

Case Report

A case of Dentigerous Cyst in Association of Impacted Mandibular Canine

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ABSTRACT

Dentigerous cyst being the second most common odontogenic cyst which constitutes around 20-24% of all the odontogenic cysts involving the jaws. Usually, these cysts remain asymptomatic and rarely cause enlargement and displacement of associated tooth. It develops by an accumulation of fluid between reduced enamel epithelium and the tooth crown of an unerupted tooth. This case report presents conservative treatment modality for 17-year-old female patient, diagnosed with a dentigerous cyst in association of impacted mandibular canine. The patient was treated with a minimal invasive approach, enucleation followed by marsupialization under local anesthesia, preserving all the teeth in occlusion.

Keywords - Dentigerous cyst, Impacted mandibular canine, Enucleation, Marsupialization.

Dentigerous cysts are odontogenic cysts that are associated with unerupted teeth. These cysts are an epithelial lined developmental cavity that encloses the crowns of unerupted teeth and are associated with the cemento-enamel junction. These cysts are usually asymptomatic and are noticed during routine radiographic examination and their frequency in general population is 1.44 [1]. It was reported in 1847 and was known as distended capsule/osseous cyst or serous cyst. These cysts are mostly found in the mandibular third molar region followed by maxillary third molar region, maxillary canine and mandibular second premolar. These cysts are the second common odontogenic cysts after radicular cysts [2] which develop by an accumulation of fluid between reduced enamel epithelium and enamel or within the enamel organ [3]. Erupting tooth exert pressure on impacted follicle which in turn obstructs the venous outflow leading to transudation of serum, increasing hydrostatic pressure. Hence, it separates the follicle from the crown with or without reduced enamel epithelium [4].

These cysts when enlarge sometimes expand the cortical plates. Bilateral occurrences of dentigerous cysts are rare and are usually associated with syndromes such as cleidocranial dysplasia and mucopolysaccharidosis [5]. Here we present a case of a female patient diagnosed with a dentigerous cyst in association of impacted mandibular canine.

CASE REPORT

A 17-year-old female patient was referred to us from rural primary health centre with a complaint of swelling at the bright side of lower lip area, which she noticed around 3 months before. The patient had no relevant past medical and dental history. Clinical examination showed that there was intraoral swelling in the anterior part of the lower right region. The swelling was intermittent in consistency and there was an expansion of buccal cortical plate from lower left central incisor to right first premolar area. There was no tenderness on percussion on the lower right incisors and canine.

The patient was advised for Orthopantomogram (OPG), which revealed a well defined large unilocular radiolucency with sclerotic margins involving roots of lower right and left mandibular incisors, canines, measuring 3×3 cm. Radiolucency was associated with impacted mandibular permanent right canine (Figure 1).



Figure 1: OPG revealing unilocular well defined radiolucency i.r.t impacted right mandibular permanent canine.

The clinical and radiographic findings were suggestive of a dentigerous cyst. The conventional approach would have been either extraction of associated teeth and enucleation of the cyst under local anesthesia (LA)/ general anesthesia (GA) or endodontic rehabilitation of affected teeth. Taking into consideration patient's clinical condition, age, compliance and socio-economic status, we planned for minimally invasive approach that is, enucleation followed by marsupialization under LA, preserving all the teeth in occlusion. In clinical setup under LA, a horizontal incision is placed below the margin of attached gingiva in the lower right anterior region and the buccal flap was raised hence, making the cyst clearly visible (Figure 2).



Figure 2: Horizontal incision given, cyst visible

After that cyst was carefully elevated, enucleated using blunt forceps and preserved on either side. Cystic line was removed carefully (Figure 3) along with the impacted canine followed by which marsupialization of the cyst was done (Figure 4,5).



Figure 3: Cystic line removal



Fig 4: Complete removal of cyst



Fig 5: Cystic line along with impacted mandibular canine

The entire bony cystic wound was irrigated and cleaned after which the patient was followed up for the

following intervals of time: after 1 month, with iodoform dressing pack; recall after 6 months; recall after 1 year; and finally, recall after 3 years, oral examination and radiographic examination were done (Figure 6,7).



Figure 6: Completely healed wound



Figure 7: OPG after 3 years revealed complete resolution of wound

DISCUSSION

The word “dentigerous” suggests “bearing teeth” that arises as a result of isolation of the follicle encompassing the crown of an unerupted tooth and is affixed at cemento-enamel junction. These are the most routinely encountered developmental cysts that can be widely found solitarily, these cysts can be multiple in syndromic conditions such as mucopolysaccharidosis (type VI), cleidocranial dysplasia, Maroteaux Lamy syndrome, and basal cell nevus syndrome [6].

Our case involved a 17-year-female however, dentigerous cysts have peak occurrence during the second decade, commonly arising in individuals between 10-30 years of

age. These cysts have a predilection for the male population with an incidence rate of 1.6-1 [6].

Several dentigerous cysts go undetected until encountered by chance in routine radiograph as they do not exhibit any symptoms. However, some cysts may attain a substantial size bringing about painless bony expansion until infected secondarily. In view of these lesions acquiring extensive size without manifestation of any symptoms, it is essential to detect and remove them to minimize destruction [4].

Radiographically, it is identified as a distinct unilocular radiolucency with a sclerotic border, but an infected cyst may show ill-defined borders. Sizable dentigerous cysts may appear as multilocular lesions due to the presence of bone trabeculae within the radiolucency. Based on radiography, these cysts are of 3 types: In the central variety, which is the most frequently encountered, the cyst encircles the crown of the tooth with the crown protruding in the cystic lumen. The lateral variety is most commonly found in association with mesioangular impacted mandibular third molars that are partially erupted. The cyst grows parallel to the root surface and partly encircles the crown. In the circumferential variant, the cyst envelops the crown and continues for some distance along the root exterior so that a significant portion of the root appears to lie within the cyst [4,7]. The radiographic characteristics of the present case were typical of the circumferential variant. The panoramic X-ray reveals the location of the cyst and enables us to carry out a presumptive diagnosis.

CONCLUSION

Dentigerous cyst is one of the common cysts associated with the supernumerary tooth, impacted third molars and canines. Unlike other invasive procedure, neither extraction nor root canal treatment was performed of the involving teeth. Only the impacted tooth which was associated with the cyst was removed along with cystic lining, keeping it as a minimal invasive approach. Enucleation was done under local anesthesia in clinical setup without any bone graft being used. Natural bone remodeling was promoted. In subsequent follow-ups, lesion got completely resolved without any complications.

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