CASE REPORT

An Unusual Dentigerous Cyst Involving Maxillary Sinus in an Elderly – A Diagnostic Dilemma

Jiten Singh N[1], Pallika K[2], Gyan R[2], Sudhiranjan Th[3]

ABSTRACT

Introduction: Dentigerous cysts are second most common odontogenic cysts. These commonly occur in second or third decade of life; incidences are slightly more in males. The mandibular third molar and maxillary canines are involved most frequently. These are usually asymptomatic, but, in symptomatic patients, facial swelling, sensory changes and fistula formation are common. Imaging plays a pivotal role in the diagnosis. These are treated by surgery, either by enucleation or marsupialisation.

Case Report: 65 year old male presented with gradually increasing painless swelling of hard palate for 5 years and, nasal obstruction and foul smelling nasal discharge for 6 months. Examination revealed a firm to hard, painless swelling 3.0 cm × 4.5 cm over the right side of hard palate and missing right upper third molar. OPG revealed an ectopic molar tooth within right maxillary sinus. CT paranasal sinus revealed a large expansile lesion containing molar tooth in right maxilla and, bony defects along its floor, medial and posterior walls. FNAC was inconclusive. Ectopic tooth was removed along with enucleation of the cyst using endoscopes through Caldwell Luc approach. Histopathology revealed infected dentigerous cyst. Follow up examination at 4 months after surgery was asymptomatic.

Conclusion: Dentigerous cysts should be considered in differential diagnosis of patients presenting with symptoms of recurrent sinusitis especially in cases with missing molars. In elderly patients, benign and malignant tumours should be ruled out. Preoperative diagnosis relies mostly on clinical suspicion and imaging. Treatment by enucleation through Caldwell Luc approach is associated with very low recurrence.

Keywords: Dentigerous cyst, maxillary sinus, ectopic molar tooth.

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[1]Senior Resident, [2]Junior Resident, [3]Professor, Department of Otorhinolaryngology Regional Institute of Medical Sciences, Manipur, India

Corresponding author: Dr Ningombam Jiten Singh, Department of Otorhinolaryngology, Regional Institute of Medical Sciences, Lamphelpat, Imphal West, Manipur, India.

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INTRODUCTION

Dentigerous cysts are the most commonly occuring odontogenic cysts, next to periapical cysts and account for approximately 18-24% of all the jaw cysts.[1] These are always associated with an unerupted or developing tooth bud and are found most frequently around the crown of mandibular third molar, maxillary canine, mandibular premolar and maxillary third molars.[2] Sometimes, these cysts may be associated with an impacted, supernumerary or an ectopically erupted tooth.[3] Here, we report a case of an atypical presentation of a dentigerous cyst associated with ectopic maxillary molar tooth. Enucleation of the cyst along with extraction of the impacted right maxillary molar tooth was done endoscopically through a Caldwell-Luc approach.

CASE REPORT

A 65 year old male presented with a gradually increasing painless swelling on right side of hard palate for 5 years. There was also nasal obstruction and foul smelling nasal discharge for 6 months. There were no symptoms of fever or epistaxis. He was initially treated with antibiotics without any improvement. Intra oral examination revealed a firm to hard, painless swelling approximately 3.0 cm × 4.5 cm over the right side of hard palate and missing right upper third molar (Fig.1a). An Orthopantomogram (OPG) revealed an ectopically erupted tooth within the right maxillary sinus cavity (Fig. 1b). Computed Tomography (CT)

scan paranasal sinus revealed a large expansile cystic lesion in right maxilla measuring 4.9 cm x 4.7 cm x 4.5 cm containing molar tooth alongwith non-enhancing heterogenous materials with multiple air pockets. CT also revealed defects in floor, medial and posterior walls of right maxilla (Fig. 2a and 2b). Fine needle aspiration cytology (FNAC) was inconclusive. A surgical plan for enucleation of the cyst along with removal of the tooth by Caldwell Luc approach under general anesthesia was made. A transvestibular incision extending from right upper lateral incissor to right upper first molar was given 3 mm above the gingivobuccal sulcus (Fig.3a). Submucosal flap was elevated and a bony window of approximately 1.0 cm x 1.0 cm was created on the anterior wall of the right maxilla. Ectopic tooth was removed along with enucleation of the cyst using 0 and 30 degee endoscopes (Fig 3b). Intranasally the natural ostieum of the right maxillary sinus was widened by antrostomy. After completion of enucleation of the cyst, the sinus cavity was irrigated and packed with ribbon gauze soaked with soframycin with one end of the gauge coming out through the meatal opening intranasally. Tranvestibular incision was closed with 3-0 vicryl suture. The gauze pack was removed after 48 hrs via the nasal antrostomy opening. Post-operative period was uneventful. The patient was asymptomatic during follow up examination at 4 months after the surgery. Histopathology of the cystic lesion revealed a squamous epithelial lining with focal areas of granulation tissue and infiltration by mixed inflammatory cells (Fig. 4). These features were suggestive of an infected dentigerous cyst.

DISCUSSION

Dentigerous cysts are epithelial lined developmental cysts, with their peak of incidence occurring in the second or third decade of life. The mandibular third molar and maxillary canines are involved most frequently. These are more common in males, with a male: female ratio of 1.6:1.[4] Our patient presented with a dentigerours cyst involving the right maxillary third molar in his seventh decade, which is very unusual presentation. These cysts are usually asymptomatic, however, in cases of enlarged cysts or secondary inflammation of the cyst, symptoms such as facial swelling, sensory changes and fistula formation can occur.[5] Our patient presented with symptoms of foul smelling nasal discharge, painless swelling of hard palate, and misleading diagnosis towards a maxillary tumour, sinusitis or a minor salivary gland tumour.

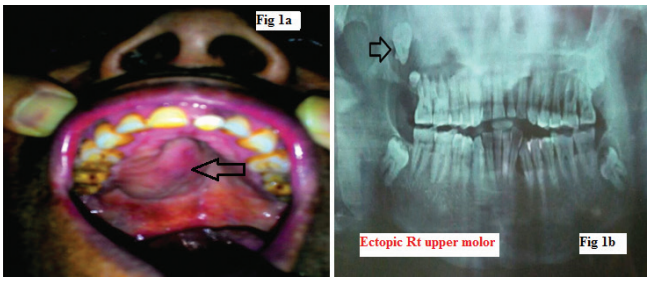

Figure-1: a) Intraoral examination showing a swelling over the right side of hard palate and missing right upper third molar tooth (large arrow); b): Orthopantomogram showing an ectopically erupted tooth within the right maxillary sinus (large arrow).

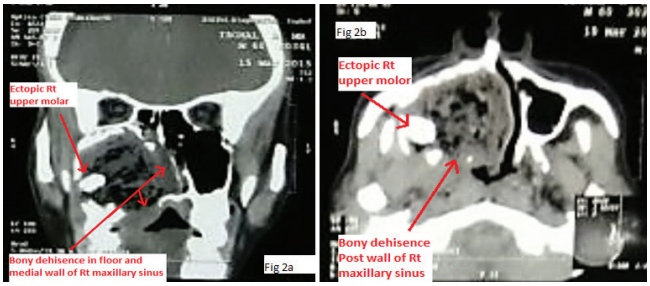

Figure-2a & 2b: CT paranasal sinus coronal and axial views of the dentigerous mass showing the ectopic right upper molar tooth and bony dehiscence of the floor, medial and posterior walls of the right maxillary sinus.

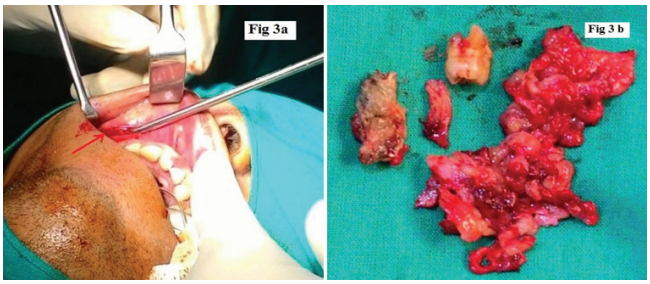

Figure-3: a): Showing transvestibular incision being given 3 mm above the gingivobuccal sulcus; b): Resected dentigerous mass along with the ectopic tooth.

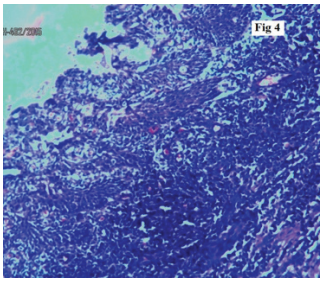

Figure-4: H & E staining showing squamous epithelial lining with focal areas of granulation tissue and infiltration by mixed inflammatory cells.

Radiographically dentigerous cyst appears unilocular with well-defined margins and often sclerotic borders. Infected cysts show ill-defined margins.[6] Orthopanto-

mogram, and skull radiography are simple and inexpensive methods that can be used in daily practice. CT scan provides superior bony detail, allowing for the visualization of the size and extent of the lesion with determination of orbital or nasal invasion or involvement.[7] In our case, OPG showed ectopic location of third maxillary molar tooth whereas CT showed bony erosions of floor, medial and posterior walls of right maxillary sinus. These findings inclined us to other differential diagnosis of odontogenic tumours like ameloblastoma, fungal sinusitis or a maxillary malignancy. Again, FNAC showed abundance of mucoid material misleading the pathologist to a diagnosis of pleomorphic adenoma of minor salivary gland.

The histopathological findings of dentigerous cysts are generally nonkeratinizing stratified squamous epithelium consisting of 2-4 cell layers and keratin elements are rarely found in the inner wall of the cyst. Mucous cells take up 25-50% of all cells that cover the inner wall of the cyst. Other cells such as ciliated cells, cuboidal cells, columnar cells, hyaline bodies or sebaceous elements are rarely detected and invasion of inflammatory cells can be found.[1] In our case, histopathology of the inner wall of the cyst showed squamous epithelial lining with focal areas of granulation tissue and infiltration by mixed inflammatory cells.

Dentigerous cysts are frequently treated surgically, either by enucleation or marsupialisation. Following enucleation of the cyst and extraction of the unerupted tooth, the prognosis is excellent and recurrence is rarely observed after a complete removal. Surgical enucleation combined with the CaldwellLuc approach followed by primary closure is recommended in treatment of the large maxillary sinus cyst as marsupialisation of these cysts towards the oral cavity will consequently create an oroantral fistula.[8] In our case, we performed a surgical enucleation through the Caldwell-Luc approach using endoscopes. Our patient did not have complications or recurrence reported even after 4 months of surgery.

CONCLUSION

In conclusion, dentigerous cysts associated with ectopic teeth within the maxillary sinus are very rare and, their presentations as palatal mass are uncommon. It should be considered in the differential diagnosis of patients presenting with symptoms of recurrent sinusitis especially in cases with missing molars. In elderly patients, benign and malignant tumours should be ruled out. Preoperative diagnosis relies on mostly on clinical suspicion and imaging. Treatment by enucleation through Caldwell-Luc procedure is associated with very low recurrence.

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REFERENCES

1. Soon Jae Hwang, Heung-Man Lee, Dae Hyung Kim, Dong Jin Lee, Jang Hyeog Lee, Jin Ho Choi, et al. Dentigerous Cyst Involving the Maxillary Sinus. J Rhinol November 2001; 8:54-7
2. Ziccardi VB, Eggleston TE, Schnider RE. Using fenestration technique to treat large dentigerous cyst. J Am Dent Assoc 1999; 128:201-5.
3. Girish G, Mahesh Kumar R, Umashankar DN, Rashi Sharma, Veeresh M, Ambika Bhandari. Dentigerous Cyst in Maxillary Sinus: A Rare Occurrence. Int J Oral Maxillofac Pathol. 2011; 2:20-23.
4. Shetty YN, Majid IA, Patel RU, Shammam M. An unusual case of tooth in the floor of the orbit: The Libyan experience. Case Rep Dent 2012. 2012:954789.
5. Regezi JA, Sciubba JJ. Clinical Pathological Correlations. Oral pathology, 2nd ed. Philadelphia: WB Sanders;1989. p.306-9.
6. Goh YH. Ectopic eruption of maxillary molar tooth- an unusual cause of recurrent sinusitis. Singapore Med J. 2001; 42:80-81.
7. Ko KS, Dover DG, Jordan RC. Bilateral dentigerous cysts - report of an unusual case and review of the literature. J Can Dent Assoc. 1999; 65:49–51
8. Kaya O, Bocutolu O. A misdiagnosed giant dentigerous cyst involving the maxillary antrum and affecting the orbit. Case report. Australian Dental Journal. 1994; 39:165–167.