



## A giant rhinolith: an unusual entity

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### ABSTRACT

Rhinoliths are calcareous concretions that are formed by the deposition of salts on an intranasal foreign body. These are uncommon clinical entities reported in clinical practice as unusual cause of unilateral nasal obstruction and foul smelling nasal discharge. It should be suspected when patient presents with nasal symptoms and found to have stony mass on examination. We report a 65 year old female patient with giant rhinolith on the left nasal cavity with septal perforation which was removed by lateral rhinotomy approach.

### Introduction

Rhinoliths are calcified material around intranasal foreign body. They can be endogenous if occur around body tissues as tooth or exogenous if they occur around foreign subject such as stones, beads, fruit seeds, plant material, etc. They are usually found in the anterior part of nasal cavity. Diagnosis is by endoscopic examination which can be supported by x-ray or CT scan. Complete resolution of symptoms occurs after surgical removal.[1,2,3] Though infrequently observed, rhinolith can be the source of foul smell from the nose and therefore a social concern for the patient. The salient features of such rhinoliths and their relevance to clinical practice are discussed and a case of a large rhinolith is presented in this article. So as to enable the attending clinician to be aware of this rare entity, this requires a high index of suspicion.

## Case report

A 65 year female presented to us with complaints of prolonged left sided complete nasal obstruction, an occasional bleeding from the right nostril, and minimal external framework deformity on the left side for the last 5years. There were no constitutional symptoms. There was no history of trauma, foreign body insertion or any systemic illness. She uses snuff for the last 30years. Otorhinolaryngological examination revealed minimal fullness on left side of external frame work; deviated nasal septum towards the right side with mucosal irregularity. The entire left nasal cavity was filled with stony hard mass with irregular and rough surface. A diagnosis of rhinolith was clinically made and the patient was admitted for removal of the rhinolith.

Under general anesthesia patient was painted and draped. Skin markings were made for lateral rhinotomy incision. Local infiltration (2% lignocaine with adrenaline) given at the proposed site of incision. Lateral rhinotomy incision made and is deepened. Bleeding was controlled by bipolar diathermy. Left nasal ala was lifted with skin hook and foreign body visualized which is shown in fig. 1. It was gently mobilized and removed in Toto. On removal, nasal mucosa was very unhealthy and started bleeding which was controlled by packing the nasal cavity for a while. There was pressure atrophy of anterior part of the inferior turbinate and cartilaginous septal deviation with perforation of septum. On the right nasal cavity there were mucosal irregularities corresponding the perforation which may be the site for occasional epistaxis. Nasal cavity was packed with ribbon gauze along with ointment. Lateral rhinotomy incision closed in two layers with 3-0 vicryl and 4-0 monocryl sutures. The specimen measured 6.5cm x 2.3cm x 4cm as shown in fig. 2.

Nasal pack removed 2nd post-operative day and patient discharged with antibiotics and saline nasal drops. Patient was followed after one week and she was asymptomatic.

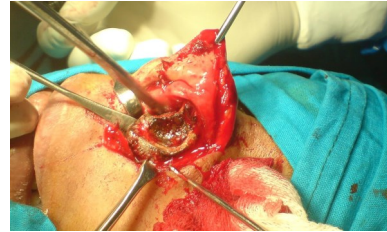


Figure 1: Rhinolith being exposed using lateral rhinotomy approach



Figure 2: Rhinolith – surgical specimen

## Discussion

Bartholin first described rhinoliths in 1654 and the first chemical analysis was conducted by Axmann in 1829.[4] Rhinoliths are rare. They are calcareous concretions that are formed by the deposition of salts on an intranasal foreign body.[5]

Although the pathogenesis of rhinoliths remains unclear, a number of factors are thought to be involved in their formation. These include entry and impaction of a foreign body into the nasal cavity, acute and chronic inflammation, obstruction and stagnation of nasal secretions, and precipitation of mineral salts.[6] In our case she was using snuff for the last 30 years may be the causative factor. Retained snuff in the nasal cavity acts as foreign body and is also an irritant to the nasal mucosa. Usually, it takes a long time for a rhinolith to form, therefore the course of development and progression of this disease is believed to take a number of years.

Rhinoliths often remain asymptomatic or with only subtle signs for a long time. Most patient's complaints of purulent rhinorrhea and/or ipsilateral nasal obstruction. Other symptoms include fetor, epistaxis, sinusitis, headache and, in rare cases, epiphora. In some patients, rhinoliths are discovered incidentally. As it gets bigger it compromises blood supply causing pressure necrosis then erosion and perforations of surrounded structures. Examination should include anterior rhinoscopy and rigid endoscopy. Rhinoscopy will reveal rhinolith as irregular, hard dark mass with greenish foul smelling crustations around. MacIntyre was the first to describe rhinolith radiographically in 1900. [7] Rhinoliths may present with variable opacities depending on the nature of the origin. Differential diagnosis includes benign lesions as osteoma and odontogenic tumours and malignant lesions as osteosarcoma.[2]

Computed tomography of the paranasal sinuses can accurately determine the site and size of the rhinolith and identify any coexisting sinus disease which may also require treatment.[8] Simple X-ray and paranasal sinuses CT scan supports the diagnosis through the presence of calcified concretions in the nasal cavity, in addition to supporting the planning of surgical approach and treating coexisting disease.

Treatment of choice is endoscopic surgical removal and in extremely rare conditions it needs external approach [4,7,9] as in our case and treating the coexisting disease if any.

#### Conclusion

Diagnosis of a rhinolith can be established by keeping a high index of suspicion based on symptomatology, history of foreign body introduction into the nose, physical examination and endoscopic examination. Simple X – ray and CT scan will assist in diagnosis. Endoscopic removal is the choice of treatment but in cases like us; giant rhinolith might requires lateral rhinotomy approach.

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