

Ectopic Supernumerary Tooth as a Nidus for Rhinolith Formation

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ABSTRACT

Rhinolith is a calcified irregular mass around an exogenous or endogenous nidus. Factors responsible for the formation of rhinolith are chronic inflammation around nidus, deposition of mineral salts and enzymatic activity of bacterial pathogens. We report the case of a 53-year-old patient with a hard radio-opaque mass in the nasal cavity and complaints of nasal obstruction and foul-smelling nasal discharge. On imaging, it was found out to be formed around an ectopic single cusp tooth in the nasal cavity and which is rarest. Endoscopic removal was performed and the patient was relieved and asymptomatic after the procedure. Hence, endogenous etiology of the ectopic supernumerary tooth should be kept in mind.

Keywords: Ectopic tooth, Rhinolith, Nidus, supernumerary

Rhinolith is formed by calcified concretions around a nidus in the nasal cavity [1]. The incidence of rhinolith is 1 in every 10,000 otorhinolaryngology patients [2]. Factors responsible for the formation of rhinolith are chronic inflammation around nidus, deposition of mineral salts and enzymatic activity of bacterial pathogens [3]. Mineral salts usually composed of calcium, magnesium, iron, and phosphorus.

Here, we report the case of an ectopic supernumerary tooth forming a rare nidus for rhinolith formation and to contribute to the existing literature as there are only a few cases with the supernumerary ectopic tooth as a nidus for rhinolith is published in the literature so far [4,5].

CASE REPORT

A 53-year-old patient presented to the outpatient clinic of the otolaryngology department with a history of partial left nasal obstruction for 25 years which was gradually progressive and became bothersome in terms of complete nasal obstruction in recent 3 years. The patient also had left-sided foul-smelling nasal discharge for the last 3 years. He had no history of foreign body insertion in the nasal cavity.

General physical examination revealed stable vitals with no obvious abnormality. On anterior rhinoscopy, irregular hard mass seen with stony feel on probing at the level of inferior turbinate and impinging between inferior turbinate and septum in the left nasal cavity. Non-Contrast Computed tomography of paranasal sinuses showed a radio-opaque shadow communicating with the nasal floor on the left side and suspicion of an ectopic tooth was made which is a rare entity in itself (Fig. 1 and 2).

Under local anesthesia using 0° rigid nasal endoscope, rhinolith was visualized between the septum and inferior turbinate. The anterior part of rhinolith was removed piecemeal with straight Blakesley's forceps and a single cusped tooth was found arising from the floor of the nasal cavity (Fig. 3). After removal of the outer part of rhinolith, enough space was made between tooth and septum on the medial side and inferior turbinate on the lateral side. The ectopic tooth was then gently pulled out using Blakesley's forceps and rest of rhinolith present posterior to tooth was removed successfully. Upon removal, granulation was seen circumferentially at the site of an eruption of a tooth on the nasal floor which was cauterized and removed (Fig 4). Nidus from a floor of the nasal cavity was histomorphologically also consistent with a tooth.

The patient was given a course of oral antibiotics, oral decongestants and nasal douching. On follow-up after 1 week, endoscopic examination showed no evidence of rhinolith and the patient was relieved of his symptoms in terms of nasal obstruction and foul smelling discharge.

DISCUSSION

The most common age group for the presentation of rhinolith is the third decade; although, rhinolith can occur at any age [6]. Rhinoliths are encrusted mineralized masses formed around an intranasal foreign body. Rhinoliths can be exogenous or endogenous. Exogenous rhinolith could be formed around nidus like paper, beads, button etc and endogenous is formed around the bone, sequestra, mucus, blood, and tooth [7]. Rarely ectopic tooth may present as a nidus for rhinolith formation [3].



Figure 1: Coronal view of Non-contrast CT images of ectopic tooth

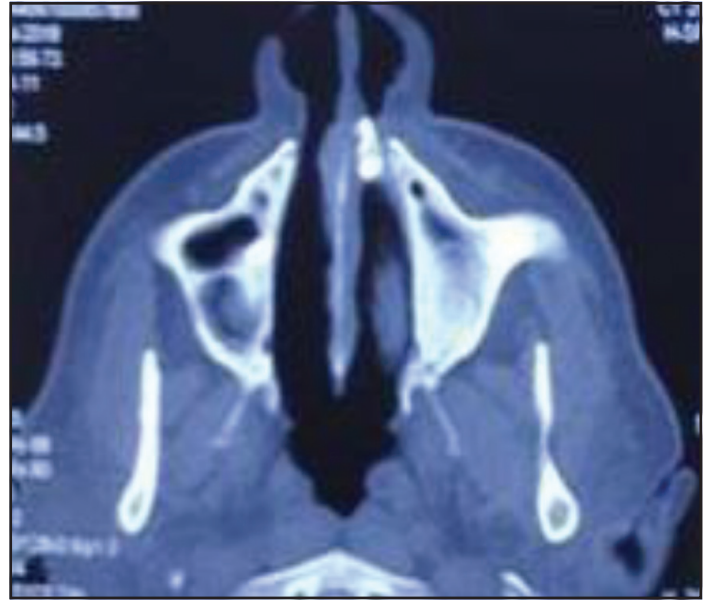


Figure 2: Axial View Non-contrast CT images of ectopic tooth

Obstruction at the time of tooth eruption secondary to crowded dentition, persistent deciduous teeth or exceptionally dense bone is attributed to the cause of ectopic tooth, although the exact cause is not well understood [8]. Common sites for ectopic tooth are a nasal cavity, maxillary sinus, coronoid process, condyle of mandible, palate, and orbit [9].

Pathogenesis of rhinolith is still unclear. It has been postulated that precipitation and crystallization of salts are facilitated by obstruction of airflow [10]. Most common symptoms of presentation are unilateral rhinorrhoea, nasal obstruction, epistaxis, headache and localized pain [3]. Imaging should be done in the form of computed tomography (CT) to understand the extent, exact site and nidus of rhinolith. The advantage of CT imaging is that the technique produces non-superimposition images of the adjacent structures and also it has high sensitivity

and specificity for calcifications, so can be differentiated from normal bone and cartilage [11].

Endoscopic removal is the treatment of choice although the external approach may be required in a few cases. Prasad *V et al* used a lateral rhinotomy approach for the removal of a giant rhinolith [12]. Mink *et al* used ultrasound lithotripsy for disintegrating a large rhinolith [13]. Complications due to rhinolith documented so far include recurrent sinusitis, oroantral and oronasal fistulas, septal perforations, palatal perforations, osteomyelitis and epidural abscess [14].

This endogenous etiology is not widely discussed in the literature, so the possibility of ectopic supernumerary should be kept in mind while dealing with rhinolith. In differential diagnosis, benign lesions like osteoma and odontogenic tumors and malignant lesions like osteosarcoma must be excluded [10].

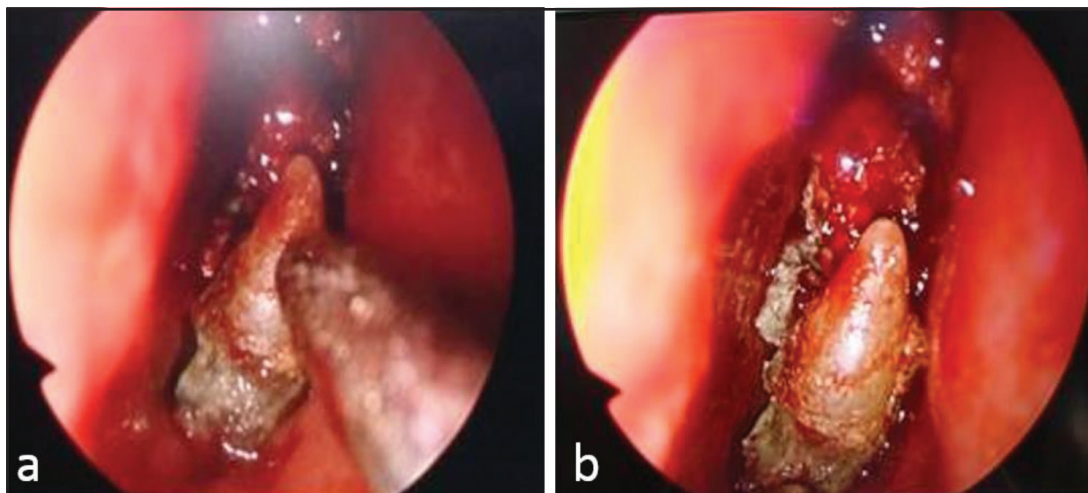


Figure 3: (a) Endoscopic view of the ectopic tooth after removal of the anterior part of rhinolith; (b) ectopic tooth arising from the floor of the nasal cavity

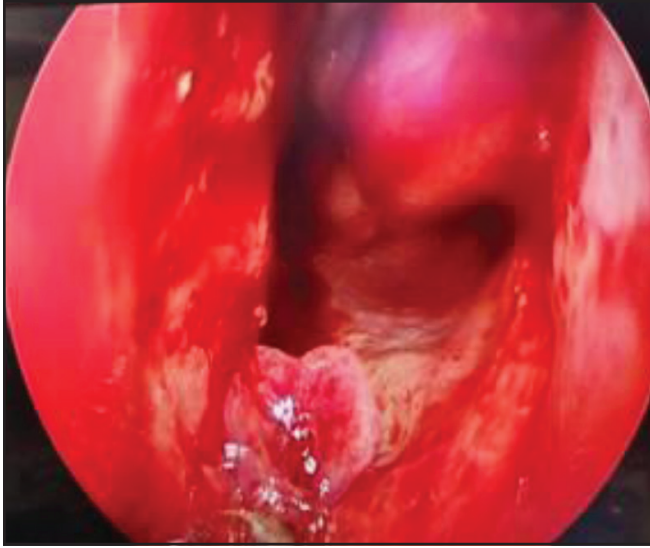


Figure 4: Site of the eruption of the tooth after removal of rhinolith

On imaging, there will be a radiotransparent area in an odontoma whereas a radiopaque area is usually seen around a rhinolith. In the case of an osteoma, a dense osteosclerotic mass will be seen on imaging and it is rarely found in nasal cavity [11].

CONCLUSION

Diagnosis of rhinolith is mainly made by typical history supported by clinical examination and contributory imaging. Others causes of unilateral nasal obstruction should be kept in mind while making the diagnosis. Imaging is essential in such cases as in our patient diagnosis of an ectopic tooth as a nidus for rhinolith would not have been formed without proper imaging.

REFERENCES

1. Abdel-Latif SM, Abdel-Hady S, Moustafa HM. Crystallographic study of rhinoliths. *J Laryngol Otol* 1979;93:1205-9.
2. Patil K, Guledgud MV, Malleshi SN. Rhinolith. *Indian J Dent Res* 2009; 20:114-6.
3. Hadi U, Ghossaini S, Zaytoun G. Rhinolithiasis: A forgotten entity. *Otolaryngol Head Neck Surg* 2002;126:48-51.
4. Janardhan N, Kumar SR, Reddy RR, Kumar CA. Rhinolithiasis Due to Supernumerary Ectopic Tooth: Very Rare Case. *Indian J Otolaryngol Head Neck Surg* 2013;65:383-4.
5. Acharya S, Mishra UP. Intranasal ectopic tooth presenting as rhinolith- A rare Case report. *J Evolution Med Dent Sci* 2016;5:6350-1.
6. Carver DD, Peterson S, Owens T. Intranasal teeth: a case report. *Oral Surg Oral Med Oral Pathol* 1990;70:804-5.
7. Polson CJ. On rhinoliths. *J Laryngol Otol* 1943;58:79-116.
8. Moreano EH, Zich DK, Goree JC, *et al.* Nasal tooth. *Am J Otolaryngol* 1998;19:124-6.
9. Alexandrakis G, Hubbell RN, Aitken PA. Nasolacrimal duct obstruction secondary to ectopic teeth. *Ophthalmology* 2000;107:189-92.
10. Shaw LC. Rhinolith of endogenous origin: A rare entity. *Surg Pract* 2007;11:48-50.
11. Manzi FR, Peyneau PD, Piassi FP, *et al.* Radiographic and imaging diagnosis of rhinolith in dental clinics. *Rev. Odonto Ciênc* 2012;27:170-3.
12. Prasad V, Shenoy VS, Rao RA, Kamath PM. A giant rhinolith: an unusual entity. *World Journal of Pharmacy and Pharmaceutical Sciences* 2016;5:1304-8.
13. Mink I, Gati J, Szekely. Nasolith removal with ultrasound lithotripsy. *HNO* 1991;39:116-7.
14. Seth S, Kumar H. Rhinolithiasis: A Case Report. *Journal of Clinical and Diagnostic Research* 2011;5:856-8.

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