

28th BaSS Congress

BaSS

Montenegro, Budva



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Invitation **Letter**



Dear colleagues

It is my great honour and pleasure to invite you on behalf of Montenegrin dentists to participate in the 28th congress of the Balkan Stomatological Society, which will be held from April 25 to 27, 2024 in Budva.

We are very happy that we have been given the opportunity to be the organizers of such a huge and important event in our country for the first time and to show our traditional hospitality. The conference venue is the Avala congress hotel, located at the very heart of the

beautiful Mediterranean city of Budva on the coast of the Adriatic Sea, facing the gates of the Old Town.

During the three congress days, you will have the opportunity to hear exceptional speakers who kindly accepted our invitation, as well as participants of the poster presentations. Also, dealers and manufacturers will have a presentation of the cutting edge technology in dental equipment and materials in the exhibition area.

We are looking forward to sharing knowledge while acquiring new information and professional skills in the beautiful Mediterranean ambience, enjoying our national cuisine and experiencing unforgettable moments in the congress halls and out of them.

Sincerely yours,

Prof. Dr. Zoran Vlahović

President of the 28th BaSS Congress

Invitation **Letter**



Dear colleagues,
I am honored to write this letter to invite you to 28th congress of the Balkan Stomatological Society (BaSS) 25th–27th of April in Budva, Montenegro. With the help of this conference, we successfully bring together the Balkan stomatologists to exchange our knowledge and improve friendships. The efficient dental specialists and executives will be giving their best and discussing the dental science and direction of dental technology and how it can be improved in the future. It will

be no less than an absolute pleasure if you will be present at this conference in Montenegro. We will be happy to hear from you and learn about your views and ideas on several problems that we are facing in dentistry. You have a very different approach when it comes to dental matters and hearing from you on the best advancement ideas and their impact on various dental areas will be fruitful, I am sure. We would also like to hear your personal opinion on these particular problems in Montenegro. I believe we will also get a chance to test the beauty of Montenegro. I am sincerely expecting you and looking forward to seeing you in Budva, Montenegro.

Best regards,

Prof. Dr. Ender Kazazoglu

President Elect of Balkan Stomatological Society (BaSS)

Organizing Committee

President of the 28th BaSS Congress Organizing Committee
Assist. Prof. Dr. Mirko Mikic

Vice president of the 28th BaSS Congress Organizing Committee
Assist. Prof. Dr. Rasa Mladenovic

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- Dr Milan Martinovic
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- Dr Andjela Vukovic
- Dr Danijela Subotic
- Dr Andjelka Duborija
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- Dr Ivana Zivkovic
- Dr Stevan Radoman
- Dr Petar Jankovic
- Dr Nikola Glusica
- Dr Pavle Jaukovic
- Dr Dusko Bojanic

Scientific **Committee**

President of the 28th BaSS Congress Scientific Committee
Assist. Prof. Dr. Mirjana Djurickovic

Members of the 28th BaSS Congress Scientific Committee

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- Prof. dr Jelena Krunic
- Prof. dr Zoran Lazic
- Prof. dr Aleksa Markovic
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- Prof. dr Bojana Davidovic
- Prof. dr Zoran Tatic
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- Ass. Prof. Aleksandar Jakovljevic
- Ass. Prof. Ana Vukovic
- Ass. Prof. Bashkim Ismaili
- Ass. Prof. Radovan Jovanovic
- Ass. Prof. Branislav Ilic
- Ass. Prof. Tatjana Savic Stankovic
- Ass. Prof. Zoran Arsic
- Dr sci. Tamara Boskovic Brkanovic

Invited **Lecturers**

Maja Raicevic – Clinical Centre of Montenegro

Challenges with the sweetest patients– potential barriers in dental management of children with diabetes

Diabetes is an utmost public health problem of 21st century, and type 1 diabetes (T1D) is the most common form of this chronic disease in children. It is caused by insulin deficiency, which is a predisposing factor for oral diseases (periodontal disease, gingivitis, oral infections, and caries). Literature reveals that oral health care providers are mostly concerned about glycaemic variability, hypo– and hyperglycaemia, and that their low confidence level was associated with low knowledge level. It highlights the need for additional education of oral health care providers so they could cope with T1D children before, during or after dental treatment. Maintaining blood glucose level in the safe range, the appropriate usage of devices for continuous glucose monitoring and managing the stress provoked by dental intervention, are skills should be overpowered. Pediatricians and pediatric endocrinologists should collaborate with oral health providers and educate patients about their increased risk for oral health problems, motivate them for good oral health behaviours and facilitate access to dental care. This presentation will bring priceless tips on how to cope with children with T1D who need a dental treatment.

Ana Vukovic – School of Dental Medicine University of Belgrade, Serbia

Is Breastfeeding a risk for Early childhood caries – up to date recommendations

Early childhood caries represents one of the most frequent chronic non communicable disease in pediatric population. Having in mind joint etiological factors causing both early childhood caries and other chronic non communicable diseases (such as obesity for example), improving oral health in young children could tackle general health too. Up to date dental research confirmed that early childhood caries etiology is complex and involves a number of different factors such as micro, meso and macro level factors including social and economic determinants of health as well. Pediatric professional associations, as well as World Health Organization recommend continuous breastfeeding up to age of two or as long as mother and child desire. However, among dentists, there is concern that prolonged and *ad libitum* breastfeeding represents risk for poor oral health. This lecture represents critical appraisal of the relationship between breastfeeding and oral health in order to achieve consensus between pediatricians and dentists and provide the best possible advice to nursing mothers' in order to enable the best care and improve both oral and general health of the youngest.

Mario Rui Araujo – Portalegre Health School, Portugal

Supportive and maintenance strategies in oral health: a psychological look

Understanding the psychology behind dental patients helps oral health professionals provide appropriate care and support to patients, considering not only the physical aspects but also the psychological impact of dental treatments on individuals' lives. Behaviour change interventions are crucial in dental interventions because they help patients adopt and maintain positive oral health behaviours, leading to successful outcomes and long-term satisfaction. Successful dental interventions typically involve so many procedures aimed at enhancing the appearance of the patients, their wellbeing and an healthy state of mind. However, the effectiveness and longevity of these interventions depend not only on the dental procedures themselves but also on the patient's oral hygiene practices and lifestyle choices. Should we have a role managing those?

Aristomenis Syngelakis – Chief Dental Officer of Greece

There is no health without oral health! Critical national policies towards Universal Oral Health Coverage

Oral health is integral to general health, affects quality of life and social well-being. Oral diseases are the most common non-communicable diseases affecting more than 3.5 billion people worldwide and placing a significant economic, social and health burden on individuals, families and health systems. Moreover, achieving the highest attainable standard of oral health is a fundamental human right of every human being. However, oral health is usually neglected by public policies, oral health is not integrated in the wider health system, and public dental services cannot meet oral health needs due to underfunding and understaffing. As a result, dental care services remain inaccessible for a big part of the population as it is reflected to the high proportion of unmet dental care needs in a number of European countries including some Balkan countries. In addition, during the years of the COVID-19 pandemic, inequalities in oral health status have worsened, although good oral (periodontal) health has been shown by reliable scientific research to be critical in protecting individuals from the severe symptoms of the disease.

Given all the above, the historic WHO Oral Health Resolution (May 2021) is a unique opportunity to adverse the situation reducing the oral health inequalities and improving people's oral health status. WHO calls for a radical oral health systems' reform towards universal oral health coverage, a shift to prevention and oral health promotion, as well as an intervention to the Social and Commercial Determinants of Oral Health.

Dedicated oral health budgets (establishment of a guaranteed share of public health funding dedicated exclusively to dental care); a national oral health strategy focused on prevention; an integration of dental care in Primary Health Care; as well as political commitment to oral health can make the vision of oral health for all a reality.

Considering the above we are very excited to announce that Greece will host the next EADPH Congress (Heraklion, Crete, 3-5 October 2024), where distinguished guests from all over the world will present the most important scientific developments in the era of Dental Public Health with emphasis on the Commercial Determinants of Health. We will be very happy to see you in Crete to have a unique experience and the opportunity

to exchange ideas and expertise regarding the promotion of oral health and accessibility to essential dental care for all without discrimination.

Paola Francescut – School of Dental Medicine University of Bern, Swiss

Molar–Incisor hypomineralisation: A clinical approach

Medication–related osteonecrosis of the jaw (MRNJ) is a serious drug–related side effect that is most common in people using antiresorptive and/or angiogenic medications. Therapy options for this condition include conservative treatments, surgical procedures with varied degrees of invasiveness, and adjuvant therapies. The aim of the present study is to identify the most successful and promising therapy alternatives available to clinicians. PubMed, Cochrane, Scopus, Web of Science, and Embase were searched for works on our topic published between 8 January 2006 and 8 January 2023. The search was restricted to randomized clinical trials, retrospective studies, clinical studies, and case series involving human subjects with at least five cases and no age restriction on participants. A total of 2657 was found. After the selection process, the review included 32 publications for qualitative analysis. Although conservative treatments (pharmacological, laser, and minimally invasive surgery) are effective in the early stages of MRONJs or as a supplement to traditional surgical resection therapy, most studies emphasize the importance of surgical treatment for the resolution or downstaging of advanced lesions. Fluorescence–guided surgery, PRP, PRF, CGF, piezosurgery, VEGF, hyaluronic acid, and ozone therapy all show significant potential for improving treatment outcomes.

Burak Buldur – Dental School, Sivas Cumhuriyet University, Turkey

Digital Intraosseous anesthesia in Pediatric dental practice: Why and how?

Effective pain management is crucial in pediatric dentistry to ensure a positive experience for children and successful treatment outcomes. Conventional local anesthesia, while commonly used, can indeed pose challenges in pediatric patients. Currently, the dental landscape has transformed due to technological advances and the introduction of new techniques, notably the rise of digital intraosseous anesthesia. This method provides a more efficient and less discomforting local anesthesia experience, especially beneficial for pediatric patients. Computer–Controlled Local Anesthesia Delivery use computer technology to control the rate and pressure of anesthetic delivery, making injections more comfortable and precise. The combination of Intraosseous Anesthesia (IOA) and Computer–Controlled Local Anesthetic Delivery (C–CLAD) brings several advantages. It is a quick and highly effective method, known for providing comfort, making it a preferred choice for both children and adults. The effects last long enough for brief treatments. This technique involves three simple steps, aiming to deliver local anesthetic solutions directly into the cancellous bone near the targeted tooth. Importantly, the anesthesia is localized to the tooth, avoiding impact on surrounding soft tissues and reducing complications such as lip or tongue biting. This presentation will explore the essential steps of the technique, practical administration aspects, and the benefits, along with a focus on patient perception.

Burak Yilmaz – School of Dental Medicine University of Bern, Swiss

New generation materials in Restorative Dentistry

Digital technologies have revolutionized prosthodontics, and computer-aided design and computer-aided manufacturing (CAD-CAM) systems have been integrated into daily practice by means of subtractive manufacturing and, more recently, additive manufacturing. Of many available additive manufacturing technologies, digital light processing (DLP) has been commonly used for dental procedures. Regardless of the technology, additive manufacturing improved the manufacturing processes by enabling cost-efficient fabrication with less waste and the fabrication of products with more complex geometries. The additive manufacturing of dental products has become more popular given the advantages of this technology over subtractive manufacturing, and additively manufactured composite resins that can be used for definitive prostheses have been recently introduced. Even though these materials have been indicated for use in definitive prostheses by their manufacturers, the properties of prostheses fabricated by using materials that could affect their clinical success should be broadly investigated. The presentation will focus on the key components of 3D printing, how printers function and on recently introduced resin-based materials that are claimed to be used for definitive restorations. The studies on the accuracy of various restorations manufactured with these novel materials will be presented. Clinical steps for printing and recent patient treatment situations will be demonstrated with pictures.

Guglielmo Campus – School of Dental Medicine University of Bern, Swiss

New approach in prevention and pediatric dentistry

For decades, pediatric and prevention dentistry was considered the Cinderella of all dental disciplines as it seemed that pediatric and prevention dentistry was not evolving, today is not true anymore, especially in today's dental landscape. It is undeniable that an individual's oral health is built during childhood. Correct eating, hygiene and behavioral habits lead, in most cases, to the development of a healthy and harmonious dental, periodontal and skeletal apparatus. Moreover, thanks to the mass introduction of fluoride, caries has decreased worldwide. Several carious lesions, especially in deciduous dentition, affect disadvantaged children and often go untreated. From this perspective, the paradigm shift that cariologists are suggesting and that dentists are still struggling to accept will bring great benefits to children's health as the widespread use of non-operative and minimally invasive treatments for lesion management is changing the clinical routine of physicians and their patients. The introduction of new preventive and restorative materials that are better suited to the needs of young patients represents an important milestone (*i.e.* the introduction of moisture-tolerant resin-based materials makes it possible to work with a higher probability of success even when a perfectly moisture-free field is not possible). What we must bear in mind, however, is that the child must be placed at the center of care, must be listened to in his or her needs, understood in his or her difficulties and limitations and helped to become a healthy adult.

Tamara Boskovic Brkanovic – Private praxis, Kotor, Montenegro

DAMON SYSTEM & TADs: Simple and effective treatment

Due to passive self-ligation, the Damon system of brackets and archwires is known for its very low friction, which enables the application of mild biological forces for effective tooth movement. The clinic's proven advantages of this system are reflected in faster treatment, reduction in the number and duration of controls, as well as less frequent use of auxiliary devices. These advantages have a significant impact on patient comfort and make therapy simpler. On the other hand, orthodontic mini-implants (MI) or TADs (Temporary anchorages devices) as a skeletal anchorage have changed the earlier concept of orthodontic treatment, which was based on the use of complicated and uncomfortable biomechanics. Using the Damon system in combination with MI enables solving complex cases through a system of simple biomechanics with minimal patient discomfort. The aim of this lecture is to demonstrate the advantages and benefits of the Damon self-ligating system and its greater effectiveness in combined use with TADs through the presentation of clinical cases

Ilijana Muratovska – Faculty of Dentistry, Ss. Cyril and Methodius, Skopje, North Macedonia

Enamel, topographic changes after debonding of orthodontic braces

With advances in the physical and mechanical properties of adhesive materials, removal of resin residues after debonding of orthodontics braces, is a daily challenge for the conservation of enamel integrity. Mechanical removal of resin residues acts on the surface of the enamel ridged, which later acts as an ideal plaque retention. The removal of adhesive resin residues from the tooth surface, without iatrogenic damage to enamel integrity is the main goal of clinicians. It must be noted that the adhesive remnant index (ARI index) depends on many factors: type of bonding technique, type of bracket, type of adhesive material, the amount of adhesive residue that remains on the enamel surface, position of the teeth in the jaw as well as the tooth surface on which the brackets are bonded. Consensus protocol for diseases of adhesive residues is not yet established and a wide range of clinical options without real knowledge of the biological cost suffered by enamel. The main objective of the lecture is to determine the efficiency of different types of orthodontic braces, adhesive systems and methods of debonding orthodontic braces in permanent teeth as well as the consequences of the enamel surface using a 3D performance stereomicroscope.

Nazan Kucukkeles – Dental School, University of Bezmialem, İstanbul, Turkey

Where are the borders of dental compensation in Class III patients

Gold standart for Class III skeletal malocclusion is orthognathic surgery although some patients demand for camouflage treatment which may be possible in some borderline cases if profile, function and periodontal condition is allowing. The protocols for Class III camouflage were used to be Class III elastics with or without maxillary expansion, extraction protocols and even face mask for upper dental arch mesialization which we rely on patient cooperation for all. On the other hand common use of mini screws and increasing performances expanded the borders of orthodontic correction. Recently it is possible to treat more severe Class III cases with mini screws and we may not need to rely on patient cooperation. One of the options is distalization of entire lower dental arch. During this lecture, case presentations will be made related to these protocols and treatment concepts will be discussed in the light of scientific evidence.

Ivica Anic – School of Dental Medicine, University of Zagreb, Croatia

Why we do endodontic retreatment so often, the real role of specialist endodontists?

In the world literature, it is stated that primary endodontics is successful in 85–95% of cases. Unfortunately, most of these numbers are based on clinical indicators of specialist institutions, and the actual situation does not even come close to following these results. The actual state of the quality of endodontic procedures in clinical practice, although much better than before, is still extremely low. In everyday practice, there is a misconception that the practice and knowledge acquired at the undergraduate study are sufficient for performing endodontic procedures, as well as that the role of an endodontic specialist is to correct mistakes and revise poorly performed endodontic procedures. Morphologically or positionally complicated cases, that require endodontic treatment, are better immediately referred to a specialist. This particularly refers to the need for revision to avoid the

multiple revisions. Numerous clinical cases will present the actual state of endodontic therapies as well as guidelines on what to do in practice to improve the quality of primary endodontics and revision of endodontic fillings.

Ruth Pérez–Alfayate – Universidad Europae de Madrid, Spain

Complex diagnosis in Endodontics

An accurate diagnosis is fundamental for the determination of an appropriate treatment plan. To emphasize, the majority of cases can be resolved in a simplified way, in others its characteristics can cover the diagnosis needing more invasive complementary tests to understand the etiology. In fact, the use of diagnostic tests can actually present a high level of doubt. Therefore, when faced with cases of complex diagnosis it is important to implement scientific knowledge and common sense unified with the capacity to interpret results of the complementary tests, decide de prognosis and to do an appropriate selection of the case within the first phase towards a successful treatment.

Irena Mladenovic – Faculty of Medicine, University of East Sarajevo, Bosnia and Herzegovina

Current Perspectives on Temporomandibular Disorders in Pediatric Patients

Temporomandibular disorders (TMD) involve a large number of clinical conditions which affect masticatory muscles, temporomandibular joint (TMJ) and adjacent structures. These conditions typically occur in the adult population, but many recent studies have reported an increasing prevalence of TMD signs and symptoms among children and adolescents. Clinical appearance of TMD in pediatric patients may include pain in masticatory muscles or TMJ, limited or irregular mandibular movements and presence of TMJ noises. Etiology of TMD in young population is multifactorial, including trauma, psychosocial, systemic, genetic and occlusal factors. The diagnosis is made based on the history and examination, optionally imaging when indicated. Therapeutic protocol implies a multidisciplinary approach and favors noninvasive and reversible treatment modalities. The presentation will include the current perspectives and specificities regarding risk of development, procedures for identifying disorders, and treatment options for pediatric patients with TMD.

Prunela Polici – Catholic University “Our Lady of Good Counsel”, Tirana, Albania

Efficiency of early treatment of class III malocclusion

In the scholarly debate about the treatment of Class III malocclusion, one of the most sensitive and discussed issue remains that of the effectiveness of early treatment. There are two major groups of scholars making their arguments and holding opposing positions. One group of scholars views the early treatment as ineffective and useless in the group of children of age 6–12 years old due to the fact that they are at the stage of rapid physical growth and changes. The other group of scholars holds a more optimistic view. They argue the early treatment of Class III malocclusion is important for a number of reasons. In addition to possible trauma and psychological benefits, the early treatment is important to prevent the need for orthognathic surgery, tooth extraction, and periodontal problems. Moreover, the treatment is viewed as a “must do” tool because Class III malocclusion anomalies tend to exacerbate during the growth period. This study aims to contribute at this issue by treating Class III malocclusion in a group of children of age 6–12 years old based on maxillary protraction therapy and face mask, preceded by rapid maxillary expansion. The treatment started in 2017 and so far, the results show the treatment has been effective in almost all the participating children. The so far results of my study, confirm the position of the scholars favoring the early treatment of Class III and viewing it as effective. However, given that children treated are still within the growth stage, and mandibula has yet to fully complete its development potential, the discussion about the results and their validity remains open to a revision whether the early treatment of Class III malocclusion is definitively effective or, it could succeed in some cases and fail in some other cases.

Tatjana Savic–Stankovic – School of Dental Medicine University of Belgrade, Serbia

Teeth whitening – possibilities and limits

Teeth whitening is an aesthetic, non–restorative procedure that can lead to a change in the color and shade of the teeth. For this procedure to be more understandable, it is necessary to point out some physical characteristics and disorders of the teeth incorporated. Today, hydrogen peroxide or carbamide peroxide–based gels are most often used for teeth whitening, and the primary reaction in teeth whitening is the oxidation reaction. A correct diagnosis and an adequate treatment plan are necessary for successful teeth whitening therapy. The therapy plan includes the selection of a proper whitening technique depending on the type of discoloration and whether the whitening is applied to vital or avital teeth. In the lecture, clinical cases of bleaching of different causes of discoloration will be presented, with a step–by–step presentation of clinical methods. Limits and possibilities of teeth whitening will be discussed, and answers to the most frequently asked questions related to this topic will be given.

Kenan Demirovic – Private praxis, Sarajevo, Bosnia and Herzegovina

Impact of occlusal splint therapy on orthodontic diagnosis and treatment planning in patients with signs and symptoms of TMD

Today it is generally accepted that etiology of temporomandibular disorders (TMD) is multifactorial and mainly related to occlusal disturbances, trauma, emotional stress and parafunctional activities. Signs and symptoms of TMD consist of pain in TMJ structures, pain in masticatory muscles, headache, limited mouth opening, joint sounds. One of the major etiologic factors of TMDs is an orthopedically unstable musculoskeletal position of the condyles in the fossa, depicted by an increased CR–MI discrepancy at dental and condylar level. Management of orthodontic patients with signs and symptoms of TMD caused by unstable musculoskeletal position represents a distinct challenge for every orthodontist with a lot of laborious work to be undertaken. In order to achieve orthopedic stability deprogramming of the neuromuscular system with occlusal splint therapy is highly indicated. By seating the condyles in an orthopedically stable position in the fossa occlusal splint therapy might be highly beneficial in reduction/elimination of signs and symptoms of TMD. Moreover, muscle deprogramming might induce a substantial changes in maxillomandibular relationship and thus change a dentofacial characteristics of the patient, directly interfering with a correct orthodontic diagnosis. In case of improper diagnosis of orthodontic patients with orthopedic instability the possibility of development of signs and symptoms of TMD during or after the orthodontic treatment substantially increases. The aim of our investigations was to evaluate if there is a relationship between the condylar axis position as determined by the occlusion and signs and symptoms of TMD and to evaluate the effect of occlusal splint therapy on final orthodontic diagnosis and plan of treatment in individuals with increased condylar displacement. The results showed a positive correlation between the occlusal splint therapy and reduction or elimination of signs and symptoms of TMD with a more than 90% reduction of TMD symptomatology. It was also shown that orthodontic diagnosis and plan of treatment should be performed from the musculoskeletally most stable position of CR in order to avoid orthodontic misdiagnosis.

Branislav Vidovic – Private praxis, Novi Sad, Serbia

The Influence of Orthodontic treatment on facial balance

The lecture will encompass the analysis of facial softtissues changes following orthodontic treatments. Soft tissue profile changes are assessed with respect to dental and skeletal structure changes in order to determine what kind of mutual connection there is between them and how that connection can be used to efficiently manage dental structures in orthodontic treatment not only for the purposes of achieving optimal occlusal relationships but also in the sense of achieving a balanced facial appearance.

Nuno Pinto – Private praxis, Lisbon, Portugal

Keep it simple with Flash

Nowadays it is important to simplify our protocols as much as possible. In my clinical experience over the years, I always have tried to simplify my procedures as far as I can, yet never neglecting the guarantee of success in the long run. Specifically talking about shaping procedures, the trend is split between rotary and reciprocation. The introduction of the reciprocation movement has broken many paradigms, as well as pushing the boundaries of canal shaping and its parameters. It is true that reciprocation was already discussed in the last century, but it has never had as much prominence as nowadays, moreover tending to evolve. In my talk I'm going to show cases where I use a single file, rotary or reciprocating, and will be able to show the advantages of using flat side files. This new and innovative reciprocating system has a design that is a complete departure from the norm. We can also complement it with some "accessory" files so this system can be used not only by those keen on the use of the single file but also by the those who like to introduce more files and make the treatment more complex yet theoretically more complete and predictable as it is claimed. The new reciprocating file is a hybrid with an innovative design. The first 6 mm are solely a reciprocating S design and then the patterns change creating a very interesting M-wire resistant where needed, giving space for the debris to come up freely. The advantage of having two designs on the same file makes its performance very effective and with a very interesting resistance for a supposedly unique file. The introduction of flat side files may be the route that instrumentation needs in the path towards minimally invasive procedures

Magdalena Marinescu-Gava – Finnish Student Health Foundation, Helsinki, Finland

Exploring the depths of 2D and 3D imaging in dentistry

Dentistry has undergone a transformative journey with the integration of cutting-edge imaging technologies, particularly in the realms of 2D and 3D imaging. The presentation aims to point out the progression of conventional radiography and its role in identifying dental pathologies, the strengths, and limitations of 2D imaging, as well as the need for third dimension, unveiling the role of 3D imaging in dentistry, particularly the CBCT. Undeniable advantages of 3D imaging, including enhanced visualization of anatomical structures, accurate measurement capabilities, and the ability to simulate surgical procedures in a virtual environment come with an increase in the radiation dose and a responsibility of the dentist to balance the benefits and the risks. This presentation aims to showcase the symbiotic relationship between 2D and 3D imaging in modern, comprehensive dentistry, with the help of a few clinical cases. The integration of imaging technologies facilitates a holistic approach, allowing practitioners to diagnose complex cases with greater confidence and devise personalized treatment plans tailored to individual patient needs.

Meric Karapinar–Kazandag – Dental School, Yeditepe University, Istanbul, Turkey
Pain management in endodontics

The lecture "Pain Management in Endodontics" will cover the importance of pain assessment and its role in effective pain management in endodontics. The learning outcomes include recognizing the significance of pain assessment, taking a detailed pain history, developing an attitude based on pain history, querying the possibility of non-odontogenic pain, identifying difficult anesthesia sites and conditions, building a strategy for improving IANB efficacy, understanding the strong correlation between anxiety and pain, selecting appropriate analgesics for systemic conditions, and managing postoperative pain. The lecturer will begin by emphasizing the importance of pain assessment in endodontics. Attendees will learn the benefits of taking a detailed history of the patient's pain to better understand its origin and characteristics. Developing an attitude based on the pain history of the patient can help identify the most appropriate pain management approach. The lecturer will explain the importance of querying the possibility of non-odontogenic pain to ensure accurate diagnosis and treatment planning. The lecture will cover identifying the difficulty of achieving anesthesia at particular sites and conditions to improve the efficacy of anesthesia administration. The lecturer will explain how building up a strategy can improve the effect of IANB while considering patient comfort and safety. Attendees will also learn about various techniques for achieving profound anesthesia in endodontic procedures. An important aspect of pain management is understanding the strong correlation between anxiety and pain. The lecturer will discuss how managing anxiety effectively can help reduce pain perception during endodontic procedures. Additionally, selecting the appropriate analgesic for the systemic condition of the patient is essential to minimize the risk of adverse effects. Finally, the lecture will cover managing postoperative pain to ensure optimal patient comfort and recovery. The lecturer will discuss various approaches to postoperative pain management, including medication, non-pharmacological interventions, and patient education. Overall, this lecture aims to provide endodontic professionals with a comprehensive understanding of pain assessment and management. By the end of the lecture, attendees should be able to apply the knowledge gained to their practice, resulting in improved patient outcomes and satisfaction.

Objectives:

- Recognize the importance of pain assessment and its role in effective pain management.
- Take a detailed history of the patient's pain to better understand its origin and characteristics.
- Develop an attitude based on the pain history of the patient to identify the most appropriate pain management approach.
- Query the possibility of non-odontogenic pain to ensure accurate diagnosis and treatment planning.

Kostas Ioannidis – Department of Dentistry, Aristotle University of Thessaloniki, Greece

Osseo-Driven Endodontics: Linking tooth survival and future implant placement

Taking into account recent advances in Endodontology and the high healing rates of root canal treatments, the aging population and the increasing rates in implant maintenance costs and complications, such as peri-implantitis, it is important to optimise and sustain natural dentition for longer-term periods. The aim of this lecture is to describe the novel clinical concept of osseo-driven Endodontics, which is applicable in compromised teeth with large periradicular infections that require root canal treatment; The prospective view of the concept is to keep teeth functional and assist in natural bone remodelling; hence preserve the alveolar ridge and soft tissue architecture. An appropriate root canal treatment and restoration of a tooth that enables periradicular soft and hard tissue healing, will be a linking anchor to the future rehabilitation of this region with an implant, in the event of restorative failure or vertical root fracture.

Nikolaos Nikitakis – Dental School, National and Kapodistrian University of Athens, Greece

Diseases of the oral mucosa in children and adolescents: A guide to differential diagnosis and management

Childhood is arguably the most critical period in every person's life, characterized by an intricate interplay between the genetic background of each individual and the unique environmental influences, which, together, determine the growth and development of any child. Ideally, this process towards adulthood evolves physiologically in a condition of health; however, children are not "immune" to various types of pathology, which affect any part of the human body, including the oral mucosa. Indeed, a plethora of oral mucosal diseases, both local and systemic, may affect children and adolescents; these pathologic conditions may be similar to those presenting in adulthood or may be quite different or even unique for childhood. Further, they may be limited to the mouth or have manifestations in other systems and organs as well. The etiopathogenesis, clinicopathologic characteristics, treatment and prognosis of these conditions are very diverse. Knowledge of the pediatric oral pathology is a challenging task for every dentist, general or specialized, or pediatrician, but also a required competency to promptly detect, accurately diagnose and successfully manage oral diseases of childhood. At the same time, the reward for caring for a child and, in some cases, intervening in a way that may be helpful, significant or even crucial for their oral and general health, is invaluable.

This lecture aims to highlight key issues related specifically to oral mucosa and minor salivary glands in childhood and adolescence. Selected entities will be presented classified into variations of the normal, developmental anomalies, hereditary conditions, soft tissue cysts, traumatic and reactive lesions, immunologic conditions, infections, granulomatous diseases, vascular tumors and malformations, pigmented lesions, conditions with neurologic symptomatology, and benign or malignant neoplasms. The focus will be on clinical presentation, differential diagnosis, and appropriate management, through discussion of specific cases highlighting the value of an interdisciplinary approach.

Ana Pucar – School of Dental Medicine University of Belgrade, Serbia

Diseases of oral mucosa – a dentist's nightmare or a professional challenge

Contemporary dentistry is mostly focused on rehabilitating teeth and restoring the damaged appearance and function of the oral cavity. A large number of dentists are able to meet the needs of patients who have sought help for problems they have with their teeth. But, when a patient comes with diseases of the oral mucosa, we enter a zone where most dentists do not feel comfortable. This is where the oral medicine specialist comes in. Oral medicine is defined by the American Academy of Oral Medicine as the discipline of dentistry concerned with the oral health care of medically complex patients – including the diagnosis and management of medical conditions that affect the oral and maxillofacial region. Thus, mucosal diseases, viral and fungal infections, autoimmune diseases, allergies, salivary gland diseases, oral manifestations of systemic diseases and their therapies, chronic pain, premalignant conditions and malignant diseases are some of the problems oral medicine specialists face in their daily practice. Oral medicine is primarily a non-surgical area of dentistry, but it involves minor surgical interventions such as biopsies, small excisions, and therapeutic injections. Oral medicine primarily relies on the use of topical and systemic drugs. The lecture is aimed at general dentists and specialists in other areas of dentistry with the primary goal of emphasize the most frequent pathological changes and conditions of oral mucosa, helping dentists to establish a differential diagnosis (or diagnosis) and define the direction of the patient's treatment. Also, the idea of the lecture is to show that solving mucosal problems can be an exciting challenge for dentists and provide them with the great professional satisfaction.

Athanasios Pouloupoulos – Aristotle University of Thessaloniki, Greece

Oral Mucosal Lesions in the Elderly—The dentist in the frontline of diagnosis and management.

The aim of the lecture is to present and discuss the diagnosis and management of the most common oral mucosa lesions (OMLs) in elderly patients. Among the entire group of patients, the most frequently observed OMLs in the elderly population are reactive hyperplasias such as denture-related stomatitis, irritation fibroma, moreover have been recorded lingual changes such as fissured tongue and varicosities. However, the more frequently described pathologies were traumatic lesions such as traumatic ulcerations, dermatological diseases such as oral lichen planus, and a variety of OMLs such as oral candidosis, recurrent aphthous stomatitis, and melanotic pigmentation. In addition have been reported salivary glands diseases and oral potentially malignant disorders— oral cancer in the elderly population. Furthermore, there is often a problem with the uncontrolled self-administration of the over-the-counter medications among seniors. Such long-term self-treatment can lead the development of OMLs and should always be taken into consideration during the medical interview and diagnostic process for the oral mucosal lesions. In conclusion, oral health has an obvious impact on the functional, psychological, and behavioral quality of life. The current demographic pattern shows an increase of geriatric population compared to other age groups, and this trend will continue in future. This demands special focus on geriatric general and oral health care, which warrant further research studies in this area.

Mia Rakic – University Complutense of Madrid, Spain

Peri-implantitis right here right now

Peri-implantitis is qualified emerging public health problem due to its increasing prevalence, lack of predictive treatment and associated high recurrence, collectively negatively affecting local and systemic health, patient perception of the treatment and overall implant therapy cost-effectiveness. Out of these reasons substantial efforts are invested in understanding of underlying causes behind peri-implantitis, and improvement of the preventive, diagnostic, treatment, and maintenance strategies for optimizing implant therapy being the gold standard treatment for replacement of the missing teeth. This lecture will address the state-of-the-art aspects concerning peri-implantitis pathology, diagnostics and treatment, and the concept of precision management of peri-implantitis patients as a safe step toward successful implant therapy.

Francesco Inchingolo, Gianna Dipalma – University of Bari Aldo Moro, Italy

Medication-related osteonecrosis of the jaw (MRNJ) treatment strategies – use of growth factors in the management of high risk hemorrhagic patients and of patients with bone neoplasms after bisphosphonates ANF monoclonal

Medication-related osteonecrosis of the jaw (MRNJ) is a serious drug-related side effect that is most common in people using antiresorptive and/or angiogenic medications. Therapy options for this condition include conservative treatments, surgical procedures with varied degrees of invasiveness, and adjuvant therapies. The aim of the present study is to identify the most successful and promising therapy alternatives available to clinicians. PubMed, Cochrane, Scopus, Web of Science, and Embase were searched for works on our topic published between 8 January 2006 and 8 January 2023. The search was restricted to randomized clinical trials, retrospective studies, clinical studies, and case series involving human subjects with at least five cases and no age restriction on participants. A total of 2657 was found. After the selection process, the review included 32 publications for qualitative analysis. Although conservative treatments (pharmacological, laser, and minimally invasive surgery) are effective in the early stages of MRONJs or as a supplement to traditional surgical resection therapy, most studies emphasize the importance of surgical treatment for the resolution or downstaging of advanced lesions. Fluorescence-guided surgery, PRP, PRF, CGF, piezosurgery, VEGF, hyaluronic acid, and ozone therapy all show significant potential for improving treatment outcomes.

Sime and Zvonimir Zivkovic – Private praxis, Rijeka, Croatia

Years of experience + Youth and Ambition = Success! Or not?

In our lecture we will present you some important points in developing of our clinic and how things change with new, digital generation of dentist. What is advantages and disadvantages of modern technology and how new and old school work together for new benefits: From one man band to clinic with 35 employees; Main challenges for dental business in the last 5 years; New market requests and competition in dental industry; Evolution of Dent Vitalis Fides through youth integration; Dent Vitalis Fides's response through new treatment concepts

Jovana Mitikj / Zoran Shushak – Private praxis / Medical Faculty, Stip, North Macedonia
The Single – tooth implant: Probability vs Possibility

The replacement of the single tooth with a dental implant is one of the most common clinical situations practitioners face on a daily basis. The use of single implants restorations is well established since the first data were published. While in the past sockets were left untouched for months after tooth extraction before attending to the residual ridge, today it is possible to perform "one surgery, one time," which is a huge benefit to both the patient and clinician alike. Single tooth replacement with an implant is challenging especially in a highly compromised site. In this lecture, we will present the foundation of theoretical knowledge of key concepts and treatment methods for successful single-tooth implant placement procedures in modern dentistry (free hand versus guided) . Through examples from clinical practice we will present the implant placement in the anterior and posterior region. Also, we will present the implant complications and risks in the esthetic zone.

Learning objectives: To understand the biological background of use of single implants in implantology. To see examples of clinical application of single implants in different scenarios in anterior and posterior region.

Cristian Peron – Advance Implant Dentistry University of Modena
Immediate implants with immediate loading using a digital approach.

The management of the post-extraction socket represents an important challenge for the clinician, especially in the aesthetic area. Tooth extraction causes bone resorption due to the qualitative and quantitative changes that occur in the alveolar bone. Post-extraction implants can represent a valid therapeutic alternative to tooth extraction in order to contrast bone resorption if used in ideal conditions with the correct surgical-prosthetic protocol. Today, digital offers us the possibility of having increasingly predictable operating protocols, helping the clinician in the three-dimensional planning of the implant with the advantage of achieving an optimal aesthetic and functional result in the long term. During the lecture, all the surgical and prosthetic steps will be described to best plan the implant insertion in the post-extraction site with the use of an immediate screw retained provisional restoration.

Spyros Papacharalambous – University of Nicosia Medical School, Cyprus
Head and neck embryology – Clinical correlations

Development of the face and cranium during embryogenesis is a complex and orchestrated process that involves cellular proliferation, differentiation, migration, and selective apoptosis. Disruption of these normal processes leads to Cranio-facial malformations. Comprising over 1/3 of all body malformations, they are of high importance not only because of their percentage but also because they affect the appearance of the patient, important functions such as breathing and eating, and some, the development of the brain, consequently his/her mental status, even his/her life. This lecture aims to give basic knowledge on the main Cranio-facial malformations, as well as their treatment options and methods. It is structured into three parts: Cranio-facial malformations – definition and classification; Cranio-facial malformations – description and treatment options; Cranio-facial malformations – clinical cases

Zoran Lazic – Militarymedical Academy, Belgrade, Serbia

Biomechanics of implants – Where are we going wrong?

Biomechanics is the tissue's response to an applied force and represents a set of interactions that transfer to bony and soft tissue via implant–prosthodontic complex. From the planning stages to the final prosthetic restoration, biomechanics is involved in each and every aspect. Ignoring it inevitably leads to implant failure. As we know, osseointegration is a biomechanical and biological concept based on the contact of the bone and the integrated implant which enables predictable long–term function of dental restorations. Even today, unfortunately, we do not think biologically, but only mechanically, as a result of insufficient knowledge and the need for quick money. Which implant system to choose, that is the question. Many factors must be taken into consideration. A series of parameters that influence osseointegration are first exclusively biological and then mechanical, and unfortunately we concentrated on surgical technique and immediate loading. Successful osseointegration depends on the interrelationship of various confounding factors such as the biocompatibility of the material of implant, the macro– and microscopic topography of implant surface, design of the implant, bone morphology and quality at the implant site, the surgical technique ... The paper will discuss which type of implant is the most suitable for certain situations... While no therapy is without failure risk, a good understanding of the biomechanics involved in oral implantology can lead to higher success rates in implant supported prosthetic restorations.

Norina Forna – Private praxis / Faculty of Dental Medicine, Iasi, Romania

Challenges of digital applications in implantprosthetic therapy

Although the use of computerized methods is on the rise in the field of dentistry globally, many dentists have reservations about integrating these techniques into their daily practice, whether due to a lack of theoretical and practical training, the limited number of efficient and user–friendly software solutions, or the difficulty in moving away from traditional work models (diagnosis, analysis, planning) that rely more on conventional methods. Research groups are focused on various directions that require facilitating and validating the use of these tools in dental implant and prosthetic therapy. It is crucial to clarify how digital indicators for evaluating the socio–economic status, behavioral aspects, and clinical–biological indicators of edentulous patients can be quantified. Optimizing the measurement techniques for these clinical–biological indicators, with the aim of reducing the risks of therapeutic failure by monitoring negative indicators, represents a challenge in terms of the long–term prognosis of dental implant and prosthetic treatments. Another requested research direction concerns the linear and angular discrepancies between the virtually planned position of dental implants and the actual position of the surgically inserted implants. The obtained results offer new perspectives on the benefits and limits of planning the placement of dental implants using software applications based on CBCT image processing and analysis. The precision of data collected through CBCT imaging or by combining data sets (radiological images and images obtained through intraoral or extraoral optical scanning of the traditional impression) poses another challenge. However, the advantages of using digitally assisted implant and prosthetic therapy significantly outweigh the limitations. *Key words: implant–prosthetic therapy, classic approach, digital applications, benefits, limits*

Ivan Delic – Private praxis, Rijeka, Croatia

Stackable guides: A new era in implantoprosthesis?

In our pursuit for increased precision, shorter treatment durations, and fewer dental appointments, new technologies and digital tools have become invaluable. Today we have powerful digital tools for transferring the preoperative occlusion and aesthetic determinants to the final prosthetics utilizing intraoral scanning, CBCT, 3D and 2D photos, and creating a 'digital patient'. This allows us to plan the course of therapy, the appearance of prosthetic work, implant positions and all supporting procedures such as soft tissue management and bone augmentation, unencumbered by time constraints. The purpose of this session is to present implantoprosthesis therapy with Stackable Guides. The Stackable Guides Concept is a fully digitized, prosthetically guided implant therapy where in the same procedure we place implants with surgical and prosthetic templates and immediately load them with provisional prosthetics on temporary abutments. The production of final prosthetics is based on provisional prosthetics and its eventual modifications by creating an identical copy through scanning in a laboratory scanner with attached implant scan analogues on the provisionals. The advantages of the concept compared to classical implantoprosthesis therapy are the predictability of outcome, improved biomechanics, reproducibility, easy eventual repairs, fewer visits, faster course of therapy, better oral hygiene, better relationship with the oral mucosa, no period of toothlessness, shorter period of getting used to it and better acceptance of the therapy plan.

Learning objectives:

- Modern approach to planning complex guided implantoprosthesis therapies;
- Creating a 'digital patient', superimposing intraoral scans, CBCT, 3D face scans, virtual wax up, implant and prosthetic guides designs;
- Designing implant and prosthetic guides;
- Understanding the Stackable Guides Concept workflow
- How to transfer preop occlusion determinants to the final prosthetics;
- Discuss the future development and possibilities of Stackable Guides Concept;
- Benefits in comparison to the conventional technique;

Vladan Kekovic – Private praxis, Podgorica, Montenegro

Xenofatgraft: Embracing the regenerative power of fat tissue for enhancing bone augmentation

Sinus lift surgery, a cornerstone procedure in implant dentistry, presents both challenges and opportunities for enhancing bone regeneration. In recent years, there has been a growing interest in exploring alternative regenerative approaches, with a particular focus on the regenerative potential of adipose tissue. In this presentation, we embark on an exploration of the remarkable regenerative potential inherent within adipose tissue, shedding light on its distinctive characteristics. Furthermore, our scientific contribution will be presented, which is rooted in a comprehensive study investigating the efficacy of utilizing fat tissue alongside xenograft in sinus lift procedures, yielding promising outcomes.

Kenan Ferati – Faculty of Dentistry, University of Tetovo, North Macedonia

Rehabilitation & implantation in aesthetic area

The success of a dental implant is not only evaluated by osseointegration as it was in the early days of implantology, today the requirements are expanding and besides osteointegration, aesthetic outcomes also play an important role. Requirements especially aesthetic ones can often be difficult to achieve, and implant failures in the aesthetic area can be multifactorial. Once implant failures occur in the aesthetic area, many cannot be fully corrected to meet the requirements of patients and the medical team. These complications should be handled by a dental disciplinary team. In our case series, surgical considerations, including cases of asymmetry / due to implant placement or bone loss resulting from inadequate techniques or treatment failures, such as papillary asymmetric deficits with biological adhesions, are given. We draw on our experience in treating aesthetic failure of dental implants.

Verica Pavlic – Department of Dentistry, Medical Faculty University of Banja Luka, Bosnia and Herzegovina

Gingival depigmentation using Er:YAG laser

Gingival pigmentations can hugely affect patient's esthetic appearance. Gingival pigmentations can be physiological or iatrogenic (gingival pigmentation following unintentional tissue contamination during dental treatment). The most frequent physiological pigmentation in the gingiva is melanin hyperpigmentation, while iatrogenic pigmentations are known as metal or amalgam tattoos. Removal of gingival pigmentation and the recovery of esthetic appearance, especially in the anterior labial gingiva, are among frequent patient demands. The main ways of removal gingival pigmentation are mechanical and surgical. Recently, less invasive depigmentation procedures have been introduced, including laser surgery using different types of dental lasers. Among those lasers, Er:YAG laser has advantageous properties for soft tissue surgery, namely due to precise ablation with minimal thermal damage to the surrounding and underlying tissues. Furthermore, the combination of Er:YAG laser with microscopy facilitates safe and effective depigmentation, uneventful and favorable wound healing, as well as successful outcomes in improving discoloration.

Nitzan Bichacho – Medical Faculty, Hebrew University and Hadassah, Jerusalem, Israel

Esthetic implant restorations in challenging situations – What did We learn?

In order to achieve a natural-looking result of artificial implant restorations, one must analyze the operative site and plan for a long-term healthy integration of the restorative complex and the implant fixture within the surrounding living tissues. At the smile zone our primary goal is also to obtain a natural-looking peri-implant soft tissue embracing a natural-looking functioning crown. The accumulated insights over the last 20 years on bone and tissue response (and alterations) around implants, enable biologic-based implementation of different surgical and restorative approaches, so that the abutment-crown complex has more chances to blend in with the surrounding tissue and the dentition in complete health and harmony. In this presentation, surgical and restorative approaches will be explained through clinical cases, to enable a comprehensive understanding of the present limitations and the various options available today to maximize the successful results of implants-based restorations especially at the smile zone

Doriana Agop Forna – Faculty of Dental Medicine, Iasi, Romania

Classical and modern aspects in oral surgery

Surgical treatments used in the reconstruction of oral tissue losses encompass a wide range of procedures, primarily classified into two approaches: complex surgery and minimally invasive surgery. While traditional complex surgical techniques are associated with longer recovery periods, potential complications due to their extensive nature, and the need for high expertise, the use of minimally invasive techniques (assisted by digital applications and laser techniques) offers many benefits, especially in the planning stage and post-treatment recovery. Advantages. Accurate measurements of alveolar bone volume and density by digital applications (On-Demand, Planmeca, Galileos) allow better planning of alveolar bone reconstruction. Laser-assisted procedures (erbium, diode, Nd:YAG, CO₂) are associated with reduced intra-operative bleeding, lower post-operative pain and discomfort, lower risk of infection, lower need for sutures as well as significantly shorter healing time. Laser-assisted minimal invasive techniques are recommended for surgical interventions on soft tissues in pre-prosthetic and pre-implant stages to guided bone regeneration techniques, removal of oral benign lesions, and even therapy of oral vascular lesions. The decision regarding the selection of complex surgical or minimally invasive techniques depends on the specific nature and severity of the oral condition. Determining the appropriate surgical approach should be made following a detailed evaluation by a team of medical specialists from various disciplines, taking into account the unique condition and treatment goals of each individual patient.

Miodrag Scepanovic – School of Dental Medicine University of Belgrade, Serbia

Digital workflow in implant retained full arch cases

In dentistry, treating edentulous patients with implant solutions is a complex procedure. Even in this realm of implantology and prosthetic dentistry, the integration of a digital workflow has become mainstream. Digitalization plays a crucial role in various intricate steps, including planning, digitally defining vertical dimensions, selecting the appropriate type of implants, determining the right time for loading, and choosing suitable materials for the prosthetic workflow. One of the key advantages of digital implant dentistry is its global approach. With just a few clicks and seconds, outsourcing can be utilized anywhere in the world. This is particularly evident in steps such as digital set-up, planning for guided surgery, and finalizing the design for permanent prostheses. The aim of the lecture is to illustrate a comprehensive digital workflow in full-arch implant rehabilitation and to address complications and challenges associated with the process.

Ventseslav Stankov – Private praxis, Plovdiv, Bulgaria

Immediate in the esthetic zone. Perio Prosthetic Synergy

Nowadays aesthetics is extremely important for our patients. They don't visit our office with a simple request for a tooth replacement and are critical about the final result. Beautiful ceramic crowns that are firmly integrated with the soft tissue are a strand of art of care. Unfortunately after tooth extraction we face changes in the buccal contour and the papillae appearance. The focus of the lecture will be the way to compensate for the buccal collapse and provide papillae support.

Nikola Vasilic – Private praxis, Belgrade, Serbia

Immediate tooth replacement in the esthetic zone: Challenge and Opportunity

Achieving anterior implant esthetics is challenging and demanding procedure, especially when implants are immediately placed in the extraction socket. Having a three-dimensional vision of the implant position and final restoration in relation to the hard and soft tissue will lead to successful treatment. Planning with understanding the biologic and physiologic limitations of the soft and hard tissue will facilitate predictability in simple to complex esthetic situations. Surgical techniques, together with implant design are prerequisites for favorable implant stability, and required restorative position. Design of restoration, temporary and final, will guide soft tissues to create a natural look of the replaced tooth. New technology, digital planning, and use of digitally created surgical guides makes treatment more accurate, and improves final outcome. Presentation outlines: Immediate tooth replacement; surgical and restorative concept; Immediate vs. Delayed vs. Early placement; How to minimize recession around implants; Restorative techniques for optimal soft tissue development; Use of digital tools to improve treatment outcome

Zoran Tatic / Boris Djuran – Military Medical Academy, Belgrade, Serbia

The effect of cigarette smoke and aerosol from heated tobacco products on periimplant tissue

Oral **Presentation**

OP-01

Dental Management of a Pediatric Patient with Alexander Disease: A Case Report

Merve Özdemir

Lokman Hekim Faculty of Dentistry, Department of Pediatric Dentistry

Introduction: Alexander disease is an extremely rare and fatal disorder that affects the central nervous system. According to the only population-based study conducted to date, the 5-year prevalence of Alexander disease is 1 in 2.7 million. There is no other case report or article in the literature reporting the dental findings of Type 2 Alexander disease with intraoral photographs. The aim of this case report is to present the intraoral findings and dental management of Alexander's disease.

Case Report A 10-year-old girl with Alexander disease presented to the pediatric dentistry department with gingival bleeding on tooth brushing. Examination of the hard tissue revealed mixed dentition with generalized enamel hypoplasia. In addition to hypomineralizations, areas of cervical demineralization were also commonly observed in permanent teeth. Caries was observed on the occlusal surfaces of the molars. Medical consultation was obtained from patient's pediatrician before dental treatment. Based on the medical consultation, it was not considered appropriate to apply dental treatment under general anesthesia. Consequently, dental procedures were performed in the clinical setting to the extent that the patient's level of cooperation allowed. Mandibular and maxillary molars were treated with the silver-modified atraumatic restorative treatment (SMART technique). Because SDF could cause discoloration, only high viscosity glass ionomer cements were used to restore the mandibular and maxillary incisors. Lastly, topical fluoride varnish was applied, and the patient was recalled after 1 month for a follow-up check-up.

Conclusion Extensive dental caries, enamel hypoplasia, gingival and periodontal pathologies are the intraoral findings of Alexander disease.

OP-02

Evaluation of Complications in Permanent Teeth Following Luxation Injuries to Primary Teeth

Cigdem Guler, Didem Odabasi, Serife Kuzubas

ORDU University Faculty of Dentistry Department of Pediatric Dentistry

Objective: The purpose of this study is to evaluate the complications in permanent teeth of patients who have experienced luxation injuries to primary teeth.

Materials and Methods: A retrospective examination was conducted on records of patients who presented with complaints of luxation injuries to primary teeth at the Department of Pedodontics, Faculty of Dentistry, Ordu University, between October 2012–2023. The evaluations were based on age, gender, type of trauma, affected tooth/teeth, cause of trauma, time elapsed from trauma to presentation, and complications in permanent teeth following trauma.

Results: The study examined records of dental trauma in 80 child patients [33 girl (41.3%) and 47 boy (58.8%)] aged between 1–6 years (mean 3.65 ± 1.54). The most commonly identified types of trauma were subluxation (25 patients, 31.3%), lateral luxation (22 patients, 27.5%), and intrusive luxation (21 patients, 26.3%). A total of 139

primary teeth were affected by trauma, with the maxillary primary central incisors (tooth number 61, 41%, and tooth number 51, 35.3%) being the most affected teeth. Dental trauma often results from falls, as was the case for 43 patients (53.8%). Within the first 24 hours after the trauma, 48 patients (60%) applied to the dental treatment. White or yellow–brown discoloration in enamel was observed in 12 patients (15%), while enamel hypoplasia accompanied by white or yellow–brown discoloration was observed in 3 patients (3.8%).

Conclusion: Developmental disturbances may occur in permanent teeth following luxation injuries in primary teeth. It is recommended to conduct regular clinical and radiographic follow–ups for patients until permanent teeth have erupted.

OP–03

Bibliometric Analysis of Studies Conducted on the Use of Virtual Reality in the Education of Dental Students

Tuğçe Nur Şahin

Karamanoğlu Mehmetbey University Ahmet Keleşoğlu Faculty of Dentistry

Objective: This study was conducted to determine the trend of research on the use of virtual reality devices, which is a current method in the education of dentistry students.

Materials and Methods: A search was made in the WOS database using the keywords "virtual reality" OR "VR" AND "dental" AND "student" AND education" in the all fields option and 225 results were found. Afterwards, only the 'Dentistry Oral Surgery Medicine' category was selected from the WOS category filter and the study was carried out with 103 articles. The downloaded file was processed using Biblioshiny via the RStudio program.

Results: As a result of the analysis, 103 articles on dental students' s education using virtual reality tools between 2007 and 2024 showed that 406 authors worked, 177 keywords and 27 sources (journals) were used, the annual growth rate was 2,41 %. It was observed that the most articles (34/103) were published in 'Journal of Dental Education' and most of the articles were published in 2022 (20/103).

Conclusion: Virtual reality is a material that is increasingly used in the education of dentistry students, as in every field. In the field of dentistry, where aerosol emissions are very high, we see that the number of studies in this field for the education of dental students in the post–pandemic period is much higher than in the pre–pandemic period (58/103). We believe that its use in this field will increase more effectively in the future.

Keywords: Bibliometric analysis, virtual reality, dentistry, education, student.

OP–04

Pedodontics (Pediatric Dentistry) Theses in Turkey

Cigdem Guler, Emre Serhan Alper

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Objective: The aim of this study is to examine the theses completed in Pedodontics (Pediatric Dentistry) postgraduate education in Turkey and to evaluate them according

to established criteria. Theses completed in Pediatric Dentistry postgraduate education between 2012–2022 years and accessible

Materials and Methods: in Turkish National Thesis Center, were examined for the study. The theses were evaluated in terms of whether the university was public or private, the type of thesis (doctoral or master's), the gender of author, the degree of supervisor, the gender of supervisor, the subject, and the methodology. The data were statistically analyzed.

Results: A total of 739 theses were evaluated, consisting of 293 doctoral thesis (39.6%) and 446 master's theses (60.4%). 700 theses (94.7%) were completed in public universities and 39 theses (5.3%) in private universities. 636 theses (86.1%) were written by female authors, while 103 theses (13.9%) were written by male authors. 160 of these advisors were assistant professors (21.6%), 194 were associate professors (26.3%), and 385 were professor (52.1%). The most used methodology was laboratory study/in vitro (286 theses, 38.7%), while the least used methodology was computer-based study/in silico (12 theses, 1.6%). The theses focused mainly on topics such as caries/preventive, restorative, and prosthetic applications (306 theses, 41.4%), while the least focused topic was artificial intelligence/stress analysis/finite elements (11 theses, 1.5%).

Conclusion: Artificial intelligence, finite element analysis, 3D printers, and 3D imaging are expected to gain popularity in the future.

Keywords: Postgraduate Education, Pedodontics (Pediatric Dentistry), Thesis

OP-05

Pulpotomy Treatment of Permanent Immature Molars with MTA: Three Case Reports

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ORDU University Faculty of Dentistry Department of Pediatric Dentistry

Objective: The aim of pulpotomy treatment in young permanent teeth is to preserve pulp vitality to ensure that root development continues and the tooth reaches the ideal crown to root ratio. In this case report, we aimed to evaluate the clinical and radiographic success of pulpotomy treatment with MTA in permanent molars with incomplete apex development.

Materials and Methods: Three eight-year-old patients presented to our clinic at different times with deep dentin caries in their permanent first molars. Clinically, reversible pulpitis findings were observed in the related teeth. After radiologic examination, it was determined that the apex development of the teeth was incomplete. Following the removal of carious dentin tissue after local anesthesia, access cavities were prepared. After removal of the coronal pulp tissue, hemostasis was achieved with 2.5% sodium hypochlorite. MTA (Mineral Trioxide Aggregate) was used as pulpotomy agent. The teeth were restored with composite resin in the same session.

Results: The follow-up period of the cases varied between 12 and 24 months. At the follow-up appointments, no clinical symptoms were observed in the permanent immature molars and radiographic root development was observed.

Conclusion: Pulpotomy treatment may be an alternative preventive treatment option to root canal treatment in permanent immature molars with deep dentin caries, when tooth vitality is preserved and root tip development is maintained.

Keywords: MTA, Pediatric dentistry, pulpotomy, young permanent teeth

OP-06

Attitudes Towards the Use of *Nicotiana Rustica* Linn (Maras Powder), Usage Characteristics, Oral Health and Hygiene Awareness

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Kahramanmaraş Sütçü İmam Üniversitesi Diş Hekimliği Fakültesi

Aim: The aim of present study was to determine patients' attitudes, usage characteristics, oral health and oral hygiene awareness towards the use of a smokeless tobacco, *Nicotiana Rustica* Linn, widely used in Kahramanmaraş province.

Materials and Methods: 136 individuals from various age groups were invited to participate in this cross-sectional study, which was conducted over a period of three days. Before beginning the study, each participant was required to sign a written informed consent form. The survey questions were drawn from the smokeless tobacco module of the tobacco use awareness survey developed by Karl O. Fagerstöm on behalf of the World Health Organization (WHO), as well as other questions from the literature and demographic questions such as age and gender. The data were presented as frequencies and percentages and analyzed using Fisher's exact test. The statistical analysis was performed using the IBM SPSS program, with a significance level of $p < 0.05$.

Results: According to our results, men and also 25–64 age range prefer Maras powder because they think it protects their health by reducing smoking (respectively, $p = 0.46$, $p = 0.007$). People with primary or high school education think that *Nicotiana Rustica* Linn is less harmful than cigarettes ($p = 0.029$). In addition, educational level does not affect the reason for utilizing Maras powder ($p > 0.005$).

Conclusions: This research demonstrated that individuals' attitudes towards *Nicotiana Rustica* Linn and oral health awareness were lacking.

Key Words: Maras powder, *Nicotiana Rustica* Linn, oral health and hygiene

OP-07

Effect of Ultrasonic Cleaning on the Flexural Strength of in 3D Printed Resins

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Aim: The use of 3D printed resins in dentistry is rapidly increasing. This study aimed to investigate the effect of ultrasonic cleaning on the flexural strength of resins produced by 3D printers.

Materials And Methods: Rectangular specimens with dimensions of 2x2x25 mm were fabricated using three different resin materials (P-crown Version 2 (Senertek–Turkey), P-crown Version 3 (Senertek–Turkey), Saremco Crowntec (Saremco–Switzerland)) according to ISO 4049 standards. Post-curing process was performed following the manufacturer's recommendations. The specimens were subjected to ultrasonic cleaning, and flexural strength was measured using appropriate test methods. Statistical analysis was performed using SPSS software, and one-way ANOVA and post hoc Tukey HSD tests were used.

Results: It was observed that the flexural strength of the specimens was significantly affected by resin type and ultrasonic cleaning. The highest flexural strength was

observed in the P–crown Version 3 non–ultrasonic group, while the lowest flexural strength was observed in the P–crown Version 2 ultrasonic group.

Conclusion: The flexural strengths of the specimens produced from 3D resin materials were found to be sufficient for clinical applications. Ultrasonic cleaning was observed to decrease the flexural strength.

keywords: 3D printer; ultrasonic cleaning

OP–08

Delayed Reimplantation of Avulsed Teeth: Presentation of Two Cases

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Nihal Belduz Kara

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Aim: Dental avulsion is defined as the complete displacement of a tooth from its alveolar socket due to trauma. The prognosis following avulsion may vary depending on factors like duration of the tooth's extra–alveolar time, stage of root development, and conditions of storage outside oral cavity. The most critical factor related to periodontal healing is the duration of extra–alveolar time of the tooth. The aim of this case series is to follow up on delayed reimplantation of avulsed maxillary central incisors

Materials And Methods: This case report presents the treatment approaches for the avulsed maxillary incisors of two pediatric patients (aged 9 and 10 years) applied to our clinic at different times after trauma. Clinical and radiographic examinations revealed no fractures in jaws or sockets. The extra–alveolar dry storage time of the tooth was recorded (tooth exposure times: 36 hours (1st) and 4 hours (2nd)). In all cases, teeth and sockets were cleaned. Semi–rigid splinting was performed for two weeks after reimplantation. Root canal treatment initiated when splint on; calcium hydroxide paste was applied for two weeks before finalizing treatments.

Results: During the 18–month follow–up period, discoloration, external resorption, pain, periapical lesions, or mobility weren't observed in any cases.

Conclusion: In delayed reimplantation cases, prompt replacement of tooth, appropriate splinting, and regular follow–up are important. Despite extended dry storage, replantation prevents complications in reimplanted teeth.

Keywords: Avulsion, Dental trauma, Delayed reimplantation, Young permanent tooth

OP–09

Internal Root Resorption Treatment on Young Permanent Tooth

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Objective: Internal resorption is a form of resorption originating from the root canal system and progressing towards the periapical tissues. This case report presents endodontic treatment and apical resection therapy applied to the teeth with a internal root resorption.

Material/Methods: 11 years old female patient presented to the clinic with the complaint of caries in her maxillary teeth. Clinical examination revealed caries on the mesial

aspect of tooth number 12. Internal root resorption was diagnosed on CBCT evaluation. Root canal treatment and apical resection were planned for the related tooth.

Results: In the first appointment, root canal treatment was started on tooth number 12. Calcium hydroxide paste was placed as a medication in tooth. After 1 month, the oral and maxillofacial surgeon performed apical surgery on teeth and the retrograde fillings of the teeth were completed with MTA. Root canal treatment of tooth number 12 was performed using cold lateral condensation technique. Root canal treatment was completed with final irrigation. After 2 years of follow-up, periapical radiographs showed the formation of a trabecular structure in the periapical tissues and the patient's complaints were resolved.

Conclusions: Endodontic treatment and apical resection in cases with internal root resorption are clinically successful.

Keywords: Apical resection, Root canal treatment, Mineral Trioxide Aggregate

OP-10

Evaluation of Delayed Maturity of Premolars in Dentitions

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Objective: Aplasia of the premolars is a common anomaly in the dentition.

Odontogenesis of premolars can vary more widely than the other permanent teeth. This work was performed in order to evaluate delayed maturity of premolars.

Material/Methods :2500 panoramic radiograph were analysed retrospectively in the faculty of dentistry.118 out of 2500 were detected to have premolar aplasia.

RESULT: 37 out of the 118 patients have first and following radiographs in the system. Therefore, the study was focused on 37 patients.This group of 37 children aged 5–8years in whom one or more tooth germs mesial to the 1st permanent molar were not visible in the various age groups was reexamined radiographically in the region where they apparently lacked the development of tooth germs. The second examination took place 1–8 year after the first, and a comparison was made of the two examinations.

Conclusion: The study confirms that the 2nd premolar can be very late in developing. Professionals in these fields should be aware of these possibilities in order to provide best possible service to the patient

Keywords: Premolar absence, hypodontia,retrospective study,prevalence

OP-11

Knowledge Levels and Attitudes of Ordu University Faculty of Dentistry Students Towards Medical Waste Management

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Objective: Medical waste management aims to collect, sort, recycle and dispose of medical waste in the most economical way possible without harming human health and the environment. The aim of our study was to evaluate the level of knowledge and attitudes of students studying at the Faculty of Dentistry towards medical waste management.

Materials and Methods: A total of 190 students from the 4th and 5th grades studying at the Faculty of Dentistry were included in the study. In addition to demographic information, multiple-choice survey questions were asked to assess students knowledge levels and attitudes towards medical waste management.

Results: One hundred and ninety students (115 females, 75 males) answered the questionnaire in our study. It was observed that 86.8% of students knew that medical waste should be disposed of in red bags, 95.8% knew that household waste should be disposed of in black bags, and 96.8% knew that recyclable packaging waste should be disposed of in blue bags. Only 49.7% of students knew that waste collection containers should be filled to a maximum of 75%. Regarding the disposal of syringe tips after use, only 14.3% of students knew that the tips should be capped before disposal into the box.

Conclusion: Considering the importance of waste management for healthcare workers, public health, and the environment, it is concluded that the knowledge levels of intern students are insufficient.

Keywords: Medical waste, Dentistry student, Healthcare, Sterilization, Waste management

OP-12

Different treatment Procedures for Complicated Crown – Root Fractures: Two Case Reports

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Complicated crown root fractures, one of the most common traumas in the permanent dentition, involve enamel, dentin and pulp tissue. The aim of this case report is to present the treatment approaches of two different pediatric patients who presented to our clinic late after trauma and fractured maxillary left incisors with complicated crown fractures. The first patient, an 11-year-old boy, presented to our clinic 3 days after the trauma. It was observed that the fracture line of the patient's tooth number 21 extended up to 3 mm under the gingiva. After the fracture fragment was removed, root canal treatment was completed and the palatal flap was lifted for permanent restoration and reattachment treatment was completed with the fracture fragment.

The second 10-year-old patient was admitted to our clinic 24 hours after the trauma. It was determined that the comminuted fracture line of the patient's tooth number 21 extended under the gingiva and part of the fracture fragment was missing. After the fracture fragment under the gingiva was removed, the palatal flap was lifted and root canal treatment was completed. Since the adaptation of the fractured fragments was not suitable, composite restoration was performed.

Twelve months later, clinical and radiographic examinations revealed that the teeth were asymptomatic and the periapical tissues were healthy. Reattachment treatment is preferred in the treatment approach of complicated crown fractures because it provides a more aesthetic and natural result.

Keywords : Complicated crown-root fractures, Dental trauma, Pediatric dentistry, Young permanent teeth

OP-13

Early and Late treatment of Complicated Crown Fractures Caused by Trauma: Two Case Reports

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Objectives: Dentoalveolar trauma predominantly affects young patients, with the maxillary incisors being the most commonly affected teeth. This case report presents the treatment protocol and 2-year follow-up of two patients with complicated crown fractures presenting shortly after trauma and one year post-trauma.

Case Presentations: Case 1: A 7-year-old girl was admitted to our clinic on the same day with complicated crown fractures in teeth number 11 and 21 due to trauma. The fracture fragment of tooth number 21 was preserved in milk, but the fracture fragment of tooth number 11 could not be found. After radiographic and clinical examination, it was decided to perform Cvek amputation. Tooth number 21 was reattached and tooth number 11 was restored with composite. After 2 years, the teeth were asymptomatic and the root tip was closed.

Case 2: A 10-year-old patient presented with a complicated crown fracture of teeth 11 and 21. The patient had been traumatised 1 year ago but had not applied to any institution during this period. Clinical and radiographic examinations revealed pulp necrosis in both teeth and cessation of apical development in tooth 11. Apical closure was achieved using the MAP system with MTA in tooth 11, while root canal treatment was performed in tooth 21. Both teeth were restored with composite. At the 2-year follow-up, both teeth remained asymptomatic.

Conclusion: Early intervention is important in dental traumas. MTA has an important place especially in the treatment of young permanent teeth.

Keywords: Dental trauma, MTA, Young Permanent Teeth

OP-14

Treatment Approaches After Avulsion in Pediatric Patients: Two Case Series

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Traumatic injuries involving teeth and supporting tissues are common in children. An avulsion is defined as the complete dislocation of the tooth from the alveolar socket due to trauma, which is common in the 7–14 age range. An avulsion is a severe traumatic dental injury characterized by the exposure of periodontal tissues to the external environment and disruption of blood supply to the pulp. Avulsion is most common in childhood and adolescence due to the high flexibility of the alveolar bone and low resistance to external forces. Permanent tooth avulsion has a prevalence of 0.5–16% among all dental injuries.

The prognosis of an avulsed permanent tooth is still a matter of debate in the long term. The most common complication, root resorption, can lead to tooth loss after extended follow-up. This complex situation necessitates a range of treatment approaches that must not hinder children's growth and development.

This case report details the treatment approaches after traumatic avulsion of incisors in two distinct patients. The first case involves the treatment and one-year follow-up of an avulsed tooth with a closed apex that was kept dry for more than 60 minutes. The second case focuses on the treatment and six-month follow-up of an avulsed tooth with an open apex that was kept for more than 60 minutes and buccal bone loss.

Keywords: Avulsion, Replantation, Resorption

OP-15

Prosthetic Rehabilitation of a Child with Oligodontia

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Objective: Oligodontia (severe hypodontia) is a rare congenital or developmental condition that manifests with the absence of six or more teeth. Non-syndromic hypodontia (isolated hypodontia) is the most commonly encountered form of missing teeth and can affect a variable number of teeth. This case report describes conservative and prosthetic management of a child with oligodontia.

Case: A 13-year-old healthy girl without any diagnosed syndrome was referred to pediatric dentistry clinic for the treatment of small-sized teeth. The intraoral and radiographic examination revealed congenital absence of twenty permanent teeth. Following the aesthetic build-up of maxillary permanent incisors using a silicone index mock-up, diagnostic impressions were obtained. The master casts with wax rims were mounted on an articulator. Acrylic teeth were arranged for proper lip support and intraoral clinical assessment of occlusion was adjusted. The dentures were fabricated with thermally activated acrylic resin. The patient was scheduled for regular follow-ups, and instructions for prosthesis maintenance and oral hygiene were provided.

Conclusion: For children with oligodontia, removable dentures are an efficient treatment alternative that provides a better outcome in terms of esthetics and function. In this case, prosthetic rehabilitation significantly improved the patient's appearance, masticatory efficiency, speech, and social attitude.

OP-16

Ectopic Eruption of First Permanent Molars in Children: 90 Cases

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Aim: This study aimed to evaluate cases with ectopically erupting first permanent molars (FPMs).

Materials and Methods: This cross-sectional study was performed on panoramic radiographic images of children aged from 6 to 10 years. The study group consisted of subjects with ectopic eruption of FPMs. The presence of ectopic eruption in the FPMs was evaluated unilaterally and bilaterally according to location and gender. The degree of resorption caused by FPMs on the primary second molars was recorded (moderate, severe, and very severe). A statistical analysis of the data was performed using Pearson's Chi-square test ($p < 0.05$).

Results: Of the 962 subjects, 90 (40 females, 50 males) were diagnosed with the ectopic eruption of FPMs with a mean age of 7.57 ± 1.09 . Of the 118 ectopic FPMs, 8 (6.8%) were detected in the mandible and 110 (93.2%) in the maxilla. Ectopic FPMs were detected bilaterally in 14.3% of patients with ectopic eruption in the mandible and 31% in the maxilla. One patient had a bilateral ectopic eruption in the maxilla and unilateral in the mandible. 60.3% of unilateral cases were on the right side. There was a statistically significant relationship between gender and unilateral–bilateral occurrence ($p=0.005$). The degree of resorption caused by FPMs in primary molars was moderate in 9.3% of cases, severe in 58.5%, and very severe in 32.2%.

Conclusion: This study provides information on the importance of early detection and intervention in cases of ectopically erupting FPMs to prevent complications and ensure optimal treatment outcomes.

Keywords: children; ectopic eruption; first permanent molars; panoramic radiography

OP-17

Management of traumatized immature permanent incisor with crown and root fracture: A case report

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Introduction: Although dental trauma is common among pediatric patients, complex traumatic injuries that include both crown and root fracture are rare. The aim of this case report was to present the treatment of a crown and root fracture in a permanent tooth with an open apex.

Case report: The patient aged 10 years was presented due to the injury of the maxillary left central incisor. The accident occurred due to a fall to the ground. Previously, vital pulpectomy was performed as an emergency treatment in a private practice. No x-ray was done at the time of accident. Clinical examination showed complicated crown fracture, and radiographic examination revealed horizontal fracture in the apical third of the root. Apical portion of the canal was sealed with mineral trioxide aggregate (MTA) and coronal part was obturated with a sealer and guta-percha. A glass-fibre post and composite material was used to restore lost crown structure. At the 6-months follow-up, the tooth was satisfactory both esthetically and functionally with no evidence of apical periodontitis.

Conclusion: MTA proved to be a proper apexification technique in traumatised immature teeth, while glass-fibre posts offer good retention for larger composite restorations. This case also shows that strict dental trauma guidelines must be followed in order to provide a good treatment plan and a successful outcome.

OP-18

Evaluation of the Level of Knowledge and Perspective of Dental Interns on Minimally Invasive Dentistry

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Objective: This study aimed to assess dental interns' knowledge and perspective on minimally invasive dentistry, which prioritizes preserving natural tooth structure and promoting remineralization.

Materials and Methods: Volunteer interns were included in this study. They completed a questionnaire covering gender, age, academic year, enrollment in minimally invasive dentistry course, and sections assessing their knowledge (16 questions) and perspective (14 questions) on this course. Knowledge levels were categorized into three groups; high, medium, and weak. The data were analyzed statistically.

Results: A total of 251 interns (138 females–113 males) with an average age of 23.56 ± 0.05 years participated in the study, comprising 132 from 5th term and 119 from 4th term. The course was predominantly (90%) taught by Department of Pedodontics at 4th term. Cronbach's Alpha test statistic (0.805) indicated the reliability of answers to perspective questions. A statistically significant Pearson correlation coefficient value (0.282) was found between knowledge level and perspective questions. In Wilcoxon signed–rank test for perspective questions, medians for each question were greater than 3 and answers of agree and strongly agree were in majority. The difference between medians of three knowledge level groups was found to be significant with Kruskal–Wallis test performed by considering the sum of perspective questions answers. After factor analysis, 5 questions particularly stood out in course comprehension ($p < 0.05$).

Conclusions: Interns' perspective on minimally invasive dentistry, which directs today's and future dental practices, is shaped by their knowledge level. Knowledge feeding is important for the reflection of practices on the field.

Keywords: Minimally Invasive Dentistry

OP–19

Evaluation of Fluoride Related Post on Instagram

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Aim: The aim of this study is to examine Instagram® posts about fluoride applications, which is an effective agent in preventing caries in children.

Material–Method: A new Instagram account was created to avoid affecting search results. The most shared hashtags related to fluoride applications were determined. 300 publicly accessible posts were recorded. After removing irrelevant posts, the selected posts for the hashtags #fluoridevarnish (16 posts), #fluorideapplication (6 posts) and #fluoridevarnishapplication (39 posts) were evaluated in terms of uploader and content. The information quality of the contents was analyzed according to the modified DISCERN analysis. Kruskal–Wallis test was used for data. Significance level was accepted as $p < 0.05$.

Results: Posts providing information about fluoride application were shared by pedodontists, dentists and clinics. 39.3% of the posts were shared by private clinics. The average score of the information content of pedodontics specialists' posts is 13 (min: 8, max: 22, $n = 17$).

Conclusion: It can be said that the information content of Instagram® posts regarding fluoride application is insufficient.

OP-20

Surgical Treatment After Traumatic Intrusive Luxation of Maxillary Permanent Teeth

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Aim: Crown fractures and luxation traumas are the most common type of trauma among permanent dental traumas. Intrusion injuries are the most severe type of luxation injuries. In this case report, the surgical treatment and prognosis of a severe intrusion case treated in our clinic is presented.

Material and Methods : A ten-year-old male patient was admitted to Ordu University Faculty of Dentistry after falling off his bicycle. There was no systemic disease in the patient's anamnesis. After clinical and radiographic examination, a decision was made to surgically reposition the teeth. After the tooth was surgically reposed, it was fixed with a semi-flexible splint. Endodontic treatment was started seven days later. After the splints were removed, the root canals were filled. After canal filling was completed, the teeth were restored with composite resin. Severe resorption was observed at the 18-month follow-up.

Result : Although surgical intrusion is a good option in severe intrusion cases, it may have negative consequences in terms of the prognosis of the tooth.

Keywords: Dental trauma, Intrusive luxation, Pediatric dentistry, Surgical reposition

OP-21

Apexification treatment with MTA: 3 case reports

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Aim: To report the results of apexification treatment applied with Mineral Trioxide Aggregate (MTA) material in teeth with periapical lesions and incomplete apical root development.

Cases: Between 2020 and 2021, in patients aged 8–15 years old who applied to our clinic with complaints of pain, 3 cases, including one molar and 2 anterior teeth, with incomplete root development and lesions in the periapical region, were detected in the radiological examinations. In all cases, root canal treatments were completed in 2 sessions, using calcium hydroxide medicament between sessions. A plug was provided using MTA (MTA Angelus, Soluções Odontológicas, Londrina, Brazil) with the help of a plugger in the apical 1/3 of the root canals of the molar tooth. The coronal root canal was filled in the same session with AH plus (Dentsply, De Trey GmbH, Konstanz, Germany) and gutta percha using the lateral condensation technique. In the two anterior teeth, the entire root canal was filled with MTA. The relevant teeth were then restored using composite resin. **Results:** It was observed that the molar tooth had no symptoms at the 1-year follow-up, the lesion covering the distal root had healed, and the lesion on the mesial roots remained stable without growing. At the 2nd year follow-up of the two anterior teeth, it was observed that the lesions had shrunk, were clinically asymptomatic and functional. There were no percussion or palpation findings in all three cases.

Conclusion: MTA is a material that shows clinical and radiographic success as an apexification material by inducing root tip closure and root growth in young teeth.

OP-22

Complicated Crown Fracture: Regenerative Endodontic Intervention and Aesthetic Restoration Outcomes

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Introduction: Endodontic treatment serves as the primary intervention frequently utilized to manage the acute or long-term consequences of dental trauma. Failure to manage trauma in the short or medium term, especially during adolescence, can lead to significant functional or aesthetic issues. In such specific cases, aesthetic approaches are as crucial as endodontic treatment. This clinical case aims to describe the management of delayed treatment of maxillofacial dental trauma and its subsequent outcomes.

Case Description: During the clinical and radiological examination of a 19-year-old female patient, it was observed that there were complicated crown fractures in teeth 11 and 21, with open root apex. History revealed that the patient had suffered a fall at the age of 8, resulting in fractured teeth, and no dental treatment had been administered thereafter. Temporary composite fillings were initially applied to the fractured teeth due to aesthetic expectations. Subsequently, regenerative endodontic procedures were performed on teeth 11 and 21. During 2-year follow-up, sinus tract was observed in tooth 21, so MTA in the coronal area was removed and the canal was medicated. Three weeks later, MTA apexification was performed. After completion of endodontic treatment, at-home whitening was carried out, followed by restoration with ceramic crowns two weeks later. Follow-up radiographs showed healing in the periapical area of teeth 21 and 22, with apical narrowing observed in tooth 11. The aesthetic and functional outcomes of the restorations were satisfactory.

Conclusion: The management of treatment failure in the early stages of trauma should be approached with an multidisciplinary perspective, considering the complexity of treatment, the prognosis of endodontic therapy, and the patient's expectation.

OP-23

Combined Technique for Bleaching a Single Vital Discolored Tooth using Digital scanning – A Case Report

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Introduction: A single vital discolored tooth can be treated using a combined technique of bleaching with the assistance of digital scanning.

Objective: To demonstrate the effectiveness of a combined technique involving in-office and at-home bleaching for a single vital discolored tooth by using digital scanning.

Case Presentation: Clinical examination revealed a significantly discolored tooth 11 compared with adjacent teeth without visible signs of injury. A positive response was observed on electric pulp testing.

The initial tooth color of I1 was measured in a software program to monitor the effectiveness of the therapy. An intraoral scanner (Aoralscan 3, China) was used to take a digital impression as well as a printed model. In-office bleaching of the tooth was performed using LED-activated 32 % hydrogen peroxide bleaching gel (WHITEsmile, Germany) in a regimen of 3 sessions of 15 minutes each. The patient applied 16% carbamide peroxide gel (WHITEsmile Home whitening, Germany) only to tooth I1 and kept it in the mouth overnight for the next three weeks.

Conclusion: The combined bleaching technique proved to be minimally invasive and successful. At the end of the procedure, treated teeth remained vital. A single vital discolored tooth can be successfully treated with a combined technique of bleaching by using digital scanning.

Keywords: single tooth discoloration, in-office bleaching, home bleaching, digital dentistry

OP-24

Effect of Different Kinematics and Perforation Diameter on the Detection of Root Canal Perforations

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*This work has been supported by Kutahya Health Sciences University Scientific Research Projects Coordination Unit under grant number TDH-2023-140.

Objective: The present study aims to assess the impact of variations in root canal perforation (RCP) diameter and nickel-titanium instrument kinematics on the efficacy of the endomotor with an integrated apex locator (EIAL) in pinpointing RCPs.

Material-Methods: One hundred extracted, single-rooted mandibular premolars received artificial perforations at five different diameters (0.25, 0.50, 0.75, 1.00, and 1.25 mm) standardized at 5 mm above the apex. Following creation of RCPs and subsequent group allocation based on perforation diameter, the teeth were further subdivided into kinematic subgroups (n=10). Following precise measurement of the actual lengths (ALs) to the perforation site under a dental operating microscope, electronic lengths (ELs) were obtained with an EIAL, using rotary or reciprocating kinematics throughout the root canal preparations. To quantify deviations from AL, measurements of EL were compared for each tooth, followed by statistical analysis using a one-way analysis of variance (ANOVA) and independent t-tests ($p < 0.05$).

Results: EL measurements were unable to detect perforations of 0.25 mm and 0.50 mm diameter. Accuracy was similar for 1.00 mm and 1.25 mm perforations ($p > 0.05$), however, these measurements exhibited greater precision compared to the 0.75 mm group ($p < 0.05$). Kinematics used during preparation did not affect the accuracy of EL measurements.

Conclusions: EIAL could not detect very small perforations. Kinematics used during preparation had no significant effect. Clinicians should be especially cautious when identifying very small perforations and consider using additional detection methods.

Keywords: Apex locator, Kinematics, Perforation

OP-25

Clinical Applications of Mineral Trioxide Aggregate for Root Resorptions and Complex Root Canal Anatomy: A Case Series

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Objective: Mineral trioxide aggregate (MTA) is a versatile material in endodontics, finding applications in retrograde fillings, perforation repair, apexification, and resorption treatments. Its biocompatibility, ability to prevent microleakage and promotion of tissue regeneration contribute to its widespread use.

Case-1: A 46-year-old female patient presented to our clinic with a complaint of pain in the upper left jaw. Clinical and radiographic examinations identified tooth number 25 as the source of pain, which exhibited internal resorption in the apical third.

Management involved the application of MTA to the apical third followed by the completion of root canal filling using the thermoplastic technique.

Case-2: A 37-year-old male patient presented to our clinic with a complaint of upper jaw pain. Clinical and radiographic examinations revealed tooth number 12 as the source of pain, exhibiting external apical resorption and an overfilled root canal. The root canal obturation was completed using MTA.

Case-3: A 19-year-old female patient presented to our clinic with right lower jaw pain. Clinical and radiographic examinations identified tooth number 47 as the source of pain. The tooth exhibited a C-shaped root canal anatomy with inadequate obturation. Management involved the application of MTA to the apical third, followed by the completion of root canal filling using the thermoplastic technique.

Results: Follow-up examinations at 3 and 6 months revealed the teeth to be functional and asymptomatic.

Conclusion: The use of MTA improves the prognosis of teeth with open apices and resorption due to its biocompatibility, sealing ability, and antibacterial properties.

Keywords: MTA, Resorption

OP-26

Clinical Differentiation and Management of Apical Abscesses with and without Sinus Tracts: A Case Series

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Objective: This case series describes the diagnostic and treatment approaches for dental abscesses manifesting in various clinical presentations, including acute and chronic apical abscesses.

Case-1: A 58-year-old male patient presented with pain and swelling in the upper jaw. Clinical and radiographic examinations revealed significant swelling of the left cheek, percussion pain, and a radiolucency associated with tooth number 23. Management involved abscess incision, root canal treatment (RCT), and antibiotic therapy.

Case–2: A 25–year–old female patient presented with pain and swelling in the right infraorbital region. Clinical and radiographic examinations revealed swelling of tooth number 11, an intraoral sinus tract associated with tooth number 22, and radiolucencies involving both teeth and tooth number 21. Management consisted of abscess incision and drainage via the root canal, followed by RCT and antibiotic therapy.

Case–3: A 16–year–old girl patient presented with a 3–month history of an extraoral sinus tract in the lower right cheek. The patient was referred by a dermatologist for further evaluation. Clinical and radiographic examinations localized the source of infection to tooth number 46. A diagnosis of chronic apical abscess was established, and RCT was performed. At the 2–month follow–up, complete resolution of the cutaneous lesion was observed.

Results: At follow–up appointments, the teeth were found to be completely asymptomatic and functional.

Conclusions: Accurate diagnosis and implementation of effective treatment interventions, including both pharmacological and surgical modalities when indicated, are paramount for optimal prognosis in patients presenting with apical abscesses.

Keywords: Endodontic treatment, Dental abscess

OP–27

Effect of Antioxidant on Shear Bond Strength of Adhesive Restorations to Dentin after Different Irrigation Protocols

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Objective: This study aimed to evaluate the effects of the application of antioxidant on the shear bond strengths of composite restoration bonded to dentin after various protocols.

Materials –Methods: 80 premolars were cut longitudinally in two halves. Then, 600–grit SiC papers were used for one minute to obtain a standard smear layer. The specimens were allocated into eight groups according to the irrigation protocols;

Group 1: 5% NaOCl + 17% Glycolic Acid (GA)

Group 2: NaOCl + 10% Sodium Ascorbate (SA) + 17% GA

Group 3: NaOCl + 37% Phosphoric Acid (PA)

Group 4: NaOCl + 10% SA + 37% PA

Group 5: NaOCl + 10% Citric Acid (CA)

Group 6: NaOCl + 10% SA + 10% CA

Group 7: NaOCl + 17% EDTA

Group 8: NaOCl + 10% SA + 17% EDTA

NaOCl 10 ml, acidic solutions 5 ml and SA 10 ml were used required time. Composite resin of standard sizes was applied to dentin. Specimens were subjected to SBS tests for debonding. Data were analyzed using one–way ANOVA and Tukey’s HSD test ($\alpha=0.05$)

Results: Statistically, the highest SBS value was obtained in group 4 (18,31 MPa), and the lowest SBS value was obtained in group 5 (12,68 MPa) ($P < 0.05$). There was a statistical difference between all groups of use of sodium ascorbate except group 2 and group 6 ($P < 0.05$).

Conclusion: 10% sodium ascorbate can be an antioxidant agent for the final irrigation protocol to reverse the negative effect of NaOCl. Phosphoric acid can be an alternative to EDTA.

Keywords: Adhesive Restorations, Antioxidant, Irrigation, Shear Bond Strength

OP-28

Comparison of the antimicrobial efficacy of chitosan versus chlorhexidine in root canal disinfection: A systematic review and meta-analysis of laboratory studies

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Aim: This meta-analysis aimed to compare the antibacterial efficacy of chitosan/chitosan nanoparticles (Ch/Ch-NPs) versus chlorhexidine (CHX).

Methods: Four electronic databases (Web of Science, PubMed, Scopus, and Cochrane) and manual searches were performed until 08 December 2023. Studies with missing, unclear, and sufficient data set were systematically excluded from analysis. The included studies were assessed by two independent reviewers using the Joanna Briggs Institute Critical Appraisal Checklist for Quasi-Experimental Studies. The meta-analysis of standardized mean difference was performed using a random effects model with a 95% confidence interval. Additionally, funnel plots as well as Egger's regression intercept test were used to evaluate potential publication bias.

Results: Two hundred fourteen samples were used in four included studies. We found that CHX was statistically more effective than Ch/Ch-NPs (SMD: 1.927; 95% CI: 0.367 to 3.487; I²= 93; p= 0.015) using both methods. Likewise, studies using the CLSM method showed that CHX had more antibacterial efficacy than Ch/Ch-NPs (SMD:3.195; 95% CI: 0.167 to 6.224; I²= 96; p= 0.039). However, when considering studies using the bacterial culture method, we found no difference in antibacterial efficacy between Ch and CHX (SMD:0.985; 95% CI: -0.246 to 2.217; I²= 84; p= 0.117).

Conclusion: There was a statistically significant difference between the Ch/Ch-NPs and CHX against *E. faecalis*. The methods (CLSM and Bacterial culture) used in the in vitro studies evaluating the antibacterial efficacy of irrigation solutions against *E. faecalis* may have had an impact on the results.

Keywords: chitosan, chitosan nanoparticle, chlorhexidine, meta-analysis

OP-29

Evaluation of Morphology and Prevalence of Palatogingival Grooves on Affected Maxillary Anterior Teeth using Cone-Beam Computed Tomography: An institutional retrospective study

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Aim: The purpose of this study is to evaluate the prevalence and characteristics of palatogingival grooves (PGGs) in maxillary anterior teeth on CBCT.

Study Design: Retrospective study.

Materials and Methods: CBCT examinations of 4012 teeth in 920 patients (Female-532, Male-388, mean age 34.68) were evaluated retrospectively. Anterior maxillary teeth

(central incisors, lateral incisors, canines) were investigated in different genders for the presence or absence of PGGs, PGG location and PGG type, using the Gu classification (type 1, 2, 3A or 3B). 3D CBCT images were used for evaluation of PGGs. Differences was considered significant for $p \leq 0.05$.

Results: The PGGs were observed in 439 teeth. PGGs were most found in lateral incisors (85.87%) followed by central incisors (10.93%) and canines (3.19%). Among teeth with PGG, Type 1 was found the most prevalent (76.12%) followed by Type 2 (15.07%); Type 3A (8.11%) and Type 3B (0.79%). In male patients with PGG, midpalatal localization was the most prevalent (53.91%); followed by mesial (44.17%) and distal (2.91%). In female patients with PGG, midpalatal localization was the most prevalent (53.65%); followed by mesial (42.06%) and distal (4.29%). Among the teeth with PGG; 71.75% had a bilateral presence, while 28.24% were reported with unilateral presence.

Conclusion: Prevalence of PGGs was found to be 10.2%. The maxillary lateral incisors are the most affected teeth. Bilateral presentation is more common. PGG facilitate bacterial colonization which may lead to endo-periodontal pathology in an apparently normal tooth which pose challenges in its diagnosis and management.

OP-30

Effect of Various Irrigation Solutions on Dentine Roughness and Wettability

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Objective: The aim of this study was to compare the effect of various novel irrigation solutions with EDTA which was known to be the best solution as the final irrigant in regenerative endodontics, and to evaluate their effects on dentin roughness and wettability.

Methods: Fifty intact human third molars were collected to create dentin samples. A dentin disc was cross-sectioned from each molar parallel to the occlusal surface. The dentin discs were randomly distributed to 4 treatment groups and an untreated control group ($n = 10$). All treatment groups were irrigated with 1.5% NaOCl for 5 minutes and then treated with Ca(OH)₂. All samples were stored for 2 weeks. After 2 weeks, the treated side of each dentin specimen was either irrigated with 17% EDTA, 1% phytic acid, 9% etidronic acid or distilled water for 5 minutes according to the test groups and no treatment was applied to the control group. After samples preparation, contact angle measuring device was used for wettability measurements and optical profilometer was used for roughness measurements. Also, one sample from each group was selected and images were taken under SEM. One-way ANOVA was employed for assessing the group means, while Tukey's multiple comparison test was utilized for pairwise comparisons. The significance level in statistical analyses was set at 5%.

Results: EDTA, Phytic acid and Etidronic acid exhibited significantly higher wettability compared to the control group. Additionally, EDTA and Etidronic acid demonstrated significantly higher roughness compared to the control group.

Conclusion: Within the limitations of this in vitro study phytic acid and etidronic acid can be used as alternatives to EDTA in regenerative endodontic protocols. Further research is needed to confirm their effectiveness.

OP-31

Comparative Evaluation of two Bioceramic–Based, and an Epoxy Resin–Based Sealers on the Apical Microleakage Resistance

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Introduction: The root canal sealers are used to create a complete seal to prevent any re–infection or apical periodontitis. This study aimed to evaluate the apical microleakage resistance of two bioceramic–based (TotalFill Bioceramic FKG Dentaire SA, Switzerland, Endoart Bioceramic Inci Dental, Istanbul, Turkey) and a resin based (AH Plus root canal sealers Dentsply, DeTrey, Germany) root canal sealers.

Materials and Methods: Seventy–five freshly extracted mandibular premolars were instrumented up to the F4 ProTaper Universal rotary file was irrigated with %5 NaOCl and %17 EDTA. The teeth were randomly divided into five groups (n:15) (Positive and negative control group, TotalFill Bioceramic, Endoart Bioceramic, and AH–Plus) and obturated with

the single–cone technique and the root canal sealers, respectively. After the samples were stored in an incubator for one week, immersed in %2 methylene blue dye for 72 h, and all samples were sectioned longitudinally to expose the root canal. The depth of dye penetration was measured in each sample. The data were analyzed using one–way analysis of variance (ANOVA) and the Tukey test used for multiple comparisons.

Results: The least mean dye penetration was shown by TotalFill Bioceramic (0,94 mm), followed by Endoart Bioceramic Root Canal Sealer (1,57 mm) and AH Plus sealer (1,9 mm). Significant difference was observed in all experimental groups compared to the control group ($P= 0,001$); no significant difference was determined between TotalFill Bioceramic sealer and Endoart Bioceramic Root Canal Sealer ($P= 0,25$).

Conclusion: All sealers showed varying levels of apical microleakage, dye penetration values were reduced for the bioceramic–based sealers.

Key Words: Apical microleakage, root canal obturation, bioceramic–based sealer

OP-32

Osseointegration of dental implants in diabetic patients

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Background: Dental implant surgery has developed to a widely used procedure for dental rehabilitation and it is considered a safe and predictable procedure. Diabetes mellitus is a chronic disease that presents hyperglycemia and causes different side effects. The patients with poorly controlled diabetes suffer from impaired osseointegration, elevated risk of peri–implantitis and higher level of implant failure.

Case: We report our experience of a successful osseointegration of 4 dental implants to a 58 years old female diabetic patient. At first the extractions of the teeth were performed and after 8 months four implants were inserted under local anesthesia (lidocaine containing adrenaline 1:100 000).

The supportive administration of antibiotics and chlorhexidine seems to improve the implant success.

Conclusion: Based on the treatment protocol the wound was healed without complication and it was evident the good integration of four dental implants with absence of osteomyelitis.

Key words: dental implant, diabetic patient, osseointegration

OP-33

Management of lip scarring with diode laser 980 nm

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Scars arise from a variety of etiologies in the perioral region. Traumatic scars are inevitable consequences of healing after various injuries including rubbing or scraping, thermal or chemical burns. There are different options for the treatment of post traumatic scarring depending from the size and location with different rate of success like: corticosteroid injection, the use acid hyaluronic and dermal fillers, plastic surgery, laser. We report in this study the efficacy of using 980 nm diode laser for the treatment of post – traumatic scarring of upper lip.

Key Words : scarring, photocoagulation, diode laser 980 nm, wound healing, functional disturbance

OP-34

Bibliometric Analysis of Articles on Individuals' Preferences in Dental Implant Applications in the Web of Science Database

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Background: This study was conducted to determine the trend of research on individuals' dental implant preference. The research was conducted in the Web of Science database on 12.03.2024.

Methods: 126 studies titled 'dental implant' and 'artificial intelligence' conducted between 2014 and 2024 in the Web of Science database were evaluated with bibliometric analysis.

Results: As a result of the analysis, it was seen that the most studies were done in the "Dentistry" category, 535 authors worked on this subject, 427 keywords were used, 3362 references were used, 53 sources were used, 99 articles were accessed, and the most articles were published in 2014. It was observed that most articles were published in the Clinical Oral Implants Research journal. It was concluded that the author with the most publications in this field is Esposito M. The country where the most research is done in this field is Italy. It was noticed that the most used words were 'survival', 'accuracy' and 'preferences'.

Conclusion: Bibliometric research both reveals the current scientific status of the topics discussed and gives insight into their development in the process, therefore they are

valuable research. The findings serve as a guide for future research interested in individuals' dental implant preferences.

Keywords: Dental implant preferences, bibliometric analysis, web of science database

OP-35

Prevalence Of Congenital Missing Teeth In Orthodontic Patients: An Epidemiological Study

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Introduction: Tooth agenesis is one of the most common anomalies in the development of human teeth.

Purpose: In this research the prevalence of congenitally missing permanent teeth in the orthodontic patient population will be investigated and missing teeth rate will be determined.

Materials and Methods: The panoramic radiographs taken before treatment of 413 male and female patients between the ages of 10 and 16 who applied to the clinics between 1981–2021 in the archives of Ankara University Faculty of Dentistry Department of Orthodontics were examined.

Results: The rate of individuals participating in the research with 2 or fewer missing teeth and who are from generation X is 8,4%, from generation Y is 25,2% and from generation Z is 31,9%. The rate of individuals with 3 or more missing teeth participating in the research and who are from generation X is 5%, from generation Y is 14,3% and from generation Z is 15,1%.

Conclusions: The relation between the amount of missing teeth and the generations of the individuals in this study was not found to be statistically significant. However the amount of tooth agenesis in individuals in the Y generation was higher than in the X generation, and the tooth agenesis in the Z generation patients was higher than both the Y generation and the X generation.

OP-36

Piezosurgery vs Burs in Orthognatic Surgery

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Purpose: This study present that piezoelectric surgery can be more comfortable for patients having bimaxillary surgery.

Methods: 20 patients with dentofacial deformities (male and female) were treated from January 2019 to July 2021. In all patients the Le fort I osteotomies were made using the piezo tip nr and in Bilateral Saggital Split Ramus osteotomies were made initially with piezo tip nr and after with piezo tip nr imitating the saw. We assessed the variables : operation time , bleeding during the operation , postoperative pain , postoperative swelling , sensitivity of upper and lower lip.

Results: In five patients we have a high duration time of surgery , this related more with case difficulty , the bleeding durin the operation was highly reduced , in all the patients

postoperative pain and swelling was significantly lower, in all the patients with piezosurgery we have no problems with sensitivity of upper and lower lip.

Conclusions: We conclude that piezosurgery offers more advantages in intraoperative bleeding, lessening swelling and pain after bimaxillary surgery and have no problems with the sensitivity after the operation.

Keywords: Orthognatic Surgery ; Piezoelectric ; Post–Operative Comfort

OP–37

The decision of extraction vs nonextraction in borderline cases

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In the treatment of the orthodontic anomalies, the reason of carrying out the extraction–nonextraction procedures and their outcomes have been mostly discussed for years. Regarding the treatment of orthodontic anomalies, there has been extensive discussions in recent years about the reasons underlying the extraction–nonextraction procedures and their outcomes. Beginning from the first day in job, orthodontists perceived that the treatment which will be applied, affect the patient’s profile and esthetics. The decision of Orthodontist about tooth extraction or not is related to many criterias such as; soft tissue profile with protrusion or retrusion, the amount of tooth–archlength discrepancies, dental protrusion or retrusion, periodontal conditions, some cephalometric measurements and patient cooperation. Although the concept of borderline patient has been widely discussed, few attempts have been made to define this term more precisely. Contemporary literature regards borderline patient as one for whom the benefits and drawbacks of performing extraction is not clear. What constitutes a borderline case? The answer to this question will vary significantly from one clinician to another, depending on the clinician’s training, experience, competence, aesthetic stance, and his ability to motivate patients.

OP–38

Determination of Orthodontic Treatment Needs in 12–13 Year Aged Children in Istanbul According to ICON Index

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Purpose: The aim of this study was to evaluate the orthodontic treatment needs of children aged 12–13 years in Istanbul using the The Index of Complexity, Outcome and Need (ICON) and to examine whether orthodontic treatment needs vary between children of different socioeconomic status and gender.

Material and Methods: A total of 530 children aged 12–13 years were included in our study. The students were divided into; girls (254), boys (276), low–high income groups. In our study, orthodontic treatment needs of children were evaluated according to the ICON index. Pearson Chi–Square and Fisher’s Exact tests were applied to test the relationship between categorical variables.

Results: As a result of the analyses, statistically significant relationships were determined between treatment need status and malocclusion level, posterior closure, anterior

closure, skeletal malocclusion status, profile ($p < 0.05$). No statistically significant relationships were obtained between treatment need status and gender, income status ($p > 0.05$). No statistically significant relationships were obtained between the need for treatment and the educational status of the mother or father ($p > 0.05$). Statistically significant relationships were determined between income level and malocclusion level, facial asymmetry ($p < 0.05$). Statistically significant relationships were found between gender and malocclusion level, profile, overbite, negative overjet, abnormal swallowing, maxillary narrowing ($p < 0.05$).

Conclusion: The need for treatment is independent of age, gender and income status. According to this study, the fact that the incidence of malocclusion is independent of income level can be explained by the heredity factor.

Key words: Orthodontic treatment need, Malocclusion, ICON index

OP-39

Evaluation of the Patients with Implant Supported Full-Mouth Prosthesis: Long Term Case Series Study

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Purpose: The purpose of this retrospective study is to evaluate the data from 3 to 8 years follow-ups of patients with full-mouth implant-supported prostheses in our clinic.

Case Series: For the 9 patients, 4 females and 5 males, aged between 38–76 years, who applied our clinic between 2015–2020 years with single jaw or full-mouth edentulism complaints, implant-supported restorations were done. 76 implants were placed in 15 jaws. 16 of the 76 implants were placed angled on the posterior regions. 4 jaws were rehabilitated with cemented prosthesis, 11 jaws were rehabilitated with screw-retained prosthesis. The prosthesis were checked clinically and radiologically during the follow-ups. The FDI restoration replacement criteria were used to score prosthesis.

Results: One angled implant on the third quadrant was lost in one patient. Radiologically bone levels around the other 75 implants were remained the same. According to the results, esthetics, and function in terms of fracture, retention and marginal adaptation were clinically very good in most patients. But prophylactic applications and porcelain repairing were required for 6 patients.

Conclusion: Full-mouth implant supported prosthesis are esthetically and functionally successful rehabilitation options for the edentulous jaws.

OP-40

8-Year Follow-up Of A Hopeless Tooth Treatment Without Using Any Regenerative Material

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Background: Periodontal disease has many damages such as pocket formation, bone loss, intra-bone defects, mobility and displacement of teeth. Many clinical studies have demonstrated that guided tissue regeneration is a successful treatment modality of

periodontal reconstructive surgery. Although the results of regenerative therapy have been successful in the literature, the patient tolerability is difficult because regenerative therapy is costly and time consuming.

Case: A 50-year-old systemically healthy male patient admitted to our clinic with abscess and mobility in tooth number 13. In the clinical and radiographic examination, vertical bone loss extending to the apical region and the presence of periodontal abscess were observed in the tooth area. Flap operation was applied to the patient after the initial periodontal treatment. Approximately three and a half years later, external root resorption was observed in cone beam computed tomography taken from the same area. A second surgery was performed to treat external root resorption. Without covering the cavity with any base material, a composite filling was made by providing saliva isolation. The patient was followed up routinely for 8 years.

Results: Although the use of biological material for regeneration is quite common, it is difficult to tolerate due to its cost and time consuming. We consider our case to be a valuable study in terms of regeneration without using any biological material.

Key words: Periodontal disease, regeneration, periodontal treatment.

OP-41

Evaluation of the Quality and Reliability of Turkish and English YouTube Video Contents on Gingival Recession Treatment

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Background: The aim of this study is to evaluate the quality and reliability of Turkish and English YouTube video contents regarding the treatment of gingival recession.

Material Methods: The terms "gingival recession treatment", "receding gum treatment", "gingival recession surgery" were searched on the YouTube video platform using Turkish and English. 42 Turkish and 67 English videos that met the inclusion criteria were evaluated. Video title, origin, content type, duration, upload date, number of views, number of likes/dislikes, viewing rate and interaction index of the videos were recorded. The Global Quality Scale (GQS) and the DISCERN tool were used to evaluate the quality and reliability of the videos.

Results: In the study, the reliability scores of Turkish and English videos were found to be 2 and 3, respectively, according to DISCERN criteria. Both the content evaluation score and reliability scores of Turkish videos were found to be lower than those of English videos. The majority of Turkish videos were scored as GQS 1, while the majority of English videos were scored as GQS 2. 97% of both Turkish and English videos had low quality content.

Conclusion: In this study, we found that 97% of the evaluated videos had low quality content. In order to prevent the spread of misinformation and to ensure that patients can access accurate information, it would be beneficial for educational institutions and specialist to prepare interesting videos with comprehensive content that are easy to understand for patients and share them on internet platforms such as YouTube.

OP-42

The Effect of Smoking on Trabecular Bone in Periodontally Healthy Individuals and Patients with Periodontitis: A Fractal Analysis

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Objective: This study aimed to examine the impact of smoking on alveolar bone density in periodontally healthy individuals and patients with periodontitis using fractal analysis.

Materials and Methods: A total of 55 participants, including 28 healthy individuals and 27 patients with stage III/IV periodontitis, were recruited. Participants were categorized into four groups based on their periodontal and smoking status: healthy non-smokers ($n=15$), healthy smokers ($n=13$), periodontitis non-smokers ($n=14$), and periodontitis smokers ($n=13$). Plaque score (PS), probing depth (PD), clinical attachment level (CAL), and bleeding on probing were recorded. Two regions of interest, one in the left angulus mandible and the other between the roots of the mandibular left second premolar and first molar were chosen from the panoramic radiographs for fractal analysis. The analysis was conducted by fractal dimension (FD) calculations using the box-counting method.

Results: There were statistically significant differences in all periodontal parameters between healthy individuals and periodontitis patients ($p<0.001$). While the median FD values in the angulus region were similar between the groups ($p>0.05$), significantly higher values were observed in the interdental region in the healthy non-smoker group than in the periodontitis smoker group ($p<0.05$). There was a negative correlation between the median interdental FD value and the median PS, PD, and CAL ($p<0.05$, $r=-0.321$; $p<0.05$, $r=-0.316$; $p<0.05$, $r=-0.330$, respectively).

Conclusion: The co-occurrence of smoking and periodontitis appears to lead to alterations in the structure of bone trabeculation. Analyzing FD values, in addition to PD and CAL, offers a more comprehensive understanding of disease severity.

OP-43

Pre-prosthetic intraseptal alveoloplasty (Dean's technique) using piezo surgery : A case report
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Introduction : Pre-prosthetic surgery is in some cases necessary to assist in the fabrication of a better-fitting removable dental prosthesis. Skeletal Class-II malocclusion patients with maxillary protrusion, are among the most demanding cases for rehabilitation with dentures, often in need of pre-prosthetic surgery. Intraseptal alveoloplasty, introduced by Dean, is described by compressing the labial plate, preserving the labial cortex after recontouring the alveolar process, following the dental extractions. With this technique, no mucoperiosteal flap is advanced and the buccal cortex remains intact, leading to less secondary bone resorption.

Case presentation : A 65-year old female with maxillary protrusion was referred to our department for pre-prosthetic extractions of the upper 6 anterior teeth, before the fabrication of a full denture. Following the simple extractions, sphenoid excision of the interdental papillae was performed and the interradicular septa were removed by piezosurgery. An incomplete fracture of the labial plate was performed, compressing it palatally in proximity with the palatal plate and continuous interlocking sutures were done. An excision of the labial frenulum was performed 20 days later. The follow up after 60 days from the alveoloplasty surgery is presented.

Conclusion: Dean's intraseptal alveoloplasty is a technique leading to a more favorable jaw relation, ensuring the necessary space for an optimal rehabilitation with dentures, after the contouring of the post-extractions alveolus, aiming to correct the maxillary protrusion of skeletal Class-II patients. The use of piezosurgery reduces post-operative discomfort leading to less swelling and better healing.

OP-44

Dentin Desensitization with Nd:Yag Laser Clinically

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The term Dentin hypersensitivity (DH) has been used to describe a specific condition that is defined as pain arising from exposed dentin. DH is a common condition that causes discomfort and sometimes severe pain. It occurs with the thinning of the enamel layer and the exposure of the dentinal tubules. Many theories have been used to explain the mechanisms of DH. The most widely accepted theory is classic-hydrodynamic mechanism proposed by Brännström and Astron. Although there are various desensitization techniques, Laser therapy is commonly used for this purpose.

The aim of this study was to evaluate the effect of 1064 nm Nd:Yag laser in neck desensitization clinically.

Patient and Method: Patients with complaint of the dentin desensitization applied to Gaziantep University Faculty of Dentistry . Patients were examined by the same clinician. A splint mouth treatment was planned. Tooth was in right segment was treated with ND: YAG laser and the left side treated with a liquid dentin desensitizer (GLUMA desensitizer, Germany). Laser was set at (1.50 W, 60 s, 200µm). Visual analogue scale was used for measure the sensitivity severity. Collected data were analysed.

Results: According to statistical analysis Nd:YAG laser was more effective than the liquid application. It was so comfortable treatment for dentin hypersensitivity.

OP-45

Clinical evaluation of GRR laser effect Patient with 9.9 HgA1c

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Diabetes mellitus is a complex, chronic systemic disorder of carbohydrate metabolism. The number of people with diabetes aged 20-79 years is predicted to rise to 642 million by 2040. Dental implant treatment for partial or complete edentulous diabetic patients is debatable because of the suspected negative effect of hyperglycemia on osseointegration. HbA1c 6.1%-8% influence bone and soft tissue changes around dental

implants when compared to normoglycemic humans $HbA1c < 6\%$ when it's above 8%, the approach is that implantation is contraindicated. To evaluate the GRR laser effect on patient with 9.9 HbA1c at oral implantation surgery. A 52-year-old male patient was referred to the clinic for the management of complaints due to missing bone support of all the tooth that were severely mobile. Orthopantomograph was taken to evaluate tooth and whether or not impacted permanent tooth, cysts, lesions in maxilla or mandible. Diagnostic impressions were obtained. Treatment was planned multidisciplinary. Subgingival curettage was done 4 sessions. GRR laser applied during 5 session dialy end of 5 session extractions were completed and laser procedure went on until 10 sessions. ISQ values recorded at the end of 1 month and according to measurements prosthetic process was started at 2. Month. This type of diode laser combined 2 wavelength 904 nm and 632 nm (GRR Laser medical, TÜRKIYE) provided to implantation in contradictionary condition. More studies and cases need to be done before it can enter the literature. In our department we go on to use this laser for these patients.

OP-46

The Effect of New Generation Low Level Laser Therapy on Dental Implant Stability and Post-operative Pain: Literature review and Case Report

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Introduction: Low-Level-Laser-Therapies (LLLT) can be used for rapid healing and osseointegration of the dental implants. In this case, it was aimed to evaluate the effect of the new generation LLLT on the implant stabilization within the first 14 days and to observe post-operative pain.

Case Description: A systemically healthy 70-year-old female patient applied to prosthodontic department with complaints of missing teeth. After clinical and radiographical examination, total of 2 dental implants (MEGAGEN, KOREA) were placed bilaterally of the maxillary posterior region. LLLT (GRR LaserMED, TURKEY) was applied to the left implant after the operation for a total of 4 minutes buccally and lingually for 10 days. On the opposite arch, LLLT was applied as placebo. Implant stabilization was measured with resonance frequency analysis using Osstell device and obtained ISQ values that recorded on the 0th, 7th and 14th days. Visual Analog Scale (VAS) was used to evaluate the pain of the surgical area.

Discussion: When evaluated according to Osstell values, the values decreased more on the laser applied side compared to placebo. When evaluated according to VAS values, it was observed that the pain decreased in the early period on the laser applied side. While primary stabilization is high on the first day of the osseointegration process, it tends to decrease until the 14th day. Therefore, the further decrease in stabilization values in the laser applied area indicates that the osseointegration process is accelerated in that area.

Conclusion: LLLT increased post-operative comfort in patients due to accelerating wound healing and reducing postoperative pain and swelling.

OP-47

Bibliometric Analysis of Studies on Artificial Intelligence Applications on Oral Cancer**Subject**

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Objective: This study was carried out to determine the trend of research on oral cancers using artificial intelligence applications in the basic field of dentistry. In the research, studies on artificial intelligence applications on oral cancers published in the Web of Science (WOS) database on March 19th, 2024 were examined.

Materials and Methods: A search was made in the WOS database using the keywords 'artificial intelligence' OR 'AI' OR 'machine learning' OR 'deep learning' AND 'oral cancer' in the all fields option and 749 results were found. According to years, 690 articles were reached in 36 different fields, the timespan was 1982–2024. When the irrelevant articles were eliminated from the 648 articles examined, the data of the 129 articles obtained were exported from the WOS database in 'Bibtex' format and transferred to the Biblioshiny software for bibliometric analysis.

Results: As a result of the analysis, 129 articles written on oral cancer using artificial intelligence between 1995 and 2024 showed that 898 authors worked, 390 keywords were used, 46 sources were used, the annual growth rate was 8.95 %. It was observed that the most articles (24/129) were published in the 'Cancers' journal and most of the articles were published in 2023 (35/129).

Conclusion: Bibliometric research is valuable in terms of examining the development of research on a subject over time. Although the use of artificial intelligence in oral cancers dates back to the 90s, it has increased in the post-pandemic period.

Keywords: Bibliometric analysis, oral cancer, artificial intelligence

OP-48

Novel techniques of implant uncoveringVancho Spirov¹, Bruno Nikolovski¹, Vesna Trpevska¹, Aneta Miovska², Vesna Jurukovska Sotarovska²

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The goal of the second stage surgery is not only to expose the implant interface for performing the required restorative procedures, but also to create a healthy marginal attached mucosa around dental implants. This second stage surgery is often overlooked and is considered non essential phase but actually could determine the health of the peri-implant tissue. This phase gives an excellent opportunity to preserve, reconstruct and even maneuver the soft tissue to optimize the soft tissue profile around the implant components. There are different techniques with which this intervention of opening the implants can be performed. In this paper are explained in detail all the techniques of opening the implant with all their positive and negative characteristics.

OP-49

Use of PRF to facilitate wound healing after oral surgical interventions in patients with risk of bisphosphonate-related osteonecrosis of the jaws

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Platelet-rich fibrin (PRF) is widely used nowadays in different fields of medicine, including tissue regeneration. The use of PRF in oral surgical interventions and its efficiency in the improvement of postoperative wound healing were analyzed. We present case of a 71-year-old woman diagnosed with generalize osteonecrosis and treated with bisphosphonates (Tab. Ibandronic Acid 1x1 once a month) for a period of two years. The patient came at the Department of Oral and Implant Surgery and University Dental Clinical Centre in Skopje, with pain from the palatal side of the upper jaw after one month treatment from her dentist with Gingigel local application. As a result of misdiagnosis (exostosis from total mobile prosthesis) pain and redness persist. Orthopantomographic X-Ray reveals persistence of impacted maxillary right and left canines. Oral surgical interventions (operative extractions of left and right canines) were performed while administration of BPs was discontinued for three months. Extraction wound was preserved with sticky bone (Bovine Xenograft mixt with supernatant from A-PRF), A-PRF plugs, covered with A-PRF membrane and sutured. Our choice for application of PRF was based on the benefits that PRF itself possesses: anti-inflammatory, anti-edematous and regenerative effects. As a result of the treatment, complete epithelialization of the wound without infection occurred. After four months from the interventions oral examination and control X-Ray reveals formation of new bone tissue and keratinized gingiva. Total mobile prosthesis was done.

Key words: bisphosphonates, osteonecrosis, platelet-rich fibrin, oral surgical interventions.

OP-50

Determination of cortical bone thickness, trabecular bone thickness and bone density in anterior mandibular region planned for dental implant therapy

Teuta Dovolani

Private dental clinic – Teuta

Objective: The implants primary stability and the general success rate from dental implants treatment is related with the bone volume and bone density that surrounds the implant bed upon their insertion. Aim of this study was to determine the cortical and trabecular bone thickness as well as cortical and trabecular bone density in the anterior mandibular region planned for dental implants treatment.

Materials and methods: In the study participated 21 individuals (13 men and 8 women), age 40 – 75 years. The participants were scanned using the cone beam computed tomography (CBCT). In the obtained cross section images was determined the cortical

bone thickness (on buccal and lingual side) and the trabecular bone thickness of the alveolar ridge. Measurements of the cortical and trabecular bone density of the alveolar ridge were expressed in Hounsfield units.. All measurements were made on crestal, middle and apical part of the alveolar ridge.

Results: The greatest cortical bone thickness revealed in the mandibular right canine region (2.41 mm. \pm 0.41 mm.) Trabecular bone thickness was greatest in the left central incisor region (4.97 mm. \pm 1,86 mm.) The cortical bone density was highest in the left central incisor region (1927.50 HU \pm 256.09 HU), the trabecular bone density was highest in the right central incisor region (1070.63 HU \pm 264.56 HU).

Conclusion: The findings suggest that in anterior mandibular region, the canine region and central incisor region offer more predictable success rate with dental implants.

Keywords: Dental implants, bone thickness, bone density.

OP-51

Implant prosthetic treatment in a patient with significant damage and resorption of the alveolar ridge

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Total and partial edentulousness and its solution often leads to an implant–prosthetic approach, which depending on the adequate anatomic–morphological characteristics of the upper and lower jaw and surrounding structures can be fixed or mobile. The choice for a fixed or mobile solution is not only the economic situation of the patient and the unfavorable anatomical and morphological resorption of the alveolar ridges and their damage from acute and chronic inflammatory processes.

Total edentulism and terminal edentulous spaces are once again solved with fixed–prosthetic rehabilitation, but sometimes the choice for mobile total and partial dentures is a decision of the patients themselves.

The most common reason is that they have been left without a rehabilitation prosthetic replacement for a long period of time or, due to carelessness, they have allowed chronic inflammatory processes to persist long enough to cause resorption or damage to the alveolar ridge.

Our patient was admitted due to complications in the post–implant–prosthetic therapy in the maxilla with five implants and was left with total toothlessness.

Analyzing the options for implant–prosthetic therapy, we came up with options to make a skeletonized total mobile prosthesis supported by two new dental implants that have different types of connections. The first implant with a telescope crown made in the technical laboratory and the second with a spherical abutment with the aim of achieving satisfactory stability and retained total mobile skeleton prosthesis and thus to return the old smile to the patient.

OP-52

Bilaminar technique for palatal recession coverage on dental implants

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Introduction: Several gingival recession coverage techniques have been introduced over the past years to restore the gingival recession defect, achieve tissue regeneration, and enhance patients' aesthetics. Depending on the anatomical condition of the donor site near single or multiple gingival recessions, the following covering methods were described: sliding step's flap, rotating flap, papilla rotating flap, and double papilla repositioned flap. Recession coverage on dental implants may be done for better esthetics and to prevent the onset of biofilm-induced peri-implant mucositis or periimplantitis.

Aim: The present case report demonstrates the stability of the obtained results 12 months after palatal recession coverage on dental implants using a laterally displaced double graft technique.

Case presentation: A 38-year-old female patient reported with soft-tissue recession on the palatal aspect of a dental implant in the maxillary right first premolar region. The palatal recession was caused due to the necrosis of the palatal split-thickness flap done previously when exposing the implant for healing abutment placing.

Conclusion: The technique combines the advantage of a pedicle graft and that of a bilaminar technique using a subepithelial connective tissue graft imposing itself as a superior protocol for a long-term result in the treatment of localized palatal recessions on single implants.

Keywords: gingival recession, implant exposure, coverage technique, double pedicle flap, lateral flap.

OP-53

Guided Implants Placement: Case Report

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Objective: In this case report our main objective is to present guided implants placement in lower jaw where there are fractured roots left (*radix relicta*)

Methods: As the X-ray and CBCT were analyzed, we decided to place the implants directly in the place where the fractured roots are. The position of the implants is determinate by creating an implant guide, based on the CBCT.

Results: The implants are successfully placed, the osteointegration is going very well, and all this is done in a minimum invasive way, without extracting the fractured roots, without any damage into the bone or the tissues around, no need to make an open flap (flapless) and not losing time by waiting its recovery if the extraction was done by a surgery.

Conclusions: The use of implant guide helps us to place the implants in a previously planned area, where the fractured roots are, also it enables us to save time during intervention, no need for invasive surgery (open flap), and enables us to create and place at the same session immediate temporary PMMA teeth. Makes patients feel more comfortable.

OP-54

Comparative Analysis of Microbiological Profiles and Clinical Characteristics in Periimplant Diseases and Conditions

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Introduction: Peri-implantitis and peri-implant mucositis represent biological complications driven by oral biofilm microbiota that activate the host's immune response, which can lead to peri-implant-supporting tissue destruction.

Aim: To assess the prevalence of *Porphyromonas gingivalis* (Pg), *Fusobacterium* species (Fs), Epstein-Barr virus (EBV), and *Candida albicans* (Ca) and correlate them with clinical peri-implant parameters in patients with diseased and healthy dental implant sites.

Materials and methods: A total of 102 patients were divided into peri-implantitis (PI), peri-implant mucositis (PM), and healthy implant (HI) groups. Pg, Fs, EBV, and Ca extracted from a peri-implant crevicular fluid were analyzed using qPCR. Peri-implant clinical parameters such as pocket probing depth (PPDi), clinical attachment level (CALi), bleeding on probing (BOPi), plaque index (Pli), and suppuration on probing (SUPi) were recorded.

Results: Significant differences were found in Pg and Fs levels ($p=0.022$, and $p=0.023$ respectively), as well as for clinical parameters ($p<0.05$), with the highest incidence in the PI group. Pg correlated positively with PPDi ($p=0.221$; $p=0.033$), CALi ($p=0.238$; $p=0.016$), and BOPi ($p=0.327$; $p=0.001$), while Fs levels correlated with PPDi ($p=0.220$; $p=0.026$) and BOPi ($p=0.233$; $p=0.018$). Regression analysis showed Pg as a predictor for both PPDi ($p=0.011$; adjusted $R^2=0.063$) and CALi ($p=0.049$; adjusted $R^2=0.038$).

Conclusion: Elevated Pg and Fs levels in peri-implant lesions could imply their pivotal involvement in disease development and progression. Given their strong association with clinical parameters, they might be disease severity and progression biomarkers.

Keywords: peri-implantitis, peri-implant mucositis, peri-implant microbiota

OP-55

Expression of extracellular matrix components, COL1A1, VTN and ITGA5 in persistent periapical lesions

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Introduction: Inflammatory-immune response and mechanisms of tissue destruction underlying persistent apical periodontitis remain unclear. It can be assumed that endodontic infection can lead to imbalance in the expression of extracellular matrix components that are responsible for healing process.

Aim: The aim of this study was to determine the expression of extracellular matrix components: collagen type I alpha 1 (COL1A1), vitronectin (VTN) and integrin alpha-5 (ITGA5) in persistent periapical lesions.

Material and methods: Twenty–four periapical lesions collected after endodontic surgeries and 20 samples of healthy periodontal ligament tissue were included in the study. The expression of COL1A1, VTN, and ITGA5 genes were determined using "real time" polymerase chain reaction (qPCR). The data were analyzed using the chi–square and independent t–test ($p < 0.05$).

Results: The qPCR results showed decrease in COL1A1 and VTN gene expression and increase of ITGA5 gene expression in periapical lesions when compared with control samples. Significant difference was observed only for COL1A1 ($p < 0.05$).

Conclusion: Higher expression of COL1A1 gene was found in periapical lesions compared to control samples. Further research aimed to investigate expression of other wound healing genes in persistent periapical lesions might contribute to better diagnosis and development of an individual treatment approach.

Key words: extracellular matrix components, COL1A1, VTN, ITGA5, persistent apical periodontitis

OP–56

Evaluation of Oral Cancer Videos in Turkey and Worldwide: YouTube Study

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Aim: It is aimed to evaluate videos about oral cancer on YouTube worldwide and locally.

Materials and Methods: The first fifty videos (100 in total) that listed by typing the words "oral cancer" and "ağız kanseri" into the YouTube search section on March 15, 2024 were examined. The videos were evaluated in terms of the year of publication, duration, publisher, speaker and content. Videos that were not related to the topic and contained advertising were excluded from the study.

Results: It was observed that 90% of the videos watched worldwide and 72% in Turkey were related to the subject. It has been determined that the most videos worldwide are published from India after America. While oncologists mostly provide information about oral cancer in videos around the worldwide, dentists in Turkey have created more video content about it. While the rate of videos consisting of stories of patients receiving treatment is 23% worldwide, it has been determined that it is 5.5% in Turkey.

Conclusion: It has been observed that YouTube videos about oral cancer around the worldwide are more visually understandable, while the videos in Turkey are more speaker–oriented. It was concluded that the reason why India ranks second in producing video content on oral cancer is related to the high incidence of oral cancer in that region due to the habit of chewing tobacco.

Keywords: Oral cancer, YouTube.

OP–57

Management of oral complications after radiotherapy

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Background: Patients undergoing radiation therapy, as primary, adjuvant or combined treatment of cancers of the head and neck are prone to several dental complications. These cancers are often treated with radiation therapy, a technique that uses ionizing radiation and perform a therapeutic effect by semi-selective damage to the genetic material of the cancer cells, directly or through the production of free radicals, which results in cell death. Aim: to highlight the current understanding and management of dental needs for patients before, during and after radiation therapy. Method: research was done exploring specialized databases PubMed, MEDLINE, EBSCO, Science Direct, Scopus for the period 2010–2023, by use of MeSH terms: head and neck cancers, radiation therapy, oral manifestations, oral complications; Results: The adverse effects of RT manifest in damage to normal cells, especially those that divide quickly, or are less able to repair, resulting in specific radiation syndromes: xerostomia and dysgeusia occurred because of damage to the salivary glands, oral mucositis from epithelial cells damage, pathological changes in the normal flora, radiation caries, reduced mouth opening due to changes in the structure of collagen and osteoradionecrosis from reduced capacity of bone healing.

Conclusion: Management of lesions of the oral cavity after radiotherapy are an integral part of oral health care, hence the early detection and treatment of these lesions will greatly improve the quality of life of patients and the survival rate in cases of head and neck cancers.

Key words: head and neck cancers, radiation therapy, oral manifestations, oral complications

OP–58

Biomechanics in Deep Bite Malocclusion Treatment

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Objective: Deep bite malocclusion is one of the most common malocclusions in daily orthodontic practice. Proper biomechanics is used to resolve the variety of skeletal and/or dental discrepancies.

Aim: To present different cases where the choice of treatment is based in part on the etiology of the deep bite, expected growth, the vertical dimension, relationship of the teeth with the adjoining soft tissue structure and the desired position of the occlusal plane.

Material and Methods: Class II division 2 patients, with deep overbite, skeletal Class II, occlusal cant was presented to illustrate the principles of deep bite cases management.

Results: We corrected the deep overbite by extrusion of the posterior teeth or by intrusion of anterior teeth or by combination of both techniques according to the

skeletal, dental and esthetic parameters. At the end of the treatment, good teeth alignment and solid, stable occlusion were established.

Conclusion: With proper biomechanics our treatment contributed for mandibular forward displacement, reduction of deep bite, reduction of facial convexity and profile improvement.

Key words: Deep overbite, extrusion, intrusion, biomechanics.

OP-59

Extraction vs. Nonextraction in Orthodontic Cases

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Introduction: Orthodontic treatment helps bring teeth in alignment. Extractions in orthodontics remain a relatively controversial area that we face in our daily orthodontic practice.

Objective: The aim of this cases presentation is to elaborate the need of tooth extractions in cases for treating crowding and increased overjet in order to create space in the arches but also to improve facial esthetics and treatment stability compared to non-extraction treatment planning.

Material and Methods: First case was orthodontic treatment of an adult patient with increased overbite, increased overjet, proclined upper incisors, skeletal Class II. We did camouflage treatment with correction of overjet by retracting the teeth in the extraction space. With Class II elastics use we achieved molar extrusion and opening the bite which is indicated in low-angle patients. Second case was non extraction orthodontic treatment of an adult patient with increased overbite, skeletal Class II. We used bracket positioning play and Class II elastics for intermaxillary correction.

Results: After the treatment, we established acceptable, aesthetic and functional occlusion in both patients, based on an accurate diagnosis and treatment plan in conjunction with good patient cooperation, appliance selection and management of the treatment.

Conclusion: While we recommend preserving natural teeth whenever possible, extractions of specific teeth are sometimes required in various presentations of malocclusions.

Keywords: Orthodontic treatment, extractions, Class II malocclusion, facial esthetics, treatment stability.

OP-60

Factors associated with maxillary canine impaction and treatment duration

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Introduction: Impacted maxillary canines (IMC) are common in orthodontic practice. Maxillary canines are second most commonly impacted teeth, after third molars. For determining position of the impacted canine, X-rays are crucial. Most commonly used is orthopantomography (OPG), but cone beam computed tomography (CBCT) is considered gold standard for diagnosis of impacted teeth. Aim of this study was to evaluate correlation between initial position of IMC (different variables on OPG and CBCT) with treatment duration, and successful outcome or failure (extraction).

Materials and methods: 64 patients with 83 impacted canines were included in this study. Information of age, unilateral/bilateral occurrence, side of impaction and treatment decision about impacted canine were gathered. Also, numerous OPG and CBCT measurements such as sector, vertical position, localization, resorption of adjacent teeth were made. Treatment duration until initial appearance in the mouth and treatment duration until perfect alignment data were collected.

Results: Mean age was 15.17 ± 3.69 . Impacted canines were more frequently impacted in females, unilaterally and palatally positioned. Before start of treatment, 68 canines were surgically exposed and orthodontically treated and 11 canines were extracted before start of treatment, 3 canines were extracted during treatment and 1 canine erupted spontaneously. It took approximately 14 months for the canine to appear in the mouth, and 27 months until stainless steel wire was ligated. Horizontal position and CBCT localization significantly influenced treatment duration.

Conclusion: Accurate diagnosis that includes assessment of precise location of impacted tooth should be made before treatment decision in each case of impacted maxillary canine.

OP-61

Understanding the Process of Orthodontic Relapse

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Retention of achieved orthodontic results is often the most overlooked subject as far as research and clinical studies are concerned. When taking into account the diversity and individuality of the patients we treat, it becomes clear that orthodontic retention is not a matter of "one fits all". We do see relapse in our carefully treated cases. Although OR is a common phenomenon in orthodontics, the number of publications giving an accurate description of this process is surprisingly small.

This systematic review aimed to explain biological basis for orthodontic relapse.

An electronic search of the literature in Pubmed, MEDLINE and The Cochrane Library was performed.

In the clinical situation, it is common practice to stabilize the treatment results by retention. Without immediate retention, relapse will take place. The stable situation remains, as long as the resultant force from the dentition and the retention appliance remains zero.

OP-62

Detecting White Spot Lesions During Orthodontic Treatment

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One of the most common adverse phenomena that occur during orthodontic treatment with fixed appliances is white spot demineralization (WSL). The presence of this phenomenon is common in patients with inadequate oral hygiene.

The aim of this study was to determinate the incidence and location of WSL in patients treated with fixed orthodontic appliances.

Eighty orthodontic patients, treated with fixed appliances at the Department of Orthodontics in Skopje were examined. All the patients fulfilled following criteria: no previous orthodontic treatment, no systematic diseases, no chronic medication and no dental anomalies. The visual examination was performed under direct illumination using a dental lamp after drying the tooth enamel with compressed air for five seconds.

WSL often develop in patients treated longer than 12 months, and in patients without adequate oral habits. In most cases, demineralization was found on incisors in the maxilla, and on molars in mandible. Females were less frequently affected than men, probably they cleaned their teeth more often and they practice additional hygienic procedures.

OP-63

Orthodontics-Periodontics Relationship

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As the orthodontic treatment is based on the principle that forces applied to teeth produce stresses on the periodontal ligament, the intricate relationship between these two disciplines has been heavily researched in recent years. Orthodontic treatment can preserve, harm or benefit the periodontal condition.

So there are benefits and risks of combined orthodontic-periodontic therapy in patients with diagnosed periodontal disease. Making the most of what these two specialties offer each other begins with the identification of periodontal problems that could become more complicated during orthodontic therapy and, conversely, those that could benefit from orthodontic therapy.

Keywords: Orthodontics, periodontium, recession

OP-64

3D Evaluation of Mid-palatal Suture Maturation in Young Adults

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Although maxillary expansion is an effective method in treating transversal maxillary deficiency, its applicability is limited to the degree of maturation of the midpalatal suture. Studies have been conducted to find an indicator that can determine the degree of maturation of the patient's midpalatal suture, but a consensus has not reached.

In this retrospective study, midpalatal suture maturation was evaluated using cone-beam computed tomographies (CBCT). Mid-palatal suture maturity was evaluated according to the five stages used by Angelieri et al. CVM, assessed using cephalometric images

obtained from tomography, was used to evaluate the skeletal age of the individuals. The relationship between midpalatal suture maturation stage, skeletal age, and chronological age was investigated.

100 patients (53 females, 47 males) aged 18–32 years were included. The rate of individuals with fused midpalatal sutures was 74%. Although chronological age gives an idea about mid-palatal suture maturation, it was not found to be a reliable source. Among 100 individuals with an average chronological age of 23.93, the rate of men with a cervical vertebra maturation score of CS6 was found to be 57.4%, and the rate of women was 45.3%. Therefore, it is also possible to say that the determination of skeletal age by CVM is insufficient to indicate maxillary expansion.

In individuals who have fused midpalatal suture and require maxillary expansion, neither chronological age nor cervical vertebral maturation stage is sufficient when planning treatment. For detailed evaluation, it was thought that it would be appropriate to evaluate midpalatal suture maturation by taking CBCT.

OP-65

Buccolingual Inclination of Posterior Dentition in Patients With Maxillary Impacted Canine Using CBCT

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Introduction: The aim of this study was to assess buccolingual inclination of maxillary posterior teeth, curve of Wilson and transversal maxillary dimensions in maxillary palatally impacted canine cases, compared to a control group. **Methods:** The study consisted of cone-beam computerized tomography (CBCT) images of 14–25 years old patients, who referred to Departments of Orthodontics and Oral and Maxillofacial Radiology of Gazi University Faculty of Dentistry. The images of bilateral (n=22), and unilateral (n=32) maxillary palatally impacted canine patients and the control patients (n=30) were divided into two quadrants, as the impaction quadrant (n=76), affected quadrant (n=32) and the control quadrant (n=60) in order to evaluate the differences for buccolingual inclination of maxillary posterior teeth, basal, alveolar, dental transversal widths and arch perimeter. Additionally, comparisons were made regarding curve of Wilson among bilateral, unilateral maxillary palatally impacted canine groups and the control group. Statistical analysis was performed by one-way ANOVA test and Kruskal Wallis test.

Results: Results showed no significant difference in buccolingual inclination of maxillary posterior teeth and curve of Wilson among groups. Basal width of the second premolar and the alveolar width of both premolars were significantly lower in the impaction quadrant than in the affected quadrant ($p < 0,05$). Dental width of the first premolar was significantly decreased in the impaction quadrant compared to other quadrants ($p < 0,05$). Arch perimeter was significantly lower in the impaction quadrant than in the affected quadrant ($p < 0,05$).

OP-66

Evaluation of Patient Cooperation with Clear Aligners from an Orthodontist Perspective

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Aim: To determine, from the perspective of an orthodontist, what percentage of patients with aligners fail to show treatment cooperation by missing appointments, switch to braces, and terminate treatment by not accepting post-treatment adjustments.

Material Methods: Demographic data, professional experience, and survey questions related to clinical situations prepared via Google Forms will be communicated to orthodontic specialists through digital channels, and they will be requested to answer the questions. The survey was concluded upon reaching the determined number of 134 participants as per power analysis, through online submission via the regional Orthodontic and Aligner Association.

Results: The survey was predominantly answered by participants aged between 25 and 50 years old (79.9%), with 60.4% being female and 39.6% male. Most participants (41%) have more than 15 years of professional experience, and 69.4% have been treating patients with transparent aligners for 1–5 years. 31.3% of participants treat over 100 patients with clear aligners, and 59.4% do so without support in planning. 83.6% of participants report that 1–5 patients discontinued treatment and 75.4% stated non-compliance with wearing aligners during sessions as an issue before discontinuation. Doctors state that they struggle the most with patient compliance in transparent aligner treatment, attributing this to adherence to the treatment plan.

Conclusion: Notably, a high percentage of patients discontinued treatment, often due to non-compliance with wearing aligners during sessions. These findings underscore the need for strategies to improve patient cooperation and support orthodontists in optimizing aligner treatment outcomes.

Keyword: Aligner , Compliance, Survey

OP-67

Backward Planning Digital Protocol for Full Mouth Rehabilitation

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Full mouth rehabilitation is a critical aspect of modern dentistry, aiming to restore both function and aesthetics to patients with complex dental issues. Digital technologies have revolutionized the field of dentistry, offering new possibilities for treatment planning and execution. This article presents a digital protocol for full mouth rehabilitation leveraging intraoral scanning, 3D smile design, 3D printing and presents how we can make the treatment starting from the end results backward.

35 years old male came to our office with dissatisfaction of his smile. In initial phase we used intraoral scanning with Heron IOS, 3DISC to capture the current state of the patient's dentition. This data was then used to create a 3D smile design, allowing for a detailed analysis of the proposed changes and the visualization of the final outcome. A 3D model was printed to provide a physical representation of the planned rehabilitation, and mock up was done enabling the patient to preview the expected results. Subsequently, the patient underwent preparation through the mock-up,

facilitating precise adjustments and refinements. Digital impressions were taken to capture the final tooth preparations accurately. Single monolithic zirconia crowns were fabricated ensuring high-quality restorations with excellent esthetics and durability. With advanced digital tools, clinicians can achieve accurate planning, efficient execution, and superior esthetic results in full mouth rehabilitation. However, challenges such as equipment cost, training requirements, and learning curve need to be considered when adopting these technologies in clinical practice. Further research are warranted to evaluate the long-term success and patient satisfaction with digitally planned full mouth rehabilitation.

OP-68**Benefits and Drawbacks of Using Intraoral 3D Scanner Versus Traditional Impression Methods**

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With a properly taken dental impression, it is precisely replicated the individual intraoral condition of each patient, obtaining it the appropriate stone model. The correct – appropriate impression with a good therapy plan are the foundation for successful therapy and prosthetic rehabilitation.

Intraoral 3D scanners are contemporary digital technology that allows dentists to make precise digital impressions from patients' teeth and oral cavity.

What are the benefits and drawbacks of using intraoral 3D scanner versus traditional impression methods? Is it worth the upgrade? What we know from our clinical experience.

OP-69**Abrasion, Its Causes and Correlation with Age**

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Abrasion is a pathology affects the dental structure in varying degrees. The etiology of abrasion is multifunctional. Today predominate the concept that abrasion is a multifunctional pathology, where the combination of chemical and mechanical factors plays an important role. As the main cause of abrasion are occlusal parafunctions combined with biological modifying factors such as saliva, tooth mineralization and stomach acidity. The consequences of abrasion are different like as: dental, aesthetic, functional and articular consequences.

The purpose of the study to determine which are the abrasion causes and which is it correlation with age?

Material and Methodology. 382 female students aged 12–24 years were observed. 206 of these were female and 176 male. Abrasion was observed in 76 female and 22 male patients. By control, it was found at about of 206 women, 66 women were effected by bruxism, while 16 men had bruxism. The comparison with a control group was carried out

and 58 individuals, 50–70 years were treated in "Qafmolla" clinic. 20 of these were women 50–70 years old, while 38 were men 45–70 years. By control group, 6 students were treated by prosthetic, while the control group the final treatment was carried out by fixed bridges.

The results, were examined 382 patients, 98 people (54.4%) had abrasion caused by bruxism in 82 (45.6%) cases. Abrasion was observed at young and at advanced ages. The longer the individual has bruxism present and has not treated it, the more pronounced the bruxism is.

Conclusions, the main cause of abrasion is bruxism, which can be present at young and older ages. As sooner the bruxism to be treated the lower the percentage of abrasion should be observed.

OP-70

Investigation of Stress Distribution on Bone and Implants Using Different Prosthetic Material on All-On-Four Concept Using Three-Dimensional Finite Element Analysis

Ipek Caglar

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The aim of this study was to assess the stress distribution in the bone and implant using different prosthetic material on "All-on-four" concept.

Four standard implants were positioned in maxilla according to the all-on-four concept. The simulations were divided into four groups according to the prosthetic framework materials: pure titanium, cobalt–chromium alloy, zirconia, polyetheretherketone (PEEK). The stresses on implants, surrounding bones and frameworks were analyzed and compared among the framework materials. The vertical and lateral loads of various values were applied to the occlusal plane of prosthetic design and Von Mises stress (σ_{VM}) was evaluated.

Stress values of implants and cortical bones from low to high were as follows: cobalt–chromium alloy, zirconia, pure titanium, PEEK. Among the framework material PEEK presented the highest stress values on the cortical bone and implants. However, the stress values within the PEEK material were lower than the other frameworks.

In all-on-four concept prostheses, biomechanical analysis showed that the zirconia and metal framework materials were more advantageous in stress distribution around implants than PEEK framework materials. However, the stress values did not exceed the bone resistance limits for both frameworks.

OP-71

Nd:YAG laser Gingivectomy, Digital Workflow for Prepless Laminate Vener Restorations

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Introduction: Dental malposition, discolorations, enamel disorders, congenital defects, disorders, dimensional deviations, malformations effect the aesthetical appearance of face negatively. These situations decrease life of quality and withdraws the individuals

from social life. Due to this esthetic and conservative treatments become quite popular in the anterior region.

The aim of this case series was to demonstrate the improved esthetic appearance of tooth and face while saving the dental structure.

Patient and method: 5 patients complained to Prosthodontic Department of Gaziantep University Faculty of dentistry with esthetic problems in anterior region examined. Photographical records were achieved. Dental and gingival structures were evaluated. 1064 nm Nd: YAG laser was used for patients requiring gingivectomy. 1 week after recovering. Prepress lamina veneer restoration (PLV) were planned for anatomical form in vestibul area was straight and without convexity. Digital impressions were achieved. PLV restorations were prepared by cut back, compatibilities were checked and simulated with variolink according to manufacturer introductions. And Followed up clinically.

Results: More comfortable treatment was carried out without anesthesia, bleeding, pain and tooth preparation. Esthetic appearance was gained in anterior region. Quality of life was improved for treated patients.

OP-72

Efficacy of Botulinum Toxin in Masseter Muscle Hypertrophy

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Introduction. Masticatory system is a complex apparatus with great adaptive capacity. Still, when that capacity is exceeded temporomandibular functional disorders (TMD) occur followed by a series of symptoms that depend on individual, local, and systemic etiological factors.

Aim To describe the application of the botulinum toxin in diseases of the temporomandibular system of a muscular type, such as masticatory hypertrophy, spasm, bruxism, and masseter muscle hypertrophy of idiopathic etiology.

Material And Methods Botulinum toxin type A, hemagglutinin complex with 500 IU (DISPORT Ipsen Biopharm, UK) was used for the therapy of muscle disorders like bruxism or night teeth clenching in female patient 26 years old. Depending on the dose that was applied to the targeted muscle, a complete or partial reduction in contraction occurs with reduced function and weakening of the muscle.

Results Two weeks after applying the neuromodulator, the patient reported a reduction in pain and episodes of teeth grinding and clenching. Bilateral hypotrophy of left and right masseter muscles was noticeable after 2 months.

Conclusion It can be concluded that botulinum toxin can be used as an effective treatment for reducing nocturnal bruxism, myofascial pain and muscle hypertrophy in patients with bruxism.

Keywords: botulinum toxin, TMJ, bruxism, masseter hypertrophy

OP-73

Silicone Finger Prostheses: Literature Review And Case Series

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'Amputation', comes from the Latin word 'amputare' (to cut), is defined as 'removal of a body part or all of it surrounded by skin'. Finger and partial finger amputations are often due to traumatic injuries. Amputation of one or more fingers of the hand as a result of trauma or congenital absence of one or more phalanges carries a severe reduction in hand function and social dysfunction for the patient. Finger prostheses are both aesthetic and functional.

The aim of this study was to show increased quality of life with silicone based finger prosthesis.

3 patients complaint with amputated fingers due to trauma applied us via surgeon who performs posttraumatic finger operations. Patients were examined. Firstly impressions of two hands were taken. Healthy hand's impression was filled with fluid wax and amputated finger was replaced into wax until it hardens. And then firstly amputated finger and then wax modelation was removed from alginate impression. Wax replica was adapted on amputated finger. Wax was replaced into the muffle and dewaxing was performed. Silicone based special material mixed with colorant (according to the manufacturer introductions) was replaced into the muffle and polymerized. And it was weared to amputated finger.

Self-confidence of patients who had finger prostheses was increased and they went on their life as effective as healthy individuals.

The quality of life and pleasure levels of patients who need a finger prosthesis and those who do and don't have a finger prosthesis need to be compared.

OP-74

Implants made without taking into account centric occlusion. Case report

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Introduction: This case describes the prosthetic treatment applied to a patient who received an implant, regardless of centric occlusion.

Case report: A 53-year-old female patient applied to our clinic with healing caps after implant application. After the clinical and radiographic examination of the patient, it was understood that two implants were made for the maxillary first molar and the mandibular second premolar. It was observed that the healing caps in the patient's mouth made premature contact with the antagonist in centric relationship. Appropriate abutment selections were made for the patient. After the root treatment of maxillary premolar teeth and mandibular first molar teeth, preparations for the prostheses to be produced in the periodontal extension of the crown operation have been completed. The implant and teeth were restored separately with fixed metal-supported porcelain and appropriate centric occlusion was achieved.

Results: As a result of the patient's three-month follow-up, no complications were observed after the prosthesis was applied.

Conclusion: In the clinical and radiological examinations performed during the follow-up examinations, it was observed that he was satisfied with the treatment applied, his quality of life increased and there was no problem in prosthesis care.

OP-75

Effects of Energy Drinks on the Surface Properties of Hybrid CAD/CAM Restorations

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Aim: This study aims to analyze the changes in the surface roughness and microhardness of two different hybrid and one leucite–reinforced CAD/CAM blocks after being immersed in two energy drinks and distilled water as a control group.

Material and Methods: The study utilized Cerasmart, Lava Ultimate, and G–Ceram blocks. From these blocks, a total of 108 rectangular–shaped samples were obtained. And the samples were randomly divided into three subgroups according to the energy drink: Monster energy drink, Red Bull energy drink and distilled water (n=12). The initial surface roughness and microhardness of all samples were measured. When measuring surface roughness, a profilometer was used, while a Vickers microhardness measuring device was used for microhardness measurements. After being stored in energy drinks for a month, had their surface roughness and microhardness measurements repeated. Data were evaluated using One–Way ANOVA in IBM SPSS with a significance level of 0.05.

Results: According to the data, Redbull energy drink caused the highest surface roughness among all the materials tested, which was then followed by a decrease in microhardness ($p \leq 0.05$). A similar effect was observed with Monster energy drink. After one month of immersion, the G–Ceram block kept in distilled water had the highest microhardness value of 660.72 and the lowest surface roughness of 0.2356.

Conclusions: Frequent intake of energy drinks can have a substantial impact on the surface properties of CAD/CAM blocks. It is noteworthy that G–Ceram block, a material that is leucite–reinforced ceramic, exhibits the highest level of resistance to these effects.

OP-76

The effect of Thymus Vulgaris Essential Oil on the Formation of Candida albicans Biofilm on Denture Base Materials: An in Vitro Study

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Purpose: This in vitro study aims to evaluate the antifungal properties of *T. vulgaris* (thyme) essential oil on *C. albicans*–infested polymethyl methacrylate (PMMA) denture base materials and identify the volatile components of *T. vulgaris* essential oil.

Materials and Methods: The investigation involved establishing *C. albicans*'s presence on resin surfaces manufactured in 1x1x1 cm size. The resin surfaces on which the *C. albicans* biofilm had formed were then soaked for 1 hour in a 2% and 5% solution of *T. vulgaris* essential oil. In the study, the efficacy of the essential oil was compared with Corega, one of the frequently used antimicrobial denture cleansers, as a positive control. The volatile components of the oil of *T. vulgaris* were determined using the GC–MS method.

Results: Corega, used as a positive control in the study, exhibited potent antifungal activity. Solutions prepared from 2% and 5% essential oil of *T. vulgaris* also showed better antifungal activity than Corega ($p \leq 0.05$). A notable distinction was also seen between the ratios of 2% and 5% of *T. vulgaris* essential oil ($p \leq 0.05$). The major

components detected by GC–MS in the essential oil of *T. vulgaris* were carvone 61.36%, linalool 8.32%, thymol 5.44% and p–cymene 5.18%.

Conclusion: The essential oil of *T. vulgaris* (2% and 5%) showed significant antifungal effects on polymethyl methacrylate resin surfaces. This oil can, therefore, be recommended as an inexpensive, uncomplicated and efficient natural cleaning agent for those wearing dentures.

OP-77

A Retrospective Analysis of the Distribution of Treatment Options Preferred in Patients with Missing First Molar Tooth in the Department of Prosthodontic Dentistry, Kirikkale University

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Aim: This study aims to analyze the distribution of treatment options preferred in patients with missing first molar teeth who applied to the Department of Prosthodontics, Kirikkale University at 2020–2023.

Material&Methods: This study was conducted retrospectively by examining patient records in the Department of Prosthodontics. Data between 2020–2023 were collected and analyzed with the following parameters: age, gender of the patients, quadrant of the missing tooth, natural dentition of the adjacent teeth, treatment option offered to and chosen by the patient. Fixed partial dentures and Implant supported restorations have been determined as the preferred treatment options for the missing first molar tooth. After prosthetic examination, FPDs and implant–supported restorations which are longer than the specified missing tooth position were excluded and 3789 patients between the ages of 16–67 were included in the study.

Results: A total of 2235 (59.1%) Male, 1554 (40.9%) Female were examined. Although the rate of treatment with implant–supported restoration is 39.9% for missing teeth numbered according to FDI 16–26–36–46, the most frequently preferred treatment option is FPDs with a rate of 60.1%. When comparing the dental quadrants, it was determined that implant–supported restorations were most frequently performed in mandibular deficiencies but also FPDs are most commonly performed in maxilla. Costs, patient's fear of surgical intervention, bone adequacy for implant surgery, mesiodistal distance and restorations in adjacent tooth contacts are identify the factors that influence the treatment choices.

Conclusion: Although technological developments and public awareness have increased, socio–economic conditions have prevented the treatment choice of implant supported restorations.

OP-78

Digital Workflow for CAD/CAM of endocrown restorations

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There are several treatment options for restoring root canal–treated teeth with extensive coronal destruction. With the development of adhesive systems, ceramic

materials and computer-aided design/computer-aided manufacturing (CAD/CAM) systems, post-core and crown applications have gradually been replaced by minimally invasive techniques.

Endocrowns are monoblock restorations in which the post, core and crown components are combined in a single piece. They are bonded to the pulp chamber and cavity walls with resin cement and allow the remaining tooth structure to be preserved. This case report describes three cases restored with endocrowns using different ceramic materials. The indications and construction stages of the restorations are explained. The digital workflow includes scanning the prepared tooth, antagonist and bite, designing the restoration and milling it. The first of the cases is made of fine-structured feldspathic ceramic, the second is made of advanced lithium disilicate ceramic and the third is made of highly aesthetic leucite reinforced glass-ceramic material.

There is no consensus on which of the digital and traditional workflows is more efficient. However, single tooth restorations are the most straightforward of the prosthetic treatments produced in a digital workflow. Endocron is a suitable option for restoring

OP-79

Aesthetic Rehabilitation of a Patient with Bruxism and Congenital Lateral Tooth Deficiency: Literature Review and Case Report

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Introduction: In the treatment of bruxism, new generation low-level-laser-therapy(LLLT) in combination with non-invasive and effective treatment of trigger points in the masseter muscles. In this case, the aim was to eliminate aesthetic/functional concerns and will present literature review of this topic.

Case Description :A systemically healthy 39-year-old male patient with aesthetic concerns was admitted to our clinic. After clinical and radiological examination, bruxism, congenital lateral tooth deficiency, teeth discoloration, abrasion and caries were detected. New generation LLLT (GRR Laser, Turkey) was applied to the masseter muscle's areas for 10minutes every day for a total of 10 sessions due to bruxism. In clinical evaluation, it was seen that there were canine teeth in place of the lateral teeth, and it was decided to give the canine teeth a lateral tooth form. Prosthetic planning was made to give a canine form to tooth number 24 and to place a canine pontic in the diastema between teeth number 13-14. When we numbered the teeth to eliminate the missing lateral teeth, laminate veneers were applied to teeth 11,21,22 and 24, e-max crowns were applied to tooth 23, zircon-supported ceramic fixed partial denture(FPD) were placed between 12-14, and metal supported ceramic FPD were applied between 15-17. Dental bleaching was applied to the mandibular anterior teeth to esthetic harmony.

Discussion: Chewing muscle pain caused by bruxism and aesthetic problems caused by tooth wear are quite common today. Combined treatment approaches to eliminate the patient anxiety are very successful.

Conclusion: The patient's life comfort was increased both aesthetically and functionally.

OP-80

Treatment of the Anterior Maxillary Region with Implant Supported Crowns and Porcelain Laminate Restorations: a Case Report 6 Months Follow-up

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Treatment of anterior tooth deficiencies requires accurate diagnosis, proper treatment planning and clinical precision. Rehabilitation of anterior tooth loss with implant , implants can be loaded immediately with provisional prostheses, while in cases where they can not be loaded immediately, the soft tissue can be shaped with the help of provisional restorations prepared following conventional healing. In the treatment of this region with implant-supported crowns, it may require a challenging process to achieve the natural contour of the soft tissues. Porcelain laminate restorations are frequently preferred in the aesthetic region because they require minimal preparation of the tooth tissue, their color remains stable and they provide excellent aesthetics. In parallel with the developments in adhesive dentistry and current porcelain materials, successful clinical follow-up results are available. After a careful evaluation of the patient's systemic and clinical status, the appropriate case can be selected and the appropriate treatment can be chosen to create aesthetically and functionally successful and long-term stable aesthetic restorations. In this case report, temporary crown construction and soft tissue contour management procedures after the conventional healing process in the anterior region and porcelain laminate restoration application stages were described. During the 6-month follow-up period, no complications were encountered in the peri-implant hard and soft tissues and the patients were aesthetically and functionally satisfied with their prosthesis.

Key words: implant, soft tissue contouring, porcelain laminate

OP-81

Rehabilitation of Congenitally Missing Lateral Incisors Using Implant – Supported Hybrid Abutment Crowns

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Symmetrical smiles can have an impact on facial expression, physical appearance, emotional expression, personality, and psychological well-being. When dealing with anterior restorations, it may be necessary to take a multidisciplinary approach due to high patient expectations. Successful outcomes can be achieved through collaboration between prosthetic, surgical, and orthodontic specialists in the treatment of congenitally missing lateral incisors. Various protocols have been described. The remaining bone height and width are crucial factors in deciding whether to use implant-supported restoration. This case report demonstrates an innovative, time-interrupted interdisciplinary approach to rehabilitating bilateral lateral incisor deficiency. A 23-year-old female patient with no systemic health issues presented with a complaint of congenitally missing lateral incisors. Orthodontic treatment was used to adjust the bite and interdental spaces. Two implants were placed. A graft block was taken from the

mandibular ramus and applied to the bone perforation. Temporary crowns were placed, and soft tissue contouring was performed. Two-piece abutments, also known as hybrid abutments, were prepared for the patient at the end of the third month. Finally, the zirconium oxide crowns were cemented with dual-cure resin cement. The patient was then scheduled for a follow-up appointment.

Key words. Congenitally missing lateral incisor, hybrid abutment, zirconium oxide crown.

OP-82

Marginal Fit of Milled 3D-Printed Interim Crowns Fabricated with Intraoral Scanners Over Reverse Tapered Preparations

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Purpose: 3D printing technology has become increasingly prevalent in the field of dentistry. Research is ongoing regarding the usability of resin-based 3D printed temporary crowns in clinical applications. Marginal fit of 3D printed interim restorations produced from digital impressions obtained with intraoral scanners may vary according to the geometry and inclination of the axial walls of the abutment tooth. The purpose of this in vitro study was to evaluate the marginal fit of 3D printed interim crowns fabricated over conventional and reverse-tapered preparations.

Material and Methods Crown preparations with known total occlusal convergence (TOC) angles (-8° , -4° , 0° , 8° , 12° , 16° , and 22°) were digitally created from a maxillary central incisor and printed in acrylic resin. Then, prepared tooth models ($n=7$) were scanned 10 times with 3Shape TRIOS 3 intraoral scanner. Each experimental scan was used to design and fabricate a 3D printed interim anatomically contoured crown. Vinyl polyether silicone was used three times to assess the marginal discrepancy of the specimens by measuring five marginal points on digital photographs for each surface (buccal, mesial, distal, lingual). For the marginal fit measured values did not follow a normal distribution; therefore, the Kruskal-Wallis and the Dunn/Bonferroni multiple comparison tests were applied ($p = 0.05$).

Results: Marginal gap values were found significantly higher ($p < 0.05$) in crowns produced for specimens with -8 and -4 degrees axial wall than other specimens.

Conclusion: Negative inclination of the axial walls adversely affects the marginal fit of crowns produced with 3D printing technology.

OP-83

Comparison of the Antimicrobial Efficacy of Chitosan Versus Sodium Hypochlorite in Root Canal Disinfection: A Systematic Review and Meta – Analysis of Laboratory Studies

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Aim: This meta-analysis aimed to compare the antibacterial efficacy of chitosan/chitosan nanoparticles (Ch/Ch-NPs) versus sodium hypochlorite (NaOCl).

Methods: Four electronic databases and manual searches were performed until 08 December 2023. Studies with missing, unclear, and sufficient data set were systematically excluded from analysis. The included studies were assessed by two independent reviewers using the Joanna Briggs Institute Critical Appraisal Checklist for

Quasi-Experimental Studies. The meta-analysis of standardized mean difference was performed using a random effects model with a 95% confidence interval. Additionally, funnel plots as well as Egger's regression intercept test were used to evaluate potential publication bias.

Results: Four hundred and twenty-six samples were used in nine included studies. There was no difference in antibacterial efficacy between Ch/Ch-NPs-NaOCl (SMD: 0.005; 95% CI: -0.844 to 0.854; $p=0.990$). However, when we analyzed studies that tested antibacterial efficacy using the bacterial culture method, we found that NaOCl was statistically more effective than Ch/Ch-NPs (SMD: 0.807; 95% CI: 0.015 to 1.599; $p=0.046$). Similarly, in the analysis of the studies using the Confocal laser scanning microscopy (CLSM) method, we found that the antibacterial efficacy of Ch/Ch-NPs was statistically higher than that of NaOCl (SMD: -1.827; 95% CI: -2.720 to -0.934; $p<0.000$).

Conclusion: When Ch/Ch-NPs are used as an irrigation solution, they may be an alternative to NaOCl against *E. faecalis*. The methods (CLSM and Bacterial culture) used in the in vitro studies evaluating the antibacterial efficacy of irrigation solutions against *E. faecalis* may have had an impact on the results.

OP-84

Biomarkers in Periodontics: A Bibliometric study

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Aim: This study aims to provide a holistic picture of the field by analyzing research on biomarkers in periodontology. Emphasis will be placed on the evolution of hotspots, publication trends, citation structures, prolific authors and countries.

Methods: Data was downloaded from the Web of Science (WoS) Core Collection and specific keywords were identified to access publications related to periodontology and the link between biomarkers. Following the set criteria, 3020 studies were found. Finally, 3013 academic studies were downloaded with their bibliometric data. of these, 446 were review articles and 2567 were original research articles.

Results: The first literature on this research topic dates back to 1973. The results of the analysis revealed that the US, Japan and Brazil are the largest contributors to the field, with the US publishing the largest number of articles and receiving the highest number of citations. In the current analysis, Journal of Periodontology published the highest number of articles and was the most cited journal. In addition, publications produced as a result of international collaborations between different countries, including the UK, Italy, Sweden and Germany, produced research with higher impact and citation counts

Conclusions: Regarding the limitations of the current analysis, we selected only the WOS database and excluded non-English articles. This may perhaps lead to selection bias. Although the authors have carefully checked the database, some errors may still be present and readers should interpret the findings of this analysis with caution.

Keywords: periodontal disease, biomarker, biochemical, periodontic

OP-85

Evaluating the Effect of Periodontitis History on Marginal Bone Loss in Patients with Dental Implants: 6 – Year Retrospective Study

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Aim: This study aimed to evaluate the effect of periodontitis history and related factors on peri-implant marginal bone loss (MBL).

Materials and Methods: Fifty-four patients enrolled in a regular maintenance program (30 females and 26 males, mean age=49.75), who had 134 implants characterized with bone level, implant-supported fixed restorations with platform-switched conical connection were included. All patients' implant data (implant diameter-length, brand-surface, localization, prosthesis type, and survival time) and demographic variables (age, gender, and periodontal history) were recorded. Patients were classified as Group 1 (no history of periodontal disease, n=17 patients/45 implants), Group 2 (patients with Stage 1–2 periodontitis, n=19 patients/43 implants) and Group 3 (patients with Stage 3–4 periodontitis, n=20 patients/46 implants). On the periapical radiograph obtained at the last follow-up session, peri-implant MBL was measured radiographically from the most coronal point of the implant shoulder to the alveolar bone. Multinomial logistic regression analysis was used.

Results: There was no difference between the groups in terms of MBL, and it was found that implant data and demographic variables, other than prosthesis type, did not affect MBL. Group 3 mean distal MBL values were highest in the Strauman-SLA group; It was detected as the lowest in the Astra-OsseoSpeed™ group. Higher MBL has been shown in cement-retained implants than screw-retained implants.

Conclusion: The dental implants in the maintenance program included in this study were placed by a periodontology specialist with 14 years of experience at the university. Therefore, a relationship between a periodontitis history and peri-implantitis may not have been demonstrated. Further studies are needed

OP-86

Clinical Crown Lengthening: A Systematic Review

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Introduction: Crown lengthening surgery (CLS) refers to a variety of surgical procedures which aim to expose a greater amount of tooth structure. The purpose of this study is to evaluate which techniques can be used effectively in crown lengthening surgery, to evaluate the periodontal status of treated teeth after healing, to determine when treated teeth can be restored, and to determine, when appropriate, how much bone needs to be removed for a satisfactory result.

Material and Methods: An electronic search was carried out on MEDLINE– PubMed databases between 1997–2024.

The search methodology was performed using the following combination of Mesh terms and keywords: (“crown lengthening” [Mesh] OR “clinical crown lengthening” OR “altered passive eruption” [Mesh] OR “periodontal surgery”).

Included studies were clinical studies and meta-analysis or clinical studies written in English.

After exclusion from the title, abstract or through thorough reading, a total of 15 articles were used for this study.

Results: Available techniques are gingivectomy with or without ostectomy and apically positioned flap with or without ostectomy. Respecting the biological width (BW) we can observe a stable periodontal status over 12 months of follow-up. When ostectomy is needed, it is suggested to leave a space of 1–3mm between the cemento-enamel junction and the alveolar crest. Prosthetic rehabilitation is advised to start minimum in 6–8 weeks after surgery.

Conclusion: With appropriate treatment selection, respecting the BW, CLS provides a satisfactory treatment in patients with altered passive eruption.

OP-87

Impact of Dipping Time on Color Difference and the Shear Bond Strength of CAD/CAM Monolithic Zirconia

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Objective: This study aims to evaluate the color changes and the shear-bond-strength of monolithic zirconia to resin cement, after coloring with different dipping times.

Materials-Methods: Uncolored monolithic zirconia (InCoris TZI, Dentsply Sirona) were cut with diamond disc (Metkon) (N=40). Samples were divided into 4-subgroups; control/uncolored (C), colored with 2-min dipping (D-2), colored with 5-min dipping (D-5), and colored with 10-min dipping (D-10) (n=10). Following super-speed sintering resulting in 6mm×6mm×2mm, CIELAB values were measured (VITA Easshade). Color changes (ΔE) between uncolored and colored groups were calculated, and statistically analyzed in SPSS26 (One-way ANOVA, Tukey post-hoc). Then, the samples were embedded in acrylic molds, primer (Monobond N, Ivoclar Vivadent) was applied, and adhesive resin cement (RelyX Universal, 3M ESPE) was shaped (diameter:2mm, height:2mm) and light-polymerized. The shear-bond-strength (SBS) test (Bisco, 0.5mm/min) was performed and data was statistically analyzed (SPSS26, One-way ANOVA, Tukey) (P=0.05). Fracture types were classified.

Results: ΔE values for D-2, D-5 and D-10 were measured as 28.21 ± 1.66 , 29.32 ± 2.45 , and 31.58 ± 2.66 , respectively. D-2 and D-10 ΔE values were found statistically significant (P=.008). L^* values increased, whereas a^* and b^* values decreased, as dipping time was extended. SBS values (MPa \pm SD) were observed statistically insignificant among groups [(C: 15.38 ± 5.77), (D-2: 18.76 ± 4.94), (D-5: 21.76 ± 6.01), (D-10: 16.18 ± 3.57)], except between C and D-5 (P=.042). Mixed failures were mostly seen in D-5.

Conclusion: For monolithic zirconia, coloring procedure of dipping with 5-min, in line with the manufacturer suggestion, can be recommended due to relatively low ΔE , and highest SBS values.

OP-88

Aesthetic Rehabilitation of Trauma – Related Tooth and Soft Tissue Loss with Implant – Supported Fixed Dental Prosthesis

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Introduction: Maxillary anterior region is exposed to the trauma mostly. In dental traumas, both soft tissue and hard tissue loss may occur. Implant-supported prostheses made using bone grafts restore the lost aesthetics and function of the patient.

Case Report: A 26-year-old systemically healthy male patient who maxillary central tooth as a result of trauma was admitted to our clinic. As a result of the clinical and radiographic evaluation, it was decided to extract the patient's traumatic central tooth and replace it with an implant, as well as to perform gingival shaping for pink aesthetics. Then implant (Medentika, Hügelsheim, Almany) surgery was applied, temporary crowns were placed and soft tissue shaping was performed. Monthly checks and temporary crown arrangements were made. At the end of three months, his rehabilitation was completed with an crown e-max on zirconia.

Discussion: Immediate loading in implant treatment provides the necessary dental support for soft and hard tissues as well as aesthetic appearance. The shape of the temporary restoration should be close to the natural tooth anatomy and have a good profile to support soft tissue.

Conclusions: As a result of immediate loading with implants in the treatment of teeth lost due to trauma, positive results were seen in psychosocial relations and the gingiva were shaped and prepared for permanent prostheses.

OP-89

Effect of Three Different Surface Treatment Methods, Two Luting Cements and Thermocycling on the Bond Strength between PEEK and Indirect Composite

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Introduction: Aim of this study was to evaluate and compare the effects of three different surface treatments, two luting cements and thermocycling on bond strength between PEEK and indirect composite.

Materials And Methods: Two hundred forty PEEK discs were divided into four groups according to surface treatment protocols: no surface treatment, sandblasting, acid etching and laser irradiation. After specimens were examined with an atomic force microscope (AFM), each group was divided into two subgroups according to luting cements (n=30). 240 composite resin discs were prepared and cemented with Zinc oxide non-eugenol and self-adhesive resin cement. Each subgroup was then divided into two additional subgroups (n=15), with and without thermocycling. Then shear bond strength (SBS) was measured and surfaces of all specimens were examined for the failure mode analysis.

Results: AFM images showed that PEEK surfaces were affected by surface treatments. Among all groups, discs cemented with RelyX which didn't thermocycled showed highest SBS values (25.134±1.665) whereas discs cemented with TempBond cement which undergo thermocycling showed the lowest (1.958 ±0.345). For all surface treatment

groups, a higher level of SBS was observed in the samples luted with RelyXU200 compared to TempBond NE ($p=0.000$). Thermocycled groups showed significantly lower SBS values ($p=0.000$).

Conclusion: Surface treatment methods have influence on surface roughness and SBS values. As the surface roughness increases, bonding of Gradia with resin cement increases whereas bonding with TempBond NE decreases. This means roughness is not the only factor affecting SBS.

Key words: Surface treatment, surface roughness, shear bond strength, PEEK.

OP-90

Virtual Articulators – A New Reality in Digital Prosthodontics

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Introduction: A virtual articulator is a computer software tool capable of reproducing the relationship between the jaws and simulating jaw movement. Virtual articulators have allowed for a full analysis of occlusion with dental models that can simulate all mandibular movements in static and dynamic positions.

Objective: To determine the usefulness of using virtual articulators, as well as presenting concepts and strategies for future replacement of mechanical articulators with virtual ones.

Materials And Methods: To achieve the set goal, the study included 13 professionals in the field of prosthodontics, who have experience working with both mechanical and virtual articulators. Based on their previous work experiences, they were given questionnaires to highlight the differences and benefits of virtual articulators compared to mechanical ones.

Results: 92.3% of the respondents noted that the fabrication of prosthetic restorations is more efficient and faster with virtual articulators compared to mechanical ones. According to the survey, 69.2% of the technicians claim that the level of complexity in using virtual articulators is appropriate, while 30.8% find that mastering the work with virtual articulators is easy.

Conclusion: Virtual articulators as a part of contemporary digital dentistry represent an advancement in prosthodontics, reshaping the way prosthodontists and dental technicians work. Combined with additional software enables quicker and more precise individualized diagnoses and discussions of dental treatment planning options with our patients.

Key words: virtual articulators, digital prosthodontics, questionnaires

OP-91

New perspectives in digital dentistry: latest tools and methods of CAD/CAM technology in full-arch implant-supported rehabilitation: A Case Series

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Objective: Full-arch implant-supported rehabilitations seem to be more and more challenging due to the multiple surgical and prosthetic steps required from clinicians. As a result, they are usually associated with poor aesthetic and functional outcomes, patient discomfort, and substantial clinical and fabrication time. The present case series aims to illustrate complicated restoration approaches in edentulous patients using the latest tools and techniques of CAD/CAM technology, significantly improving the workflow.

Materials-Methods: The present clinical cases follow the "hybrid-design" concept; therefore, patients have been treated with screw-and-cement-retained implant restorations. Among the cases presented, there is a two-staged restoration, including a screwmentable metal implant bar, digitally prepared with a circumferential chamfer finish line and a telescopic zirconia-cemented superstructure. The presentation includes as well the whole rehabilitation process of a fully edentulous patient with severe alveolar bone resorption, from the initial wax rims and the digitally designed titanium implant bar to the implant-supported removable partial denture (ISRPD) manufacture.

Results: The selected restorations address the biomechanical and aesthetic needs and are specifically adjusted to every patient since they are customized. Depending on the anterior-posterior implant spread traditional, or compound solutions are ensued.

Conclusions: The computerized workflow accompanied with the latest tools of digital design ensures passive fit, a harmonious emergence profile definition enabling oral hygiene, reliable and predictable aesthetic results, as well as conditions for avoiding mechanical complications and guarantees stability of the implant-abutment-restoration system.

OP-92

Assessment of the content of YouTube videos related to bruxism

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Objective: Many patients use Internet to obtain information about various health problems. Information about bruxism and its treatment is also made available to the public by dentists, health professionals and organizations in the form of videos on the Internet via YouTube. Although some YouTube videos on bruxism can be educational, few studies have examined the content of YouTube videos on bruxism. The aim of this study was to evaluate the content of YouTube videos according to the account that uploaded the videos about bruxism.

Methods: In this study, only YouTube videos in Turkish with the keywords "bruksizm, diş sıkma, diş gıcırdatma" were considered. The first 300 most viewed videos were viewed. The same videos that appeared more than once with the specified keywords were excluded. The evaluation of the videos included the video source, the title of the video, general information about bruxism and treatment. The relationship between the content creator and content of YouTube videos about bruxism was analyzed.

Results: During the search, 74 videos were excluded as they appeared more than once. 226 videos were analyzed. 48.7% of the videos were uploaded by either a dentist or a

dental clinic, while 23.5% were uploaded by patients or others. 58.5% of patients provided information about bruxism and 35.8% about treatment options.

Conclusion: Since people who are not experts in the field share videos, the content, quality and accuracy of YouTube videos that could negatively affect patients with bruxism should be thoroughly evaluated.

Keywords: YouTube, bruxism, tooth clenching, tooth grinding

OP-93

Fixed prosthodontics on double conical crowns

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Introduction: Fixed dental restorations include a whole range of restorative solutions in dentistry. The main dental solutions consists of dental crowns and bridges, which are also the most common fixed solutions when repairing one or more lost teeth. Fixed dentures are also one the best quality solutions for the patient, both because of their longevity and because they give the patient the feeling of his natural teeth.

Aim: Presentation of less used methods of prosthodontic solutions by combining fixed and mobile parts in the form of bridges on double crowns.

Material and Methods: Double crowns were often indicated in the treatment of patients, because they were affordable and reliable, as shown by works over 20 years old. In the future, it will have its own indicative space by using alternative materials. They are indicated in patients who have a small number of teeth left with a favorable arrangement and preserved biological value.

Conclusion: Bridges on double crowns enable better retention, stabilization, dental transmission of chewing pressure and easier maintenance of oral hygiene thanks to the mobile segment of the restoration itself. On the other hand, there are reasons why such fixed works are not used in everyday practice, namely: complex production, insufficient knowledge of the problems in production techniques, lack of equipment in the laboratory and lack of training of dental technicians, as well as bad previous experiences and the economic aspect. These restorations, when it is possible to do them, are the most comfortable and the best aesthetic solution for the patient

Keywords: "dental fixed bridge"; "double crowns"

OP-94

Evaluation of the Prevalence and Distribution of Pulp Stones Using Cone Beam Computed Tomography

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Introduction: Cone beam computed tomography (CBCT) is a three-dimensional imaging method that provides accurate anatomical details in the detection of pulp stones, endodontic diagnosis and treatment planning. **AIM:**The aim of this study was to evaluate the prevalence and distribution of pulp stones by CBCT.

Method: CBCT images of 300 randomly selected patients from our faculty archive were retrospectively examined. A total of 8000 teeth were examined for the presence of a

radiopaque mass in the pulp of the teeth in all CBCT sections (sagittal, axial and coronal). The patients' age, gender, presence of pulp stones, type and dental arch of the teeth with pulp stones, and the presence of caries and restorations were recorded.

Results: In this study, 164 (54.7%) of 300 patients were female and 136 (45.3%) were male; (mean age: 28.8 ± 12.8). Pulp stone prevalence was 45.7% of the patients (137 out of 300) and 4.39% of the examined teeth (351 out of 8000). The most common teeth with pulp stones were the upper right first molars (14.2%), and the most common tooth group was the maxillary and mandibular molars (83.8%). No statistically significant relationship was detected between the presence of pulp stones and gender ($p=0.469$) and age groups ($p=0.237$).

Conclusion: The teeth most affected by the presence of pulp stone were molars, and the least affected teeth were canines. Pulp stones can complicate endodontic treatment as they can block canal openings and increase the risk of instrument fracture. CBCT is an imaging method that can help detect pulp stones and plan endodontic treatment.

Keywords: pulp stone, cone beam computed tomography, prevalence

OP-95

A Deep Learning Approach For Mandibular Condyle Segmentation on Ultrasonography

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Objective: Deep learning methods have recently been applied for the processing of medical images, and they have shown promise in a variety of applications, including segmentation. The aim of this study is to develop and evaluate the function of computer based diagnostic software designed to evaluate mandibular condyle segmentation on ultrasonography images.

Material and Methods: A total of 668 anonymous adult mandibular condyle retrospective ultrasonographic images were evaluated. The mandibular condyle was labeled on the ultrasonography images using the polygonal type labeling method with the CranioCatch labeling program (CranioCatch, Eskişehir, Turkey). All images were re-checked and verified by Oral and Maxillofacial Radiology experts. This data set was divided into training ($n=536$), verification ($n=66$) and test ($n=66$) sets. In the study, an artificial intelligence model was developed using YOLOv8 architecture, which is a deep learning approach.

Results: In our study, the artificial intelligence (AI) deep learning model YOLOv8 provided the detection and segmentation of all test images, and when the success rate in the estimation of the images was evaluated, the F1, sensitivity and precision results of the model were 0.93, 0.90 and 0.96, respectively.

Conclusion: Artificial intelligence shows promise in automatic segmentation of mandibular condyle on ultrasonography images. This method can help surgeons, radiologists, and other professionals in saving time for diagnosis.

Keywords: Mandibular condyle, ultrasonography, deep learning, artificial intelligence

OP-96

Challenging implant treatment planning in two patients with Papillon Lefèvre Syndrome

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Papillon Lefèvre Syndrome (PLS) is a rare autosomal recessive disease characterized by palmoplantar keratosis and severe periodontitis that leads to early tooth loss in primary and permanent teeth. In the diagnosis of Papillon–Lefèvre syndrome, hematological tests, hormone analyzes and genetic tests are used in addition to clinical and radiological diagnosis. In the early stages of PLS, periodontal treatment procedures such as scaling and root planing are performed. As the disease progresses, antibiotic treatment is also recommended depending on the severity of periodontitis. Despite all the treatments applied, loss of teeth and alveolar crests occurs due to the aggressive and rapidly progressing character of periodontitis. Dental implants are recommended to correct functional and aesthetic disorders that occur due to missing teeth in young PLS patients. Thinning of the alveolar bone due to periodontal bone resorption in PLS patients creates difficulties in implant applications.

The purpose of this study is to present the clinical and radiological examination findings and the implant treatment process of two Papillon Lefèvre Syndrome patients who applied to the Faculty of Dentistry Clinic with the complaint of missing teeth.

OP-97

The relationship among concha bullosa and maxillary sinusitis based on CBCT

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Objective: Concha bullosa (CB) or middle turbinate pneumatization is one of the most common variations of sinonasal anatomy. Sinusitis is a very common disease, and factors which cause immunosuppression or any blockage of normal sinus drainage are responsible for this condition. Paranasal anatomical variants have been investigated by several studies, and concha bullosa has been shown to be a common predisposing factor for maxillary sinusitis. The purpose of this study is to evaluate the prevalence of concha bullosa and maxillary sinusitis.

Material and Methods: 768 CBCT were retrospectively reviewed for the presence of concha bullosa of maxillary sinus and maxillary sinusitis.

Results: 384 male and 384 female with concha bullosa or maxillary sinusitis were detected in the CBCT scans. The prevalence of concha bullosa is more frequent in female than in male. The incidence of chronic sinusitis and nasal septum deviation in male is more frequent than in female.

Discussion: We found 250 concha bullosa (127 unilateral, 123 bilateral) in 768 CBCT scans. In the present study, the prevalence of concha bullosa was calculated as 11,7%, which is lower than the rates reported in previous studies. In the literature, concha bullosa was defined as a pneumatization of a middle turbinate, but it is rarely found in the superior and inferior conchae. In our study we found one patient with concha bullosa in the inferior conchae.

Conclusion: According to the present findings, it can be concluded that it is not significantly related to maxillary sinusitis.

OP-98

Clinical and radiological evaluation of patients referred for focal infection examination in a university clinic

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Focal infection of oral origin spreads from the infection focus in the mouth to the body through the bloodstream, causing infection in another tissue or organ. Studies have shown that there are more than 1 billion microorganisms in 1 milligram of plaque formed on teeth. It has been reported by various researchers that in less than 1 minute following an oral procedure, organisms in the infected area can reach the heart, lungs, and peripheral blood vessels. In people who are healthy and have normal oral hygiene, small numbers of facultative bacterial species can enter the bloodstream.

On the other hand, bacterial counts increase up to 10 times in individuals with immune deficiency, poor oral hygiene, or patients receiving chemotherapy or radiotherapy. Before major interventional treatments, such as organ transplantations or heart valve replacement, focal infection foci in the patients' mouths must be identified and eliminated.

The purpose of this study is to present the clinical and radiological evaluation findings of 170 patients (74 male, 96 female) who were referred to Istanbul University Faculty of Dentistry, Department of Oral and Maxillofacial Radiology for Focal Infection examination.

Key words: Infection, Dental Focal; Examination, Oral; Orthopantomography.

OP-99

Evaluation of Growth and Development Period According to Spheno-Occipital Synchondrosis Fusion Stages in Cone-Beam Computed Tomography with ImageJ Program

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Purpose: Spheno-occipital synchondrosis (SOS) is an important growth area in the craniofacial skeleton. It has been explored in research relate to age assessment and forensic medicine due to its closure in the postnatal period. The aim of this study is to evaluate the growth and development period of SOS on cone-beam computed tomography (CBCT) images with pseudo-color imaging depend on fusion stages.

Material and Methods: In this cross-sectional retrospective study, 280 CBCT sagittal sections' images (163 women, 117 men) were used to evaluate the SOS fusion stages by dividing them into five categories. ImageJ version 1.3 software was used to analyze. SOS stages and histogram analyzes were evaluated. The significance level was set at $p=0.05$.

Results: In the evaluation of synchondrosis stages according to gender and age, the incidence of stages 4 and 5 in individuals aged 15-25 years was statistically

significantly higher ($p < 0.01$) compared to stages 1 and 2 in individuals aged 5–14 years. The mean minimum, maximum and open histogram values of synchondroses in the same age group were also statistically significantly higher ($p < 0.05$). In the assessment of synchondrosis maturation using three-way ROC analysis, histogram analyses indicated Stage 1 for data below 68.33, Stage 3 for data above 104.5.

Conclusion: ImageJ histogram analysis can numerically reveal radiographic differences between SOS fusion stages and can perform staging on pseudo-colored cross-sectional CBCT images. Different image processing software can reveal differences between phases through false coloring.

Keywords: sphenoccipital synchondrosis, imageJ software, pseudocolor imaging

OP-100

Automatic Detection and Localization of All Impacted Teeth and Third Molar Teeth According to Winter Classification in Panoramic Radiographs with Deep Learning: Interface Design For Clinical Use

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Introduction: Impacted teeth are common and their extent and distribution in different parts of the jaws can vary considerably.

Any tooth can be impacted, but the most frequently impacted teeth are mandibular third molars. Famous for its object detection feature, YOLO is a widely used algorithm. The YOLOv8 algorithm is the latest version of the YOLO family as of the execution of this study.

Aim: The aim of this study is to detect all impacted teeth on panoramic radiographs and automatically classify impacted third molars on the basis of deep learning according to the Winter's classification system.

Material and Methods: In this study, panoramic radiographs collected from the faculty database were reproduced by augmentation methods and 2000 images were obtained for the Winter's classification system and 2394 images were obtained for the detection of impacted teeth.

The deep network architecture used was trained with the 80% of the data, validated with the 10%, and 10% of the data was tested with the training weights obtained by improving the model predictions. The results were evaluated by performance criteria including precision, sensitivity (recall), and F-1 score.

Results: According to the Winter's classification system, mean precision, mean sensitivity, and mean F1-score were 0.972, 0.967, and 0.969, respectively; in the detection of impacted teeth, 0.991, 0.995 and 0.993 were obtained, respectively.

Conclusions: The YOLOv8 algorithm has demonstrated a successful performance in the detection of impacted teeth and the classification of third molars according to the Winter's classification system.

Keywords: Impacted teeth, Deep Learning, YOLO

OP-101

Evaluation of the Mandibular Canal by CBCT with a Deep Learning Approach

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Objective: The mandibular including the inferior alveolar nerve (IAN) is important in the extraction of the mandibular third molar tooth, which is one of the most frequently performed dentoalveolar surgical procedures in the mandible, and IAN paralysis is the biggest complication during this procedure. Today, deep learning, a subset of artificial intelligence, is in rapid development and has achieved significant success in the field of dentistry. Employing deep learning algorithms on CBCT images, a rare but invaluable resource, for precise mandibular canal identification heralds a significant leap forward in the success of mandibular third molar extractions, marking a promising evolution in dental practices.

Methods: The CBCT images of 300 patients were obtained. Labeling the mandibular canal was done and the data sets were divided into two parts: training (n=270) and test data (n=30) sets. With the nnU-Netv2 architecture, training, and validation data sets were used to estimate and produce optimal algorithm weight factors. The success of the model was checked with the test data set, and the obtained dice score gave information about the success of the model.

Results: Dice score indicates the overlap between labeled and predicted regions, expresses how effective the overlap area is in an entire combination. In our study, the dice value found to accurately predict the mandibular canal was 0.768 and showed outstanding success.

Conclusion: Segmentation and detection of the mandibular canal on CBCT images allows new approaches applied in dentistry and help practitioners with the diagnostic preoperative and postoperative process.

Key Words: Deep Learning, Artificial Intelligence, Mandibular Canal, CBCT

OP-102

Evaluation of a Rare Known Anatomic Formation in the Maxillofacial Region by Cone Beam Computed Tomography: Parinaud's Canal

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Purpose: Parinaud's canal (PC) is a structure located on the processus frontalis ossis maxilla. During the growth period, the shape of the nasal septum and the presence of nasal septal deviation (NSD) may affect facial morphological parameters. The aim of this study is to investigate the presence of PC and to investigate the effect of the presence of NSD on facial morphological parameters.

Material and Methods: Radiographic images 200 patients were retrospectively reviewed. On the CBCT images PC, NSD Angle and Palate-Orbita Angle were evaluated. The significance level was set at $p=0.05$.

Results: PC was found to be present at a high rate in the general population and its presence was not significantly different according to the angle of nasal deviation ($p>0.05$). The angle of NSD was found to increase statistically when the left PC diameter was 1 mm or less ($p<0.05$). The mean Hard Palate – Orbital Angle was 46.66 ± 8.43

degrees in individuals with a right PC while this angle was 36.50 ± 1.65 degrees in those without a canal.

Conclusion: This study revealed that PC is common in the general population and has no significant relationship with NSD angle. While a decrease in the diameter of the left PC is observed as the NSD angle increases, the Hard Palate – Orbital Angle varies depending on the presence of the right PC. These findings indicate that PC may play an important role in nasal and orbital anatomy.

Keywords: nasal septal deviation, Parinaud’s canal, palate–orbita angle, facial morphology

OP-103

Assessment of TMJ Disorders Using Ultrasonography

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Aim: There are many causes in the etiology of temporomandibular joint dysfunction (TMD). Clinical and radiological examination is important for the diagnosis and treatment of TMJ diseases, which have a very high incidence in the community. This study aims to compare clinical examination findings and ultrasound examination of joint pathologies in 100 volunteer patients.

Method: The clinical examination of the temporomandibular joint of 100 patients who applied to our clinic was performed with the DC/TMD Form (The Diagnostic Criteria for Temporomandibular Disorders) and the results were compared with the ultrasound data. SPSS 28.00 (Statistical Package for Social Sciences, IBM Inc., USA) application was used for statistical analysis. The statistical significance limit was taken as $p < 0.05$.

Results: In patients diagnosed with muscle–fascia pain, the masseter muscle resting and contracted thickness on USG was lower than in other diagnostic groups, and this finding was statistically significant. The joint elastography value with closed mouth on USG of patients diagnosed with reduced disc displacement was found to be higher than patients without a diagnosis of irregularity, and this finding was statistically significant.

Conclusion: It was concluded that joint elastography and masseter muscle thickness are important data in TMJ disorders.

OP-104

Automatic Detection of Degenerative Changes in the Temporomandibular Joint Region Using Deep Learning with Panoramic Radiographs

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Aim: The temporomandibular joint (TMJ) is a complex anatomical region composed of the mandibular condyle located in the glenoid fossa of the temporal bone and covered with fibrous connective tissue. Excessive and continuous forces lead to progressive degeneration of the bony surfaces of the TMJ. The aim of this study is to determine the

success of automatic detection of degenerative changes detected on panoramic radiographs in the TMJ region with deep learning method.

Material and Methods: Panoramic images of 1068 patients (1000 with normal TMJ appearance and 68 with TMJ degeneration) over 18 years of age were included in the study. CVAT, open-source annotation tool (<https://www.cvat.ai/>) was used for labeling image data. All images were resized using the bilinear interpolation method. With the using data augmentation techniques, the number of images data reached 1480. BSRGAN model was applied to the data to increase the resolution of the data. YOLOv5, YOLOv7 and YOLOv8 algorithms were used for TMJ degeneration detection. TP, FP, TN, FN, accuracy, precision, recall, F1-score and AUC (Area Under the Curve) metrics were used for statistical analysis.

Results: YOLOv5s training resulted in 94.40% accuracy, 81.63% precision, 86.96% sensitivity, 84.21% F1 score and 91.45% AUC. YOLOv7 training resulted in 99.63% accuracy, 97.87% precision, 100% sensitivity, 98.92% F1 Score and 99.77% AUC. YOLOv8 training resulted 96.64% accuracy, 91.11% precision, 89.13% sensitivity, 90.11% F1 Score and 93.66% AUC.

Conclusion: All three algorithms have high success rates, with the best results obtained in YOLOv7.

Keywords: deep learning, degeneration, panoramic radiography, temporomandibular joint

OP-105

Effect of Radiotherapy on the Adhesive Interface of Caries-Affected Dentin and Bioactive Restorations: A Micro-CT Analysis

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This study aimed to employ micro-CT analysis to assess the presence of defects within the adhesive interface formed with 5 bioactive materials and caries-affected dentin with respect to the timing of radiotherapy.

A total of 96 carious molars were randomly allocated into the following groups based on the irradiation sequence: radiotherapy followed by restoration (RT1) or restoration followed by radiotherapy (RT2). Following cavity preparation and caries removal, a universal adhesive was administered in self-etch mode or accompanied by the application of suitable cavity conditioners. Subsequently, restorations were performed using 5 bioactive materials (n=8); resin-modified glass-ionomer (RMGIC), high-viscosity glass-ionomer hybrid (HVGIH), giomer (GIO), alkasite (ALK), and dual-cure bulk-fill composite (DCBFC) and a microhybrid resin composite (MHRC). The radiotherapy regimen encompassed 60 Grays (Gy) administered at a rate of 2 Gy/day over 6 weeks, 5 days a week. Micro-CT analysis was employed to assess adhesive defects at the interface between caries-affected dentin and the restorations. The data were analyzed using the Kruskal-Wallis, Mann-Whitney U, and Dunn tests (p<0.05). RT2 caused significantly higher adhesive defects than RT1 for the MHRC and DCBFC subgroups (p<0.05). For RT2, the adhesive defects were significantly higher for the DCBFC and ALK subgroups than for the HVGIH and GIO (p< 0.05).

When using most bioactive materials, radiotherapy had no significant influence on adhesive interface regarding the timing of caries treatment interventions. In the context of restoration following a radiotherapy protocol, a favorable impact was identified with HVGIH and GIO restorations compared with DCBFC and ALK restorations.

OP-106

Investigation of the Effect of Temperature on Polymerization Shrinkage of Flowable Composite Resin Restorative Material with Micro Computed Tomography

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Introduction: Dental composite resins are restorative filling materials obtained by homogeneous distribution of the inorganic filling phase in the monomer matrix. In resin materials, as in all polymers, there is a volumetric shrinkage caused by the arrangement of the monomer in the polymer chain between 1,5–3%.

Aim: The aim of this study is to determine which temperature will have more effect on polymerization shrinkage occurring in flowable composite kept at different temperatures using the latest micro-computed tomography.

Materials and methods: The samples used in this study were evaluated at 4 different temperatures. After the flowable composites were kept at 4°C, 20°C, 37°C and 55°C for 30 minutes, 25 samples placed in molds were kept in the dark for two minutes at the same temperature and were scanned in a micro-CT device without polymerization. Then, to compensate for the heat loss during scanning, the samples were kept in the dark for two minutes at their current temperature and polymerized using a light device for 20 seconds and were scanned again in micro-CT. Data were statistically evaluated.

Result: When the average volume data of all groups before and after polymerization were compared, the least polymerization shrinkage at 4°C was observed. In our study, 4°C showed the least polymerization shrinkage, followed by 20°C and 37°C. The highest polymerization shrinkage was observed at 55 °C. No statistically significant difference was found in terms of polymerization shrinkage.

Keywords: Flowable composites, Micro-CT, Pre-heating, Volumetric polymerization shrinkage

OP-107

Evaluation the Effects of Energy Drinks on the Microhardness and Color Stability of Feldspathic CAD/CAM Ceramics

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Aim: Recently, people's food preferences have been changing, leading to a shift in the beverages they consume. Energy drinks have become a popular daily beverage for many. The current study aims to evaluate the microhardness and color stability of different feldspathic CAD/CAM ceramics exposed to two energy drinks and artificial saliva as a control group.

Material and Methods: For this research, two feldspathic CAD/CAM blocks, Vita Mark II and Cerec Block, were used to produce 72 samples. Initial microhardness and color measurements were taken, and samples were divided into subgroups based on beverage exposure; Black Bruin energy drink, Jack Wrestler energy drink, and artificial saliva (n=12). The samples were kept in the relevant beverage at 37°C for one week. Microhardness and color measurements were repeated afterward.

Results: Color measurements indicate that all beverage groups caused a color change, regardless of the material. However, significantly lower ΔE_{00} values were obtained in the artificial saliva group ($p < 0.05$). It has been determined that there is no significant difference in ΔE_{00} values among energy drinks ($p > 0.05$). After exposure to energy drinks, a significant decrease in the microhardness of all feldspathic CAD/CAM ceramics was observed ($p < 0.001$). A strong negative correlation was found between the color change and microhardness value after exposure to energy drinks for both materials.

Conclusions: Regular consumption of energy drinks poses an aesthetic risk by inducing color change in restorations produced using feldspathic CAD/CAM blocks. It can also lead to biomechanical failure as it triggers a decrease in microhardness.

OP-108

The effect of HVAC systems on the microbial composition within the ambient air of a dentistry research laboratory

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Aim: The implementation of Heating, Ventilation, and Air Conditioning (HVAC) systems within buildings is intended to optimize both indoor air quality and occupants' comfort levels. The aim of this study is to investigate the effect of HVAC systems on the bacterial and fungal population in a dentistry research laboratory.

Methods: This study was carried out in three sections of the Ataturk University Faculty of Dentistry Research Laboratory which were (1) the staff room without HVAC system (control group), (2) the micro-CT laboratory with HVAC system (HVAC-Unfiltered), (3) the cell culture laboratory with HVAC system using HEPA filter (HVAC-HEPA). Petri dishes containing an adequate culture medium was kept open for 4 hours to allow the microorganisms to settle just before the installation of the HVAC systems. The experiments were repeated again after installation and operation of the HVAC systems for 72 hours. The bacterial and fungal colony counts were recorded and differences were calculated to find out the efficacy of different air conditioning ways.

Results: Before the installation of the HVAC systems; bacterial and fungal colony counts were 25 and 0 (zero) in the control group, 13 and 5 in (HVAC-Unfiltered), 50 and 13 in (HVAC-HEPA), respectively. After installation and 72 hours of operation of HVAC systems; bacterial and fungal colony counts were 60 and 1 in the control group, 5 and 0 (zero) in (HVAC-Unfiltered), 10 and 1 in (HVAC-HEPA), respectively.

Conclusion: HVAC system using HEPA filter is the most efficient equipment to reduce microorganisms present in laboratory air.

OP-109

Evaluation of the Repairability of Contemporary Bioactive Restorative Materials: an in Vitro Study

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Background: Minimal invasive dentistry prompted the development of bioactive restorative materials, like glass–hybrids and bioactive composites, releasing ions like calcium, phosphate, and fluoride, promoting remineralization. However, the repair potential of these materials remains largely unexplored. This study aimed to investigate the repairability of bioactive restorative materials when repaired with resin composite, utilizing shear bond strength (SBS) model and universal adhesive system used in different etching modes.

Method and materials: Four types of bioactive restorative materials [Glass hybrid (Equia Forte), bioglass–reinforced glass ionomer (Activa™ BioACTIVE), alcasite (CentionN), and giomer (Beautiful II)] were investigated. 30–disc shaped specimens for each experimental repair material and a total of 60 control group specimens were prepared. After surface roughening with acid etching, application of adhesive systems, and repair with FiltekZ250 resin composite, SBS test was performed, and failure mode analysis was accomplished. Statistical analysis was conducted using Kruskal–Wallis Variance Analysis and Chi–Square test. Significance was defined at $p < 0.05$.

Results: In self–etch mode, Activa Bioactive exhibited higher SBS than Equia Forte or Beautiful II groups ($p < 0.05$). In etch&rinse mode, Beautiful II exhibited significantly lower SBS than Cention and Activa Bioactive, whereas Equia Forte exhibited significantly lower SBS than Cention N and Activa Bioactive groups ($p < 0.05$). In the cohesive strength analysis, Equia Forte showed statistically significant the lowest value ($p < 0.05$). Beautiful II exhibited a significant difference in failure modes between self–etch and etch&rinse samples ($p = 0.003$).

Conclusion: Regardless of the material type there was no statistically significant difference between self–etch and etch&rinse adhesive modes in terms of shear bond strength; however, none of the materials' repair strength reached its cohesive strength ($p < 0.001$).

OP-110

Awareness Of Alternative Caries Removal Methods Among Turkish Dentists

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Aim: Pain control is one of the main problems in dentistry and there may be some limitations regarding the use of anesthetic solutions. Developments have enabled the introduction of new caries removal methods such as chemomechanical caries removal (CMCR) and dental lasers into clinical use, which will increase the comfort of both patients and clinicians. The aim of this study is to determine the knowledge, attitude and

practice of active dentists and trainee students in Turkey regarding alternative caries cleaning methods.

Method: An online survey was conducted among dentists and intern students in Türkiye. The survey consisted of 3 parts. demographic data, clinical experience, and knowledge and attitude toward alternative caries removal methods. Statistical evaluation was made with SPSS program

Result: A total of 410 participants were obtained. 220 of the participants were interns. %95 percent of the people who participated in the survey stated that they routinely use traditional caries cleaning methods. 36.1% of the participants reported that they had knowledge about CMCR. Only 7% reported have previously prepared cavity using chemomechanical method. (40% Carisolv, 8% Caridex, 4% Papacarie) 68.3% of the participants reported that they had knowledge about dental lasers. 12.3% of them stated they had experienced dental lasers before. %7.8 of the participants stated their use laser for cavity removal. According to the results of this study, 88.5% of the participants have stated that they have not get proper education in regard to alternative caries removal methods.

Keyword: Survey, Laser, CMCR

OP-111

Dental Anxiety Level Comparison of Dentistry Students with Other Faculties

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Background/Aim: Dental anxiety is often reported worldwide and affected by many factors. This study aimed to determine the differences of dental anxiety between dentistry and other students, and to investigate the relationship between dental anxiety with oral hygiene perception, painful experiences, tissue odor and instrument noise.

Material and Methods: The dental anxiety levels of the patients were determined by modified dental anxiety scale (MDAS). The following questions asked which may be related to dental anxiety:

Do you think your oral and dental health is good or poor?

Did you have any painful treatment experience?

Are the noises of hand devices increase your stress?

Is tissue odor occurrence during your treatment increase your stress?

Results/Conclusions: MDAS scores were significantly lower in dental students (.000).

Although was higher in women, there were no significant differences(.088). Oral hygiene perception was better in males but no significant difference was observed by gender.

Dental students oral hygiene perception were significantly better than other students

(.000). There was a significant correlation between dental anxiety with tissue odor and noises of instruments (.000) Painful dental treatment experience demonstrated a strong relation with dental anxiety (.028). No relationship was found between oral hygiene

perception with dental anxiety (.297). In the limitations of this study these can be

concluded; dental students have a better oral hygiene perception and less dental

anxiety than other students. Painful dental experiences, noises of instruments and odor of

tissue may provoke the dental anxiety.

Keywords: Dental Anxiety, MDAS, Oral Hygiene, Noise, Odor

OP-112

Is CHATGPT Sufficient in Answering the Questions Related to the Restorative Dental Treatment Department?

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KAHRAMANMARAS SUTCU İMAM UNIVERSITY FACULTY OF DENTISTRY

Purpose: It was aimed to evaluate how effective ChatGPT is while answering the patients and physicians' questions in the field of Restorative dental treatment and the quality of its answers.

Materials and Methods: A total of 132 questions were asked to ChatGPT, including 33 patient questions and 33 physicians' questions in the fields of 'operative procedures' and 'bleaching and sensitivity'. Responses provided by ChatGPT were evaluated using the modified Global Quality Scale. After the scoring, a survey with 4 options was directed to dentists and specialists to determine whether they would use ChatGPT for patient information and education purposes in this field. 35 dentists and 2 specialists participated in the study. According to the answers given by the physicians, Mann Whitney U tests were used for two-group comparisons. Fisher's exact test was used to evaluate the relationship between two categorical data. Kappa was measured to evaluate the agreement between two raters.

Results: When evaluated in terms of bleaching and sensitivity questions, a significant difference was found between the patient and physicians' questions ($p < 0.001$). No significant difference was found in terms of operative procedures ($p > 0.05$). No significant relationship was found between gender, professional experience, AI experience, usage and usefulness ($p > 0.05$).

Conclusion: While we were able to provide better quality answers for patients on bleaching and sensitivity questions, we could not receive good enough answers to technical questions. For this reason, physicians should be careful when using it both for patient information and for their own education.

Key Words: AI, ChatGPT, Global Quality Score

OP-113

New Concept of Frontal Teeth Restorations for Excellent Function Aesthetics and Healthy Smile – Case Report

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The Purpose of this study was to investigate new esthetic concept for restoration of endodontically treated teeth.

Material and methods. This clinical report included patient with endodontically treated teeth restored with zirconia posts with three retentive coronal rings in the coronary part and upgraded with MultiCore materials. Represented teeth was without (0mm) and with 2 mm inner ferrule preparation.

The zirconia posts were cemented and upgraded with Multilink Automix, Ivoclar.

Results. Our clinical case report was providing knowledge about the possibility of additional improvement of aesthetic restoration of prepared teeth with a new contemporary ferrule design restored with a new zirconia post–core design.

Conclusion: The new inner ferrule preparation and retentive coronal part of the zirconia posts contribute to increasing the aesthetic effect of restored endodontically treated teeth with all ceramic crown.

Keywords: endodontically treated teeth, ferrule, zirconia post, composite core, all ceramic crown

OP–114

Treatment of Defects Caused by Gunshot Wounds with Tooth and Implant Supported Removable Partial Denture: Case Report

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Maxillofacial defects can occur as a result of congenital, acquired or developmental causes. Acquired defects include traumas (gunshot wounds, traffic accidents), surgical resection of tumoral or cystic formations, and defects caused by infectious diseases (osteomyelitis, syphilis) with necrotizing properties in their late stages. Especially the devastating effects of acquired maxillofacial defects on patients are quite high.

Treatment of gunshot wounds should be handled with a multidisciplinary approach. These defects are surgically reconstructed and then restored with prosthetic methods. While the amount of maxillary defect affects the difficulty and method of treatment, cases with or without mandibular continuity also change the treatment course of the case as it affects the relation and occlusion between the jaws.

In recent years, the use of osseointegrated implants has come to the fore to eliminate the disadvantages of classical retention methods in defect prostheses and to enable patients to use their prostheses more comfortably.

In the few present cases in the literature, it has been reported that long edentulous arches were treated with partial dentures supported by tooth and implant retention systems. In this case report, the clinical construction stages of a removable partial denture supported by teeth and implants in a patient with clinically free finite dental arcade and wide edentulous arches in both maxilla and mandible, whose surgical and preprosthetic procedures were completed after a gunshot wound, will be described.

Keywords: Mandibular defect, partial prosthesis, implant

OP–115

The evaluation of the effect of massage application on masseter muscle thickness and volume in patients with bruxism through MRI

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Purpose: The aim of this study is to investigate the effects of nightly sesame oil massages on the thickness of the masseter muscle in individuals diagnosed with bruxism, utilizing magnetic resonance imaging (MRI) for evaluation. This study fills a notable gap in the

current understanding of non-invasive treatments for bruxism-related masticatory muscle alterations.

Materials and Methods: Adults diagnosed with bruxism (ages 20–30, female) participated in this study. To investigate the efficacy of sesame oil in modifying masseter muscle dimensions in bruxism-affected individuals, the study mandated bi-daily applications of sesame oil massages to the masseter region. This regimen, structured at twelve-hour intervals, was consistently adhered to across a span of thirty days. Pre- and post-treatment MRI scans were analyzed to measure changes in masseter muscle thickness and volume, with statistical significance assessed via Shapiro-Wilk test and Mann-Whitney U test.

Results: Initial analyses suggests statistically significant result in the masseter muscle's post-treatment thickness and volume, indicating sesame oil massage's potential in mitigating bruxism-induced muscular alterations.

Conclusions: Massage appears to have a beneficial impact on reducing masseter muscle thickness in bruxism patients, offering a potential non-invasive treatment option. Further research is warranted to explore the broader applicability of this therapy in managing bruxism and its associated symptoms.

Keywords: bruxism, masseter muscle, massage therapy, MRI, temporomandibular joint disorders, muscle hypertrophy.

Poster **Presentation**

PP-01

Early Treatment Of An Anterior Crossbite Patient With Inclined Plane Appliance: A Case Report

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Background: Anterior crossbites are malocclusions observed frequently during the period of mixed dentition. The inclined plane is one of the removable appliances that can be used to correct incisors crossbite which is designed for the early treatment period in order to prevent skeletal malocclusion.

Purpose: To describe the early treatment of an anterior crossbite patient in early mixed dentition with a removable inclined plane orthodontic appliance.

Materials and Methods: This case report presents a 7 year-old girl with a Class I malocclusion, anterior crossbite and bruxism. She has treated by using a removable inclined plane orthodontic appliance in mandible for 1 year especially at night. The anterior inclined plane fits into the lower dental arch and the occlusion is elevated. When the maxillary incisors press on the front inclined plane, it applies anterior force to the maxillary incisors.

Results: As a result of the use of this appliance, the anterior crossbite was corrected by obtaining a positive overjet, and bruxism was treated with the ideal tooth alignment achieved.

Conclusion: The treatment of the anterior crossbite should be started as soon as possible, so that it allows adequate growth of the jaws and correct dental positioning. In this case at the end of treatment, a positive overjet achieved, normal growth and development continued.

PP-02

Accuracy of cephalometric analyses in the diagnosis and orthodontic treatment planning of patients with dentoskeletal Class III and Class II Malocclusion

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A lateral cephalometric radiograph is a standardized, reproducible radiograph used primarily for orthodontic diagnosis and treatment planning. It is a useful record prior to treatment and can be used during treatment to assess progress. It is used to assess the growth and development variations, etiology of malocclusion; to determine whether the malocclusion is due to skeletal relationship, dental relationship or both. Class III malocclusion may result from mandibular prognathism, maxillary retrognathism or a combination of both, but most common is mandible excessive growth. These radiographs can also be used for research purposes, although the radiographs must be clinically justified. Class II malocclusion, may be associated with skeletal abnormalities in about 75% of the patients, who usually present with mandibular retrognathism, resulting from a shortened mandible and maxillary protrusion. This malocclusion is described with distal relationship between mandibular and maxillary molars.

The aims of this study were to review the available scientific literature and to evaluate the existing evidence about the accuracy of lateral cephalometric radiograph analysis

in orthodontics. This review also studied the accuracy and reliability of lateral cephalograms and its cephalometric analysis.

The review strategy was influenced by the National Health Service Center for Reviews, Dissemination and by the Institute of Electrical and Electronics Engineers Inc, and by ISI Web of Science Citation Index Expanded.

Eligibility of the selected studies was determined by reading the abstracts of the articles identified by each database. All articles that appeared to meet the inclusion criteria were selected and collected. The reference lists of the retrieved articles were also checked for.

PP-03

Characterization of Occlusal Stability as Goals of Orthodontic Treatment

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Introduction: Ideal positional relationships among the teeth within and between the arches, while condyles are positioned such that there is minimal strain on the muscles of mastication is the primary goal in every orthodontic treatment. Diagnosis of the occlusion based on static and dynamic parameters is important both in understanding symptoms and providing treatment plan and successful therapy.

Aim: Evaluation of the occlusion details in subjects with normoocclusion as the orthodontic treatment goal with the T-Scan III system as a sophisticated tool for digital occlusal analysis in order to characterize their occlusal stability.

Material and method: In all 30 subjects with normoocclusion we conducted occlusal analysis with T-Scan III system (Tekscan Inc., Boston, MA, USA) in position of maximum intercuspitation.

Results: The difference between the values for left side and right side in maximum intercuspitation for $Z=0,57$ and $p>0,05$ ($p=0,57$) was not significant. Occlusion time was running in interval $0,29\pm 0,12s$, $\pm 95,00\%KI:0,24-0,33$, while the disclusion time was running in interval $0,21\pm 0,10s$, $\pm 95,00\%KI:0,17-0,25$.

Conclusion: The results showed that subjects with normoocclusion are characterized with balanced occlusion and harmony in the masticatory system function. T-Scan digital analyses use in every day clinical practice is important in diagnose, treatment plan in all phases of orthodontic treatment.

Key words: Occlusion, occlusal parameters, orthodontic treatment, T-Scan III system.

PP-04

Proper Diagnosis and Treatment Plan in TMD Patients

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Introduction: Temporomandibular disorders (TMD) is a multifactorial group of musculoskeletal disorders that demand different treatment plans.

Aim: The aim of this case reports is to evaluate and to determine the dynamic occlusal parameters by detailed computerized occlusal analysis in orthodontic patients with TMJ problems in order to make proper diagnosis and treatment plan.

Material and method: Patients with malocclusion Angle Class II with TMJ problems were presented. Besides analyses of CO–CR difference and anterior guidance, presence of premature contacts, Center of occlusal force–COF, time of occlusion and time of disclusion were analyzed with T–Scan III system (Tekscan Inc., Boston, MA, USA).

Results: Centric slide more than 2 mm, presence of occlusal interferences, high values for occlusion and disclusion time respectively were evaluated in these patients. The in–depth occlusal analysis determined non balanced occlusion.

Conclusion: After the orthodontic adjustments, a new balanced oral system with harmony in the masticatory system function was accomplished with the aid of T–Scan software which presents a valuable method for clinical evaluation and understanding of the occlusal problems.

Key words: TMD, Angle Class II, orthodontic treatment, occlusal parameters, T–Scan III system.

PP–05

Efficiency of Segmented Mechanics to Optimize the Orthodontic Treatment in Canine Distalization – Case Report

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Introduction: The principles of orthodontic mechanics strongly influence the success of canine distalization.

Objective: The aim of this case report is to present the use and efficiency of good biomechanical principles of segmented mechanics in order to optimize the orthodontic treatment in canine distalization.

Material and Methods: Orthodontic treatment of a young patient with primary anterior bimaxillary crowding, an ectopically erupted upper left canine, buccally positioned and dental asymmetry, Angle class I on the right side and Class II malocclusion on the left side, ½ Class II in the canine region and Class II in the molar region. The treatment plan included extractions of the lower first molars and the upper right first premolar. With 0.017 x 0.025 segmental titanium molybdenum alloy T–loop, the horizontal force acted on the tooth performing its bodily distalization and its retraction by closing the extraction space.

Results: After the treatment with segmented arch and achieving correction of the ectopic placement of the canine in Angle class I relationship, we continued the treatment with

straight wire technique. We corrected the maxillary and mandibular crowding, achieved ideal overjet and overbite and improved incisor inclination, which, led to improved occlusion and satisfactory smile for the patient.

Conclusion: Through this case report we highlight the efficiency of segmented mechanics to optimize the orthodontic treatment, to reduce the duration of treatment time and to achieve ideal results without side effects on the surrounding teeth and tissues.

Keywords: Ectopically erupted canine, T-Loop, segmental utility arch technique.

PP-06

The Influence of Different Types of Adhesives in Presence of *Streptococcus mutans* and *Streptococcus sobrinus* in Patients with Braces

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The purpose of this study is to investigate whether there is scientific evidence in presence of *Streptococcus mutans* and *Streptococcus sobrinus* in the plaque formed around the braces using different types of orthodontic adhesive. The certain bacteria were detected by PCR amplification method. We examined 40 patients who were treated in the Department of Orthodontics, University Dental Clinical Center "St Panteleimon" Skopje. The patients were divided in two groups, consisting of 20 patients each. The adhesive used in the first group was composite and in the second group was glass-ionomer cement. Dental plaque was collected with plaque indicator swabs in the different intervals. T₀ – before bonding the braces; T₁ – one week after bonding; T₂ – three months after bonding. After the investigation was completed we found out that in the group with composite adhesive there was significant increase of *Streptococcus mutans* and *Streptococcus sobrinus* ($p < 0.05$) in comparison with the group where glass-ionomer cement was used ($p < 0.05$). It is evident that the lower concentration of bacteria in the second group is due to presence of fluorides in glass-ionomers which are active ingredients against cariogenic bacteria.

PP-07

Hypodontia – Diagnosis, Therapy and Multidisciplinary Treatment

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Introduction: Hypodontia is a developmental absence of one or more teeth, excluding the wisdom teeth. The lack of more than six teeth is known as oligodontia. Hypodontia can occur as an isolated anomaly or in association with Daun's syndrome, clefts or ectodermal dysplasia. Usually it is combined with microdontia, transposition and ectopic permanent teeth. It is more present in permanent than in primary dentition.

Aim: To present the interdisciplinary cooperation between orthodontist, prosthodontist and oral surgeon in a patient with hypodontia.

Material and method: On clinical and X-ray examination in a 25-year-old patient, we diagnosed oligodontia with the presence of several permanent teeth. Due to the lack of a larger number of teeth, a deep bite was also present. We applied a fixed orthodontic appliance for mesialization and distalization of certain teeth. This, in order to create

free dental spaces in the arch, to be managed with oral surgery and prosthetic treatment.

Results: With orthodontic treatment that lasted one year and a half, were closed some dental spaces and created new ones, that were later treated by a prosthodontist. By compensating the missing teeth, appropriate occlusion and satisfactory aesthetics was achieved.

Conclusion: The interdisciplinary cooperation is necessary for the successful treatment of cases with hypodontia. The task of the orthodontist is to make a good treatment plan and establish a satisfactory occlusion and a nice facial profile.

Key words: hypodontia, oligodontia, interdisciplinary treatment.

PP-08

Investigation of Novel Nanocoated Nitinol Archwires

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Objectives: Despite clinically desirable mechanical properties such as shape memory effect and superelasticity, the major limitation to safe orthodontic treatment is the chemically or microbiologically induced corrosion of NiTi archwires. As a result of the corrosion processes, Ni ions are released into the oral cavity which may have different health implications. The necessity for developing coatings that would decrease Ni release and improve biological properties is of a great importance. The aim of this investigation was to synthesize the coatings on the surface of NiTi archwires with antibacterial properties.

Materials– Methods: Copper doped titanium nitride coatings (TiN–Cu) on the surface of NiTi archwires were obtained by combination of the cathodic arc evaporation and DC magnetron sputtering. The physicochemical characterization was performed using EDS, XRD and ICP. The cytotoxicity of TiN–Cu–nanocoated archwires was investigated using Neutral red assay. For biofilm formation, *Streptococcus mutans* and *Streptococcus mitis* were seeded onto investigated archwires. **Results:** Copper particles were evenly distributed over the samples, mostly spherical–like (20–130 nm). The Ni release increased in acidic conditions, while Ti release was constant and very low. The release of copper was the highest regarding TiN–Cu nanocoated archwires ($p < 0.05$). TiN–Cu–nanocoated archwires exhibited the lowest cytotoxicity regarding the 28–day eluates ($p < 0.05$). The most evident decrease of *Streptococcus mitis* adhesion and growth was noted in the case of TiN–Cu–nanocoated archwires ($p < 0.05$).

Conclusion: Taking into account the results of ion release, biocompatibility test and bacterial adhesion, TiN–Cu–nanocoated archwires may be considered as a favourable candidate for further in vivo inv

PP-09

Treatment of Maxillary Retrognathism and Crossbite in the Early Mixed Dentition (Case Report)

Vanja Stojić, Zorana Stamenković, Dragana Kolović, Ivan Arsić, Nemanja Marinkovic
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Aim: The aim of this paper was to show the treatment of bilateral crossbite and maxillary retrognathism using a hybrid hyrax–face mask combination.

Methods: Patient, 6.5 years old boy was diagnosed with maxillary retrognathism. Clinical examination, study cast analysis, orthopantomogram and lateral cephalogram have been done before treatment. Clinical examination showed half a cusp Class III occlusion, bilateral crossbite, edge–to–edge bite (overbite of 0mm) and anterior crossbite (overjet of – 2.5mm). Initial lateral cephalogram showed maxillary retrognathism (SNA 80°) and mandibular normognathism (SNB 80°), skeletal Class III (ANB 0°, Wits –1mm), neutral facial rotation (Bjork's sum 398°, Jarabak 62%) and deficiency of maxillary corpus (CMx –5.8mm). The treatment comprised protraction of the maxilla with Delaire's facemask and maxillary expansion with a hyrax expander. The force of protraction was 350g per side and the hyrax expander was turned once every 4 days.

Results: Correction of anterior crossbite was achieved after 3 months. The active phase of therapy lasted 10 months, after which the intraoral construction was removed and therapy continued with a removable plate appliance. At the end of the active phase control lateral cephalogram was done and it showed maxillary prognathism (SNA 83°), mandibular prognathism (SNB 80°), skeletal Class I (ANB 3°, Wits 1,5mm), neutral facial rotation (Bjork's sum 397°, Jarabak 62%) and maxillary corpus (CMx –4.1mm). Crossbite was corrected, occlusion Class I was achieved and overbite of 2.5mm and overjet of 3.5mm.

Conclusion: Delaire's mask in combination with the hyrax screw is an exceptionally effective therapeutic tool for the early treatment of maxillary retrognathism and crossbite, as it can very successfully correct def

PP-10

Treatment of Skeletal Class II Malocclusion Using Twin Block Appliance – Case Report

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AIM: The aim of this paper was to show the treatment of bilateral crossbite and maxillary retrognathism using a hybrid hyrax–face mask combination.

METHODS: Patient, 6.5 years old boy was diagnosed with maxillary retrognathism. Clinical examination, study cast analysis, orthopantomogram and lateral cephalogram have been done before treatment. Clinical examination showed half a cusp Class III occlusion, bilateral crossbite, edge–to–edge bite (overbite of 0mm) and anterior crossbite (overjet of – 2.5mm). Initial lateral cephalogram showed maxillary retrognathism (SNA 80°) and mandibular normognathism (SNB 80°), skeletal Class III (ANB 0°, Wits –1mm), neutral facial rotation (Bjork's sum 398°, Jarabak 62%) and deficiency of maxillary corpus (CMx –5.8mm). The treatment comprised protraction of the maxilla with Delaire's facemask and maxillary expansion with a hyrax expander. The force of protraction was 350g per side and the hyrax expander was turned once every 4 days.

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mandibular prognathism (SNB 80°), skeletal Class I (ANB 3°, Wits 1,5mm), neutral facial rotation (Bjork's sum 397°, Jarabak 62%) and maxillary corpus (Cmx -4.1mm). Crossbite was corrected, occlusion Class I was achieved and overbite of 2.5mm and overjet of 3.5mm.

CONCLUSION: Delaire's mask in combination with the hyrax screw is an exceptionally effective therapeutic tool for the early treatment of maxillary retrognathism and crossbite, as it can very successfully correct def

PP-11

Comparative Analysis of Spectrophotometric vs Visual Tooth Color Determination

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Accurate tooth color determination is crucial in producing esthetically pleasing restorations. This study aims to compare the effectiveness of Spectrophotometric and visual tooth color determination in standardized conditions.

Methodology: 100 patients age 18–60, were selected for this study with specific inclusion and exclusion criteria. Tooth color assessments were conducted using Spectrophotometric ShadePilot and VITA 3D Master Shade Guide under standardized D65 daylight conditions. The color difference (ΔE) between the two methods was calculated using the CIEDE2000 formula.

Results: The mean ΔE value for Spectrophotometric ShadePilot vs VITA 3D Master Shade Guide color determination was calculated as 2.6, indicating a significant difference in color assessment. The correlation coefficient between the two assessment techniques was determined to be 0.87, indicating a strong positive correlation in color determination. However, statistical analysis using a Pearson correlation test revealed a p-value of 0.03, signifying a significant difference in the correlation strength between the two methods.

Conclusion: The notable difference in ΔE values and the high level of significance support the superiority of Spectrophotometric ShadePilot over the VITA 3D Master Shade Guide. Moreover, conducting visual color assessment under standardized conditions provides a consistent and controlled environment for accurate comparison. Dental professionals are encouraged to use spectrophotometers into their practice to enhance the reliability and precision of tooth color evaluations.

PP-12

Orthodontic and Orthognathic Surgery in Skeletal Open Bite Correction

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Introduction: Open bite treatment is challenging for orthodontists and surgeons. In orthodontics, open bite treatment options range from simple observation, control of childhood habits, to traditional orthodontic appliances, while surgical procedures such

as one-piece or multisegment Le Fort I are often combined with mandibular surgery to correct open bite.

Aim: To give a clinical and statistical description of the orthodontic and surgical treatment of skeletal open bite cases.

Material and Methods: Clinical statistical study with descriptive nature. In the period of time 2014–2021, sixty patients aged 18–34 years old underwent surgical orthodontic treatment in Mother Theresa University Hospital Center.

Results, Skeletal class III malocclusion with open bite was the most prevalent malocclusion treated.

Anterior and posterior open bite was present in class III surgical cases. Orthodontic treatment was made pre and post surgery. Bimaxillary surgery was the most prevalent surgery. Stable results were seen in one and two year follow up.

Conclusion: Satisfactory results in function, esthetics, airway, and stability were achieved after orthodontic and orthognathic surgery in skeletal open bite cases.

PP-13

Polydiastema Closure with Direct Composite Laminate Veneer: Case Report

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Introduction: Diastema is a term describing the spaces between teeth, often seen in anterior teeth. The presence of more than one diastema is called polydiastema. Maxillary diastema is a common aesthetic complaint of patients.

Aim: The aim of this 3 case reports is to describe the aesthetic rehabilitation of patients with polydiastemas using direct composite laminate veneer restorations.

Materials and methods : In this 3 case reports maxillary polydiastema was closed with direct composite laminate veneer restorations in one appointment without any preparation. Total etch adhesive was used and composite resin shades were layered on surfaces of the teeth that were isolated with rubber dam. Finishing and polishing procedures were achieved by using polishing discs. Patient was informed for recall after 3 months.

Conclusion: At 3 months control examination, no sensitivities, discolorations, or fractures were detected on teeth and restorations. It was determined that the design of the restorations met the patient's aesthetic expectations. Direct composite laminate veneers are highly aesthetic and durable restorations that can satisfy patients as under the conditions of cases presented.

Key words: anterior aesthetic, composite laminate veneer, polydiastema

PP-14

Endocrown Restoration of Endodontically Treated Teeth with CAD/CAM in a Single Session: Case Report

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Ankara University Faculty of Dentistry

Introduction: Endocrown restorations were developed as an alternative to post-core systems in the restoration of teeth with severe crown damages. Endocrowns are mono-block restorations which combine core structure with crown restoration.

Aim: The aim of this 5 case reports is to describe the rehabilitation of root canal treated teeth with crown damages by endocrowns prepared with the CAD/CAM system in single visit.

Materials and methods : In this study, GC CEREC Blocks in A2 color were chosen for endocrown preparation of root canal treated posterior teeth with CAD–CAM in 5 different cases. A three–dimensional model of the arch was obtained after mouth scanning and the endocrown was designed digitally according to the model. When the design was complete, the endocrown was fabricated with a milling machine. Finally, the endocrown was cemented with dual cure resin cement.

Conclusion: Endocrowns, produced in a single session with the CAD/CAM system, can be preferred by dentists in the restoration of canal treated teeth due to their advantages such as aesthetics, high mechanical performance, application in a short time, eliminating the need for temporary prostheses, preventing cross contamination, ideal marginal fit and proximal contact.

Key words: endodontically treated tooth, endocrowns, CAD/CAM

PP–15

Polymerization Contraction in Composites – How to reduce?

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Introduce: In modern restorative dentistry , polymer resin–based composite materials are alternative materials for traditional amalgam fillings in posterior teeth. It is a fact that currently, no composite material provides a good one adhesion to the cavity walls and inappropriate marginal the adaptation of the filling and leads to the appearance of a microcrack, marginal discoloration, post–operative sensitivity, secondary caries, and pulp diseases.

Aim: The aim of this paper is to evaluate the influence of different placing and light polymerization techniques on marginal adaptation of composite restorations.

Material and methods:The review includes relevant literature from online databases (PubMed, MedLine) , on the topic of polymerization contraction in composite materials and factors that will lead to its reduction.

Result and discussion: Modern composite materials used in restorative dentistry show a polymerization contraction of 1–6%, depending on the composition and conditions of the polymerization process. Several clinical methods are proposed in order to reduce the negative effects of polymerization contraction. One way to reduce the effect of contraction stress is to place a liner with a low modulus of elasticity between the teeth and the composite material. Another approach to solving this problem is incremental placement of composite material in the cavity. By eliminating a single point of stress, centrally placed, the marginal adaptation of the composite material is improved. One of the methods is the two phase soft–start polymerization, and the configuration factor determines the tension behavior of the adhesive materials placed in the cavities.

Key words: soft–start polymerization, polymerization shrinkage, marginal discoloration.

PP–16

Treatment of Enamel Hypoplasia with Resin Infiltration Technique: Two Case Reports

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Introduction: Resin infiltration technique, which is commonly used in the treatment of enamel hypoplasia, is a current non-invasive technique. The aim of this study is to make a clinical follow-up of anterior teeth treated with resin infiltration method in patients aged 22 and 27 years.

Methods: Two female patients (22–27 years) were admitted to our clinic for opaque lesions on her anterior teeth. Resin infiltration, a non-invasive technique, was chosen as the treatment protocol. The first step was microabrasion of the teeth (Opalustre, Ultradent). Icon Infiltrate (DMG, Hamburg, Germany) was selected for resin infiltration technique. 15% hydrochloric acid gel (Icon-Etch DMG, Hamburg, Germany) was applied on the white lesions. The lesion surface was dried with ethanol (Icon-Dry DMG, Hamburg, Germany). Following this, icon resin was applied. The light emitting diode-light device (VALO Grand, Ultradent, USA) was used to polymerize it for 40 seconds. Finally, a thin enamel composite (Essentia LE, GC Corp, Tokyo, Japan) was covered over the surface. The polishing process was completed with aluminum oxide discs (Soflex discs, 3M, USA) and rubber wheels with diamond particles (Clearfil Twist Dia, Kuraray, Japan). Patients called for 1-week, 6-month and 2-year follow-up visits.

Results: Restorations were scored alpha according to modified usphs criteria (marginal discoloration, postoperative sensitivity, marginal adaptation, anatomical form, secondary caries) at all follow-ups.

Conclusions: The resin infiltration technique is a relatively long-term stable and successful technique that eliminates the opaque lesion appearance.

keywords: hypoplasia, non-invasive, resin infiltration

PP-17

Restoration of Peg Shaped Teeth with Direct Composite Resin

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Introduction: Peg lateral anomaly mostly affects the upper incisors and leads to the aesthetic and functional losses in the patient.

Aim: In this report, the treatment of a patient who presented to our clinic with maxillary peg lateral tooth anomaly with direct composite restoration is presented.

Materials and Methods: A 22-year-old female patient came to our clinic with the complaint of aesthetic appearance of bilateral maxillary lateral teeth. Intraoral and radiographic examination of the patient was performed. Silicone index was created. Color selection was made using the button technique and isolation was provided using rubberdam. Bond Force II (Tokuyama Dental, Japan) was preferred as the adhesive agent with prior 35% orthophosphoric acid application. The preferred composite resin A2B (Estelite Asteria, Tokuyama Dental, Japan) was polymerized with an LED device (Ellipar S10, 3M ESPE, Seefeld, Germany) for 20 s. Finally, the restoration was finished and polished with polishing disks (OptiDisc, Kerr, USA) and twists (Twist Dia, Kuraray, Japan). The patient was motivated for oral hygiene and informed for recall.

Results: After the restorative procedure, the patient was satisfied with the appearance. At the 1-month recall, no discolorations or chipping were detected on the restorations. . No discoloration or fracture of the restorations was detected at the one-month follow-up.

Conclusions: In regard to the treatment of shape anomalies direct composite resin restorations exhibit excellent physical properties, marginal integrity and esthetics.

Keywords: Peg shaped lateral, direct restoration, aesthetic, composite.

PP-18

Successful Endodontic Treatment of the Maxillary Right First Molar Using the "BY-PASS" Technique

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Introduction: Fracture of endodontic instruments is a complication that can occur during endodontic treatment, impeding effective cleaning and shaping of the root canal system.

Aim: To present a case of successful endodontic treatment of the maxillary right first molar using the "by-pass" technique in the mesiobuccal canal.

Case presentation: A male patient was referred to the Department of Restorative Dentistry and Endodontics, School of Dental Medicine, University of Belgrade, due to pain in the region of tooth 16. Analysis of the initial retroalveolar radiograph revealed a fractured endodontic instrument approximately 5 mm in the apical third of the mesiobuccal root canal. A "by-pass" procedure was performed using a K#08 file and abundant irrigation with sodium hypochlorite and concentrated citric acid. After instrumentation the working length was confirmed radiographically and with electronic apex locator. The root canals were medicated with calcium hydroxide for 14 days, after which they obturated. The quality of obturation was assessed on a follow-up retroalveolar radiograph.

Discussion: Re-establishment of the working length alongside the fractured part of the endodontic instrument is essential for successful chemomechanical root canal treatment, treating existing infections, and preventing potential complications.

Conclusion: In cases of infected root canals, instrumentation and disinfection beyond the fractured instrument apex are crucial for a desirable treatment outcome.

Keywords: By-pass, endodontic instrument, fracture, mesiobuccal canal

PP-19

Endodontic treatment of a Maxillary Second Premolar with S – shaped Root Canals

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Introduction: Understanding the unusual root canal morphology contributes to success in endodontic treatment. One such variant root canal morphology is the 'S' shaped or bayonet shaped root canal.

Aim: To present a case of successful endodontic treatment of the maxillary second premolar with 'S' shaped root canals.

Case presentation: A male patient was referred to the Department of Restorative Dentistry and Endodontics, School of Dental Medicine, University of Belgrade, due to pain in the region of tooth 15. Analysis of the initial retroalveolar radiograph revealed 'S' shaped root canals. For determining the patency of the root canals, K#08 and K#10 were used. The root canals were instrumented with Reciproc R25 (25/.08) file. The root canals were medicated with calcium hydroxide for 14 days, after which they obturated. The quality of obturation was assessed on a follow-up retroalveolar radiograph.

Discussion: Complex root canals systems that are not cleaned and filled adequately might provide a source of persistent irritation, compromising the long-term success of the root canal therapy. The diagnosis and management of double curvatures, or S-shaped canals, present an endodontic challenge. The 'S' shaped canal has two curves, with the apical curve being very difficult to negotiate.

Conclusion: Understanding the complex root canal morphology and choosing a canal preparation technique more suited for such morphology, will contribute to successful endodontic treatment.

Keywords: Bayonet shaped canal, S-shaped canals, second maxillary premolar

PP-20

Direct Resin Restoration for Anterior Carious Teeth: A Case Report

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Objectives: The aim of this study was to treat the patient with caries in her anterior teeth with direct composite resin restoration.

Method: A 20-year-old female patient applied to our clinic with an aesthetic and discoloration complaint about her upper central incisors. It was determined that the patient did not have any systemic disease obtained from anamnesis information. During the intraoral examination performed on the patient, it was identified that there was no percussion or palpation pain in the relevant tooth and that it responded positively to the vitality test. The patient was informed about porcelain laminate veneer and direct composite resin restoration treatment options. To achieve faster outcomes, patient decided direct composite resin restoration compared to alternative treatments.

Treatment was started under rubber-dam isolation. The beveling process was carried out with a bur, to masked it the transition line and had a positive effect on retention. Then, the teeth were etched with 37.5% phosphoric acid gel. Universal adhesive was applied and polymerized. Composite resin was applied by layering method and polished with discs. It was informed to patient about oral hygiene training.

Conclusion: Monochromatic layering of anterior carious teeth with direct composite resins without the use of index is a conservative, fast and low-cost treatment option. The patient's treatment can be completed in a single session and his/her aesthetic expectations were met. The color harmony of the restorations, the materials used, treatment duration and patient comfort are effective in the success of the treatment.

Keywords: Composite resin, anterior caries, treatment, direct restoration, non-invasive, monochromatic layering, conservative

PP-21

Restoration of Open Apex Permanent Teeth Using Post – Traumatic Regenerative Endodontic Treatment: Case Report

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Purpose: It was aimed to achieve aesthetic and functional restoration of the crown fracture, where the pulp was not exposed, due to a history of trauma, supported by regenerative endodontic treatment.

Method: A 10-year-old male patient applied to our clinic due to trauma to his front teeth. As a result of clinical examination, teeth 12, 11, 21, 22 were seen to be affected by trauma, no mobility was detected, and in vitality tests, teeth 11 and 21 were observed to be devital. According to panoramic and periapical x-rays, teeth 11–21 had not yet completed their root development, and it was decided to perform regenerative endodontic treatment. Regenerative endodontic treatment irrigation procedures were applied to the root canals for 2 sessions. PRF obtained from blood was placed open apex and applied on MTA. A direct composite restoration was planned for our follow-up session. After rubber dam isolation, all 4 teeth were beveled with bur, and etched with. Universal bond was applied to teeth and polymerized. Finishing and polishing operations were carried out with the help of fine-grained diamond burs and discs. The patient was informed about oral hygiene training and routine checks.

Conclusion: Treatment planning may variously depend on the damage caused by dental trauma. In such cases where the pulp is not exposed, the tooth is devital and the apical root is still open, regenerative endodontic treatment is an option that gives successful results. With composite restorations, the intraoral function of the tooth is successfully maintained with an aesthetic appearance.

Key Words: Aesthetic composite resin restoration, MTA, open apex, regenerative endodontic treatment

PP-22

Applications of Post Usage in Modern Dental Practice

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Analysis and short presentation of a survey results made among more than 200 dentists made in February 2024. Survey is about their everyday work with post&cone restorations. What kind of post materials do they use – metal of fiber; how often do they use them after endodontic treatment; do they prefer fiber posts compared to metal and are they familiar with CAD/CAM fabricated posts. We also discussed different qualities of the fiber posts that are considered crucial about their total preference nowadays like their modulus of elasticity, aesthetic qualities and etc.

PP-23

Minimally Invasive Treatment for Aesthetic Enhancement of Enamel Hypoplasia in Anterior Teeth: Case Report

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White enamel discolorations are frequent and can impact patients' quality of life. Enamel hypoplasia is a condition that affects the quality of enamel, resulting in a change in its translucency and color. Minimally invasive procedures of the slightly altered enamel are an effective treatment for improving the esthetic appearance of tooth discoloration. They contribute to a greater longevity of teeth and prevent them from relapsing into the repetitive restorative cycle. This case history report aimed to show a sequential technique of minimally invasive procedures for esthetic resolution in anterior teeth. Prior to microabrasion, anterior teeth were bleached in office with 40% hydrogen peroxide. Afterwards, hypoplastic spots on the buccal incisal thirds of the maxillary central incisors were treated with two sessions of microabrasion using phosphoric acid and pumice stone and one session using resin infiltrant. The proposed strategy is based on masking the lesion by infiltrating the porous subsurface enamel with a hydrophobic resin that has a refraction index closer to that of sound enamel, after permeating the non-porous surface enamel through hydrochloric acid erosion. The masking of hypoplastic spots was done with this sequence of treatments and re-establishing color harmony. The resin infiltration technique seems to be a feasible option for color masking of enamel whitish discolorations, resulting both from white spot lesions and enamel development defects. Clinical success is related directly to spot depth, diagnosis, and the most relevant treatment choice.

PP-24

Anterior Teeth Restoration with Polyethylene Fiber as Short Posts: Two Case Report

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INTRODUCTION: Polyethylene fibers have several advantages, such as, reducing polymerisation shrinkage, aesthetic appearance, fracture toughness, and they can be adapted to the root canal walls without unnecessary enlargement. In young adults, anterior teeth fractures require both restoring aesthetics and function, but also minimal invasive restorations are necessary to obtain a good prognosis and to be able to be restored in case of fractures.

OBJECTIVE: In this case report maxillary endodontically treated central incisors were minimal invasively treated with direct composites and polyethylene fibers as short posts to restore aesthetics and function.

RESULTS: After treatment procedures both patients were satisfied with the aesthetics and function of their maxillary anterior teeth during their 1-month follow-up.

CONCLUSION: Successful results can be achieved with polyethylene fiber as short posts.

PP-25

The Effect of Orthophosphoric Acid Etching on Strength of Universal Adhesive Bond with Dentin of Primary and Permanent Teeth

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Introduction: The bond between adhesive and dentin is the form of micromechanical retention. Orthophosphoric acid can be used to achieve that bond. New universal adhesives are effective due to their chemical bond. The difference in primary and permanent teeth's dentin structure can affect bond strength when different etching protocols are applied.

The aim is to estimate the effect of orthophosphoric acid etching on the strength of the universal adhesive bond with the dentin of primary and permanent teeth.

Material and methods: The study included 20 permanent premolars and 20 primary canine teeth. A flat dentin surface was obtained by removing enamel with a linear diamond saw. A cylindrical silicone mold (3 x 2mm) was placed on the dentin of 10 permanent and 10 primary teeth and a total-etch protocol (was applied using 37% orthophosphoric acid (i-GEL, I-DENTAL) for 15s. On the rest of the teeth samples self-etch protocol was applied. The universal adhesive (G-Premio Bond, GC) and composite (Gæniel Universal Flo, GC) were applied according to the manufacturer's instructions. The shear bond strength (MPa) was measured after 24 hours using a Universal Testing Machine (Model SLJ-B). The results were processed using a nonparametric Man-Whitney U test.

Results: Shear bond strength to dentine was stronger in permanent teeth using the total-etch protocol ($2.88 \pm 0.85 \text{ MPa}$) compared to the self-etch protocol ($2.00 \pm 1.00 \text{ MPa}$) with no statistical difference ($p=0.841$). A stronger bond with primary teeth' dentin was measured in the self-etch subgroup ($2.25 \pm 1.12 \text{ MPa}$) compared to the total-etch subgroup ($1.96 \pm 1.11 \text{ MPa}$) without statistical significance ($p=0.889$).

Conclusion: The protocol of application did not affect the shear bond strength of the universal adhesive with both types of dentin.

PP-26

Fracture Resistance of Provisional Restoration Materials

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Introduction: Provisional restorations play an important role in the prosthetic rehabilitation of patients in terms of protecting the pulp tissue from external influences. In order to be applicable in clinical practice, these restorations must be mechanically resistant, which is why the choice of materials for their production is important.

The aim: The objective of the research is to examine and compare the value of fracture resistance of two different temporary restorations materials.

Materials and methods: The 30 samples of two materials were prepared for research. The samples were stored for 48 hours in a 0.9% sodium chloride solution at room temperature, and then tested on a Universal testing machine, with a three-point load test. The results were statistically processed and shown in the table.

Results: The obtained middle values of tensile strength of PMMA and bis-acrylate composite, analyzed by t-test, show that there is no statistically significant difference in tensile strength between these two materials. The obtained middle values of the penetration of PMMA and bis-acrylate composite, analyzed by the Mann-Whitney U

test, show a statistically significant difference between these two materials, in favor of the bis-acrylate composite.

Conclusion: Based on the obtained results, it is concluded that there is no difference in tensile strength, i.e. fracture resistance between PMMA and bis-acrylate composite. On the other side, it can be concluded that the elasticity of PMMA is higher compared to the bis-acrylate composite.

Keywords: provisional restorations; PMMA; bis-acrylate composite; tensile strength; three-point bending test;

PP-27

Dental Treatment Approach in Patients with Mucopolipidosis Type II (I CELL DISEASE)

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Introduction: Mucopolipidosis Type II (I cell disease) is a rare storage disease caused by a lysosomal enzyme deficiency. In these patients, symptoms are present from birth. Rough facial appearance, short stature, developmental retardation, umbilical and inguinal hernias are early symptoms. Cardiomegaly and severe cardiovascular diseases are significant findings that determine the course of the disease. There is no definitive treatment for the disease, and the mortality-morbidity rate is high.

Results: A 4-year-old girl diagnosed with mucopolipidosis type II presented to our hospital with swelling and pain in the gums. She had a rough facial appearance, protruding eyes, puffy eyelids, and short and blunt fingers and toes. In the anamnesis, it was learned that the patient had chronic bronchitis and atrial septal defect. Examination revealed diffuse gingival hyperplasia, macroglossia, and eruption cysts in the right and left maxilla.

Aim: The patient was consulted by the Department of Oral and Maxillofacial Surgery. General anesthesia was avoided because hyperplasia of the nasal tissues, narrowed trachea, short neck, restricted cervical movement, and mucoid secretions causing airway obstruction might cause difficulties in ventilation and intubation. Under local anesthesia, the hyperplastic tissue was incised into the eruption cyst, and the related teeth were left to erupt spontaneously.

Conclusion: In patients with mucopolipidosis type II, limitation of movement in the cervical joints, macroglossia, and hypertrophic nasal tissues cause severe difficulties in airway management during dental intervention. Therefore, specialized dental treatments should be planned for these patients.

Keywords: Enzyme deficiency, mucopolipidosis, paediatric dentistry, storage disease

PP-28

Needle Phobia During Dental Treatment in Children

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Abstract :One of the most delicate and difficult procedure in pediatric dentistry is the administration of local anesthesia. The aim of this study was to compare children's reaction between two techniques of local anesthesia administration—the one in which

the dentist shows the needle before local anesthetic administration to the child and the other in which the dentist doesn't show the needle. In this study took place 56 children 6–7 years old. All participants needed local injection anesthesia as part of their treatment. The children were divided randomly into two groups (we showed the needle to the first group before local anesthetic administration while to the second group we didn't show the needle). We explained the procedure to each mother and informed consent for local anesthesia administration was obtained. Children's reactions were classified into 4 groups based on Frankl's scale adapted for local anesthesia. From 56 children examined, 44 had positive reactions and 12 of them had negative reactions. In each group 20 children (71%) reacted positively. Anesthesia was applied successfully in 52 children (90%). The collected data give us the reason to accept that there is no difference in the reaction when we applied the two different techniques for local anesthesia in 6–7 years old children. We found out that child's previous experience with injections plays an important role on their reactions. **Key words:** local anesthesia, needle, children, fear etc

PP–29**Social Factors and Oral Health of Children**

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OBJECTIVE: The aim of the research was to determine the relationship between children's oral health and social factors.

METHOD: The study was conducted at the Faculty of Medicine in Podgorica in 2019. The research consisted of a clinical examination of children and a survey of their parents. 111 children of both sexes aged 10–14 years were included in the research. Dental status was recorded using the Klein Palmer system. The Plaque Index according to Silness–Loe and the Calculus Index according to Green were used to determine oral hygiene.

RESULTS: In the total sample (N=111), the average number of diseased teeth per subject (DMFT) was 4.45, and the prevalence of caries was 87.3%. The Plaque index was 1.34, the Calculus index was 0.04. Number of children with all healthy teeth was 14. Of the total number of parents surveyed, approximately half of the mothers had a secondary school education, and the fathers had a university degree. The share of households with average monthly income was 58.7%. The percentage of working mothers was 55.6%, and the percentage of working fathers was 92.5%. The results of the study showed that children of unemployed mothers, parents with a lower level of education and with a lower average monthly income have a worse state of oral health (DMFT=5.12, PI=1.78) compared to children of employed people. Parents with higher education and higher average incomes (DMFT=4.24; PI=1.15)

CONCLUSION: The research indicated the necessity of continuous health–educational activities, preventive and prophylactic measures for all population groups, regardless of socio–economic status.

PP–30**Oral Health in Early Childhood**

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Introduction The most common oral disease in children is tooth decay. The aim of this work was to determine the health status of primary teeth in children aged 6 years.

Material and method The research included 93 children of both sexes living in the Podgorica municipality, who came for a dental examination at the Faculty of Medicine during 2018. Only children whose parents gave consent were included. The parameters used to assess the oral health status were: the number of decayed, missing and filled teeth due to caries (dmft) and the Significant Caries Index (SiC). One dentist clinically examined all subjects in accordance with the methodology and criteria of the World Health Organization (WHO).

Results The average dmft value in six-year-olds was 4.8. On average, 82.3% of examined children had caries. The SiC index was 8.5. Among the examined children, 13.3% had at least one tooth with a cavity for fissures. In the dmft structure, untreated decay dominates (95.6%).

Conclusion The results showed a high prevalence of dental caries in children aged 6 years, which indicates the absence of preventive measures and programs in Montenegro.

PP-31

Dental Health and Asthma in Children

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Introduction Asthma is a serious global health problem that usually starts in childhood, and the patients have to take lifelong therapy. Oral health is an important part of overall health. The promotion of oral health and the quality of life is an important objective of modern dentistry.

Objective The aim of this study was to evaluate dental status in asthmatic children.

Methods The present study consisted 68 children with asthma/AG aged 6 to 16 years. Based on the symptoms of asthma and the level of asthma control, this group was divided into two subgroups—children with good controlled asthma/GCA and children with partly controlled asthma/PCA. The oral examination of the teeth was performed by the use of probe and mouth mirror under artificial light in accordance with World Health Organization recommendations.

Results There were 39% boys and 11% girls in the AG. The mean of decayed, missing, and filled teeth (dmft/DMFT) of the children in the AG group ($6.0 \pm 4.0/3.3 \pm 4.4$).

Moreover, the dmft/DMFT were higher in the PCA subgroup compared to the GCA, both in primary and permanent dentition, but statistical significance was not observed.

Conclusion The dmft/DMFT index values are high for the population under study. This could be explained by insufficient knowledge, as well as the lack of interest of children and their parents in their oral health, or the impact of asthma/asthma medications on dental health, increased consumption of sweet products, inadequate oral hygiene, and insufficient awareness of the importance of regular dental examinations.

Keywords: children; asthma; caries; epidemiology

PP-32

Usage of Augmented Reality on Learning of Anterior Superior Alveolar Nerve Anesthesia

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Local anesthesia is an essential part of modern dental practice, and achieving successful local anesthesia is vital in clinical practice, making it crucial for dental students to master the techniques. To ensure that the first encounter with a real patient is as successful as possible, it is necessary to employ various types of exercises and simulations.

The aim: The aim of this research was to assess the effectiveness of applying a mobile simulator with augmented reality technology to the practical application of anesthesia in students.

Materials and Methods: A prospective study involved 41 fourth and fifth-year students. Participants were randomly divided into two groups (19 students) and an experimental (22 students). In addition to theoretical instruction and exercises on models, students in the experimental group used a mobile simulator in Serbian language in a dental office with an educator in augmented reality mode using a mobile phone camera on a specially designed phantom for practicing on a dental chair. In addition to a post-clinical questionnaire, success was evaluated by the time required for anesthesia application and monitoring heart rate 5 minutes before and during the procedure.

Results: Students who used the Augmented Reality mobile simulator (experimental group) showed a positive difference in the mean response values to all questions from the post-clinical questionnaire. The average time for anesthesia application in the experimental group was statistically significant.

Conclusion: Students who used the mobile simulator with the concept of AR had significantly shorter application times, greater anesthesia success, and better understanding of reference points for plexus anesthesia.

PP-33

Contribution of Artificial Intelligence in Analyzing CBCT among Students

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Introduction: Dental students must attain an acceptable level of competence since most dental procedures are irreversible, implying that the diagnosis, as the very beginning, should be precise. In addition to clinical diagnosis, radiological examination is an essential part of dentistry. Cone Beam Computed Tomography (CBCT) has become a cornerstone in accurate and rapid diagnostics in dentistry today. However, image analysis is challenging and often time-consuming. The development of Artificial Intelligence (AI) systems has gained traction in various medical fields, including dental practice.

Methods: The study involved 22 final-year students from the University of Kragujevac Faculty of Medical Sciences, Department of Dentistry. Students completed a satisfaction questionnaire regarding their knowledge of CBCT. After that, students analyzed several

CBCT scans using the conventional viewer. Subsequently, the same images were analyzed using the AI tool.

Results: In response to the question, "I believe that more instructional units are necessary to better master CBCT images," over 70% of respondents agree that additional education on CBCT is essential during their undergraduate studies. When asked about their proficiency in analyzing CBCT images, none of the students completely disagree with this statement (42% of them are neutral, while over 30% disagree, and 28.2% partially agree). Based on the image analysis, none of the students had more than 50% correct answers. In response to the question of whether the AI tool can facilitate the analysis of CBCT images and if it is easy to use, 100% of the respondents agree.

Conclusion: Students are not sufficiently educated on the principles of operation and analysis of CBCT during their undergraduate studies.

PP-34

Five Supernumerary Teeth – case report

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Introduction: Hyperdontia is an anomaly of the teeth number characterized by presence of one or more extra teeth compared to normal dentition – 32 teeth in permanent dentition. Various molecular signaling pathways are involved in the etiology of supernumerary teeth occurrence, as well as several theoretical hypotheses about the hyperactivity of the dental bed. According to the phylogenetic hypothesis, the answer lies in the phylogenetic answer of atavism – a type of inheritance from ancient ancestors.

This report aims to present unusual occurrence of the parapremolar germ in the period of adolescence, with the simultaneous presence of fourth molar germs.

Case report: In February 2022, a 14-year-old patient came to the Specialist Center for Dentistry in Foča for a regular checkup. Clinical examination, followed by the analysis of the OPT image revealed the presence of supernumerary teeth in the molar region – in all four quadrants. The patient was without any symptoms, family history excluded the presence of supernumerary teeth among family members. After 2 years, the patient reported to the clinic. Analyzing the control OPT, a new fifth supernumerary tooth was diagnosed in the premolar region on the left side, which was not visible on the first OPT. More than 3 supernumerary teeth is a very rare phenomenon that occurs in less than 3% of cases.

Conclusion: Patients with supernumerary teeth need a multidisciplinary approach. Therapy is determined depending on the type and position of supernumerary teeth. It is important to assess the risks and benefits of the chosen therapeutic approach.

Keywords: supernumerary tooth, multidisciplinary approach

PP-35

Prenatal Prevention of Orthodontic Anomalies

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Aim: The etiology of orthodontic anomalies is multifactorial, complex and influenced by numerous factors, both genetic and local, such as bad habits. Preventing the occurrence of orthodontic anomalies is possible if timely prevention and identification of harmful etiological factors are initiated.

Methodology: Within organized workshops, expectant mothers are acquainted with the importance and methods of maintaining oral health in babies and young children through lectures and practical workshops. The research was conducted in the form of anonymous surveys for pregnant women, which were introduced just before the education. The questions covered etiological factors responsible for the occurrence of orthodontic irregularities.

Results: 80 pregnant women participated in the study. More than half, 62.5% (n=50) of the future mothers, were not informed that breastfeeding affects the growth and development of the face and jaws. Also, more than half, 75% (n=60) of the expectant mothers were not familiar with WHO recommendations that breastfeeding should continue for two years and beyond, while both mother and baby have a need for it, with the cessation of nighttime breastfeeding after the baby's sixth month of life. However, 87.8% (n=70) of mothers were aware that frequent nighttime feedings can be a risk factor for early childhood caries development.

Conclusion: Preventive measures involve promoting factors that positively affect oral health, recommending hygienic–dietary regimes for pregnant women, and prevention during infancy, mixed dentition and permanent dentition. These measures do not necessarily have to be implemented only in the dental office. Preventive measures should focus on educating mothers about necessity and benefits of natural feeding through breastfeeding.

PP–36

Replantation of Teeth That are not Adequately Kept After Injury – Case Report

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Introduction: One of the most common reasons for tooth loss in the adolescent period is dental traumatism. The possibilities and therapeutic procedures for definitive dental treatment of adolescent patients are limited by the end of growth and development of the jaws. Young patients are sensitive to their physical appearance it is necessary to rehabilitate them and enable them to function properly and have facial aesthetics.

Case report: A 17–year–old patient presented himself after dental trauma and treatment of soft tissue injuries in another health institution. During the injury, there was a traumatic extraction of the upper left central incisor from the dental cup and a partial displacement of the upper right central incisor. The tooth was not adequately kept, it was wrapped in a handkerchief in a dry environment and the time spent in the external environment was over 5 hours. The tooth was washed with physiological solution, under

local anesthesia the coagulum was removed by curettage, the wound was washed and the teeth were repositioned in tooth cups and a flexible composite splint was placed. Teeth have been obturated and composite restored, the patient comes regularly for check-ups, the condition of the roots is monitored with X-rays, and so far there are no signs of pathological resorption or ankylosis of the injured teeth.

Conclusion: patients who lose their front teeth as a result of trauma face numerous difficulties for definitive prosthetic treatment, therefore replantation should be performed as soon as possible and health workers should be educated how to transport extracted tooth to the dental office

PP-37

Dental Interventions Under General Anesthesia From the Sustainable Aspect

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Introduction: The term sustainable dentistry represents an approach to dentistry that means minimizing the environmental impact of dental procedures and practices, promoting social equity and responsibility within their community, and operating dental practice in an economically viable manner.

Objective: The aim of the study was to analyze the factors that present challenges from the aspect of sustainable dentistry in patients, which treatment was performed under general anesthesia (GA).

Methodology: The research was conducted at the Center for special care dentistry in the Clinic of Preventive and Pediatric dentistry, School of Dental medicine, University of Belgrade. The participants are patients who, due to the nature of disease and difficult cooperation were treated under general endotracheal anesthesia in the period from April to September 2023. Data related to the duration of waiting for dental treatment, the distance of patients travel, environmental factors and frequencies of visits for regular check-ups were analyzed.

Results: The average waiting time from the dental examination indicating the need for rehabilitation under GA to the intervention date was 5.42 ± 2.72 months. Patients travel an average distance of 149.63 km (min=4km, max=1086km) round trip for dental treatment under GA. The travel costs averaged 4079.1 RSD, while the total carbon emissions produced during travel was 7 t.

Conclusion: The results of the study indicate the need for educations among dentists to conduct work with patients with special needs in local and regional dental centers, and expanding knowledge in the field of sustainable dentistry.

PP-38

Hormonal-vitamin Balance in Human Periodontal Ligament Stem Cells

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Introduction: Gingiva as a tissue contains receptors for estradiol and the vitamin D receptor, and data from the literature indicate that vitamin D3 and estradiol can have a positive effect on periodontal health.

Objective: The objective of proposed in vitro study was to investigate the possible effect of vitamin D3 and estradiol on expression on mitochondrial 25-hydroxyvitamin D-1 α -hydroxylase (CYP27B1) and mitochondrial 25-hydroxyvitamin D-1 α -hydroxylase (CYP27B1), two enzymes involved in vitamin D3 metabolism in isolated human periodontal ligament mesenchymal stem cells (hPDL-MSC).

Method: hPDL-MSCs, previously isolated from six extracted intact third molars from young donors, were stimulated with the different forms of vitamin D3 and 17 β estradiol either alone or in combination. Stimulation was performed in serum-free conditions. Either 100nM of 25(OH)D3 or 10nM of 1,25(OH)2D3 were used for the stimulation in different combinations with 100 nM of 17 β -estradiol. The resulting expression levels of enzymes CYP24A1 and CYP27B1 were analyzed by real-time PCR methods.

Results: 17 β -estradiol inhibited CYP27B1 expression, indicating a reduced ability of hPDLSCs to activate circulating 25(OH)D3 and convert it to biologically active 1,25(OH)2D3; at the same time, 17 β -estradiol increased the expression of CYP24A1, which may mean increased deactivation of 1,25(OH)2D3 and the activity of the vitamin D3 receptor.

Conclusion: This study provides evidence of the possible interaction between vitamin D3 and estradiol in hPDLSCs, which should be investigated in future studies.

PP-39

Intracoronary Bleaching of Previously Traumatized Tooth

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Introduction: The color of teeth plays a crucial role in achieving an aesthetically pleasing smile. When a single tooth displays discoloration, its negative impact can be more pronounced compared to generalized discoloration across all teeth. Prosthodontic treatments are more invasive and involve loss of tooth. Hence, intracoronary bleaching emerges as a minimally invasive treatment option.

Objective: Systemic healthy, 37-year-old male patient, presented to our faculty with discoloration of tooth 11. In the medical history obtained, it was revealed that the patient had experienced a bicycle accident during his childhood. During the first appointment, root canal treatment was performed. A 2 mm glass-ionomer cement was placed above the root canal filling and then bleaching performed with 35% hydrogen peroxide gel using the walking bleach technique. After three days, the coloration result was satisfactory. Subsequently, calcium hydroxide medication was applied for two weeks. Finally, coronal restoration was carried out using composite resin.

Results And Conclusion: Whitening that tooth not only influences the patient's satisfaction with their appearance but also positively impacts their self-perception and contributes to psychological well-being. Intracoronary bleaching serves as a minimally invasive alternative treatment to aesthetic crown restoration.

PP-40

Removal of Fractured Endodontic Instrument and Overfilling in the Upper Central Incisor

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Introduction: Instrument fracture represents one of the most frequent local complications during endodontic treatment and can significantly reduce the positive outcome of endodontic therapy.

Objective: The aim of this study was to present the removal of fractured endodontic instrument and overfilling as part of retreatment of the upper central incisor.

Case Presentation: A female patient was referred for removal of fractured instrument used for post space preparation. Retroalveolar X-ray showed the fractured instrument in the middle and apical third of the root canal, and overfilling in the periapical region without signs of periapical lesion. Through the access cavity made during the previous procedure, the coronal part of the fractured instrument could be visualized. Using specialized ultrasonic tip, the fractured instrument was freed and removed. Subsequently, coronal part of the gutta-percha was hooked using Hedström files and completely removed from periapical region.

Conclusion: The use of specialized ultrasonic tip during removal of a fractured instrument contributes to minimal destruction of root canal dentin as well as adequate cleaning and shaping of the canal space. Due to well-achieved visualization of the fractured instrument, the use of an operative microscope for additional magnification was not necessary.

Keywords: fractured instrument, tooth revision, endodontic therapy

PP-41

Success of Endodontic Therapy of the Central Maxillary Incisor Internal Resorption – 3 Years Follow UpSlobodan Jovanovic¹, Jovana N. Stasic¹, Zorana Velickovic², Ilija Veskovc³, Tatjana Savic-Stankovic¹Department of Restorative Odontology and Endodontics, School of Dental Medicine, University of Belgrade¹, Clinic for Paediatric and Preventive Dentistry, School of Medicine², University of Nis, School of Dental Medicine, University of Belgrade³

Introduction: A 40-year-old female patient fell and applied to our Clinic for the treatment of fractured crowns of teeth 21 and 11. The presence of enamel and dentin defects revealed without exposing the pulp on teeth 21 and 11. Tooth 21 was sensitive to vertical percussion with the presence of luxation. Vitality tests revealed absence of pulp sensibility and analysis of the retroalveolar radiograph showed presence of limited illumination in the region of the middle third of the tooth root canal. Chemomechanical treatment of the root canal was performed with Protaper Next instruments using 2% sodium hypochlorite for irrigation. Two weeks of intracanal medication with calcium-hydroxide followed. The canal was obturated with calcium silicate cement (Bioroot, Septodont, France) with gutta-percha points. One and three years later, no presence of pathological changes in the area of the lesion and the surrounding bone was observed,

and the clinical examination showed that the tooth was asymptomatic and without luxation.

Discussion: As a result of trauma damage to the predentin and odontoblast layers, the activity of osteoclastic cells initiates the process of root dentin resorption. Endodontic therapy of internal resorptions is challenging due to removing necrotic and well-vascularized granulation tissue and obturation of irregularly shaped defects.

Conclusion: Adequate obturation and successful canal therapy with internal resorption can be achieved by using calcium silicate cements. Due to their positive properties (bonding in a moist environment, good edge sealing, osteodentine and osteocement potential), calcium silicate cements are the materials of choice in the rehabilitation of tooth root canal resorptions.

PP-42

Artificial Intelligence in Teledentistry as New Oral Health Care Tool Among Dental Professionals in North Macedonia – A Questionnaire Study

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Objectives: The rapid and extensive dissemination of the COVID-19 sparked an unprecedented global health crisis, leading to a fundamental reshaping of healthcare systems across the globe. Due to the inherent need for close interaction with patients in dentistry, interventions have become especially vulnerable during the pandemic. However, teledentistry presents an innovative solution to safely resume dental practice amid these challenging times. Incorporating AI into teledentistry has the potential to completely transform the remote delivery of dental care, education, research, and subsequent innovations.

Materials and methods: A prestructured questionnaire was developed and disseminated among 100 dental professionals in N. Macedonia through various social media platforms. The data analyses were based on the respondents in the questionnaires and were calculated using Statistical software SPSS for Windows version 23.

Results and discussion: Out of a total of 96 completed forms received, 88 (91.7%) respondents were aware of the term "teledentistry". Additionally, 86 (89.6%) participants believed that teledentistry could serve as an effective educational tool, while 80 (83.3%) participants expressed confidence in its ability to monitor the oral health of patients. However, 68 (70.8%) participants perceived teledentistry as challenging or difficult to implement across all branches of dentistry.

Conclusion: The rapid advancement of digital health technologies holds significant potential to enhance the performance of health systems and promote population health. Our participants demonstrated a strong knowledge and awareness of teledentistry and expressed confidence in teledentistry's effectiveness as a tool for educating and raising healthcare awareness.

PP-43**Dental Treatment Under General Anaesthesia**

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Private Practice

Dental treatment under general anaesthesia is a safe and effective way to provide dental care in several cases when treatment with local anaesthesia is not possible. The aim of this presentation is to show the special requirements of this procedure and differences between dental treatment under local and general anaesthesia.

Dental treatment under general anaesthesia is being practiced only in a hospital environment and in cooperation with an anaesthesiologist. It is indicated especially in patients with moderate to severe mental or physical disabilities, patients with complex medical conditions and patients with extreme dental phobia.

During the procedure the patient lacks consciousness, is ventilated and is in a lying position. Due to these conditions dental treatment protocols are altered and usually different treatment priorities are set.

After- and side-effects of the procedure are relatively rare. In most of the cases the patient doesn't have to stay in hospital overnight.

Despite the difficulties and the special conditions when practising dentistry under general anaesthesia, sometimes it is the only acceptable alternative treatment option.

PP-44**Trace Elemental Analysis of Dental Tissues in Archeological Findings**

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Analyzing the presence and concentration of trace elements in dental tissues of both human and non-human organisms is a promising and rapidly advancing scientific field. Various sectors, including Forensics, Anthropology, and Bio-archaeology, greatly benefit from the newly developed techniques employed in these analyses. Enamel and dentin fossils from Neanderthal and non-human populations provide insights into past dietary habits and lifestyles. The hydroxyapatite in teeth primarily originates from elements found in breast milk of mammals, thus the trace elements present in both breast milk and dental tissues offer detailed information about past practices. For example, the presence of Sr indicates consumption of plant-based foods and its replacement of Ca in bone tissue; Ba and Sr are believed to be indicative of the consumption of vegetables, grains, legumes, as well as marine organisms like mollusks and crustaceans; Cu and Zn levels suggest a diet rich in animal products such as red and white meat, as well as dairy. Ratios of Ba/Ca and Sr/Ca in dental tissues correlate with the initiation time and duration of breastfeeding, providing insights into health, fertility, demography, biological evolution, and even weaning practices and survival strategies of mammals in the past. The presence of hydrogen isotopes in dentin provides evidence of meal preparation practices, while the relationship between Cu, Zn, Ba, and Sr indicates the type of diet. In the field of Visual Histology, the LA-ICP-MS method is primarily utilized as it aids in constructing Ba/Ca and Sr/Ca maps in molars' enamel and dentin. Therefore, the

information provided by tracing elemental concentrations in dental tissues can be valuable in archaeological investigations.

PP-45

Dental Education and Distance Learning in the Post-Pandemic Era

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Introduction: The Covid-19 pandemic led to a reconfiguration of medical education, which is why distance learning has become an integral part of education today.

Aim: Assessment of attitudes of dental students about online teaching.

Material and methods: A cross-sectional study was conducted among the first-, third-, and fifth-year students at the School of Dental Medicine, University of Belgrade. A specially designed online questionnaire containing 33 items about distance learning was used.

Results: 78.7% of students stated that online learning provides them with flexibility in terms of organizing their study time. When asked whether they consider the experience gained in practical lessons to be irreplaceable, 54% of first-year, 74.4% of third-year, and 70.7% of fifth-year students completely agreed ($p=0.145$). With regard to the amount of acquired knowledge through the online learning environment, a significant difference was observed among the students from different years of study ($p=0.020$). First-year students were the most satisfied (66.7% of students), while 38.1% of third-year and 39% of fifth-year students were satisfied with this teaching approach. 55.3% of male and 38.8% of female students agreed they would choose online learning again. 68.4% of respondents believe that combining online lectures and on-site practical lessons would be the most effective method of instruction.

Conclusion: The results show that dental students are satisfied with distance learning to a certain extent, which indicates that dentistry per se cannot be virtual, but dental education may benefit from a blended approach that includes both face-to-face and online instruction.

PP-46

Size and Shape Dental Anomalies – Classification, Etiology and Treatment

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Introduction: Dental development is a highly regulated multi-leveled, multidimensional, multi-factorial biological process that has multiple interactions and is progressive over time. It begins at the 4th fetal week and is completed by the last years of adolescence. At any stage of tooth formation, mutations can occur both structurally and morphologically. These changes can vary from a slight abnormality in the structure of a tooth to the complete absence of a tooth tissue. Developmental anomalies of size and shape present special interest.

Aim: To review the classification, etiology and treatment of developmental anomalies of dental tissues regarding shape and size.

Materials and methods: A literature review was performed using the electronic databases: PubMed, Google Scholar, Embase and Scopus.

Results: Under the influence of both genetic and environmental factors a variety of tooth size and shape anomalies is possible to occur, such as microdontia, gemination, concrescence and taurodontism. These conditions differ in location, prevalence, repercussions and treatment approach. They vary from non-harmful, non-treatment need cases to cases that have high risk of future complications and may need orthodontic treatment, extraction, sectioning or extensive restoration.

Conclusions: Preserving the knowledge regarding the characteristics and handling options of these anomalies is essential for the dental practice. By identifying these disorders early, we can take the appropriate intervention measures in order to prevent possible complications and ensure optimal dental health.

Keywords: dental development, dental anomalies, dysplasia, teeth size and shape

PP-47

Candida Albicans Influences Cyclin D Expression in Oral Carcinoma Patients

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Introduction: *Candida albicans* represents the main opportunistic fungal pathogen in humans and is highly implicated in oral carcinoma (OSCC). There are several proposed pathogenetic mechanisms that are related to dysplastic changes and carcinogenesis and include nitrosamine and acetaldehyde production, p53, Ki-67, and COX-2 overexpression, and proinflammatory cytokine upregulation. The Cyclin D gene acts as a regulator of cell cycles, and its overexpression may lead to cell proliferation and reduced dependence on growth factors.

Objective: The objective of this study was to assess the presence of *Candida albicans* in benign lesions, oral potentially malignant disorders (OPMDs), and oral carcinoma, as well as to investigate the influence of *Candida albicans* presence on ALOX5, VEGF, and Cyclin D gene expression.

Materials and methods: This study included 87 patients: 23 with benign lesions, 30 with OPMDs, and 33 with OSCCs. After performing biopsies, DNA, RNA extraction, and Taqman-based real-time PCR were performed to detect *Candida albicans* in the lesions and to estimate gene expression by the means of the relative quantity compared to GAPDH expression.

Results: *Candida albicans* was present in 14 benign lesions (58%), 24 OPMDs (80%), and 23 OSCCs (70%). A statistically significant difference was observed in Cyclin D expression in OSCC patients who were positive for *Candida albicans* fungi ($p = 0.05$). No other correlations were established.

Conclusion: *Candida albicans* was abundant in tissue samples from all mucosal lesions. Cyclin D overexpression in OSCC was linked to *Candida albicans* presence, which might indicate this microorganism's role in the mentioned gene expression.

PP-48

Drug-Induced Gingival Hyperplasia in a Hypertensive PatientVasiana Gjergo¹, Eneida Hoxha¹, Ersida Spahija²Private Dental Office¹, University Hospital Center "Mother Theresa"²

Background: Presenting a gingival hyperplasia case induced by the use of calcium blockers, which could be important to further analyze not only for dental purposes but also for being very rare in the medical area.

Case presentation: A male patient, age 44, presented to the dental clinic complaining of gum bleeding, inflammation, swelling, tooth movement, discomfort in speaking and chewing at the same time. The patient had a long history of arterial hypertension (HBP), which has been stabilized in the past six months by using amlodipine 10 mg per day. Clinical and radiological examination showed generalized chronic periodontitis accompanied by gingival hyperplasia. With the specialist's recommendation, the treatment for arterial hypertension was replaced with olmesartan 20 mg per day. We proceeded with gingival deep cleaning, including curettage and gingivectomy of enlarged tissue, antibiotics and oral antiseptics.

Conclusions: Even with a short and low administration of amlodipine, excessive gingival growth can have a negative effect. This is due to the fact that gingival hyperplasia create a vicious circle along with the disease and makes that worse. The best results are reached when the replacement of calcium blockers and oral prophylaxis are combined.

Reference: I. Newman and Carranza's Clinical Periodontology 13 Edition May 2018.

PP-49

Graphene Oxide's Therapeutic Potential: Targeting Oral Cancer Stem CellsAleksandar Jakovljevic, Milica Jaksic Karisik, Milos Lazarevic, Dijana Mitic, Jelena Milasin
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Introduction: Nanotechnology is a growing field, with many potential biomedical applications of nanomedicine for the treatment of different diseases, particularly cancer. Objective: To investigate the antineoplastic potential of graphene oxide (GO) on oral cancer stem cells.

Methods: The effect of GO on oral cancer stem cells (CSCs) and healthy control cells (dental pulp stem cells-DPSCs) viability was determined by MTT and cell cycle analysis was done using flow-cytometry. MTT was conducted over 24h to 3 days. The cell cycle results indicated the exact distribution of the cells in the G0-G1, S, and G2-M phases. Results: A dose-dependent inhibition of CSCs viability was observed in the presence of GO with the lower doses being more effective and without cytotoxic effect on DPSCs. In other words, the treatment with 50 µg/ml of GO significantly increased the death of cancer cells ($p < 0.0001$) and the proliferation of healthy cells ($p = 0.0003$). Cell cycle analysis indicate that GO did not exert cell cycle arrest in DPSCs as the majority of cells reached G2 phase; GO treatment significantly affected the cell cycle of CSCs and the majority of cells remained in. A negligible percentage of cells reached G2 indicating that GO did induce cell cycle arrest.

Conclusion: GO could effectively inhibit the proliferation of CSCs by inducing cell death and cell cycle arrest, which is essential in the prevention of uncontrolled tumour growth. Future studies are needed to understand how these novel nanomaterials affect cells. This research was funded by the Science Fund of the Republic of Serbia, #GRANT NO 7750038, ORAL CANCER—NEW APPROACHES IN PREVENTION, CONTROL, AND POST-OPERATIVE REGENERATION—AN IN VITRO STUDY—ORCA-PCR.

PP-50

Oral Squamous Cell Carcinoma Mimicking Trauma due to an ill-fitting Denture. A Chronic Oral Ulcer: a Case Report

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The purpose of this study is to describe a case of a female patient in which an oral squamous cell carcinoma (SCC), with the coexistence of irritation caused by her removable appliance was mimicking a long-lasting oral ulcer.

A 48 years old, female patient, was referred to the Department of Oral Medicine and Pathology, School of Dentistry, Aristotle University of Thessaloniki, Greece, complaining of pain in the lower jaw. The clinical examination revealed an extensive ulceration on the edentulous alveolar process, distal from the teeth #33, reaching the floor of the mouth and the buccal mucosa. The ulceration was initially attributed to trauma due to the ill-fitting removable denture, that the patient was wearing. However, the patient reported to have had this particular ulcer for many months prior to the clinical examination, therefore, it was decided, that a biopsy should be carried out. The biopsy included both soft and bone tissue and showed respectively, both the presence of an invasive, moderately differentiated, oral squamous cell carcinoma, and underlying bony invasion by cancer cells.

This case illustrates the risk of misdiagnosis of SCC when it's mimicking other, benign clinical entities, such as oral trauma due to dental appliances. SCC is the most frequent malignant neoplasia of the oral cavity, repeated and chronic mechanical irritation of the oral mucosa may act as a co founding factor at best. The clinical must remain in high alert, in such dubious cases, since early diagnosis is linked to a much higher survival rate.

PP-51

Preliminary Study of DAPK Vascular- endothelial Staining in Malignant and Potentially Malignant Lesions

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Potentially malignant disorders such as Oral Lichen Planus (OLP) or Leukoplakia (OL) of several degrees of dysplasia manifest a significant potential of malignant transformation being a precursor of oral squamous cell carcinoma (OSCC). The role of microvascularization in carcinogenesis is critical, therefore, microvascularization

constitutes a major therapeutic target. The aim of the present study is to investigate the vascular endothelial expression of the methylated –inactive form of DAPK or alternatively named DAPK–1(9q21.33) through immunohistochemistry in paraffin embedded tissue samples of OLP, OL and OSCC. The tissue samples were retrieved from the archives of the Department of Oral Medicine/Pathology, School of Dentistry, Aristotle University of Thessaloniki, as well as from St Lukas Hospital of Thessaloniki, Greece during the period 2004–2019. The staining was evaluated exclusively in a quantitative manner. The vascular endothelial staining was evaluated as either positive or negative. Fisher's Exact test was used and the significance level was set at 0.05 ($p \leq 0.05$). The statistical analysis did not show any statistically significant results. In particular, the comparison between OLP and OL yielded a Fisher's Exact test of $P > 0.999$, OLP and OSCC $P = 0.389$, OLP and normal oral epithelium $P > 0.999$, OL and OSCC $P = 0.226$, OL and normal oral epithelium $P > 0.999$ as well as OSCC and normal oral epithelium $P = 0.342$. The evaluation of the methylation profile of DAPK–1 in OL, OLP and OSCC requires further studies in larger samples of tissue samples to illustrate its possible implication.

PP–52

Citalopram Induced Melanocytic Macules in a Female Patient and Review of the Literature

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Pigmented lesions in the oral cavity can arise from the accumulation of external substances or internal pigments, resulting in black or brown discoloration. The etiology can be categorized as physiologic, reactive, neoplastic, idiopathic, or indicative of systemic illness. A female patient, 89 years old, was referred to the Department of Oral Medicine and Pathology, School of Dentistry, Aristotle University of Thessaloniki, Greece, complaining of the recent and constant appearance of black spots in her oral cavity. Her medical history revealed hypertension, hypercholesterolemia, osteoporosis, mild depression and the concurrent uptake of allopurinol, irbesartan, hydrochlorothiazide, pravastatin sodium, denosumab, bromazepam and citalopram. Regarding the onset of each drug administration, the patient mentioned that citalopram was the most recently prescribed one, approximately one year prior to the examination. The clinical examination revealed multiple melanotic macules, on the upper and lower lip as well as on the hard and soft palate. Based on these findings, a biopsy of a melanotic macule of the lip was carried out. The histopathological examination showed that the basal layer of the stratified squamous epithelium exhibited hyperpigmentation (melanin pigmented basal cells). Our case constitutes an exception since citalopram induced intraoral and perioral hyperpigmentation instead of cutaneous, melanin was present in the basal cell layer and melaninophages in the lamina propria. The complete and detailed record of the medical and dental history of the patient may directly unveil the cause of the patient's symptoms and clinical signs. The prolonged life expectancy is significantly associated with the number of administered drugs.

PP-53

Treacher Collins Syndrome: A case report

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Introduction: Treacher Collins syndrome (TCS) or mandibulofacial dysostosis, is a rare genetic disorder that has an autosomal dominant inheritance pattern with great phenotypic variability and expressivity. The incidence of TCS is approximately one in every fifty thousand births and it is believed that 60% of the cases are attributed to random mutations without familial inheritance present.

Objective: The objective of this study is to illustrate the orofacial features of a clinical case of a 9-years-old male presenting with TC syndrome.

Results: The patient went through genetic testing at 18 months of age and the results revealed that there was no familiar inheritance of the syndrome. During extraoral examination, the patient presented with right hemifacial paresis, right choanal atresia, and deformation of the external ears, mandibular micrognathia and a narrow face. In the intraoral examination, a right posterior crossbite, a midline deviation to the right were noticed. Generally, the patient's dental age, corresponds to the chronological one. Additionally, the right coronoid process of the mandible presented with hypoplasia and the mandibular canines were impacted with a horizontal orientation inside the mandibular body fact which was noted during radiographic examination. Clinical audiograms showed 50% reduction in hearing. This patient was the youngest of the two children born to parents with no history of consanguineous marriage. The other sibling showed totally normal facial features.

Conclusion: Early detection and treatment with a multidisciplinary approach can improve the quality of life of patients, mainly solving the craniofacial malformations that affect their self-esteem.

PP-54

Evaluation of Serum Cortisol Level, ALT-AST and Hepatitis B, C in Oral Lichen Planus Patients

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Objective: In this study, we aimed to evaluate the relationship of serum cortisol levels, alanine transaminase (ALT), aspartate transaminase (AST), hepatitis C and hepatitis B virus infections in patients with oral lichen planus (OLP) and to compare to healthy controls.

Material and Methods: The study protocol was approved by the Local Community of Research and Ethics of Marmara University. Fourty patients with OLP and 40 age-gender matched healthy controls were participated in the study. All patients were subjected to routine blood test and the estimation of serum cortisol levels, alanine transaminase (ALT), aspartate transaminase (AST), detection of anti-HCV antibody and hepatitis B surface antigen (HBsAg) by using the enzym immunoassay. The data were statistically analyzed using Student-t, Mann-Whitney U and Chi-Square Fischer's Exact tests.

Results: Serum cortisol level of OLP patients was found to be 13.38 ± 5.93 , and that of the control group was 12.80 ± 3.93 . The OLP patients' ALT–AST levels were 19.91 ± 10.66 , 20.81 ± 9.85 , and those of the control group were 19.91 ± 10.66 , 20.81 ± 9.85 , respectively. There was no statistical difference of serum cortisol levels, hepatitis B and hepatitis C virus infections in OLP patient compared to the healthy control group ($p > 0.05$).

Conclusion: This study identified that there was no association between OLP and healthy controls regarding elevated serum cortisol levels, alanine transaminase (ALT), aspartate transaminase (AST), hepatitis C and hepatitis B virus.

Key Words: Oral lichen planus, oral mucosal diseases, hepatitis, serum cortisol

Acknowledgement: This research is supported by TÜBİTAK with Project number 123S550. This research is based on PhD thesis of Dr. Hakan Yülek.

PP–55

Peripheral Ossifying Fibroma Treatment: A Case Report

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Peripheral ossifying fibroma (POF) is a benign reactive tissue growth frequently seen at the anterior region of maxilla usually in females at the second decade. It is suggested to be the inflammatory hyperplasia of periodontal ligament or periosteum with approximately 16–20% recurrence. It starts from gingiva, usually interdental papilla of the related tooth. This case report presents the treatment of a POF case with periodontal surgery after its edematous state has been controlled by initial periodontal treatment (IPT). 18 years old systemically healthy female patient complaining from a gingival lesion formed within the last 2 months applied to our clinic. The clinical and radiographic evaluation revealed gingivitis with localized pedunculated gingival overgrowth sized 10x10mm starting from the interdental papilla of teeth #12 and 13 and extending palatinal to teeth #11–13. IPT was performed in four sessions for two weeks thus, the size of the lesion was reduced to 7x7mm. The incision was performed including some surrounding healthy tissue for the complete excision of the lesion. Mucoperiosteal flap was elevated, and the region was degranulated. Osteotomy and osteoplasty was performed to remove any bone invasion at the base of the lesion. Flap was closed by 3.0 silk sutures primarily. Healing after two weeks was uneventful. The histopathologic examination confirmed POF. No recurrence was observed at 12 months follow-up. This case demonstrates that deep excision of the POF lesion with bone surgery is required to prevent possible bone invasions and to avoid any recurrence, thus preventing potential tooth and alveolar bone loss.

Keywords: initial periodontal treatment, mucoperiosteal flap, peripheral ossifying fibroma

PP–56

Treatment of Gingival Recession with Unit Graft: A Case Report

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Objective: The treatment of gingival recessions is performed for eliminating dentin sensitivity, increasing the amount of keratinized tissue and aesthetic purposes. One of the most significant factor for success in soft tissue grafts is the synergistic relation between vascular configuration and involved tissues. This case report aims to present a clinical case of gingival recession managed with a gingival unit graft. A 43-year-old systemically healthy female patient presented with Miller class I gingival recession affecting the lower left central incisor. In preoperative clinical assessment, gingival margin was located 3 mm apically to the cemento enamel junction (CEJ) and 4 mm average attachment loss with 1 mm probing depth were recorded. After Phase I periodontal treatment was completed, surgical procedures have been applied. The surgical intervention began with two horizontal incisions extending mesially and distally from the cemento enamel border of the tooth. A sulcular incision was combined with these horizontal incisions. The incision of the trapezoidal recipient site was completed with two vertical incisions extending apically beyond the mucogingival junction. In the recipient bed, the underlying connective tissue and periosteum were preserved. The gingival unit graft was obtained from the palatal side of the left maxillary 2nd premolar and fixed in the recipient area at the CEJ with simple sutures. Postoperative care instructions were provided.

Results In this case report, the clinical effectiveness of gingival unit graft was evaluated with the complete closure of gingival recession after 6 months follow-up.

Keywords: Free gingival graft ; Gingival recession; Unit graft

PP-57

Hypersensitivity Reactions Caused by Toothpastes: A Case Report

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Although bacterial plaque is the primary cause of gingival inflammation, allergic reactions can sometimes accompany the disease, increasing inflammation and altering its clinical and histopathological appearance. Plasma cell gingivitis (PCG) is a rare benign condition of the gingiva characterised by dense plasma cell infiltration of the gingival connective tissue with an erythematous, oedematous appearance. PCG is a hypersensitivity reaction to certain ingredients in toothpastes and some materials. The aim of this case report is to raise awareness of the diagnosis and treatment of PCG caused by toothpaste.

A 16-year-old female patient was admitted to Ankara University, Faculty of Dentistry, Department of Periodontology on October 2023 with complaints of gingival redness, bleeding and tenderness. Intraoral examination revealed diffuse gingivitis localised to the maxillary gingiva. There was no radiographic evidence of bone loss. Scaling and root planning (SRP) were performed and oral hygiene instructions were given. Although there was a reduction in gingival hyperemia and oedema, complete healing wasn't observed after a week. The patient was advised to brush without toothpaste due to the possibility of an allergic hypersensitivity reaction. The gingiva was found to be completely healed after one week. A new toothpaste was then prescribed.

It should be noted that the ingredients in toothpaste can cause hypersensitivity reactions. The lesions may not heal with conventional periodontal treatment and good oral

hygiene. The lesions can be treated with SRP by identifying and avoiding the source of the allergen.

Keywords: Plasma cell gingivitis, hypersensitivity reactions, toothpastes

PP-58

Treatment of multiple Gum Recessions Using the Zucchelli Technique

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Introduction: Gingival recession is defined as the apical migration of the gingival margin relative to the enamel–cementum junction and exposure of the root surface to the oral environment. The Zucchelli technique is a modification of coronally positioned flaps used for the treatment of teeth with multiple recessions. This case report presents the treatment of multiple adjacent gingival recessions using Zucchelli's coronally positioned flap technique.

Objective: An 32 years old female patient, presented to our clinic with complaints of multiple gingival recessions. Upon obtaining medical history, it was revealed that the patient is systemically healthy, has'nt undergone orthodontic treatment, and does'nt smoke. Clinical examination revealed Miller class I gingival recession in teeth number 12,13,14. After initial periodontal treatment, the patient was reevaluated after 1 month. Before the operation, measurements were taken in the relevant areas, and it was decided to apply the Zucchelli technique.

Results: . On the 3rd day post–operation, frenectomy was performed with laser in the premolar area. At the 3rd day, 1st week, 2nd week, and 1st month follow–ups, it was observed that the root surfaces in the relevant area were covered, and no signs of relapse were found

Conclusion: It has been demonstrated with this case that Zucchelli's coronally positioned flap, used to cover root surfaces in patients with multiple gingival recessions, is a successful treatment method in terms of creating less wound area in the oral cavity, achieving color harmony with surrounding tissues, and covering the root surface.
Keywords: gingival recession, coronally positioned flaps, Zucchelli technique

PP-59

Regenerative Treatment using PRF: A Case Report

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Objective: Regenerative endodontic procedures (REPs) or revascularization is a form of treatment that is aimed at regeneration of pulp–like tissue inside the root canal. This study aims to present the regenerative endodontic treatment procedure for an incisor with a periapical lesion and incomplete root development using platelet rich fibrin (PRF).

Case: A 23–year–old male patient was referred to Ordu University Faculty of Dentistry, Department of Endodontics with a complaint of pain in central incisor. Radiographic examination revealed periapical radiolucency surrounding immature apex and clinically

examination percussion and palpation were positive. The patient had trauma history. Our clinic decision was rep using prf. Access cavity preparation was done. The canal was irrigated with 20 ml 1.25% sodium hypochlorite (NaOCl) and 10 ml 17% EDTA solutions and dried. Calcium hydroxide was used as intracanal medicament. The patient returned clinic after 3 weeks and was asymptomatic. The PRF scaffold obtained by centrifugation of 10 ml blood from the patient was used. The PRF was condensed into canal with plugger. The mta was placed over the PRF to thickness of 3mm and the access cavity was sealed GIC and composite restoration.

Result: The patient was called for 1st, 3rd and 6th month follow-ups. In clinic examination, the patient was asymptomatic and cold test (+). Periapical radiolucency decreased. At the end of the 6th month, the apical foramen surrounding the hard tissue formation was observed.

Conclusion: REP can give successful results with a PRF scaffold.

Key words: MTA, Regeneration, Open Apex, Trauma

PP-60

Use of amelogenin (Emdogain) in periodontal regeneration. Review of the literature—Case reference

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Introduction: The constant loss of tooth-supporting tissues (alveolar bone, periodontal–ligament and cementum) led to the discovery that enamel matrix proteins (EMPs) play an important role in the regeneration of these tissues. EMPs enamel matrix proteins that are expressed during tooth development and except their role in enamel formation have a significant role in periodontal regeneration. The most abundant of EMPs them is amelogenin.

Aim: To review the role of amelogenin in periodontal regeneration.

Materials And Methods: A literature review was performed using the electronic data bases: PubMed, Google Scholar.

Results: There are several studies that support the effectiveness of EMD (emdogain), in periodontal regeneration either flapless or during open flap debridement. Moreover, the combination of EMD and bone grafts have been used successfully in periodontal regeneration.

Conclusions: Among other periodontal regeneration materials, EMD has been used successfully with the advantage of its use in less invasive techniques.

Keywords: amelogenin, enamel matrix proteins, periodontal regeneration, emdogain

PP-61

Treatment of a Single Mandibular Gingival Recessions by Tunnel Technique with Deepithelialized Gingival Graft: A Case Report

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Introduction: This case report presents the treatment of a Miller Class III/RT2 gingival recession in the mandibular lateral incisor using the modified coronally advanced tunnel (MCAT) technique combined with a de-epithelialized free gingival graft (DFGG).

Objective: A 38-year-old, non-smoking, male patient has complained of gingival recession (recession depth: 4mm, recession width: 3mm) in mandibular lateral incisor (#32). During the intraoral examination, inadequate keratinized attached gingiva and a thin gingival phenotype were observed in tooth #32, along with Miller Class III/RT2 gingival recession. A procedure of MCAT combined with DFGG was planned to increase the width of the keratinized gingiva and cover the root surface. Initially, intrasulcular incisions were performed using surgical micro blades. After, the tunnel form was prepared by raising a mucoperiosteal flap beyond the level of the mucogingival junction without touching the interdental papillae. A free gingival graft was harvested from the palatal mucosa, with the epithelium of the harvested tissue being excised using surgical blades to procure a connective tissue graft. Complete closure of the gingival recession was achieved by stabilizing the connective tissue graft and positioning the flap coronally with sling sutures.

Results: In the evaluations on the 3rd day, 1st week, 1st month, 3rd month, a significant root coverage was noted at the recession site, accompanied by an increase in the width of the keratinized gingiva.

Conclusion: The combination of MCAT with DFGG is a procedure that provides aesthetics without scars, covers the root surface, increases the amount of keratinized gingiva in single gingival recessions.

PP-62

Efficiency of Hyaluronic Acid and Collagen Block (Bio-Oss Geistlich) in Intra-bony Defect. A Case Report

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Introduction: Furcation defects are typically inaccessible for good professional conventional debridement. Despite anatomical limitations, reports in the literature have demonstrated a reduction of probing depth and a gain in the clinical attachment level (CAL) using coronally positioned flaps, hard tissue grafts and guided tissue regeneration.

Aim: The aim of present case was to evaluate the effect of HA with Collagen Block (Geistlich) in treatment of a single Muller class II furcation defect. **Material and method:** A 41 year old female came to the Department of Periodontology and oral pathology with the chief complaint of bleeding gums. Made a RTG status in the planned region. Phase I therapy was initiated and the patient was advised to rinse with 0.12% chlorohexidine twice daily for 14 days. Patient was asked to start antibiotic thrice daily with probiotic capsules. After 14 days the administration of local anesthesia, crevicular incision was given and mucoperiosteal flap was reflected and thorough debridement of the furcation defect was carried out. Using Gracys curretes depth of furcation defect was evaluated. 0,8% HA and Collagen Block was condensed into the furcation and intra-bony defect with respect to # 46 and 47. Flap was sutured with 5 0 silk sutures. **Result:** The patient was recalled after 14 days for suture removal, pocket probing

depth (PPD), horizontal furcation defect (HFD), and BOP were recorded after 6 and 12 months. Conclusion: In the present case, the superior clinical and radiographic outcomes observed can be attributed to the use of HA along with Collagen Block. Overall, the treatment of intrabony defect with Collagen Block in combination with HA appears to be effective and promising.

Key words: periodontitis, regeneration, bone, hyaluronic, collagen

PP-63

10 years Follow-up Dental Implants in a Patient with Rheumatoid Arthritis: A Case Report

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Introduction: Rheumatoid arthritis (RA) is an autoimmune disease that results in a chronic, systemic inflammatory disorder that principally attacks synovial joints. The pathology of the disease process often leads to the destruction of articular cartilage and the bone.

There are few publications on dental implant application in patients with RA. In this case report, 10 years follow-up dental implants in a patient with RA will be presented.

Case report: 76-year-old female patient who was diagnosed with RA, She was taking prednisolone 5 mg/day, methotrexate (MTX) and was otherwise healthy.

due to missing teeth, 8 implants in total both jaws were placed immediately under local anesthesia. Bone defects were supported by allograft bone graft and collagen membrane implants. Annual controls were made and at the 10th annual check-up, it was observed that there was no implant loss and the patient used her prostheses without any problems.

Discussion: According to the international literature in rheumatoid arthritis, due to frequent periodontitis, decreased salivary secretion, medication, as well as a decrease in bone regenerative potential, rheumatoid arthritis is considered as relative contraindication in implantology.

Conclusion. Dental implant treatment was successfully performed for an 76-year-old woman with RA taking long-term steroid and MTX therapy. The results suggest that dental implants may not be contraindicated for such patients, and that masticatory function can be recovered and maintained in the long term after implant treatment.

PP-64

Inflammation Due to Forgotten Amalgam in an Alveolar Cavity

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A 43 year-old woman, suffered from severe pain in her mandibular jaw for several years. A metallic artifact of about 2(3) mm was detected by a panorama radiography in an edentulous region with a surrounding inflammation in close contact to the canal of the mandibular nerve. Inflamed tissue with the central metallic inclusion was removed from the bone under local anesthesia and operation. Postoperatively, pain and missensitivity disappeared within 1 week. Although the patient had no macroscopically visible so-called amalgam tattoo, the metallic cube was identified as amalgam by the

detection of mercury, silver, tin, copper, and zinc using energy dispersive X-ray analysis (EDX) in a scanning electron microscope (SEM). Nevertheless, brown to black pigments in the connective tissue matrix and inside histiocytes, fibroblasts, and multinucleated foreign giant cells of the surrounding inflammatory tissue were observed by light and electron microscopy. However, the elemental analysis by EDX in SEM or by electron energy loss spectroscopy in transmission electron microscope detected only silver, tin, and sulfur but no mercury in these precipitates and in the residual bodies of phagocytes. The presented case demonstrates a seldom complication of amalgam deposition in the tissue. The authors assume that the chronic pain results from a forgotten amalgam filling inside an alveole after extraction of a molar tooth, causing a chronic inflammation by resolving mercury and other toxic elements out of the metallic artifact.

PP-65**Treatment of Miller Class II Gingival Recession Due to Multifactorial Etiologies**Özge Tezel¹, Adnan Tezel², Fatma Karacaoglu²Ministry of Health / Oral and Dental Health Center ERZURUM/TURKEY¹, Ankara University Faculty of Dentistry Department of Periodontology ANKARA/TURKEY²

In this case report, it is aimed to present the treatment of a patient with Miller Class II gingival recession caused by high frenulum connection and occlusal trauma, and therefore being unable to provide oral hygiene in the relevant area, with a gingival unit graft taken from the palatal region, following Phase I treatment, along with the elimination of the etiologies of gingival recession.

After the treatment, the amount of insufficient keratinized gingiva was increased, oral hygiene was facilitated, tooth sensitivity and the patient's aesthetic problems were eliminated.

PP-66**Osteonecrosis of the Jaw in a Young Patient: Beyond Medication-Related Causes**İpek Atak Secen¹, Bilgesu Kurt², Emre Baris¹Gazi University Faculty of Dentistry, Department of Oral Pathology¹, Gazi University Faculty of Dentistry, Department of Oral and Maxillofacial Surgery²

The development of osteonecrosis in the jawbones due to various pharmacological agents remains an ongoing concern within the field of dentistry, identified as Medication-Related Osteonecrosis of the Jaw (MRONJ). Nonetheless, osteonecrosis of the jaws can also arise from a multitude of other etiologies, including the use of dental materials, occurrences of dental trauma, viral and bacterial infections, as well as exposure to radiation therapy. The implementation of dental implants for the remediation of tooth loss stands as a prevalent treatment modality within dental practices, especially as a preferred option for the younger patients. Following the placement of an implant, the surrounding bone tissue, which is expected to remain in a healthy state, may show changes in bone metabolism due to trauma to the area. This can lead to complications in osseointegration, osteonecrosis and ultimately failure of the dental implant. This poster presentation discusses a case of osteonecrosis that emerged

following the placement of a dental implant for a single-tooth deficiency in a 26-year-old male patient.

The distinctiveness of this case lies in the patient's absence of any prior medical or medication history. It is speculated that the osteonecrosis was triggered by a surgical procedure to remove an impacted canine that occurred subsequent to the implant placement.

Ensuring adequate healing post-implant surgery is crucial for the health of the patient and the success of the implant therapy, representing a significant concern for oral and maxillofacial surgeons.

PP-67

Decompression as Effective Approach in Therapy of Large Radicular Cyst in Mandibula – A case report

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Introduction: Therapeutic approach to jaw cysts depends on their dimensions and localization. Enucleation of cystic lesion is not always preferable in the first act, especially if large cysts are in close proximity to important anatomical structures. The aim of this work is to present the outcome of the treatment protocol that includes decompression and subsequent enucleation of a large mandibular cyst.

Case report : 65 years old male patient with large radicular cyst in mandibular which perforate bone. There was a risk of pathological fracture of the mandible. Surgical treatment of the cystic lesion includes: decompression with biopsy in the first act and enucleation, after 8 months.

Conclusion: The presented case support the opinion that decompression with subsequent enucleation proved to be effective treatment of large radicular cyst in mandibular with low morbidity.

PP-68

Stick Bone Graft and PRF Membranes in Surgical Treatment of Large Periapical Lesions : Case Report

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The aim of this case report is to demonstrate an efficient method of bone augmentation using sticky bone along with PRF membrane in a case of large periapical lesions in the aesthetic region of maxilla. Large diameter periapical lesions in the anterior region of maxilla are often related to significant bone loss which can complicate potential implant placement. Combination of bone substitutes and injectable PRF is referred as 'sticky bone' and it has been related to superior bone and soft tissue healing because of high concentration of growth factors and cytokines. Due to its sticky consistency, augmentation procedures are much easier to perform. A 24 year old male patient was referred to our clinic because of an incidental radiographic finding of three large periapical lesions in the upper jaw. The CBCT revealed three radiolucent unilocular

lesions in the periapical area of the right maxillary first molar, premolars, canine, lateral incisor and left central and lateral incisors. We decided to use sticky bone graft and PRF membranes after enucleation of periapical lesions and in this case report we will describe preoperative protocol and surgical procedure.

Key words: periapical lesion, bone augmentation, PRF, sticky bone, healing

PP-69

Evaluation of Keratinised Tissue Gain After 30 Days of Healing Following Apically Positioned Flap in Comparison with Free Gingival Graft Strip

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Introduction. Alveolar ridge atrophy results in inadequate vestibular depth owing to narrow and insufficient width of attached keratinized mucosa. In order to deepen vestibulum and obtain sufficient denture bearing area alveolar ridge soft tissues should be reconstructed. Various vestibuloplasty techniques have been introduced. The apically positioned flap (APF) is the most utilized one in contrast to relatively new APF combined with a free gingival graft strip (FGGS). The aim of this study was to compare the rate of shrinkage during early wound healing between APF and FGGS.

Patients and Method. The study enrolled 17 patients who underwent a vestibuloplasty with either a apically positioned flap (APF) or apically positioned flap with free gingival graft strip (FGGS) from the palate. Surgical guide was made based on their previous denture prosthesis. Follow up examinations were performed and width of keratinised mucosa was measured in anterior (incisors) middle (canine and premolars) and posterior (first molar) region of former teeth using surgical guide at the day of surgery and after 10 and 30 days of healing.

Results. Immediately following the surgery, vestibular depth was almost similar in both APF and FGGS. Following 30 days of healing in anterior and middle region of FGGS keratinized tissue gain showed significantly less shrinkage comparing to APF. However, in posterior region clinical significance did not found.

Conclusion. Following early wound healing it may be concluded that FGGS shows considerably less shrinkage comparing to APF alone.

PP-70

Surgical Prosthetic Rehabilitation with Implant – Retained Prosthesis

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Treatment of edentulous patients with fixed prosthodontic restorations according to the “all-on-X” concept requires adequate anatomical conditions, invasive and long-term surgical procedures, as well as significant financial expenses. An alternative approach to surgical-prosthetic treatment for these patients is implant retained overdentures that have proven to be predictable, reliable, and successful therapeutic solutions. They provide greater satisfaction, chewing ability, and quality of life compared to

conventional complete dentures, but they also have lower economic costs. A 62-year-old male patient with an atrophic, edentulous upper jaw, distinctly pneumatized maxillary sinuses, and an edentulous lower jaw came to the Oral Surgery Department, School of Dental Medicine, University of Belgrade. The patient was surgically rehabilitated with 3 endosseous implants in the upper jaw (positions 13–12–22) and 4 in the lower jaw (positions 44–42–32–34) (Neodent–Straumann group brand, Curitiba, Brazil). Due to specific arrangement of the implants, an implant–retained overdenture retained by bar (on „miniconical“ abutments) was fabricated in the upper jaw, and an implant prosthesis retained with „locator“ abutments (Novaloc system, Neodent–Straumann group brand, Curitiba, Brazil) was made in the lower jaw. In this way, a successful rehabilitation was carried out, with a satisfactory appearance for the patient and a recovery of the function of the stomatognathic system.

PP–71

Hard and Soft Tissue Augmentation– A Necessity for Proper Implant – Prosthetic Rehabilitation

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Introduction: For successful guided bone regeneration (GBR), proper surgical technique and stability of the bone graft or blood clot are necessary. The thermosensitive resorbable solution for graft stabilization – TSV Gel (OsteoBioI) will be presented in the following case report as a successful means of creating a scaffold for GBR in combination with the resorbable membrane for GBR: Evolution (OsteoBioI).

Case report: A case of implant–prosthetic rehabilitation of a 26-year-old patient with a missing upper left second incisor is presented. In the first treatment phase, an Ankylos C/X dental implant (DentsplySirona) was placed, and simultaneously, GBR with the bone substitute Gen–Os (OsteoBioI) mixed with fibrin glue TSV Gel (OsteoBioI) was performed. A resorbable membrane (Evolution, OsteoBioI), was placed, fixated and sutured tension–free. Soft tissue augmentation of the alveolar ridge was performed with a free connective tissue graft taken from the hard palate. A palatal "roll flap" was created during the placement of the gingival former to achieve a more aesthetically acceptable appearance. The fixed prosthetic replacement was made according to the known protocol for a single dental implant.

Conclusion: A successful case of patient care with a dental implant in the esthetic zone is presented, where GBR was successfully performed with the help of a collagen adhesive. With the described technique, we managed to stabilize prefabricated deproteinized bone particles of animal origin, which, according to our predictions based on CBCT scans and literature reports, facilitated the formation of new bone.

PP–72

The Influence of the Use of the Piezosurgical Device on Alleviation of Postoperative Discomfort Intensity After the Surgical Extraction of the Lower Third Molar

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Introduction: Extraction of impacted lower third molar is often associated with trauma of bone and soft tissue, resulting in numerous postoperative sequelae.

AIM: To determine the difference between the intensity of postoperative discomfort after surgical extraction of the lower third molars using a piezosurgical unit and using conventional rotary instruments.

Material And Methods: Study included 30 participants, divided into two groups.

Experimental group consisted of 15 participants who underwent surgical extraction using piezosurgical device for osteotomy. Control group consisted of 15 participants who underwent surgical wisdom tooth extraction using rotary instruments. Duration of the intervention was measured as well as three parameters at baseline and postoperatively: face swelling, trismus and pain.

Results: Distance tragus–tip of the chin had statistically significantly lower values on the second postoperative day in the investigated group compared to the control group (I test; $t = 2.87$; $p = 0.047$). Interincisal distance in the examined group was significantly higher on second and fourth postoperative days than in the control group (ANOVA; $p = 0.046$ on the second postoperative day and $p = 0.047$ on the fourth postoperative day). Intensity of pain on the second postoperative day was statistically significantly lower in the examined group compared to the control group (MANOVA; $p = 0.001$ and discriminative analysis; $p = 0.001$).

Conclusion: Postoperative discomfort after the surgical extraction of wisdom tooth using a piezosurgical device is lower than the postoperative discomfort after extraction by the conventional method.

Keywords: surgical tooth extraction; lower third molar; piezo–surgical device; rotating instrument

PP-73

The Use of Sticky Bone for Treatment of Bicortical Bone Defect – A Case Report

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Introduction: Platelet rich fibrin (PRF) is an autologous source of cells and cytokines with great healing properties. A combination of PRF (Miron protocol) with bone substitute materials (Bio-Oss, Geistlich, Switzerland) – “sticky bone“ has been established as a promising option for the treatment of bone defects.

Case Report: A female patient (28 y.o.) has been treated in the Clinic for Oral Surgery, School of Dental medicine in Belgrade because of chronic infection. Two years prior to the admission, the left maxillary lateral incisor and canine had been resected. On the CBCT (Cone Beam Computed Tomography) inadequate root canal fillings with bicortical bone defect were detected.

After the elevation of full–thickness mucoperiosteal flap, inflamed tissue was removed, and piezo retropreparation with root fillings (biodentine) was performed. The subsequent osseous defect was filled with bone substitute material (Bio-Oss, Geistlich, Switzerland) and PRF in form of “sticky bone“, and covered with PRF membrane. The postoperative period was uneventful and the patient recovered successfully. A control

OPT was made six months postoperatively and it showed that the bone defect in the affected area healed completely.

Discussion: PRF in combination with bone substitute materials can be utilised for the treatment of bone defects. Sticky bone provides faster and effective bone healing.

PP-74

Treatment of Neglected Mandibular Ameloblastoma: An Interesting Case Report

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Ameloblastoma is a benign but locally aggressive tumor of the odontogenic epithelium of the mandible and maxilla, that represents 1% of all cysts and tumors of the oral and maxillomandibular region. It occurs with equal frequency in both sexes and the mean age of presentation in whites is 40 years. The tumor is most often found in the posterior body and angle of the mandible but can occur anywhere in the mandible or maxilla. Its pathogenesis remains unclear. This case report details a 50-year-old male who presented in our clinic with a painless tumor lasting for about eleven years, involving the entire right mandible. The skin of his face was normal, except for a scar, sequela of odontogenic cellulitis fistula on the right side of the mandible region. Intraorally, there were no remaining teeth on the involving area. The patient had a history of ameloblastoma which had been surgically treated by resection of the ipsilateral coronoid process. Evaluation results showed that the patient should be treated by segmental mandibulectomy, however the patient could not afford extensive surgery, so it was decided to follow a conservative approach such as enucleation, curettage, and marsupialization. Postoperatively, the patient was monitored and checked at weekly intervals in the office for the first month and monthly at the first 3 months. After 3 months, he referred to our clinic with a cervical fracture of condyle. Pathological fractures are likely to happen in these cases. In conclusion, our case highlights that neglected ameloblastomas may become enormous and cause facial deformities that pose considerable problems in management, such as complicated and expensive treatment.

PP-75

Management of Miller's Class II Gingival Recession with PRF Membrane and Subepithelial Connective Tissue Graft Combination: a Case Report

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Coronally advanced flap (CAF) with connective tissue graft (CTG) is the technique with the most reproducible results in root coverage (RC) of gingival recessions (GR) Miller's Class I and II. Platelet-rich fibrin (PRF) has been proposed as a replenishment of the healing, because of slow protein release, circulating immune cells, and angiogenesis through the release of fibroblast growth factor, vascular endothelial growth factor, and

platelet-derived growth factor. The purpose of this report was to present a case of Miller's Class II GR treated with subepithelial connective tissue graft (SCTG) and PRF membrane where the potential of PRF to increase gingival thickness and clinical attachment level, and improve soft-tissue healing and clinical appearance was corroborated.

Keywords: Connective tissue graft, gingival recessions, periodontal tissue regeneration, platelet-rich

PP-76

Middle Third of the Face Pathologies that Affect the Maxillary Sinus

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Introduction: Maxillary sinus is the largest of the paranasal sinuses. The anatomical position in the middle floor of the face as well as the close relationship with the neighboring structures causes it to be affected by many pathologies, which may be of the sinus in its own or of the neighboring structures. Sinus diseases are classified as inflammatory, cystic, tumoral, pseudotumoral, traumatic, and developmental pathologies.

Purpose: To provide a clinical statistical description of the middle third of the face pathologies affecting maxillary sinus.

Material and Method: This is a clinical statistical study of descriptive nature. For the realization of this study, the charts of $n = 400$ patients (243 males and 157 females) aged 2–78 years, treated in the O.M.F surgery service, with various middle third of the face pathologies, were used. The period of time January 2011–December 2016. The data collected from clinical charts and hospital records of the hospitalized patients were statistically analyzed with SPSS 19 system.

Results: $N = 165$ or 41.25% of patients treated with middle-third of the face pathologies have affected the maxillary sinus. Inflammatory pathologies appear to be the middle third of the face pathologies that affect more often the maxillary sinus $n = 46$ cases (11.5%), followed by traumas $n = 35$ (8.75%) and maxillary cysts $n = 31$ (7.75%).

Conclusions: Based on our study, the maxillary sinus is highly affected by the middle third of the face pathologies.

PP-77

Treatment of Gingival Recession in the Mandibular Incisor Region with Free gingival Grafting: A Case Report

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Aim: In recent years, clinicians and researchers have shown increasing interest in mucogingival surgery to reconstruct soft tissue around teeth and implants. To increase the width of the attached gingiva, free gingival grafting is an excellent procedure. At the same time, root surface augmentation in areas where there is minimal keratinized tissue in the mandibular incisors is one of the indications where free gingival grafts are

preferred. This case report aims to present a periodontal treatment with free gingival grafts.

Materials and Methods: A 37-year-old female, non-smoking patient has complained of gingival recession in .As a result of intraoral examination, the width of keratinized attached gingiva was found insufficient. A free gingival graft was planned to increase the width of the keratinized gingiva and to cover the root surface. The recipient site was prepared with a split-thickness flap and then a 1.5–2 mm thick free gingival graft was obtained from the palatal region. The obtained graft was fixed at the periosteum with sutures and adapted to the recipient site. When the recession site was evaluated on the 3rd day, 1st week, 1st month, and 2nd-month controls, it was detected that significant root coverage was observed with an increase in the width of keratinized gingiva.

Conclusion: In the treatment of gingival recessions in the mandibular incisor region, free gingival graft operation is a treatment that increases the width of the keratinized gingiva. It provides healthy gingival integrity and has predictable results.

Keywords: Free gingival graft, gingiva recession, keratinized gingiva

PP-78

Implant Peri-apical Lesion: Case Report

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Implant peri-apical lesion (IPL) is characterized by radiographic detection of bone loss around the apex of the implant without marginal bone loss or pathological peri-implant probing pocket depths. It usually occurs within the first 6 months after implant placement. IPL can occur due to premature loading, overheating of the bone during drilling, implant placement in an infected area, contamination of the implant surface during instrumentation in the presence of residual root fragments or foreign bodies. Different management approaches have been proposed for implant periapical pathology, including implant extraction, periapical surgery with or without resection of the implant apex, and regenerative surgery. In this case report, IPL after immediate implantation and 6-month follow-up results of its treatment are presented.

Case: A systemically healthy 49-year-old female patient was admitted to Ankara University Faculty of Dentistry, Department of Peridodontology because of missing teeth. Clinical and radiologic examination was performed. An immediate implant was planned for tooth number 25. Severe pain and swelling developed at the implant site on the 16th postoperative day. The patient was prescribed antibiotics. After the patient's complaints subsided, the implant site was surgically opened. Granulation tissues in the apical region of the implant were removed and washed with sterile saline solution and bleeding zones were created in the defect area. The flap was closed primary.

Results: At 6 months after treatment, the defect area was reevaluated by CBCT and showed significant bone filling.

Conclusion: Opening the defect area and eliminating the granulation tissue without using regeneration material is thought to be a successful treatment option in cases of IPL.

PP-79

Multidisciplinary Approach for the Treatment of Root Caries: A Case Report

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Root caries (RC) occur for many reasons including the presence of subgingival calculus (SC) resulting in disruption of the tight contact between the root surface and the gingival margin causing food impaction or the gingival recessions because of senile atrophy especially in caries susceptible patients having Lactobacillus dominant microflora. This report presents the treatment of RC located by the gingiva just above the existed SC with the help of periodontal flap.

A systemically healthy 71-year-old male applied to our clinic for implant treatment. His clinical examination revealed moderate calculus accumulation, generalized gingival recessions, horizontal bone loss in addition to multiple edentulous areas. During his periodontal treatment, the active caries was observed on the root of #13 just by its gingiva. Because of the prolonged treatment due to his private problems, the initial periodontal treatment has not been able to completed properly resulting in residual calculus left under gingiva. The probing depth of the region was above 5mm and the possibility of unsuccessful calculus removal obligated us to complete the treatment of #13 with the help of periodontal flap with simultaneous restoration of the RC. The mucoperiosteal flap was reflected, scaling and root planing were completed. The caries cavity was restored with composite filling material. The primary closure was obtained with 5.0 PLGA suture. 6 months follow-up demonstrated successfully treated RC and periodontium with minimum recession.

Well-planned multidisciplinary treatment of complicated subgingival caries lesions should be the choice of treatment for the successful treatment.

Keywords: Periodontal flap, root caries, multidisciplinary approach

PP-80

Updated Insights into Diagnosis and Management of Hypertrophic Gingivitis

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Background: Hypertrophic gingivitis (HG) constitutes a plaque- or non-plaque-induced condition and remains an actual perspective problem of dentistry medicine and public health.

Objectives: Comparative assessment of treatment outcomes in HG patients managed with conventional options alone and in combination with ozone therapy.

Material and methods: The design of this observational, clinical-analytical study consisted in dividing patients with HG into two research groups: control (74 patients) and study (74 patients). The protocol for examination and treatment of patients with HG included the registration of laser doppler flowmetry (LDF) before treatment, immediately after the treatment, and then at 1, 3, 6 and 12 months of post-treatment monitoring.

Results: The anamnestic data were collected, with the subsequent performance of OPG, the determination of the oral hygiene index, gingival indices and LDF-gram before and after the treatment. The changes in the blood flow and the assessment of treatment effectiveness were monitored using LDF, pre- and post-treatment at 1, 3, 6, 12 months. Oral hygiene index recorded before the treatment $11-37.59$ and after the treatment: $11-8.33$. The gingival indices were until the treatment: $IHG-43.75$; $ISG-59.13$; $IG-0.65$ and after the treatment: $IHG-8.31$; $ISG-12.25$; $GI-0.06$. LDF-gram recording before the treatment accounted: $IEM-1.05$; $M-12.63$; $ALF-0.27$; $ACF-0.11$; $AHF-0.19$ and after the treatment: $IEM-1.47$; $M-10.45$; $ALF-0.38$; $ACF-0.27$; $AHF-0.35$.

Conclusions: In the research group of patients, treated in combination with ozone therapy, the oral and gingival hygiene indices, as well as the LDF index, were considerably enhanced, as compared to the control group. These findings proved the effectiveness of the combined treatment options.

PP-81

Levels of Biochemical Markers – Labor Triggers in Gingival Fluid of Preterm Delivery Women

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Introduction: Preterm delivery, one of the most common adverse pregnancy outcome, is recognised as the mayor source of neonatal mortality and morbidity. Prostaglandin E2 (PGE2), interleukin-1b (IL-1 β), interleukin-6 (IL-6) and tumor necrosis factor alpha (TNF- α) are inflammatory mediators and the main labor triggers, their increased levels are associated with preterm birth. Periodontitis is a chronic inflammatory disease of periodontal tissues. Significantly increased gingival fluid (GF) levels of PGE2, IL-1 β , IL-6 and TNF- α are reported in patients with periodontitis compared to periodontally healthy individuals.

Objective: The objective of this study was to evaluate levels of inflammatory mediators PGE2, IL-1 β , IL-6 and TNF- α in gingival fluid of preterm and full term delivery women and correlate them with periodontal status.

Method: The study included 128 sistemically healthy women: 64 preterm delivery women (PTB group) and 64 full term delivery women (FTB group). Periodontal examination and sampling of GF were performed within 48 hours following delivery. Levels of investigated mediators in GF samples were evaluated using ELISA test (enzyme-linked immunosorbent assays).

Results: PTB group demonstrated higher frequency of periodontitis compare to FTB group ($p=0.001$), while FTB group showed significantly higher frequency of periodontal healthy participants compare to PTB group ($p=0.001$). Preterm birth women showed significantly increased GF levels of PGE2 and IL-6 compared to full term birth women ($p<0.05$).

Conclusion: Periodontitis might impact overall increase of inflammatory mediators which are also and biochemical markers – labor triggers, hence contribute to knowledge of preterm birth pathogenesis.

PP-82

Follow Up Protestant Reconstructions of the Endo – Surgically Treated Tooth

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Introduction: The significance of successful restorative, endodontic, and surgical therapies in managing teeth in the inter-canine sector is indisputable, particularly for younger individuals. Retaining all natural teeth makes patients especially sensitive to the loss and aesthetic appearance of frontal region teeth, particularly in cases involving the upper right central incisor. This case report discusses the prosthetic retreatment of an individual prosthetic restoration of a surgically resected tooth 11, undertaken 13 years after the apicoectomy procedure, with the patient presenting solely for aesthetic reasons and showing a complete absence of clinical symptoms. The patient's prosthetic treatment included the placement of a fiber-reinforced composite (FRC) post, and the metal-ceramic crown was replaced with a zirconium crown. Follow-up over 2 years involved clinical and radiographic examinations, during which periodontal assessment revealed no pain upon percussion and palpation. No additional clinical or radiological symptoms were identified.

Case Report: The patient is a 37-year-old female who presented to the Department of Dental Prosthodontics at the Institute of Stomatology in Banja Luka with a desire to replace the existing metal-ceramic crown for aesthetic reasons.

The patient expressed satisfaction with their new smile. The proper choice of materials, a multidisciplinary approach, and professional collaboration with dental technicians enable the prosthodontist to manage such a demanding case to the complete satisfaction of both parties. The significant efforts of colleagues in the fields of surgery, endodontics, and prosthodontics result in good prognostic success and gaining the trust of the patient.

PP-83

Occlusal Characteristics in Implant Supported Protheses

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Occlusion over load can cause further complications in the implant supported prosthesis. The occlusal scheme depends on the dentition type on the opposed arch, on the material of the prosthesis constructed, bone density, implant orientation, number of implants. Different prosthetic materials have different mechanical properties. Yoon et al presented five combinations of prosthetic materials and natural dentition, both in centric and eccentric occlusion. Another factor that influences the occlusal scheme is the immediate or conventional loading applied. In temporary prosthetic restorations, the occlusal scheme should be a stable static centric occlusion, while if present, the cantilevers should have a distance of 10–30 μm . The main occlusal schemes in implantology are based on the occlusal schemes in the fixed restorations over natural teeth. The main occlusal concepts such as balanced occlusion, group function occlusion and mutually protected occlusion are successfully used, with some modifications, in implantology. There is no fixed successful design of occlusion in implantology. The proper

occlusal scheme should be determined case by case. In literature there is a lack of the clinical trials studies that compare different occlusal designs in implantology. The main explanation is the difficulty in conducting studies with large number of patients with different occlusal schemes. An appropriate occlusal scheme is important in order to avoid the mechanical and biological complications of the prostheses supported on implants and to increase their longevity. Further investigation is suggested in this field.

Key words: Implant support prostheses, occlusion, considerations.

PP-84

Disc Displacement with Reduction: Case Report

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A female, 32 years old had as main complaint clicking in the left side during jaw movement one month ago. There was lack of pain and psychological issue, graded Chronic Pain Scale was 0. During the clinical evaluation the following were observed: At relax situation, normal facial symmetry. The maximum mouth opening was 46 mm. Clicking sound on the left side of the mouth when it opens and closes. In palpation of TMJ and jaw muscles was no pain. During dental examination, normo-occlusion was found. Based on anamnesis, TMJ examination, analysis of jaw movements (deviation to the affected side), a hypothesis of the diagnosis of disc displacement with reduction was firstly made, based on the DC/TMD. MRI defined the primary diagnosis of left TMJ anterior disc displacement with reduction, where the disc located ahead of the condyle in the closed mouth situation, and a return to the physiological position over the condyle, in the opened mouth position. The patient was instructed on adequate jaw positioning and relaxation techniques. A soft diet was recommended. Jaw exercises and manual therapy techniques to relief muscle tension were done, by paying special attention to avoid the parafunctional activity, avoid tiring caused by chewing for a long time. After 2 months of the management approach the patient reported an improvement in the clicking sound. This case has a follow up of two years. It emphasizes the need for an individual treatment case by case. **Key words:** disc displacement with reduction, treatment.

PP-85

Case Report: Utilization of Endocrown as a Chairside Solution

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Endodontically treated teeth often present challenges in restorative dentistry due to compromised structural integrity. Endocrowns, as an chairside solution, offer a promising alternative for restoring such teeth. This case report presents a successful utilization of the CAD/CAM milling system to fabricate an endocrown for a mandibular molar with extensive caries and previous endodontic treatment. The procedure involved digital impression, design, and milling of the endocrown using CAD/CAM technology, providing

efficient chairside restoration in a single visit. Clinical and radiographic assessments revealed favorable outcomes in terms of function, aesthetics, and preservation of tooth structure. This case highlights the feasibility and effectiveness of endocrowns fabricated using a dental practice mill as a reliable chairside restorative option for endodontically treated teeth, emphasizing its potential in modern dental practice.

PP-86

Association Between Biomechanical Support and Retention Force in Polyoxymethylene Telescopic Denture

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Introduction: The number and arrangement of the remaining teeth play an important role in the choice of subtotal denture and the prognosis of therapy. Telescopic denture made of polyoxymethylene (POM) as a structural element, in addition to the criteria of strength, rigidity, and satisfactory aesthetics, must meet certain biomechanical criteria.

Aim: The aim of the study was to evaluate the value of the retention force of the telescopic denture made of POM, in patients with different numbers and arrangement of remaining teeth.

Material and methods: Four telescopic dentures made of POM were analyzed. The remaining teeth belonged to different Steffel's classification categories. The subjective evaluation of dentist and patients about the value of the retention force, when removing the dentures was carried out on the day of delivery and at controls after 3 and 6 months. The retention force is rated on a scale of 1–10.

Results: The lowest values of the retention forces were recorded in patients whose line of support is a sagittal tangent, slightly higher values are in the case of the secant and transverse tangent, and the highest values in patients with a triangular support surface. The average values of the retention forces increase as a function of time.

Conclusion: The results of this study show that biomechanical support is a necessary factor for the successful treatment of subtotal edentulism. The telescopic denture made of POM is a dental device that provides satisfactory retention over time and in cases of unfavorable arrangement of the remaining teeth.

PP-87

Which Type of Occlusal Splint; Where and When to Use?

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Objective: Stabilization Appliance (The Michigan Splint): Indications for the Michigan splint include Temporomandibular joint (TMJ) and muscle disorders and pain, severe bruxism, diagnosis and treatment of trauma from occlusion to any part of the masticatory system, and the establishment of optimal condylar positions before definitive occlusion.

Anterior repositioning splint: This type of appliance is indicated in patients with anterior disk displacement with reduction by contributing to the restoration of normal disc–condyle relationship.

Distraction splint (Pivot Appliance): The pivoting appliance is indicated in patients with internal derangements or with osteoarthritis.

Anterior bite plane: They are indicated in the event of muscular disorders related to orthopedic instability or a sudden change in the occlusal state.

Posterior bite plane: This type of splint is used when there is a considerable need to alter the anterior placement of the mandible or when there is a serious loss of vertical dimension of occlusion (VDO).

Conclusion: In this literature review, it shows that careful examination of the patient is necessary to make a decision for the treatment method of specific TMD.

Keywords: TMD, Occlusal Splints, Occlusion

PP-88

Digital Occlusal Analysis in Normoocclusion Patients with T-SCAN III System

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Aim: The objective of this study was to observe and characterize the occlusal balance of static and dynamic occlusal parameters in subjects with normoocclusion using the T-Scan III System as well as to determine the importance of T-Scan III System digital occlusal analysis in orthodontics.

Material and Method: In 10 patients with normoocclusion, Angle Class I, occlusal balance was quantitatively evaluated using the T-Scan III System, in position of maximum intercuspitation (MIP), protrusive and lateral excursion of the mandible. We analyzed the following parameters: occlusal contact distribution, bilaterally, determination of center of occlusal force (COF), occlusal time (OT), disclusion time and determination of functional type of occlusion.

Results: Occlusal contact distribution in our patients was 48.7% on the left side and 51.3% on the right side from the dental arch in MIP. Center of occlusal force (COF) was located anteroposteriorly in the region of the first permanent molar at 94% from our patients. 90% had occlusion time shorter or equal than 0.4sec and disclusion time shorter or equal than 0.5sec per excursion.

Conclusion: Normoocclusion patients are characterized by balanced occlusion. There is a correlation between occlusion and articulation. Ideal occlusion correlates with ideal articulation. T-Scan III System is a very important diagnostic tool for determination of correct occlusal pattern in orthodontics and provides us with high quality treatment results in every day clinical practice.

Key words: Normoocclusion, Digital Evaluation, Occlusal Balance, T-Scan III System.

PP-89

Comparison of Conventional and 3D-Printed Complete Dentures: A Review

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Objective: Advancements in digital dentistry have facilitated the fabrication of fixed partial dentures, but their use in removable dentures is still in its early stages. Currently, recommended applications for 3D-printed complete dentures (CDs) include interim or immediate dentures and the fabrication of custom trays or record bases. The aim of this review was to compare the differences between conventional and 3D-printed complete dentures.

Methods: An electronic search of the English-language literature was performed in the PubMed/MEDLINE database. Studies related to conventional and 3D-printed dentures were included. Data was evaluated to highlight the advantages and disadvantages of conventional and 3D-printed CDs.

Results: 3D-printed CDs have a lower residual monomer content, which leads to fewer allergic reactions. They demonstrate minimal polymerization shrinkage, resulting in better tissue adaptation. The resins used in 3D-printed CDs have lower microporosity, reducing the risk of microbial colonization and infection compared to conventional resins. 3D-printed CDs also offer the advantage of reducing chairside and laboratory work. However, there are still limitations, such as lack of retention requiring relining to be clinically acceptable, inability to balanced occlusion, which can affect the stability of the prosthesis, and long-term color instability leading to esthetic problems.

Conclusion: Clinicians need to decide which technique aligns with their practice, skills and training when integrating new workflows. A precise fit between the denture base and the mucosal tissue is crucial for the retention and long-term effectiveness of CDs.

Keywords: complete dentures, 3D-printed, digital, conventional

PP-90

The Association of Serotonin Receptor 2A (5-HTR2A) Gene Polymorphisms and Pain – Related Temporomandibular Disorders

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Introduction: Polymorphisms of the gene encoding serotonin receptor 2A (5-HTR2A) have been associated with the risk of chronic pain dysfunction and occurrence of chronic pain. The aim of the study was to examine the association of HTR2A gene polymorphisms (rs6313 and rs6311) with pain-related temporomandibular disorders (TMD).

Materials And Methods: The case–control pilot study involved 46 patients with pain–related TMD and 45 control subjects without TMD. All subjects were examined according to the Research Diagnostic Criteria for TMD (RDC/TMD) in order to determine the presence of pain–related TMD diagnoses (myofascial pain and/or arthralgia). DNA was extracted from peripheral blood, and polymorphisms in HTR2A were genotyped by the real–time PCR method using predesigned genotyping assays. The collected data were processed in the SPSS 20.0 program for Windows. p values below 0.05 were considered statistically significant, and all tests were two–sided.

Results: The research results indicate that the prevalence of alleles and genotypes for both investigated HTR2A polymorphisms, rs6313 and rs6311, corresponds to the results of earlier Caucasian studies. None of the investigated polymorphisms of the HTR2A gene showed an association with pain–related TMD diagnoses ($p>0.05$).

Conclusion: The results of the study do not confirm a role of polymorphisms encoding 5–HT2A receptors (rs6313 and rs6311) in the presence of painful TMD. Subsequent studies should include a larger number of subjects and the analysis of other candidate genes encoding the components of the serotonergic pathway, regarding their role in TMD and orofacial pain in general.

Keywords: genetic polymorphisms; HTR2A; pain; temporomandibular disorders

PP–91

Soft Denture Lining Materials – The Right Choice or a Short Term Compromise?

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Introduction: Soft denture lining materials belong to acrylate polymer group, serving as intermediate buffer between hard acrylic denture base and residual alveolar ridge. It's soft consistency provides temporary resolution of chairside or laboratory denture relining of all conditions involving ill–fitting dentures.

Objective: Comparison and contrast the advantages and disadvantages of subsequent soft and hard acrylic materials symbiosis in the oral cavity.

Material and Methods: We observed 20 subjects in both genders 40–80 age denture users during 2 year period. 10 dentures made of hard denture acrylic materials (HDAM) while 10 uses some type of soft denture acrylic material (SDAM) beneath HDAM. All 20 were smokers/coffee drinkers with decent oral hygiene.

Results: 8 SDAM patients found with discoloration, odor, heavy plaque contamination, debonding from denture base, prone to piling denture flanges, consistency wrinkled, deformed soft lining base material with visible volume increase. None of patients complains in discomfort. 2 did not show up. 10 HDAM found with no significant changes in acrylic material consistency, minimal plaque presence, better hygiene achievement, smooth evenly denture base. 3 has upper dentures retention loss, 2 experienced pain at nerve ending locations within lower dentures, 5 have no issues on the clinical examination.

Conclusion: Dentures lined with SDAM are user acceptable, comfortable more than HDAM, thus benefits improved chewing force, reduced pain and sores under denture. Soft

relining denture procedure is repetitive successful treatment, challenging in many ways afterwards, well appreciated among patients. Ill-fitting dentures need attention, often complex direct or indirect procedure. Aid involving SDAM perform only if no other treatment options are available.

PP-92

Innovative Paths in Single Anterior Missing Tooth Replacement

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Loss of a single tooth in the anterior region is a prevalent condition across diverse age groups. Treatment alternatives for patients with a single-tooth loss, include removable partial dentures, resin-bonded fixed partial dentures, tooth-supported fixed partial dentures, and implant-supported crowns. This study embarks on an in-depth exploration of single anterior missing tooth treatment by implant therapies, conservative approaches with Maryland bridges and other diverse options. A number of studies were analyzed during the course of this study, in which the best replacement option for a single anterior missing tooth was sought, via an electronic search on PubMed database. Within the results of these human randomized clinical trials (RCTs), prospective and retrospective cohort studies comparing above-mentioned treatment paths the “success” was defined for the resin bonded “Maryland bridges”, as remaining in situ, not having experienced debonding and biological or mechanical failures under the provided oral conditions. Meta analysis of the included studies in this systematic review showed similar results for the performances of conventional fixed partial dentures, Maryland bridges and implant supported single crowns that are used as treatment options in the anterior single missing tooth cases. A Maryland bridge, which is a type of adhesive bridges, can be conveniently used in anterior single missing tooth cases as it is found to be as successful as the conventional fixed partial dentures or implant supported crowns according to the included studies. Each treatment option has its advantages and limitations. A thorough assessment of the patient’s local and systemic conditions is crucial for the appropriate approach for each individual.

PP-93

The Usage of Monolithic Zirconia and Layered Zirconia – Case Report

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Introduction: Zirconia, also known as zirconium dioxide, is a popular dental material for everyday use for the dental restorations. We usually ask ourselves, “What will we use, monolith or layered zirconia?”

Objectives: The aim of this presentation is to show which type of zirconia will be used in frontal region and which in posterior region for 38-year-old female patient who has old nonmetal dental construction.

Results: We have made new dental restoration for the 38-year-old female patient. Layered zirconia was used for the frontal restoration and monolith zirconia for the posterior defect.

Conclusion: Zirconia gives good results for the patient and good dental construction. Although both, monolithic zirconia and layered zirconia have their benefits, our choice will depend most on the patients' specific case.

Key words: monolithic zirconia, layered zirconia

PP-94

Zirconia in Everyday Clinical Practice – Case Report

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Purpose. Modern aesthetic dental medicine has affirmed the importance of new zirconia ceramics as one of the leading materials for achieving high aesthetic results with adequate mechanical properties and bio-compatibility. This study investigated the clinical outcomes of new zirconia compared with metal-ceramic restorations, in everyday clinical dental practice.

Material and method. This clinical study included prosthetic restorations of patients with different material (metal and metal-free ceramics).

Results. This clinical research for metal and metal-free prosthetic restorations was providing knowledge about the qualitative advantages of zirconia as one of the modern leading metal-free materials in dental medicine and its highly safe clinical use in the boat groups.

Conclusion: The analysis of the study showed a high quality of anatomic-morphological, functional, and aesthetic restoration has been achieved. Patients with zirconia ceramics have better aesthetics and find better application in the frontal and molar region.

PP-95

Comparison of Clinical Complications in Porcelain and Acrylic Implant Supported Hybrid Prostheses with Different Occlusal Combinations

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Objective: The aim of the study is find out what type of complications occur when we use porcelain to porcelain and acrylic to porcelain teeth in all-four cases

Materials And Methods: In our study, we have to analyze two groups of patients. One group had porcelain to porcelain teeth, while the other group had plastic to plastic teeth. All patients had all-on-4 full mouth coverage. We followed these patients for about five years. We analyzed the types of complications that occurred in these patients we followed.

Results:

The results are shown in the table.

Total 7 total implants suffered from soft tissue infections. (7/382 %1.8 complication)

4 patients' prothesis broken upper/lower plastic teeth

5 patients' prothesis broken upper/lower porcelain teeth

3 patients' prothesis broken upper/lower porcelain/natural teeth

Total 12 patients in 80 have prosthetic complications (12/80 patients' protheses %15)

3 patients have repeatedly broken protheses(Bruxist)

2 abutments broken

18 loose or broken screws none of these problems effect protheses

Total 20 mechanical complications (20/382 %5.2 complication)

Conclusions: There was no significant difference between the two groups. Porcelain fractures occurred in the porcelain group, while screw loosening occurred in the acrylic group as a complications in these cases.

Keywords: Implant supported hybrid prothesis, porcelain overdenture, acrylic overdenture, all-on-4, clinical complication.

PP-96

Rupture of the Articular Disc in the Temporomandibular Joint on Magnetic Resonance Imaging: a Case Report

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Introduction: One of the main constituents of the temporomandibular joint (TMJ) is articular disc. Articular disc divides articular space into two compartments, upper and lower, which do not communicate in a healthy joint. Articular disc has four zones: anterior, posterior, intermediate, that is the thinnest one (1mm) and bilaminar. The rupture of articular disc is a subgroup of posterior disc dislocation. Disc fracture represents the complete separation of the disc, whereas in disc rupture or perforation, the disc sustains only a partial tear but retains its integrity. Articular disc rupture begins with thinning of the disc that ends in rupture of intermediate zone or rarely in the real fracture.

Case Report: A 65-year-old woman presented with a 3-months history of anterior open bite and discomfort during mastication. She had a history of bruxism in her middle-aged period of life. On clinical examination, there was no limitation in mandibular movements and normal range of mouth opening was detected. Tight contact between the upper and lower second molars was present, and a slight gap between upper and lower anterior teeth was observed in the closed mouth position.

After clinical examination and analysis of panoramic radiograph, diagnosis was not clear, so MRI was ordered. On sagittal plane, MRI showed rupture of articular disc and posterior dislocation of disc.

Conclusion: Magnetic resonance imaging is a non-invasive imaging technique with superior soft-tissue resolution, used as the gold standard for examination of TMJ disc displacement. However, its diagnostic value for assessment of the presence or absence

of TMJ disc perforation is limited. In this case, a rupture of articular disc in TMJ was established by MRI, even though arthrography remained the method of choice.

PP-97

All – Ceramic Restorations – Excellent Aesthetics

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Introduction. The front teeth, due to changes in color, shape and position, often distort the appearance of a smile and a negative impact on the self esteem of the individual. Today, there is available a large selection of all–ceramic systems for the restoration of tooth with significantly improved mechanical and optical properties.

The aim. Manufacture all–ceramic crowns in the anterior region of the upper dental arch.

Material and methods. For 26 years–old female patient in the aesthetic evaluation indicated four all–ceramic restorations in teeth 12, 11, 21 and 22. To create the front restorations we are selected lithium disilicate glass–ceramic all–crowns that comes in the form "ingots" of different colors and translucency (IPS e.max Press, Ivoclar Vivadent, Liechtenstein). This all–ceramic system is further layering with nano–fluorapatite ceramic (IPS e.max Ceram, Ivoclar Vivadent, Liechtenstein), which provides esthetic results. For success of all–ceramic restorations plays an important role and cementation technique. In this case we selected adhesive cementation technique. It provides better mechanical properties of restorations. For the cementation of all–ceramic crowns a light–cured composite cement (Variolink Veneer, Ivoclar Vivadent, Liechtenstein) is used.

Conclusions. Ceramic materials are an important part of modern dentistry. Their resistance and optical properties enabling production of excellent and durable restorations that are at the same time achieves compliance of various requirements (aesthetic, functional and preventive).

Keywords: all–ceramic restorations, adhesive cementation

PP-98

Occlusal Scheme Choices in Implant – Prosthetic Dentistry

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Introduction: Majority of all implant occlusal concepts are based on those which refer to natural teeth occlusion and are applied, with a few modifications. However, there are a few big differences between natural teeth and implants, which need to be considered in implant restorations.

Method and materials: First difference is proprioception (occlusal awareness) of tooth and implant itself. Natural tooth has much higher proprioception (about 20 μm) and implant about 48–108 μm . Another difference is the absence of periodontal shock absorption. The presence of periodontal ligament as a shock absorber in a natural tooth

brings about an apical intrusion by about 28 μm and lateral movement by around 50–108 μm . In the case of a similar load acting on an implant, no initial movement is seen and the delayed apical movement observed is around 10–50 μm . The same can be attributed to the viscoelastic properties of bone.

Results: The ideal occlusal contact is over the implant body. This contact leads to the axial loading of implants. A posterior implant is hence placed under the central fossa of the implant crown. A buccal cusp contact is an offset or cantilever load. A marginal ridge contact is also a cantilever load, as the marginal ridge may also be several millimeters away from the implant body. In fact, the marginal ridge contact may be more damaging than the buccal offset, as the mesiodistal dimension of the crown often exceeds the buccolingual dimension.. The secondary occlusal contact should remain within 1 mm of the periphery of the implants to decrease the moment loads.

Conclusion: Many studies have reported that parafunctional activities and u adequate occlusal designs are correlated with implant bone loss and failures, so a proper occlusal scheme is prior.

PP-99

Implant Supported Monolithic Zirconium Restorations for Rehabilitation of Edentulous Maxillae by the Help of Two Stage 3D Temporary Approach

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The purpose of this report is to illustrate a protocol for achieving adequate vertical dimension, soft tissue support and smile line using 3D printed temporaries in the rehabilitation of maxillary full arch implants with monolithic zirconia. A two-stage try-in appointment was performed. After taking impressions of 5 implants with additional silicone, a base wax template was prepared, supported and stabilised by the impression posts. Reference lines were marked on the wax for easy guidance of the Exocad user. The first 3D printed temporary was fabricated and a try-in was performed after the abutments were transferred. The smile line, occlusion and soft tissue support were evaluated. An intraoral scanner was used to capture the current situation of the temporary. The scan data was used to determine the occlusion, gingival and crown height and smile line of the provisional. Finally, a final temporary was fabricated according to the patient's requirements. Minor occlusal adjustments were made and the restoration was scanned again. Final monolithic zirconia restorations were fabricated using the second temporary restorations as a guide and cemented with a resin-modified glass ionomer cement. All temporaries were tried by the patient for 3 days after the appointments. The functional, aesthetic and physiological adaptation of the patient with the temporary restorations was evaluated. This technique allows us to use intraoral scanners as a guide for permanent restorations instead of full dentures.

PP-100

Giant Peripheral Ossifying Fibroma in the Mandible: A Rare Case Report

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Introduction: Peripheral ossifying fibroma (POF) is a reactive focal overgrowth that arises from cells in the periodontal ligament. POF is usually observed in the maxillary anterior region during the second and third decades of life, and is rarely observed in the mandibular anterior region. The pathogenesis of this lesion is unclear, but it is thought to be caused by microorganisms, masticatory forces, calculus, dental plaque, minor trauma, and incompatible dental restorations.

Objective: This case report aims to present a case of POF in the mandible.

Case Report: A 51-year-old male patient was admitted to our clinic with a complaint of gingival swelling in the lingual region of his left lower jaw persisting for approximately 8 months. Oral hygiene of patient was inadequate, and dense dental calculus was detected. During the intraoral examination, a reddish, pedunculated soft tissue mass measuring 4.5x2 cm was observed. Excisional biopsy was performed and the lesion was diagnosed as POF.

Results and Conclusion: POF cases require periodic follow-up due to their high recurrence rate. In addition, preventing the occurrence of various pathologies can be achieved through improved oral hygiene and periodical controls.

Keywords: Gingival growth; Mandible; Peripheral ossifying fibroma

PP-101

Evaluation of Maxillary Sinus Anatomical Variations Using Cone Beam Computed Tomography in a Group of Patients

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Objective: Anatomic variations of the maxillary sinus can be detected in cone-beam computed tomography (CBCT) and may assist to define the maxillary sinus morphology more accurately for a more strict surgical treatment plan. The study aimed to determine normal variations of the maxillary sinus with the aid of CBCT in a sample population in Turkey.

Material and Methods: A total of 1000 retrospective right and left maxillary sinus CBCT images of 500 patients, 259 (51.8%) male and 241 (48.2%) female, were included in the study. The mean age was 39.38 ± 14.55 years. The anatomic variations which were evaluated in CBCT images included the presence of maxillary sinus opacity, mucosal thickening, polyp, hypoplasia and sinus septa. IBM SPSS Statistics 25.0 (IBM SPSS, Turkey) program was used for statistical analysis. The level of significance was evaluated as $p < 0.05$.

Results: In our study, there is no statistically significant relationship between right and left maxillary sinus opacity, mucosal thickening, maxillary sinus hypoplasia, and sinus septa ($p > 0.05$). Polyps were found in 3.6% of the right maxillary sinuses and 8% of the left maxillary sinuses, and there was a statistically significant difference between polyps in the right and left maxillary sinuses ($p < 0.05$).

Conclusion: Common anatomical variations are not rare in maxillary sinuses. This study revealed that CBCT is an important imaging modality which provides anatomical information of maxillary sinuses.

Key Words: Maxillary sinus, Anatomical variation, Cone Beam Computed Tomography

PP-102

Peripheral Ossifying Fibroma: Series of Three Cases

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Objective: Peripheral ossifying fibroma (POF) is a reactive soft tissue growth that predominantly affects females and usually seen on the interdental papilla. Its color ranges from pale pink to cherry red, and it might have a smooth surface or a broad base with pedunculation. This study's purpose is to evaluate and compare three different POF cases with histopathological examination.

Cases: Two female and one male patients of different ages came to our clinic with a complaint of asymptomatic, soft tissue growths in the anterior region of the interdental papillae area. The lesions were surgically excised and sent for histopathological examination which confirmed the diagnosis of POF.

Conclusion: Even though the etiology of the POF is unclear, trauma or local irritation such as plaque, calculus, ill-fitting dental appliances, and poor-quality dental restorations are all known to precipitate the development of POF. Dentists should make clinical differential diagnoses including peripheral giant cell granuloma, pyogenic granuloma, fibroma, and peripheral odontogenic fibroma.

Keywords: Differential diagnosis, peripheral ossifying fibroma, oral diagnosis, histopathological evaluation

PP-103

Peripheral Giant Cell Granuloma Located in the Maxillary Premolar Region: A Case Report

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Introduction: Peripheral giant cell granuloma (PGCG) is a reactive, benign lesion of the oral cavity originating from the periosteum or periodontal membrane. Although its etiology is not fully known, it is believed to develop as a secondary reaction to chronic irritation. It can be seen in the gingiva, on the alveolar ridge, and in toothed and toothless jaws. It is most common in females, in the 4–6th decade, and in the mandible. Treatment includes surgical resection of the lesion and elimination of irritating factors.

Case Report: A 53-year-old male patient with systemic hypertension was admitted to our clinic with a complaint of painless swelling in his upper jaw that had been present for a while. During clinical examination, a pedunculated, red–purple colored, painless and bleeding lesion located on the gingiva and alveolar crest was observed, localized in the area of teeth 14–15. Panoramic radiographic examination revealed severe bone loss in the relevant teeth. An excisional biopsy of the lesion and extraction of the relevant teeth

were performed. As a result of histopathological examination, it was determined that the lesion was PGCG. The lesion recurred in the same area 3 months later. In the histopathological examination performed after repeated excisional biopsy, the lesion was re-diagnosed as PGCG.

Conclusion: Since PGCG may have a clinical appearance similar to other lesions, histopathological examination should be included in its diagnosis. Etiological factors should be eliminated in case of recurrence and the patient should be examined periodically.

Keywords: benign, maxilla, peripheral giant cell granuloma

PP-104

Gingival Enlargement as a Possible Adverse Effect of Amlodipine – Case Report

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Amlodipine is a dihydropyridine calcium channel blocker with structural similarities to nifedipine, which might have gingival hypertrophy as a side effect.

The aim of this report was to raise awareness of the possible adverse effect of amlodipine in the gingival region and to offer management of drug-induced gingival enlargement.

This case report documents clinical, radiographic and histopathological feature of the 60-year-old female patient, referred to our dental office complaining of painful gingival overgrowth in the frontal region of the lower jaw with difficulties in mastication and maintenance of proper oral hygiene. Three months prior to our examination, essential arterial hypertension was diagnosed. Since then, this patient has been using amlodipine, 5mg per day. Two weeks after non-surgical treatment, the gingivectomy, was done and a specimen of eliminated tissue was sent for histopathological analysis. Substitution of amlodipine was requested. After 3 weeks of discontinuing amlodipine, significant improvement was obvious. Considering these results, drug substitution, appropriate non-surgical and surgical treatment with successful improvement of oral hygiene led to regression of amlodipine-induced gingival enlargement and its recurrence could be prevented.

PP-105

A Rare Case Report– Huge and Extensive Radicular Cyst

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Introduction: The most common inflammatory odontogenic cystic lesion of the jaws is radicular cyst. This case report is about a rare, huge and extensive radicular cyst in the mandible, and its management.

Case Report: A 76 year-old, systemically healthy woman applied to the clinic with painless swelling in the right mandible. The patient notices swelling 2 weeks ago, as well as a history of extraction of 48. No obvious swelling or facial asymmetry was noted on

extraoral examination. No fistula was evident extraorally. Regional lymph nodes were non-enlarged, non-palpable. On intraoral examination, hemangiomatic lesion and expansion was observed in tooth area 48, and the mucosa was evaluated as normal. On radiographic examination, a large unilocular radiolucency was noted, extending from 45 to ramus, with root resorption of 45 and well-defined, well-corticated borders and including septa. The inferior border of the mandible, buccal and lingual cortical plates were intact, but thinned and expanded. Also, alveolar crest was destructed. The patient was consulted to maxillofacial surgeon with preliminary diagnosis of ameloblastoma. After excisional biopsy, radicular cyst was certain diagnosed with pathology report for the lesion.

Conclusion: Generally, radicular cysts are small periapical lesions associated with one or more carious teeth, attaining 0,1 cm to 1 cm. The case report here presented is an unusually large mandibular radicular cyst, therefore, a rare documentation in literature.

Keywords: radicular cyst, odontogenic cyst, excisional biopsy

PP-106

Treatment of Taurodontism under Operation Microscope: A Case Report

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Aim: Taurodontism is an anatomical variation in multi-rooted teeth characterized by an abnormally long pulp chamber due to apical displacement of the furcation. Taurodontism has difficulties in endodontic treatment during identification, preparation, and filling of root canals. The use of magnification systems in the treatment of these teeth facilitates the treatment. This study has presented the treatment of a mandibular second premolar diagnosed with taurodontism using an operating microscope and its three-month follow-up.

Case Report: A 29-year-old systemically healthy male patient was referred to Ordu University Faculty of Dentistry, Department of Endodontics because of a broken restoration on his mandibular second premolar. Clinical examination revealed a fractured restoration and secondary caries in the relevant tooth. There were no percussion and palpation sensitivity. Periodontal tissues were evaluated as healthy. Radiographic examination revealed a radiolucent area associated with the mesial root of the mandibular second premolar. Under the operating microscope, the old restoration was removed, and the access cavity was opened. After the root canal was identified, the working length was determined using an electronic apex locator. Root canal preparation was completed using a reciprocal single-file system. 2.5% NaOCl was used as an irrigation solution. Root canal treatment was completed in a single visit with cold lateral condensation.

Results: Periapical radiography was taken at 3 months showed that the lesion had healed, and the periapical tissues were healthy. Clinical examination did not reveal any symptoms. Teeth with taurodontism can be successfully treated with the help of an operating microscope.

Key Words: Operation Microscopy, Root Canal Treatment, Ta

PP-107

Assessment of Stem Cell Utilization in Routine Dental Practice

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Objectives: This research aims to investigate the feasibility of utilizing stem cells in dental medicine within our country.

Materials and methods: A total of 90 dental practitioners from the Republic of North Macedonia participated in this study. They were surveyed regarding their knowledge and awareness of stem cell usage in dentistry, using a questionnaire administered to all respondents.

Results and discussion: Out of all participants, 64.44% exhibited familiarity with stem cells and their potential applications. Most respondents were acquainted with stem cell isolation techniques, with 46.55% being familiar with extraction from dental follicles and 31.03% with extraction from umbilical cord blood serum. Notably, none of the participants indicated that these procedures were unavailable at their dental practices.

Conclusion: While dental practitioners demonstrate awareness of stem cell usage, they often do not inform patients about this treatment option, primarily due to lack of patient education, patient skepticism, and the associated high costs.

Keywords: stem cells, dental stem cells, dental follicle, dental doctors.

PP-108

The minimally invasive management of early occlusal caries

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Dental professionals frequently encounter demineralization in the pits and fissures of the chewing surfaces of back teeth due to caries. Identifying these lesions, determining their activity level, and deciding on the best treatment approach present ongoing challenges. Historically, when an active or potentially active lesion was found, it typically led to the creation of a standard cavity in the affected area, often extending beyond the diseased tissue, followed by the placement of a direct filling material.

Contemporary evidence overwhelmingly supports minimally invasive (MI) operative management when required, with a wide range of equipment, materials, and techniques available to preserve maximum healthy tooth tissue. Microinvasive methods for treating uncavitated carious lesions, such as infiltration with low-viscosity composite resins, have gained attention.

The aim of this paper is to evaluate the effects, advantages, and disadvantages of carious lesion infiltration, specifically in the adult population. Relevant literature from online databases such as PubMed and MedLine is reviewed regarding resin infiltration of initial carious lesions as a method of non-invasive restorative treatment.

Resin infiltration, marketed as Icon®, is a novel technology that bridges the gap between prevention and restoration of carious lesions, camouflaging aesthetically disfiguring white lesions on the buccal surface. Encouraging prevention through infiltration not only ensures good oral health but also saves time, money, and reduces patient stress

associated with conventional methods of preparation and restoration. Therefore, recommending and performing caries infiltration with resin in adult patients when indicated can be highly beneficial.

PP-109

Mandibular non-epithelial Cyst – a Case Report

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Introduction: Solitary bone cysts (SBCs) are pseudocysts characterized by a cavity lacking epithelium, with trauma-induced intramedullary bleeding being a commonly accepted etiology. Predominantly observed in the mandible, particularly in molar and premolar regions, SBCs are often incidentally discovered radiolucencies on imaging. Here, we present a case of SBC in a 15-year-old patient identified during orthodontic assessment.

Case Report: A 15-year-old patient presented with incidental radiolucency in the mandibular symphysis and left parasymphysis during orthodontic evaluation. Clinical examination revealed no symptoms, except for one non-vital incisor. Imaging depicted a well-defined unilocular radiolucent lesion with scalloped interradiolar growth, indicative of SBC. Surgical intervention involved intraoral vestibular approach, revealing an empty cystic cavity upon osteotomy. Subsequent curettage and suturing resulted in successful treatment. Follow-up imaging showed significant bone healing with minimal residual radiolucency lingual to the mandibular incisors.

Conclusion: This case illustrates the diagnostic and therapeutic approach to SBCs. Through clinical examination, imaging, and surgical intervention, we effectively managed SBC in the mandible. The absence of recurrence during follow-up suggests the efficacy of the treatment strategy. Further research is needed to elucidate underlying mechanisms and refine management protocols for SBCs.

PP-110

Abrasion in frontal region and the usage of nonmetal ceramics – Case report

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Introduction: Wasting of hard dental substance during normal functions and parafunctions of the teeth is called abrasion. When there is normal function in the mouth, abrasion is equally spread. But during parafunction abrasion is shared stronger. The strongest mastication force in the front can be from 100N to 1000N.

Objectives: The aim is to show how hard food (walnuts, nuts, pistachios etc.) and the bad habits (chewing finger nails) can affect the abrasion in frontal region.

Results: Nonmetal fixed prosthetic restorations are made in frontal region. The final nonmetal restoration gave great results for the soft tissues, the minimal subgingival demarcation gave great precision of the final product in the frontal region.

Conclusion: Nonmetal ceramic restoration in frontal region is the best solution for protection of the teeth in patients with big abrasion in frontal region.

Key words: abrasion, subgingival demarcation

PP-111

Safe harvest rules and recipient bed preparing

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Introduction: Performing soft tissue autografts has been a progressively trendy surgery for the past 20 years, even though the first articles about autografts in clinical periodontology were published more than 40 years ago. The use of free gingival grafts (FGG) started to be an option to solve aesthetic defects like gingival recessions, ridge augmentation, and nowadays socket preservation.

Aim: This presentation aims to highlight the limitations as well as the advantages of soft tissue grafting, taking into consideration the purpose, needs, and local factors that affect the treatment plan.

Case presentation: After elaboration on the main well-known options for harvesting, our choice was FGG (rectangular graft with thickness of 1,5mm) harvested from the lateral palate and its placing over the defect in the anterior mandible in 40-year-old systemically healthy female presented with dentin hypersensitivity and discomfort while brushing on two adjacent recession Type 2 of 7-mm depth with a narrow band of keratinized tissue in the lower incisors. The harvesting techniques seek to achieve more tissue volume, minimize postoperative pain, and reduce the risk of complications. We will discuss right that.

Conclusion: After identifying the dominant features and borders and defining the problem, the proper choice of the donor site and the most accurate approach allow predictable and long-term results of this standard procedure considered the gold standard.

Keywords: gingival defect, autograft, harvesting technique, donor, recipient bed.
