

Dentigerous Cyst in Maxillary Premolar Region : A Rare Site of Occurrence

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Abstract

A case of a large dentigerous cyst associated with impacted maxillary premolar is presented. This case is of interest because of its extensiveness and unusual site of occurrence. Dentigerous cyst has a male predilection of 1.6:1, but in our case the patient was female. Cyst enucleation was done and patient was followed up for a longer period.

Key Words: Dentigerous cyst, Impacted tooth, Enucleation.

Introduction

The dentigerous cyst is a developmental odontogenic cyst that arises from the dental follicle of an unerupted or developing tooth. It is the second most common odontogenic cyst after radicular cyst. They account for approximately 20% of all jaw cysts. Peak incidence is in the teenage years and in 20's. It has a slight male predilection of 1.6:1. The cyst can attain very large size (10 - 15 cm).¹

The cyst is not painful unless secondarily infected or unless their size has created a pathological fracture.¹ The most common sites of occurrence are the mandibular and maxillary third molar, maxillary cuspid areas since these are the most commonly impacted teeth.² We report a case of dentigerous cyst of unusual large size in the maxillary premolar region which is a rare site of occurrence with brief review of literature.

Case Report

A 13 year old girl reported to us with a complaint of pain and swelling in the left side of her cheek region since one week. She gave no history of chronic sinusitis or recurrent dental infection. The medical history was not significant. (Fig. 1)

On extra oral examination there was asymmetry of the face with diffuse swelling located on the left malar region measuring 3×2 cm approximately. Consistency of the swelling was soft to firm. (Fig. 2)

Intraoral examination revealed a missing permanent left canine and first premolar with left deciduous canine retained. Buccal vestibule wrt 23 to 26 regions is obliterated and was tender on palpation. Overlying mucosa appeared normal with no discharge. Orthopantomogram revealed an impacted canine and first premolar tooth. A well defined, unilocular radiolucency with sclerotic margin was seen surrounding the crown of the impacted first premolar. Routine haematological investigations were within normal limits.

A provisional diagnosis of dentigerous cyst was arrived based on clinical and radiological findings. On aspiration of the swelling, it yielded straw coloured fluid which was sent for biochemical investigation, protein content of aspirated fluid was 6.2g/100ml. The result of which was consistent with the diagnosis of a cystic lesion. Enucleation of the cyst was chosen as the treatment of choice. (Fig. 3, 4, 5, & 6)

Under local anaesthesia incision was placed in the left mucobuccal fold extending from lateral incisor to first molar region. Mucoperiosteal flap was elevated to expose the lesion. Paper thin bone was present covering the lesion, which was removed to expose the cyst. The cyst was finally separated from the bony cavity and removed in toto along with the impacted premolar. The impacted canine was allowed to erupt spontaneously. (Fig. 7 & 8)

The entire specimen was sent for

histopathological examination. The report revealed maxillary premolar encased by an infected dentigerous cyst. Patient is on regular follow up for 5 years without any signs of recurrence.

Discussion

Dentigerous cyst is defined as an epithelium-lined pathologic cavity that contains the crown of a tooth and fluid or semisolid material. Dentigerous cyst is a common developmental odontogenic cyst which encloses crown of the unerupted tooth and is attached to the cemento enamel junction. It is also called follicular cyst as it arises between the enamel epithelium and the tooth or remnants of odontogenic epithelium.³

Dentigerous cyst occur most commonly in mandibular third molar and the other teeth commonly affected are, in the following order of frequency, maxillary canine, maxillary third molar and rarely maxillary incisor.⁴

The dentigerous cyst is often painless unless secondarily infected or unless their size has created a pathological fracture. They progress slowly and may exist for several years without being noticed. Therefore majorities are discovered accidentally on routine radiological examination.⁵

The present case report highlights the fact that apart from the rare site of occurrence i.e maxillary premolar region, the cyst was painful due to secondary infection.

There are two theories to explain the pathogenesis of dentigerous cyst.⁴



1. Fluid accumulation between reduced enamel epithelium and the crown of the impacted tooth. This fluid pressure causes proliferation of reduced enamel epithelium, which is attached to cemento- enamel junction of the tooth.
2. Breakdown of stellate reticulum leads to fluid accumulation between inner and outer enamel epithelium. The fluid pressure incites proliferation of outer enamel epithelium, which remains attached to the tooth at the cemento- enamel junction. The inner enamel epithelium is then pressed onto the crown surface.

In both the theories, the fluid generates cystic proliferation by its hyperosmolar content created by cellular breakdown and cell products, creating an osmotic gradient to pump fluid into the cystic lumen, henceforth leading to cystic transformation.⁴

Radiographic feature of a dentigerous cyst reveal a well-circumscribed radiolucent area associated with an unerupted tooth crown.⁶ In the presented case there was a well defined radiolucency with sclerotic margin suggestive of infected cyst.

Toller postulated that a protein content of less than 4g/100ml indicates the diagnosis of odontogenic keratocyst. Value of over 5g/100ml suggests a radicular, dentigerous, fissural or even an ameloblastoma.⁶ Diagnosis of a dentigerous cyst can be made by careful clinical, radiological and histological investigations.

The two treatment modalities for

dentigerous cyst are enucleation and marsupialization. The preferred treatment is complete removal of the lesion from the bony cavity by enucleation. Marsupialization is less ideal: it runs the risk of allowing an ameloblastoma in situ or a microinvasive ameloblastoma or other neoplastic transformation of the cyst lining to develop into a more invasive disease. It also commits the wound to a slower healing process, a more laborious postoperative course, and reduction in the final bone regeneration.¹

Marsupialization is indicated in only two situations-

1. When it will allow a tooth to spontaneously erupt or to be orthodontically guided into a functional position in the arch.
2. When the surgeon identifies a relative risk of damaging developing teeth or neurovascular bundles during the enucleation.¹

Most dentigerous cysts are solitary. Bilateral and multiple cysts are usually found in association with a number of syndromes including basal cell nevus syndrome, muco-polysaccharidosis (type VI), cleidocranial dysplasia & Maroteaux-lamy syndrome.^{4,7}

From a clinical standpoint, the differential diagnosis of a dentigerous cyst includes other cystic lesions such as odontogenic keratocyst, large periapical cyst⁵ and primordial cyst; odontogenic tumors such as mural ameloblastoma, unicystic ameloblastoma, ameloblastic fibroma and adenomatoid odontogenic tumor.⁸

Prognosis is good; there is no

reported case of recurrence unlike the odontogenic keratocyst with highest recurrence. In case if a portion of a dentigerous cyst lining remains, it will lie dormant and not retain its stimulation to form another cyst.¹

Neoplastic changes within simple odontogenic cysts appear to be a rare but definite entity. The neoplasms associated with epithelial lining of the odontogenic cyst include ameloblastoma, ameloblastic fibroma, calcifying epithelial odontogenic tumor, adenomatoid odontogenic tumor, odontoma, squamous cell carcinoma and mucoepidermoid carcinoma. Among the odontogenic cysts, neoplastic transformation is considered to be highest in keratocyst and dentigerous cyst.⁹

Conclusion

On clinical examination of patients, who present with swelling, one must bear in mind that the rare site of occurrence of dentigerous cyst such as in maxillary premolar region is seen in the presented case. Long term follow up of such patients is essential as there is a high propensity for them to undergo neoplastic transformation.

References

References are available on request at editor@healtalkht.com

Legents

- Fig. 1 : Pre operative extra oral view
- Fig. 2 : Intra oral view
- Fig. 3 : On aspiration
- Fig. 4 : Straw coloured fluid on aspiration
- Fig. 5 : Flap reflection
- Fig. 6 : Enucleation of cyst with impacted premolar
- Fig. 7 : Impacted canine exposed.
- Fig. 8 : Post operative intra oral view

