



## **Successful Surgical Removal of an Ectopic Erupted Third Molar in Maxillary Sinus: A Case Report**

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### **Authors' contributions**

*This work was carried out in collaboration between all authors. Author BAM diagnosed the case, planned for surgery, joined in operation and wrote the draft of the manuscript. Author BMS did the operation and supervised the surgery team. Author EMA designed the case report, managed literature searches and contributed to the correction of the draft. All authors read and approved the final manuscript.*

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**Case Report**

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### **ABSTRACT**

A 24 year old female complained of recurrent headache, facial fullness and purulent discharge in her mouth. Intra oral examination showed an absence of the right upper third molar with no history of previous extraction. The diagnosis was made radiographically with plain sinus X-rays, which revealed, right maxillary third molar inside the maxillary sinus indicating ectopic eruption. Caldwell-luc operation was done and the wisdom tooth was removed with a diseased mucosa. In conclusion; in cases of persistent symptoms of chronic sinusitis with absence of upper third molar, ectopic eruption should not be overlooked.

*Keywords: Caldwell luc operation; chronic sinusitis; ectopic eruption; upper third molar.*

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## 1. INTRODUCTION

Tooth development result from a complicated multi-step interaction between the oral epithelium and the underling mesenchymal tissue [1], results in the formation of mature teeth [2]. Ectopic tooth development and eruption may result due to abnormal tissue interactions, developmental disturbances, pathological process and iatrogenic activity [3,4]. Ectopic tooth eruption is common in the dental environment, whereas it is rare in other sites [5]. One of the sites for an ectopic tooth eruption in non dental location is the maxillary sinus [5-7]. Ectopic tooth eruption into the maxillary sinus may cause different symptoms; headache and facial fullness [8]. It can also show a sign of purulent discharge in the mouth [8-10]. All these signs and symptoms are an indication of an acute or chronic sinusitis. The treatment is surgery with options; include Caldwell–Luc approach or mini maxillary sinusotomy through the anterior wall of the maxillary sinus. An approach through Endonasal has been reported [11]. This paper presented a successful surgical treatment of chronic persistent symptoms of sinusitis related to ectopic tooth erupted in maxillary sinus.

## 2. CASE PRESENTATION

A 24-year old female patient attended our clinic with complain of headache, facial fullness and persistent purulent discharge into her mouth from the upper back right region. She had been experiencing these symptoms for three years. She was seen by an ENT surgeon and diagnosed as chronic sinusitis. The symptoms were managed by antibiotics and analgesics for three weeks, but showed no improvement. Relatives advised her to be seen by dentist as they thought these symptoms were of relevant to dental specialty. She was referred to our clinic by one of the junior dentist, when he noticed the absence of her upper third molar with no history of any extractions. Visual examination revealed sound and fully erupted upper maxillary teeth with positive response sensibility test. A white discharge from the area of the upper first and second molar teeth was observed. No tenderness or swellings were observed with the absence of the upper right third molar tooth. The OrthoPantomoGram (OPG) findings showed an abnormal location of the upper third molar in the right maxillary sinus (Fig. 1). Sinus view X.ray confirmed the abnormal position of that tooth and

it reveals radio-opacity in the right maxillary sinus (Fig. 2). The treatment plan was to remove the tooth surgically under general anesthesia. The patient was informed. The plan was discussed with her, and she consented for the treatment option, then she signed an informed written consent. Under endotracheal intubation a Caldwell-luc operation was done (Fig. 3) and the ectopic tooth was removed (Fig. 4). The wound was then sutured and the patient recovered uneventfully. Antibiotics and analgesics were prescribed for seven days and the patient was seen after five days then after three weeks for follow up. The healing was uneventful and the patient showed no signs and symptoms of chronic sinusitis. The patient has been asymptomatic over a year's follow-up.



**Fig 1. Orthopantomogram view shows ectopic third molar tooth inside the right maxillary sinus**



**Fig. 2. X ray Sinus view shows the ectopic eruption of upper third molar tooth**



**Fig. 3. Caldwell-luc operation**



**Fig. 4. The excised tooth with surrounding soft tissues**

### 3. DISCUSSION

An impacted tooth is a tooth, which for one reason or another is located apart from its natural anatomical position. The ectopic eruption of teeth into regions other than the oral cavity i.e. non dental location is rare especially in the maxillary sinus; as from searching in the literatures, only thirty case plus few were reported between 1980 and 2013 [12-14]. Other than in the maxillary sinus; there were few reports of tooth in the nasal septum [3], mandibular condyle [15], coronoid process [16] and the palate [17].

The etiology of ectopic eruption is still unclear and many theories have been suggested

including trauma, infections, cysts, tumors, crowding and developmental abnormalities [2-4,6,7]. In our case the maxillary third molar was absent from its normal position in the dental arch and was found to be in the right maxillary sinus, similar to previously reported cases [1-4,8]. This rare case was added to contribute to the body of the knowledge in this area. The diagnosis of the condition could be easily made through radiography. Dentopantogram and occipitontal views demonstrated the presence of ectopic tooth eruption and unusual surroundings of soft tissue reactions, with associated symptoms of chronic sinusitis [1,18]. Some patient with ectopic eruption in the maxillary sinus can present without any symptoms throughout their lifetime. Others can present with many complaints which varies from: headache, facial fullness, nasal obstruction to hyposomnia [1,8,18]. The treatment of an ectopic tooth in the maxillary sinus is usually by surgical removal because if it is left untreated, it has the tendency to form a cyst or tumor and/or the lesion may cause perforation of the orbital floor and obliteration of the nasal cavity [19].

In the reported case, the patient was complaining of facial fullness and purulent discharge into the mouth, similar findings were reported by other authors [3,8,20] and similar to other reported cases; surgical removal was performed [5,7, 8,21]. The most frequently used technique is the Caldwell-Luc approach or mini maxillary Sinusotomy through the anterior wall of the maxillary sinus.

### 4. CONCLUSION

In case of persistent symptoms of chronic sinusitis with absence of upper third molar, ectopic eruption should be investigated and surgical removal is recommended.

### PATIENT CONSENT

All authors declare that written informed consent was obtained from the patient for publication of this paper and accompanying images.

### ETHICAL APPROVAL

All authors hereby declare that this case has been approved by the Ethical committee of the National Ribat University and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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