Unusual presentation of more common disease/injury

Rhinolith in the fossa of Rosenmüller – a hidden stone

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Summary

This is a case report of an 80-year-old woman who presented to the ENT services with multiple non-specific upper aerodigestive tract symptoms. Despite extensive investigation and treatment, her symptoms remained unalleviated with significant impact on the psychological morbidity. During a routine flexible nasoendoscopy for worsening globus pharyngis, a mass was noted in the right Rosenmüller's fossa, where the Eustachian tube leaves the lateral wall of the nasopharynx. A CT scan showed this to be a 10 mm calcified entity within the right Eustachian tube. It was subsequently removed under local anaesthesia providing much relief to the patient. Histology showed this mass to be a rhinolith.

BACKGROUND

It is disheartening to have patients frequently return with chronic symptoms for which there seems to be no explanatory, underlying pathology. This case highlights the importance of taking each symptom seriously, be it a new symptom or a deteriorating old one, and investigating them appropriately. Rare explanations do occur and it was the neat, albeit highly unlikely, 'hidden stone' cause of this patient's problems that prompted the writing up of this case.

CASE PRESENTATION

This case study examines an 80-year-old woman of Mediterranean descent who has been a regular attendant to the health services. She has frequented the ENT services over a 4-year period for multiple non-specific otolaryngeal problems such as tinnitus, otalgia, hyperawareness of respiration, headaches, neck pain, maxillary sinus pain, dizziness, halitosis and persistent globus pharyngis. Despite various prescribed treatments, ranging from medication to physiotherapy, her symptoms recurred intermittently. Extensive investigations included multiple nasoendoscopies, blood tests and x-rays of her sinuses. Her symptoms had caused her to be depressed and she was especially self-conscious about her halitosis during social interactions.

INVESTIGATIONS

As her symptoms of globus pharyngis and halitosis worsened, she was referred again to the ENT department by her general physician for diagnostic and treatment purposes. A routine nasoendoscopy by the ENT consultant revealed a grey mass in the fossa of Rosenmüller, where the opening of her Eustachian tube leads into the lateral wall of the nasopharynx. A CT scan was performed, which showed a 10-mm calcified area at the opening inferior of her right Eustachian tube (see figures 1 and 2).

DIFFERENTIAL DIAGNOSIS

The patient's differential diagnosis included tumour, cyst, vascular anomaly, ectopic calcification due to a systemic mineral imbalance such as uraemia.

TREATMENT

This mass was later removed under local anaesthesia in the theatre with the aid of microsuction (see figures 3 and 4).

Figure 1 Transverse view of CT scan. The arrow is pointing at the rhinolith in the right Eustachian tube.

Figure 2 Coronal view of CT scan. The arrow is pointing at the rhinolith in the right Eustachian tube.

Figure 3 Rhinolith seen with nasoendoscopy at right Eustachian tube opening.

OUTCOME AND FOLLOW-UP

Histological examination revealed decalcified sections showing fragments of mucoid and non-specific cellular debris with bacteria, consistent with the appearance of a rhinolith. The patient was seen in the follow-up clinic 1 month later and reported significant improvement in her symptoms, largely with respect to otalgia, respiratory hyperawareness and globus pharyngis. Furthermore, when the patient was followed up 8 months after rhinolith extraction, her symptoms had remained largely alleviated and the sensation of globus had not recurred. In fact, the improve-

Figure 4 Rhinolith removed using microsuction, passing nasal turbinates.

ment of her symptoms was such that she was discharged from the care of the ENT services altogether.

DISCUSSION

Rhinoliths occur as a result of partial or complete encrustation of intranasal foreign bodies or body tissue, either by mineral salts precipitated onto them or solidification of mucous and debris.^{1 2} Despite unclear pathogenesis, they are considered exogenous if the nidus is foreign material (ie, beads, paper, buttons) and endogenous if the encrustation occurs around normal or abnormal body tissue (ie, teeth, mucous, bone, blood clot).^{3 4} The source of origin for these nidus is mostly through the anterior nares; however, some foreign bodies have been reported to have entered through the choana during vomiting or coughing.^{5 6}

It has been suggested that the rhinoliths grow over approximately 15 years.¹ Since 1654, over 600 cases have been reported in the literature with an incidence of 1 in every 10 000 otolaryngeal outpatients.⁵ Rhinoliths are thought to be more common in women, with the usual age of presentation between 8 and 25.^{6 7}

Rhinoliths are usually found in the floor of the nose, about halfway between the anterior and posterior portion of the nares.⁶ Their presenting symptoms correlate with their size; smaller-sized rhinoliths are commonly asymptomatic while larger ones cause unilateral nasal discharge, nasal pain, nasal obstruction, foul-smelling breath, epistaxis, nasal or facial swelling, sinusitis and/or anosmia.^{8 9} Macroscopically, rhinoliths appear as grey irregular masses that feel hard, bony and gritty on probing.⁸

Radiographs may reveal homogenous or heterogeneous opacities of varying shapes and sizes depending on their origin, and an object with low density may not be visible radiographically until calcification occurs.¹⁰ In this case, CT scan is deemed most sensitive for diagnostic purposes, mainly differentiating rhinoliths from other surrounding structures.^{6 7 9}

Surgical removal, debridement and control of infection with appropriate antibiotics currently remain as a widely accepted treatment of choice.^{4 7} The literature has yet to report any case of recurrence.⁶

Learning points

- ▶ Care must be taken with patients who return regularly with unexplained chronic symptoms. Any new or worsening symptoms should be taken seriously as if this were a newly presenting patient and investigated appropriately.
- ▶ Once common explanations of a patient's symptoms have been investigated and exhausted, the rare, however, improbable, ones must be considered.
- ▶ Both foreign bodies and endogenous body materials can form rhinoliths, which tend to occur in the middle section of the floor of the nose.
- ▶ Rhinoliths depending on their size and location can explain a wide spectrum of common ear, nose and throat symptoms.

Competing interests None.

Patient consent Obtained.

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