Endoscopic Removal of Bilateral Supernumerary Intranasal Teeth

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Supernumerary teeth occur in 0.1% to 1% of the general population.1 Dentists and oral-maxillofacial surgeons (OMSs) sometimes encounter a supernumerary tooth, and the most common is the mesiodens; a supernumerary intranasal tooth is very rare.2-5 Bilateral supernumerary intranasal teeth are extremely rare,2 and the literature contains only a few reports.3,4 Because most intranasal teeth are found by otolaryngologists based on patients presenting with nasal symptoms, dentists and OMSs have less opportunity to treat them. We report a rare case of bilateral supernumerary intranasal teeth removed under endoscopic guidance.

Report of Case

A 27-year-old man was referred to our department for a foul smell in the nasal cavity. The patient had no history of dentomaxillofacial trauma or surgery, craniofacial anomalies or syndromes, or infection, such as syphilis or osteomyelitis of the maxilla. Clinical examination with a nasal speculum showed hard white masses in the nasal cavities bilaterally. Intraoral examination showed 32 permanent teeth and a supernumerary intranasal tooth (Fig 1). Facial radiographs (posterior-anterior and lateral radiographs) and computed tomography (CT) showed a supernumerary intranasal tooth in each nasal cavity (Figs 2-5). The patient underwent transnasal endoscopic removal of bilateral supernumerary intranasal teeth under general anesthesia. First, we placed pharyngeal packing gauze to prevent any teeth from dropping to the pharynx after orotracheal intubation. We used a 4-mm, 0° rigid endoscope (Olympus Medical Systems, Tokyo, Japan) for good visualization and minimally invasive surgical intervention (Figs 6, 7). The intranasal teeth could be removed completely by use of forceps under endoscopic guidance (Figs 8, 9). The right intranasal tooth had a canine crown and dilacerated root; the left intranasal tooth had a conical crown and straight root (Figs 10, 11). The patient’s postoperative course was uneventful, and his symptoms resolved after the teeth were removed.

Discussion

Ectopic teeth occur in various sites such as the mandibular condyle,6 coronoid process,7 maxillary sinus,8 orbit,9 palate,10 facial skin,11 and nasal cavity.2-5 Intranasal teeth are uncommon, and septal perforation of an intranasal tooth was reported as an extremely rare case.12,13 Supernumerary teeth are more commonly seen intranasally than deciduous or permanent teeth.14-16 Although the etiology of intranasal tooth eruption is unclear, the theories include developmental disturbances such as cleft palate, dentomaxillofacial trauma, cysts, infection (syphilis or osteomyelitis of the maxilla), eruption due to crowding of dentition, persistent deciduous teeth, or dense bone.4,16-19 However, in our case, an etiologic factor for the supernumerary intranasal teeth has not been identified.

Symptoms and signs associated with intranasal teeth include facial pain,20,21 external nasal deformity,22 nasal discharge,3,20 nasal discomfort,20 foul smell,12 nasal obstruction,5,8,12,14,15,23 rhinorrhea,8,14,15,21 headache,23 rhinitis,14 recurrent epistaxis,15,21 and oronasal fistula.16 Sometimes an intranasal tooth is asymptomatic,1,14,17 and such an intranasal tooth may be inciden-
tally discovered when routine clinical examination is performed on patients with other symptoms such as otitis. Therefore most intranasal teeth are found in patients presenting for nasal symptoms to otolaryngologists, and dentists and OMSs have less opportunity to treat this rare condition. However, we should be cognizant and knowledgeable about intranasal teeth because routine radiographic examination for dental treatment may show a radiopaque lesion in the nasal cavity.

Because supernumerary intranasal teeth are very rare, most of the literature is limited to case reports and case series. Therefore we investigated supernumerary intranasal teeth in the English-language literature. The review of Kirmeyer et al between January 1959 and January 2008 and our further investigation until July 2011 showed 26 well-documented cases of supernumerary intranasal teeth, including the present case and the case of Kirmeyer et al. The age when the supernumerary intranasal teeth were diagnosed...
ranged from 6 to 61 years (mean, 25.8 ± 13.4 years). There were more cases of supernumerary intranasal teeth found in male patients (62%) than in female patients (38%), and symptoms associated with supernumerary intranasal teeth occurred in 84.6% of cases. In most cases of supernumerary intranasal teeth, there is a unilateral single tooth in the nasal cavity, but Martinson and Cockshott reported multiple supernumerary intranasal teeth in 1 nasal cavity as an extremely rare case. To our knowledge, there have been only 2 cases of bilateral supernumerary intranasal teeth, with our case constituting the third report. Our investigation of 25 cases without a median supernumerary intranasal tooth (septal perforation) showed supernumerary intranasal teeth present slightly more often on the left than the right.

The diagnosis of an intranasal tooth can be confirmed clinically and radiologically. An intranasal tooth is often a hard white mass clinically and is sometimes covered completely by nasal mucosa and surrounded by granulation tissue and necrotic debris. Radiography is useful for the diagnosis because intranasal teeth are identified as radiopaque lesions. Although panoramic radiographs can provide detailed information about the condition of dentition and whether the intranasal tooth is supernumerary,
deciduous, or a permanent tooth,14 such radiographs are not always sufficient to identify intranasal teeth off the midline.4 In our case a panoramic radiograph showed only a supernumerary intranasal tooth. However, bilateral supernumerary intranasal teeth could be confirmed by facial (posterior-anterior and lateral) radiographs and CT. Because conventional radiologic examination may not be able to confirm supernumerary intranasal teeth precisely, CT is useful to identify supernumerary intranasal teeth.4,15 Although the differential diagnosis of an intranasal white mass should
include nasal foreign body, rhinolith, bony seques-
trum, neoplasm, and exostosis, the intranasal tooth can be diagnosed with comparative ease by CT.

Supernumerary intranasal teeth should be removed as soon as they are detected because of potential morbidity. However, in children the most appropriate time for removal is when the roots of the permanent teeth have completely formed, to minimize the risk of developmental injury to the dentition. Although some intranasal teeth may be asymptomatic, such intranasal teeth should be removed or at least followed radiographically. Although supernumerary intranasal teeth may be removed by a transnasal approach or intraoral approach according to site of the intranasal teeth, we should extract supernumerary intranasal teeth carefully to avoid damaging surrounding tissues. The transnasal approach is often less invasive, but this approach under direct vision with a nasal speculum and head light cannot provide sufficient visualization to remove supernumerary intranasal teeth in the posterior region of the nasal cavity. To overcome the problem, endoscopy has recently been used to remove intranasal teeth as a minimally invasive surgery. Endoscopic removal of intranasal teeth can provide good illumination, better visualization, and precise dissection with preservation of surround-


**References**

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