International Journal of Recent Research in Arts and Sciences ISSN: 1857-8128

MIT UNIVERZITET SKOPJE

JOURNAL

International Journal of Recent Research in Arts and Sciences

Volume 20

Skopje, Republic of North Macedonia

March, 2025

MIT UNIVERSITY
SKOPJE

International Journal of Recent Research in Arts and Sciences

ISSN: 1857-8128

MIT UNIVERSITY
SKOPJE

International Journal of Recent Research in Arts and Sciences

ISSN: 1857-8128

MIT UNIVERSITY
SKOPJE

International Journal of Recent Research in Arts and Sciences

ISSN: 1857-8128

MIT UNIVERSITY
SKOPJE

International Journal of Recent Research in Arts and Sciences

ISSN: 1857-8128

CONTENTS

Natural and Technical-technological Sciences

MIT UNIVERSITY
SKOPJE

International Journal of Recent Research in Arts and Sciences

ISSN: 1857-8128

Social Sciences and Humanities

MIT UNIVERSITY
SKOPJE

International Journal of Recent Research in Arts and Sciences

ISSN: 1857-8128

SURGICAL TREATMENT OF RADICULAR CYST IN MAXILLA - A CASE REPORT

Irena Stojanova[1], Mirjana Markovska Arsovska[2], Zaklina Mencheva[3], Gordana Petrushevska[4]

[1]University Dental Clinical Center St. Pantelejmon, Department for Oral Surgery Skopje, Republic of Macedonia

[2]Faculty of Medical Sciences, University "Goce Delchev", Shtip, Republic of North Macedonia

[3]Faculty of Dental Medicine at MIT University Skopje, Republic of Macedonia

[4]Faculty of medicine, Ss Cyril and Methodius in Skopje, Republic of Macedonia

Abstract

Radicular cysts are most common odontogenic cysts. Many of them are usually asymptomatic and can be detected incidentally on routine radiography before symptoms appear. Cysts can vary in size, and over the years can grow and disrupt bone continuity. Causes of jaw cysts are different, numerous and depend on the type of cyst. Lately, CBCT-cone beam computed tomography is the most common diagnostic method for detecting them. The possibilities for their treatment and the choice of surgical method depend on the size of the cyst and its location. The aim of this case report is to present the clinical symptoms and treatment of a radicular cyst in a 69 years-old male patient. The main complaint of the patient was swelling on the right upper tooth region. The radiographic examination and CBCT revealed the presence of a well-defined radiolucency surrounded by a corticated border between right lateral incisive and canine in maxilla. Patient sometimes had pain swelling but It has been recurring in recent years and the condition was improving with the administration of antibiotic therapy. Surgical treatment with tooth extraction of canine with cystectomy and apicoectomy of lateral incisive were the methods of choice. This case report discusses a diagnosis and successful surgical therapy for a radicular cyst.

MIT UNIVERSITY
SKOPJE

International Journal of Recent Research in Arts and Sciences

ISSN: 1857-8128

INTRODUCTION

Odontogenic cysts are pathological cavities with epithelial lining and surrounded by fibrous connective tissue that originates from odontogenic tissues, they are classified as developmental and inflammatory cysts [1]. The World Health Organization classification basically divides all jaw cysts into two groups: developmental and inflammatory. Inflammatory cysts are those cysts that develop from the odontogenic epithelium under the direct influence of inflammation and persistent irritation of a bacterial nature. Some studies reported that radicular cysts are inflammatory in origin and more represented in male. Radicular cyst can be a subject of interest because if their etiopathogenesis, asymptomatic growth, as well as differential diagnostic from another various tumors and soft-tissue pathological lesions of the affected area. [2]

AIM

The aim of this study is to present the surgical treatment of radicular cyst in the maxilla.

CASE REPORT

A 69-years-old male patient appears at the Clinic for oral surgery due to recurrent swelling on the right side of the maxilla with precise localization. The patient provides information on swelling that persist recent years but the condition was improving with administration of antibiotic therapy. Intraorally, on palpation, the lesion was soft and fluctuant. The buccal vestibule was devoid. Lymph nodes were non-palpable. The patient was referred for X-ray examination. The Orthopantomography image (Figure 1) and CBCT (Figure 2) revealed the presence of a radiolucent cystic lesion with sclerotic border associated with teeth 12 and 13. On general examination, the patient was apparently healthy.

MIT UNIVERSITY
SKOPJE

International Journal of Recent Research in Arts and Sciences

ISSN: 1857-8128

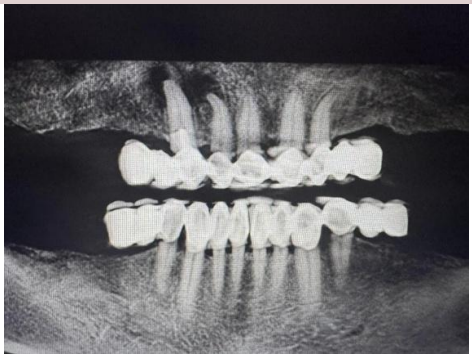

Figure 1. Radiographic orthopantomography

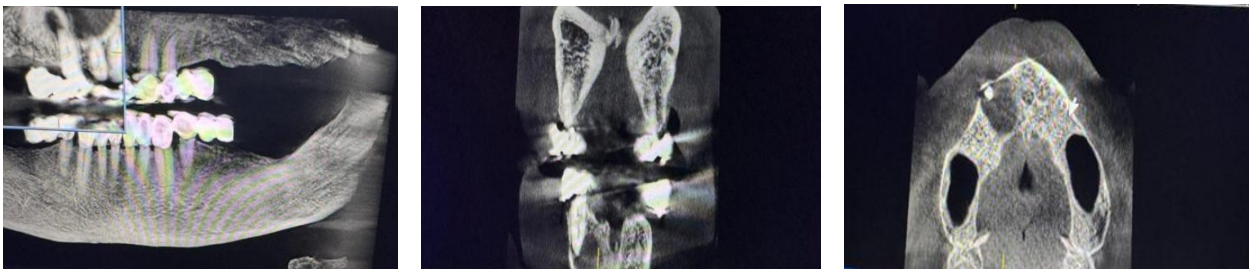

Figure 2. Maxillary CBCT imaging showing radicular cyst involving right anterior quadrant

After the intraoral examination (Figure 3) and radiological examination, a provisional diagnosis of the radicular cyst was made. Medical history was unremarkable. The patient has signed an Informed Consent before surgical treatment. The existing prosthetic bridge was cut in the projection of tooth 12.

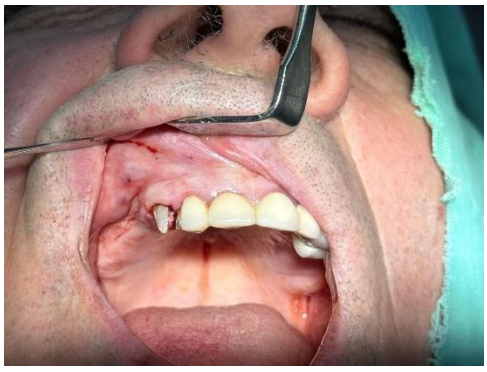

Figure 3 Intraoral finding

MIT UNIVERSITY
SKOPJE

International Journal of Recent Research in Arts and Sciences

ISSN: 1857-8128

Surgical intervention was carried out with a local anesthesia. The surgical procedure began with disinfection of the operative field with a 1% solution of Betadine (providon-iodine), and then the application of anesthesia with mepivacaine (Scandonest3%) to anesthetize the operative field. The operative procedure began with an incision and formation of a trapezoidal mucoperiosteal flap in order to obtain a visual control of the operative field. The mucoperiosteal flap was raised in full thickness with a retractor, osteotomized in order to expose the cystic sacculus (Figure 4). The canal of the concerned tooth 12 was opened, debrided, and orthoradially filled immediately before the surgical intervention. This was followed by surgical enucleation of the cyst (cystectomy-Partch II) via apicoectomy of the afflicted teeth 12 and extraction of tooth 13 was done. After the enucleation of the cyst suture was performed (Figure 6).

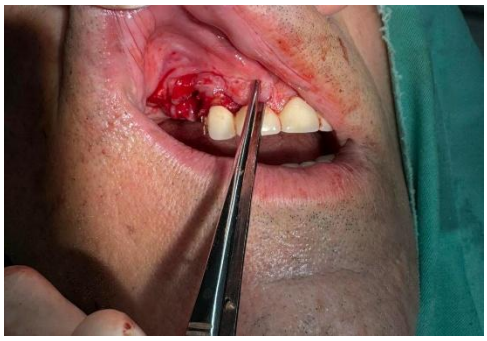

Figure 4. Formation of mucoperiosteal flap

Figure 5. Enucleation of radicular cyst

MIT UNIVERSITY
SKOPJE

International Journal of Recent Research in Arts and Sciences

ISSN: 1857-8128

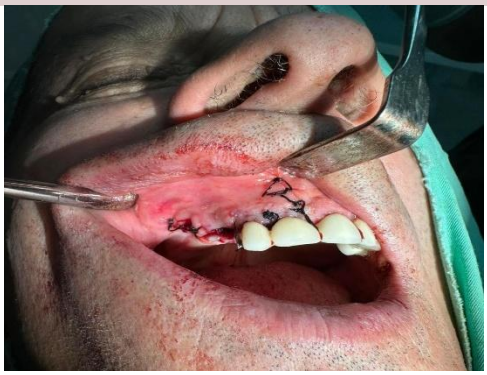

Figure 6 Sutures placed on the operative field

The taken material was put in 0.5% physiological solution (Figure 7), and was sent at the Institute of Pathology for histopathological verification of the cyst and establishing the diagnosis.

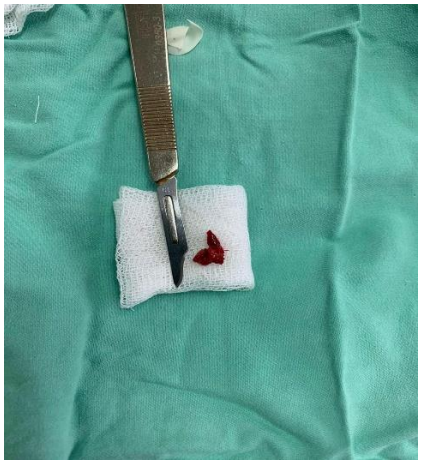

Figure 7. Material taken for histopathological analysis

One gram of co-amoxicillin was used twice daily for one week as prophylaxis, and 90 mg etoricoxib once daily to control the pain. Post-surgery, the patient was counseled on how to manage the wound in order to lower the post-surgical complications. The patient was followed up the next day (Figure 8), and the sutures were removed one week after the procedure. (Figure 9). The postoperative course was without difficulties, and the gingival epithelization was obtained after 7 days.

MIT UNIVERSITY
SKOPJE

International Journal of Recent Research in Arts and Sciences

ISSN: 1857-8128

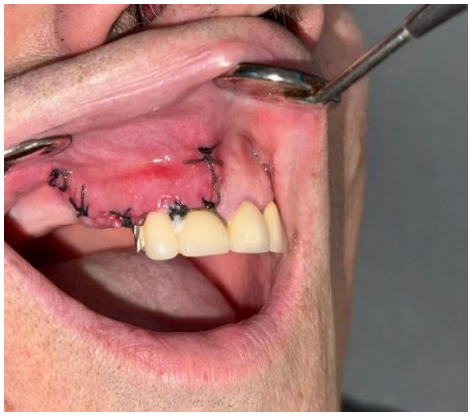

Figure 8 Wound next day after surgery

Figure 9 Wound healing after 7 days

After the obtained histopathological analysis, the diagnosis of a Radicular cyst was confirmed. (Figure 10) Microscopic analysis showed a cyst wall made of hypocellular collagenous connective tissue infiltrated with mononuclear inflammatory infiltrate towards the lumen is lined with stratified squamous epithelium with benign features characteristics.

MIT UNIVERSITY
SKOPJE

International Journal of Recent Research in Arts and Sciences

ISSN: 1857-8128

МЕДИЦИНСКИ ФАКУЛТЕТ,
ИНСТИТУТИ , ИНСТИТУТ
ЗА ПАТОЛОГИЈА
ул.50-та Дивизија бр.6, 1000 Скопје
тел. 02/3-112-166

НАОД: 1266861

Име:
Презиме:
Роден:
Адреса:
Град:

Установа: Стоматолошки клиники - ОРАЛНА ХИРУРГИЈА
Адреса:
Град: СКОПЈЕ
Лекар: ИРЕНА СТОЈАНОВА
Амб.број:
Прим./Зат.: 27.1.2025 - 11.2.2025

Клиничка дијагноза: K04.8 Cista radicularis maxillae lat dex
Вид на испратен материјал: Surgical Biopsy - Excision
Материјал опис :

ХИСТОПАТОЛОШКИ НАОД

CYSTIS RADICULARIS
K04 - K04

Макроскопски наод :
Доставена е раскината циста со димензии 1,5x0,8x0,6см, целосно вкалапена за ПХА во 1 парафински блок.

Микроскопски наод:
Микроскопската анализа покажа ѕид од циста изграден од хипоцелуларно колагено сврзно ткиво, инфилтрирано со мононуклеарен инфламаторен инфилтрат, кон луменот обложен со многуслоен плочест епител со бенигни карактеристики.

Наодот оди во прилог на радикуларна циста.

Лекар:
д-р Димитриевски Дарко

Раководител
Проф. д-р Костадинова-Куновска Славица
736379

Консултант

Патолог:
Проф. д-р Петрушевска Гордана
738310

Наодот е електронски авторизиран од Проф. д-р Петрушевска Гордана 738310

стр : 1/1

Figure 10 Histopathological finding

DISCUSSION

A wide variety of cysts and neoplasms may occur in the maxillofacial region, and their identification can be difficult. The most important of these cysts are radicular cysts. A cyst is a pathological cavity with a defined wall of connective tissue and an epithelial carpet, filled with liquid, semiliquid or gaseous content. Growth of a cyst is typically slow, centrifugal and infiltrative. [4] Radicular odontogenic cysts are the most commonly occurring odontogenic cysts of the jaws. From a pathogenetic point of view, in odontogenic inflammatory cysts there is inflammation usually from the root canal of the teeth. The basic precondition for the occurrence of a cystic lesion is the previous presence of epithelial tissue at the site of future development of the cystic formation. Under the influence of bacteria and their products or under the influence of some other factors (mechanical, chemical and antigens), the metabolic activity of epithelial so-called Malassez–residues in the periodontal tissue changes and their proliferation begins.[5] A radicular cyst also known as a periapical cyst or dental cyst is more predominant in males than females. They are expected to resolve once the primary tooth falls off or is extracted and thereby is left untreated. The radicular cysts are usually asymptomatic unless secondarily infected. Commonly encountered odontogenic lesions are periapical abscesses, radicular cysts, dentigerous cysts, ameloblastoma, and odontogenic keratocytes. [6] The treatment of radicular cysts in most cases is surgical. The possibilities for such treatment and the choice of surgical method depend on the size of the cyst, its location, and the pathological formation. Radicular

cyst rarely exceeds 1 cm in size, but if larger it might show buccal cortical plate expansion and can thin the bone around the tooth. Prompt diagnosis and treatment ensure the great success of the procedure [7]. The usual surgical treatments for radicular cyst include total enucleation of small lesions, marsupialization for decompression of larger cysts or a combination of these techniques. Other most commonly performed surgeries are marsupialization (Partsch method), enucleation with primary packing, or marsupialization followed by enucleation. [8,9]. For the case reported here, the surgical literature clearly indicated enucleation of the cyst as the preferred option, because marsupialization carries the risk that any cystic cells left behind may become malignant [10]. However, for this patient, it was felt that cystectomy in toto of canine and cystectomy with apicoectomy of lateral incisive were the best treatment options.

CONCLUSION

Radicular cysts are subject of interest of many studies because if their etiopathogenesis, asymptomatic growth, as well as differential diagnostic from another various tumors and soft-tissue pathological lesions of the affected area. Definitive diagnosis for present lesion in maxilla was determined only after histopathological examination. Endodontic therapy or extraction of affected teeth with surgical enucleation of the cyst is recommended for long-standing chronic lesions; however, nonsurgical care for minor lesions can also be recommended.

REFERENCES

[1] Bruna Castilho Canassa, Angelo Jose Pavan, Inflammatory odontogenic cysts, a brief literature review Journal of surgical and clinical dentistry,2014 ;7,20-28.

[2] Merva Soluk Tekkenesini, John M. Wright2, The World Health Organization Classification of Odontogenic Lesions: A Summary of the Changes of the 2017 (4th) Edition Turkish Journal of Pathology 2017. 12-15.

[3] Nair PNR. Pathogenesis of Apical Periodontitis and the Causes of Endodontic Failures. Critical Reviews in Oral Biology & Medicine.2004;15(6):348-381.

[4] Chi AC, Gonzales TS, Herschaft EF. Elsevier Health Sciences; 2015. Oral and maxillofacial pathology; pp. 678–700.

[5] Sushruth Nayak, Asha Karadwal, Prachi Nayak, Kush Pathak, Prevalence of Odontogenic Cysts and Tumors – A Clinicopathological Study, Medico-legal Update, July-September 2020, Vol.20, No. 3, (207-210)

[6] Hamied, M. A.-S., Al-Shaikhani, S.M., Ali, Z. D. Inflammatory Odontogenic Cysts. AL-Kindy College Medical Journal, 2021.17(3), 135–144.

[7] Antonela Marcela Berar, Cosmina Ioana Ondo r, Luminita Matros, Radu Eptimu Ampian, Radiological, histological and immunohistochemical evaluation of periapical inflammatory lesions Romanian Journal of Morphology and Embryology 2016 ;419-425.

[8] Sevekar S, Subhadra HN, Das V. Radicular cyst associated with primary molar: surgical intervention and space management. Indian J Dent Res. 2018; 29:836–839.

[9] Effective management of large radicular cysts using surgical enucleation vs. marsupialization - two cases report. Fawzi R, Carine T. https://digitalcommons.aaru.edu.jo/iajd/vol1/iss1/7 Int. Arab J. Dent. 2010; 1:44–51.

[10] Squamous odontogenic tumor-like proliferations in radicular cysts: a clinicopathologic study of forty-two cases. Parmar RM, Brannon RB, Fowler CB. J Endod. 2011; 37:623–626.