



Inflammatory Dentigerous Cyst in Mandible in a 10 Year Old Male Child - A Case Report and Review of Literature

Madhu Verma^{1*} and Jyoti Mittal²

¹Oral and Maxillofacial Specialist, Elite Medical Center, Bin Omran, Doha, Qatar

²Reader Oral and Maxillofacial Surgery, SKSS Dental College and Hospital, Ludhiana, India

*Corresponding Author: Madhu Verma, Oral and Maxillofacial Specialist, Elite Medical Center, Bin Omran, Doha, Qatar.

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Abstract

Dentigerous cyst is the most commonly found among odontogenic cysts. Regarding its origin, it may be developmental or inflammatory. The inflammatory dentigerous cyst occurs only in mixed dentition patient and too with less frequency. The cyst is mostly seen as a unilocular radiolucency that encloses permanent teeth buds which can be displaced at times. Treatment of inflammatory dentigerous cyst in children is aimed to save as many developing permanent teeth as possible. This article presents a case of uncomplicated behavior of a huge mandibular dentigerous cyst in a 10-year-old boy after marsuplisation. Long-term follow-up examination showed complete bony healing and spontaneous eruption of permanent teeth even if they were badly dislocated.

Keywords: Dentigerous Cyst; Child; Marsuplisation; Mandible; Inflammation

Introduction

Dentigerous cyst is the most commonly occurring among all odontogenic cysts [1]. The clinical features associated are expansion of cortical plates, displacement of associated permanent tooth bud and sometimes dilacerations of forming roots. The developmental variety can be typically seen in the late 2nd and 3rd decades associated with mature teeth with no signs of inflammation. The inflammatory type is mostly seen in young children below 10 years of age and early second decade with involvement of nonvital immature deciduous tooth [2-7]. Benn and Altini suggest that periapical inflammation from a non-vital primary tooth may spread to involve the follicle of the permanent successor. The inflammatory exudate leads to the formation of a dentigerous cyst [8]. Main designated such cysts as inflammatory follicular cysts.

Cysts occur most frequently in the premolar region, while primary molars are destroyed by caries and non-vital. As long as the cyst remains small it is asymptomatic and usually only found by chance, for example, during routine radiography for orthodontic reasons.

Radiographically, inflammatory dentigerous cysts appears as a round or void, well demarcated unilocular radiolucency within the corpus of the mandible. A cyst is usually associated with the roots of a non-vital primary tooth and the crown of an unerupted permanent successor. The border is sclerotic.

Since the development of the cyst is connected with inflammation arising in a non-vital primary tooth, removal of the source of inflammation, i.e. extraction of the tooth, is logically the basic therapeutic procedure. The next step comprises opening and draining the cystic cavity [9]. This paper describes four dentigerous inflammatory cysts that were treated by extraction of the non-vital primary tooth and decompression of the cyst. The outcome of treatment is presented.

Case Report

A 10-year-old boy reported to the Dental Clinic with the chief complaint of pain and swelling in the left side of the lower jaw region. On clinical examination, there was a hard swelling along with expansion of buccal cortical plate starting from left lower midline and extended till left lower premolar region. The swelling was non

tender. There was no eggshell cracking of bone. A panoramic radiograph was taken that showed a well-defined unilocular radiolucent lesion, approximately 3 × 3 cm in dimensions and involving the crowns of the unerupted 33, 34 and 35. 34 was lying inverted in the cystic cavity. 33 was pushed along the lower border of the mandible and locked against the roots of lower incisors. The roots of these teeth were not fully formed. There was no resorption of roots of adjacent incisors. Root resorption was noted in the roots of 74 and 75 (Figure 1). Based on clinical and radiological examination, a provisional diagnosis of inflammatory dentigerous cyst was made. Since patient was young and cystic lesion was very big involving lower border of mandible, the treatment plan consisting of marsupialization of the cyst was planned in an attempt to preserve 35 and 33 along with extraction of 34, 74 and 75 was made. Patient was advised routine blood investigations before treatment.



Figure 1: Panorama (OPG) showed a large radiolucent lesion with erupting 2nd premolar in left mandibular body region.

Extractions of 34, 74 and 75 were done under local anesthesia and a part of the bony was removed with surgical bur and saline to create an opening into the cavity. A thick brown-colored fluid was aspirated from the cavity and part of cystic lining was removed to perform marsupialization of wound. The margins of cyst lining were sutured with oral mucosa and cavity irrigated with normal saline and iodoform gauze pack was placed. The patient was given instructions regarding cleaning of the cavity with warm saline gargles after 24 hrs after each meal till next appointment. Antibiotics and analgesics were given and the patient recalled after 1 week for suture removal and dressing.

The piece of tissue lining obtained from the cavity was sent for histopathological examination that showed features suggestive of dentigerous. The cyst lining showed stratified squamous epithe-

lium along with inflammatory components including numerous proliferating blood vessels and mixed inflammatory cells (Figure 2). That confirmed the diagnosis of inflammatory dentigerous cyst.

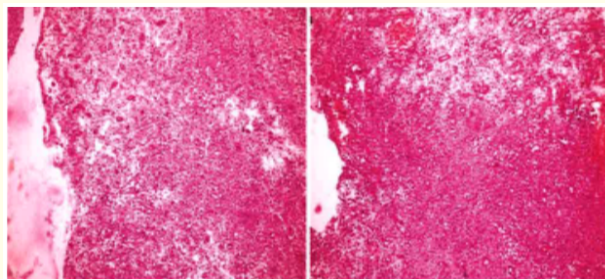


Figure 2: Biopsy report showing wall of dentigerous cyst lined by stratified squamous epithelium (H and E).

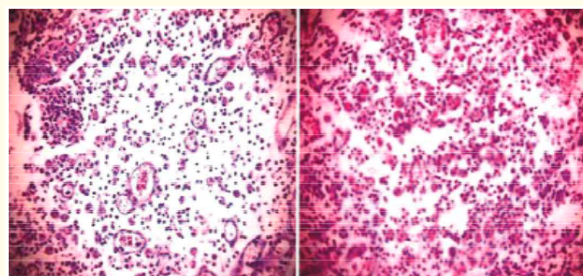


Figure 3: Inflammatory components including numerous proliferating blood vessels and mixed inflammatory cells (H and E).

On follow up examination after 1 week, the iodoform pack was changed and patient was recalled every week for the pack change until the cavity size reduced significantly. OPG was taken after 4 weeks initially and then after 3 months (Figure 4-6).



Figure 4: One month postoperative image.



Figure 5: Second month postoperative image showing bony healing with sclerotic borders.



Figure 6: Six month postoperative image showing significant movement of 33 and reduced cavity.

Nine-month follow-up examination in October 2020 revealed the clinical presence of 35 in the oral cavity and significant distal and upward movement of 33 along with almost complete bone healing (Figure 7 and 8). The extra-oral swelling caused by expansion of the buccal cortical plate also disappeared completely. However, 33 did not erupt clinically in the dental arch which was planned for orthodontic traction and eruption along with orthodontic correction of the other teeth at a later stage.



Figure 7: Nine month postoperative follow up showing complete healing with bone formation.



Figure 8: Nine months follow up showed eruption of 35 in oral cavity.

Discussion

Inflammatory dentigerous cyst (IDC) is a variant of dentigerous cyst which is associated only with mixed dentition. It is formed as a result of spread of inflammation from the root apex of a non-vital deciduous tooth to the follicle of the unerupted immature permanent bud [10]. In our case the spread of infection occurred from the root apex of non-vital 74 and 75 to involve the follicle of 33, 34 and 35 resulting in development of dentigerous cyst.

The differential diagnosis of a radicular cyst, odontogenic keratocyst and ameloblastoma (unicystic) was also made. But all these lesions occur in the second or third decade of life and are associated with the molar region of the mandible. Histopathological examination is required to confirm the diagnosis and differentiate amongst lesions. However, during decompression of the cyst, the brownish fluid coming out confirms the clinical diagnosis of the cyst [11]. In our case, histopathological report along with other clinical findings during the extraction of 74 and 75 confirmed the diagnosis of inflammatory dentigerous cyst.

According to various authors, marsupialization or decompression is preferred method of treating dentigerous cyst in very young children to save the involved permanent successors [12,13]. This conservative approach involves creating a small window in the bone to open up cystic cavity to relieve intra-cystic pressure and thus helps in the regression of the cystic lesion and accelerate bone healing [14]. The permanent teeth generally erupt in the oral cavity with or without the need of orthodontic correction. However, the follow up should be done till the time all permanent teeth erupt in the oral cavity into their proper position.

Conclusion

It is concluded that marsupialization is a reliable and effective method to treat large dentigerous cysts in young children. 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 can be certain that permanent teeth can move into their desired location in the oral cavity once the bony cavity heals with time and later orthodontic correction of the teeth alignment can be done if needed.

Source of Support

Nil.

Conflict of Interest

None declared.

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