CASE REPORT

When perennial rhinitis worsens: rhinolith mimicking severe allergic rhinitis

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SUMMARY

Allergic rhinitis is one of the most common causes of nasal obstruction, but other diseases need to be considered particularly when the clinical course is getting worse. We present a patient with known mild persistent allergic rhinitis due to house dust mites who experienced progressive worsening of nasal obstruction with associated hyposmia and mucopurulent discharge. The lack of improvement of the patient's symptoms prompted the re-evaluation of the case. Skin prick tests for airborne allergens confirmed sensitisation only to house dust mites. Nasal endoscopy and facial CT scan revealed a huge rhinolith occupying almost completely the right nasal cavity. The rhinolith was surgically removed with resolution of symptoms. Rhinoliths are rare and unusual calcified materials which grow around intranasal foreign body; they are often promoted by trauma, surgical operations and dental work. The patient underwent dental work about 30 months before the diagnosis of rhinolith, suggesting a possible aetiology.

symptoms possibly observed in the same patient. Therefore, it is important that physicians investigate all possible causes of nasal obstruction.³ This clinical case highlights that, even if the patient received a well-established diagnosis of allergic rhinitis, the diagnosis itself should be re-assessed, whenever the symptoms are getting worse, particularly nasal obstruction, looking for other causes, including the bizarre ones, as in the present case report, which may mimic the previously known aetiology.

CASE PRESENTATION

A 34-year-old man, who received the diagnosis of mild persistent allergic rhinitis due to house dust mite (HDM) sensitisation and was well controlled by HDM avoidance measures and sporadic use of second-generation H1 antagonists, was referred back to our Outpatients Allergy Clinic for progressive worsening of nasal obstruction, mucopurulent discharge and hyposmia in the past 2 years. The patient was not able to appreciate whether the increase in nasal obstruction was unilateral or bilateral.

A review of patient's medical history revealed no other abnormalities, as well as no change in his occupational status (the patient is working as a medical doctor in a general hospital).

The patient was advised to use fluticasone furoate nasal spray (two sprays in each nostril once a day) for 20 consecutive days. After this period, he reported only little improvement of nasal

BACKGROUND

Allergic rhinitis, particularly if due to perennial allergens, is a disease that may significantly affect health-related quality of life.¹ Among symptoms of rhinitis, nasal obstruction is known to be the most relevant in terms of interference with disease-specific quality of life, affecting quality of sleep and workplace efficiency.² Nasal obstruction may be caused by anatomic, physiological, inflammatory or neurological factors, with more than one of these

Panel A

Panel B

Figure 1 (A) Axial projection of facial CT scan showing calcified material occupying right inferior meatus and most of the right nasal cavity attributable to rhinolith (arrow). (B) Rhinolith specimens surgically removed from the nose of the patient.

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obstruction without significant improvement of smell perception and mucopurulent discharge.

INVESTIGATIONS

The allergological re-evaluation confirmed HDM mono-sensitisation.

Suspecting severe chronic rhinosinusitis, the patient underwent nasal fibroscopy, which showed a bulging irregular mass (maximal diameters: about 3 cm×3 cm×2 cm) of hard material with crustations and thick secretions around, stuck between septal spur and inferior turbinate of the right nasal cavity.

Facial CT scan (figure 1A) revealed calcified material occupying the right inferior meatus and most of the right nasal cavity attributable to rhinolith (arrow) and hypertrophic nasal turbinates. No signs of chronic rhinosinusitis were found.

TREATMENT

Endoscopic surgical removal of the rhinolith (figure 1B) was performed by nasal endoscopy and pathological investigation confirmed a specific lithiasic formation.

OUTCOME AND FOLLOW-UP

The patient was re-assessed 2 and 12 months after the surgical removal of rhinolith: he was not having anymore nasal obstruction, hyposmia and mucopurulent discharge, and nasal endoscopy confirmed the absence of rhinoliths.

DISCUSSION

Rhinoliths are calcified formations that generally surround intranasal foreign body. They occur around body tissues (ie, tooth; in this case they are called 'endogenous' rhinoliths) or around foreign material (ie, cotton, beads, stones, etc; in this case they are called 'exogenous' rhinoliths). Rhinoliths are often promoted by trauma, surgical operations and dental work.⁴

They commonly determine nasal obstruction as main symptom, possibly associated with hyposmia; other possible symptoms associated with the presence of a rhinolith are cacosmia, rhinorrhea (often fetid and purulent) and nasal bleeding (often unilateral). Nasal endoscopy is the main step in diagnosis of rhinoliths, and radiology (mainly sinuses CT scan) is useful to support it.

Sinus CT scan is particularly useful to plan the surgical approach, and to exclude any other sinonasal involvement which may cause similar symptoms (ie, chronic rhinosinusitis with or without nasal polyps and tumour).

A complete resolution of symptoms usually occurs after endoscopic surgical removal. Sometimes rhinoliths can lodge in a nasal cavity for a very long time before incidental finding.⁵

Differential diagnosis includes benign lesions (ie, osteoma, odontogenic tumours) and malignant lesions (ie, osteosarcoma).⁶ Treatment of choice is endoscopic surgical removal, which in

extremely rare conditions (depending on size and/or location of the rhinolith) needs external approach.⁷

A deeper re-evaluation of the clinical history revealed that the patient underwent dental work on upper teeth about 30 months before the diagnosis of rhinolith, suggesting a possible aetiology.

This case report advise clinicians that any worsening of symptoms of rhinitis should be investigated also looking for causes that differ from the already known aetiology because it is possible that symptoms may be due to diseases (sometimes bizarre diseases as in the present case report) which may mimic the previously known aetiology.

Learning points

- ▶ Nasal obstruction may compromise the quality of life of patients with allergic rhinitis, and when it worsens it deserves a re-evaluation of its causes.
- ▶ In case of unusual clinical and radiological findings, malignant lesions should be ruled out.
- ▶ Among the differential diagnosis, also those which seems bizarre should be taken into account and investigated.
- ▶ Rhinoliths may be a rare and bizarre cause of nasal obstruction.

Contributors All the authors contributed in visiting the patient, making hypothesis on differential diagnosis, performing diagnostic procedures (allergy skin tests or nasal endoscopy) or interventions (surgical removal of the rhinolith), discussing the case, writing and revising the manuscript.

Competing interests None.

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