizgalicom administrirano je 1,5 ml, a aparatom Comfort in 0,5 ml anestetika. Podaci su statistički obrađeni u programu SPSS.

Rezultati: Primena lokalne anestezije Comfort in aparatom i karpul brizgalicom nije pokazala statistički značajnu razliku ($p > 0,05$) u pogledu percipiranja straha pre i nakon aplikacije lokalnog anestetika, bola u toku primene i nakon prestanka dejstva anestezije, kao ni pri ispitivanju osećaja da je anesteziran deo nepca. Rezultati su pokazali da postoji statistički značajna razlika ($p < 0,05$) u vremenu proteklom do početka delovanja anestezije, pri čemu je ono značajno kraće u slučaju primene karpul brizgalice, kao i u dužini trajanja efekta anestezije koja je značajno veća u poređenju sa primenom Comfort in-a. Nasuprot tome, širina anestetickog polja odmah i 5 minuta nakon primene lokalne anestezije bila je značajno veća u slučaju primene aparata Comfort in, pokazujući statistički značajnu razliku ($p < 0,05$).

Zaključak: Comfort in aparat pokazao se kao efikasna alternativa karpul brizgalici i može se koristiti za uspešno postizanje efekta lokalne anestezije.

Ključne reči: lokalna anestezija, sistem za ubrizgavanje bez igle, Comfort in, efikasnost

PP15

KOMPLEKSNOST I IZAZOVI U TERAPIJI FRAKTURA IV KLASSE

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Cilj: Komplikovani prelom korena stalnog zuba sa završenim rastom i razvojem definiše se kao horizontalni ili kosi prekid kontinuiteta cementnog i dentinskog tkiva korena zuba.

Prikaz slučaja: Pacijent, starosti 17 godina, javio se na Kliniku za dečju i preventivnu stomatologiju radi zbrinjavanja povrede zuba koja se dogodila u junu 2024. godine. Heteroanamnestički podaci ukazuju da je dečak zadobio udarac u predeo zuba 11. U nadležnom Domu zdravlja dijagnostikovano je prelom korena zuba 11 i postavljena je imobilizacija u trajanju od 2 meseca. Prema navodima, u tom periodu, dečak je zadobio još jedan udarac u regiji istog zuba, tokom fudbalske utakmice. Kliničkim pregledom uočava se patološka pokretljivost zuba 11, perkutorna bolna osetljivost i negativan test vitaliteta. Analizom retroalveolarnog snimka uočava se horizontalna linija preloma u srednjoj trećini korena zuba 11. Izvršena je digitalna repozicija zuba 11, stabilizacija kompozitnim splintom 12-11-21 i započet je endodontski tretman kanala korena. U narednoj poseti nakon odgovarajuće obrade kanala, izvršena je definitivna opturacija kanala mineral trioksid agregatom (MTA). Nakon 7 dana, postavljen je kompozitni ispun. Nakon četiri nedelje uklonjen je kompozitni splint. Pacijent je na narednim kontrolnim pregledima bez subjektivnih tegoba, nema patološke pokretljivosti zuba 11, kao ni perkutorne osetljivosti.

Zaključak: Terapija komplikovanih preloma stalnih zuba je često neizvesnog ishoda iako protokoli o tretmanu ovih povreda daju jasne smernice. Zbrinjavanje i čuvanje ovih zuba je važno, iako je nekada privremeno, zbog razvoja orofacijalnog sistema, očuvanja koštanog tkiva i prostora i psihološke podrške detetu do trajne implantno-protetske rehabilitacije.

Ključne reči: kompleksnost, terapija, fraktura, klasa IV

PP16**Implantno-protetsko rešavanje prave progenije - *Progenia Vera***

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Cilj: Ovaj rad ima za cilj da predstavi postupak izrade fiksnog protetskog rada na implantatima kod pacijenta sa pravom progenijom.

Prikaz slučaja: Pacijent star 53 godine došao je u našu kliniku zbog nerešenog problema sa pravom progenijom. Imao je urađene metal keramičke mostove na svojim zubima, ali problem sa obrnutim zagrižajem i funkcijom žvakanja i dalje nije bio rešen. Nakon kliničkog pregleda i analize rendgenskih snimaka, indikovano je vađenje svih zuba gornje i donje vilice i imedijantna ugradnja zubnih implantata u raspoloživu kost sa akcentom na adekvatan položaj implantat koji će kasnije omogućiti postizanje eugnatog zagrižaja izradom fiksnog protetskog rada. Zbog dobre primarne stabilnosti, nakon pet dana, napravili smo fiksne privremene zube na implantatima, čime smo značajno korigovali zagrižaj i tako omogućili pacijentu da normalno funkcioniše u narednih šest meseci. Nakon šest meseci, pristupili smo izradi definitivnog protetskog rada nakon što smo rendgenološki i klinički proverili integraciju ugrađenih implantata. Primenom abatemnata različitih uglova, postigli smo optimalan vilični luk, dobre međuvilične odnose i adekvatnu okluziju. Pacijentu su urađeni fiksni cirkonijum keramički mostovi na implantatima kojima je potpuno korigovan pacijentov prvobitni zagrižaj.

Zaključak: Ovaj način rešavanja je najoptimalniji za dugoročno zbrinjavanje pacijenata sa pravom progenijom. Oralni hirurg ima ključnu ulogu u proceni koštanog deficita, odabiru odgovarajućih tehnika rekonstrukcije i postavljanju implantata u optimalnu poziciju raspoložive kosti, čime je ovaj slučaj je uspešno rešen sa privremenim krunicama, a kasnije i definitivnim protetskim radom. Ostvarena je potpuna rehabilitacija funkcije, estetike, žvakanja, fonacije i psihosocijalnih aspekata.

Ključne reči: progenija, implantati, rehabilitacija, estetika, fiksni protetski radovi

PP17

NIŽI KARIJES RIZIK KOD DECE SA PRISUTNIM HROMATOGENIM MRLJAMA

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Cilj: Prikazati korelaciju prisustva crnih mrlja na zubima kod dece i incidence karijesa.

Metod: Pretraživanje baze podataka "Pub med" na osnovu ključnih reči "black stain", "caries risk" u poslednjih 10 godina, kao i stomatološki pregled pacijenata u ambulanti dečje stomatologije.

Rezultati: Na osnovu ključnih reči, analizirano je 15 radova o prisustvu crnih mrlja na zubima kod dece, njihovo poreklo, sastav oralne flore, kao i povezanost sa prisustvom karijesa kod takvih pacijenata. Radovi ukazuju na dominantno prisustvo *Actinomyces spec.* u oralnoj mikroflori, pljuvačku većeg puferskog kapaciteta, veću koncentraciju kalcijuma, bakra i gvožđa (što se smatra uzrokom prebojenosti). Incidenca karijesa u ovih pacijenata je niska i većinom su mrlje prisutne u mlečnoj denticiji, što pored literature potvrđuje kliničko iskustvo: 90% pregledanih pacijenata (uzrasta od 1 do 14) godinasa prisutnim crnim mrljama, imalo je sve zdrave zube. Distribucija po polu je podjednaka, što se poklapa sa nalazima pregledanih radova. Tretman podrazumeva mehaničko uklanjanje naslaga (ultrazvukom, četkicom i abrazivnom pastom) koji se ponavlja posle određenog vremena. Saveti o pravilnoj oralnoj higijeni i ishrani ne izostaju. Literatura predlaže i fotodinamsku terapiju, probiotike i laktoferin (zbog sposobnosti vezivanja gvožđa).

Zaključak: Na osnovu analiziranih radova i kliničkog iskustva utvrđena je niska stopa karijesa kod pacijenata sa prisutnim crnim mrljama na zubima, koje nisu porekla hrane i pića, i pušenja (adolescenti), već porekla hromatogenih bakterija.

Ključne reči: crne mrlje, karijes

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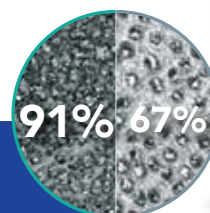
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Reference:

1. Colgate-Palmolive. Market research through Zapera, Denmark, 2019. 2. Hines D et al. Poster #3406, July 2018 IADR. Colgate-Palmolive Company 2018.

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HANDLE BATTERY CAPACITY	3.7V, 1200mAh
ANGLE HANDPIECE	6: 1 Gold and gray
FOLLOW UP SURVEY	Single test and root test in one
HANDLE WEIGHT	About 140g
CHARGING TIME	About 3h



RETREATY KIT

Size	Taper	Torque
Bull #25/.07	07	1.5N•CM
Skinny #25/.04	04	1.5N•CM
ShapY 1 #20/.05	05	1.5N•CM
ShapY 2 #25/.05	05	1.5N•CM
ShapY 3 #30/.05	05	1.5N•CM

Cross section: 

Speed range: 350~500 RPM



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jedan orkestar
dva implanta

Sve nadogradnje
su kompatibilne sa
T6 torq i **T6 standard**.

T6
torq



T6
standard



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KOMBINOVNA SNAGA
HLORHEKSIDINA I CITROX®-a

CURAPROX
PERIOPLUS⁺

UNAPREĐENA FORMULA ZA EFIKASNU ZAŠTITU ZUBA I DESNI



 SWISS PREMIUM ORAL CARE

Tečnosti za ispiranje usta Perio plus idealne su za sprečavanje zubnih naslaga pre i posle hirurškog tretmana. Zajedno sa pastom za zube i gelom pomažu u tretmanu hroničnih upala i nude efikasno rešenje za osobe, koje imaju probleme sa zubima i desnim. Kombinacija hlorheksidina (CHX) i Citrox®-a, prirodnog ekstrakta gorke narandže, deluje antiseptički, antigljivično i antivirusno.

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