

# The Teeth in the Nasal Cavity

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Serat Rahman,<sup>1</sup> Tanuj Madan,<sup>2</sup> Reshu Jindal Goyal,<sup>3</sup> Sunil Goyal,<sup>2</sup> Vijay Bhalla,<sup>2</sup> Manikanda Prabhu S<sup>4</sup>

## ABSTRACT

### Introduction

Ectopic and supernumerary teeth are sparsely reported. Among the various reported sites, nasal cavity affection is even rarer. This results in easy overlook of such cases. However, it is pertinent to be aware of this entity as it can lead to considerable morbidity which gets relieved only with correct surgery. These patients may get tentatively diagnosed as chronic sinusitis and get wrongly treated with intranasal corticosteroids, systemic antihistaminics and antibiotics. Owing to its rarity and available literature tending to be in the form of case reports and small case series, every such case must be reported so as to create awareness about it and to facilitate a valid statistical analysis.

### Case Series

We report a case series of 4 cases of supernumerary teeth that were present in proximity of nasal cavity. The authors of this case series wish to bring out that teeth in the nasal cavities are rare and unaccustomed entity and therefore, although, only 4 cases were encountered, it is pertinent to present these along with review of available literature along with the differential diagnoses.

### Discussion

Supernumerary intranasal teeth are an unaccustomed entity. Despite that, it must be kept in mind whenever a unilateral nasal mass is encountered. It's clinical and radiological presentation is quite typical and clinches the diagnosis. Removal of ectopic teeth surely has a potential risk of complications which are preventable with precise planning. Understanding about this entity is, therefore, indispensable by the maxillofacial surgeons and otorhinolaryngologists.

### Keywords

Supernumerary teeth; Mesiodens; Nose; Paranasal Sinuses; Ectopic Teeth

Supernumerary teeth (ST) affect 0.1% to 1% of the general population.<sup>1</sup> They are usually asymptomatic and get picked up on routine clinical evaluation or radio-imaging. It is known to affect various sites of maxillo-facial skeleton which includes palate, maxillary sinus, mandibular condyle, coronoid process, facial skin, orbital and nasal cavities.<sup>2</sup> This ectopic tooth eruption within the nasal cavity is a rare occurrence.<sup>3</sup> An intranasal supernumerary tooth is proposed to be an inverted mesiodens (supernumerary tooth in incisor region) growing into the nasal cavity floor.<sup>4</sup> Ectopic teeth are also radio-opaque.<sup>5</sup> So, a diligent clinical examination coupled with appropriate radio-imaging can easily help pick up this rare cause of treatable morbidity.

## Case 1:

14 years old female reported for Orthodontic consultation for her malposed dentition. Upon history, frequent crusting

1 - Department of Oral and Maxillofacial Surgery, Air Force Institute of Dental Sciences, Bengaluru,

2 - Department of ENT, Command Hospital- Eastern Command, Kolkata

3 - Department of Orthodontics and Dentofacial Orthopaedics, Institute of Dental Studies and Technologies, Ghaziabad, Uttar Pradesh

4 - Department of ENT, Military Hospital, Dinjan, Assam

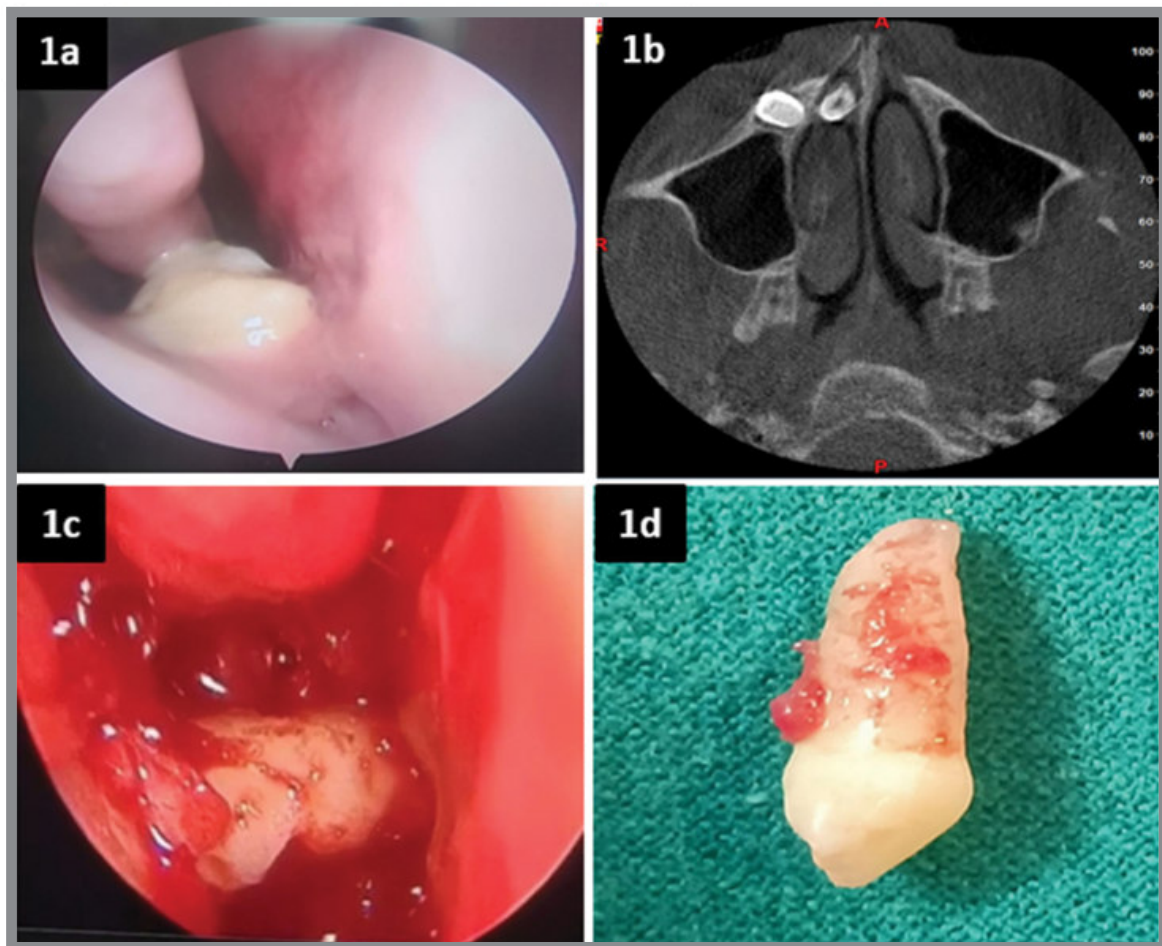
### Corresponding author:

Dr Tanuj Madan

email: tanuj\_ambition2007@yahoo.co.in

of right nasal cavity and blockage were elicited. Clinical examination revealed a bony hard projection in right nasal cavity, not clearly visible on headlight examination (Fig 1a). Orthopantomogram (OPG) and Cone beam Computed tomogram (CBCT) were ordered, which revealed a supernumerary tooth mimicking maxillary canine which was partially erupted in the right nasal cavity (Fig 1b). Right maxillary canine was also impacted but the direction was labial with feasibility for orthodontic traction to bring the same in occlusion. The treatment

plan devised included extraction of supernumerary tooth followed by surgical exposure of right maxillary canine with fixed mechanotherapy. Since the supernumerary tooth was partially erupted in the nasal cavity, a trans-nasal extraction was planned under general anaesthesia (GA) (Fig 1c). An endoscopic guided extraction was performed since the root of the canine was long measuring about 15mm delivering the tooth out (Fig 1d). Merocel pack was placed in right nasal cavity to ensure hemostasis which was removed on the following day.



**Fig. 1. (a)** Endoscopic view of partially erupted tooth in right nasal cavity

**Fig. 1. (b)** Non Contrast Computed Tomogram of face and paranasal sinuses (axial section) showing intranasal location of tooth

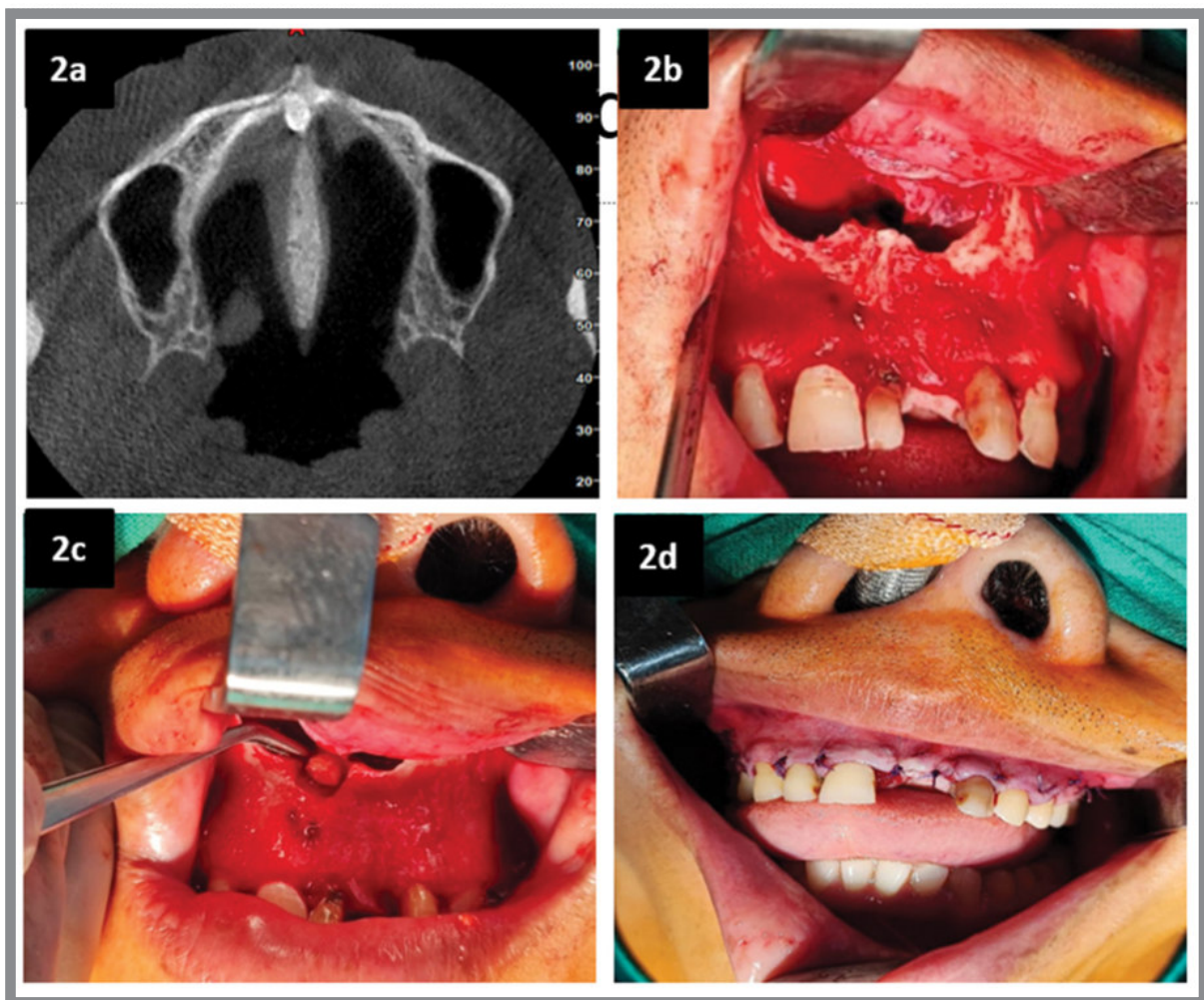
**Fig. 1. (c)** Endoscopic view of luxated tooth in the right nasal cavity prior to its delivery

**Fig. 1. (d)** Extracted supernumerary tooth

**Case 2 :**

30 years old male, renal transplant recipient, presented with discomfort in the upper labial sulcus region in the midline of 1 month duration. Clinical examination revealed missing upper left central incisor (21) and retained deciduous left lateral incisor. Radiovisiographic examination revealed missing 21 and a radio-opaque mass in the midline (Fig 2a). CBCT revealed a supernumerary tooth lying horizontally in antero-posterior direction above the palatal vault in relation to the nasal floor. There was

associated radiolucency around the root apex suggestive of infection which was probably the cause of individual's discomfort. Treatment plan of intra-oral vestibular approach with elevation of nasal floor to expose and extract the ST under GA was made and executed accordingly (Fig 2b). Trans-oral guttering was done followed by tooth luxation (Fig 2c). Closure was done using mattress sutures (Fig 2d). Post-operative period was uneventful.



**Fig. 2. (a)** Non Contrast Computed Tomogram of face and paranasal sinuses (axial section) showing centrally placed nasal tooth  
**Fig. 2. (b)** Intra-oral vestibular approach with elevation of nasal floor to expose the tooth  
**Fig. 2. (c)** Trans-oral guttering and luxation of tooth  
**Fig. 2. (d)** Closure using mattress sutures



**Case 3 :**

21 years old male referred from peripheral health centre for evaluation of mass in left nasal cavity. Upon clinical examination bony hard tissue was visualized. Radiovisiographic examination revealed the mass to be a mesiodens. Tran-nasal extraction of same was performed under local anesthesia. Anterior nasal pack was placed in nasal cavity for a day. Post-operative healing was uneventful.

**Case 4 :**

37 years old female reported with dull pain and fullness in relation to upper left labial vestibular region with missing left maxillary canine and retained deciduous left maxillary canine. CBCT revealed an impacted canine placed in proximity of left lateral wall of pyriform aperture along with a radiopaque mass suggestive of odontome. Case was managed under GA using envelope flap extending from right maxillary canine to left maxillary first molar for wide exposure. A gutter was created, odontomes were removed and impacted canine was sectioned for ease of delivery. However, the apical portion of the root got dislodged into nasal cavity and was lost from vision. Utilizing the wide exposure, nasal mucosa was elevated from anterior nasal spine to left lateral pyriform wall, the dislodged stump was visualized and retrieved. Post-op healing was uneventful.

**Discussion**

The commonest locus of supernumerary teeth is between the maxillary central incisors, known as mesiodens. This extra tooth is reported to have an atypical crown (cone-peg or triangular shaped) and may be found in a vertical, horizontal or inverted position. Mesiodens may occur singly or in pairs and may be erupted, impacted or inverted. It can grow and appear on the palate or may get inverted to enter the nasal cavity. The presence of ectopic tooth in the nasal cavity is a rare phenomenon.<sup>6</sup> Therefore, we aim to present 4 such cases managed by our team. Available literature shows that this entity has a female preponderance of around 2:1.<sup>7</sup> In our reported

case series, an equal gender predilection is noticed which is different from the available literature.

The etiology of intranasal teeth is obscure and disputed. Researchers propose that they originate either from a third tooth bed which arises from the dental lamina close to the permanent tooth bud or by splitting of the permanent bud itself.<sup>8</sup> Another mechanism postulated is that they arise as a result of reversion to the dentition of extinct primates who had three pairs of incisors.<sup>8</sup> It is also believed by some that the ectopic growth is attributable to obstruction during eruption of teeth which is due to crowded dentition, persistent deciduous teeth or anomalous dense bone.<sup>9</sup> Other suggested causative variables are genetic predisposition, anatomical variations like cleft palate; rhinogenic or odontogenic infections; and displacement consequent to cyst or trauma.<sup>9</sup>

Intranasal supernumerary teeth may remain asymptomatic or produce a spectrum of symptoms and signs like unilateral nasal congestion or obstruction, recurrent epistaxis, headache, facial pain, cacosmia, foul smelling mucopurulent discharge, nasal crusts, nasolacrimal duct obstruction and external nasal deformity.<sup>2</sup> These cases may get complicated by development of rhinitis caseosa with septal perforation, naso-oral fistula and aspergillosis.<sup>10</sup> In our reported case series, the predominant symptoms are unilateral nasal blockage, frequent crusting, dull aching pain and sense of fullness around the labial sulcus.

The diagnosis of a nasal tooth is essentially clinico-radiological. Grossly, it may appear as a well differentiated tooth in the nasal cavity which may be covered with debris or granulation tissue. Radiographically they appear radio opaque with same attenuation as that of oral teeth. In computed tomogram (CT) (bone window) the pulp cavity is seen as a central radiolucency appearing as a spot or a slit depending upon the tooth's orientation.<sup>11</sup> The differential diagnoses offered for a nasal tooth are radiopaque foreign body; rhinolith; bony sequestra; exostosis; inflammatory diseases like syphilis, tuberculosis or fungal infection with calcification; benign tumors like hemangioma, osteoma, calcified polyps, enchondroma and dermoid; and malignancies like chondrosarcoma and osteosarcoma. The CT findings of tooth-equivalent

attenuation along with a central cavity within a lesion are highly suggestive and discriminating features that confirm of the diagnosis of intranasal tooth.<sup>11</sup>

An intranasal tooth should be addressed only when symptomatic. If asymptomatic, it must be radiologically observed.<sup>12</sup> The surgery involves extraction either transorally utilizing envelope flap or vestibular approach, transnasally or transpalatally which will cause alleviation of symptoms and prevents complications. Chronologically the most appropriate time for the surgical intervention is after the roots of permanent teeth have completely formed, to avoid injury during their development. If there is a bony socket visualized in the nasal floor, extraction may be extremely challenging. If the scenario is complicated by a concomitant osteomyelitis, an intraoral fistula or a septal deviation, then other approaches also encompassing debridement and septoplasty will be essential. In our experience it is always prudent to utilize the trans oral approach with lifting of nasal mucosa in case there is no breach of it, or when the tooth is large in size. The said approach provides wide exposure, direct visualization and ease of instrumentation. In trans- nasal extractions, endoscope should be utilized as it offers the advantages of better illumination and visualization, along with precise dissection, however constraint of space with limited instrumentation is a challenge with this approach.<sup>13</sup>

## Conclusion

Supernumerary intranasal teeth are rare. Despite that, it must be kept in mind whenever a unilateral nasal mass is encountered. It's clinical and radiological presentation is quite typical and clinches the diagnosis. Removal of ectopic teeth surely has a potential risk of complications which are preventable with precise planning.

Understanding about this entity is, therefore, indispensable by the maxillofacial surgeon and otorhinolaryngologist.

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