Colossal rhinolith secondary to distant history of trauma and retained foreign body

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INTRODUCTION

- Rhinolithiasis is a rare, benign entity characterized by a calcified intranasal mass that can cause nasal obstruction and malodorous, purulent rhinorrhea.
- Rhinoliths form around a nidus of endogenous substrate, such as a retained tooth or bony sequestrum, or more commonly, an exogenous foreign body.¹
- Patients present most commonly with purulent rhinorrhea, followed by nasal obstruction and headache.² ³
- Due to its slow rate of formation and growth, onset of symptoms is relatively innocuous, making diagnosis difficult without appropriate workup.³
- Treatment is centered upon surgical removal of the rhinolith, which typically results in complete resolution of symptoms.

OBJECTIVES

- To present a case of colossal rhinolith and describe its presentation, diagnosis, and treatment.
- To cite characteristics of the few cases and series of rhinolithiasis reported in the medical literature and review its theorized pathogenesis.

CASE PRESENTATION

A 62 year old male was referred to our care for predominantly left-sided purulent rhinorrhea, headache, and nasal obstruction. These symptoms were previously treated with topical nasal corticosteroids, oral antihistamines, and nasal saline irrigations without significant improvement. Notably, the patient had a history of blunt trauma to the nose twenty years prior. The patient also endorsed left sided hearing loss for several months duration prior to presentation.

On physical examination the patient was noted to have a large calcified mass impacted within the left nasal cavity between the nasal septum and the lateral nasal wall and a left middle ear effusion. Manipulation of the mass during attempted nasal endoscopy and suctioning elicited exquisite tenderness for the patient.

Additional workup with computed tomography revealed a colossal calcification within the nasal cavity with no bony erosion, expansion, or involvement of the paranasal sinuses, consistent with a rhinolith. The patient underwent endoscopic removal of the mass under general anesthesia. Pathology confirmed a nidus of fabric fibers encased by concentric layers of calcification. In subsequent follow up, the patient reported complete resolution of his rhinorrhea, nasal obstruction, and headaches following rhinolith removal, and his middle ear effusion had resolved.

DISCUSSION

- This case of unilateral nasal obstruction and rhinorrhea recalcitrant to medical therapy was caused by a large rhinolith, which presumably formed from a retained foreign body in the setting of prior nasal trauma.
- Rhinolithiasis in this patient also resulted in ipsilateral Eustachian tube dysfunction and produced a unilateral middle ear effusion and conductive hearing loss. Both completely resolved following surgical removal of the rhinolith.
- Symptoms of rhinolithiasis can overlap with more common nasal disease processes such as chronic rhinosinusitis, which may occur concomitantly, but may also result in misdiagnosis and mistreatment. Workup with endoscopic examination or imaging is crucial for proper management of this rare entity.
- Though nasal foreign bodies are relatively common, rhinoliths are extremely rare. It has been suggested that in addition to an intranasal nidus, stasis and obstruction of nasal secretions combined with enzymatic activity of nasal bacteria contribute to concentric crystallization of calcium and magnesium salts, gradually resulting in rhinolith formation over time.² ³

CONCLUSIONS

A unilateral rhinolith secondary to very distant trauma and resultant retained foreign body was identified and removed. The patient’s symptoms were relieved immediately upon removal. Rhinoliths, though rare, should be considered in the differential diagnosis of calcified nasal masses.

REFERENCES