

# Maxillary antral mucocoele caused by ectopic canine tooth in maxillary sinus

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## ABSTRACT

A seventeen year old male presented with a 5 month history of left sided purulent rhinorrhoea and left facial pain. Occlusal view X-ray of maxilla showed the presence of an ectopic canine in the left anterosuperior aspect of the maxillary sinus entrapped in soft tissue. Surgical removal of the tooth and the diseased antral tissue was undertaken via a Caldwell-Luc procedure with resolution of symptoms.

## Key words

Ectopic canine, extraction, maxillary antrum, mucocoele

## INTRODUCTION

Tooth development results from a complicated multistep 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.<sup>[1]</sup> Ectopic eruption of a tooth into the dental environment is common, whereas ectopic eruption of a tooth in other sites is rare.<sup>[2]</sup> Diverse oral anatomical locations can infrequently be the site of an ectopic tooth eruption.<sup>[3]</sup> Such locations include the nasal cavity, chin, mandibular condyle, coronoid process, and palate. One of the sites for an ectopic tooth in a nondental location is the maxillary sinus.<sup>[1-3]</sup> Teeth in the maxillary sinus are rare.<sup>[4,5]</sup> Due to its rarity, the literature that deals with this entity is sparse. Ectopic eruption may be associated with one of three distinct processes: Developmental disturbances, pathological processes, and iatrogenic activity.<sup>[4]</sup> The etiology of ectopic teeth is not always known.<sup>[6]</sup>

Impaction of a tooth in the maxillary sinus can be asymptomatic or may lead to maxillary sinusitis.

Some authors report nasal obstruction, facial fullness, headache, and hyposmia.<sup>[6]</sup> In some cases such teeth are often discovered serendipitously on radiographs of the skull or teeth.<sup>[1]</sup> The treatment of an ectopic maxillary tooth is surgical removal through Caldwell Luc procedure, transnasal extraction and endoscopically assisted extraction. We present a case of an ectopic canine tooth which was present in the maxillary sinus and was removed via the Caldwell-Luc procedure with its diseased antral tissue.

## CASE REPORT

A seventeen year old male presented to the department of oral and maxillofacial Surgery, Faculty of Dental Sciences, IMS, BHU, Varanasi, U.P., India, with a 5 month history of left sided facial pain and occasional purulent discharge, from left nasal cavity and left side of maxillary vestibule, which was refractory to several courses of antibiotics and analgesics. The facial pain was continuous, dull in character and localized over the left maxillary antrum. There was some swelling over the left side of maxillary region. There was no history of recurrent upper respiratory tract infection. Dental examination showed missing left upper canine and 3<sup>rd</sup> molar teeth. The canine was absent with no history of extraction. X-ray paranasal sinus Water's view showed a bony opacity in the left maxillary sinus, but maxillary occlusal view X-ray and IOPA X-ray confirmed the presence of a ectopic canine tooth with well developed root [Figures 1 and 2]. Patient was planned for extraction under local anesthesia following standard protocol of extraction.

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Caldwell-Luc procedure was performed with the anterior antral wall being cut with burr [Figures 3 and 4]. The mucocoele was excised and sent for histopathological examination. An ectopic canine tooth was seen arising from the medial antral wall, over the ostium area. The tooth was extracted with maxillary anterior teeth extraction forceps and haemostasis achieved [Figures 5 and 6]. Maxillary sinus ostium was found to be patent after the extraction. All healthy antral mucosa was preserved and the maxillary antrum was packed with antibiotic soaked ribbon gauze. The extracted canine tooth was of adult size with well developed root.

The antral ribbon gauze pack was removed on the 2<sup>nd</sup> post-operative day. Histopathology report confirmed the presence of maxillary antral mucocoele and ruled out the presence of dentigerous cyst. The patient's symptoms were relieved completely after surgery.

## DISCUSSION

The etiology of ectopic eruption is still unclear and many theories have been suggested including trauma, infection, cyst, tumor, crowding, and developmental abnormalities.<sup>[2,3,6]</sup> In many cases, however, the etiology cannot be identified.<sup>[1,7]</sup> Presumably, the etiologic factor

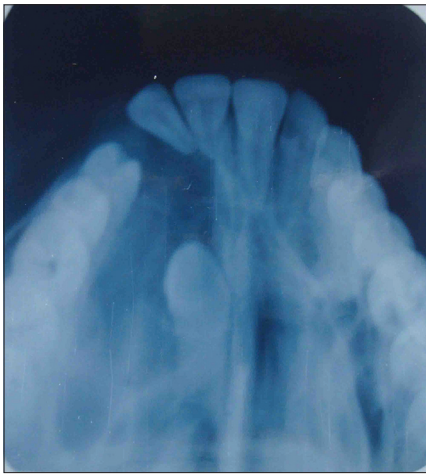


Figure 1: Occlusal view of maxilla showing impacted canine



Figure 2: IOPAX-ray showing crown of impacted canine in left maxillary sinus

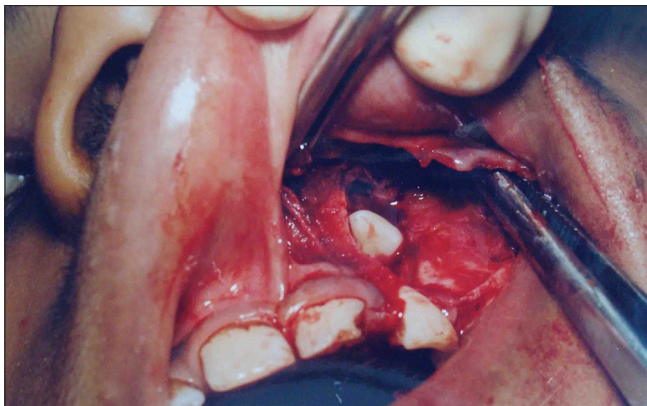


Figure 3: Exposure of impacted canine

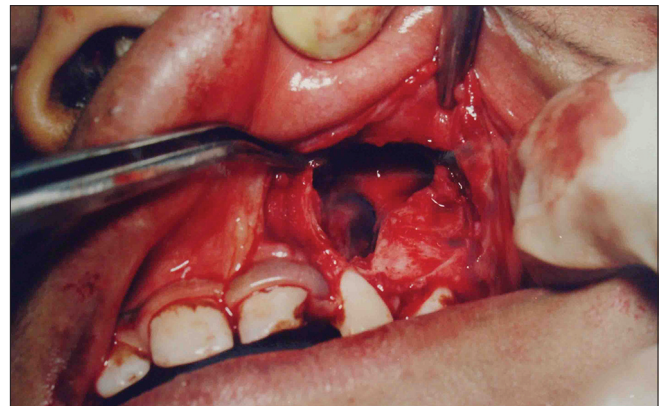


Figure 4: After extraction of impacted canine



Figure 5: Extracted canine and associated pathology



Figure 6: Extracted canine showing complete development

is related to the type of tooth and its immediate anatomic environment.<sup>[6]</sup> In the present case the left maxillary canine 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 infra-orbital 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.<sup>[1,3,5,8]</sup> Teeth developing in the maxillary sinus are rare.<sup>[4,5]</sup> 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.<sup>[1,6]</sup> In the present case, the condition was detected using para nasal sinus radiography. Ectopic teeth in the maxillary sinus are radiopaque and, therefore, easily diagnosed radiographically.<sup>[3]</sup> Patients with an ectopic tooth impaction in the maxillary sinus can remain asymptomatic over the course of their lifetime. Some authors report nasal obstruction, facial fullness, headache, and hyposmia.<sup>[6]</sup> In the present case the patient complained of a headache and sinusitis. Occasionally, a tooth may erupt in the maxillary sinus and present with local sinonasal symptoms attributed to

chronic sinusitis.<sup>[1]</sup> The present case also was associated with sinusitis, confirming the earlier observations.

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