Two Rhinoliths in a Single Nasal Cavity in an Elderly Patient Mimicking Fungal Sinusitis

Objective: To highlight an interesting and a rare case of two rhinoliths in a single nasal cavity of an elderly male patient, mimicking fungal sinusitis or malignancy.

Case report: A 55-year-old man presented with a right-sided nasal obstruction, foul-smelling nasal discharge and a mass in the right nasal cavity of 6 months duration. Endoscopic examination revealed a gritty, blackish brown mass filling the entire right nasal cavity. A clinical differential diagnosis of malignancy or fungal sinusitis was made. CT scan of paranasal sinus was suggestive of fungal sinusitis following which patient was posted for biopsy. Intraoperatively, patient was found to have two separate masses in the right nasal cavity which were removed. We found a septal perforation adjoining the area where the rhinolith was impacted, with septum pushed laterally and adherent to middle turbinate. However, there were no features suggestive of malignancy. Histopathological examination also ruled out malignancy and confirmed a vegetable foreign body with calcification around an acellular material.

Conclusion: Rhinolith, though rare should be considered in the differential diagnosis of unilateral nasal mass in the elderly.

Keywords: Rhinolith, Septal perforation, Nasal mass, Fungal sinusitis.

sites adjoining the area where the rhinolith was impacted and pushed to the left due to mass effect (Fig. 3). The right middle turbinate was lateralized and was attached to uncinate process leading to blockage of osteomeatal complex. However, nasal mucosa appeared normal and there were no features suggestive of malignancy. A diagnosis of rhinolith with adjoining granulation tissue was made and the specimen was sent for histopathological confirmation.

Histopathological examination revealed a mass having a central vegetable foreign body with surrounding acellular material and calcifications confirming the diagnosis (Fig. 4).

Patient underwent endoscopic sinus surgery to treat the sinusitis that could have been secondary to osteomeatal complex obstruction by the rhinolith. Right frontal, maxillary and ethmoid sinuses were cleared of the disease. Postoperative course was uneventful and patient was discharged on 4th postoperative day.

**DISCUSSION**

Foreign body in the nose is a common entity, but the incidence of rhinolith is very rare in the elderly. Rhinolith was first described by Bartholini in 1654.²,³ It is reported that less than 0.01% patients present with rhinolith.⁴ There are around 600 cases of rhinolith that have been reported till date. They are unilateral, single and vary widely in size and shape.⁴ Here we report a rare case of two rhinoliths in a single nasal cavity presenting at an elderly age. One study quotes that rhinoliths occur in all age groups and mostly found in lower socioeconomic status.⁵ However, few other studies have reported that the age group frequently affected is between 8 and 25 years.⁶-⁸ It is seen that Rhinolith occurs more common in females.⁴,⁵ Common sites in the nasal cavity are on the floor, between the maxillary sinus wall and inferior turbinate or between the inferior turbinate and septum.⁵,⁹ In our case, the patient was an elderly male with two rhinoliths in a single nasal cavity, in contrast to the other reports.

Rhinolith occurs as a result of calcareous concretions, around a long standing intranasal foreign body. The calcified foreign bodies in the nose were formerly designated false or true rhinoliths. These terms have been replaced by exogenous and endogenous, depending on whether or not a nucleus, around which the incrustation has been deposited.⁵ Rhinoliths that have developed around materials introduced into the nose such as cherry stones, forgotten nasal swabs, vegetative matter and other articles like sand, bead, paper, buttons, wood or glass are called exogenous. Endogenous rhinoliths are those that are formed around body’s own
material such as ectopic teeth in the maxillary sinus, bone sequestra, dried blood clots, desquamated epithelium, dried pus and inspissated mucus in the nasal cavity. The chemical composition of rhinolith is hydroxyapatite, calcium phosphate hydrate, magnesium phosphate, carbonate and oxalate ions. Morgan described that in an acidic pH, oxalates were deposited around the nidus leading to hard stone formation. Some studies have reported phosphates deposition in alkaline medium forming soft and friable stones. Nover and Florke reported that they are chiefly composed of siderite and ferrihydrite with nucleus of high iron content rather than of calcium or magnesium salts.

Diagnosis of the rhinolith is often overlooked. Most of the patients, including our patient do not recall the history of foreign body insertion into their nose. They present with the symptoms dating back to several months or years as seen in our case. Patients often presents with foul smelling, purulent rhinorrhea, unilateral nasal obstruction, headache, facial pain, anosmia and fever. Our patient presented with a nasal mass mimicking malignancy or fungal ball. They appear as hard irregular masses which are dirty grayish brown or black in color.

The reported complications include septal perforation, lateral wall and maxillary sinus erosion, oroantral or oronasal fistula. Differential diagnosis for rhinoliths are benign lesions like calcified nasal polyps, hemangiomas, ossifying fibromas, enchondromas and malignant tumors like osteosarcomas, chondrosarcomas. Apart from these, even chronic granulomatous diseases and osteomyelitis can also mimic rhinolith.

Computed tomography scan is an invaluable tool for diagnosis. The first radiological description of the rhinolith on CT scan was given by Maclintype in 1900. On CT they appear as a calcified high dense radiopaque mass with irregular border, which should be distinguished from other clinical entities such as ossifying fibroma, odontoma and osteoma or osteosarcoma.

Treatment of rhinolith is by endoscopic removal. But due to the long standing nature of these benign lesions, there is formation of granulation tissues and adhesions around the calcareous secretions. As a result, surgical removal may be difficult in such cases. In cases of larger rhinoliths, they can be crushed and broken down into smaller pieces thereby avoiding injury to the surrounding structures. Lithotripter has also been used for breaking the rhinolith. Concomitant treatment of associated conditions like sinusitis, septal deviation, perforation and oroantral fistula can be treated at the same time.

The report highlights one such rare case of two rhinoliths in a nasal cavity, presenting at an elderly age and mimicking fungal sinusitis or malignancy. The long standing rhinoliths had led to multiple septal perforations and pan sinusitis.
CONCLUSION

Rhinolith, although rare should be considered in the differential diagnosis of unilateral nasal mass in the elderly. Most cases of rhinolith are accidentally detected while treating conditions like sinusitis. In contrast, our case presented with a nasal mass mimicking malignancy or a fungal ball.

Our report highlights one such rare case of two rhinoliths presenting as a nasal mass in an elderly male, which were removed.

REFERENCES