

Radicular Cyst : The Arcading Cell Pattern

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Abstract

Epithelium at the apex of a non vital tooth can be presumably stimulated by inflammation to form a true epithelium-lined cyst, or radicular cyst. The source of the epithelium is usually a rest of Malassez but also may be traced to sinus lining or epithelial lining of fistulous tracts. Cyst development is common; the reported frequency varies from 7% to 54% of periapical radiolucency. The incidence of radicular cysts is greater in the third to sixth decades and shows a slight male predominance. Most of the radicular cysts are found in the maxilla, especially around incisors and canines. The most common epithelial lining is stratified squamous; with Rushton's hyaline bodies in 10% of the reported cases. Slow accumulation and deposition of cholesterol during the inflammatory process leads to the formation of "clefts" with acute and chronic inflammatory cells in the proliferating epithelium and connective tissue, respectively. The presence of hemosiderin usually indicates a previous micro-hemorrhage event. While the presence of lipid-laden macrophages or foam cells indicate the presence of cholesterol-removing mechanism from the lesion. We report a case of a 21 year old male patient who present with swelling in the palate and pain.

Case Presentation

A 21 year old male patient was referred to the Department of Oral Medicine & Radiology, Manav Rachna Dental College, Faridabad, with a complaint of a swelling behind the right upper front teeth, since 2 years, associated with pain. The patient gave a history of trauma, while playing a sport, when the patient was hit by his friend's knee on the upper anterior teeth. The pain was sharp and severe initially but presently, it is dull and throbbing in nature. Clinical examination revealed dome shaped punctate swelling on the right side of anterior hard palate involving right upper incisors which

measured 2.3cm in diameter with discoloration of 11. The swelling was mildly tender. The tooth was painless to vertical percussion.

Pulp vitality testing showed negative response in upper right central and lateral incisor while the adjacent teeth showed a normal response.

Initially an IOPA was taken to know the extent of lesion. Radiological evaluation revealed a well-defined oval radiolucent lesion in the periapical alveolar bone of upper right central incisor, measuring 1.8cm x 1.4cm, involving the periapical region of the upper right lateral incisor.

Based on the history, clinical examination and radiographic examination, a presumptive diagnosis of infected radicular cyst in relation to right upper central incisor and right upper lateral incisor (11,12) was made and a treatment plan was formulated to manage the case.

A root canal treatment and apicectomy was performed for upper right central and lateral incisor, followed by enucleation of cyst.

Discussion

Radicular cyst aka Periapical cyst or Apical periodontal cyst or Root end cyst is in most cases associated with a non-vital tooth. The usual etiology is an infected tooth which leads to necrosis of pulp, thereby leading to the entry of toxins into the apex, leading to

periapical inflammation. The inflammation then stimulates the epithelial rests of Malassez, resulting in formation of periapical granuloma. Eventually due to lack of blood supply, the epithelium undergoes necrosis, causing the granuloma to become a cyst.

Generally asymptomatic, the tooth is seldom painful or even sensitive to percussion.

Differential Diagnosis: Periapical granuloma, Traumatic bone cyst, Periapical Cemental Dysplasia, Aneurysmal Bone cyst, Periapical scar.

Treatment: The treatment options for large periapical lesions ranges from conventional nonsurgical root canal treatment with long term calcium hydroxide therapy to various surgical interventions. Decompression procedure reduces the size of the lesion so that surgical intervention is unnecessary or if necessary will be limited to the immediate periradicular tissues of involved teeth. The procedure disrupts the integrity of lesion wall, eliminates internal osmotic pressure differential and promotes healing by osseous regeneration.

Conclusion

The clinical case report presented in this article was managed successfully by endodontic therapy with emphasis on thorough debridement, disinfection and obturation of the root canal.



Fig (a) : Shows a soft, dome shaped swelling on the right anterior hard palate near the periapical region of 11,12.

Fig (b) : Shows discolored upper right central incisor

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