

Dentigerous Cyst Associated With Maxillary 3rd Molar Involving Maxillary Sinus -A Rare Case Report

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Abstract Dentigerous cyst is the most prevalent type of odontogenic cyst and is associated with crown of an unerupted or developing tooth, and accounts more than 24% of jaw cysts, usually develops around crown of mandibular third molar, maxillary canine, followed by mandibular premolars, but rarely involve supernumerary teeth and central incisors. Here, we present an interesting case of dentigerous cyst in a 20-year old female patient, which developed around an impacted maxillary 3rd molar. Histological examination revealed a cystic lining made up of non-keratinized to focally parakeratinized stratified squamous epithelium and dense fibrous connective tissue wall. The epithelial lining was of variable in thickness and in focal areas showed variable dysplastic features.

Keywords: dentigerous cysts, odontogenic cyst, impaction, maxillary molar

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1. Introduction

Dentigerous cyst is a developmental odontogenic cyst which develops around the fully-formed crown of an unerupted tooth [1]. Most are discovered on routine radiographs, when a tooth has failed to erupt, a tooth is missing; teeth are tilted or are otherwise out of alignment. The dentigerous cyst is most frequently found in the age group 20 - 40 years. The most prevalent areas for dentigerous cysts are, in order of frequency, the mandibular third molar, maxillary third molar, maxillary canine and mandibular second premolar that is the teeth that are prone to impaction [2,3]. About 75% are located in the mandible. Here we present a case of dentigerous cyst occurring in maxilla associated with 3rd molar involving the maxillary sinus.

2. Case Report

A 26-year-old female patient reported to Department of Oral Medicine and Radiology, Rajah Muthiah Dental College, Annamalai University, Chidambaram, South India with a complaint of pus discharge in the upper right back jaw region for the past 2 day. Patient related the onset of swelling 2 months back. She noticed a swelling in the right middle third region of face, which was gradual in onset, gradually regressed after taking medication prescribed by general physician. Swelling was not associated with pain or numbness. History of spontaneous pus discharge from the right upper back jaw region since 2 days with fetid odor from the mouth.



Figure 1. Showing frontal view of the patient

Extraoral examination (Figure 1) revealed facial asymmetry due to a diffuse swelling over the right middle third region of face with ill defined borders. Skin over the swelling was stretched and shiny. The surrounding skin was normal. No visible pulsation and no secondary changes like sinus opening and pus discharge was evident. Swelling was firm in consistency, non-tender, and afebrile.

Intra oral examination (Figure 2) revealed missing tooth in relation to 18. Expansion of cortical bone extending from distal of 14 region to distal of 17 region. Pus discharge was evident from the sinus opening on the alveolar ridge in relation 18 region. Expansion of buccal cortical bone extending from distal of 14 region to distal of 17 region, which was uniform, hard and smooth in the 14, 15 region with yielding areas in the 16, 17 region. Considering the age of the patient, missing tooth in relation to 18, buccal cortical plate expansion and pus discharge from the sinus opening on the alveolar ridge in

relation to 18, a provisional diagnosis of infected dentigerous cyst was made. Differential diagnosis ranges from Keratocystic odontogenic tumour, Calcyfying cystic odontogenic tumour, Adenomatoid odontogenic tumour, Ameloblastoma, Mucocele of maxillary sinus.



Figure 2. Expansion of cortical bone

Blood profile was normal. Intra-oral periapical radiograph (Figure 3) in relation to 18 revealed well defined radiolucency with corticated border involving the impacted tooth of size approx.2x2 cm. Root resorption in apical third in relation to 15.16.17. Widened PDL space in apical one third in relation to 15, 16 and 17. Lamina dura was lost in apical one third in relation to 15, 16, 17. Right lateral maxillary occlusal view showed (Figure 4) expanded buccal cortical bone in relation to 15.16.



Figure 3, Well defined radiolucency with impacted tooth



Figure 4. Occlusal view – expansion of buccal cortical bone

OPG-(Figure 5) Revealed well defined radiolucency with corticated border of size approx.2x2 cm involving

unerupted tooth invading the maxillary sinus in relation to 18. Root resorption seen in the apical one third in relation to 15.16,17.



Figure 5. well defined radiolucency with corticated border with unerupted tooth

Maxillary sinus level – coronal CT scan sections (Figure 6, Figure 7) in soft tissue window shows well defined isodense area in right maxillary sinus around impacted 18 with scattered hypodense areas in between. Lesion is showing infiltration into nasal fossa. Floor of the sinus appears pushed down. Lesion is pushing upper wall of sinus also. On axial sections in soft tissue window shows well defined isodense area with 3 hypodense area seen. Lesion is extending to nasal fossa and expansion of right maxilla evident. No evidence of calcification.



Figure 6. Axial sections shows well defined isodense area in right maxillary sinus around impacted 18



Figure 7. Coronal sections in soft tissue window shows well defined isodense area with hypodense area

Aspiration (Figure 8) showed positive straw colour fluid. Patient underwent cystic enucleation under LA along with removal of tooth and mass was sent for histopathological evaluation. Histopathology (Figure 9) revealed cystic lining made up of non-keratinized to focally parakeratinized stratified squamous epithelium and dense fibrous connective tissue wall. The epithelial lining is of variable in thickness and in focal areas shows variable dysplastic features. Some areas show disruption of basement membrane also. The stromal wall shows dense chronic inflammatory cell infiltration with focal dysplastic change and final diagnosis of infected dentigerous cyst was made.



Figure 8. Positive Aspiration - Straw colour fluid

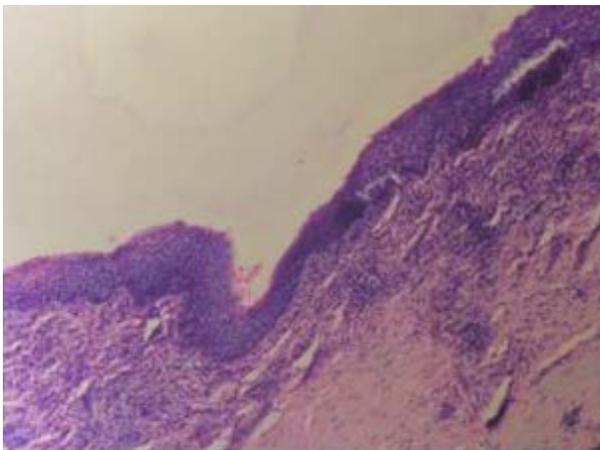


Figure 9. Shows histopathology of the specimen

3. Discussion

Dentigerous cyst involves any unerupted teeth, whatever may be the cause for the failure of eruption. Mandibular third molar and maxillary canine are commonly involved followed by mandibular premolar and maxillary third molar and very rarely central incisor, deciduous teeth and supernumerary teeth. Shear And Singh (1978) in their study found 1.5% incidence of central incisors involved as compared to 45.7% of mandibular third molar very substantial majority involved mandibular third molar [4]. Dentigerous cysts associated with maxillary 3rd molar tooth are rare and estimated to constitute 5-6% of all dentigerous cysts [5]. They resemble the usual dentigerous cysts in terms of sex predilection and age distribution.

The epithelial lining often contains focal areas of orthokeratinised or mixture of mucin secreting and ciliated cells. On the occasions untreated some dentigerous cysts rarely have potential to develop odontogenic tumors like ameloblastoma and malignancy like oral squamous cell carcinoma, mucoepidermoid carcinoma and also Cholesterol clefts which are more common in radicular cysts because of constant inflammatory form [6]. Dentigerous cyst associated with 3rd molar will result in the failure of eruption and may invade maxillary sinus are rare phenomenon in infected cysts or lesions as reported in this case.

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