INFLAMMATORY DENTIGEROUS CYST IN A TEN-YEAR-OLD CHILD

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ABSTRACT

Dentigerous cyst may be developmental or inflammatory in origin. The latter is found only in mixed dentition with a low frequency. Treatment of inflammatory type of dentigerous cyst in children should be done with the aim of saving developing permanent teeth which should not be sacrificed as far as possible. This is a case report of a large inflammatory dentigerous cyst in a 10-year-old female patient treated conservatively by marsupialization method saving all teeth (mandibular permanent left canine, first and second premolars) in relation to the cyst.

Key words: Dentigerous cyst, inflammatory, marsupialization

INTRODUCTION

The frequency of dentigerous cysts in children has been reported low in dental literature. Shear¹ has estimated about 9% while Donath² about 4% of dentigerous cysts to occur in the first decade of life. Two types of dentigerous cysts are reported, viz. developmental and inflammatory in origin.³ Developmental type of cyst develops in a mature tooth as a result of fluid accumulation. Inflammatory type develops in an immature permanent tooth as a result of spread of inflammation from an overlying non-vital primary tooth. Clinically, the cyst is generally asymptomatic and discovered occasionally during routine radiographic examination. Larger cysts may cause springiness of the bone, expansion of cortical plates and mild sensitivity without any pain. Radiographically, the cyst presents as a well-defined unilocular radiolucency surrounding a crown of unerupted tooth. Histologically, the cyst consists of a fibrous wall lined by non-keratinized stratified squamous epithelium of myxoid tissue, odontogenic remnants and rarely, sebaceous cells.⁴

Treatment of the dentigerous cyst is done by Enucleation or Marsupialization/Decompression methods.⁵ The latter approach is preferred for larger cysts and is especially helpful in pediatric patients to conserve the unerupted permanent successors.

CASE REPORT

A 10-year-old female patient was referred to our department in January 2011 with the chief complaint of painless swelling of one-month duration in the left side of the lower jaw. On extra-oral examination, a slight buccal bulge was present in the mandibular left posterior region [Figure 1] which was felt hard on palpation. Intra-oral examination revealed the presence of grossly carious mandibular primary left canine (73) and mandibular primary left first molar (74) with distally tipped mandibular permanent left lateral incisor (32). A buccal swelling was visible in the 74 region [Figure 2]. We advised an orthopantomogram X-ray to the patient which revealed the presence of a well-defined unilocular radiolucency in relation to the roots of 73, 74 and mandibular primary left second molar (75). The radiolucency also involved unerupted mandibular permanent left canine (33), first premolar (34) and second premolar (35). We advised the patient to have a computed tomography (CT) scan of the region. The CT scan showed a well-defined radiolucency involving 33, 34 and 35 with expansion of buccal and lingual cortical plates [Figures 3 and 4].
The dimensions of the radiolucent lesion were approximately 25.5 × 36.0 mm. Based on clinical and radiological findings, a provisional diagnosis of dentigerous cyst was made. Decompression of the lesion was planned to save the unerupted permanent teeth. Routine blood examinations were advised before decompression, which were within normal limits.

Extractions of 73, 74 and 75 were done under local anesthesia which led to opening of the cavity. A thick brown-colored fluid was drained during the procedure. A small soft tissue was attached with the resorbed 74. We also got the tissue from the cavity which was sent for histopathological examination showing wall of the dentigerous cyst lined by stratified squamous epithelium having features of inflammation including numerous proliferating blood vessels and mixed inflammatory cells [Figure 5]. Histopathological examination and leaking out of fluid confirmed the diagnosis of inflammatory dentigerous cyst.

The cortical plates were compressed and the cavity was left open for continuous drainage. Antibiotics and analgesics were prescribed and the patient was dismissed after giving instructions. The follow-up examination was scheduled one week after the procedure. A space maintainer was given with an acrylic and wire extension into the cystic cavity to keep the cavity open. The patient was recalled every three months for follow-up examinations. Space maintainer was removed after six months as there was closure of the cystic cavity as the permanent teeth moved upwards.

Nine-month follow-up examination in October 2011 revealed the clinical presence of 34 and 35 in the oral cavity [Figure 6] and almost complete bone healing [Figure 7]. The extra-oral swelling caused by expansion of the buccal cortical plate also disappeared completely [Figure 8]. However, 33 did not erupt because of insufficient space in the dental arch. The patient was advised to undergo orthodontic correction of the teeth.

**DISCUSSION**

Inflammatory dentigerous cyst (IDC) is a type of dentigerous cyst which is found in mixed dentition only. It develops when the inflammation present at the root apex of a non-vital primary tooth spreads to involve the follicle of the unerupted immature permanent
successor. In our case the infection present at the root apex of a grossly carious and non-vital 74 spread to involve the follicle of 34 resulting in formation of IDC.

In the differential diagnosis of IDC, an odontogenic keratocyst, unicystic ameloblastoma, radicular cyst must be considered. All the above mentioned lesions are rare in the first decade of life. Odontogenic keratocyst and unicystic ameloblastoma occur in the second and third decade of life and are found in the molar region of the lower jaw. Radiograph alone cannot differentiate the above mentioned lesions so a histopathological examination should be performed wherever possible. However, as suggested by Kozelj and Sotosek in 1999, leaking out of cystic fluid during an extraction of a primary tooth or during a decompression, respectively, confirm the clinical impression of the cyst. In our case, histopathological examination as well leaking out of the fluid during the extraction of primary teeth confirmed the diagnosis of IDC.

Marsupialization or decompression technique has been advocated by several authors for treating dentigerous cyst in young patients. In this conservative technique, creation of an accessory cavity helps to relieve intracystic pressure and accelerate the healing of the cystic lesion. The permanent teeth generally erupt in the oral cavity with or without the need of orthodontic correction. However, the patient should be followed up
CONCLUSION

From the foregoing discussion, it is concluded that marsupialization technique is an ideal approach to treat large dentigerous cysts in pediatric patients. Several authors have reported excellent results by this technique. However, the follow-up of the patient should be done until the complete eruption of permanent teeth in their right location in the oral cavity. It is observed that, if permanent teeth are left undisturbed then as the cyst heals in due course of time, these permanent teeth erupt in the oral cavity.

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