

Rhinolithiasis Presenting with Long-Standing Unilateral Nasal Obstruction and Fetid Discharge: A Case Report**Akanksha Verma¹, Pranshuta Sehgal², Maneesh Kumar Jain³**¹Junior Resident, Department of Otorhinolaryngology (ENT), Krishna Mohan Medical College & Hospital, Mathura, Uttar Pradesh, India²Assistant Professor, Department of Otorhinolaryngology (ENT), Krishna Mohan Medical College & Hospital, Mathura, Uttar Pradesh, India³Assistant Professor, Department of Otorhinolaryngology (ENT), Krishna Mohan Medical College & Hospital, Mathura, Uttar Pradesh, India

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Abstract**Background:** Rhinolithiasis is an uncommon condition in which mineral salts deposit around an endogenous or exogenous nidus inside the nasal cavity, gradually forming a calcified mass. Because symptoms are non-specific, it is often misdiagnosed as chronic rhinosinusitis.**Case Presentation:** A 45-year-old woman presented with 5 years of right-sided nasal obstruction with foul-smelling discharge, intermittent epistaxis, and headache. Nasal endoscopy showed a hard irregular mass, and CT of the paranasal sinuses confirmed a densely calcified lesion without bony erosion. The rhinolith was removed endoscopically under general anaesthesia.**Outcome:** Recovery was uneventful. On follow-up, the patient had complete symptom relief and healthy nasal mucosa with no recurrence at 6 months.**Conclusion:** Rhinolithiasis should be suspected in long-standing unilateral nasal obstruction with fetid discharge. Nasal endoscopy and CT help confirm the diagnosis and guide safe endoscopic removal.**Keywords:** Rhinolithiasis; Rhinolith; Unilateral nasal obstruction; fetid discharge; Nasal endoscopy; CT paranasal sinuses.**DOI:** 10.25258/ijcpr.18.1.175

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Introduction

Rhinolithiasis refers to the presence of a calcified mass within the nasal cavity resulting from the progressive deposition of mineral salts such as calcium, magnesium, and phosphate around a central nidus. The nidus may be exogenous, such as a foreign body inserted into the nasal cavity during childhood, or endogenous, including blood clots, desquamated epithelium, thickened mucus, or necrotic tissue. Over time, chronic inflammation leads to precipitation of mineral salts, resulting in the formation of a rhinolith. [1,2]

Although rhinolithiasis is considered rare, it is likely underdiagnosed due to its nonspecific presentation and indolent course. Patients typically present with unilateral nasal obstruction, foul-smelling discharge, epistaxis, facial pain, and headache, symptoms that closely resemble chronic rhinosinusitis or nasal polyposis. [3,7] Delayed diagnosis is common, with reported durations ranging from months to several decades. Advances in nasal endoscopy and cross-sectional imaging

have significantly improved the detection and management of this condition. Computed tomography (CT) allows precise localization, assessment of size, and identification of associated mucosal disease or bony erosion [4,6] Endoscopic surgery has replaced open techniques due to its superior visualization and minimal morbidity [9,10].

Review of Literature

The earliest descriptions of rhinolithiasis date back to the nineteenth century, with Polson's classical review in 1943 providing the first systematic analysis of this entity. [1] Subsequent reports have established that rhinoliths form slowly over many years following the introduction of a nidus, most commonly during childhood.

Appleton et al. reviewed multiple cases and emphasized the role of chronic inflammation and stagnation of secretions in mineral deposition. [2] Ozdemir et al. reviewed 21 cases and reported

purulent rhinorrhea and nasal obstruction as the most common symptoms, with diagnosis based on nasal endoscopy and CT imaging. [5] CT imaging is considered the diagnostic modality of choice. Aksungur et al. demonstrated that CT accurately differentiates rhinoliths from osteomas, odontomas, and fungal infections. [4] Endoscopic removal is highly effective with minimal complications, as reported by Silva et al. and Varshney et al. [9,10]

Clinical Case Presentation

A 45-year-old female presented to the ENT outpatient department with a 5-year history of progressive right-sided nasal obstruction. The obstruction was insidious in onset and gradually progressive over time. It was associated with unilateral nasal discharge, which was purulent, occasionally blood-stained, and associated with intermittent ipsilateral epistaxis, post-nasal drip,

and dull frontal headache. The patient also complained of a reduced sense of smell on the affected side and social embarrassment due to halitosis. There was no history of recurrent sneezing, past allergies, recurrent upper respiratory tract infections, nasal trauma, previous nasal surgery, or any known comorbidities. General physical examination was unremarkable. Local nasal examination revealed crusting and purulent discharge in the right nasal cavity. On anterior rhinoscopy, a hard, irregular, greyish mass was visible posterior to the vestibule. On diagnostic nasal endoscopy, a large, stony, hard mass occupying the inferior meatus and extending posteriorly up to the choana was seen. The mass was immobile, surrounded by inflamed and oedematous mucosa, and had caused deviation of the nasal septum to the left. The contralateral nasal cavity and nasopharynx were normal.



Figure 1: Endoscopic visualization showing a large, irregular, stony-hard mass (rhinolith) obstructing the right nasal passage.

Radiological Investigation: Computed tomography of the paranasal sinuses revealed an irregular, densely calcified mass occupying the right nasal cavity, extending posteriorly up to the choana. Peripheral mucosal thickening was noted, with no evidence of bony erosion or intracranial extension.



Figure 2: Coronal non-contrast CT PNS (bone window) showing a densely calcified mass in the right nasal cavity.



Figure 3: Axial non-contrast CT PNS (bone window) showing the extent of the calcified lesion without bony erosion.

Management

The patient underwent endoscopic removal of the rhinolith under general anaesthesia. The mass was carefully mobilized and removed in multiple fragments using endoscopic instruments. Intraoperatively, surrounding mucosal inflammation was noted without septal perforation or turbinate destruction. Hemostasis was achieved, and nasal packing was done.

Surgical Technique

Under general anaesthesia, the nasal cavity was decongested using topical adrenaline packs. Using

0° and 30° rigid nasal endoscopes, the rhinolith was carefully mobilized. The mass was found adherent to the surrounding mucosa and was gently separated using Blakesley forceps and suction elevators.

Due to its large size, it was removed in multiple fragments. Care was taken to preserve the surrounding mucosa and avoid septal perforation. After complete removal, the cavity was irrigated with saline and dilute povidone-iodine solution. No significant bleeding occurred, and nasal packing was done with a nasal pack (Merocel) in the right nasal cavity.

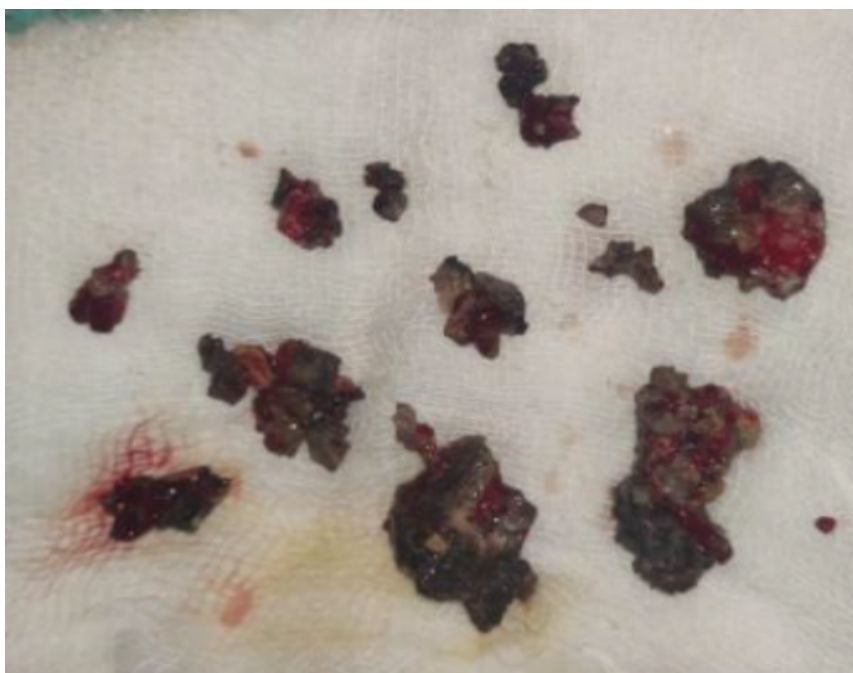


Figure 4: Multiple calcified fragments of the rhinolith after successful endoscopic extraction.

Outcome and Follow-Up: The postoperative period was uneventful. The patient reported complete resolution of nasal obstruction, discharge, and headache. Follow-up nasal endoscopy at 1 month, 3 months, and 6 months demonstrated healthy nasal mucosa with no residual disease or recurrence.

Table 1: Summary of clinical features

Clinical Feature	Finding in present case	Diagnostic Relevance
Duration of symptoms	5 years	Reflects the slow, mineralized growth
Consistency	Stony hard	Typical of calcium/magnesium salt deposition
Side/Location	Right nasal cavity (between septum and inferior turbinate)	Inferior meatus involvement
Key Symptom	Unilateral nasal obstruction with fetid discharge	Key indicator for rhinolithiasis
Key investigations	Nasal endoscopy + CT PNS	Key diagnostic tools in this case
Surgical Outcome	Complete symptom relief; no recurrence at 6 months	No associated complications or recurrence

Discussion

Rhinolithiasis develops when an endogenous or exogenous nidus remains in the nasal cavity and induces chronic inflammation, leading to gradual mineral salt deposition and formation of a calcified mass. [1,2] Because the symptoms overlap with chronic rhinosinusitis, diagnosis is often delayed. Most rhinoliths originate from childhood foreign bodies that are forgotten and later become symptomatic in adulthood.

Endogenous niduses such as dried blood clots or inspissated mucus may also serve as a core. Clinically, patients develop unilateral nasal obstruction, fetor, epistaxis, and headache, often mimicking chronic rhinosinusitis. Rhinolithiasis remains a diagnostic challenge due to its rarity and nonspecific symptomatology. [1,2] The prolonged

duration of symptoms in this case highlights the indolent nature of the disease and explains the delayed presentation commonly reported in the literature. [5,7] Computed tomography plays a crucial role in differentiating rhinoliths from other calcified nasal lesions and in surgical planning. [4,6] Endoscopic removal is currently considered the treatment of choice, offering excellent visualization, minimal morbidity, and high success rates. [9,10] Early recognition and intervention are essential to prevent complications such as septal perforation, chronic sinusitis, mucosal erosion, and osteitis. [3,8]

Conclusion:

Rhinolithiasis should be suspected in patients with chronic unilateral nasal obstruction and foul-smelling discharge. Nasal endoscopy combined

with CT imaging ensures accurate diagnosis. Endoscopic surgical removal provides definitive treatment with excellent outcomes.

Ethics Approval and Consent: Written informed consent was obtained from the patient for publication of clinical details and images. Identifying information has been removed to maintain confidentiality.

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