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CASE REPORT

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Fungal ball in the nasal cavity mimicking rhinolithiasis: a case report*

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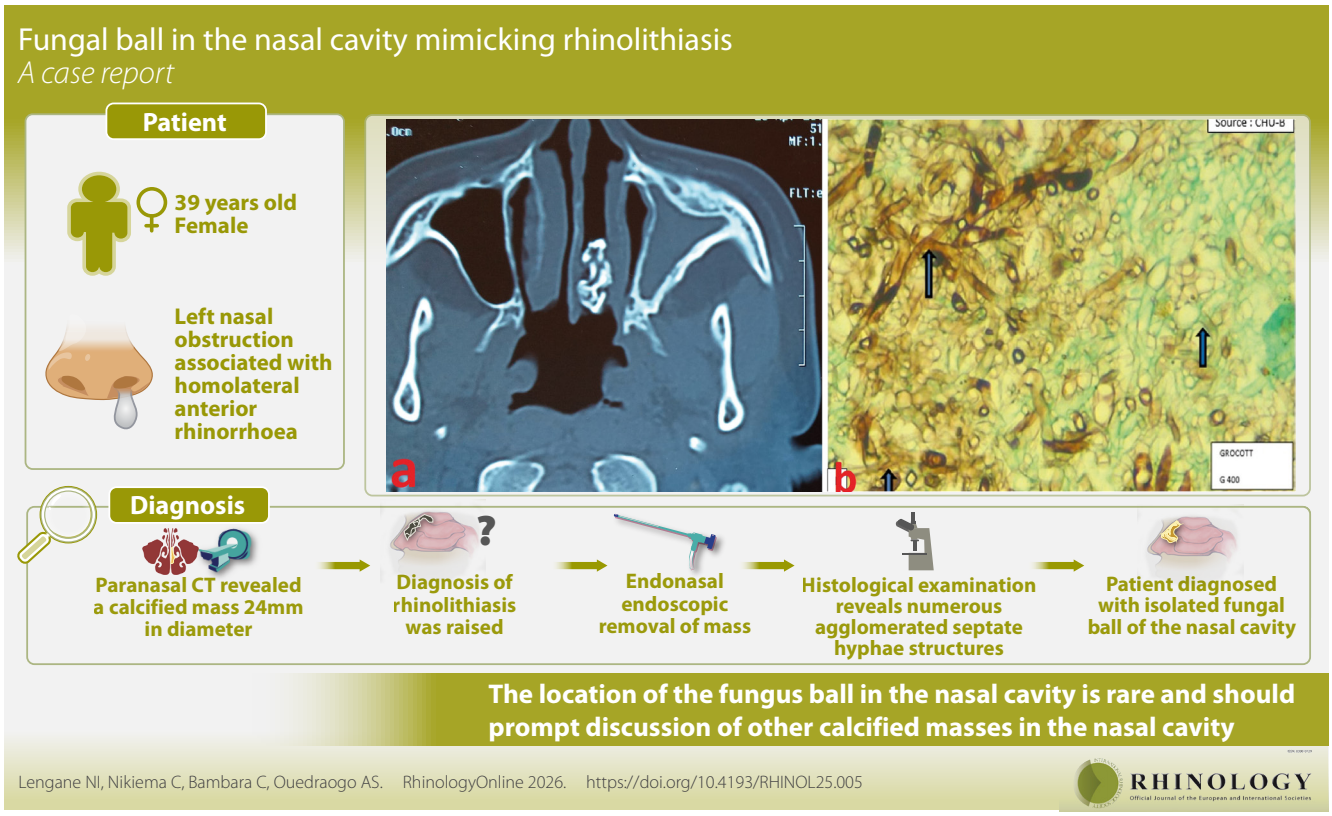

Abstract

Background: Fungus ball is an extramucosal fungal proliferation which completely fills one or more paranasal sinuses. Localization in the nasal cavity is extremely rare and can be confusing with rhinolithiasis.

Case presentation: A 39-year-old female patient was referred to the ENT department for a left nasal obstruction that was associated with homolateral anterior rhinorrhoea. The diagnosis was an isolated fungal ball of the nasal cavity.

Conclusions: The location of the fungus ball in the nasal cavity is rare and should prompt discussion of other calcified masses in the nasal cavity.

Key words: nasal cavity; nasal obstruction, nose diseases

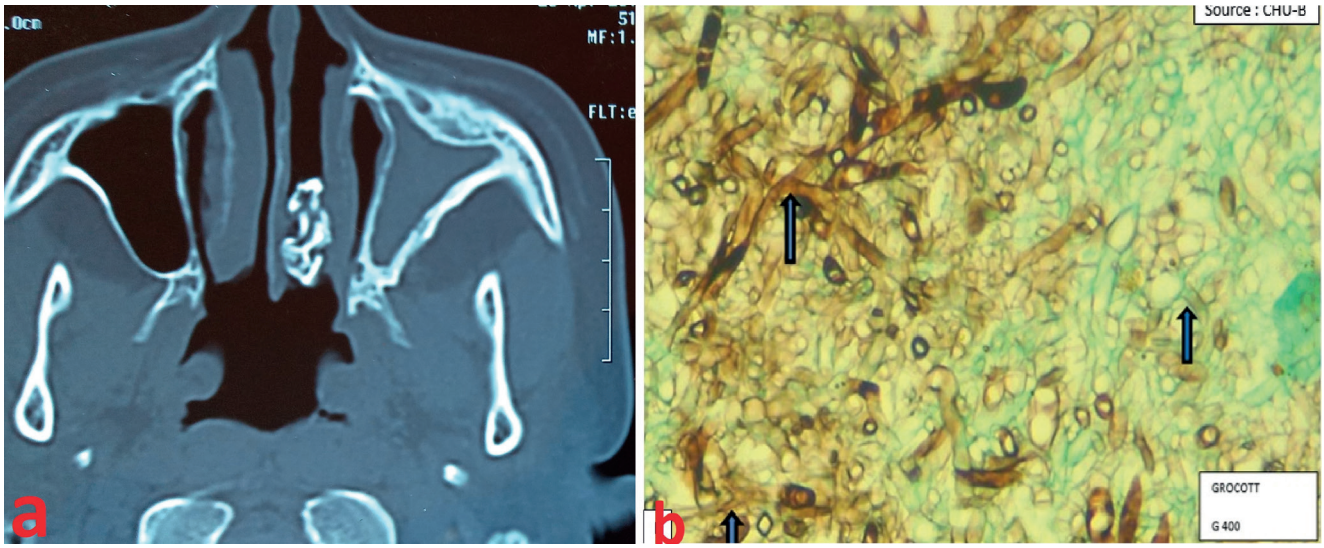

Figure 1. Axial section computed tomography image showing a calcified mass in the left inter-septo-turbinal space (a); histological sections images stained with Gromori Grocott showing numerous agglomerated mycelial filaments, sometimes septate, consisting of large hyphae (b).

Introduction

The fungus ball is an extra-mucosal fungal proliferation that completely fills one or more para-nasal sinuses [1]. Fungal ball is generally localised in a single sinus, most often the maxillary sinus [2]. Localisation in the nasal cavity is extremely rare and may be confused with rhinolithiasis [3].

We report a case of an isolated fungus ball in the nasal cavity of a 36-year-old female patient, which was extracted endoscopically. This location is unusual and rarely reported in the literature.

Case report

A 39-year-old female patient was referred to the ENT department for left nasal obstruction associated with homolateral anterior rhinorrhoea. The symptoms had been evolving for about 5 years with a progressive worsening of the nasal obstruction and persisted despite several medical treatments. The history-taking did not reveal any antecedents. Endonasal examination after aspiration of purulent secretions revealed a greyish, rough mass occupying the left inter septo-turbinal space. The mass was hard at palpation. Paranasal computed tomography revealed a calcified mass of 24 mm long in the left nasal cavity (Figure 1a). The diagnosis of rhinolithiasis was raised. There was no previous notion of a nasal foreign body. The patient underwent endonasal endoscopic removal of the mass under general anaesthetic. The mass was fragmented and extracted with forceps. Histological examination of the operative specimen revealed, after decalcification, numerous agglomerated septate hyphae structures (Figure 1b). The diagnosis of an isolated fungus ball of the nasal cavity was done. No postoperative complication was observed. Her symptoms had entirely resolved at subsequent follow up.

Discussion

Fungus balls of the sinus cavities, sometimes called aspergillomas, are localised, non-aggressive, chronic, extramucosal fungal infections in immunocompetent patients. The fungal ball is generally localised in a single sinus, most often the maxillary sinus, followed by the sphenoid, ethmoïd and frontal sinuses [2,4,5]. Isolated localization in the nasal cavity is extremely rare, and it may be confused with rhinolithiasis [3].

The pathogenesis remains unknown. Ostial obstruction favours the development of an anaerobic environment, which is a favourable condition for fungal growth [1]. Favourable factors have been suggested. These include a history of dental treatment and poor oral hygiene [1]. Although the pathogenesis is poorly understood, the fungal ball may be the site of a significant accumulation of calcareous salts, making it hard and stony and thus mimicking a rhinolith [1,3].

Clinically, it manifests as a foreign body or rhinolithiasis with nasal obstruction associated with fetid purulent unilateral rhinorrhoea. Headaches, rhinosinusitis, epistaxis and epiphora may also occur. It may also be asymptomatic, discovered accidentally during a clinical examination [1,3]. Computed tomography reveals a calcified lesion in the nasal cavity. However, imaging alone, especially CT scans, cannot differentiate fungal bullet from other calcified nasal masses. The differential diagnosis is made on imaging with rhinolithiasis, osteomas, chondromas, calcified polyps, chondrosarcomas and osteosarcomas [1,5].

Diagnosis is based on anatomopathological and mycological examination. These reveal agglomerated septate filaments. Culture is often negative [6].

Treatment is surgical and may include correction of associated anomalies (septoplasty, lower turbinate reduction). Extraction may be performed endoscopically under local or general an-

aesthesia. The mass is generally fragmented and extracted, and the residual particles are aspirated. The granulation of the nasal mucosa in contact with the rhinolithiasis may cause bleeding, which can be controlled by cauterisation or nasal packing. Surgery alone is usually sufficient, and no local or general antifungal treatment is necessary [1,3].

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Authorship contribution
NIL wrote the protocol and collected the patient data, CN collected the patient data, CB collected the patient data, ASO collected the patient data. All authors read and approved the final manuscript.

Ethics approval and consent to participate
Not applicable.

Consent for publication
Written informed consent for publication of their clinical details and/or clinical images was obtained from the patient. A copy of the consent form is available for review by the Editor of this journal.

Availability of data and material
The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Conflict of interest
The authors declare that they have no competing interests.

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