

A Tale of a Traumatized Permanent incisor - A Case ReportAbhishek Khatua^{1*}, Rudresh K.B.², Dr. Prashanth R³, Dr. Avinash Rathore⁴, Dr. Abhishek Bhattacharjee⁵, Vinod Kumar B⁶¹PG student V.S. Dental College and hospital, Bengaluru, India²Reader, V.S. Dental College and hospital, Bengaluru, India³Reader, V.S. Dental College and hospital, Bengaluru, India⁴PG student V.S. Dental College and hospital, Bengaluru, India⁵PG student, VS dental college and hospital, Bengaluru, India⁶PG student V.S. Dental College and hospital, Bengaluru, India**Case Report*****Corresponding author**

Abhishek Khatua

Article History

Received: 01.04.2018

Accepted: 10.04.2018

Published: 30.04.2018

DOI:

10.21276/sjds.2018.5.4.15



Abstract: Radicular cysts or periapical cysts are the most common cystic lesions in the jaws. They arise from the epithelial remnants in the periodontal ligament as a result of the stimulus from periapical infection following pulpal necrosis. They are found mostly near apex of the teeth. Most radicular cysts are of smaller size of around 1.5 cm, but they can even extend up to 5-6 cm. In the maxilla, sometimes, a cyst may involve the entire maxillary sinus. Radiographically most radicular cyst appears as a pear shaped unilocular radiolucent lesion in the periapical region attaching the affected tooth root. This case report presents the successful surgical and endodontic management of large infected radicular cyst involving over half of the palate in anterior maxilla region. Pathogenesis, clinical features, and treatment options are discussed.

Keywords: Periapical cyst, common, pathophysiology, surgical, Radicular Cyst, platelet rich fibrin

INTRODUCTION

Radicular cysts are the most common inflammatory jaw cysts and develop as a sequel of untreated dental caries with pulp necrosis and periapical infection [1]. Around 60% of all jaw cysts are radicular or residual cysts [2]. This cyst represents a chronic inflammatory process and develops only over a prolonged period of time. They are most commonly found at the root apices of the pathologically affected teeth at any age affecting any gender. Maxillary arch is more affected than mandibular arch [3]. A number of studies have even shown poor correlation between the size of radiolucencies and histological findings of radicular cysts and periapical granulomas [4, 5].

However, it is apparent that there is a greater likelihood of radiolucencies being radicular cysts rather than chronic periapical periodontitis lesions within creasing size of radiolucencies, particularly those over 2 cm in size. The treatment options for radicular cyst can be conventional root canal therapy when lesion is localized and small and surgical treatment like, Enucleation when lesion is large [6]. Hence this case report presents a case of radicular cyst in the maxillary anterior region involving multiple teeth.

CASE REPORT

A 20-year-old female patient reported to the Department of Oral and Maxillofacial Surgery with the chief complaint of pain and gradually increasing intraoral swelling in upper front tooth region since 2 month. There was a history of trauma to the upper anterior teeth before 5years. She consulted a dentist and was advised to undergo treatment, and root canal

treatment of 12 was done initially later as the lesion did not subside, patient was referred to V S DENTAL COLLEGE. Before a month, she noticed a palatal swelling near 11 12 13 and 21 region. Initially, it was a very small size swelling. Then it gradually expanded and achieved a large size since 7 days with continuous mild pain in the upper left anterior region and pus discharge in 12 13 region. Intraoral clinical examination revealed a diffuse swelling located largely over right palatal region crossing the midline from 13 to 21 regions. On palpation, the lesion was around 3 cm × 2cm, soft to firm in consistency, and tender. The mucosa overlying the swelling was normal in color and texture.

Electric and thermal pulp vitality testing showed a negative response in 11, 12. Teeth were painless to percussion. The intraoral periapical radiograph, orthopantomogram, cone beam computed

tomography (cbct) presents oval shape large periapical radiolucency about 1.9 ×2.1 cm associated with 13-21teeth. On aspiration with sterile syringe needle, dirty white turbid fluid was obtained. On the basis of history and clinical finding, a provisional diagnosis was considered as periapical cyst and the cystenucleation with root canal treatment in 13 12 11 21. There was no significant medical history that influences the procedure and prognosis. Root canal opening was done in all affected teeth prior to the surgical procedure.

For enucleation, greater palatine, and nasopalatine nerve blocks were administered with 2% Local anesthesia with adrenaline (1:200000) Crevicular incision was given and the labial full thickness mucoperiosteal flap was elevated to expose the area of lesion. Existing cortical bone window was expanded

and underlying pathology was exposed and sufficient space was made for thorough curettage. The lesion was removed in toto and sent for histopathological examination. Irrigation with betadine and normal saline done. Platelet rich fibrin was prepared and was filled in the cavity. Primary closure was done with 3-0 black silk. Post-operative instructions were given and the patient was prescribed antibiotics and anti-inflammatory drugs. After 1-week patient was recalled. Histopathological examination gives diagnosis of infected radicular cyst. Root canal treatment was completed in associated teeth and apicectomy was performed for 11 12 13 21.

Follow-up was done after 1 months which shows a normal labial and palatal contour with no other complaints.



Fig-1: Radiographic view



Fig-2: Pre-op labial view



Fig-3: Pre-op swelling over palatal region

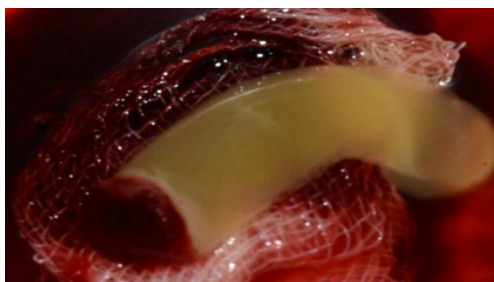


Fig-4: PRF prepared intra-op to be filled in cystic cavity

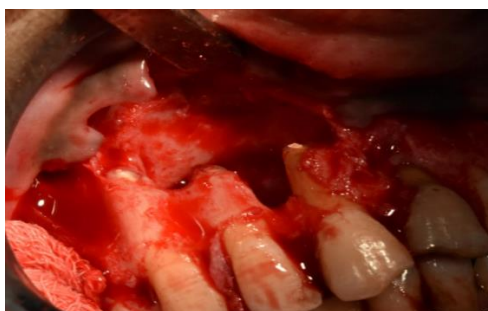


Fig-5: Intra-op cystic cavity



Fig-6: Post op 15 days

DISCUSSION

Varieties of cysts and tumor may occur in the maxillofacial region, and their detection may be difficult. The most important of these are maxillary cysts. A cyst is a pathological cavity with a defined wall of connective tissue and an epithelial carpet filled with liquid, semiliquid or gaseous contents. Growth of a cyst is typically slow, centrifugal, and infiltrative. Radicular cyst are thought to arise from epithelial cells rest of Malassezin the periodontal ligament, and they are believed to proliferate as a result of periapical inflammation caused by infection of the root canal system. Radicular and residual cysts are the most common cystic lesions in the jaws. In the Sheffield case series 51.5% were men and 48.5% were women, but this gender difference was not significant. They occur in all tooth-bearing areas of the jaws especially high frequency in the maxillary anterior zone [7, 8].

The pathogenesis of radicular cysts has been described as comprising of three distinct phases

The phase of initiation, the phase of cyst formation and the phase of enlargement [9]. The initial swellings of these radicular cysts are usually bony hard,

but as they increase in size, the covering bone may become very thin despite initial sub-periosteal bone deposition.

Finally, with progressive bone resorption, the swellings exhibit 'springiness' or 'egg shell crackling' [10]. The associated teeth are always nonvital, and may show discoloration. Although the associated teeth usually show no root resorption, there may be smooth resorption of root apices. When cysts are intact, cyst cavities may be filled with brown or straw-colored fluid, while the cyst fluid may have a shimmering gold appearance when light passes through it [10].

The nature of the epithelial lining depends on the stage of development of the cyst, and also the severity of inflammation. In the majority of cases the epithelium is from 6 to 20 cell layers thick, but may be up to 50 cell layers thick in some areas. The early stage of radicular cyst formation usually shows a proliferative epithelial lining, associated with an intense inflammatory infiltrate and marked intercellular oedema, while the epithelium may show an arcading pattern penetrating into the underlying capsule. The

epithelium may also show spongiosis and be permeated by neutrophils [11].

CONCLUSION

A radicular cyst is a common condition found in the oral cavity. However, it usually goes unnoticed and rarely exceeds the palpable dimension. This case illustrates the successful management of a radicular cyst with enucleation and endodontic treatment. It is suggested that the treatment of the radicular cysts should be defined according to the clinical and radiographic evaluations according to each case.

REFERENCES

1. Jones A, Craig G, Franklin C. Range and demographics of odontogenic cysts diagnosed in a UK population over a 30-year period. *Journal of Oral Pathology & Medicine*.2006;35(8):500-7.
2. Joshi UK, Patil SK, Siddiqua A. Nasopalatine cyst a rare entity. *International Journal of Dental Clinics*. 2010;2(1):34-6.
3. Manwar NU, Agrawal A, Chandak MG. Management of infected radicular cyst by surgical approach. *Int J Dent Clin* 2011;3:75-6
4. Kannan N, Patil R, Sreenivasalu P. Bilateral maxillary dentigerous cysts a case report. *International Journal of Dental Clinics*. 2010;2(1):25-9.
5. Stockdale C, Chandler N. The nature of the periapical lesion-a review of 1108 cases. *Journal of Dentistry*. 1988;16(3):123-9.
6. Suhail L, Ajaz, Shah A, Suhail, Jan M. Radicular cyst: Review. *J Med Educ Res* 2009; 11:187-9.
7. Shear M, Speight P. *Cysts of the Oral and Maxillofacial Regions*. Oxford: Wiley-Blackwell; 2007. p. 123-42.
8. Amos M, Dalghous A, Alkhabuli J, Mizen K. Massive maxillary radicular cyst presenting as facial fracture and abscess, a case report. *Libyan J Med* 2007; 2:211-3.
9. Jansson L, Ehnevid H, Lindskog S, Blomlöf L. Development of periapical lesions. *Swedish DentalJournal*. 1993;17(3):85-93.
10. Lustmann J, Shear M. Radicular cysts arising from deciduous teeth: Review of the literature and report of 23 cases. *International Journal of Oral Surgery*. 1985; 14(2):153-61.
11. Schulz M, von Arx T, Altermatt HJ, Bosshardt D. Histology of periapical lesions obtained during apical surgery. *Journal of Endodontics*. 2009; 35(5):634-42.