



MANAGEMENT OF RADICULAR CYST IN PRIMARY TOOTH

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Abstract: Radicular cysts are among the most common odontogenic cysts of the jaws. When they originate from primary teeth, nevertheless, they are rare. This article discusses the enucleation treatment for a 11-year-old boy who had a radicular cyst associated with his primary teeth.

Index Terms - extraction, enucleation Odontogenic cyst, , primary teeth, radicular cyst

I. INTRODUCTION

According to Uloopi KS *et al* (2015) the most prevalent odontogenic cystic lesions with an inflammatory origin are radicular cysts. Their proportion in the primary dentition is limited to 0.5–3.3% of all cysts. Ages 3 to 19 years old are the most common range in which males are known to develop radicular cysts from deciduous teeth. Mass E *et al* (1995) found that the low prevalence of radicular cysts in the primary dentition remains unclear, even if the developmental pathways are the same. Mandibular molars are linked to the majority of radicular cysts observed in early dentition. Radicular cysts are usually asymptomatic and go unnoticed until they are found by routine radiography screening, in contrast to some long-standing lesions that may develop a sudden flare-up of cysts such as swelling, mobility, and displacement teeth.

II. CASE REPORT

An 11-year-old male patient presented with a chief complaint of swelling in the lower right back tooth region for 10 days with no history of pain. Past dental history revealed endodontic treatment in the same jaw region was done 3 years ago. During an extraoral inspection, the right side of the mandibular body exhibited a diffuse, non-tender, febrile, bony hard swelling. Upon intraoral inspection, a dislodged restoration of 85 was found along with diffuse buccal swelling extending from 85 to 46 in the buccal vestibular region (Fig. 1). The swelling was about 1x1 cm in diameter. The mucosa overlying the swelling appeared to be normal. In the intraoral periapical radiograph, well-defined unilocular radiolucency was associated with 85 and, encircling erupting tooth bud of the second permanent premolar. 85 showed radiopaque restorative material with remnants of obturating material and root resorption (Fig. 2). CBCT revealed resorption of the buccal cortical plate in 85 regions (Fig. 3). For further evaluation, fine needle aspiration of the lesion was done, yellow-colored fluid mixed with blood was obtained, and it was found to be inflammatory on cytology. A tentative diagnosis of a radicular cyst was made based on the signs and symptoms of the patient, the clinical appearance of the lesion, and radiographic findings. The entire procedure was explained to the patient's parents, informed consent was taken and extraction of the mandibular right second molar was done under local anesthesia. Following extraction cyst enucleation was done by taking an approach from the socket of the extracted molar. The cystic contents were allowed to drain from the socket. The biopsy of the lesion and the extracted tooth were sent for histopathological evaluation. The socket was then irrigated with betadine solution and normal saline and a pressure pack was given at the extraction site. The patient was instructed to maintain proper oral hygiene measures and was prescribed antibiotics and analgesics. On histopathological examination, A cyst cavity

exhibiting a fibrous wall harbouring a primarily chronic inflammatory infiltration was seen, bordered by stratified squamous epithelium displaying exocytosis (Fig. 4). Which confirmed the diagnosis of the radicular cyst. During the follow-up period, the child responded well to the treatment with satisfactory soft tissue and hard tissue healing. after one year follow-up normal eruption of the second premolar was seen (Fig. 5)



Figure 1: Intra-oral photographs
Diffuse swelling in buccal vestibule extending from 85 to 46 about size of 1x1 cm



Figure 2: Intra-oral periapical radiograph of 85
Distinct unilocular radiolucency surrounding tooth bud of 45

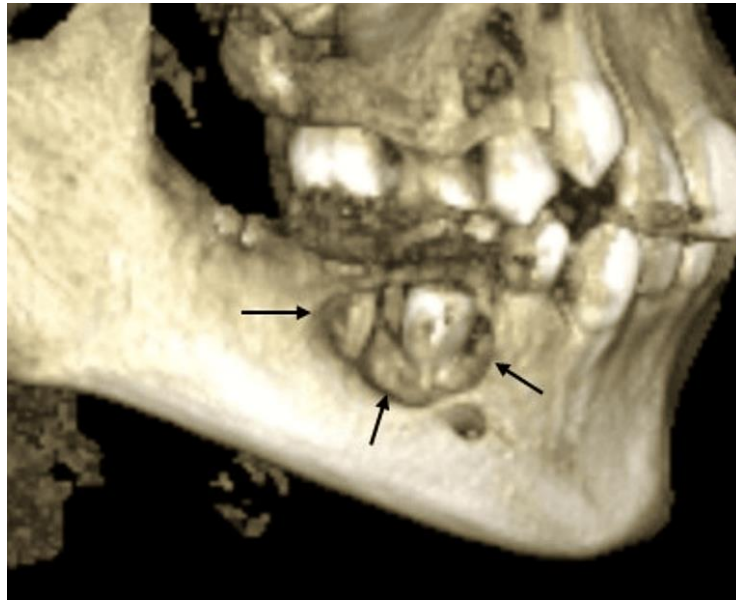


Figure 3: CBCT

CBCT showing resorption of buccal cortical plate in relation to 85

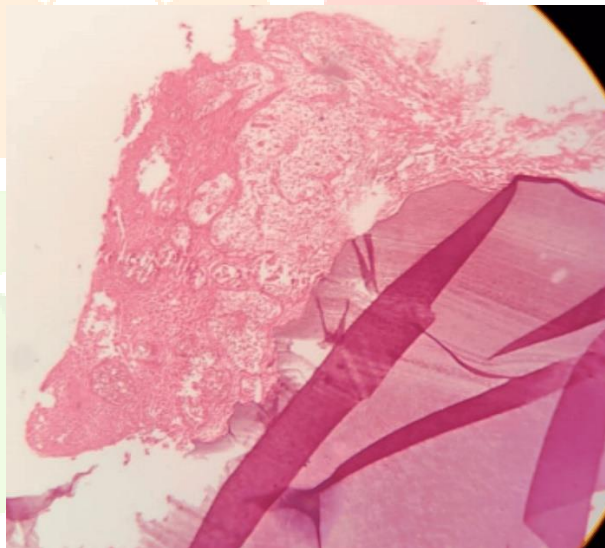


Figure 4: Histopathological image of radicular cyst
cyst cavity exhibiting a fibrous wall harboring a primarily chronic inflammatory infiltration was seen, bordered by stratified squamous epithelium displaying exocytosis



Figure 5: Radiograph after one year follow up

A normal eruption of 45 after one year

III. Discussion

Radicular cysts are caused by inflammation-induced epithelial remains in the periodontal ligament. This process usually results in cysts that are found close to the apices of the teeth that are impacted, and inflammation usually follows dental pulp degeneration. Although radicular cysts typically do not exhibit any symptoms, they are often visible on intraoral radiographs in the periapical zone of non-vital teeth. Primary molar cysts are primarily seen within the furcation area as well as around the roots, whereas cysts in permanent teeth are usually seen surrounding the apex in the periapical area. This can be due to the short and partially resorbed roots of primary molars and the presence of many accessory canals. Because of this, cysts in primary teeth are termed "peri-radicular cysts" rather than periapical or radicular cysts. Radicular cyst development from primary teeth is uncommon. Deciduous teeth are associated with radicular radiolucency, which is often ignored and likely resolved after the problematic teeth are extracted. The frequency is low because antigenic stimuli that trigger the alterations that lead to the production of radicular cysts may differ from those that trigger pulpal and periapical infections in permanent teeth, which tend to drain more easily (Shear M 1976). Furthermore, the shorter life span of primary teeth in the jaw, the ease of drainage in deciduous teeth due to a lot of accessory canals, and the tendency to ignore radiolucency in deciduous teeth are thought to be the causes of the lower incidence of radicular cyst in primary teeth compared to permanent teeth. Furthermore, the lesions usually go away on their own after the related tooth is extracted or exfoliated, and they are rarely sent for histological analysis (Ramakrishna Y et al 2006, Shetty S et al 2010). Radicular cysts that originate from primary teeth and those that originate from permanent teeth differ in a few aspects. Unlike maxillary predominance in the permanent dentition, mandibular primary teeth are affected more commonly than maxillary teeth. The disparity between the location distribution of radicular cysts in primary and permanent dentitions may be caused by various etiologic factors. The most frequently affected mandibular molars in the primary dentition include caries and primary molars that have undergone endodontic treatment with formocresol containing materials. Radicular cysts occur frequently in permanent maxillary incisors as a result of caries, trauma (Mass E et al 1995). Several cases of radicular cysts associated with deciduous teeth that had received endodontic treatment with formocresol containing materials were reported by Grundy et al (1984). Formocresol is antigenic and has been demonstrated to trigger humoral and cell-mediated responses when combined with tissue proteins (Block RM 1997). The most prevalent clinical and radiographic characteristics linked to deciduous radicular cysts include a thin reactive cortex, well-defined unilocular radiolucency, displacement of succedaneous teeth, and buccal cortical plate expansion (Ramakrishna et al 2006). Dentigerous cysts and periapical granulomas are two more odontogenic tumors that frequently resemble radicular cysts. 6 of 7 Assessing if the permanent tooth germ is moved or preserved is vital for differentiating this condition from dentigerous cysts. A thorough evaluation based on clinical, radiological, and histological findings is necessary for a reliable diagnosis of the condition because it has been shown that radicular cysts can encompass the crown of succeeding permanent

teeth [Mass E et al 1995, Lustmann J 1995]. However, radiologically, radicular cysts originating from deciduous teeth may resemble dentigerous cysts (Lustmann J et al 1995). In the present case, enucleation was thought to be the best course of action to avoid harm to the child's developing permanent teeth, and both the parents and the child found it to be easily acceptable.

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