

# Ectopic Eruption of Maxillary Molar Tooth – An Unusual Cause of Recurrent Sinusitis

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## ABSTRACT

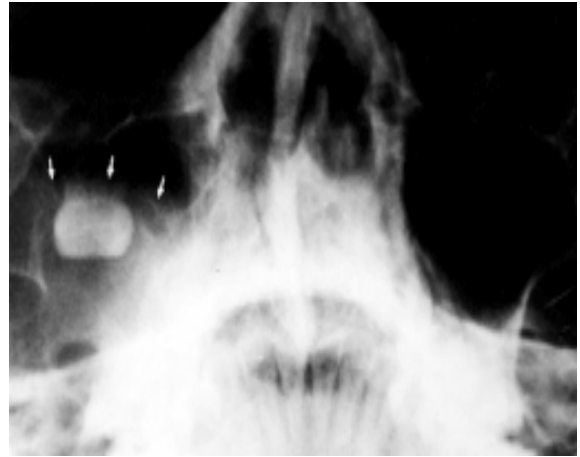
A 17-year-old male presented with a 3-month history of cough associated with right-sided purulent rhinorrhoea and right facial pain. Nasal endoscopy confirmed the presence of mucopus from the right middle meatus. Plain sinus X-ray assessment showed the presence of an ectopic molar in the right antero-superior 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.

**Keywords:** Ectopic Molar, Maxillary Antrum, Sinusitis

*Singapore Med J 2001 Vol 42(2):080-081*

## INTRODUCTION

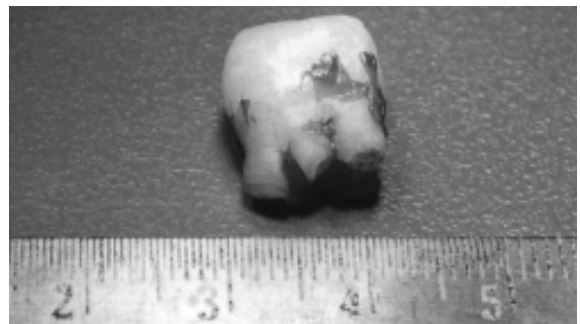
A 17-year-old Chinese male was referred to the ENT Outpatient Clinic for the problem of chronic cough, recurrent right-sided purulent rhinorrhoea and facial pain of 3 months duration. The problem did not resolve in spite of several courses of antibiotics prescribed by several medical practitioners. Apart from the endoscopic appearance of mucopus trickling from the right middle meatus into the post-nasal, space clinical examination was unremarkable. A Water's view sinus X-ray (Fig. 1) showed a well-defined circular opacity surrounded by a soft tissue mass in the right maxillary antrum. The lateral sinus film (Fig. 2) confirmed the presence of an ectopic molar tooth with poorly developed roots at the antero-superior aspect of the right maxillary antrum. A re-examination of the patient revealed the absence of the right second upper molar shown radiologically in the right maxillary antrum. He subsequently underwent an examination under anaesthesia and removal of the ectopic tooth (Fig. 3) via a Caldwell-Luc procedure. At surgery, the tooth was found within a mass of dense soft tissue filled with inspissated pus. The right maxillary antrum was cleared of all diseased mucosa and purulent material. Histology of the soft tissue showed odontogenic keratosis with no evidence of malignancy. The patient's symptoms resolved completely after surgery.



**Fig. 1** Occipito-mental (Water's) view of the sinuses showing a well-defined opacity entrapped in soft tissue shadow (arrows) in the right maxillary sinus.



**Fig. 2** A plain lateral sinus X-ray showing a molar tooth with poorly developed roots at the antero-superior aspect of the maxillary sinus (arrows).



**Fig. 3** The removed molar tooth with poorly developed roots.

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## DISCUSSION

Teeth development results from a complicated multi-step interaction between the oral epithelium and the underlying mesenchymal tissue. This process begins at the sixth week in utero with the formation of the maxillary and mandibular dental laminae in the region of the future alveolar processes. This ectodermal-derivative subsequently undergoes proliferation to form twenty tooth germs for the primary teeth between the 6th and 8th prenatal week and 32 additional tooth germs which differentiate to form the permanent dentition between 5th (incisors) and 10th months (pre-molars). The series of complex tissue interaction that ensue result in the formation of mature teeth, each with a crown and root<sup>(1)</sup>. Abnormal tissue interaction during development may potentially result in the ectopic teeth development and eruption.

Ectopic eruption of teeth into regions other than the oral cavity is rare although there have been reports of teeth in the nasal septum<sup>(2)</sup>, mandibular condyle<sup>(3)</sup>, coronoid process<sup>(4)</sup> and the palate<sup>(5)</sup>. Occasionally, a tooth may erupt into the maxillary antrum and present with local sinonasal symptoms attributed to recurrent or chronic sinusitis. Patients with this rare dental abnormality are therefore more likely to be managed by medical practitioners than their dental counterparts. The diagnosis of this condition can easily be made radiologically with plain sinus X-rays which will demonstrate the presence of the highly radio-opaque tooth and the surrounding soft tissue reaction seen commonly in chronic sinus disease. A CT assessment of the paranasal sinuses is unnecessary, as it does not provide any additional information available from the plain films. In an era when CT scan is often considered a first line investigation in the work-up of patients with chronic sinusitis, a simple plain radiograph can still prove to be a cost-effective and useful investigative tool.

The treatment of ectopic maxillary tooth is surgical removal via a Caldwell-Luc procedure. Trans-nasal extradition of tooth may be attempted if the tooth is small and sited near the maxillary ostium. It is also mandatory to completely remove all diseased antral tissue and thoroughly assess all resected soft tissue histologically. This is important as certain antral diseases like odontogenic keratosis, as in this case,

may co-exist with an ectopic molar. It is thus important to follow-up such patients closely as this condition has a high tendency to recur. In the absence of any unusual histology, surgery provides the patient with a definitive cure of his symptoms.

Odontogenic keratocyst is a locally aggressive intraosseous cystic lesion of the jaw with reported recurrence rates of between 5% to 62.5%<sup>(6,7)</sup>. The average age of presentation is 39.5 years. The molar region of either the mandible or the maxilla are the principal sites of occurrence<sup>(8)</sup>. The treatment of choice is complete enucleation of the lesion with curettage mainly reserved for larger lesions with friable cyst walls as in this case<sup>(9)</sup>. A review of the medical literature showed that only a few cases of 'ectopic' molars displaced by progressively growing dentigerous cyst has been reported<sup>(10)</sup>. It is believed that the displacement of teeth buds by the expansion of these dental cysts result in the 'ectopic' eruption of such teeth. The same mechanism may be attributed to the ectopic appearance of the second molar in this patient. The importance of a thorough histopathological study of resected specimen cannot be overemphasized as it has been reported that odontogenic keratocysts has a tendency to undergo malignant or ameloblastomatous changes more often than other odontogenic cysts<sup>(11,12)</sup>.

## REFERENCES

1. Avery JK. Oral Development and Histology 2nd Edition. Thieme Medical Publisher, Inc., 1994; 70-92.
2. el-Sayed Y. Sinonasal Teeth. *J Laryngol Otol* 1995; 24(3):180-3.
3. Yusuf H, Quayle AA. Intracondylar tooth. *Int J Oral Maxillofac Surg* 1989; 18:323.
4. Toranzo FM, Terrones MMA. Infected cyst in the coronoid process. *Oral Surg Oral Med Oral Pathol* 1992; 73:768.
5. Pracy JPM, Williams HOL, Montgomery PQ. Nasal Teeth. *J Laryngol and Otol* 1992; 106; 366-7.
6. Melvor J. The radiological features of odontogenic keratosis. *Br J Oral Surg* 1972; 10:116-25.
7. Pindborg JJ, Hansen J. Studies on odontogenic cyst epithelium. *Acta Pathol Radiol* 1963; 58:283-94.
8. Maara JG, Shah S, Li KK, Cunningham MJ. The odontogenic keratocyst: a 20-year clinicopathologic review. *Laryngoscope* 1998; 108(2):280-3.
9. Anand VK, rrowood JP Jr, Krolls SO. Odontogenic Keratocysts: A study of 50 patients. *Laryngoscope* 1995; 105(1):14-6.
10. Szerlip L. Displaced third molar with dentigerous cyst – an unusual case. *J Oral Surg* 1978; 36(7):551-2.
11. Kramer IRH. Ameloblastoma: A clinicopathological appraisal. *Br J Oral Surg* 1963; 1:13-28.
12. Toller PA. Origin and growth of cysts of the jaws. *Ann R Coll Surg Engl* 1967; 40:306-36.