

Radicular cyst in Maxilla- Two case reports

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Abstract

Radicular cysts fall into the category of the most common odontogenic cysts. It occurs in the periapical region of unimportant teeth. Cystic wounds have a pathological cavity, which is lined by epithelial membranes and is usually filled with fluid; So it's sent to the right systems. The residue cyst is a type of radicular cyst that remains after tooth extraction or develops after extraction. Both surgical and/or non-surgical, can be methods of treatment for cysts. The choice of treatment depends on the size and location of the cyst. In the present case, a radicular cyst was managed successfully with surgical enucleation and apicectomy with root canal treatment.

Keywords: Inflammatory cyst, Periapical cyst, Radicular cyst

Introduction

Radical cysts can be referred to by a number of names such as tooth cysts, peripheral cysts, apical periodontitis or root-and-cysts.¹ Malasez lives in epithelial cell periodontal ligament, which leads to a reddish cyst due to inflammation caused by pulp necrosis or pulp trauma. Radicular cyst is the most common odontogenic cyst. It involves the apex of the erupted tooth originating as a result of bacterial infection and necrosis of the dental pulp, nearly always following involvement of carious tooth. The radicular cyst is rarely seen in the primary dentition,

with a total incidence of 0.5–3.3% comprising both primary and permanent dentitions.¹ Radicular cysts are not commonly noticed because they are mostly asymptomatic, until it gets detected accidentally by routine radiographic investigation. However, some chronic/long-standing lesions may result as an acute exacerbation of the cyst and can become symptomatic and can present with swelling, mobility of tooth and displacement of unerupted teeth.² In Maxilla, it manifests itself as an extension of a buccal or pallatal cortical plate, unlike the lower jaw, where it is mostly buccal cortical plate and rarely lingual.

First, the consistency of growth is bone-hardened; And when the cyst becomes larger and the source appears after swelling, and finally the cyst indicates the fluctuance, when the cyst completely emp the bone, the bone cover gradually begins to thin.^{3,4}

Case Report 1

A 24-year-old female reported to our hospital with the chief complaint of pain and swelling and pus discharge on the upper front tooth region since 1month [Figure 1].



Fig 1: Pre op extra oral view

Past medical history was non-contributory. Patient has past history of trauma to upper front teeth. The patient was well oriented well build and nourished. The patient was Extraoral examination revealed no facial asymmetry. The swelling was small in size 1month back which gradually increased to the present size. Vitality test gave a negative response in relation to 12,11. Vitality test

gave a positive response in relation to 13. Intra oral examination revealed Ellis class2 fracture 11 and diffuse swelling on the upper labial mucosa in relation to 11,12,13 and the swelling was obliterating the labial vestibule measuring approximately 1.3 cm × 1.8 cm in size extending from distal aspect of 13 to the Mesial aspect of 11. Pus discharging Sinus opening seen on the surface over the swelling. [Figure 2 and 3].



Figure 2: Pre-op intra oral view



Figure 3: Sagittal section of CBCT

On palpation, all the inspection findings were confirmed and the swelling was tender without with pus discharge. The provisional diagnosis was given as chronic periapical abscess in relation to 12,11.

CBCT was advised which revealed a well-defined well circumscribed periapical radiolucency seen in relation to 12,11 measuring approximately 1.32 cm × 1.8cm in size extending from mesial aspect of 13 to mesial aspect of 11 surrounded by well-defined sclerotic border which was suggestive of radicular cyst in relation to 12,11. [Figure 4].



Figure 4: Pre op CBCT

Enucleation of the cyst was done and the sample was sent for Histopathological examination. Apicectomy with Root canal treatment was done in relation to 12,11. MTA was used as obturation material.



Fig. 5: Enucleation of the cyst



Figure 6: obturation with MTA and access opening closed



Figure 7: IOPAR 3month follow

Case Report 2

A 28-year-old Female patient reported to the Department of Oral Medicine and Radiology with the chief complaint of pain and swelling on the upper front tooth region for 18 days [Figure 8].



Figure 8: pre op intra oral view

Past medical history was non-contributory. Patient has past history of trauma to upper front teeth. The patient was well oriented well build and nourished. The patient was Extraoral examination revealed no facial asymmetry. The swelling was very small in size before 18 days which gradually increased to the present size. Vitality test gave a negative response in relation to 22. Vitality test gave a positive response in relation to 11,13. Intraoral examination revealed Ellis class 1 fracture in 21 and class 2 fracture 22 and diffuse swelling on the upper labial mucosa in relation to 21,22,23 and the swelling was obliterating the labial vestibule measuring approximately 0.83cm x 1.8cm in size extending from mesial aspect of 21 to the Mesial aspect of 23. On palpation, all the Inspection findings were confirmed and the swelling was tender without pus discharge. The provisional diagnosis was given as periapical cyst in relation to 22,21. [Figure 8]

CBCT was advised which revealed a well-defined well circumscribed periapical radiolucency seen in relation to 22 measuring approximately 0.63 cm x 1.4cm in size extending from distal aspect of 21 to mesial aspect of 23 surrounded by well-defined sclerotic border which was suggestive of infected radicular cyst in relation to 22. [Figure 9].

Enucleation of the cyst was done and the sample was sent for Histopathological examination. Apicectomy with Root canal treatment was done in relation to 22.MTA was used as apical plug and rest of canal was obturated with gutta percha material. [Figure 10, 11, 12]

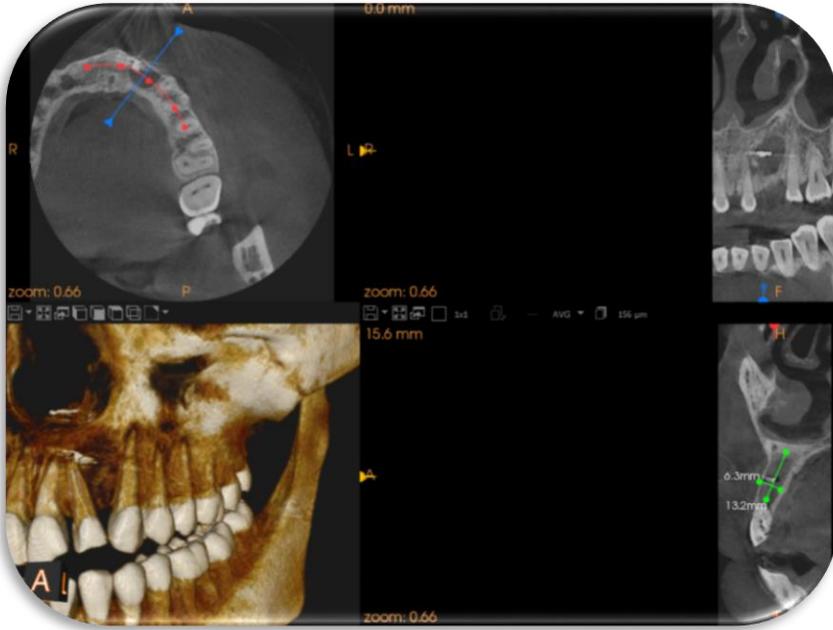


Figure 9: Pre op CBCT

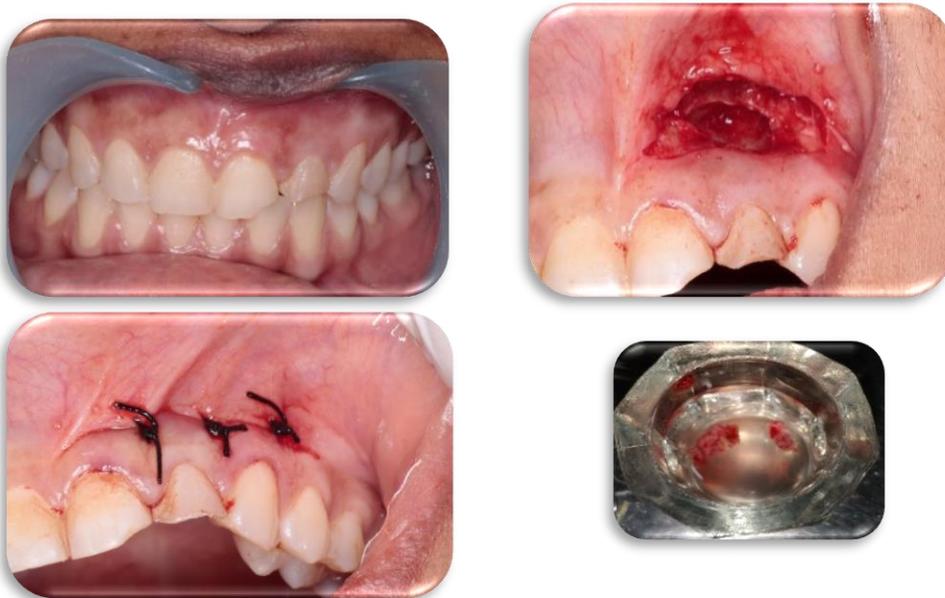


Figure 10: intra operative pictures



Figure 11: Immediate post op IOPAR



Figure 12: 1 month post op intra oral view and IOPAR

The Histopathological examination revealed non-keratinized stratified squamous epithelial cystic lining with arcading pattern. The connective tissue capsule was fibrovascular with dense inflammatory filtrate composed of lymphocytes and plasma cells.

Few areas of extravasated red blood cells were also seen. The final diagnosis was radicular cyst.

Discussion

Cyst word is derived from a Greek word "Kystis" which means a "bag, bladder, or sac" [4]. A cyst can be defined as a epithelial lined pathological cavity, which grows in a centrifugal expansion mode [5]. Periapical is often defined as fluid-filled cavity which arises from the epithelial residues in the periodontal ligament, i.e., cell rests of Malassez as an outcome of inflammation, usually following non-vital pulpal tissue of the tooth [6]. Periapical or radicular cysts are among the cystic lesions most commonly affecting the jaw [7,8]. These lesions are among the most common of all the jaw cysts and comprise about 52–68% of all the cysts affecting the human jaw. The cyst arises from Malassez epithelial cell rests, which are stimulated and proliferated by the process of inflammation secondary to pulp necrosis of a

tooth. The sequence of events initiates with a dead (non-vital) tooth which after long standing develops chronic periapical pathology [9]. In the current cases, the patient had history of trauma which could be the probable etiology of the lesion. Though they most commonly occur at the apices of the involved nonvital teeth, they can also occur on the lateral aspects of the tooth roots in relation to accessory root canals [10]. In current cases, cyst was occurred at apices of involved traumatized nonvital teeth. They are usually asymptomatic and are diagnosed accidentally during routine radiographic examinations. Cortical expansion, root resorption, displacement of adjacent teeth are common features of radicular cyst.¹³ According to the literature, it has been clearly specified that the adjacent tooth also can become non-vital as the cyst enlarges in size.¹⁴ In current cases, buccal cortical plate expansion was seen. Egg-cell crackling was seen in case 1. The use of root canal dressings between sessions in root canal treatment of teeth with chronic periapical lesion is important for reducing bacteria which are unreachable by instruments or irrigation solutions such as dentinal tubules and accessory lateral canal. In current case, calcium hydroxide intracanal medicament was used. When root canal is wide with open

apex, MTA is the choice of material for obturation. In current case, we use the MTA as obturation material due to open apex 11,21 in case 1 and MTA used as retrograde filling material in case 2. MTA has been favored due to its higher biocompatibility and sealing ability over the current available root end filling materials. There are basically two surgical approaches for the cystic lesions of jaws which can be (a) marsupialization or (b) enucleation.¹¹ The treatment mainly depends on the location and size of the lesion, the unity of the bone to the cystic wall, and the closeness of the lesion to the vital structures.^{15, 16} In current cases, we have done enucleation of cyst with apicectomy and Root canal treatment in involved teeth.

Conclusion

Non-surgical mode of treatment is the current concept in the management of periapical cysts. However, surgical management might be necessary for the successful treatment, depending on the size and extent of lesion. The current case was managed successfully by performing enucleation of the cyst and apicectomy with Root canal treatment.

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