Case Report

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A Rare Case of Ectopic Tooth Associated with Dentigerous cyst in Maxillary Sinus.

Abstract:
Ectopic eruption of teeth may be associated with developmental disturbances, pathologies or may be iatrogenic. Ectopic eruptions of 3rd molar in maxillary sinus is relatively rare. This article reviews a 30 year male who reported to the out-patient department of Oral and Maxillofacial Surgery with complaint of pain and swelling in upper left side of the face since 15-20 days. Orthopantomogram revealed an impacted tooth in left maxillary sinus with cystic lining. Provisional diagnosis of dentigerous cyst in relation to ectopic tooth was made. Surgical removal of the tooth from the maxillary sinus using a standard Caldwell-Luc approach is the treatment of choice along with removal of the associated pathology. Asymptomatic cases should be managed similarly as the tendency to form cyst or tumor is possible.

Key-words: Ectopic tooth, Maxillary sinus, Third molar

Introduction:

The etiology of ectopic teeth is not always known. Ectopic eruption of teeth may be associated with developmental disturbances, pathologies or may be iatrogenic.[1,2] Ectopic eruption of a tooth into the oral cavity is common, however ectopic eruption of tooth at other sites is quite rare.[3] Maxillary sinus is not a common location for an ectopic tooth.[1] When present in the maxillary sinus, ectopic tooth usually presents asymptomatically. However, some patients may experience symptoms like sinusitis, headache, runny nose, nasomaxillary anatomy deviation.[2,4] Dentigerous cysts associated with ectopic teeth within the maxillary sinus are rare: in the literature about 30 cases have been described.

Case Report:

A 30 year male patient reported to the Out-patient department of Oral and Maxillofacial Surgery with the complaint of pain and swelling in upper left side of the face since 15-20 days. No history of trauma was reported by the patient.

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On intraoral examination, vestibular swelling was noted from maxillary left 1st pre-molar to maxillary left 2nd molar region, obliterating the vestibule. The swelling was tender.

Orthopantomogram (OPG) revealed an ectopic tooth in left maxillary sinus with cystic lining. Floor of the maxillary sinus was seen missing from 2nd molar region (Figure1).

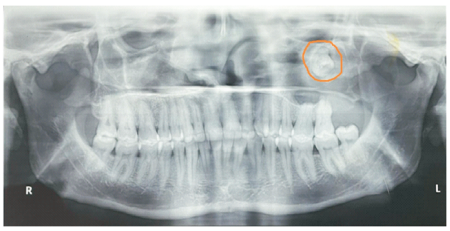

Figure 1 : Orthopantomogram revealing ectopic tooth in left maxillary sinus; associated with cyst

[1]RAHUL GUPTA, [2]VIKAS K SINGH, [3]RUCHIKATIWARI, [4]TAMANNAJAMWAL
[1-4]Department of Oral and Maxillofacial Surgery, Mahatma Gandhi Dental College, Jaipur

Address for Correspondence: Dr. Rahul Gupta
Near BalajiMandir, Station road, BhawaniMandi, Jhalawar, Rajasthan. Pincode -326502
Email : dr.rahul9782776151@gmail.com

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Provisional diagnosis of dentigerous cyst in relation to ectopic tooth of left side was made. The patient was planned for removal of the ectopic tooth under general anaesthesia

Caldwell-Luc incision was made from left lateral incisor up to the left first molar tooth. A bony window was created and cystic lining was noticed (Figure 2). Enucleation of the cyst was done; the lining was attached with medial wall of maxillary sinus which was thinned out and came out along with the lining which was sent for histopathological examination. Ectopic tooth was removed (Figure 3). Hemostasis was achieved by packing the sinus (Figure 4). Closure was done using 3-0 vicryl. Post-operative recovery was satisfactory.

Figure 2: Exposed ectopic tooth using Caldwell Luc approach

Figure 3: Removed ectopic tooth

Figure 4: Nasal antrostomy

The intra-operative biopsy revealed dentigerous cyst in relation to ectopic tooth.

Figure 5 illustrates post-operative Water's view, confirming removal of ectopic tooth along with cyst

Figure 5: Post-operative Water's view radiograph

Discussion:

According to Archer, Impacted tooth is the tooth that is partially or completely unerupted and is positioned against another tooth or bone or soft tissue so that its further eruption is unlikely. The most commonly impacted tooth are the mandibular 3rd molars, followed by maxillary 3rd molars, maxillary cuspids, mandibular bicuspids, mandibular cuspids, maxillary bicuspids, maxillary central incisors, maxillary lateral incisors.[5]

The exact etiology for ectopic eruption of teeth is not clear. However, developmental disturbances, pathological processes like large cysts, which displace tooth buds to other areas, and iatrogenic activity are thought to be contributing factors.[6]

Oral cavity is a common site for eruption of ectopic teeth. However, eruption at sites like mandibular condyle, coronoid process, nasal cavity, maxillary sinus, pterygomandibular space is less common.[1]

Beriat et al., in their review of ectopic teeth in maxillary sinus, reported 18 molars, of which 17 were third molars, 5 canine, 3 supernumerary, 1 odontoma, 1 tooth-like structure, and only 1 premolar.[6] The last tooth to erupt in the oral cavity is the maxillary 3rd molar hence it is more likely to migrate while competing for space which accounts for the high incidence of ectopic 3rd molar in the maxilla.[7]

Ectopic teeth are usually asymptomatic in nature and are diagnosed on routine dental examination. However, the presence of ectopic teeth in the maxillary sinus can sometimes

present with symptoms like chronic sinusitis, purulent discharge, pain, severe headache, nasolacrimal duct obstruction, facial edema and asymmetry, epistaxis, hemoptysis, elevation of the orbital floor and fractures. Impingement of this lesion on the orbital floor can cause diplopia and possibly even blindness. These teeth may also be associated with cysts and pathologies in the associated area. Asymptomatic cases should be managed similarly as the tendency to form cyst or tumor is possible.[4,6]

The radiographic investigations that can aid in the diagnosis of ectopic teeth in maxillary sinus are orthopantomogram or para-nasal sinus view or computed tomography scans.[2]

Dentigerous cyst is the most common pathology related to an ectopic tooth. Dentigerous cysts associated with ectopic teeth within the maxillary sinus are rare: in the literature about 30 cases have been described. 90% had a single dentigerous cyst in the maxillary sinus and the most frequently involved tooth was the maxillary third molar tooth, followed by canine, supernumerary, and premolar.[6,8]

Dentigerous cysts are typically asymtomatic, but may cause facial swelling and delayed tooth eruption; dentigerous cysts progress slowly and may exist for many years without being noticed. When the maxillary sinus is involved, the patient experiences the classic signs of sinus involvement such as swelling, facial pain, headache, epistaxis, nasolacrimal obstruction.[9]

The treatment of choice in dentigerous cyst is enucleation along with removal of the involved tooth. If the tooth is not severely displaced and can erupt in its normal position and needs conservation, marsupilization is advised. In large cysts, marsupialization to decrease the size of the defect, followed by enucleation and tooth extraction, has been advised.[8] When the tooth is in maxillary sinus, it is mandatory to completely remove the diseased antral tissues and thoroughly assess all resected soft tissue histologically to rule out ameloblastic changes, especially in large cysts.[10]

Various techniques for managing ectopic teeth are mentioned in the literature, such as extra and trans-oral approaches as well as endoscopic assisted procedures.[1,7] The traditional and most commonly used approach for ectopic teeth present in maxillary sinus is Caldwell-Luc procedure, which allows direct visualisation of structures and pathologies in the sinus. However, complications such as epistaxis, periorbital injuries, damage to extrinsic eye muscles, orbital haemorrhage, facial pain, paresthesia have been reported.[8]

Conclusion:

Ectopic tooth eruption associated with dentigerous cyst is very rarely seen in maxillary sinus. These teeth may present with symptoms and should be promptly removed along with the associated pathology.

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Competing Interests :

None

Ethical Approval:

This work has been approved by the Institutional Ethics Committee, Mahatma Gandhi Dental College & Hospital before the procedure.

Consent:

Written informed consent was taken from the patient before the procedure, explaining the downtime, results, and side effects of the procedure. The patient has also signed informed consent regarding publishing the data and patient's photographs in the journal.

Submission Declaration And Verification:

The work described in this manuscript has not been published previously, is not under consideration for publication elsewhere and if accepted, it will not be published elsewhere in the same form in any language. Publication of this manuscript is approved by all authors.

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