

## A rare case report of Ectopic tooth in maxillary sinus

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**Abstract:** Ectopic eruption of tooth in dental structures is a common entity whereas ectopic eruption of tooth in non-dentate regions are infrequent. The main aim of this report is to give an overview of the clinical presentation, diagnosis and surgical management of the ectopic tooth in maxillary sinus. We present a 13 years old male with ectopic tooth in left maxillary sinus. CT scan suggested ectopic tooth in left maxillary sinus with odontogenic cyst. Patient underwent transnasal endoscopic middle meatal antrostomy with enucleation of cyst. No sign of recurrence after the surgical procedure.

**Keywords:** ectopic tooth; maxillary sinus; transnasal approach; endoscopic; dentigerous cyst; odontogenic cyst.

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### I. Introduction

Odontogenesis or tooth development is a complex process involving interactions between the oral epithelium and the mesenchymal tissue under the epithelium. Abnormal tissue interactions during odontogenesis leads to ectopic tooth development. Ectopic tooth outside the oral cavity is rarely reported in the literatures. Ectopic tooth can remain asymptomatic or form odontogenic cysts, cause degradation of bone or be a source of focal infection<sup>1</sup>. Etiology of ectopic tooth in maxillary sinus is still unclear though developmental disturbances such as cleft palate, displacement of teeth by trauma or cyst, infection, genetic factors, crowding and dense bone are the suspected clinical conditions<sup>2</sup>. Traditionally ectopic tooth was managed by Caldwell-Luc operation but here transnasal endoscopic approach was done.

### II. Case Report

A 13 years old male reported to Department of Otorhinolaryngology Jawaharlal Nehru Institute of Medical Sciences, Imphal, Manipur in the year 2019 with complaints of swelling over left side of cheek, facial pain and facial pressure over left maxillary region for 4 months. The patient did not give any history of trauma in the maxillofacial region. On examination facial asymmetry on left side with diffuse swelling over left cheek was seen which subsided after a course of antibiotics and supportive treatments. Intra oral examination showed mixed dentition. All the other ENT examinations and routine investigations were within normal limit. Radiographic examination using CT scan PNS taken two weeks after conservative treatment showed impacted tooth in left maxillary sinus with radiolucent lesion suggestive of odontogenic cyst (fig1).

A decision was taken together with the patient to endoscopically remove the tooth from the left maxillary sinus. Patient underwent endoscopic transnasal middle meatal antrostomy with enucleation of the cyst under general anesthesia. The maxillary ostium was opened with rotatable Antrum backbiting forceps (fig2,3). A curve probe was used to perforate the thin intrasinus septa circumferentially around the teeth. Then the ectopic tooth was carefully luxated by a Weil-Blakesly forceps (fig4) and removed (fig5). The specimen was sent for histopathological examination showed cyst lumen lined mostly or entirely by non-keratinizing squamous epithelium resembling reduced enamel epithelium consistent with diagnosis of dentigerous cyst. Antibiotic prophylaxis was started a day before the procedure and continued for 7 days postoperatively. The postoperative period was uneventful. Patient was discharged on 10<sup>th</sup> day post-operative and was followed up on 1 week, 1 month and 6 months. There was no recurrence of disease.



Fig 1: CT scan showing ectopic tooth in left maxillary



Fig 2: Rotatable antrum backbiting forceps used to open maxillary ostium.



Fig 3: opened left maxillary sinus ostium.

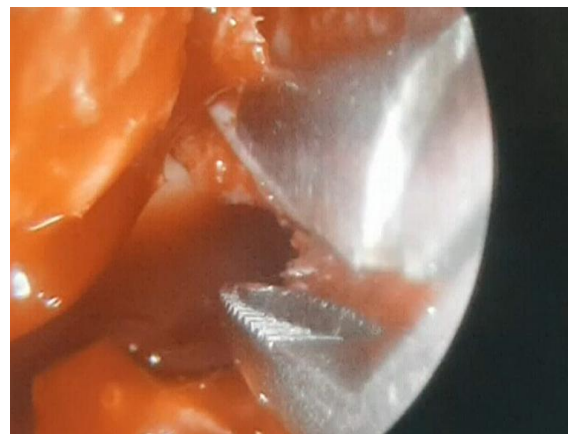


Fig 4: Ectopic tooth carefully luxated by a Weil-Blakesly forceps.

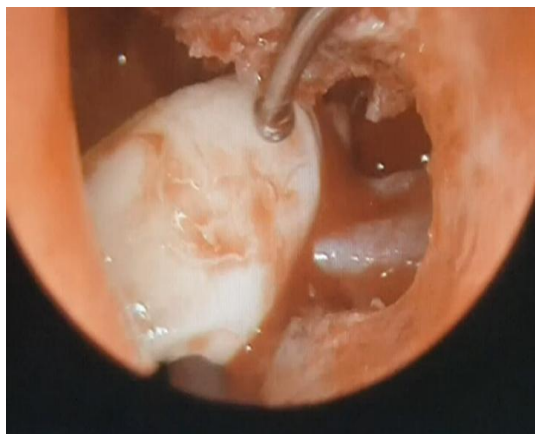


Fig 5: ectopic tooth removed out with help of probe.

### III. Discussion

Ectopic eruption of a tooth in non-dentate region is a rare clinical entity. There have been a few reports of tooth erupting in the nose, mandibular condyle, coronoid process, and maxillary sinus, which is also the largest of the paranasal sinuses. Wisdom teeth are most common to be impacted and take up ectopic positions<sup>3</sup>. People with ectopic teeth mostly are asymptomatic. However, when they present in the maxillary sinus it can cause several symptoms, such as facial pain, facial swelling, headache, purulent discharge, recurrent sinusitis and nasal obstruction<sup>4</sup>. In our case the patient came with chief complaints of facial pain and pressure over the left maxillary region and swelling over the left cheek.

Ectopic tooth is usually associated with dentigerous cyst, which is the second most prevalent type of odontogenic cysts after periapical cyst, they can occupy the maxillary sinus partially or totally and can cause various symptoms<sup>3</sup>. About 70% of dentigerous cysts develop in the mandible and 30% of the cases occur in the maxilla. They usually present in the second or third decade of life. The incidence of impacted teeth transforming into dentigerous cyst is nearly 1.44%<sup>4</sup>. In our case the patient was 13 years old male and his histopathological result came as dentigerous cyst.

Ectopic tooth in the maxillary sinus is usually discovered accidentally on routine clinical or radiographic examinations, as most of the cases are asymptomatic. Ectopic teeth in the maxillary sinus are radiopaque and can be easily diagnosed radiographically. Plain film imaging of the maxillary sinus such as Water's view, panoramic radiography and plain skull radiography are some simple and inexpensive methods, that can be employed in daily practice. CT scan is necessary and more valuable compared to plain film radiographs not only for definitive diagnosis, but also for reevaluation of any associated abnormalities, exact localization of the ectopic tooth and proper treatment planning<sup>2</sup>. In our case the patient underwent CT scan PNS and report showed ectopic tooth in left maxillary sinus with odontogenic cyst.

The traditional surgical management of ectopic tooth in maxillary sinus is by Caldwell-Luc procedure, which allows a direct view into the maxillary sinus and is useful to remove foreign bodies from the maxillary sinus. Endoscopic sinus surgery is associated with lesser operative and postoperative morbidity<sup>5</sup>. In our case the patient underwent endoscopic transnasal middle meatal antrostomy with extraction of ectopic tooth and enucleation of cyst over the traditional Caldwell-Luc procedure as the former has lesser chance of oroantral fistula and trauma to infra orbital nerve.

### IV. Conclusion

Ectopic tooth in maxillary sinus is a rare clinical entity. Ectopic tooth tends to form a cyst or tumor if not managed. CT scan is fundamental investigation before surgery for exact localization of the ectopic tooth and proper treatment planning. Choice of treatment is surgical extraction of teeth with enucleation of cyst.

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