Dentigerous Cyst Presenting as Maxillary Sinusitis: A Rare Case Report

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INTRODUCTION

Paget coined the term “dentigerous cyst” in 1853. Dentigerous cyst is usually a solitary, benign odontogenic cyst, frequently affecting teeth that erupt late. The prevalence in the mandible is twice more common than the maxilla.1-3

These lesions occur mostly in the 2nd and 3rd decades of life and show a male predilection. They are often painless unless secondarily infected and mostly silent until they have enlarged sufficiently to produce an expansion of the jaw, resorption of adjacent teeth and facial asymmetry.

CASE REPORT

A 28-year-old male reported with painful swelling in the maxillary anterior region since 2 months, which was sudden in onset, rapidly progressing and led to right sided nasal blockage and mucopurulent foul smelling nasal discharge. There was no history of trauma, headache, loosening of teeth, paresthesia, or lymphadenopathy. No other abnormality was noted.

Extraoral examination showed mild, diffuse, bony hard swelling in the right supralabial region extending up to the lateral aspect of the nose. It was approximately 3 cm × 2 cm in size; tender on palpation, however, the local temperature was normal.

Intraoral examination revealed a solitary swelling in the maxillary labial vestibule, extending from the 14 to 22, with obliteration of the vestibule. The swelling was well defined, firm in consistency, tender on palpation and measured about 3 cm × 3 cm with no bruit or pulsation. The buccal cortical plate showed slight expansion and the overlying mucosa was slightly inflamed. There were no signs of any acute periodontal condition or carious lesions. 11 was palatally displaced with Grade I mobility and tender on percussion.

The maxillary occlusal radiograph showed a well-defined heart shaped unilocular radiolucent area mimicking nasopalatine cyst of approximately 5 cm × 3 cm dimension, surrounded by a sclerotic border, associated with the periapical region of 11 and 12. The root of 11 showed resorption and was palatally displaced. A vertically inverted well-defined tooth like radio-opaque mass was seen within the radiolucency suggestive of a supernumerary tooth (Figure 1).

Keywords: Dentigerous cyst, Maxillary sinusitis, Supernumerary tooth
The orthopantomograph in addition to the findings on the occlusal radiograph showed a well-defined oval radiolucency from 14 to 22, extending superiorly toward the floor of the nose and right maxillary antrum. The divergence of central incisor roots and erosion of alveolar process was evident (Figure 2).

Aspiration with a 21 gauge needle revealed straw colored fluid. A provisional diagnosis of the dentigerous cyst was made; however, large periapical cyst, odontogenic keratocyst, central giant-cell granuloma, adenomatoid odontogenic tumor, and ameloblastic fibroma were also considered in the differential diagnoses. The preoperative general anesthesia investigations were normal.

Surgical enucleation of the cyst and extraction of the impacted supernumerary tooth were done under I.V sedation and antibiotic cover after performing Root canal treatment of 12, 13, and 22 (Figures 3 and 4).

Gross examination showed a cystic quality soft tissue specimen measuring 2 cm × 4 cm. The histological examination showed a thin fibrous cystic wall lined by a 2-3 layer thick non-keratinized stratified squamous epithelium, with islands of odontogenic epithelium. The connective tissue showed inflammatory cell infiltrate, which confirmed the diagnosis of an infected dentigerous cyst.

DISCUSSION

The word dentigerous means “tooth bearing.” The dentigerous cyst can be defined as a cyst that encloses the crown of an unerupted tooth, expands the follicle and is attached to the cementoenamel junction of an unerupted tooth. A majority involves the mandibular third molar and the maxillary permanent canine, followed by mandibular premolars, maxillary third molars, and rarely central incisors and supernumerary teeth.

Studies have shown that the incidence rate of dentigerous cysts involving the maxillary central incisor was 1.5% as compared
to 45.7% involving the mandibular third molar.5 Mourshed stated that 1.44% of impacted teeth undergo dentigerous cyst transformation.7 Daley et al. reported an incidence rate of 0.1-0.6%, whereas Shear found the incidence to be 1.5%.6 Toller stated that the likely origin of the dentigerous cyst was the breakdown of proliferating cells of the follicle after impeded eruption.8 This results in an increased osmotic tension resulting in cyst formation. Bloch suggested that the origin was from the overlying necrotic deciduous tooth. He further explained that the resultant periapical inflammation spreads to involve the follicle of the unerupted permanent successor; an inflammatory exude ensues and results in the formation of a cyst.9

Various treatment modalities are indicated for dentigerous cysts. At times, the position of the causative tooth can influence the line of treatment. Complete enucleation of the cyst along with the removal of the tooth may be the treatment of choice, as was the case in our patient since it happened to be a supernumerary tooth. However, when preservation of the teeth which are in a favorable position is desirable as in a young patient, then marsupialization maybe the preferred treatment.

Complications include pathologic bone fracture, loss of a permanent tooth, and in very rare cases development of an ameloblastoma, squamous cell carcinoma, or mucoepidermoid carcinoma.1,10

**CONCLUSION**

As infected dentigerous cysts are asymptomatic and can attain a considerable size, early clinical and radiographic detection of the extent of the cyst is crucial so as to prevent or decrease the associated morbidity. Enlarged cyst near the antrum and nasal floor produce symptoms of nasal blockage and discharge due to obstruction of the osteomeatal complex. Bony erosion of the walls of the maxillary sinus, alveolar arch, and floor of the nose may add to morbidity.

Surgical enucleation of cyst along with tooth extraction is a definitive therapy in most of the cases. In this case, a mild displacement of maxillary anterior teeth, due to the cyst, was corrected in time. This resulted in the elimination of the pathology along with maintenance of dentition.

This unusual case of the dentigerous cyst presented clinically as maxillary sinusitis and radiographically as the nasopalatine cyst. Specialists such as OMF Surgeons, ENT, and radiologists should be aware of this new variant since the nasal symptoms, and bony erosion can present with a wide range of differential diagnosis.

**REFERENCES**


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