Large Bilateral Dentigerous Cyst – Rare case report

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ABSTRACT:
Dentigerous cyst is one of the most prevalent types of odontogenic cysts associated with partially erupted, developing, or impacted teeth. The most common teeth affected are impacted mandibular third molars and permanent maxillary canines. Most of the dentigerous cysts are solitary, slow growing, asymptomatic lesions that are incidentally found during routine radiographs. We reported a rare case that involves a dentigerous cyst encompassing the bilateral impacted mandibular canines associated with two permanent unerupted teeth in a single follicle which crossed the midline. This case involves an unusual clinical and radiographic presentation of a dentigerous cyst.

Keywords: Dentigerous cyst, Impaction, Odontogenic cyst.

INTRODUCTION:
Dentigerous cyst can be defined as an odontogenic cyst that surrounds the crown of an impacted tooth which means (Latin word: Dens - tooth, gerere - to bear) caused by fluid accumulation between the reduced enamel epithelium and the enamel surface, resulting in a cyst in which the crown is located within the lumen.¹ Browne and Smith in 1991 stressed that the term dentigerous cyst is preferable to that of follicular cyst, as the latter implies a derivation from the tooth follicle. As Browne has pointed out, the literal meaning of dentigerous is tooth bearing and the term is most appropriate for this lesion.²³ Dentigerous cysts are frequently discovered when radiographs are taken to investigate a failure of tooth eruption, a missing tooth or malalignment. There is usually no pain or discomfort associated with the cyst unless it becomes secondarily infected.⁴ Most dentigerous cysts are solitary and unicystic involving one side mandibular third molar area and found rarely bilaterally.⁵ Radiographically dentigerous cyst appears as well defined, round or ovoid, corticated, lucent lesions around the crowns of unerupted teeth.⁶ Histologically, the cyst wall is composed of a thin layer of connective tissue lined by epithelium that may be only two to three cells thick and this resembles the reduced enamel epithelium.⁷ We presented a rare case report of a large dentigerous cyst of a 34-year-old male
patient in the anterior mandible crossing the midline. This rare case is reported because of its unusual presentation in such location, and because it is a dentigerous cyst crossing the midline with bilaterally impacted mandibular canines in a single follicular space forming a single radiolucent area.

CASE REPORT
A 34 years old male patient presented to the department of Oral Pathology with painless swelling in the parasymphysial region since 2-3 months which was gradually increasing in size. On extra oral examination, a slight labial expansion was present in the mandibular anterior region of the jaw. Intra oral examination revealed swelling in the mandibular anterior region with the clinically absence of the bilateral mandibular canines. There was also the presence of peg shaped lateral incisors and high arch palate. The overlying mucosa appeared normal in colour, non-tender, hard in consistency, and smooth on palpation.

The orthopantomograph showed impacted mandibular canines, both of which were inclined mesially in a nearly vertical position and located in the region apical to the mandibular incisors. There was a well-defined radiolucent area evident around the crown of the both mandibular canine that was continuous with the cemento-enamel junction. Along with this there were elongated roots with dilacerations in most of the teeth which were evident in the orthopantomograph. The surgical enucleation of the lesion was performed in the army hospital under general anaesthesia and the substance was analysed. The post operative radiograph was taken. (Figure 1)

Figure1: Postoperative panoramic radiograph showing well defined radiolucency after the surgical removal of bilateral impacted canine.
Gross features of the lesion showed cystic cavity enclosed by capsule with the presence of cystic lumen and attached tooth were also present. The cystic lining was attached to the cementoenamel junction of the mandibular permanent canine.

On histopathological examination there was cystic lumen lined by the thin, nonkeratinized, stratified squamous epithelium supported by the connective tissue which composed of dense collagenous bundles having numerous fibroblasts, blood vessels lined by the endothelial cells. (10x & 40x).

The clinical, radiographical and histological findings were consistent with the diagnosis of Dentigerous cyst.

**DISCUSSION**

A dentigerous cyst is one that encloses the crown of an unerupted tooth by expansion of its follicle, and is attached to its neck.\(^3\) This is one of the most common types of developmental odontogenic cyst & nearly always involves or is associated with the crown of a normal permanent tooth.\(^1\) Dentigerous cyst develops only when the tooth crown is mostly formed, and the defined sequence to its origin is unsure. It has been suggested that dentigerous cyst may develop by fluid accumulation either between the reduced enamel epithelium and the enamel or alternatively between individual layers of the reduced enamel epithelium.\(^8\) The majority of the dentigerous cysts manifest in adolescents and young adults and often form around the crown of an unerupted mandibular third molar. The most important features of this cyst are its ability to expand asymptomatically and its potential to displace or resorb adjacent teeth or bone.\(^6\) It has been suggested that dentigerous cysts may be of either extrafollicular or intrafollicular origin and that those of intrafollicular origin may develop by accumulation of fluid either between the reduced enamel epithelium and the enamel, or within the enamel organ itself.\(^3\)
Radiographically, the cyst may be related to the crown of the tooth in three ways in central type, the cyst completely surrounds the crown of the tooth, in lateral type, the cyst projects laterally from the side of the tooth and does not completely envelop crown, and lastly in circumferential type, the entire tooth appears enveloped by the cyst. It has been suggested (Thoma, 1960) that dentigerous cysts originated by a degeneration of the stellate reticulum of the enamel organ, the central type originating over the axis of the crown, the lateral type presumably starting a little later in the crown development.

However, it has long been observed that teeth contained within a dentigerous cyst generally do not suffer from abnormalities of enamel. If the full thickness of enamel is always found on the contained teeth then the origin of a cyst at this site must be either by a proliferation and later cystic breakdown of the peripheral cells of this reduced enamel epithelium, or by a primary separation of this membrane from the surface of the enamel by a collection of fluid between it and the bare enamel surface, or by the involvement of the crown of a buried tooth by an adjacent cyst.

There have been previous case reports of a dentigerous cyst with a bilateral impaction of the mandibular canines but in our case it was unusual dentigerous cyst which was not associated with any of the syndromes as it is common developmental solitary cyst.

Usually bilateral dentigerous cysts occur in association with syndromes like mucopolysaccharidosis (type VI) and cleidocranial dysplasia, these diseases cause alterations in tooth development or in their eruption. These conditions may participate in the development of multiple dentigerous cysts. Bilateral dentigerous cysts are extremely rare in the absence of a syndrome or systemic disease.

The presence of more than one tooth in a single follicle has speculated the two possible theories that is, a fusion between two adjacent dentigerous cyst linings and the other is a fusion between the lining of one preexisting cyst and the lining of reduced enamel epithelium surrounding the adjacent tooth.

Not much case reports have been reported but the same report as the Gonzalez et al. (2011) who reported a Dentigerous cyst encompassing the right and left impacted mandibular canines and crossing the midline. Hence, we are also reporting this case, as there is a bilateral impaction of the mandibular canines which is unique in its own kind and forming a single dentigerous cyst containing the tooth in the same follicle. As it was also seen that cyst enlarges and displaced the root of the affected teeth apically which was same in accordance with the authors.

REFERENCES


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