

Multiple Radicular Cysts in an 8-year-old: A Case Report

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ABSTRACT

Aim: The aim of this article is to report a case of multiple radicular cysts in an 8-year-old.

Background: Multiple radicular cysts are an uncommon and rare entity in mixed dentition. Management of these cysts needs careful examination of the present deciduous and erupting permanent dentition. Here, we present a case of multiple radicular cysts in an 8-year-old with no other significant medical history. The treatment approach included removal of the involved deciduous teeth and enucleation of cysts, followed by curettage and the use of Whitehead's varnish.

Case description: The patient reported to the department with a chief complaint of pain in the right lower front tooth region and upper left back tooth region for 2 months. There was no relevant medical or dental history. A routine panoramic radiograph was done, which revealed multiple radiolucency. Clinical presentation, radiograph, and aspiration cytology concluded the diagnosis as multiple radicular cysts. The treatment plan for management was the extraction of the teeth involved, followed by enucleation. Whitehead's varnish dressing was placed in the extraction socket. A regular follow-up was done, showing the absence of radiolucency and eruption of permanent teeth.

Conclusion: Management of radicular cysts in mixed dentition is challenging. Preserving the vitality of erupting permanent teeth is of utmost importance.

Significance: Multiple radicular cysts are an uncommon finding in young children. Proper medical history is important to rule out any syndrome. Correct diagnosis and early management are prognostic factors.

Keywords: Case report, Enucleation, Mixed dentition, Radicular Cysts.

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BACKGROUND

Radicular cysts are found to be a rare entity in primary dentition. It comprises only 0.5–3.3% of the total number of cysts in both the primary and permanent dentition.¹

Radicular cysts develop from epithelial remnants of the periodontal ligament as a consequence of inflammation and associated infiltration of inflammatory cells, which, in most cases, is an outcome of pulp necrosis. These cysts commonly involve the apex of the affected tooth.² Apparently, caries are often associated with radicular cysts in the primary dentition.³ Most reported cases of radicular cysts were in molar teeth with apical infection caused by caries.⁴

Radicular cysts generally do not show any symptoms and are overlooked until detected by a routine radiograph.¹ The patient presents with symptoms of swelling, tenderness, and mobility when there is acute inflammation. The associated teeth respond negatively to the vitality test.⁵ These cysts frequently cause displacement of the adjacent and successional teeth and may produce appreciable expansion of the cortical bone

The radiographic features of radicular cysts are quite similar to periapical granuloma. They appear initially as well-defined radiolucency involving the apex of the tooth.

CASE DESCRIPTION

An 8-year-old girl presented to the Department of Oral and Maxillofacial Surgery with a chief complaint of pain in the right lower front tooth region and upper left back tooth region for 2 months.

There was no relevant medical or dental history. The history of the present illness dates back to 1 year when the patient experienced pain in the left anterior region. The patient then again experienced pain and swelling in the upper left anterior region

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2 months back. The swelling extended from the base of the nose to the left cheek region. The patient went to an ear, nose, and throat specialist, and they were referred to the Department of Oral and Maxillofacial Surgery.

Extraoral examination revealed no swelling and tenderness (Fig. 1). Intraoral examination revealed proximal deep caries in the left maxillary first molar, that is, 64, which is also tender on percussion. There was mobility in the maxillary anterior teeth. The maxillary left lateral incisor showed grade II mobility, while the maxillary right central and lateral incisor showed grade III mobility (Fig. 2). Mandible showed no variation than normal (Fig. 3). Panoramic radiograph revealed multiple unilocular

radiolucencies with thin sclerotic border in relation to 53, 63, 73, and 84. Radiolucency in relation to the apex of the maxillary right canine was unilocular around 1.5×1 cm. In relation to the maxillary left canine, unilocular radiolucency with a thin sclerotic border had a size of 1×1 cm. Radiolucency with respect to the mandibular left canine was 0.5×0.5 cm in size (Fig. 4).



Fig. 1: Profile picture



Fig. 2: Preoperative maxillary teeth



Fig. 3: Preoperative mandibular teeth

The mandibular right deciduous first molar also showed a radiolucency of size 0.5×0.5 cm. To rule out syndrome associated with multiple cysts, further investigations were done. A chest X-ray was done, which revealed normal anatomy of clavicles (Fig. 5). Complete blood count and thyroid profile showed normal values.

Aspiration cytology (hematoxylin and eosin stained smear from the aspirate) showed the presence of inflammatory cells arranged individually and scattered all over the smear. Inflammatory cells mainly include neutrophils, lymphocytes, plasma cells, and macrophages.

Based on clinical examination and radiograph, a provisional diagnosis of multiple radicular cysts was made. The treatment plan for management was the extraction of the involved teeth, followed by enucleation. Local anesthesia (2% lignocaine with 1:200,000 adrenaline) was administered. Extraction of involved teeth was done (Fig. 6). Whitehead's varnish dressing was placed in the extraction socket (Fig. 7). Histopathological examination gave a final diagnosis of radicular cysts. A regular follow-up for 3 months was done, showing the absence of radiolucency and eruption of permanent teeth (Fig. 8). examination of dentition showed good healing (Figs 9 and 10).

DISCUSSION

The presence of multiple radicular cysts in mixed dentition is a rare pathology. The data accounting for its presence is $<1\%$, as described by Shetty et al.⁶ The prevalence of radicular cysts in deciduous dentition was higher in males than females, with a ratio of 1.6:1.

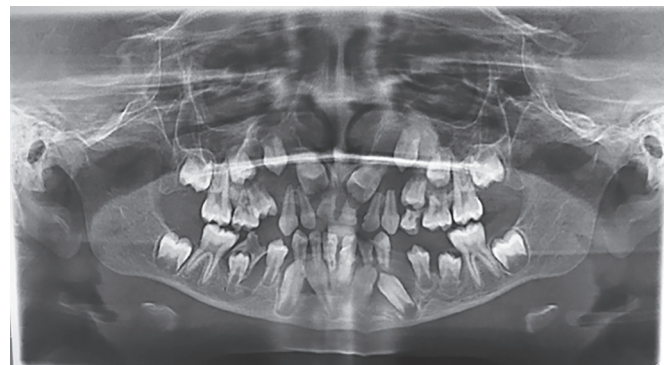


Fig. 4: Preoperative orthopantomogram



Fig. 5: Chest X-ray



Fig. 6: Extracted deciduous teeth



Fig. 9: Postoperative maxillary arch



Fig. 7: Whitehead's varnish dressing after enucleation and curettage



Fig. 10: Postoperative mandibular arch

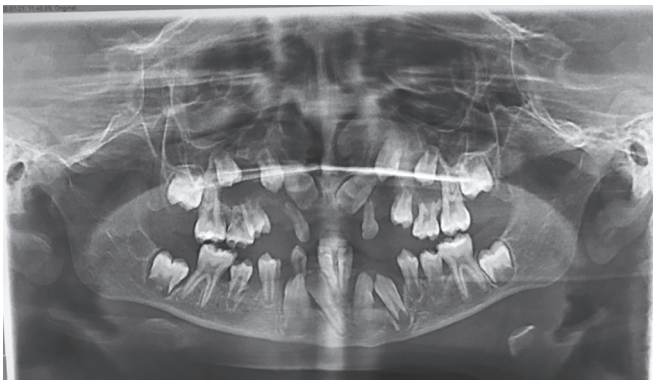


Fig. 8: Postoperative orthopantomogram, 3 months

In deciduous dentition, the presence of cysts should be considered originating from roots of teeth. These residual roots might not be appreciated in panoramic radiographs because of the advanced resorption of roots.⁷

The radiolucencies present periapically in relation to deciduous teeth are often overlooked as they are usually asymptomatic, and most of them resolve after extraction of the involved tooth. The low prevalence of these cases is credited to diagnostic errors,

extraction of involved teeth with no pathological examination, and also to endodontic treatment of involved teeth.⁸ The pathological tissue is present either at the bifurcation of associated molar teeth or laterally along the roots of associated teeth. These cysts also showed varied resorption of associated roots.⁷

During the treatment of involved teeth, utmost care should be taken so as not to hamper the growth of permanent dentition. Treatment considered should be conservative. Enucleation of the cyst, along with the extraction of involved deciduous teeth, is considered a favorable approach.⁹ Use of Whitehead's varnish dressing has been widely described. The resins present in the varnish eventually break down to benzoic acid and thus act as an antiseptic. Along with the water-resistant properties of this material, the use of Whitehead varnish is widely acceptable.¹⁰ The eruption of properly aligned permanent teeth supported the above treatment protocol.⁹

Clinical Significance

The clinical case describes multiple radicular cysts in a child with mixed dentition. The emphasis has been given on a thorough medical history to rule out any associated syndrome. Management of cysts is done *via* a conservative approach. A regular follow-up is important in managing erupting permanent teeth.

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