

AN UNUSUAL PRESENTATION OF DENTIGEROUS CYST INVOLVING THE MAXILLARY CANINE IN A YOUNG BOY

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Abstract

Dentigerous cysts are benign odontogenic cysts that are associated with the crown of permanent teeth. They are usually single in occurrence and are located in the mandible.

Dentigerous cysts are always associated with an unerupted or developing tooth bud and are found most frequently around the crown of mandibular third molar, maxillary canine, mandibular premolar and maxillary third molars Here we report a case of dentigerous cyst in maxilla associated with maxillary impacted canine which was displaced to floor of the orbit compressing the maxillary sinus on left side.

The cyst was successfully treated by enucleation along with extraction of the involved maxillary impacted canine.

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Introduction

Dentigerous cysts are the second most common odontogenic cysts of jaw and accounts for approximately 20-24% of all the epithelial lined jaw cysts.^{1,2} Dentigerous cysts are always associated with an unerupted or developing tooth bud and are found most frequently around the crown of mandibular third molar, maxillary canine, mandibular premolar and maxillary third molars³.

They usually occur as single lesion. Bilateral and multiple cysts have been reported with syndromes such as basal cell nevus, mucopolysaccharidosis and clediocranial dysplasia¹. Here we report a case of dentigerous cyst in maxilla associated with maxillary impacted canine which was displaced to floor of the orbit compressing the maxillary sinus on left side.

Case Report

The present case was 11 year old male child who presented with a progressively increasing painless swelling in left maxillary region for last three months. The swelling was hard measuring 3×4.5 cms obliterating the left ala of nose. Patient's medical and family histories were non contributory. Intra oral examination revealed missing left canine and a hard, nontender swelling obliterated the buccal vestibule in 22, 23, 24 region. Aspiration revealed straw coloured fluid.

On radiographic examination , coronal CT scan revealed well defined oval shaped lesion involving the crown of left maxillary canine in left maxilla pushing the maxillary left canine superiorly to the infra orbital margin giving a hanging drop appearance (Fig-1).

Maxillary sinus on left side was compressed and was pushed superiorly to infraorbital margin. Axial section showed enlargement of the left maxilla with well defined lesion having sclerotic border with the tooth at centre of the lesion (Fig-2).

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Figure 1. Showing the lesion in CT coronal section with compres.



Figure 2. Showing the lesion in axial section.

Maxillary sinus was displaced superiorly and posteriorly with intact walls. Based on these a provisional diagnosis of dentigerous cyst with missing left canine was made. All other parameters were normal. The cyst was operated

under general anesthesia. Through upper left vestibule; semi lunar incision was taken to expose the cyst (Fig-3).

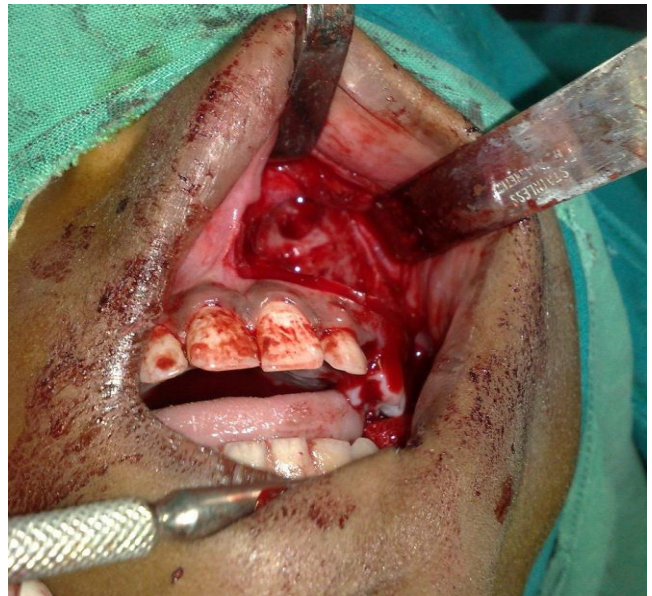


Figure 3. Showing the intraoperative photograph.

Thinned out cortical plate of the cyst was excised to expose the cyst. Lining of the cyst and its contents along with impacted canine were removed (Fig-4).



Figure 4. Showing the excised lesion.

Wound closing was done with 3-0 vicryl. The histopathological examination confirmed the lesion to be dentigerous cyst (Fig-5).

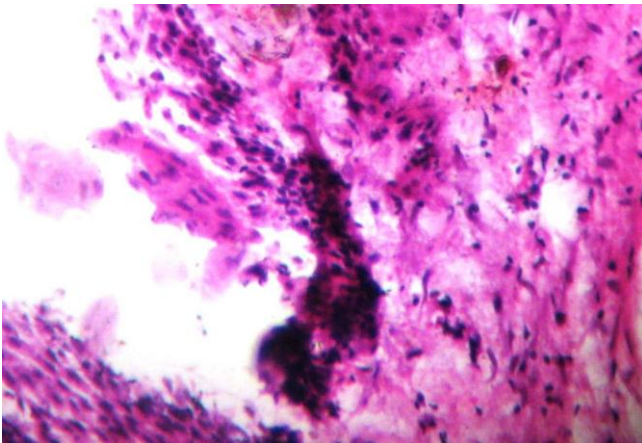


Figure 5. Photomicrograph of the lesion.

Discussion

A dentigerous cyst is defined as a cyst that encloses the crown of an unerupted tooth, expands the follicle and is attached to the cemento-enamel junction of the unerupted tooth. Mourshed stated that 1.44% of impacted teeth undergo dentigerous cyst transformation.⁴ Dentigerous cyst commonly occurs in 2nd and 3rd decade of life and are rarely seen in childhood. In 75% of cases, they are located in mandible. Though they are second common with maxillary canines, extensive maxillary involvement and childhood presentation are rare.^{5,6,7} The present case was seen in child with extensive maxillary involvement.

The exact histogenesis of dentigerous cyst is not known. It is stated that dentigerous cyst develops around the crown of an unerupted tooth by accumulation of fluid either between the layers of the reduced enamel epithelium and enamel or between the layers of the enamel organ. This fluid accumulation occurs as a result of the pressure exerted by an erupting tooth on an impacted follicle, which obstructs the venous out flow and thereby induces rapid transudation of serum across capillary wall.

Toller stated that the likely origin of dentigerous cyst is the breakdown of proliferating cells of the follicle after impeded eruption. These breakdown products result in increased osmotic tension and hence the cyst formation. It has also been reported that in many cases, a deciduous tooth or remnants of it was found in direct contact with the cystic cavity and the related deciduous tooth was always diseased. Hence, it is suggested that the origin of follicular cyst is from overlying necrotic deciduous

tooth. The resultant inflammation will spread to involve the follicle of unerupted permanent successor; an inflammatory exudation ensues and results in dentigerous cyst formation^{8,9}. Bloch also suggested that origin of dentigerous cyst is from overlying necrotic deciduous tooth⁴. An inflammatory dentigerous cyst may also occur due to periapical inflammation from non vital primary tooth. It is stated that the cyst develops around the partly formed crown of permanent tooth as result of interfollicular spread of a periapical inflammation from an overlying deciduous tooth¹⁰.

Radiographically the dentigerous cyst presents as a well defined unilocular radiolucency, often with the sclerotic borders that surrounds the crown of the tooth. A dentigerous cyst may give the impression of multilocular process because of persistence bony trabeculae within the radiolucency. In case of extensive bony involvement and presence of complex cystic lesion, CT imaging has more advantage than conventional radiography especially in maxilla. A dentigerous cyst in maxilla may be destructive and can erode the maxillary sinus, nasal cavities and even orbital encroachment may be observed. It's known that panoramic radiology has a limited value for evaluating the margin and extension of lesion. CT examination aid in delineating the extend of the lesion.

The indication for CT examination of dentigerous cyst are not so familiar, CT imaging displays bony details and gives exact information about the size, origin and content and relationship of the lesion involving maxilla¹¹. Observation of the cortical plates and antral bony walls on CT help to distinguish an antral from an extra antral maxillary lesion.¹ Thus CT imaging becomes an important diagnostic tool for planning the treatment of the complex lesion that involves the maxilla. In the present case though the lesion was large maxillary sinus was free from the lesion on left side and no associated signs and symptoms of sinus lesion was seen on left side.

Possible complications include permanent bony deformity, pathologic fractures from its expansive destruction of bone, loss of essential permanent dentition or its innervations or development of odontogenic tumors like ameloblastoma or malignancy like epidermoid carcinomas from the epithelial lining of cyst¹². In the present case, erosion of orbit, nasal cavity

and maxillary sinus along with permanent bony deformity were possible complications.

Treatment of dentigerous cyst depends on size, location, disfigurement and often requires the bone removal to ensure total removal of cyst especially in case of large ones. Dentigerous cysts are frequently treated surgically, either by enucleation or marsupialisation. Marsupialisation of cyst lining in treatment of dentigerous cyst in children in order to give a chance to unerupted tooth to erupt.

In the present case, as the tooth was displaced to the lower orbital margin and was away from the path of eruption, also considering the esthetic problem as the lesion was in anterior region, surgical enucleation was favored along with the tooth removal^{7,13}.

Conclusions

Prognosis is excellent and recurrence is rare if removed completely.

Declaration of Interest

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