

Conservative Management of Radicular Cyst Associated with Non- Vital Primary Molar

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Abstract

Deciduous teeth with radicular cyst are rare to find. This is a rare case report of radicular cyst associated with maxillary first deciduous molar affecting the development of permanent maxillary canine. A conservative surgical enucleation of the cyst and extraction of deciduous molar helped in proper development of permanent maxillary canine.

Keywords: Radicular Cyst; Deciduous Molar; Enucleation

Introduction

Radicular cysts are the most common inflammatory cyst arising from epithelial residues in periodontal ligament as a result of inflammation. The incidences of radicular cyst in primary dentition are rare and it is 0.5 to 3.3% [1]. Most of the radicular cysts in primary dentition are associated with the mandibular molar [2]. The most common etiological factor is caries, along with traumatic injuries to the primary teeth leading to the necrosis of the teeth. This case report describes the complete enucleation of the radicular cyst associated with primary first molar along with its extraction and preservation of the permanent tooth.

Case Report

A 10 year old male child reported to the Department of Pediatric and Preventive dentistry with chief complain of hard swelling and pain in upper right front region of jaw for past 2 to 3 months. Patient experienced pain in anterior region while consuming food. Extra oral examination revealed diffuse hard swelling. It extended from right side of ala of nose till zygomatic region causing obliteration of nasolabial fold (Figure 1). The swelling was round, firm and tender on palpitation. Overlying skin was smooth. On intraoral examination, soft and tender swelling was present in the right vestibular region which was depressible in nature. No history of any discharge was present. Intraoral examination revealed root piece of 54 (Figure 2). 13 was unerupted and 14 was rotated in mesiodistal direction (Figure 2). Digital Orthopantomograph showed a well defined radiolucency in the right side of maxillary anterior region extending from periapical region of 54, pushing 13 apically close to the lower border of the floor of orbit and right side of lateral wall

of nose (Figure 3). Cone beam computed topography (CBCT) was done to check the proximity of 13 to wall of nose and orbit (Figure 4). Depending upon the patient's history, clinical examination and radiographic findings a differential diagnosis of radicular cyst or dentigerous cyst was made. Surgical enucleation of the cystic lesion was planned under local anesthesia. Routine blood investigations were done prior to procedure. After explaining the procedure to patient's parent, informed consent form was signed by them. Following the standard disinfection protocol the enucleation was done under local anesthesia. Root piece of 54 was extracted. The cystic lining which was not attached with 13, was enucleated in toto and 13 was left undisturbed. Hemostasis was achieved and gel foam was placed into the cystic cavity. Sutures were placed and specimen was sent for biopsy (Figure 5 and 6). Biopsy report confirmed the diagnosis as radicular cyst associated with root piece of 54. Post-operative OPG after three months showed a normal root formation and development of 13.



Figure 1: Extraoral view of patients.



Figure 2: Intraoral view showing root piece of 54 and rotation of 14.



Figure 6: Intraoperative view showing all epithelial lining are removed.



Figure 3: Orthopantomograph showing well defined radiolucent area in the right side of maxillary anterior region pushing 13 apically close to the lower border of the floor of orbit.



Figure 4: Cone beam computed topography showing close proximity of 13 to the floor of orbit.



Figure 5: Histological specimen.

Discussion

Radicular cysts are considered to be rare in primary dentition with a prevalence of 3% [3] with male predilection of 1.6:1 [5]. Most radicular cysts in primary teeth are located at the inter-radicular area of deciduous molars often suffering from necrosed pulp and from root canal treatment [4]. The rare incidence of radicular cysts in primary dentition is attributed to a shorter life span of the teeth and easy drainage of inflammation [7]. Periapical lesions resolve after exfoliation or removal of the tooth or remain untreated because of relatively less severe symptoms, diagnostic errors, non-referral for pathologic examination, or regression of the lesion after endodontic treatment [6].

The most commonly involved deciduous teeth are mandibular molars. This is a case report of a radicular cyst associated with maxillary deciduous first molar, which is rare.

Grundy, Adkins, and Savage reported a series of radicular cysts associated with deciduous teeth with endodontic treatment containing formocresol, which in combination with tissue protein is antigenic and has been shown to elicit a humoral and cell-mediated immune response [8]. Our case was unique as the tooth with radicular cyst was not treated endodontically and the cystic lesion had pushed the developing maxillary canine towards the orbital floor. The cystic lesion was not associated with a maxillary right permanent canine in this case but with root piece of maxillary right deciduous 1st molar. Complete enucleation of the cyst and preservation of the permanent successor teeth is recommended as the most suitable treatment option in these cases [9,10]. We saved the permanent tooth while extracting the root piece of deciduous molar. Orthopantomograph taken three months later showed well developing permanent maxillary canine (Figure 7).



Figure 7: Postoperative orthopantomograph showing root formation of 13.

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Conclusion

This case reports a conservative approach towards the management of radicular cyst in non-endodontically treated deciduous tooth. Proper diagnosis and timely management are valuable in such cases.

Conflict of Interest

No conflict of interest.

Informed Consent

Informed consent from patients for publication was obtained.

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