

Inflammatory Dentigerous Cyst in a 9 Year Old Child

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Abstract

One of the most prevalent cystic lesions affecting the mandible is dentigerous cysts. Most frequently seen in 20 - 30 years of life. Cases which have been reported in mixed dentition period are hardly few in number. Clinical finding includes Cortical bone expansion, adjacent permanent tooth bud displacement, and root dilacerations. Radiographically it appears as a round, well-defined radiolucent image in close proximity to the crown of an enclosed tooth. In literature various treatment modalities have been mentioned for management of dentigerous cysts. This article presents a right mandibular dentigerous cyst in a 9-year-old boy. Marsupialization was the treatment of choice along with periodic irrigation of the cystic cavity. Long-term follow-up revealed good healing of the bony lesion. Careful evaluation of the patient with past medical history, clinical, radiographic and histopathological examination would help the clinician for early diagnosis to administer appropriate treatment.

Keywords: *Dentigerous Cyst; Marsupialization; Orthopantomogram*

Introduction

One of the most prevalent cystic lesions affecting the mandible is dentigerous cysts. It's commonly linked with an unerupted tooth's crown [1]. Dentigerous cysts form as a result of a shift in the development of the reduced enamel epithelial organ, resulting in a fluid collection between the reduced enamel organ and the permanent tooth's crown [2]. Cortical bone expansion, adjacent permanent tooth bud displacement and root dilacerations are all clinical findings. It appears as a round, well-defined radiolucent image in close proximity to the crown of an enclosed tooth on radiography. The developmental type occurs in mature teeth without causing inflammation, and it is more common in the late second and third decades.

Inflammatory type is the most common in children, and it usually occurs in a non-vital immature deciduous tooth [3]. Special considerations are required for the management of dentigerous cysts during the primary and mixed dentition periods in order to preserve the developing permanent tooth bud. Here, we present a case of a dentigerous cyst in a 9-year-old male patient and its treatment.

Case Report

A 9-year-old male patient reported as an emergency to the Department of Pedodontics and Preventive Dentistry at Tabuk Specialty Dental Centre with chief complaint of pain and swelling in the lower right back tooth region. Medical history was non-significant. Clinical history revealed that the swelling began as a small, painless nodule that grew to its current size over the course of three weeks. Stainless steel crowns were placed in 84 and 85, according to previous dental history.

Intraoral examination revealed a firm swelling in the 84, 85 region, as well as obliteration of the buccal vestibule. Asymmetry in the face was discovered during a second oral examination. A panoramic examination revealed a well-defined unilocular radiolucency in the apical area of 85, which was slightly pushing the right second mandibular premolar mesially (Figure 1). In the cases of 84 and 85, complete root resorption was seen. Because of the patient's age and proximity to the lower boundary of the mandible, marsupialization of the cystic cavity was planned, along with the preservation of teeth 44 and 45. On the frankel behaviour rating scale, the patient was definitely cooperative. Tooth 84 and 85 were extracted under inferior alveolar nerve block, followed by meticulous marsupialization of the cystic lesion (Figure 2). The Histopathologic examination of the lesion revealed hyperplastic non-keratinized epithelium, elongated interconnecting rete ridges, with severe acute and chronic inflammatory infiltration, which is consistent with an inflammatory dentigerous cyst. For two weeks, the marsupialized wound was packed with wet gauze that was changed on alternate days and irrigation was performed. After each meal, the patient was instructed to clean the wound with distilled water from a syringe. A 6 month post-operative OPG showed Regression and disappearance of the cystic lesion along with eruption of 44 and 45 (Figure 3 and 4).



Figure 1: Orthopantomogram (OPG) showed unilocular radiolucency associated with the apical region of 85.

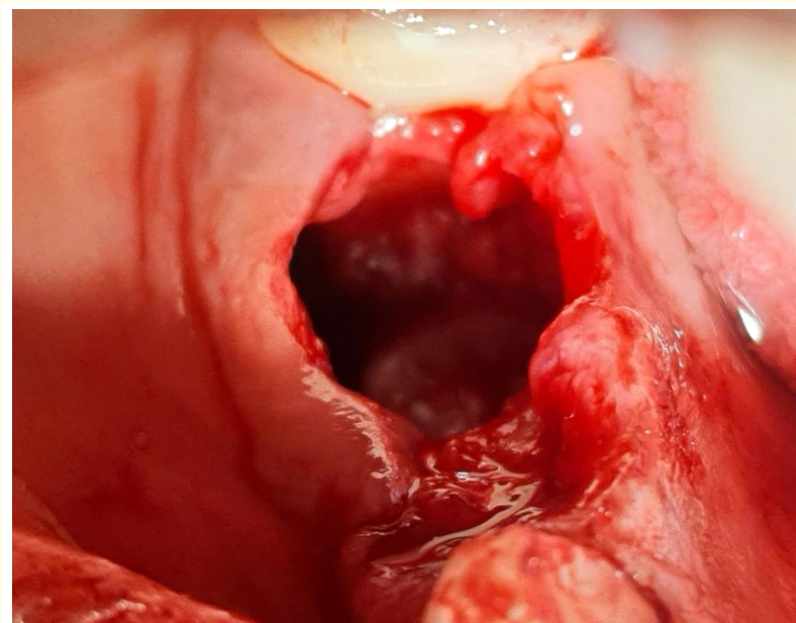


Figure 2: Marsupialized cystic cavity.



Figure 3: Six month post-operative OPG showing complete regression of the lesion.



Figure 4: Follow -up intra oral photograph showing normal eruption of 44 and 45.

Discussion

Dentigerous cysts are commonly found in the crowns of unerupted teeth [4]. Dentigerous cyst should be differentiated or differently diagnosed from radiolucent lesions, such as odontogenic keratocyst, ameloblastoma, radicular cyst, and odontoma [5]. Dentigerous cysts appear to be more likely than OKC or radicular cysts to cause root resorption of adjacent teeth [6]. Inflammation from a non-vital deciduous tooth spreads to the follicles of the unerupted permanent successors, resulting in cyst development as the inflammatory exudates separate the reduced enamel epithelium from the enamel. This suggests that there are two forms of dentigerous cysts: one that is developing and the other that is inflammatory [7]. The presence of two decaying teeth in our case suggests an inflammatory cause for the cyst formation.

Treatment for a dentigerous cyst is determined by its size, location, and deformity, and it frequently necessitates varied bone removal to guarantee that the cyst is completely removed. If the eruption path is favourable, every effort should be made to allow the affected tooth to erupt [8]. In a young patient with an isolated lesion and the intention to preserve the teeth, marsupialization remains the therapy of choice. To prevent cyst recurrence, thorough irrigation and full debridement are required.

Marsupialization was chosen in our case since it is a relatively low-risk procedure or conservative intervention that allows for the smooth eruption of the developing permanent teeth. Marsupialization should be regarded as a first line of treatment in paediatric patients, according to Hyomoto., *et al.* (2003), because it aids natural eruption of the implicated teeth in dentigerous cysts in 72.4 percent of cases [9]. According to Scott-Brown (1997), the treatment of choice for dentigerous cysts in children is marsupialization of the cystic lining to allow the unerupted tooth to erupt [10]. Muramaki., *et al.* provided a case study regarding a dentigerous cyst in a twelve-year-old child that was found on the same and treated through marsupialization [11].

In child patients, healing of the postsurgical osseous defects are always good due to their robust propensity for bone regeneration [12]. These factors are significant in cases of large dentigerous cyst in children and presents a better prognosis for the teeth involved in the lesion. This point was further reiterated by the present case and is quite evidently noticeable on the follow-up.

Conclusion

The choice of treatment for dentigerous cyst depends up on various factors, such as age of patient, size and location of the cyst, position of tooth in relation to the cyst, its proximity to the vital structures, and degree of the axial inclination of the tooth and its root formation. Marsupialization still stands as a favourable treatment modality in young patients.

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