



Dentigerous Cyst Associated with Impacted Premolar Tooth

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Authors' contributions

This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Dentigerous cysts of the mandible is an uncommon entity in routine clinical practice. The dentigerous cyst is found in children and adolescents, the highest incidence is in the second and third decades. This article reports the case of dentigerous cysts associated with the tooth germ of the unerupted premolar. The treatment approach includes enucleation and extraction of involved teeth. In conclusion, proper case selection early detection for conservative treatment might be good option for treating dentigerous cysts.

Keywords: Dentigerous cyst; follicular cyst; premolar tooth; mandible; tooth germ.

1. INTRODUCTION

Dentigerous cysts are the most common developmental cysts of the jaws and the second most common type of odontogenic cysts after

radicular cysts [1]. Dentigerous cyst, also known as a follicular cyst, is caused by fluid accumulation between the reduced enamel epithelium and the enamel surface of a formed tooth and it originates by separation of the follicle

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from around the crown of an unerupted tooth [2]. Dentigerous cysts remain asymptomatic and are usually diagnosed incidentally during the routine radiological examination. Rarely, these cysts get secondarily infected and the patient presents with symptoms such as swelling and pain.

These cysts are usually unilateral, but several rare cases of bilateral dentigerous cysts have also been reported in the literature [3,4]. The impacted teeth associated with cysts are treated using extraction or non-extraction conservative methods [3,5]. Radiographs show radiolucent unilocular lesion characterized by well-defined sclerotic margin associated with unerupted or impacted tooth. We hereby report a rare case of a 24 year-old boy with dentigerous cyst associated with an impacted premolar tooth.

2. CASE PRESENTATION

24 year male patient presented with painless swelling of the right side of the lower jaw for the past 6-8 months. It was gradually increasing in size causing intermittent pain and not resolving with medication. On examination, there was a large sized cystic enlargement, firm and fixed swelling with chin enlarged outwards and downwards. Right lower premolar was unerupted (Fig. 1). Computed tomography showed attenuation in the body of the mandible with well-defined cystic mass causing expansion of the mandible with overlying cortex thinned out hyperdense, unerupted tooth seen in the cystic cavity (Fig. 2). Under GA mucoperiosteal trapezoidal flap raised (Fig. 3), deroofing of the buccal cortical plate done to expose the cystic lining and cavity (Fig. 4) with an impacted tooth (Fig. 5). Enucleation of the cyst done (Fig. 6) along with the removal of the associated impacted tooth along with other molar and premolar were done. Primary closure has done after thorough debridement (Fig. 7).



Fig. 1. Pre operative lesion in relation to molars

3. DISCUSSION

Dentigerous cysts are true developmental cysts which are usually found in association with impacted teeth, [6] their attachment with the cemento-enamel junction of the involved teeth forms the prime basis for their diagnosis. In order of decreasing frequency, they are associated with mandibular third molars, maxillary canines, mandibular second premolars, maxillary third molars, mandibular first premolar, maxillary second premolar and mandibular canine [7] and usually detected by routine radiographic examination.



Fig. 2. Radiographic and ct features showing cystic mass with enlarged mandible



Fig. 3. Exposure of surgical site with flap raised



Fig. 4. Deroofing of surgical site by exposing buccal cortical plate



Fig. 5. Impacted tooth been exposed

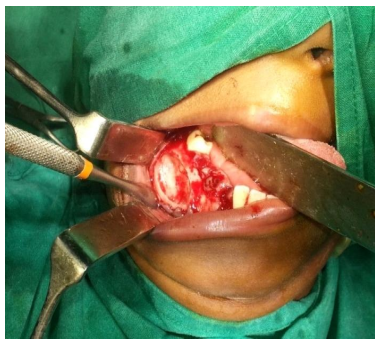


Fig. 6. Enucleation of lesion



Fig. 7. Closure of the lesion

Radiographically, dentigerous cyst may appear as well-defined unilocular or multilocular radiolucency enclosing the crown of an unerupted tooth [8]. The radiolucency usually arises in the cemento-enamel junction of the tooth. The histopathologic characteristics of the dentigerous cyst (pathological cavity lined by a hyperplastic epithelium and the presence of intense chronic inflammation) and dentigerous cysts (thin fibrous cystic wall lined by 2- to 3-layer-thick stratified nonkeratinizing squamous epithelium and the presence of scarce inflammatory infiltration in the cellular connective

tissue) [9]. Differential diagnoses of such radiolucency include radicular cyst, odontogenic keratocyst and odontogenic tumours such as ameloblastoma, Pindborg tumour, odontoma and cementomas [10].

Complication associated are as follows: [11]

- Carcinomas or neoplastic changes: squamous cell carcinoma or epidermoid carcinoma may arise from epithelial lining of the cyst.
- Pathologic Jaw Fracture: if cyst is eroded completely especially in posterior bone, which is very rare, may cause pathologic bone fracture.
- Secondary Infection: secondary infection may occur and cause further complication.

Enucleation is the standard treatment for a dentigerous cyst along with extraction of the associated supernumerary tooth [12,13]. Marsupialisation is recommended for a large cyst when a single draining may not be effective and complete removal of the surrounding structure is not desirable [14] for a large cyst. Scolozzi et al. [15] recommended enucleation followed by an immediate bone grafting procedure. In the present case, surgical removal of the impacted premolar and enucleation without using bone grafting of the associated cyst was performed.

4. CONCLUSION

In conclusion, Hence, it is suggested, that the choice of therapeutic approach for a dentigerous cyst should not be randomly selected but customized to patients' need, based on: the size and location of the cyst, patients' age, affected dentition, status of root completion of the associated tooth, clinical course, histological presentation relationship with the surrounding structure and patients' compliance for a particular treatment [16].

CONSENT

As per international standard or university standard, patient's written consent has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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