

# Rhinolithiasis: A Case Report

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## ABSTRACT

Rhinolith is an uncommon nasal mass in children and adults. A case of a 40 yr old female having a 7 years history of right nasal obstruction and a foul smelling right nasal discharge, which was clinically and radiologically diagnosed to be rhinolith, is being

reported here. Epistaxis and nasal obstruction are its most marked symptoms. The complete resolution of the symptoms is easily achieved by the surgical removal of the rhinolith. This case highlights the importance of examining the nasal cavities in any patient with unilateral nasal obstruction symptoms.

## INTRODUCTION

Rhinolith, as the name indicates, is lithiasis or stone formation in the nose. The first well documented case of rhinolithiasis was reported by Bartholin in 1654 [1]. Rhinoliths are completely or partially encrusted mineralized nasal masses- either exogenous or endogenous, depending on the origin of the nucleus on which the encrustation occurs. Dessicated blood clots, ectopic teeth and bone fragments are examples of endogenous matter. The exogenous materials include fruit seeds, plant material, beads, cotton wool and dental impression material [2]. Rhinoliths may cause rhinosinusitis, erosion of the nasal septum and the medial wall of the maxillary sinus and perforations of the palate [3]. The ethical clearance for this case presentation was obtained according to the Helsinki declaration.

## CASE REPORT

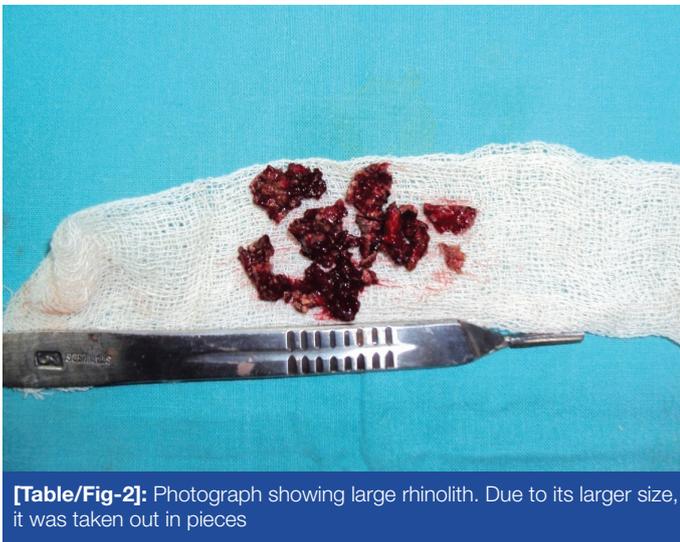
A female patient BK, aged 40 years, presented to the ENT outdoor department at MAMC Agroha (Hisar), with the complaint of nasal obstruction on the right side, for the past 7 years. There was a history of a yellow, thick, foul smelling, blood stained nasal discharge. There was no history which was suggestive of any foreign body in the nose, hypertension, diabetes mellitus, tuberculosis or other relevant systemic illnesses in the past. The patient belonged to a rural background and had never gone to any otolaryngologist during this tenure of seven years. She took treatment from local quacks for nasal blockade but did not have any records. On anterior rhinoscopic examination, an irregular, dark, stony mass covered with secretions was present in the right nostril, which on probing gave a gritty sensation. It was adherent to the septum and the turbinates. The nasal septum was found to be deviated on the left side. On the basis of the history, the clinical examination and imaging, a diagnosis of right side rhinolithiasis was established. The X-ray of the paranasal sinuses (water's view) showed a radio opaque shadow in the right nostril (shown in scanned X-ray film). CT scan for the paranasal sinuses was not done due to financial constraints. Routine pre operative investigations as haemoglobin, bleeding time, clotting time, complete urine examination, total leucocyte count, differential leucocyte count, fasting blood sugar, blood urea, serum creatinine, ECG and X-ray chest-PA view were found to be within normal limits. Ethical clearance was obtained

**Key Words:** Rhinolithiasis, Nasal obstruction, Epistaxis

before proceeding with the case. Under general anaesthesia, nasal endoscopy was done and the presence of a large sized rhinolith was confirmed. To avoid injury to the adjacent nasal mucosa, the stone was removed in pieces from the right nostril with the aid of a nasal endoscope (scanned picture showing large size as comparable to that of the surgical blade handle). Haemostasis was achieved by a bilateral ointment soaked nasal packing. The patient did not give her consent for the laboratory analysis of the rhinolith. Postoperatively, the patient was given broad spectrum antibiotics (cefixime, 200 mg twice a day) and a systemic decongestant combination phenylephrine, cetirizine and paracetamol twice a day for five days. The nasal packing was removed after 48 hours and a bilateral gel foam was placed to prevent synechiae formation. She had an uneventful recovery after the operation. On subsequent



**[Table/Fig-1]:** X-ray for paranasal sinuses (water's view) showing marked radio opaque shadow (rhinolith) in right nostril



**[Table/Fig-2]:** Photograph showing large rhinolith. Due to its larger size, it was taken out in pieces

weekly follow ups till 4 weeks, followed by a 4 monthly follow up, no recurrence was found till 1 year of follow up.

## DISCUSSION

Rhinoliths are rare nasal masses. Foreign bodies are normally introduced during childhood, occupying the nasal floor in most of the situations. Its presence causes a local inflammatory reaction, leading to deposits of carbonate and calcium phosphate, magnesium, iron and aluminum, in addition to organic substances such as glutamic acid and glycine, leading to a slow and progressive increase in size [4]. The aetiology and pathogenesis is not always detected. A number of factors are thought to be involved in the formation of rhinoliths. These include the entry and impaction of a foreign body in the nasal cavity, acute and chronic inflammation, obstruction and stagnation of the nasal secretions and precipitation of mineral salts [5]. Rhinoliths are usually presented in the third decade of life and rarely occur in children with females being more commonly affected than males [5].

These observations correspond to those of the case which was reported by us. Rhinoliths are grey to brown coloured, foul smelling, rough surfaced, friable structures, which are often situated in the anterior half of the nasal cavity on its floor. Most patients complain of purulent rhinorrhoea and/or ipsilateral nasal obstruction. Other symptoms include fetor, epistaxis, sinusitis, headache and in rare cases, epiphora [6]. In some patients, rhinoliths are discovered incidentally. In this case also, due to the lack of specific symptoms, the case was misdiagnosed and was reported late. This signifies that such uncommon entities must be kept in mind while examining such cases and such a possibility should not be overlooked. The examination should include anterior rhinoscopy and radiological evaluation. CT scan cannot differentiate a rhinolith from any other calcified mass but it can detect related complications of rhinoliths. CT scan of the paranasal sinuses can accurately determine the site and size of the rhinolith and identify any coexisting sinus disease which may require treatment [7]. The treatment consists of the removal of the rhinolith and the surgical approach which is chosen, depending on the location and the size of the rhinolith and presence or not of complications, but most of them may be removed endonasally. External approaches may be necessary in cases of giant rhinoliths,

and endoscopes are extremely helpful in both approaches [7]. Sometimes rhinoliths become so difficult to remove, that they may have to be broken into small pieces by forceps [8] the use of lithotripsy [9] or by pushing the rhinolith posteriorly into the nasopharynx and removing it through the oral cavity [10]. Sometimes, septoplasty and/or bone-turbinoplasty have to be done [11]. In this reported case, the rhinolith was removed by endoscopic guidance. This signifies that the larger the size of the rhinolith, its removal becomes difficult and in such a case, no blind method should be adopted to avoid the complications which follow the removal. The complications which have been described as secondary to rhinoliths include recurrent sinusitis, destruction of the nasal mucosa, oronasal and oronasal fistulas, septal deviation and perforation, palatal perforation, [3] bony destruction of the maxillary sinus, frontal osteomyelitis and epidural abscess [12]. This signifies that the early the diagnosis, better is the outcome. The differential diagnosis of radiopaque nasal lesions includes a number of benign and malignant pathologies such as rhinolith, calcified polyp, ossifying fibroma, odontogenic tumour, osteoma, osteosarcoma, osteomyelitis and carcinoma [12]. Recurrence following the removal of the rhinolith has not been reported in the literature so far.

## CONCLUSION

Although rhinoliths are rare, clinicians should be aware of the possibility of their incidence. It requires a high index of suspicion when dealing with nasal symptoms such as progressive unilateral nasal obstruction, rhinorrhoea (usually purulent and fetid), cacostomia and unilateral nasal bleeding which favour the possibility of foreign bodies in children and rhinoliths in adults. Hence, a quick referral from local practitioners and general physicians to an otolaryngologist is required for appropriate and timely management.

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