



ORIGINAL RESEARCH PAPER

Dental Science

A CASE REPORT ON DENTIGEROUS CYST INVOLVING IMPACTED MANDIBULAR SECOND PREMOLAR. A RARE ENTITY.

KEY WORDS:

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ABSTRACT Dentigerous cysts are the second most prevalent type of cyst in the maxillofacial area after radicular cyst. They are commonly asymptomatic and are typically discovered after a radiographic scan to ascertain why the eruption was deferred. The radiographic examination reveals a dentigerous cyst lesion with a clearly defined sclerotic border and a radiolucency around the crown of an impacted tooth. Treatment modalities range from enucleation to marsupialization, which may influenced by the age of the patient and severity of impaction This article report the case of dentigerous cyst associated with the unerupted 2nd premolar.

INTRODUCTION

The prevalence of dentigerous cysts, a kind of odontogenic cyst, ranges from 20% - 24% among all jaw cysts.[1] These cysts develop between the enamel epithelium and the enamel of the damaged tooth's crown, and fluid builds up nearby.[2,3] A dentigerous cyst is frequently found in the area of the mandibular third molar and invariably contains a crown of an impacted tooth.[4,5] These cysts frequently have no symptoms, and they are typically found through a radiographic scan to determine why the eruption was delayed. In the radiographic examination, a well-defined unilocular radiolucency that is encircling the crown of an unerupted tooth is seen, as well as a dentigerous cyst lesion with a well-defined sclerotic border.[6,7]

The crown of an impacted tooth is often affected by a unilocular, asymptomatic, radiolucent lesion in a typical clinical presentation of a DC. Unless it develops a secondary infection, it usually doesn't cause pain or discomfort [8]. The cemento-enamel junction of the tooth is where the radiolucency often develops [9]. The most majority are unintentionally found when radiographs are done to look into an eruption failure or an unnaturally positioned tooth [8]. The determination of the presence of a DC is typically uncomplicated. A dental follicle, that is hyperplastic or even an odontogenic keratocyst or unicystic ameloblastoma must be included in the differential diagnosis, albeit [9].

They are the most frequent developing cysts of the jaws and the second most prevalent form of odontogenic cysts. They develop when fluid gathers at the junction of cementum and enamel of an impacted or unerupted tooth, connected between the crown and decreased enamel epithelium [11] Dentigerous cysts can form at any age, although the second and third decades see the highest occurrence. [12] Males are more prone than females to acquire dentigerous cysts. [13] When these individuals are evaluated, it will be discovered that a tooth or teeth are missing along with a pronounced swelling. If untreated, pathological fracture is another complication. Regular dental radiographs are used to provisionally identify dentigerous cysts. They frequently include impacted canines, third molars, and maxillary molars, while mandibular premolars have very infrequently been mentioned in the literature.

This case report discusses a rare instance of a dentigerous

cyst in a 21 year old female patient with an unerupted, impacted left mandibular second premolar.

Case Report

A 21-year-old female patient visited the Department Of Oral And Maxillofacial Surgery, at Maharana Pratap College Of Dentistry And Research Centre, Gwalior (M.P) with the chief complaint of swelling in the left mandibular premolar region. Patient presented history of swelling since past 3 months. On examining clinically, the mandibular left second premolar was missing, over-retained deciduous molar was present and patient gave no past dental history of extraction. Swelling was fluctuant and no aspiration was evident. The patient's oral hygiene maintenance was good. [Figure 1]



Figure 1: Clinical intraoral findings

An orthopantomogram was advised for investigation, it was observed that there was an impacted second premolar. Moreover there was an evident radiolucency noted over the tooth which was unilocular, with well defined margins involving the crown portion of the tooth. Along with these findings, it was found that the first premolar was tilted distally occupying the edentulous area, it might also be due to the pressure applied on the root apex of 1st premolar by the crown of impacted mandibular second premolar and the lesion over that tooth. [Figure 2]

Based on the findings a provisional diagnosis of dentigerous cyst was made and enucleation of the cyst was planned. The cyst was enucleated by a vestibular incision and blunt dissection of the respective area. Followed by enucleation the impacted second premolar was also retrieved. Ab gel was placed in the socket and the soft tissue approximation was done by 3-0 silk suture. Then the cystic lining was sent to histopathological analysis. [Figure 3-6]



Figure 2: OPG showing cyst and impacted tooth



Figure 3: Enucleation of the cyst



Figure 4: Ab gel placed in the socket



Figure 5: Suturing Done after placing AB gel

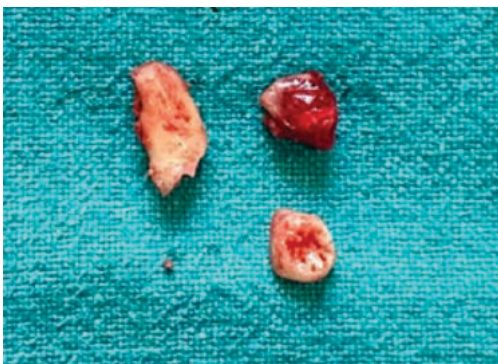


Figure 6: Retrieved tooth and cyst lining

Based on the histopathological report the tissue showed moderate chronic inflammatory cells and areas of calcification, no evidence of granuloma and features were consistent with dentigerous cyst. A complete removal of cystic lining was assured, as the literature showed squamous cell carcinoma, ameloblastoma, and mucoepidermoid carcinoma as complications of untreated dentigerous cyst [13]

SURGICAL PATHOLOGY REPORT @

SPECIMEN : Dentigerous cyst
CLINICAL HISTORY : --
GROSS : Received 2 grey yellow soft tissue bits together measuring 0.7 x 0.6 x 0.5 cm.
MICROSCOPY & IMPRESSION : **Dentigerous cyst :**
 - Pieces of fibrous tissue containing moderate chronic inflammation and areas of calcification.
 - No evidence of granuloma or malignancy seen.
 - Features are consistent with Dentigerous cyst.
HISTOPATH NO : [LPLB/73396/23 : Entire tissue]

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Note: Case reported by Dr. Rajni Parmar

DISCUSSION

The DC usually goes undetected since it has no symptoms. They are therefore typically discovered as a result of a delay in the timeline of the affected tooth's eruption, which results in deformation of the alveolar bone and expansion of the cortical bone, both of which acquire significant dimensions as a result of the delay in their identification. In these situations, surgical intervention with little damage to anatomical components is essential. In patients receiving therapy for cyst enucleation, postoperative facial structural anomalies may result in functional and aesthetic issues in addition to having an adverse psychological impact [14]. Enucleation is thus only performed on minor lesions or those when saving the tooth is not an option.

The impacted tooth is usually the mandibular third molar in about 75% of cases of DC.[15]. The most involved teeth in descending order of occurrence are the mandibular 3rd molars, maxillary 3rd molar, maxillary canine, and mandibular 2nd premolar. This order of frequency also corresponds to the frequency of impaction of the respective teeth. The hydrostatic pressure that develops within the lumen of a DC owing to the accumulation of fluid over time, has some pressure-related effects on the surrounding bone and the adjacent teeth.[16] Therefore, DCs tend to be expansile and cause root resorption of the adjacent teeth; more so than other developmental OCs such as OKC.[17] Herein, whether the mobility noted with respect to the deciduous second molar above the lesion could be fully attributed to the resorption caused by the cyst is questionable. It could also possibly be physiologic mobility given the age of the patient and no effect on the roots of any other adjacent tooth.

Considering the pathogenesis rationally, DCs cannot recur following their removal since the mechanism of fluid accumulation gets disrupted.[15,16] Therefore, simple surgical enucleation is considered to be adequate for the treatment of DCs. In the present case, there was adequate healing and no evidence of disease after three months of follow-up.

CONCLUSION

Early intervention can allow the associated teeth to erupt normally, thereby eliminating the need for further

rehabilitation for the patients, ultimately improving the patient's quality of life, given their young age in most cases. However, despite being common and simple to diagnose, one must proceed with caution when diagnosing a DC as the clinical and radiographic features overlap significantly with other odontogenic cysts and tumors.

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