

Intranasal Tooth: Report of Three Cases

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Intranasal teeth are uncommon, with only a few reported cases in the past few decades. The clinical manifestations of an intranasal tooth are quite variable. Unilateral nasal obstruction is a common complaint, but even though nasal symptoms are present, an intranasal tooth can be an incidental finding during routine examination in patients without nasal discomfort. Although the diagnosis is not difficult to make, a complete workup that included radiological investigations is important before any surgery is attempted. Transnasal endoscopic surgical approaches have been described with no evidence of recurrence or complications in similar cases. Herein, three patients with an intranasal tooth are described, along with possible etiologies, potential complications, differential diagnoses and their treatments. (*Chang Gung Med J* 2004;27:385-9)

Key words: intranasal tooth, nasal obstruction, transnasal endoscopic approach.

An aberrant tooth can be found in sites outside of the oral cavity, and can be a supernumerary, deciduous or permanent tooth. The maxillary sinus and palate are the most frequently affected sites, while the mandibular condyle, coronoid process, orbits, and facial skin are affected much more rarely.⁽¹⁻³⁾ Intranasal dental eruptions are another of the more unusual aberrant teeth, which present in the nasal cavity and are quite rare.^(1,4) Although an intranasal tooth is not difficult to diagnose, it is easily missed due to the lack of symptoms and the variable clinical presentation, and a diagnosis is often made incidentally during routine clinical or radiological examinations. After complete evaluation, removal of the aberrant tooth is appropriate in order to prevent further complications.^(1,4,5)

CASE REPORT

Case 1

A 16-year-old girl presented with a history of

longstanding left nasal obstruction and frequent epistaxis. The patient was initially examined in an outpatient clinic, where a mass lesion in the left nasal cavity was identified. Examination notes described a white, hard mass apparently erupting from the floor of the left nasal cavity, near the nasal septum. The oral dentition was normal and no history of previous facial trauma or surgery was given. No cleft palate or congenital abnormality was noted and the patient was otherwise well medically. Paranasal sinus computed tomography (CT) was then arranged for further evaluation of the suspected aberrant tooth. The CT scan identified a calcified mass at the junction of the perpendicular plate and palate on the left side, which was consistent with a dental structure (Fig. 1 and Fig. 2). The patient then underwent trans-nasal endoscopy for removal of the mass lesion. The operative findings suggested that the tooth was erupting from the nasal septum, inferior to the nasal crest. The gross specimen consisted of a tooth surrounded by some granulation tissue. The postoperative course

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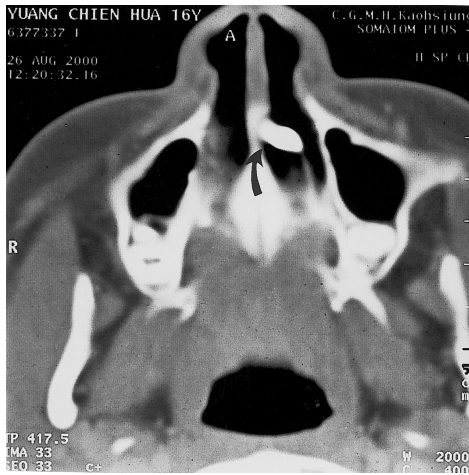


Fig. 1 A calcified mass (arrow) is consistent with the dental structure in left junction of perpendicular plate and palate.

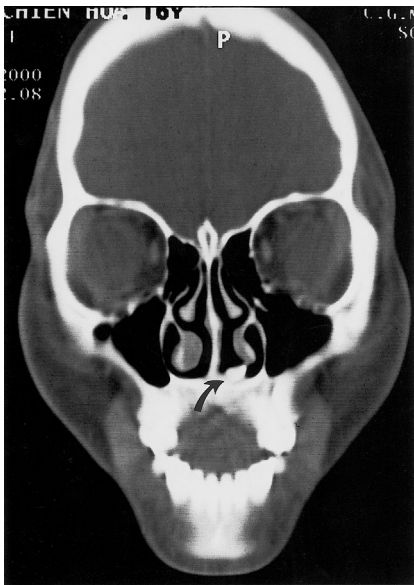


Fig. 2 A calcified mass (arrow) is consistent with the dental structure in left junction of perpendicular plate and palate.

was uneventful and there has been no recurrence in the two years post-operatively.

Case 2

A 21-year-old man presented with a six month history of unilateral nasal obstruction and purulent rhinorrhea. Clinical examination identified a granulomatous lesion with necrotic tissue in the left nasal



Fig. 3 Gross specimen is a tooth surrounded by granulation tissue.

cavity, just below the inferior turbinate. The patient's oral dentition was normal, there was no cleft palate or congenital abnormality, and he gave no history of previous facial trauma or surgery. An intranasal foreign body, infection or malignancy were suspected. A Water's view x-ray identified a radio-opaque lesion in the left nasal cavity, immediately beneath the inferior turbinate. Paranasal sinus CT showed that the lesion was a calcified mass that extended into part of the maxillary sinus but with no apparent destruction of other adjacent structures. An air fluid level was noted in the left maxillary sinus, suggestive of sinusitis. The patient underwent trans-nasal endoscopy for removal of the lesion. The gross specimen had the appearance of a bony lesion surrounded by granulation and necrotic tissue (Fig. 3). The histopathological findings confirmed that the mass was an aberrant tooth. The postoperative course was uneventful and no recurrence has been noted.

Case 3

A 6-year-old girl presented with a six month history of right nasal obstruction. A hard mass arising from the base of the right nasal cavity was noted on clinical examination. A Water's view x-ray identified a radio-opaque, oblong lesion erupting from the floor of the right nasal cavity, near the septum. X-ray appearances suggested that the lesion was not associated with the adjacent bony structures, making an intranasal tooth likely. The patient's oral dentition

was essentially normal, and no previous history of facial trauma, cleft palate or congenital abnormalities were reported. The patient underwent trans-nasal endoscopy for removal of the lesion, which grossly resembled a tooth. Adjacent structures were unharmed, and the postoperative course was uneventful.

DISCUSSION

Intranasal teeth can be supernumerary, deciduous or permanent. A tooth is termed supernumerary if it is an extra tooth, regardless of shape or size. The prevalence of supernumerary teeth is believed to range from 0.1 to 1 per cent,^(1,5) and supernumerary teeth are more commonly seen intranasally than deciduous or permanent teeth.^(2,6-8) Case reports would indicate that most intranasal teeth appear as a unilateral single tooth in the nasal cavity, rather than multiple teeth in the nose, or teeth in both nasal cavities. The literature would tend to suggest a male predominance, and around half of all patients are diagnosed before adulthood. The underlying etiology remains unclear, but the literature mentions potential causes of intranasal tooth development that include cleft palate, maxillofacial trauma, previous odontogenic or rhinogenic infection, and hereditary factors including Gardner's syndrome and cleidocranial dysostosis.^(1,5-7) No significant causative factors were identified in the presently described cases.

If symptomatic, the clinical manifestations are varied and can include unilateral or bilateral nasal obstruction, epistaxis, a persistent purulent or blood-tinged nasal discharge, nasal or facial pain including headache, chronic localized ulceration, deviation of the nasal septum, necrotic or granulation tissue in the nasal cavity, a rhinolith, paranasal sinusitis, or a nasal oral fistula.^(2,4,7) Although the three patients described presented because of symptoms of nasal obstruction, epistaxis, or purulent rhinorrhea, the diagnosis should not be excluded in an otherwise asymptomatic individual in whom the diagnosis is made incidentally.

Diagnosis is based mainly on clinical and radiological findings. Clinically, intranasal teeth are seen most frequently on the floor of the nasal cavity, and are often an ivory white mass without any covering, or a tumor-like lesion surrounded by granulation and necrotic debris. Differential diagnoses should be con-

sidered, such as a foreign body, rhinolith, benign or malignant tumor, inflammatory change with calcification, tuberculosis, fungal infection, osteoma, exostosis, odontoma, or a cyst lesion.^(6,7) Radiological investigations help to differentiate between these possibilities. Water's or Caldwell's traditional views, a lateral view of the skull or panoramic radiography may guide diagnosis and management, perhaps even showing a specific, radiopaque and well-differentiated tooth. A panoramic film has the added advantage of giving a detailed view of the normal dentition. Computed tomography can indicate tooth equivalent attenuation and pinpoint the lesion centrally, which are highly discriminating features that not only delineate and confirm the diagnosis, but also facilitate surgical planning.^(6,7,9,10) In the presently described patients, a complete radiographic series was not performed since the diagnosis was based mainly on clinical findings, with radiography used only to confirm the diagnosis and delineate the lesions.

Most authors feel that the main goal of treatment should be to extract the tooth before further morbidity results, although one author has suggested that regular radiographic and clinical follow-up alone are adequate for asymptomatic patients.⁽²⁾ A dental opinion can be useful in some cases, but was not sought for the presently described patients. The most appropriate time to remove aberrant teeth is when the roots of the permanent teeth have completely formed, thereby minimizing the risk of developmental injury to the dentition.

The most common surgical approaches include the transnasal and transpalatal approaches. Operative methods depend on the involvement of structures adjacent to the tooth, and potential complications arising from extraction of the tooth.^(4,7) If a nasal tooth is associated with prominent deviation of the nasal septum, an intra-oral fistula or osteomyelitis, further debridement, septoplasty or septomeatoplasty may be necessary following extraction of the tooth. The extraction of nasal teeth can be performed under direct vision with the assistance of headlights, but the trans-nasal endoscopic approach is recommended since it offers clear visualization, good illumination, precise dissection and the ability to minimize injury to nearby structures and the mucosa.^(7,8) In the presently described cases, extraction of the intranasal teeth went smoothly under endoscopic guidance, without the need to resort to any other methods.

In conclusion, the intranasal tooth is one of the rarer conditions encountered in the field of otolaryngology. The clinical manifestations are so variable that the diagnosis is sometimes made incidentally in asymptomatic patients. Without appropriate treatment, there is the potential for further morbidity. The diagnosis is not difficult and depends mainly on clinical findings, assisted by radiological investigations. In general, a full workup should be arranged that includes radiological investigations and a dental consultation prior to surgery. The presently described cases and previous case reports have confirmed the appropriateness of a transnasal endoscopic approach for the extraction of intranasal teeth.⁽⁷⁾

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鼻內牙：三例報告

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鼻內牙並不常見，在過去，只有零星的病例報告被提出。鼻內牙的臨床表現是多樣性的，其中以單側鼻塞最常見。但病人常未感覺不適，因而僅在例行檢查中被意外發現。雖然診斷並不困難，但仍需與許多相關的疾病作鑑別診斷；手術前需完整的評估，放射線檢查是必須的。藉由鼻腔內視鏡進行手術治療，是一種可行且有效的方法。本報告就三病例可能的病因、診斷、治療方法等作一綜合討論。(長庚醫誌 2004;27:385-9)

關鍵字：鼻內牙，鼻塞，鼻腔內視鏡手術。

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