



A Dentigerous Cyst Enveloping Multiple Impacted Teeth: A Rare Occurrence

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Abstract

Dentigerous cyst (DC) is a developmental odontogenic cyst that encloses the crown of an unerupted tooth by accumulation of fluid between the reduced enamel epithelium and the tooth crown and is attached to the neck of the tooth. Dentigerous cysts are the second most common odontogenic cysts and are associated with the crown of an unerupted tooth. Most commonly mandibular third molars, the other teeth that are commonly affected are maxillary canine. Usually involving single tooth more often, multiple cysts either syndromic or non-syndromic are also reported. Report a case of a 16-year-old male who presented with a chief complaint of pain & swelling in the maxillary anterior region of the jaw since 1 month. On examination, multiple missing permanent teeth were noted. On radiographic examination, a large corticated radiolucency surrounding the crowns of impacted maxillary right central and lateral incisors and canine was seen. The present case report is unique as there was single follicle containing multiple impacted teeth.

Keywords: Dentigerous cyst, Impacted teeth

Introduction

Dentigerous cyst is an epithelium-lined developmental cavity that encloses the crown of an unerupted tooth with lining attached at the cemento-enamel junction. Dentigerous cysts are the second most common odontogenic cysts and are associated with the crown of an unerupted tooth. Frequently occur in individuals between 2nd and 4th decade of life with slight male predilection and are seldom discovered in young children. Majority of the dentigerous cysts associated with mandibular third molars and the maxillary permanent canines, followed by the mandibular premolars, maxillary third molars, and rarely the central incisors, supernumerary teeth, and mesiodens. So dentigerous cysts involving the permanent central incisor are rare.

Present a rare case of a dentigerous cyst follicle associated with multiple impacted teeth.

Case Report-

A 19 year old male patient reported with the complaint of pain and swelling in upper right anterior region of jaw since one month. He noticed swelling since last 20 days in upper palatal region which was initially painless, gradually increased in size. The past history revealed that the patient had never been to dentist earlier for his dental treatment. Medical history was not contributory.

Intraoral examination revealed over retained 51,52,53,63(Fig 1). Discolouration with 51 & right palatal swelling was evident. (Fig 2).



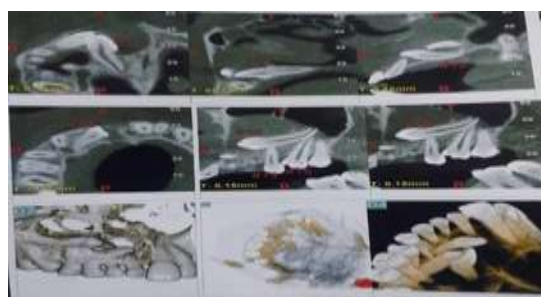
Orthopantomogram(OPG) showed a well-circumscribed, unilocular radiolucency with corticated border around the crown of horizontally impacted 11,12,13. Labial cortical plate expansion and perforation was seen.

CBCT showed well defined corticated radiolucency along with impacted teeth 11,12,13 measuring app 22.3mm X 23.6 mm X 25.2mm. Root resorption seen with 14,15. Based on clinical and radiographic findings provisional diagnosis was Dentigerous cyst and AOT.

Figure 1 shows Horizontally impacted tooth

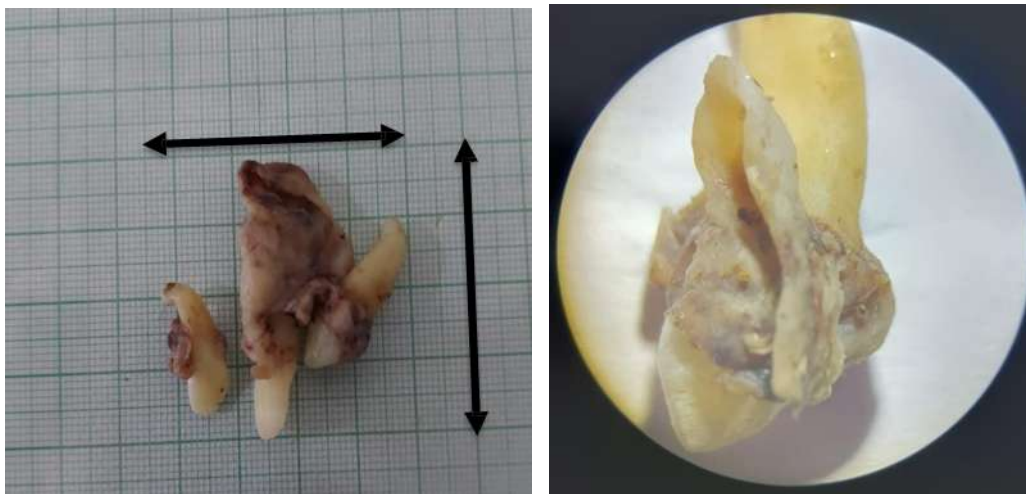


Figure 2- CBCT



An aspiration biopsy of the swelling revealed the presence of clear, straw-colored fluid suggestive of an odontogenic cyst. Under local anaesthesia lesion was enucleated along with impacted teeth and sent for histopathological examination. On gross examination the cystic lining was found attached to the crowns of impacted teeth 11,12,13.

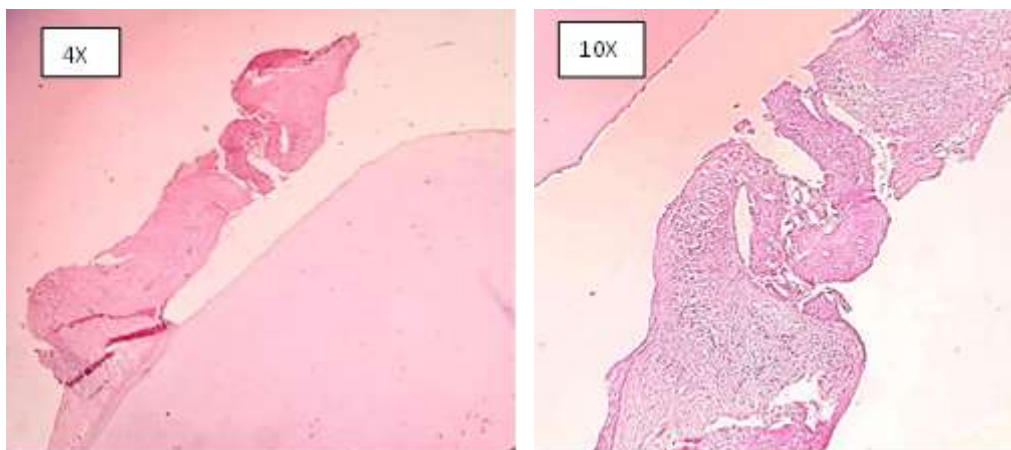
Excised cyst lining with attached teeth



Microscopically, present case revealed cystic lining attached to cemento enamel junction and lined by non keratinised stratified squamous epithelium was 2-5 cell layered thick with absence of rete pegs. Connective tissue wall showed loose, haphazardly arranged collagen fibre bundles with mild degree of chronic inflammation.

Based on above findings diagnosis of “Dentigerous cyst” was made

cyst lined by a thin layer of nonkeratinized stratified squamous epithelium



No.	Teeth & site of involvement	Authors	Gender	Age	Year
1.	Maxillary right canine and premolar	Agrawal et al ^[3]	F	40	2011
2.	Maxillary central, lateral incisor and canine	Rohilla et al ^[1]	M	10	2011
3.	Maxillary central, lateral incisor and canine	Pushkar et al ^[5]	M	15	2015
4.	Mandibular second and third molars	Gen Udagawa et al ^[8]	F	33	2022

Discussion –

Dentigerous means “tooth bearing” which describes the cyst is one that encloses the crown of an unerupted tooth by expansion of its follicle, and is attached to its neck.[3]It is also known as follicular cyst and is second most frequent odontogenic cyst. The cyst is always associated with the crown of an impacted, embedded, or unerupted tooth. It may also be found enclosing a complex compound odontoma or involving a supernumerary tooth. Mandibular and maxillary third molar, maxillary cuspid areas are most common sites of this cyst. Most lesions present in second and third decades (M:F – 3:2).

According to Toller, the origin of dentigerous cyst is breakdown of proliferating cells of the follicle after impeded eruption. These breakdown products result in increased osmotic tension and hence cyst formation.[11] Ben and Altini indicated that at least two types of dentigerous cysts occur. The first type is developmental in origin and occurs in mature teeth usually as a result of impaction. The second type is inflammatory in origin and occurs in immature teeth as a result of inflammation from a non-vital deciduous tooth or some other source spreading to involve the tooth follicle. Our literature results favourable with inflammatory in origin according to Ben and Altini.[10]

Two possible theories have been speculated to explain multiple follicle in single dentigerous cysts. One theory is a fusion between two adjacent dentigerous cyst linings and the other is a fusion between the lining of reduced enamel epithelium surrounding the adjacent tooth and the lining of one preexisting cyst.[9,10]

Radiographically, the dentigerous cyst usually occurs as a well-defined unilocular radiolucency, often with a sclerotic border. As the epithelial lining is derived from the reduced enamel epithelium, this radiolucency characteristically surrounds the crown of the tooth. In dentigerous cyst three radiological variations may be observed. Central, lateral and circumferential type dentigerous cyst. In the central variety the crown is enveloped symmetrically. Radiographic appearance of lateral type of dentigerous cyst results from dilatation of the follicle on one aspect of the crown and is commonly seen when an impacted mandibular third molar is partially erupted. Circumferential dentigerous cyst in which the entire tooth appears to be enveloped by cyst.

None of the case reports had involvement of more than three teeth. In this unique case report, the cyst was found to be enclosing three permanent maxillary teeth: Central incisor, lateral incisor, and canine. There are very few cases in literature reporting occurrence of dentigerous cyst associated with multiple impacted teeth. A search of database revealed four cases of such occurrences. Table 1 gives a summary of such cases.

Dentigerous cysts have the potential to grow into painful, aggressive lesions in the context of persistent infection. Persistently enlarging cyst may result in alveolar bone widening, tooth displacement, severe root resorption, extension of the buccal and lingual cortex, and pain. Development of cellulitis, deep neck infection, ameloblastoma, mucoepidermoid carcinoma, or epidermoid carcinoma occur if left untreated. Main differential diagnosis for dentigerous cyst is hyperplastic follicle. Odontogenic keratocyst, ameloblastic fibroma, and cystic ameloblastoma are the other differential diagnosis.

Treatment of choice may be marsupialization and surgical enucleation of the cyst. Surgical enucleation of the cyst was done in present case. Post operative follow up shows uneventful healing.

Conclusion-

Very few cases of dentigerous cysts involving multiple impacted teeth are reported in literature, we hereby, presenting this very rare case of dentigerous cyst involving multiple impacted teeth. Dentigerous cyst is asymptomatic & if left untreated, possible consequences like ameloblastoma like changes seen. Precise diagnosis and treatment is mandatory to prevent dreadful complications.

References-

1. Rohilla M, Namdev R, Dutta S. Dentigerous cyst containing multiple impacted teeth: A rare case report. J Indian Soc Pedod Prev Dent 2011;29:244-7.
2. Hasan S, Ahmed SA, Reddy LB. Dentigerous cyst in association with impacted inverted mesiodens: Report of a rare case with a brief review of literature. Int J App Basic Med Res 2014;4:61-4.
3. Agrawal M, Raghavendra PD, Singh B, Agrawal N. Multiple teeth in a single

- dentigerous cyst follicle: A perplexity. *Ann Maxillofac Surg* 2011;1:187-9.
4. Gaurkar S S, Deshmukh P T, Singh C, et al. (June 19, 2022) A Rare Presentation of Dentigerous Cyst.
5. Dahiwal P, Sodhi S, Kale L, Khambete N. A rare dentigerous cyst of maxillary central incisor associated with multiple impacted teeth: Case report and review of literature. *J Indian Acad Oral Med Radiol* 2015;27:273-8.
6. Shrikant GS, Savale SM, Pereira T, Tamgadge A, Tamgadge S, Birje S. Dentigerous Cyst In The Children: A Case Report. *Oral Maxillofac Pathol J* 2022; 13(2): page no. 183-185
7. Mortha N, Uppala D. Pathogenesis of Odontogenic Cysts. *Oral Maxillofac Pathol J* 2021;12(1): page no. 31-34
8. Gen Udagawa et al Bilateral kissing molars involving dentigerous cyst A case report and literature review *Journal of oral & Maxillofacial surgery, Medicine ,& Pathology* Volume 34, Issue 1, January 2022, Pages 40-44
9. Nishikawa S, Cheng J, Koyano Y, Irie T, Nomura T, Kato T, et al. Dentigerous cyst involving two impacted molars: Report of a Case. *Oral Med Pathol* 1996;1:60-2.
10. Altini M, Cohen M. The follicular primordial cyst odontogenic keratocyst. *Int J Oral Surg* 1982;11:175-82
11. Toller PA. The osmolality of fluid from the cyst of jaw. *Br Dent J* 1970;129:275-8.