

Dentigerous Cyst Associated with an Ectopic Maxillary Third Molar in Maxillary Sinus: A Case Report

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ABSTRACT

Ectopic presence of teeth is a rare clinical event. Ectopic maxillary third molar in maxillary antrum may be confused with sino-nasal disease. Dentigerous cyst associated with an ectopic maxillary third molar is a very rare finding.

KEYWORDS: Ectopic eruption, Maxillary third molar, Dentigerous cyst, Maxillary Antrum, Caldwell Luc approach.

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INTRODUCTION

Teeth development results from a complicated multistep interaction between the oral epithelium and the underlying mesenchymal tissue. This process begins at the sixth week in-utero with the formation of the maxillary and mandibular dental laminae in the region of the future alveolar processes. This ectodermal derivative subsequently undergoes proliferation to form twenty tooth germs for the primary teeth between the 6th and 8th prenatal week and 32 additional tooth germs which differentiate to form the permanent dentition between 5th (incisors) and 10th months (premolars). The series of complex tissue interaction that ensue result in the formation of mature teeth, each with a crown and root. Abnormal tissue interaction during development may potentially result in the ectopic teeth development and eruption.¹

Ectopic eruption of teeth is an uncommon event and may occur due to subsequent three main processes i.e; developmental disturbance, pathological progression and iatrogenic issues.² Usual ectopic sites are chin, coronoid process and palate. Maxillary sinuses are also another atypical site for ectopic maxillary third molar.^{3,4}

Maxillary antrum is an uncommon location of an ectopic maxillary 3rd molar tooth. Only about thirty cases were reported in a Medline search between 1980 and 2010 but few other cases have been added to the literature in recent studies.¹⁶

Presence of ectopic 3rd molar tooth in maxillary sinus can give rise to many issues like sino-nasal symptoms and required sometimes plain radiographs like; PNS, OPG or CT scan with axial and coronal views.^{3,4}

CASE REPORT

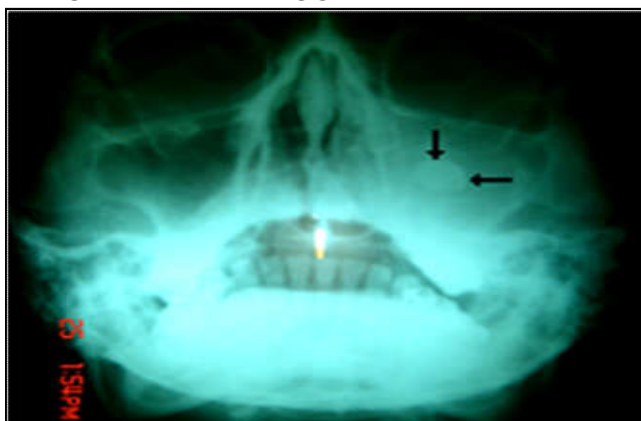
A 30 year old male presented in the Maxillofacial Sur-

gery Department at PNS Shifa, with complain of heaviness on left side of face for the last six months. He was also concerned about asymmetry on the left side of his face which initially was unnoticeable. He denied any nasal symptoms, discharge, dental pain, loosening of teeth or bleeding per oral or nasal. He also denied any numbness on left side of his face or problems with visual acuity. He was given multiple regimes of antibiotic therapy which failed to relieve his symptoms. Clinical examination revealed mild fullness on left side of mid-face giving rise to asymmetry. Ocular motility was intact on both sides and no diplopia was detected. There was mild tenderness over left maxillary sinus. Intra-orally, he had a missing upper left third molar. All other teeth were present, vital and in occlusion. No alveolar expansion was seen.

Radiological examination

A Occipitomental view was requested and confirmed the presence of an ectopic maxillary third molar in left maxillary antrum, with radiological evidence of cystic changes around it.

PREOPERATIVE RADIOGRAPH



Surgical procedure

Maxillary sinus was approached via the Caldwell-Luc incision given in the left maxillary vestibule under general anaesthesia. Lateral wall of maxillary sinus was removed with small rose head bur with “postage stamp” method. Thick lining with purulent material and little granulation tissue was removed along with a completely formed third molar. Left nasal antrostomy was done for the placement of BIPP sinus packing. The intraoral wound was closed in a water tight manner with 3.0 vicryl interrupted sutures. Entire surgical specimen was submitted for histological examination. Patient has recovered uneventfully and histological analysis confirmed the lesion to be a dentigerous cyst, post operative standard antibiotics (cap Lincomycin 500mg BD) with analgesic (Tab Ibuprofen 400mg TDS) were prescribed for 5 days with sinus precautions.

PRESENCE OF ECTOPIC THIRD MOLAR IN LEFT



MAXILLARY ANTRUM



WATER-TIGHT CLOSURE USING 3-0 VICRYL

REVIEW OF LITERATURE

Villa and Fernando, in 1951, reported the first case of maxillary sinusitis associated with infected dentiger-

ous cyst.⁵

In 2004, Lee, Prepageran and Subha reported a case of a dentigerous cyst in the maxillary sinus, resulting in significant facial swelling. The case was managed by endoscopic marsupialization of the cyst.⁶

In 2005, Barziali G, et al, conducted a study in which they did Caldwell-Luc approach for fungal disease cases of maxillary sinus and for other diseases of maxillary sinus were done by endoscopic medial maxillectomy.⁷

In year 2005 a case by Buyukkurt MC et al was reported; the patients active complain was headache since 3-4 years on the left side of face. The plain OPG radiograph showed a well-defined circular opacity surrounded by a soft tissue mass in the left maxillary sinus later computed tomography (CT) scan of the paranasal sinuses revealed this was a crown of a tooth. A Caldwell-Luc operation was performed for the removal of ectopic tooth, all diseased mucosa and purulent material was removed from maxillary sinus finally patient's symptoms was resolved completely after surgery.⁸

In 2006, Manzoor T et al, reported a case in which a maxillary dentigerous cyst had eroded the posterior wall of the right maxillary sinus into the pterygo-palatine fossa causing facial pain due to the pressure on the nerves. It had also eroded the lateral wall of the sinus and into the oral cavity and got infected resulting in foul smelling oral discharge. The case was dealt with complete removal of cyst using the Caldwell-Luc approach.⁹

In 2006, Di Pasquale et al reported the case of a 14 year old girl; with abnormal finding of left maxillary sinus on panoramic dental radiograph since 2 years. Finally CT scans of the paranasal sinuses was done and demonstrated unilateral maxillary sinus opacification that had by an ectopic molar and tooth was removed by an endoscopic approach, nasal endoscope was used to create a middle meatal antrostomy to deliver the tooth and its cystic contents. The patient recovered without complications and exhibited no signs of recurrence at the 2 year follow up.¹⁰

DISCUSSION

Abnormal tissue interaction may give rise to ectopic tooth development and eruption. Ectopic sites are mandibular condyle,¹¹ coronoid process,¹² nasal septum,¹³ chin and palate.¹⁴ Maxillary sinus is also an unusual site for the presence of un-erupted teeth and can give rise to sino-nasal symptoms, confusing clinically with sinusitis. Radiological investigation with plain radiographs like; lateral skull, Occipitontental view and CT scan confirms the presence of ectopic teeth.

Dentigerous cyst is the most common follicular cyst

and accounts for 10-15% of odontogenic cysts and associated with an impacted tooth.^{15,16} Seventy per cent of dentigerous cysts occur in the mandible and thirty per cent in the maxilla.² Males are twice as likely to be affected.¹⁵ Very few dentigerous cysts have been reported in the medical literature associated with an ectopic molar in maxillary sinus.¹⁰

Ectopically present teeth with cystic changes in follicle and symptoms require surgical removal. If left untreated, it may give rise to neoplastic changes. Caldwell-Luc approach was used in this case as the ectopic tooth was the cause of heaviness in maxillary sinus in spite of administering antibiotics repeatedly.

CONCLUSION

In case of maxillary sinus disease, which fails to respond to conventional medical treatment, dental pathologies should be considered. Absence of any tooth from either arch should be investigated radiologically to rule out ectopic presence.

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