Endoscopy in Rhinolithiasis
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ABSTRACT
Rhinolith is a stone like nasal mass uncommon in children and adolescent. Diagnosis of rhinolithiasis may be difficult because of the possibility of varying clinical presentations. We report 2 cases in adults. The first was a 23 years old female having unilateral nasal obstruction, cacosmia and occasional blood stained nasal discharge. The second case was that of a 47 years old male having unilateral foul smelling nasal discharge, progressive unilateral nasal obstruction, anosmia and atypical facial pain. Both were diagnosed on anterior rhinoscopy and rigid endoscopic examination of nose. Radiological evaluation of nose and paranasal sinuses were performed to confirm the diagnosis. These rhinoliths were removed using zero° rigid nasal endoscope. Salient features of such large rhinoliths and the role of rigid endoscope in the diagnosis and treatment are discussed briefly enabling the attending physician to be aware of this infrequent entity in adults which requires high index of suspicion.

Key words: Adults. Rhinolithiasis. Nasal endoscopy. Anterior rhinoscopy.

INTRODUCTION
Rhinoliths are uncommon calcareous concretions of the nose formed by the deposition of salt on inspissated nasal secretions or nasal foreign body, which acts as a nidus. They usually present with progressive unilateral nasal obstruction, foul smelling nasal discharge, anosmia, epistaxis and rarely with headache, facial pain and epiphora. They are usually found in the anterior part of nasal cavity but may reach the nasal cavity through posterior choanae due to cough or vomiting. They are usually diagnosed on anterior rhinoscopy but endoscopic examination provides immense help in diagnosis of posteriorly placed foreign bodies.1,2 Radiology is useful to confirm diagnosis and management for cases which cause diagnostic difficulty.3

We present rare cases of large rhinoliths in adults diagnosed and treated with the help of rigid endoscope.

CASE REPORT

Case 1: The first case was of a 23 years old female who presented with a history of unilateral progressive nasal obstruction, cacosmia and blood stained nasal discharge. She had no history of nasal trauma or surgery, loosening of teeth, facial pain or insertion of foreign body in the nose. Patient had no history of systemic illness. On anterior rhinoscopy, mass was suspected in the posterior part of the right nasal cavity which was confirmed with zero° rigid nasal endoscope. Plain X-ray of nose and paranasal sinuses showed calcified mass with haziness of right maxillary sinus. Computerized tomography of nose and paranasal sinuses showed well-defined mass in the posterior part of right nasal cavity which was hugging the posterior part of nasal septum and filling most of the left choanae (Figure 1).

Case 2: The second case was of a 43 years old male complaining of right unilateral foul smelling nasal discharge, nasal obstruction, anosmia and atypical right facial pain. The initial clinical suspicion of a foreign body in the nose with overlying granulation tissue on anterior rhinoscopy was confirmed with zero° nasal endoscope. Plain X-ray of paranasal sinuses showed calcified mass with haziness of right maxillary sinus. Computerized tomography of nose and paranasal sinuses revealed a large well-defined homogenous calcified opacity in right nasal cavity with right sided maxillary sinusitis (Figure 2).

Both patients were admitted for removal of rhinoliths under general anaesthesia. In the first case, nasal cavity was examined with zero° nasal endoscope. A big rhinolith lying in the posterior part of right nasal cavity which was hugging the posterior part of nasal septum and filling most of the left choanae (Figure 1). In the second case, large stone was crushed and removed anteriorly through nostril. Nasal cavity was decongested and sprayed with lignosol local spray and examined with zero° endoscope 24 hours after removal of nasal pack. Computerized tomography of nose and paranasal sinuses confirmed well-defined mass in the posterior part of right nasal cavity which was hugging the posterior part of nasal septum and filling most of the left choanae (Figure 3). Small remains of rhinolith were found in the posterior part of nose and removed. Antibiotics, analgesics and nasal decongestants were prescribed for 7 days.
DISCUSSION

Rhinoliths are stone-like calcareous concretions formed by deposition of salt on insipissated nasal mucus or nasal foreign body. Bartholin gave the first documented description of rhinoliths of nose in 1654.1 The pathogenesis of rhinolithiasis is not yet clear but the insipissated mucus or foreign body acts as a nidus and induces inflammatory reaction and precipitation of mineral salts with slow development and progression of the disease.3

Patients usually present with foul smelling nasal discharge, unilateral progressive nasal obstruction, epistaxis and rarely with headache, facial pain and epiphora. In some patients rhinoliths are discovered incidentally. Examination should include rhinoscopy and rigid nasal endoscopy with hard gritting sensation on probing of nasal mass.4 MacIntyre in 1900 gave the first radiological description of rhinolith as a radio-opaque mass in nasal cavity with central translucency. On CT scan, it appears as homogenous, high density lesion with smooth mineralization. The central portion of the lesion containing organic material or a foreign body nidus may be somewhat of a lower density.3-6

Techniques such as Electron-ray microprobe, X-ray diffractometry and infrared spectroscopy are used for chemical analysis of rhinolith.2 The predominant material found is inorganic such as calcium phosphate, calcium carbonate and magnesium phosphate. Other rare substances are also present. The organic component is derived from the nasal secretions and the lacrimal fluid. Clinical examination and nasal endoscopy with high index of suspicion for rhinoliths are of immense importance as diagnosis may be missed on anterior rhinoscopy due to inadequate exposure of the posteriorly located masses. Radiological examination confirms the diagnosis. On plain film diagnostic difficulty may occur due to presence of superimposed adjacent structures. CT scan is essential for complete evaluation since it does not superimpose adjacent structures but accurately determines the site and size of the rhinolith and identifies any co-existing sinus disease which may also require treatment.1,4,7 Differential diagnosis includes chronic inflammation, osteomyelitis and tumours. Chronic inflammatory processes include syphilis and tuberculosis. Benign growths include calcified nasal polyp, ossifying fibroma, osteoma, chondroma, odontoma, calcifying angiofibroma, nasal glioma and septal dermoid tumour. Malignant tumours include osteosarcoma, chondrosarcoma and squamous cell carcinoma.8

Treatment consists of surgical removal of rhinolith. Surgical approach depends on location and size of rhinolith. CT scan not only supports the diagnosis but helps in planning for surgical approach. Mostly, rhinoliths can be removed through nostril, in rare cases extended surgical approach like lateral rhinotomy is needed. The use of rigid nasal endoscopes began a new horizon in the diagnosis and management of rhinoliths. Nasal endoscopes are of immense help in complete, uneventful removal of rhinoliths. Careful patient follow-up with endoscopic evaluation is necessary to diagnose left-over pieces and thus avoid other complications.2,5,9

The presently described cases were unique in the occurrence in an adult age group and large size. Nasal endoscopy proved an excellent diagnostic and therapeutic option.

REFERENCES


