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Nasal cavity fungus ball discovered accidentally: A case report

Dae-Neung Lee, Dong Hoon Lee, Sang Chul Lim

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Abstract

BACKGROUND

Fungal balls within the nasal cavity are an exceedingly rare clinical entity, typically presenting with nonspecific symptoms or being identified incidentally.

CASE SUMMARY

This report presents an incidental discovery of a fungal ball in the nasal cavity during routine imaging, with no associated clinical symptoms.

CONCLUSION

This case underscores the importance of considering the possibility of asymptomatic presentations of nasal fungal balls, which may be detected incidentally during imaging evaluations.

Key Words: Fungi; Mycoses; Fungus ball; Nasal cavity; Nasal surgical procedures; Case report

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Core Tip: This case highlights the need to consider a diagnosis of nasal cavity fungal ball, even in patients who are asymptomatic.

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INTRODUCTION

Fungal balls typically form within the paranasal sinuses, most frequently in the maxillary sinus[1-5]. However, these formations can occasionally be present in the nasal cavity[1-4]. This report presents a case where a nasal cavity fungal ball was incidentally detected during imaging performed by a different department.

CASE PRESENTATION

Chief complaints

A 71-year-old male patient was referred to our department after an incidental discovery of a lesion in the right nasal cavity during imaging for brain metastasis secondary to lung cancer.

History of past illness

The patient had no history of nasal surgery or trauma and reported no nasal discomfort.

Personal and family history

The patient had no family history.

Physical examination upon admission

Physical examination revealed a dark gray, cheese-like material posterior to the right inferior turbinate (Figure 1).

Laboratory examinations

Laboratory examinations were unremarkable.

Imaging examinations

Imaging studies, including computed tomography (CT) and magnetic resonance imaging (MRI), revealed a 2.8 cm calcified lesion located posterior to the inferior turbinate in the right nasal cavity. The CT scan also demonstrated fibrous dysplasia in the ipsilateral maxillary sinus (Figure 2). Axial T1-weighted MRI displayed an iso-intense signal in the same region, while T2-weighted MRI showed it as hypo-intense (Figure 3).

FINAL DIAGNOSIS

Histopathological analysis confirmed the presence of an *Aspergillus* fungus ball.

TREATMENT

The mass was excised in an outpatient setting, and adhesive remnants were noted on the nasal cavity floor post-removal (Figure 1).

OUTCOME AND FOLLOW-UP

The patient experienced no recurrences or complications for 10 months post-surgery but ultimately died of lung cancer.

DISCUSSION

Fungal balls within the nasal cavity are exceptionally rare and are predominantly documented through case reports[1-4]. In contrast to previously reported cases, the fungal ball in this instance was incidentally identified during imaging, without notable nasal symptoms. Over an extended period, the fungal ball grew to approximately 3 cm in diameter. The absence of symptoms may be attributed to its location within a spacious area posterior to the inferior turbinate, where it

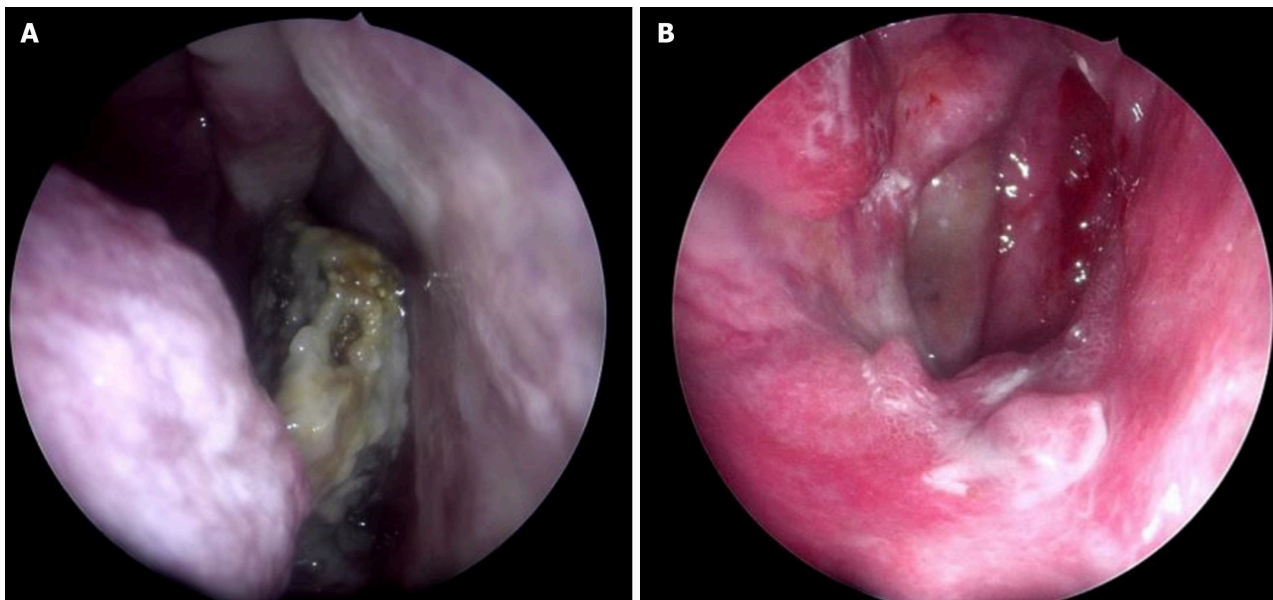


Figure 1 Physical examination. A: A dark gray, cheese-like substance is observed behind the right inferior turbinate; B: This mass is attached to the floor of the nasal cavity.

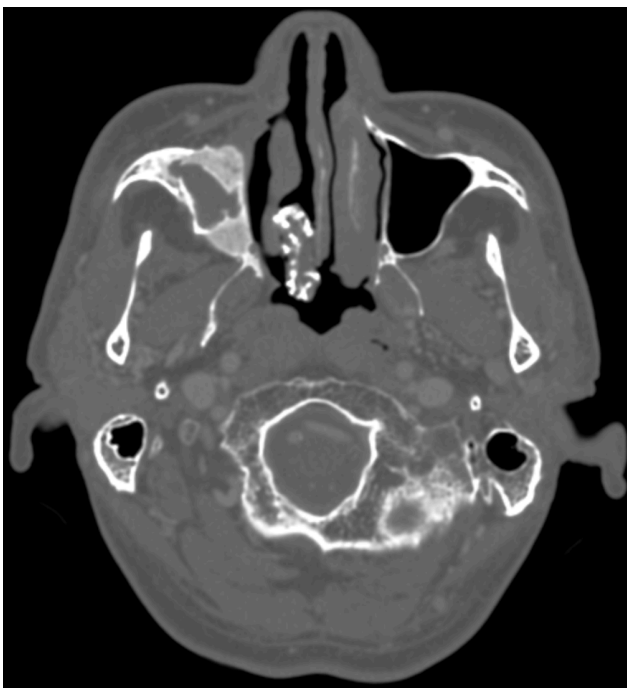


Figure 2 On computed tomography scan, a 2.8 cm-sized calcified lesion is observed posterior to the inferior turbinate of the right nasal cavity and fibrous dysplasia of the ipsilateral maxillary sinus.

did not provoke inflammation.

The pathophysiology underlying nasal cavity fungal balls remains poorly understood[1-5]. The most commonly reported symptom is unilateral nasal obstruction[1,4], though patients may also present with headache, facial pain, and postnasal drip[1,4]. In the case presented here, the patient did not display any nasal symptoms.

Diagnosis of nasal cavity fungal balls generally involves endoscopic examination and imaging studies, with histopathological analysis serving as confirmation[1-5]. While fungal culture is time-intensive and has low diagnostic sensitivity, histopathology often enables a rapid presumptive diagnosis[6]. During endoscopic examination, a nasal mass may be detected, frequently accompanied by a foul-smelling discharge[1,3,4]. On non-contrast CT scans, a fungal ball typically appears hyperattenuating due to dense fungal hyphae and may exhibit punctate calcifications[1,4,5]. MRI often reveals the fungal ball to be iso-intense on T1-weighted images and hypo-intense on T2-weighted images[1,4].

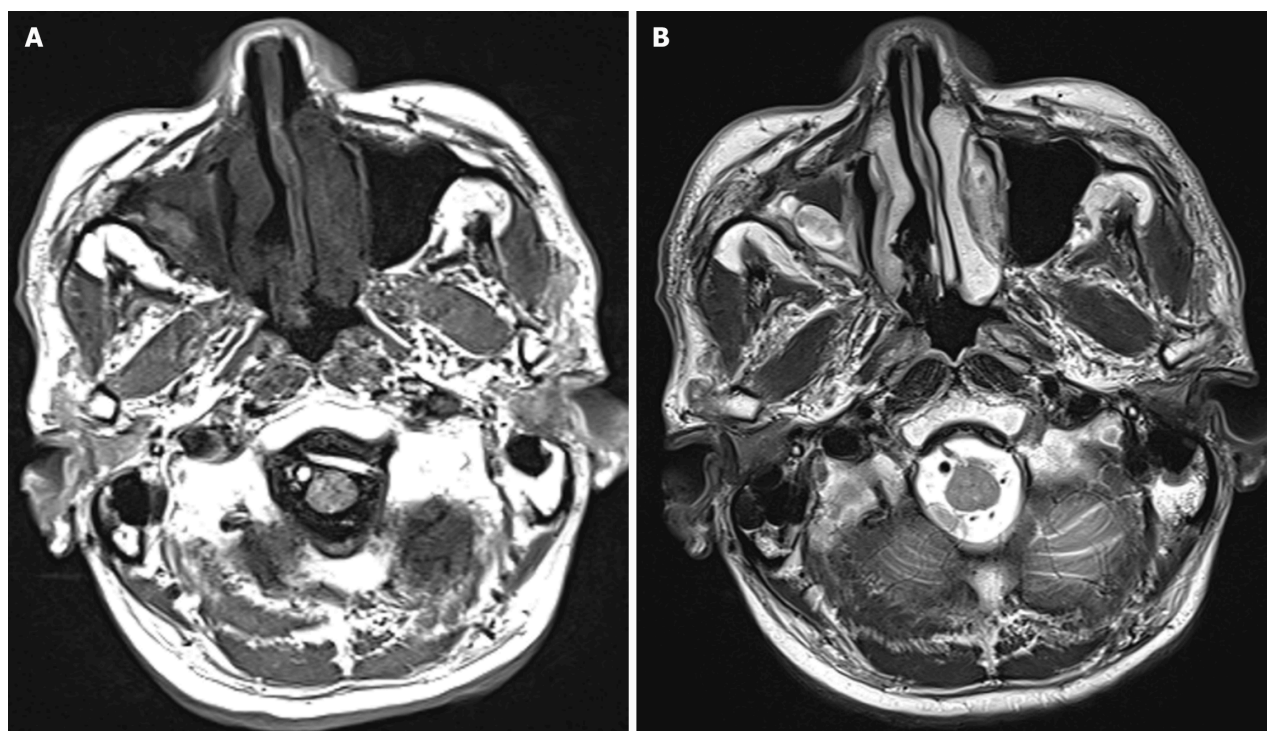


Figure 3 Weighted magnetic resonance imaging. A: An axial T1-weighted magnetic resonance imaging (MRI) shows an iso-intense signal lesion in the right nasal cavity; B: The hypo-intense signal intensity lesion on T2-weighted MRI.

The treatment of choice is functional endoscopic sinus surgery, which aims for the complete excision of the fungal ball [1-5]. As nasal cavity fungal balls represent a non-invasive form of fungal sinusitis, they generally do not require antifungal therapy post-surgery[1,4]. Prognosis is typically very favorable following adequate surgical intervention[1-4].

CONCLUSION

This report presents a rare case of a nasal cavity fungal ball discovered incidentally during routine imaging. It underscores the need to consider nasal cavity fungal balls as a potential diagnosis even in asymptomatic patients.

FOOTNOTES

Author contributions: Lee DN and Lee DH designed the research study, performed the research, analyzed the data and wrote the manuscript; Lee DH and Lim SC contributed new reagents and analytic tools; all authors have read and approved the final manuscript.

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