




Supernumerary Tooth: Endoscopic Removal for a Rare Cause of Recurrent Epistaxis

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Abstract The presence of ectopic (supernumerary) teeth is common odontogenic problem in clinical practice. Its presence in dentate region is common but rare in the non dentate areas such as nose and maxillary sinus. The intranasal teeth generally remain asymptomatic but can get misdiagnosed for foreign body, or may present as complications like headache, epistaxis, nasal obstruction, rhinolith formation, oroantral fistula and sinusitis. Here, we discuss a case of intranasal tooth as a rare cause of profuse and recurrent epistaxis. The clinical, radiological findings

and surgical treatment via endoscopic approach of this rare entity has been discussed. This interesting case report highlights the need to look beyond nose as cause for epistaxis. Endoscopic removal for this entity can be a preferred option to help minimize complications.

Keywords Epistaxis · Supernumerary tooth · Intranasal tooth · Endoscopic removal

Introduction

Epistaxis—Greek word for nosebleed that means “leaking on, drop by drop”—is a problem that has been a part of the human experience from ancient times [1]. Approximately 60% population will suffer from epistaxis at least once in their lifetime [2]. Local causes of epistaxis within the nose include anatomical anomalies (septum deviation with septal spur), nasal injury (foreign body, fractures), rhinitis, medications (nasal sprays-decongestants and sprays), chemical irritants (cocaine abuse, ammonia), intranasal tumors-benign (e.g. inverted papilloma, angiofibroma) and malignant [3]. Systemic causes may include hepatic disease (hepatic and cirrhosis failure), cardiovascular diseases (e.g. atherosclerosis and systemic arterial hypertension), hematologic diseases (von Willebrand disease, hemophilia etc.), endocrine causes (pheochromocytoma, puberty) and systemic medication (NSAIDs, anticoagulants) [3]. Epistaxis could rarely be caused by unerupted incisor tooth in the nasal cavity. Tooth eruption begins in the intra alveolar bone to finally grow and move to its oral cavity position. During its growth and movement many problems can occur, like ectopic tooth eruption [4]. Ectopic tooth has commonly been seen in palate or dentate region. Rarely, they can be found in coronoid process, mandibular

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condyle, nose, orbit, maxillary sinus, inferior concha and cheek [5–8].

Here we have reported a case of an unerupted incisor tooth in the nasal cavity as a cause for recurrent epistaxis.

Case Report

A 46 years old male presented with complaint of recurrent and profuse bleeding from left nasal cavity for 6 months which was associated with foreign body sensation on ipsilateral side. On anterior rhinoscopy, a bony hard mass was visible on anterior nasal floor on left side. It was assumed to be a rhinolith. Diagnostic nasal endoscopy showed a bony mass on left nasal floor engulfed by debris and granulation tissue at its base (Fig. 1a–c). It appeared to be a tooth with its sharp conical projection impinging on the lateral nasal mucosa. Hence, the reason for recurrent epistaxis. OPG and CT scan reported an unerupted incisor tooth projecting into left nasal cavity with impingement over nasal mucosa (Fig. 2a–d). The endoscopic removal of incisor tooth was done (Fig. 3b) and alveolar socket was drilled after raising the nasal mucosal flap. The flap was then repositioned and sutured using vicryl 4-0 (Fig. 3a.). Unilateral merocel nasal pack was put in situ and hemostasis secured. Merocel pack was removed after 48 h. The follow up was done on weekly basis for 1 month, then monthly for 6 months and postoperative period was uneventful.

Discussion

Extra teeth more than normal dental formula are usually termed as supernumerary teeth or hyperdontia. Supernumerary tooth has an incidence of 0.1–1% in general

population. Males have a preponderance of twice compared to females in having primary supernumerary teeth [9]. This preponderance may be because of sex linked inheritance as per Bruning et al. [10]. Variations in size, number and form of teeth causes defects in primary and permanent dentition. Supernumerary tooth is most commonly located in the upper incisor area called as mesiodens, as seen in our case [11]. Less frequently they are related to third molars and are known as paramolars or distomolars according to their location. These uncommon supernumerary tooth in the nasal cavity can be placed in horizontal, vertical or inverted positions [4, 5]. The aetiology of supernumerary teeth has not been completely understood but there are various theories proposed. As per one theory, there occurs defect in migration of derivatives of neural crest which were to reach jaw bone [8]. A more acceptable theory is multistep mesenchymal and epithelial interaction [12]. Obstructions at the time of tooth eruption (due to persistent deciduous tooth, crowded dentition or dense bone) may be the cause for supernumerary tooth, though the cause is not well clear [13]. Other pathogenic factors for supernumerary tooth include developmental disturbances (cleft palate), genetic predisposition, odontogenic or rhinogenic infection and displacements due to cysts or trauma [13]. It may have a syndromic association with Gardner syndrome, Fabry disease and others. Supernumerary teeth can be classified as per location and morphology. Morphology in primary dentition is mostly conical or normal. Morphologically four types of supernumerary teeth are seen: tuberculate, conical, supplemental and odontoma [14]. Our case was that of conical variety in permanent dentition form which is the most common variety. It develops during formation of root (either at same stage or after the development of permanent incisor) presenting as mesiodens. It can be found either high in the horizontal position or inverted into the palate. However, the long axis of tooth is inclined normally in

Fig. 1 a Showing bony mass protruding from floor of left nasal cavity, impinging on mucosa of left IT and engulfed by debris. b Unerupted incisor tooth engulfed with granulation tissue seen after decongestion. c Tooth after delineating from nasal floor mucosa. S Septum, IT inferior turbinate, T tooth

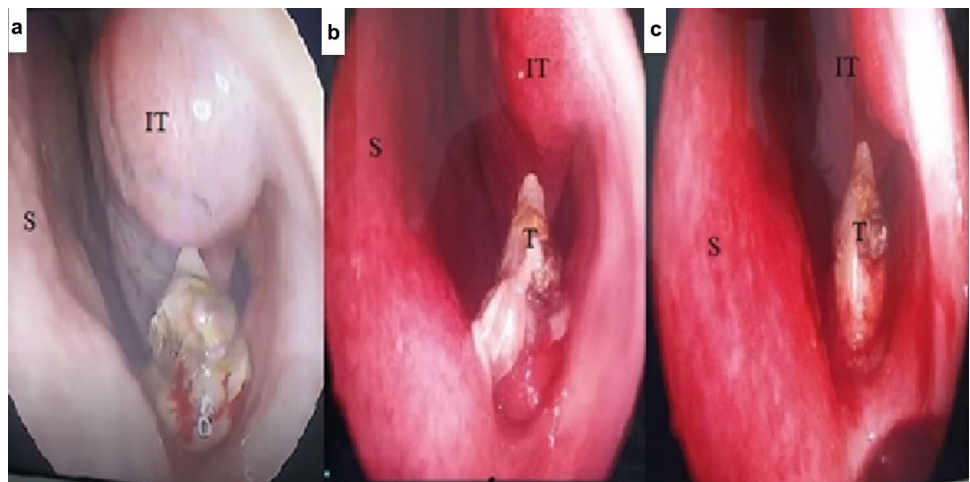


Fig. 2 Radiological images. **a** Orthopantomogram showing supernumerary incisor showing, **b** NCCT PNS showing tooth at floor of left nasal cavity in axial view, **c** coronal view and **d** sagittal view (black arrow marks tooth)

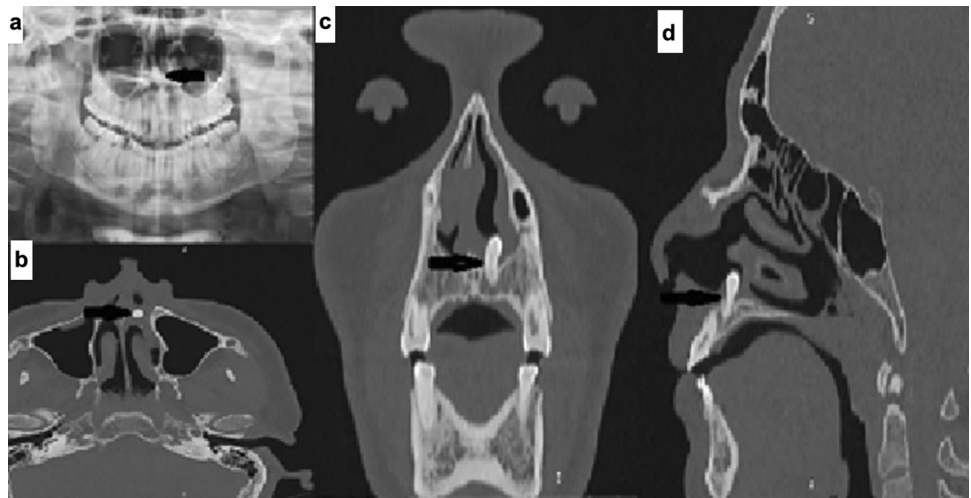
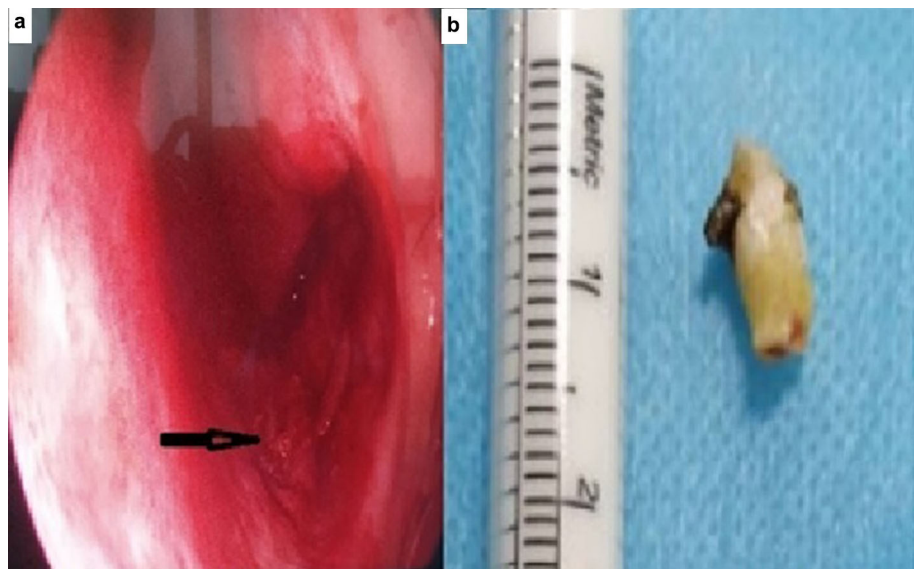


Fig. 3 Showing **a** post-operative nasal cavity with anterior nasal mucosal flap repositioning. (black arrow) and **b** excised tooth specimen (black arrow)



most of the cases. In supernumerary tooth (conical variety) their occurs displacement or rotation of permanent incisor, but rarely they delay eruption [14]. In our case it was rotated in nasal region.

The nasal tooth may be an incidental finding on radiograph as they present asymptotically. They may present with various signs and symptoms like nasal obstruction, headache, rhinorrhea, epistaxis, nasolacrimal duct obstruction and facial pain [15]. Nasal teeth may present with complications like oroantral fistula, aspergillosis and rhinitis caseosa with septal perforation [16]. In our case patient was completely unaware of this pathology and presented only when he had complaint of epistaxis. The diagnosis of supernumerary tooth can be made on clinical and radiological findings. On clinical examination, an intranasal tooth can be seen embedded in the nasal mucosa, completely or incompletely with overlying debris on

endoscopic examination [6]. Radiographic studies implemented are: Water's, Caldwell, lateral view of skull, orthopantomogram and CT scans. The orthopantomogram provides clear view of dentition. CT scans are useful in determining exact eruption site and depth, that helps in surgical planning [5, 17, 18]. The differential diagnosis of intranasal tooth should be ruled out before active intervention which includes rhinoliths, nasal foreign bodies, neoplasm, granulomatous infections and exostosis [5, 6]. The treatment consists of early extraction of the supernumerary tooth to avoid potential complications or morbidity. However, recommendations have been made for supernumerary tooth removal only when they become symptomatic. In order to reduce the complication rate arising due to their eruptive course, the supernumerary tooth should be most appropriately removed after their development [5]. Extraction was earlier done via open sublabial

approach. However, with the advent of nasal endoscopes, the endoscopic removal is gaining popularity. The endoscopic removal of the supernumerary tooth as done in our case resulted in less morbidity in comparison to conventional methods. There were no comorbidities like oro-antral fistula in post-operative period.

Conclusion

Problems associated with supernumerary tooth is eruption failure, permanent tooth displacement, crowding and pathologies like dentigerous cyst. An unerupted supernumerary incisor tooth in nasal cavity can be a rare odontogenic cause for recurrent and profuse episodes of epistaxis. Hence timely diagnosis and successful removal is the treatment of choice to prevent complications. Endoscopic removal can be a preferred option to help minimize complications.

Compliance with ethical standards

Conflict of interest All authors declare that they have no conflict of interest.

Informed Consent Informed consent was obtained from the patient.

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