

A 44-year-old Rhinolith: A Case Report and Review of the Literature

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The reported incidence of rhinolithiasis is 1 in 10,000 patients. Symptoms include rhinorrhea, epistaxis, and nasal obstruction. Diagnosis is clinical, by anterior rhinoscopy. Treatment requires the complete removal of the existing rhinolith, either by anterior rhinoscopy or nasal endoscopy, although a lateral rhinotomy has been required in some cases. Reported complications include sinusitis, septal perforation, frontal osteomyelitis, and, rarely, epidural abscess formation. We present a case of a large right nasal cavity rhinolith of 44 years of evolution that required removal under general anesthesia. The patient's chart was reviewed to compile case details, and PubMed was searched for current diagnostic and management options. [*P R Health Sci J* 2015;34:105-107]

Key words: Rhinolith, Rhinorrhea, Nasal foreign body

Rhinoliths are stone-like deposits that form around either endogenous or exogenous sources. Endogenous materials may include dried nasal secretions, such as mucus, desquamated epithelium, blood clots, and, rarely, an ectopic tooth, any of which materials might provide a nidus for the deposition of minerals (1). Exogenous foreign bodies may be organic or inorganic and are usually secondary to the direct insertion of the foreign body into the nasal cavity. Whatever their etiology, rhinoliths are usually unilateral, though bilateral rhinoliths have been infrequently described.

They may be found in both adults and children and can cause unilateral rhinorrhea, epistaxis, foul-smelling nasal discharge, nasal obstruction, and chronic sinusitis. Rhinoliths are more commonly found in the right nostril than in the left one, this because right-handedness is more prevalent than left-handedness, and a child is more likely to insert a foreign body into that nostril which is ipsilateral to his or her dominant hand.

A diagnosis of rhinolithiasis may be solely clinical, occurring after direct visualization by anterior rhinoscopy or nasal endoscopy. A CT scan may also aid in determining potential sequelae, such as septal deviation, bony erosion, and sinusitis.

Treatment requires the complete removal of the object under topical, local, or general anesthesia. If left untreated, any one or more of several complications, including chronic sinusitis, septal perforations, naso-oral fistulas, dacryocystitis, frontal osteomyelitis, and epidural abscess, could result (2-5).

Case Report

A 48-year-old male came for an evaluation of a throat discomfort of 3 weeks of evolution. He also complained of having had purulent post-nasal drip in the mornings for the last

several years. He reported no epistaxis, unilateral rhinorrhea, or significant nasal obstruction.

His general physical exam was within normal limits. Upon being examined by flexible laryngoscopy, he was found to have a large right nasal cavity rhinolith with greenish post-nasal discharge and a left-sided septal deviation. Upon further questioning, he recalled having inserted a foreign body (a plastic bead) into his nose at the age of 4. At the time, he was evaluated by his pediatrician and was told it would "come out on its own."

A CT scan revealed (in his right nasal cavity) a calcified object with central translucency suggestive of a rhinolith (Figure 1). The gradual growth of the rhinolith had caused a contralateral septal deviation, but no signs of chronic sinusitis or bony erosion were observed. Using forceps and suction, 40% of the rhinolith was removed in the office. The rest of the rhinolith could not be removed because of significant bleeding and discomfort. The patient was told to perform nasal rinses using saline solution and baby shampoo and to return for staged removal in the office. Two subsequent attempts made at 3-week intervals were both unsuccessful; the rhinolith was too large to remove through the nostril or posterior choanae. The rhinolith was scheduled for removal in the operating room, where it was removed under general anesthesia, without complications (Figures 2 and 3). The patient had an uneventful recovery, and his throat discomfort and post-nasal discharge resolved.

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Figure 1. Coronal CT. Right nasal cavity: hyperdense calcified foreign body with central translucency adjacent to inferior turbinate and causing left nasoseptal deviation.



Figure 2. Endoscopic view. Right nasal cavity rhinolith adjacent to inferior turbinate.

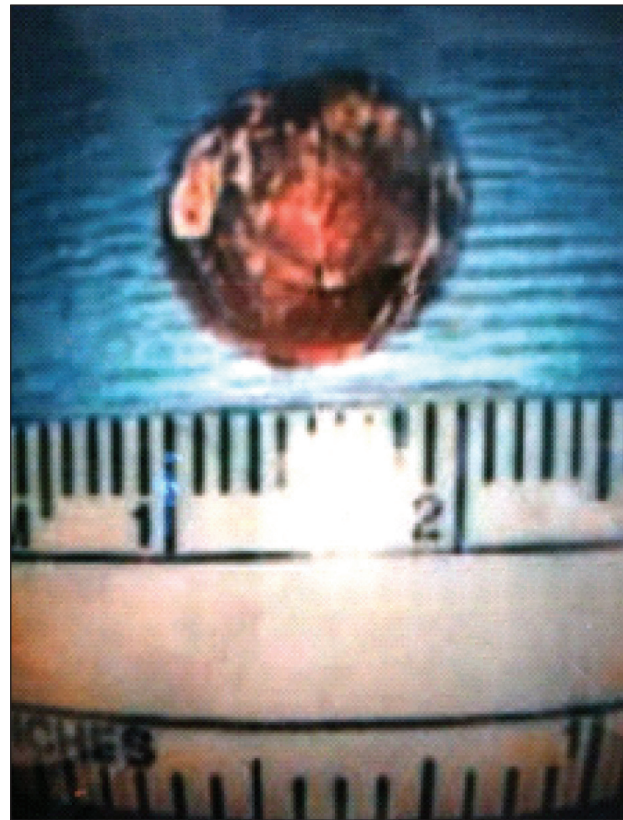


Figure 3. Pathologic specimen: 1x1 cm rhinolith.

Discussion

The first report of rhinoliths dates back to 1654, when, according to Polson (6), Bartholin described a rhinolith forming over a cherry-stone nidus. Its pathogenesis is believed to involve a nidus consisting of a foreign body that is introduced into and remains in the nasal cavity for a long period of time, causing chronic inflammation and resulting as well, in the deposition of mineral salts. These usually consist of calcium stearate, whitlockite, or dahllite, as has been determined by previous chemical and mineral analyses (7, 8). The nidus associated with this process may be either endogenous or exogenous. Inspissated mucus and pus, blood clots, desquamated epithelium, and even ectopic teeth have all been described as endogenous sources (1). An exogenous nidus is usually a foreign body that has been inserted into the nasal cavity accidentally (occurring more frequently in children than in adults), or one that may have reached the posterior choanae through forceful vomiting or coughing. Common objects include grains, seeds, small stone fragments, beads, pieces of plastic, insects, glass, foam, and wood, among others (9). The literature also reports cases of iatrogenic rhinolithiasis in which retained pieces of nasal packing developed into rhinoliths. In addition, a rare case of a rhinolith developed secondary to polyethylene stenting used in a dacryocystorhinostomy has been described (10).

The reported incidence rate of rhinolithiasis is 1 per 10,000 otolaryngology patients; it usually presents unilaterally, occurring on the right side more often than on the left. Rhinoliths have been reported in patients of all ages, with females being affected more commonly than males (11). Some have postulated that this last is because women sneeze and blow their noses less forcefully than males do and are therefore less likely to expel foreign bodies.

Rhinoliths may be asymptomatic and found incidentally, or patients may complain of unilateral rhinorrhea, cacosmia, epistaxis, headache, post-nasal drip, throat discomfort, nasal obstruction, or even chronic otorrhea (12).

The diagnosis may rely solely on a given patient's history and a physical examination, including nasal endoscopy, since it is not always possible to address the posterior extent of a rhinolith by anterior rhinoscopy alone. Rhinoliths are usually located on the floor of the nasal cavity, abutting the inferior turbinate or anterior to the middle turbinate. CT scanning may aid in determining the size of the rhinolith and in determining the presence of any significant sequelae.

Treatment is the complete removal of the rhinolith. Removal is usually achieved via anterior rhinoscopy or endoscopy, although a lateral rhinotomy approach has been required in select cases in which complete removal through the nostrils or the posterior choanae was not possible due to the large size of the mass (13). Ultrasound lithotripsy has also been employed for large rhinoliths that could not be removed non-invasively (14). If left untreated, rhinoliths can potentially lead to serious complications, which may include chronic sinusitis, septal perforations, naso-oral fistulas, dacryocystitis, frontal osteomyelitis, and epidural abscesses (2-5).

Rhinolithiasis is a rare diagnosis that requires a high index of suspicion. It is an entity which can be resolved rather simply if considered in the differential diagnosis of chronic nasal obstruction. Yet, if left unattended, it may lead to serious sequelae.

Resumen

La incidencia reportada de rinolitiasis es de 1 en 10,000 pacientes. Los síntomas incluyen rinorrea, sangrado nasal, u

obstrucción nasal. El diagnóstico es mayormente clínico, por rinoscopia anterior. El tratamiento requiere remoción completa mediante endoscopia nasal, aunque algunos casos han requerido un abordaje de rinotomía lateral. Las complicaciones reportadas son sinusitis, perforación septal, osteomyelitis frontal y aunque es raro, un absceso epidural. Presentamos un caso donde se requirió anestesia general para remover un rinolito de 44 años de evolución. Se revisó el expediente del paciente para recopilar los detalles del caso, y se llevó a cabo una búsqueda de la literatura en "Pub Med" acerca de las opciones de diagnóstico y tratamiento.

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