

Masked rhinolith: The significance of unilateral symptom

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Abstract:

This is a case report of an 11-year old child who was suffering from rhinorrhoea for five years. As there was no history of foreign body insertion into the nose, the diagnosis of a nasal problem was not suspected. Furthermore, the initial presentation of unilateral rhinorrhoea (nasal discharge) masked the suspicion of other pathologies. The child was treated for allergic rhinitis until she presented herself to our attention whereby a rhinoscopy was performed, showing a rhinolith.

Introduction

Nasal problems are commonly encountered in primary care settings. It becomes more challenging to manage nasal problems if the patients are children. It is also difficult to obtain accurate history and perform complete examination. Sometimes symptoms of allergic rhinitis such as rhinorrhoea, nasal block, or even occasional epistaxis can mask the correct diagnosis. Rhinolith is a bony concretion that develops surrounding a nidus in the nasal cavity. Unilateral nasal symptoms are very important in differentiating foreign body or rhinolith from other diagnoses such as allergic rhinitis. A negative history of foreign body should not mask the suspicion of rhinolith. Thus, a patient presenting with unilateral foul smelling nasal discharge should be referred for further evaluation of intranasal pathology such as rhinolith.

Summary

An 11-year-old Malay girl experienced right-sided foul smelling nasal discharge for the past five years. Initially she had occasional right-

sided rhinorrhoea and was seen by several general practitioners. There was a history of blood-stained mucus discharge from the right nasal cavity. However, the amount was minimal and self-aborted. The patient denied any history of inserting foreign body into the nose. She was treated for allergic rhinitis for years. However, the symptom did not resolve until she presented to our attention in the ENT clinic.

A whitish brown crust was noted on the floor of the right nasal cavity upon anterior rhinoscopy examination. It was gritty on probing with Jobson Horn instrument. Cold spatula test revealed good airflow from both nostrils. Oropharynx appearance was normal. There was no paranasal sinus tenderness.

Rhinolith was clinically diagnosed. She was taken for examination under anaesthesia. Intra-operatively, the mass was found to be concretion of stone located on the floor of the right nasal cavity. Rhinolith was completely removed. The nasal cavity was washed until no residual stone was seen. She was successfully extubated and nursed in a ward for one day before discharge. Next, the rhinolith was examined. It was crushed and blood clot was found at the centre.

**Figure 1.**

White mass on the floor of the right nasal cavity with gritty sensation on probing (arrow = right inferior turbinate; star = nasal septum)

Discussion

Although nasoendoscopic examination may be difficult in uncooperative children, the history of unilaterality of nasal symptoms should be regarded as the strong diagnosis of rhinolith. The symptoms that strongly indicate the diagnosis of rhinolith include unilateral foul smelling nasal discharge, even without positive history of foreign body insertion into the nose. If the lesion is expanding, pain in the nose and epistaxis can be the presenting symptoms, indicating the pressure effect. Sometimes a superimposed infection can take place, owing to disruption of normal nasal discharge passageway. The symptoms may have some psychological effect on patients, especially children.

In most of the cases, children would not be able to reveal the history of foreign body insertion to the nose, especially those who are left unsupervised. Radiological assessment is rarely needed; however, the diagnosis of rhinolith may be revealed through routine imaging conducted for other reasons, such as dental treatment.^{1,2} The incidence of rhinolith is very low, which accounts for 1 in 10,000 otolaryngology patients,³ or one new case per year.⁴ Owing to its rarity, rhinolith can be easily overlooked and confused with infections or obstruction of upper airways.⁵ This scenario was the most likely reason of delayed diagnosis of rhinolith in this patient.

It is not uncommon for the nidus of a rhinolith to be endogenous in origin. In this case, the nidus was a blood clot. Desiccated blood clots, ectopic teeth, and bone fragments are examples of common endogenous causes.¹ Nasal mucus itself or any bony fragment can be the centre of concretion. A deciduous tooth that migrated to the floor of the nasal cavity was reported to be one of the endogenous nidus for rhinolith in an adult patient.⁶ Exogenous nidus includes foreign bodies that enter the nasal cavity either intentionally, which is more common in children, or accidentally, for example during road traffic accident.

Intra-operative findings of the removed concretion would confirm the diagnosis of a rhinolith. The foreign body, if present, would be readily identified by crushing the covering calcifications. Usually the inert foreign body is found because such type of material can be left longer in the cavity without producing any symptom. This is why the medical history of a rhinolith may range from months to decades.² When the concretion is formed, it will obstruct the nasal passage. The symptoms of infection may prevail due to stasis of nasal secretion, which in turn will promote bacterial colonization. Nasal vestibulitis and sinusitis are common complications of infection in rhinolith cases.³ Organic foreign bodies such as peanuts, seeds, and vegetables tend to show symptoms at an early stage, owing to the property of inducing inflammation to the surrounding structures.

Conclusion

Any child who presents with unilateral foul smelling nasal discharge has to be treated with suspicion and these patients need early referral to ENT specialist if symptoms persist. Even in cases in which patients were treated for allergic rhinitis and did not show any improvement or control with medications, an ENT referral may be needed to establish the diagnosis and to rule out other intranasal problems.

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