

Unusually Large Radicular Cyst of Mandible: A Rare Case Report

Abstract:

A radicular or periapical cyst or periradicular cyst is the most common odontogenic cyst mostly seen in mandible. It is mostly symptomless and are found accidentally during periapical radiographs involving non-vital pulp which heals spontaneously after endodontic treatment of the aberrant tooth or after extraction. However, recommended treatment is complete enucleation of the cyst to remove all the epithelial remnants. In this article, we report a case of a 18 year old female patient with large periapical cyst along with deep bite and attrition.

Key-words: Radicular, cyst, enucleation, attrition

Introduction:

A Radicular cyst is the most common odontogenic cyst of inflammatory origin arising from the epithelial residues of the cell rests of Malassez in the periodontal ligament due to infection and necrotic pulp. Odontogenic cysts develop from-1) epithelial cell rests of Malassez, 2) tooth germ, 3) reduced enamel epithelium, 4) remnants of dental lamina

It comprises of about 52% to 68% of all cysts affecting human jaw. It is most common in mandibular region with male predominance, mostly seen in third and fourth decade of life. In maxilla, it is common in anterior region whereas in mandible it is common in premolar region.

A radicular cyst is mostly symptomless and found via a routine radiograph but the definite diagnosis can only be made with histopathologic examination.

Radiographically, it appears as round or pear shaped unilocular radiolucent lesions in the periapical region usually bordered by a thin rim of cortical bone. For multilocular lesions, a differential diagnosis with other cysts such as ameloblastoma, dentigerous cyst, odontogenic keratocyst is necessary.

In this article, we report a case of radicular cyst in a young female patient.

Case Report:

A 18 year old female patient reported to the Department of Oral and Maxillofacial Surgery Maharaja Gangasingh Dental College and Research Center with a chief complaint of pus discharge and pain in the lower front teeth region since 2 years. There was no relevant medical history.

Patient gave history of consulting dentist for pain 2 years back and was on antibiotic coverage since the last 5 days when the patient reported to the department. IOPA revealed incomplete root canal treatment and OPG revealed a large radiolucency of approximately 30x15mm in size with a well defined borders extending from the mesial side of the root of right canine to the mesial side of root of the left canine. Electric pulp testing

¹ROHIT GOYAL, ²KAMAL GARG, ³SANGITA KALITA, ⁴POOJA JAISWAL, ⁵CHANDA DUBEY

^{1,3,4,5}Dept of Omfs, Maharaja Ganga Singh Dental College & Research Institute . Sri Ganga Nagar (Rajasthan)

²Department of Periodontology and Oral Implanotlogy. I.T.S. Dental College and Research Institute. Greater

Address for Correspondence: Dr. Kamal Garg
Department of Periodontology and Oral Implanotlogy.
I.T.S. Dental College and Research Institute. Greater
Email : Kamalgarg1064@rediffmail.com

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(EPT) revealed all the lower anteriors to be non-vital. Aspiration revealed straw coloured fluid with protein content more than 4g per deciliter. Incisional biopsy was taken which revealed it to be a case of radicular cyst. Root canal treatment of all the lower anteriors was completed and apicectomy of all the lower anteriors along with cystic enucleation was done. Excisional biopsy report confirmed the diagnosis of radicular cyst.

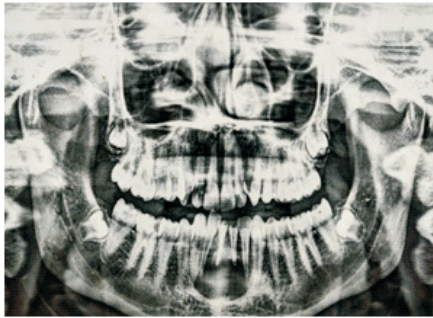


Fig-1 Pre-operative radiograph



Fig-2 Frontal View



Fig 3- Intra-operative photograph



Fig 4-Exposure of the lesion(Degloving incision)



Fig 5- Apicoectomy & enucleation of cystic lesion



Fig 6- Post-operative closure

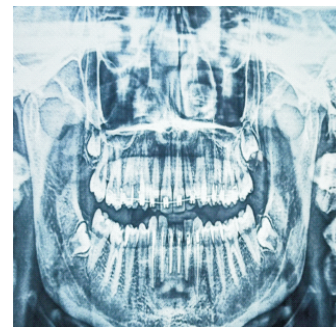
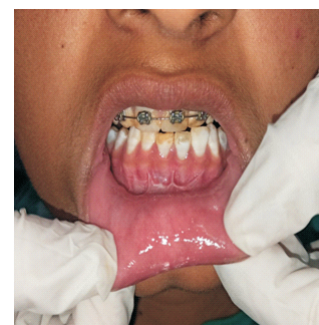


Fig 7- Post-operative radiograph after 3 months



8- Post-operative follow up after 3 months

Discussion:

A radicular cyst or periapical cyst is usually associated with carious tooth with pulp involvement. It arises from the epithelial cell rests of Malassez in the periodontal ligament as a result of inflammation followed by necrosis of dental pulp which turns the epithelial cells to proliferate into a cystic lesion.

Radicular cyst occurs due to infection of the aberrant tooth or due to trauma. As the patient did not give any history of fall or assault and was having deep bite, hence trauma from occlusion is the most possible cause of radicular cyst in this case

The inflammation of the peri-radicular region causes pain, swelling, fistulae, abscess which is resolved by conventional endodontic treatment. But in some cases, if the inflammation is not relieved after root canal treatment, then cyst enucleation is necessary. Phase of initiation, phase of cyst formation, phase of enlargement are the pathogenesis of radicular cyst. It mostly involves buccal cortical plate in mandible and in maxilla buccal or palatal cortical plates. It is slow growing bony swelling and asymptomatic. In long standing cases, it may show acute exacerbation of cystic lesion showing sign and symptoms such as tooth mobility, swelling, root resorption of the affected tooth, displacement of unerupted tooth. It exhibits egg shell crackling with advanced bone resorption.

In this case, buccal cortical plate perforation was present below the apices of the canine to canine region respectively.

The treatment option depends on factors such as size, location of cyst, proximity to vital structures, integrity of the wall. Treatment modalities are-surgical endodontic management, extraction of the aberrant tooth, enucleation, marsupialization followed by enucleation. In this case, apicoectomy was done followed by surgical enucleation. Differential diagnosis of radicular cyst includes- dentigerous cyst, odontogenic keratocyst, odontogenic fibroma, periapical cementoma, traumatic bone cyst, pindborg tumour.

Conclusion:

Biopsy and histopathological examination is necessary for definitive diagnosis irrespective of clinical features. However depending on the size and extent of the lesion, surgical management is necessary in order to get a successful outcome.

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