

Dentigerous Cyst- A Rare Case Report

Akanksha A. Auti¹, Deepak K. Motwani², Neetu Y. Bhoplewad³

¹Department of Oral and Maxillofacial Surgery, CSMSS Dental College, Aurangabad, Maharashtra, India.

²Department of Oral and Maxillofacial Surgery, CSMSS Dental College, Aurangabad, Maharashtra, India.

³Department of Oral and Maxillofacial Surgery, CSMSS Dental College, Aurangabad, Maharashtra, India.

INTRODUCTION

The second most frequently found cyst in the jaws is dentigerous cyst comprising of 14–20% cysts in the jaw. Mostly found in the mandible with male predilection.^[1-4] This cyst is attached to the cervical margin of the tooth which is impacted. Reduced enamel epithelium proliferates after the enamel formation is complete which leads to the development of dentigerous cyst. These cysts enlarge as a result of accumulation of fluid between the crown of an impacted tooth and the reduced enamel epithelium.^[5] When radiographs are taken to determine the reason for failure of a tooth to erupt, dentigerous cysts are usually discovered. They are usually unilocular, always radiolucent and large lesions occasionally show a scalloping multilocular pattern.^[3,4,6,7]

The frequency of impaction is roughly the same as that of cyst formation for mandibular third molars. Maxillary third molars have higher frequency of impaction than cyst involvement, which suggest that this tooth has a much lower relative risk of developing a dentigerous cyst than its mandibular counterpart.^[8] Similarly, the risk of formation of cyst around the crowns of impacted mandibular first premolars, maxillary incisors, or mandibular second molars is very high, although the frequency of failure of eruption of these teeth is extremely low.^[9] Dentigerous cysts are mostly painless but may attain large size with root resorption of teeth till it manifests clinically or radiographically. Treatment of cyst remains cystic enucleation and removal of suspected impacted tooth. Prognosis is good and recurrence is rare if removed completely.

Dentigerous cysts are seen most commonly in association with impacted maxillary and mandibular third molars and maxillary canines. Supernumerary teeth accounts only 5% of dentigerous cysts, of which mesiodens is the most common type. Initially such cysts remains completely painless unless infected, and discovered on routine radiographs. This paper presents a case of 35-year-old male patient with a dentigerous cyst associated with impacted right mandibular premolars and supernumerary teeth that caused painful swelling in the right lower buccal vestibule. The patient was treated surgically by enucleation of a dentigerous cyst in toto with surgical extraction of premolars and supernumerary teeth under local anaesthesia followed by primary wound closure.

PRESENTATION OF CASE

A 35-year-old male patient reported to Oral and Maxillofacial Department at C.S.M.S.S. Dental College and Hospital with a chief complaint of intraoral painful swelling in the lower right region which was present since 12 months. The chief complaint of the patient was pain with respect to 84 and 85 region which was curiously destructed since 15 - 20 days. Extraoral examination revealed no swelling. Intraoral examination revealed a swelling extending laterally from distal surface of mandibular right canine, inferiorly obliterating vestibule and superiorly up to the gingival margin [Fig. 1]. Slight tenderness was noticed on percussion with carious 84 and 85.

Corresponding Author:

*Dr. Akanksha A. Auti,
Sai Shraddha Housing Society,
Shirdi-423109, Dist-Ahmednagar,
Maharashtra, India.
E-mail: autiakanksha9@gmail.com*

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The panoramic radiograph [Fig. 2] showed radiolucency involving impacted 44, 45 and 2 supernumerary premolars which was large unilocular, well-circumscribed radiolucent lesion enveloping the unerupted premolars and two supernumerary teeth. Based on the aforementioned findings, it was provisionally diagnosed as dentigerous cyst with a differential diagnosis of radicular cyst or odontogenic keratocyst for which enucleation was considered as treatment option along with the removal of all unerupted teeth. Under local anaesthesia, maxillomandibular fixation using arch bars was done as a preventive measure for preventing pathologic fracture. Carious 84 and 85 were extracted and a full thickness mucoperiosteal flap was raised anteriorly from mandibular right lateral incisor to right second molar posteriorly [Fig. 3]. Surgical exposure of pathologic lesion was done [Fig. 4] and cystic lining was enucleated in toto along with the removal of all unerupted associated teeth [Fig. 5]. Platelet rich Fibrin (PRF) and decalcified freeze dried bone Allograft (DFDBA) (Osseograft) placed in the bony defect [Fig. 7] and mucoperiosteal flap was sutured with 3-0 black braided silk suture (BBSS) (Ethicon Mersilk). [Fig. 8] Cystic lining was sent for histopathology. Regular follow up was done for uneventful post-operative healing. On the basis of clinical, radiographic and histopathological findings [Fig. 9], the present case was diagnosed as dentigerous cyst involving the unerupted right mandibular premolars.

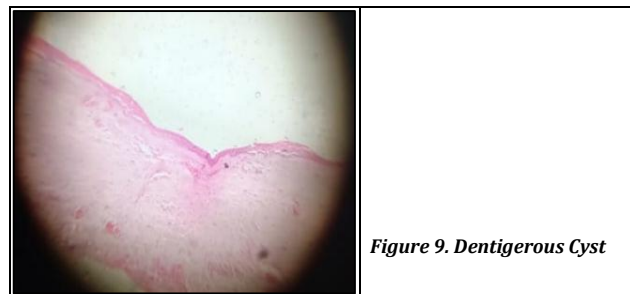


Figure 9. Dentigerous Cyst

DISCUSSION

Dentigerous cysts of odontogenic origin are developmental cysts, which comprises of 14 to 24% of the cysts of jaw.^[10,11] These can attain a large size with lesser or no complaints, early diagnosis and its removal is important to reduce morbidity. Literature suggests that dentigerous cysts occur more frequently during the second decade of life,^[12,13] and can also be found in children and adolescents. The ratio of dentigerous cysts in male and female patients is 1:2.^[14] Whites are more prone to dentigerous cyst than blacks.^[15] Dentigerous cysts are usually single, grow gradually, painless lesions that are found during routine radiographs incidentally, taken to identify a missing tooth in the arch. They can occur anywhere in the jaw but frequently seen in relation to impacted mandibular third molars followed by the maxillary canines and maxillary third molars.^[15,16,17] Rarely these cysts become symptomatic when infected which cause erythema and swelling. These cysts are usually small in size but when large, leads to pathological fracture as a result of expansion and thinning of the cortex.^[15,18] The clinical presentation is relative to a dentigerous cyst, in our case it was associated with impacted mandibular premolars and supernumerary teeth.

Radiographic features are characterized by a well-defined radiolucency circumscribed by a sclerotic border, associated with the crown of an unerupted or impacted tooth. When infected the borders may be ill-defined. Rarely they may be found with a supernumerary tooth or an odontoma.^[16,18] Follicular space greater than 4 mm is diagnosed to be a dentigerous cyst.^[15] The cyst is classified according to its relation with the involved tooth crown as central, lateral and circumferential type. The most common is the central type which surrounds the crown. The lateral variant partially surrounds the crown and extends along the side of the root. The circumferential type presents both surrounding the crown and the root of the tooth involved.^[16]

Histologically, 2 to 5 cell layers of cuboidal to flattened nonkeratinized epithelial cells lines the lumen. Forms keratin by metaplasia.^[19] The connective tissue contains more collagen when inflamed. Chronic inflammatory cell infiltration is usually present.^[15,18] Treatment of dentigerous cysts is most commonly by Enucleation,^[11] Marsupialization^[20] and decompression of cyst by fenestration.^[13]



Fig. 1. Preoperative Photograph Showing Intraoral Swelling; Fig. 2: Preoperative Radiograph Showing Radiolucency with Sclerotic Border Involving 4 Premolars; Fig. 3: Reflection of Full Thickness Mucoperiosteal Flap; Fig. 4: Exposure of Premolars; Fig. 5: Cyst Enucleation; Fig. 6: Platelet-Rich Fibrin and DFDBA; Fig. 7: PRF and DFDBA Placed in the Bony Defect; Fig. 8: Wound Closure Done Using 3-0 BBSS

Enucleation along with removal of impacted tooth is the choice of treatment. Dentigerous cyst which are large are treated first with marsupialization followed by enucleation. Prognosis is good when the cyst is completely enucleated and recurrence rate is found to be rare. The epithelial lining has the pluripotential capacity cause of which these lesions may develop into ameloblastoma, squamous cell carcinoma and mucoepidermoid carcinoma.^[15]

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