

CASE REPORT



Radicular cyst in upper left incisor - A case report

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Abstract

Radicular cysts come under the category of one of the most common odontogenic cysts. It occurs in the periapical region of the carious tooth. The cystic lesion consists of a pathologic cavity that is lined by the epithelium and is commonly filled with fluid; therefore, it is referred to a true cyst. Residual cyst is a type of radicular cyst which remains after the tooth extraction or develops subsequent to extraction. Surgical and/or non-surgical, both can be the treatment modalities for the cyst. The treatment choice depends on the size and site of cyst. In the present case, a radicular cyst was managed successfully with surgical enucleation.

Introduction

Radicular cyst can be referred by several names such as dental cyst, periapical cyst, apical periodontal cyst, or root-end cyst.^[1] Malassez epithelial cell rests in the periodontal ligament give rise to the radicular cyst as a result of inflammation because of pulp necrosis or pulpal 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 the maxilla, it clinically manifests as enlargement of buccal or palatal cortical plate, in contrast to mandible where it is mostly the buccal cortical plate and rarely lingual. First, the consistency of enlargement is bony hard; and the bony covering starts thinning out gradually as the cyst increases in size and the swelling then appears springy, and finally, the cyst exhibits fluctuance when cyst completely erodes bone.^[3,4] However, radicular cysts arising from primary teeth are rare.

Case Report

A 60-year-old male reported to the Department of Oral Medicine and Radiology with the chief complaint of pain and swelling on the upper front tooth region for 3 years [Figure 1]. The swelling was small in size 3 years back which gradually increased to the present size. Past medical history was non-contributory. The patient was moderately build and nourished. The patient was well oriented. Extraoral examination revealed no facial asymmetry.

Intraoral examination revealed diffuse swelling on the upper labial mucosa in relation to root stump of 21, and the swelling was obliterating the labial vestibule measuring approximately 2 cm × 3 cm in size extending from distal aspect of 12, crossing the midline, and extending up to the 23. The surface over the swelling appeared erythematous [Figure 2].

On palpation, all the inspeutory findings were confirmed and the swelling was tender without any discharge. The provisional diagnosis was given as chronic periapical abscess in relation to 21.

Maxillary anterior occlusal radiograph was advised which revealed a well-defined radiolucency seen in association of root stump of 21, measuring approximately 3 cm × 4 cm in size extending from mesial aspect of 11, crossing the midline up to 26, surrounded by well-defined sclerotic border, which was suggestive of infected radicular cyst in relation to 21 [Figure 3].

Enucleation of the cyst was done, and the sample was sent for histopathological examination.

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.



Figure 1: Front profile of the patient



Figure 2: Intraoral image showing swelling in the upper labial mucosa

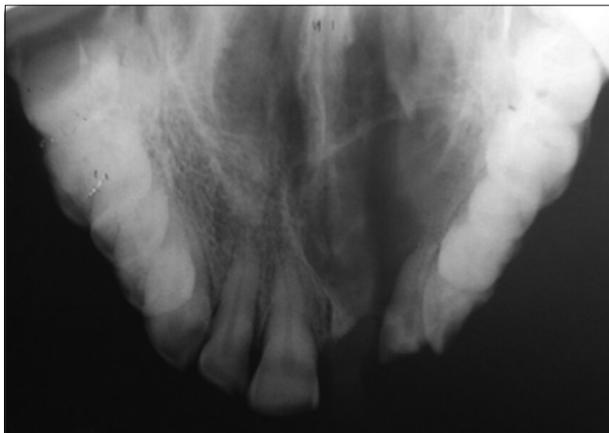


Figure 3: Maxillary anterior occlusal view showing lesion

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 or radicular cyst is often defined as a 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. 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.^[7,8]

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] They are most commonly occurred at the apices of the involved (caries) teeth. Though they most commonly occur at the apices of the involved (caries) teeth, they can also occur on the lateral aspects of the tooth roots in relation to accessory root canals.^[10]

They are generally asymptomatic and are diagnosed accidentally during routine radiological examinations. When lesion is localized, treatment modality for the radicular cysts mainly includes nonsurgical endodontic (root canal) therapy, while when the size of the lesion is large, treatment includes surgical approach like enucleation, marsupialization or decompression.^[11]

Mostly, the radicular cysts originate due to deep dental caries or after trauma. Dental caries causes inflammation of the pulp cavity, resulting in the necrosis of the pulp, followed by the spread of infection to the apex of the tooth root, causing apical periodontitis, which can either develop into an acute abscess or chronic granuloma.^[12] Long-lasting chronic infection can result in the formation of a periapical cyst.^[13] In the current case, the patient had grossly decayed tooth, which could be the probable etiology of the lesion.

Common radiological features include resorption of the affected tooth root, cortical expansion, and adjacent teeth displacement.^[13] According to the literature, it has been clearly specified that the next (adjacent) tooth also can become dead (non-vital) as the cyst enlarges in size.^[14]

There are basically two surgical approaches for the cystic lesions of jaws which can be (a) marsupialization or (b) enucleation.

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]

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.

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