

Radicular Cyst in Deciduous Molars: An Infrequent Condition

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ABSTRACT

Radicular cyst accounts for one of the most common odontogenic cysts of the jaw. However, its association with deciduous teeth is an infrequent phenomenon. The purpose of this article is to report a case of radicular cyst associated with non-vital primary tooth. The treatment includes a conservative approach which is the technique of decompression following the extraction of the offending deciduous molar and preservation of the succedaneous tooth.

Keywords: case report, decompression, deciduous teeth, radicular cyst, stent

INTRODUCTION

Odontogenic cysts are classified based upon the etiology as developmental and inflammatory cysts. The inflammatory type includes radicular cysts and lateral periodontal cysts¹. Radicular cysts accounts for 60% of odontogenic cysts but are very rarely seen in primary dentition. They are seen to be only 0.5-3.3% of the total number of cysts in deciduous dentition². In relation to the location of these cysts, the mandibular primary teeth are more frequently affected than the maxillary teeth³.

It is mainly derived from the inflammatory stimulation to the epithelial cell rests of malassez which are present along the periodontal ligament area which usually is a sequela of bacterial infection and dental pulp necrosis². A review of the literature shows the total cases reportable through 2004, to be about 112 and attributes 56% of them to be in response to pulpectomy⁴. Radicular cysts usually do not show any symptoms and go undiscovered until they are found by regular radiography evaluation, although certain long-standing lesions can

suddenly become more symptomatic and exhibit swelling, tooth movement, and displacement of unerupted teeth. The treatment options include enucleation of the cyst, offending tooth extraction and decompression of large cyst.

CASE HISTORY

13 year old male patient reported to the department of Paediatric dentistry with complaint of swelling on lower left back teeth region since 3 months with no history of pain. Past dental history revealed the patient has undergone endodontic treatment in the same region of the jaw 5 years ago. On extraoral examination, a diffuse, non tender, bony hard swelling was noticed on the left side extending from the corner of the mouth to the body of mandible.

Intra oral examination revealed cast metal crown was placed on 75 associated with diffuse buccal swelling in the same region which extended from 33 to 36. Radiographic investigation included IOPA for 34 and 75 which revealed well defined unilocular radiolucency associated with 75

encircling erupting tooth bud of 35. The IOPA showed radiopaque restorative material and remnants of obturating material in 75 along with the root resorption. For further extended view of the radiolucent area, OPG was taken which revealed a well defined radiolucency apical to 75 extending from the mesial root of 34 till the distal root of 36. The size of the swelling was about 2x3 cm. The contents of the lesion were aspirated. Straw colour fluid was obtained mixed with blood. The cytological reports confirmed inflammatory cystic lesion. Based on the history, clinical findings and radiographic examination provisional diagnosis of radicular cyst was made. The treatment plan included extraction of 75 under local anaesthesia followed by decompression of the cyst.

The biopsy of the lesion and the extracted tooth were sent for histopathological examination, which confirmed the diagnosis of radicular cyst. The socket was irrigated with betadine and normal saline. A stent was made from a cannula, which was placed in cystic cavity. The stent was stabilized in place by tying it to the adjacent tooth with the help of sterile ligature wire. This was performed to clean the cystic cavity routinely with the help of betadine- saline irrigation. Closure of the wound was done with the sutures. The stent was kept in place for about 2 weeks

The patient was prescribed antibiotics and analgesics and was instructed to maintain good oral hygiene.

FIGURES



(A)



(B)



(C)

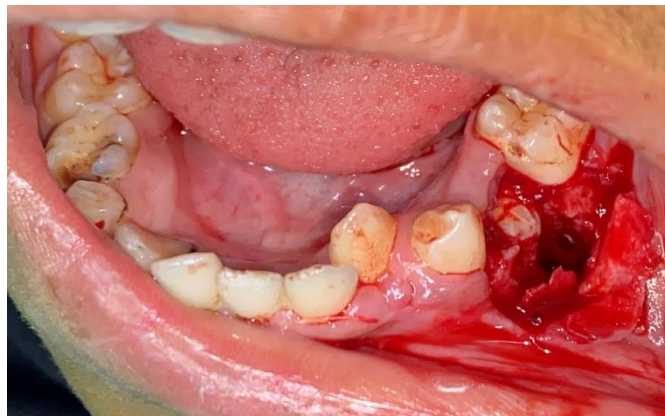


(D)

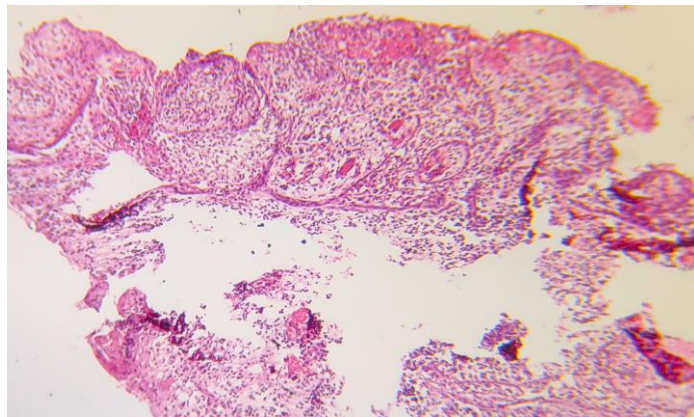


(E)

Fig 1 A to E: pre operative pictures (A)extra oral pre operative; (B)FNAC; (C)pre operative intraoral; (D)pre operative RVG; (E) pre operative OPG



(A)



(B)Grossing 10x view



(C)

Fig 2 (A) to (C): intra operative pictures

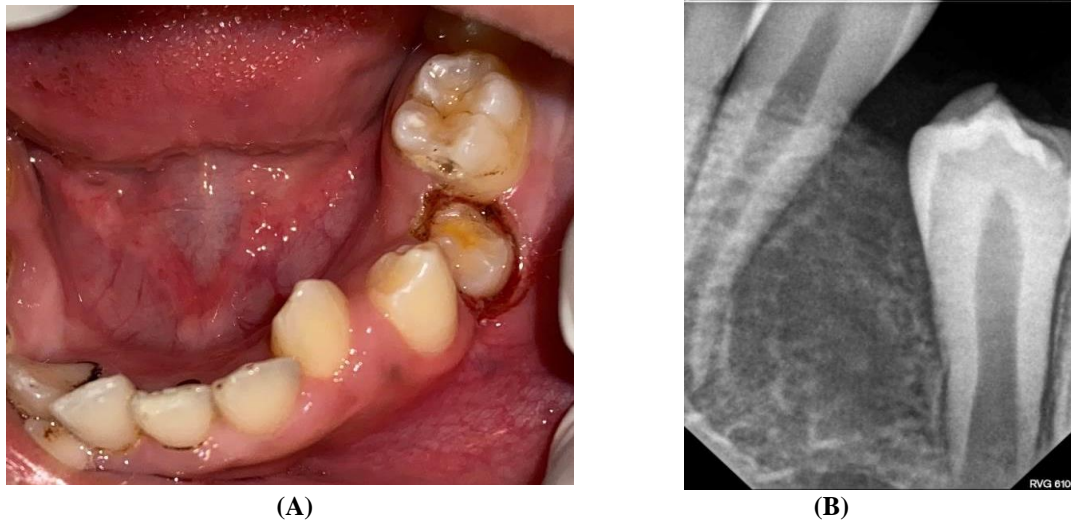


Fig 3 (A) to (B): (A) post operative intra oral; (B) post operative RVG

DISCUSSION

Radicular cyst also known as periapical cyst is very rarely seen in primary dentition compared to permanent dentition⁵. In deciduous dentition they are seen in the age group of 3-19 years^{3,6}. This coincides with our case as the patient was a 13 year old male and the tooth associated was mandibular second molar. Radicular cysts usually go undiagnosed in primary dentition because the primary teeth are present for a short period of time, easy drainage of infection and the lesion tends to heal on its own after extraction or exfoliation of the primary teeth^{7,8}.

One of the most common etiologic factors for the development of radicular cyst is dental caries¹⁰. The mandibular molars in primary dentition are more susceptible to dental caries so the prevalence of radicular cyst is more in mandibular molars¹¹. Radicular cysts are commonly seen in case of over retained necrotic or pulp treated primary teeth. Improper endodontic treatment failing to eliminate the infection can be one of the reasons. Grundy et al suggested that antigenic stimulation from various products used for endodontic treatment can be related to the development of the cyst¹⁰. This inflammation and prolonged irritation from infected tooth causes proliferation of the epithelial residues in periodontal ligament resulting into radicular cyst^{12,13}.

Radicular cysts are frequently unilocular, and the radiolucency is well defined which is seen in this case¹⁴. They can mimic dentigerous cyst if multilocular¹⁵. Histopathological findings noted in our case were non keratinized stratified squamous cystic epithelial lining showing arcading pattern. Connective tissue stroma was infiltrated with chronic inflammatory cells predominantly lymphocytes, plasma cells and a few giant cells. These features were similar to those of radicular cyst¹⁶.

The treatment of this Radicular cyst is important as it can cause detrimental effects like Turner's hypoplasia, displacement and damage to the permanent successor and can also hamper root development. Pie et al in a retrospective study stated that decompression was indeed an effective method to treat radicular cyst associated with primary teeth¹⁷. In our case we decided to extract the offending tooth and surgically incise the lesion, remove the infected tissue followed by placement of a stent for the purpose of cleaning the cystic cavity routinely with betadine and saline. After 2 weeks the stent and sutures were removed. After a follow up of 3 months the swelling was completely subsided and regeneration of bone was seen radiographically.

CONCLUSION

To avoid the need of invasive surgical treatment and adverse effects to the underlying permanent successor teeth, recognition of the potential of radicular cyst in association with deciduous dentition is important.

Declaration by Authors

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