AN ECTOPIC CANINE TOOTH IN THE MAXILLARY SINUS : A CASE REPORT

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ABSTRACT :

Kittidusaditham T. An Ectopic Canine Tooth in the Maxillary Sinus : A Case Report. (Region 7 Medical Journal 1996 ; 4 : 457-463).

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Ectopic eruption of the tooth in the maxillary sinus is a rare condition. This article presents a case which a canine tooth ectopically erupted into the maxillary sinus. The patient had no symptoms but accidentally found by the dentist who will give an orthodontic treatment from routine radiograph. ENT consultation for diagnosis and treatment was considered. The further sinus radiograph include the CT scan were performed to confirm the diagnosis and for the exact location of the tooth. The antral tooth was removed by the Calwell-Luc operation. The patient was healthy postoperatively and continue an orthodontic treatment by the dentist. The detail of the etiology and management are discussed.

บทคัดย่อ :

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การงอกผิดตำแหน่งของฟันในโพรงไซนัสข้างแก้มเป็นภาวะที่พบได้น้อย ได้รายงานผู้ป่วยที่มีฟันเขี้ยวงอกผิดปกติโดยงอกอยู่ในโพรงไซนัสข้างแก้มซ้าย โดยที่ผู้ป่วยไม่มีอาการแสดงอะไรและไปพบทันตแพทย์เพื่อการจัดฟัน ซึ่งทันตแพทย์ได้พบโดยบังเอิญจากการเอกซเรย์และปรึกษามายังแพทย์หู คอ จมูก เพื่อผ่าตัดเอาฟันที่งอกผิดปกติในโพรงไซนัสออก ได้ส่งผู้ป่วยตรวจด้วยเอกซเรย์คอมพิวเตอร์เพื่อหาตำแหน่งที่ชัดเจน และได้ทำการผ่าตัดโดยวิธี Caldwell-Luc นำเอาฟันที่งอกผิดปกติในโพรงไซนัสออก หลังผ่าตัดผู้ป่วยหายดีไม่มีโรคแทรกซ้อน และสามารถไปรักษาต่อทางทันตกรรมจัดฟันได้ ในรายงานได้บรรยายถึงรายละเอียดของสาเหตุ การตรวจวินิจฉัย การรักษา และผลแทรกซ้อนในผู้ป่วยที่มีภาวะผิดปกติดังกล่าว

Introduction

An ectopic eruption of the tooth in the sinonasal tract is a rare condition. In 1979, Smith et al. reported only 27 well-documented cases of intranasal teeth.[1] But the ectopic canine teeth that erupting in the maxillary sinus reported are just very rare. After this review of the literature by Smith et al., a few cases have been reported by other authors.

This article reports and describes a case of an ectopic eruption of the canine tooth in the maxillary sinus. The etiology, diagnosis, complications, and treatment of the ectopic eruption of the tooth in the sinonasal tract are discussed.

Case report

A 20-year-old Thai woman was referred to the ENT Outpatient Department by her dentist. She went to the dentist for orthodontic treatment and the dentist found a radiopaque structure resembling tooth from the routine orthopantomogram and the maxillary occlusal radiograph (Figure 1) located beyond the dental arch in the left maxillary sinus. The consultation was for proper diagnosis and treatment of this radiopaque lesion.

Eight years ago, she gave a history of facial pain near the left ala nasi with little swelling and some tenderness. She went to see the dentist and

Fig. 1 Maxillary occlusal radiograph showing a radiopaque structure resembling tooth with absence of left maxillary canine tooth.

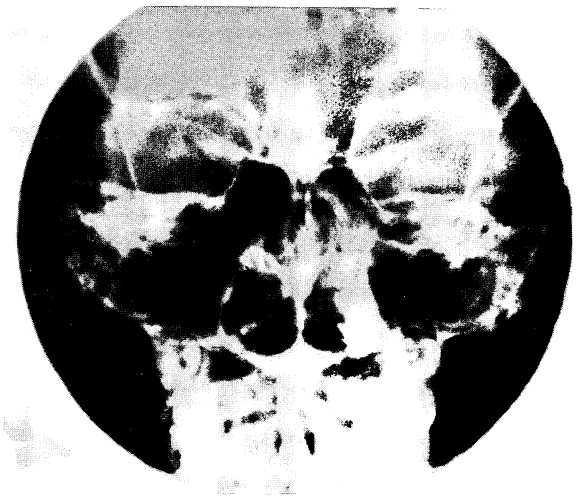

Fig. 2 Radiograph of paranasal sinuses showing a radiopaque mass in the left maxillary sinus

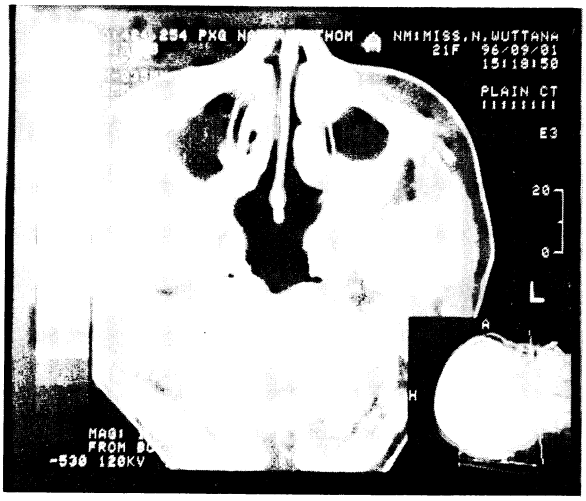

Fig. 3 An axial CT scan showing the opaque mass at the anteroinferior part of the left maxillary sinus.

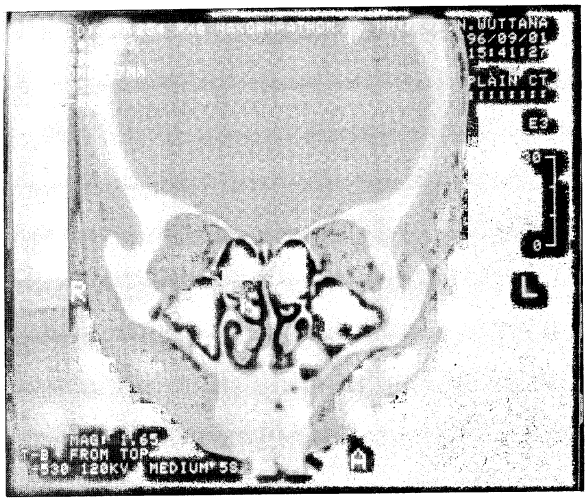

Fig. 4 A coronal CT scan showing the opaque mass attatched to the medial wall of left maxillary sinus.

was diagnosed as an odontogenic abscess. The surgical drainage was performed to drain the pus from the abscess which located in the gingibuccal sulcus above the left lateral incisor. After that time she had no any symptoms until the discovery of the ectopic tooth. She gave no history of severe trauma or previous dental extraction.

Intra-oral examination demonstrated a nomal occlusion with absence of the left maxillary canine tooth and impacted both maxillary and mandibular third molars. On the nose examination revealed slightly mucosal bulging of the left lateral nasal wall beneath the inferior terbinate but no other abnormalities of the nasal mucosal lining. Other ENT examination appeared normal.

The plain X-ray film of the paranasal sinuses showed a radiopaque mass as a toothlike structure at the inferomedial region of the left maxillary sinus (Figure 2). The antrum and mucosa of the sinuses appeared normal.

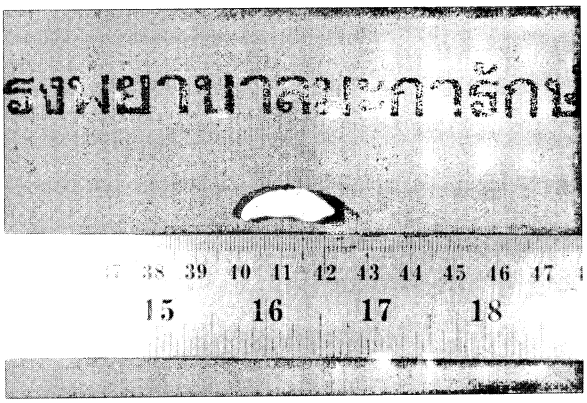

Fig. 5. The canine tooth removal from the left maxillary antrum.

Plain axial Computed tomography (CT) revealed an opaque mass at the anterior and inferior part of the left maxillary sinus (Figure 3).

On the coronal view of the CT scan showed the opaque mass attatched to the medial wall of the left maxillary antrum (Figure 4). No evidence of mucoperiosteal thickening of the maxillary sinuses and otherwise was normal.

The diagnosis was possibility of an ectopic eruption of a tooth in the left maxillary sinus.

The left maxillary antrum was entered via a Caldwell-Luc approach under general anaesthesia and found an ectopic canine tooth (Figure 5) buried in the inferomedial wall of the sinus cavity. Its root pointed downward and medially to the nasal cavity and the crown protuded into the antrum. It was carefully removed. The medial wall of the sinus was not perforated to the nasal cavity. The mucosal lining of the antrum appeared normal.

The patient was discharged 3 days after surgery and there were no postoperative problems. On follow-up in the out patient department two months later, she was entirely asymptomatic ; the

nasal cavity was healthy and the remaining of the left lateral nasal wall bulging was observed. A repeat sinus X-ray showed no more than the usual reduction in transluscence following Caldwell-Luc surgery.

Discussion

The ectopic eruption is one of the several types of developmental anormaly of the teeth. Such anormaly the position in which the teeth are found next to their normal site of eruption. They can occurs in a variety of sites : nasal cavity,[1-10] mandibular condyle, coronoid process, palate, facial skin,[1] orbit,[11] infratemporal fossa,[12] and maxillary sinus.[12-14]

The etiology of this phenomenon is unclear. Several theories explaining it include trauma to the oral cavity region, either rhinogenic or odontogenic maxillary infection,[5] developmental disturbances due to incomplete union of embryogenic processes as in cleft palate[15] or formation of either an additional tooth bud next to a permanent supernumerary tooth or displacement of a normal tooth element to an ectopic site,[9] obstruction to eruption secondary to crowding of dentition, some patients shown a hereditary tendency as an autosomal dominant trait with lack of presentation in some generations[4,5] osteomyelitis of the maxilla,[2] persistent deciduous teeth, tooth formation associated with dermoid cysts[15] or exceptionally dense bone.[5]

The ectopically eruped tooth may be permanent, deciduous or supernumerary. The supernumerary teeth are one of the common dental abnormalities. The incidence is 0.1 to 1% of the general population.[8] It is not clear about their embryogenesis. There are several theories postulating the development of supernumerary teeth. In the disscussion of Thawley and La Ferriere in 1977, an intranasal tooth is a rare form of supernumerary tooth.[8] Smith et al.,[1] in a review of the world liturature, found 17 supernumerary teeth (15 permanent and 2 deciduous) from a total of 27 well-documented intranasal teeth cases. However, some authors suggested that an ectopic tooth may arrived from abberant extraodontogenic epithelium.[15]

On viewing of this reported case that the ectopic tooth in the maxillary antrum is a canine tooth. The canine is one of the most frequently impacted teeh : the incidence of impaction was approximatly 1% of the patient population.[16] The literature shows only rare cases of a maxillary canine ectopically erupting in the maxillary sinus. According to Laptook and Silling,[16] the maxillary permanent canine shows the first evidence of calcification at the age of 4 to 5 months, with the crown fully calcified at 6 to 7 years. Within one or two years, the canine starts its downward migration until erupts into the mouth between the ages of 11 and 12 years. Although the causes of this ectopic eruption of the canine are not clear, the possible explanation is from the migration of a tooth away from its normal path of eruption.

Clinically the ectopic sinonasal teeth may be asymptomatic as in this reported case. It may or may not have dental caries.[6] Variety of signs and symptoms may present including mild facial pain, headach, nasal obstruction, recurrent epistaxis, feeling of something in the nose, foul-smelling serous or purulent rhinorrhea, cacosmia, rhinitis caseosa,

external deviation of the nose, crusting of the nasal mucosa, mild fever, nasal congestion, and naso-oral fistula.[1]

The diagnosis is not usually a difficult by the clinical and plain radiologic findings. However, it should be differentiated from exostoses, foreign body, tumours, rhinolith, antrolith, bony sequestra, superimposed conical coronoid process, dense unaerated zygomatic buttress, exuberant root filling, and unerupted teeth. The computed tomography (CT) scan is a useful technique for the exact location of the ectopic tooth for further surgical management.

Complications of sinonasal teeth include : acute or chronic bacterial sinusitis,[7] antral polyp,[17] obstruction of the sinus ostium,[18] aspergillosis,[13] rhinitis caseosa[1] and naso-oral fistula.[13]

The treatment of sinonasal teeth is depend upon the symptoms and signs of the patients. If the patient is asymptomatic and the sinus is radiologically clear, immediate surgical removal is probably unnecessary but at least followed radiologically.[13] In case of trauma, the displaced teeth or roots should be removed immediately. In 1964 Killey and Kay reviewed 50 patients with a tooth or root in the maxillary sinus, and 16% of these cases the mucosal lining of the maxillary sinus appeared normal.[17] Smith et al., [1] Spencer and Couldery 4 suggested that both asymptomatic or symtomatic ectopic sinonasal tooth should be removed not only for alleveate the symptoms but also for prevention of the complications. In case of children, the best time to remove this tooth is after the roots of the permanent teeth have completely formed so that possible injury to their development can be avoided.[9]

Summary

A rare case of an ectopic canine tooth in the maxillary sinus is described. The etiology of this phenomenon is not clear but was postulated by many theories. The diagosis is not usually difficult by the radiography. The ectopic tooth in the sinus may be asymtomatic or may causes several complications. The management is controversial. It can be left in its position if there are no complications but many authors suggest to remove the ectopic tooth for prevention of the further complications.

Acknowledgement

The author is thankful to Dr. U. Chaovaroj, Director of Makarak Hospital, for his permission to publish the case ; and S. Urai D.D.S., J. Chalermsak D.D.S., K. Lakana D.D.S., Department of Dentistry, Makarak Hospital, for their advice and encouragement in the preparation of this paper.

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