

Radicular Cyst of Primary Tooth - A Rare Case Report

Jayanta Saikia*, Balaji P and Poornima Govindaraju

Department of Oral Medicine and Radiology, Rajarajeswari Dental College & Hospital, Mysore Road, Bangalore, India

Correspondence should be addressed to Jayanta Saikia, Jayantasaikiaomr@gmail.com

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ABSTRACT

Radicular cysts are the most common inflammatory cystic lesions of the jaws, Radicular cysts represent 60% of odontogenic cysts, and the frequency of radicular cysts in permanent dentition is about 7% - 54%, Very rare in primary dentition approximately 0.5% - 3.3% because of the distinct biological cycle of primary teeth. In this report, we present a case of a 12-years old female patient with a painless swelling on her lower right back tooth region which was diagnosed with a radicular cyst of a primary deciduous molar 85. Treated with the extraction of 85 followed by marsupialization of the cyst. At five-month follow-up, the patient showed completely healed socket intraorally, erupting 45. This article emphasis on the importance of early diagnosis and, regular clinical and radiographic follow up for pulp treated primary teeth.

KEYWORDS

Child; Dentigerous cyst; Marsupialization; Non-vital tooth; Primary deciduous molar; Radicular cyst

INTRODUCTION

Radicular cysts are the most common inflammatory cysts that arise from the epithelial residues in the periodontal ligament as a result of periapical periodontitis following death and necrosis of the pulp. Radicular cysts represent 60% of odontogenic cysts, the frequency of radicular cysts in permanent dentition is about 7% - 54%, Very rare in primary dentition approximately 0.5% - 3.3% because of the distinct biological cycle of primary teeth [1].

Shear has estimated that about 9% of dentigerous and 1% of radicular cysts occur in the first decade of life, while according to Donath, about 4% of dentigerous and less than 1% of radicular cysts appear through the first decade of life [2]. A large number of cases are seen in the fourth

and fifth decades among adults whereas in children the mean age is 7.7 years [3].

CASE REPORT

A 12-year-old female reported to the outpatient department of oral medicine and radiology, with the complaint of painless swelling on her lower right back tooth region since 1 week, swelling was small at the beginning and gradually increased to the present size. Patient reported episodes of tooth ache in the same region due to caries for which she got treated in a private dental clinic 1 year back. Her medical and family history was non-contributory, no history of previous trauma. Patient was well coordinated, moderately built and nourished, all vital signs were within normal limits.

On extraoral examination, (Figure 1) solitary diffuse swelling was present on the right lower third of the face

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measuring about 2 cm × 3 cm, firm in consistency, non-tender on palpation, right submandibular lymph node palpable, non-tender.



Figure 1: Extra orally solitary diffuse swelling was present on the right lower third of the face, intra oral view shows vestibular obliteration #44, #46, metal crown #85, intraoral periapical radiograph revealed well defined radiolucency seen involving the interdental area and extending from the alveolar crest & beyond the confines of the roots of the tooth #85, not arising from the CEJ of #45, retained deciduous tooth #85 with metal crown and external root resorption #85, vertically impacted #45.

Intra-oral examination revealed vestibular obliteration with buccal cortical plate expansion irt 85 and irt 46, erupting bulge of 45 palpable on the lingual aspect irt 85, missing 45 and 35, metal crown irt 85 and 75, with no tooth mobility. Hence, correlating history and clinical examination, a provisional diagnosis of radicular cyst irt 85 was given, with a differential diagnosis of dentigerous cyst irt 45.

An intraoral periapical radiograph irt 85 and irt 46 region (Figure 1), revealed diffuse radiolucency in the periapical region of 85 and impacted 45 which was beyond the confines of the IOPAR for which a Panoramic radiograph was taken that revealed well defined radiolucency with corticated margins measuring about 3 cm × 3 cm approximately in relation to 85 46, internal structure is completely radiolucent with impacted 45, external root resorption in relation to 85, loss of follicular space in relation to 45 and mesial displacement of 44 (Figure 2).

As the complete assessment of the lesion was difficult with a conventional radiograph, CBCT was done (Figure 2). Axial section revealed break in continuity of buccal

cortical bone irt 85 and irt 46 region, coronal and sagittal section revealed ballooning of the buccal cortical plate and the displacement of 45 lingually, mandibular canal was intact and displaced inferiorly. Radiographic diagnosis of radicular cyst irt 85 was given as it is arising from 85, and based on the radiographic appearance differential diagnosis of unicystic ameloblastoma and ameloblastic fibroma was given.

Patient was subjected to haematological investigation where all parameters were within normal limits. FNAC was done which revealed blood tinged straw colored fluid and was sent for histopathological examination that suggested cystic fluid.

Under all aseptic precaution RCT of 44, 46 was done along with extraction of 85 and marsupialization was done along with Incisional biopsy under LA, Bismuth subnitrate Iodoform pack was placed for two weeks (Figure 3). Specimen was sent for histopathological examination which showed stratified squamous epithelium in an arcading pattern underlying cellular cystic connective tissue stroma comprising of lymphocytes and plasma cells suggestive of Radicular cyst. Hence, correlating the clinical, radiographic and histopathological features Radicular cyst in relation to 85 was formulated as the final diagnosis.

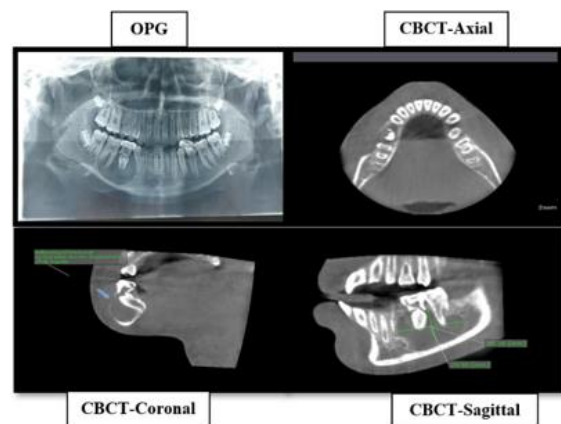


Figure 2: Orthopantomograph showing mandibular right deciduous molar #85 associated with well-defined periapical radiolucency, CBCT axial, Coronal and Sagittal view.

At five months follow-up, the patient showed completely healed socket intraorally, erupting 45, patient is under regular clinico radiological follow-up (Figure 3).

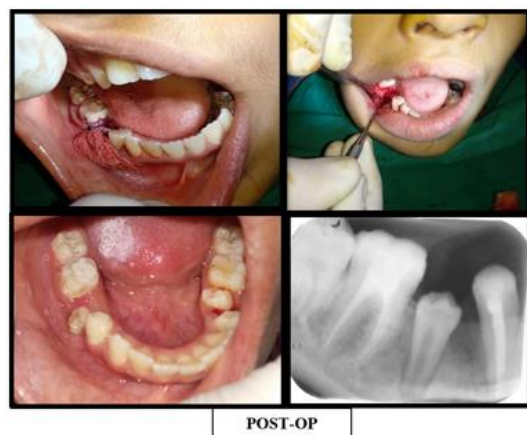


Figure 3: RCT of 44 46 was done along with extraction of 85 and marsupialization was done along with Incisional biopsy under LA, Bismuth subnitrate Iodoform pack was placed and sutures were placed, Post-Op: At five months follow-up, the patient showed completely healed socket intraorally, erupting 45 patient is under regular clinico-radiological follow-up.

DISCUSSION

Radicular cysts originating from primary teeth are considered rare as pulpal and periapical infection in deciduous teeth tend to drain more rapidly than those of permanent teeth. In the permanent dentition, the teeth most affected are the incisors [3]. In the primary dentition, the mandibular molars (67%) are commonly affected followed by maxillary molars (17%) [1] and approximately 30% are associated with previous endodontically treated teeth [4] as in our case. The mean age of prevalence is 7.7 years, with equal gender distribution [5].

According to Mass et al. The prevalence rate of radicular cysts accompanied with primary molars is probably higher compared with that in the reported literature, as most of the primary teeth are extracted without submitting for pathological examination [5], and also because of the shorter duration of primary teeth present in the jaw, compared to that for permanent teeth [6].

Cysts associated with primary molars are located in the inter-radicular area and around the roots, whereas cysts related to permanent molars are located adjacent to the apex. This may be explained by the short and partially resorbed roots and the existence of accessory canals in the roots of primary molars. Thus, the term periradicular cyst in primary molars is more appropriate than periapical or radicular cyst [5].

Clinically radicular cyst may present with a non-vital tooth, painless swelling unless infected, with mostly buccal cortical plate expansion which is hard or firm in consistency depending whether the cortical plate is perforated, as was also seen in our case.

Periapical radiolucencies of primary teeth may be misdiagnosed as a periapical granuloma or a dentigerous cyst of the permanent successor [7]. Dentigerous cysts are characterized by a well-defined unilocular radiolucency in the pericoronal area of an unerupted permanent tooth and cortical margins are continuous with the follicle at the cemento-enamel junction of the permanent tooth [6].

The common signs of radicular cysts are expansion of the buccal cortical plate, well defined radiolucency, thin reactive cortex, displacement of permanent successor and inferiorly pushed inferior alveolar nerve, as was observed in our case.

In the present case root canal treatment was done in relation to 44, 46 and surgical marsupialization was considered as treatment of choice to prevent any damage to the developing permanent teeth and it is easily acceptable by the child and parents as well. The objective of marsupialization or decompression was to ease the intracystic pressure through an accessory cavity, that reduces the size of the lesion so that surgical intervention is unnecessary or if necessary, will be restricted to the immediate periradicular tissues of involved teeth. The procedure disrupts the integrity of lesion wall, eliminates

internal osmotic pressure and promotes healing by osseous regeneration [8]. People have shown in their case reports that marsupialization for odontogenic cyst in growing patient has more advantages than enucleation to reduce treatment morbidity [9-11].

In children, healing of the postsurgical osseous defects is always good as they have high propensity for bone regeneration, however, the success of the treatment depends on the patient and parent agreement and the practice of good oral hygiene measures. The children undergoing similar treatment for radicular cyst should be followed-up postoperatively at regular intervals until the

eruption of the permanent teeth to assess the success of the treatment, as was observed in our case.

CONCLUSION

The reported case is one of the rare occurrences of radicular cyst in the primary dentition. Early diagnosis plays a vital role, regular clinical and radiographic follow up for pulp treated primary teeth is strongly recommended. Treatment of the cystic lesions should be carried out as soon as possible so that there is no damage to the adjacent teeth and other vital structures.

CONFLICT OF INTEREST

Authors didn't have any conflict.

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