

Nasal Tooth: A Cause of Unilateral Nasal Obstruction

Somphong Wajajamroen, M.D.*, Chuda Srisukonth, M.D.**, Anchalee Aramtiantamrong, M.D.***

*Department of Otorhinolaryngology, **Department of Radiology, ***Department of Pediatrics, Nopparatjathane Hospital, Bangkok, Thailand.

ABSTRACT

Intranasal tooth is a rare phenomenon. The clinical manifestations of an intranasal tooth are quite variable. Unilateral nasal obstruction is a common complaint. In this case, a 14-year-old girl presented with left nasal obstruction. Anterior rhinoscopy and endoscopic examination showed the tooth-like lesion in the left nasal cavity. Computed Tomography (CT) scanning is helpful in the diagnosis and treatment planning. After a complete evaluation, the patient underwent transnasal endoscopic removal of the lesion. In the present study, the clinical and radiological findings of a nasal tooth is reported.

Keywords: Nasal tooth, nasal obstruction, computed tomography

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CASE REPORT

We have reported a 14-year-old girl who presented with left nasal obstruction. She was diagnosed acute lymphoblastic leukemia with central nervous system involvement (August, 2006). She was treated with chemotherapy for 5 years and did not receive radiation. Her disease is still under remission until now. In 2008, she presented with a left nasal mass. Intranasal endoscopic removal of her left nasal mass was done. The histopathological findings were a chronic and acute osteomyelitis with no evidence of malignancy. The post-operative course was uneventful until her 2-months follow-up period.

In January 2013, she presented with unilateral left nasal obstruction. Routine anterior rhinoscopy showed a white tooth-like structure with conical projection from the floor of right nasal cavity into left nasal cavity (Fig 1 & 2).

The patient's oral dentition was normal and there was no cleft palate or congenital abnormality.

A digital panoramic x-ray illustrated a tooth-like structure in the left side of her nasal cavity and retained deciduous left upper tooth (Fig 3). The paranasal sinus

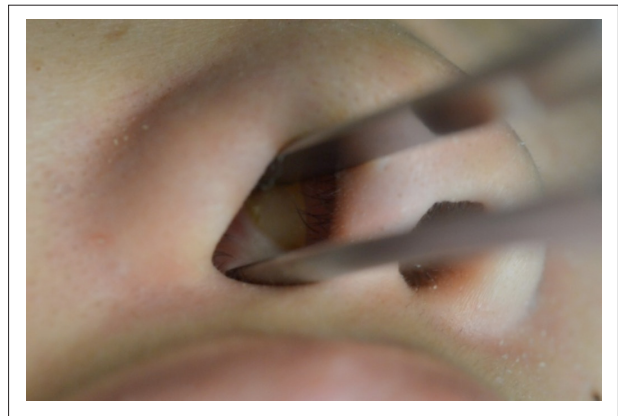


Fig 1. Anterior rhinoscopy of right nasal cavity.



Fig 2. Anterior rhinoscopy of left nasal cavity.

Correspondence to: Somphong Wajajamroen

E-mail: somphong148@gmail.com

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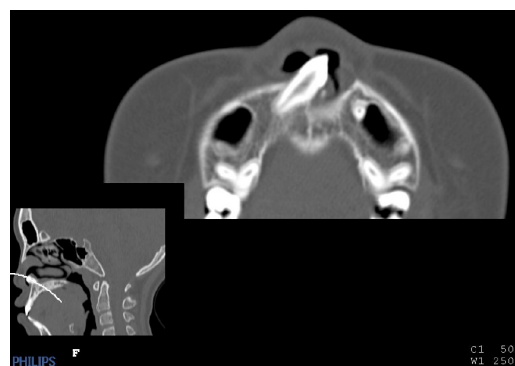
Fig 3. Digital panoramic radiograph illustrated a tooth-like structure in left side of the nasal cavity.

CT showed a tooth-like structure in relation with the bone and adjacent soft tissue (Fig 4).

She underwent endoscopic removal of the nasal mass. The gross specimen consisted of a tooth surrounded by some granulation tissue (Fig 5). It was a tooth-like lesion with 24 mm length. There was no postoperative nasal bleeding and the patient was discharged after 2 days postoperatively. The histopathological report shows a tooth structure with dentinal tubules (Fig 6).



4A



4B



4C



4D



4E

A: Axial scan with a bone window setting revealed that the lesion was tooth-equivalent attenuation with centrally located cavity suggestive of ectopic tooth arising from the right maxillary bone toward the left nasal cavity. **B:** MPR (multiplanar reformation) with curve reconstruction clearly depicted the mass in long axis for evaluation of the depth of the eruption site. **C:** MPR with thick slab coronal bone reconstruction demonstrated that the nasal tooth was in an inverted-oblique position originating from the right palatal bone. Note an un-erupted left upper tooth. **D and E:** Volume rendering bone and soft tissue reconstruction showed the nasal tooth in relation with the bone and adjacent soft tissue.

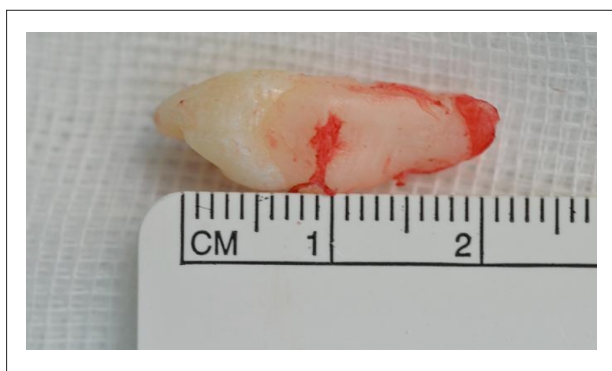


Fig 5. The gross specimen.

Gross Examination: A tooth measures 2.4x0.8x0.7 cm. The root of tooth shows a pot, measuring 0.2x0.1x0.1cm.

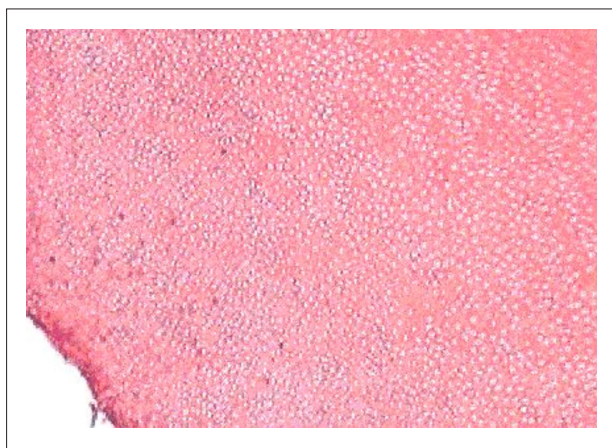


Fig 6. The histopathological report.

Microscopic Examination: The sections show a tooth structure with dentinal tubules

DISCUSSION

The incidence of supernumerary teeth is generally 0.1–1% of the population.¹ The prevalence is higher in male children and vegetarians. The etiology is not entirely understood. Heredity may play a role for the increased incidence in some families.¹ Various theories have been proposed to explain the presence of supernumerary teeth. The first theory is the excessive growth of the dental lamina.¹ The second theory is that the tooth germ may undergo dichotomy.² The third theory states that these teeth are derived from clumps of epithelium that remained after the breaking up of the tooth band and became activated to tooth formation.²

Several conditions may lead to the ectopic eruption of teeth. e.g. developmental disorders such as cleft palate, trauma which causes displacement of the teeth, cysts, maxillary infection, crowding, genetic factors and high bone density.^{3,4,5}

The potential chemotherapeutic effects in 5 out of 23 patients who received treatment for tumors located outside of the head and neck region comprised acquired amelogenesis imperfecta, microdontia of bicuspid teeth,

and a tendency toward thinning of roots with an enlarged pulp chamber.⁶

In this case, the patient had a history of surgery of the nose and was diagnosed with acute lymphoblastic leukemia 7 years ago. In addition, she was treated with chemotherapy for 5 years. These factors may lead to the occurrence of supernumerary teeth.

The intranasal teeth may be asymptomatic or cause a variety of signs and symptoms, including nasal obstruction (common complaint), facial pain, headache, epistaxis, foul-smelling rhinorrhea, blood tinged nasal discharge, external nasal deformities, and nasolacrimal duct obstruction.^{5,7}

Although the diagnosis is not difficult, a complete workup including radiological investigations is necessary before any surgery is attempted.

Complications of nasal teeth include rhinitis caseosa with septal perforation, aspergillosis, and nasooral fistula.⁸ Diagnosis is primarily based 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. The differential diagnosis of nasal teeth includes radiopaque foreign body, rhinolith, inflammatory lesions due to syphilis, tuberculosis, or fungal infection with calcification, benign tumors (e.g. hemangioma, osteoma, calcified polyps, enchondroma, and dermoid), and malignant tumors (e.g. chondrosarcoma and osteosarcoma).⁵ However, the CT findings of tooth-equivalent attenuation and a centrally located cavity are highly discriminating features that help to confirm the diagnosis.⁹

When a tooth has a bony socket in the floor of the nose, it may be extremely difficult to extract.¹⁰ CT is useful to evaluate the depth of the eruption site. The most appropriate time to remove the tooth is after the roots of the permanent teeth have fully formed, thereby minimizing the risk of developmental injury to the dentition.¹⁰

The most common surgical approaches include the transnasal and transpalatal approaches.^{11,12}

In this patient, the endoscopic transnasal approach was performed because it had an exceptionally bright clear image to improve precision and ability to reduce injury to nearby structures and the mucous membranes.¹¹

CONCLUSION

The intranasal tooth is one of the rare conditions encountered in the field of otolaryngology and may cause a variety of symptoms and complications. The diagnosis depends mainly on clinical finding and radiological investigations.

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