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CASE REPORT

Rhinolith Causing Oronasal Fistula: A Rare Complication

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ABSTRACT

Rhinolith is an uncommon nasal mass and it is rare to find it causing complication. Most of the rhinoliths are asymptomatic and are incidentally diagnosed, although some may present with unilateral foul smelling nasal discharge and obstruction. We report an unusual case of rhinolithiasis in 50-year-old male causing palatal erosion forming an oronasal fistula.

Keywords: Foreign body, Nasal obstruction, Oronasal fistula, Palatal erosion, Rhinolith.

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INTRODUCTION

Rhinolithiasis is an uncommon and often asymptomatic condition. Rhinoliths are calcified concretions deposited around a hub in nose. The most common site of rhinoliths is anterior nasal floor.[1] They may be exogenous or endogenous depending upon the kernel source. If symptomatic, they usually present with unilateral nasal obstruction, epistaxis and foul smelling nasal discharge. Rarely, rhinoliths may also cause complications like fistula or perforation. We present an atypical case of a 50-year-old male with rhinolith causing oronasal fistula formation, who never had any nasal complaints and sought clinical opinion only for lesion in his palate, fearing it to be malignancy.

CASE REPORT

A 50-year-old male presented to ENT-OPD with chief complaint of a lesion in his palate for 2 years. This was associated with a gritty sensation whenever he would touch it with his tongue. He did not give history of any nasal complaint or foul smelling discharge or any pain in the site. He was edentulous in upper jaw and never wore denture for the same. There was no history suggestive of trauma or any foreign body introduction in the nose.

Intraoral examination revealed a 1.5 cm diameter palatal ulcer in the midline, more towards the right side. The base was grey, bony hard and mobile (Fig. 1A). On nasal examination, the right nasal fossa floor adjacent to inferior turbinate was found filled by a whitish grey mass, which was hard to touch and moved simultaneously with the hard lesion in the palate (Fig. 1B).

Computed tomography (CT) showed a calcified material with sharp margins in the inferior part of right nasal cavity alongwith an adjacent large bony defect at the anterior aspect of hard palate creating an oronasal fistula on the right side. Soft-tissue thickening was seen in bilateral maxillary sinuses, more on the right side alongwith blocked osteomeatal complexes (Fig. 2).

The shape and position of the mass alongwith foul smell complimented by CT findings suggested the diagnosis of rhinolith, which had ulcerated through the palate. Rhinolith was removed in pieces with the aid of a nasal endoscope under local anaesthesia. The patient did not give consent for laboratory analysis of the rhinolith. He was given antibiotic and a systemic decongestant for a week and had uneventful recovery. Patient refused an additional surgical procedure to close the palatal perforation and instead, opted for an obturator.

DISCUSSION

Nasal foreign bodies are quite common, especially in children, mostly attributed to their tendency to keep putting things in nose, but rhinolithiasis is quite uncommon, especially with a superimposed complication like palatal erosion as in our case.

Rhinoliths are hard calcareous bodies found in the nasal passages. These form as a result of amassing of mineral salts like calcium phosphate and magnesium around a central nucleus. This central focus forms the basis of classification of rhinoliths. It can be exogenous like beads, buttons, fruit stones and pieces of paper or at times endogenous involving teeth, sequestra or blood clot like substances to initiate rhinolith formation.[2] It is more likely for an exogenous substance to be the reason behind rhinolithiasis and few suggest endogenous nature of growth to be completely theoretical.[3] Nevertheless,

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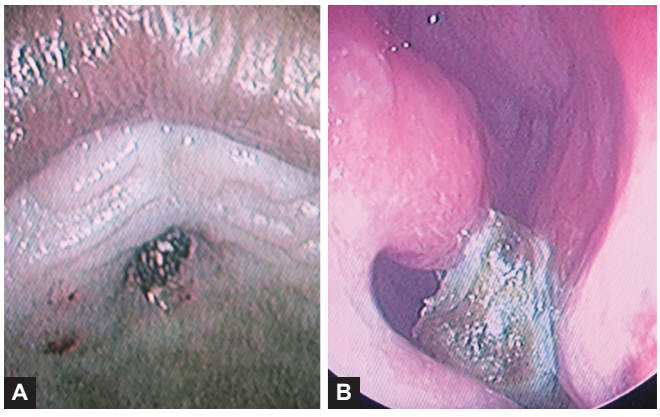

Figs 1A and B: (A) Clinical photograph showing palatal lesion with part of rhinolith as seen from oral cavity and (B) rhinolith as seen in the right nasal cavity

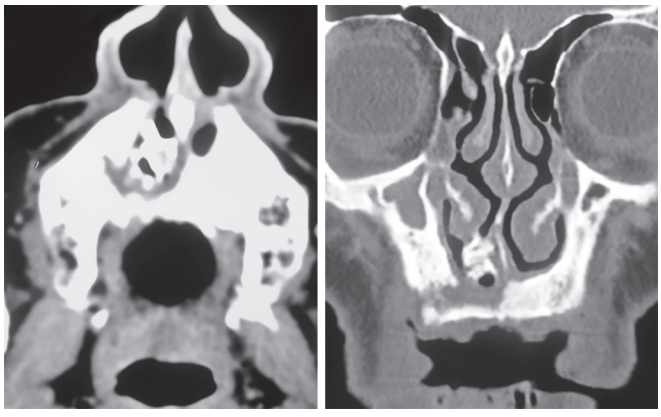

Fig. 2: Axial and coronal contrast-enhanced computed tomography scans showing calcified material in the right nasal cavity along with an adjoining bony defect in the hard palate

it is hard to decide on the type of rhinolith, because of the difficulty in recognising the initial nature of nucleus before it gets encrusted.

First, described case of rhinolith appears to date back to 1654, published by Barthdin. The mechanism of formation of nasal stone is not fully understood, but it is considered to be a vicious interplay of chronic inflammation incited by a foreign body, precipitation of salts, obstruction and stagnation of secretions. The last two may independently provoke infection, inflammation and fibrosis producing an endogenous rhinolith as has been described in a case of unilateral choanal atresia.[4]

Typical symptoms of rhinolithiasis are unilateral foul smelling discharge, nasal obstruction, facial pain, epistaxis, decreased sense of smell, epiphora and swelling of face or nose. It can produce complications like recurrent sinusitis, oroantral and oronasal fistulas, septal deviation and perforation, bony destruction of maxilla, palatal perforation. Our case strangely never had a nasal complaint, because of rhinolith and sought medical opinion after 2 years of developing a complication in the form of oronasal fistula only fearing malignancy. Such complication is comparatively uncommon than septal complications, because of thickness of palate. Upper denture has also been incriminated for accelerating the process of palatal perforation by possibly preventing palatal distension while exerting counterpressure to enlarging rhinolith. Our patient did not wear a denture though. Pinto et al reviewed cases of rhinolith causing palatal perforation and found only 14 cases including his.[5] Women were found to be more commonly affected probably, because of their habit of blowing noses less frequently and less violently than men.

Rhinolithiasis may be suspected on the basis of a history of foreign body or trauma, although majority of cases do not give any such history like our case. On anterior rhinoscopy, they can usually be located in the anterior half of nasal cavity showcasing a brownish gray color and a crude and brittle texture. The radiological investigation of choice is CT, which not only gives idea about the rhinolith location and calcifications, but also surrounding tissues and erosions. Rhinolith needs to be differentiated from chronic inflammation, osteomyelitis, benign tumors like osteoma, chondroma, ossifying fibroma, calcified nasal polyp and malignant tumors like osteosarcoma, chondrosarcoma and at times squamous cell carcinoma.[1]

The preferred treatment for rhinolithiasis is extraction, which can be done endoscopically as was done in our case. Small calculi can be crushed and removed piecemeal through a transnasal approach. More extensive surgery may be required in larger calculi for their complete removal.[6] Our case did not give consent for the fistula repair, which could have been done by giving a two-layer local rotation flap repair.

CONCLUSION

The incidence of rhinolithiasis is low, and thus clinicians need to keep a high-degree of suspicion, while dealing with unilateral nasal symptoms of obstruction, discharge and foul smell. A timely detection and intervention can easily prevent unwarranted complications.

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