

A Rare Case of Ectopic Third Molar in The Maxillary Sinus: A Case Report & Its Management

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Abstract

Background: Ectopic tooth eruption in a non-dental area is a rare entity, whereas in oral cavity it is most common. The ectopic development of teeth in non-dental localizations have been reported in the nasal cavity, chin, maxillary sinus, mandibular bone, palate and orbital cavity. Ectopic tooth eruptions in maxillary sinus are usually asymptomatic and found incidentally during routine clinical or radiological investigation. Facial pain, epistaxis, purulent rhinorrhoea, headache, swelling and epiphora related nasolacrimal duct obstruction can also be seen. Ectopic teeth within the maxillary sinus are often removed via a Caldwell-Luc procedure. In this case, the patient presented with ectopic left maxillary third molar apical to second molar. The aim of the operating surgeon was to execute the procedure in the least hazardous manner, to avoid any surgical complications.

Methods: The surgery was carried out under local anesthesia. An incision was made at the crest of the ridge with an anterior releasing incision. Huge granulation tissue with pus discharge was present. There was severe bone loss around second molar region. As prognosis of second molar is poor, extraction of the second molar was planned. After thoroughly irrigation, a pearly white tooth bud was seen in sinus which was extracted and sinus was sutured.

Results: Ectopic maxillary third molar was successfully removed and sinus was sutured without any complications.

Conclusion: Ectopic maxillary third molars are not commonly encountered in dental practice. Subsequently, their removal can be a challenging job on the part of dental surgeon. The surgeon should preoperatively weigh carefully the associated risk factors and explain them thoroughly to the patient.

Keywords: Ectopic, Maxillary Sinus, Maxillary third molar.

Introduction

Tooth development results from a complicated multi-step interaction between the oral epithelium and the underlying mesenchymal tissue. A series of complex tissue interactions result in the formation of mature teeth. Abnormal tissue interaction during development may potentially result in ectopic tooth development and eruption.¹

Ectopic tooth eruption in a non-dental area is a rare entity, whereas in dental localization it is most common. The ectopic development of teeth in non-dental localizations have been reported in the nasal cavity, chin, maxillary sinus, mandibular bone, palate and orbital cavity.^{2,3,4} The pathogenesis of ectopic teeth are unknown. Authors believe that aetiology includes developmental disturbances such as cleft palate, trauma, rinogenic or odontogenic infection, genetic factors, crowding or dentigerous cysts surrounding impacted tooth.^{5,6} Ectopic teeth may be permanent, deciduous or supernumerary. The maxillary canine and mandibular third molar are involved most frequently.^{7,8}

Most cases are asymptomatic and usually found incidentally during routine clinical or radiological investigation. Facial pain, epistaxis, purulent rhinorrhoea, external nasal deformity, headache, swelling and epiphora related nasolacrimal duct obstruction can be seen.^{9,10} The standard treatment for an ectopic tooth is extraction of the tooth. Ectopic teeth within the maxillary sinus are often easily removed via a Caldwell-Luc procedure.¹¹ In the ectopic teeth surrounding by a large cyst, an initial marsupialization to diminish the size of the osseous defect, followed by extraction of the tooth, has been advocated.¹¹

In this case report, a case of an ectopic tooth in the maxillary sinus is reported, and it was successfully managed by removing from sinus under local anaesthesia without any complications.

Case Report

A 32-year-old woman was referred to us due to the pain and pus discharge on the upper left side of her mouth lasting for 1 year. Antibiotics and pain-killers were prescribed to her by the general practitioner, but her complaints were not resolved. She had no other

symptoms. Patient was advised OPG but no abnormality seen. Radiographically, third molars were absent on both sides, bone loss was present distally around left second molar and a small radio-opaque shadow was seen apical to left second molar below the sinus floor. On examination of the oral cavity, all the permanent teeth were present except the right and left maxillary third molars. No other pathological findings were detected as a result of intraoral and nasal endoscopic examinations.

The surgery was planned and carried out under local anesthesia. An incision was made at the crest of the ridge with an anterior releasing incision distal to second molar. Huge granulation tissue with pus discharge was present. There was severe bone loss around second molar region. As prognosis of second molar is poor, extraction of the second molar was planned. After thoroughly irrigation, a pearly white tooth bud was seen in sinus which was extracted by root forceps and sinus was sutured.

Post-operative instructions were given to the patient and was kept under recall. The



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patient's symptoms were resolved completely after surgery and remained symptom-free for over a postoperative follow-up period of 1 year.

Discussion

Tooth evolution results from an interaction between the oral epithelium and the underlying mesenchymal tissue. This development begins in the sixth week in utero at the time of maxillary and mandibular dental lamina formation. This ectodermal structure changes to mature form including a crown and a root.¹² Abnormal tissue interactions during molar tooth, which is found to be the mostly studied one in literature.

Frequently ectopic teeth are asymptomatic and are usually found during routine clinical or radiologic investigations.¹³ If the tooth erupts into the maxillary antrum, it can present itself with local sinonasal symptoms like nasal obstruction, facial fullness, headache, hyposmia and recurrent choronic sinusitis. Other rare symptoms include epistaxis, fever, rhinorrhea, nasolacrimal duct obstruction and a deviation of the nasomaxillary anatomy.^{14,15} A large maxillary cyst can exert pressure on the sinus walls causing discomfort, pain and fullness. Scored symptomatology helps us to consider the presence of an ectopic tooth but a radiographic examination is essential for diagnosis. Our patient was referred to us for a pain of one year duration on the left side of her face.

The etiology of ectopic eruption is still unclear and many theories have been suggested including trauma, infection, cyst, tumor, crowding, and developmental abnormalities.^{16,17,18} In many cases, however, the etiology cannot be identified.^{1,19} Presumably, the etiologic factor is related to the type of tooth and its immediate anatomic environment.¹⁸ In the present case the left upper third molar was absent from its normal position and was found in the left maxillary sinus.

In such cases the teeth can migrate to various locations including the maxillary sinus, nose, and infraorbital area. Ectopic eruption of teeth into regions other than the oral cavity is unusual although there have been

reports of teeth in the nasal septum, mandibular condyle, coronoid process, palate, chin, and maxillary sinus.^{1,16,17} Teeth developing in the maxillary sinus are rare.^{20,21}

Patients with this rare dental abnormality are, therefore, more likely to be managed by medical practitioners than their dental counterparts.¹ The diagnosis of this condition can easily be made radiologically with panoramic and radiographs of the maxillary sinuses that demonstrate the presence of the highly radiopaque tooth and unusual surrounding soft tissue which is a reaction seen commonly associated with in chronic sinus disease.^{1,18}

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