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Oropharyngeal Basidiobolomycosis Mimicking Malignancy in an Immunocompetent Patient: A Rare Case Report

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Abstract **Objectives:** Basidiobolomycosis is an uncommon entomophthoromycosis caused by Basidiobolus ranarum that usually affects subcutaneous tissue and, less commonly, the gastrointestinal tract in otherwise immunocompetent hosts [1,2]. We report a 50-year-old Saudi man with progressive sore throat, odynophagia, dysphagia and a hot-potato voice caused by an oropharyngeal/posterior pharyngeal wall mass that initially raised concern for malignancy and deep neck infection. Contrast-enhanced CT demonstrated extensive left submandibular and masticator space collections with airway compromise, whereas repeated tissue sampling ultimately showed broad aseptate hyphae with granulomatous inflammation and a Splendore-Hoeppli reaction; PAS and GMS stains highlighted the organisms and fungal culture confirmed Basidiobolus ranarum [2,3,5]. The patient had no documented history of diabetes, chronic steroid exposure, malignancy, transplantation, or other known immunosuppressive condition in the available clinical record and he was treated successfully with oral voriconazole 200 mg twice daily for 6 months with serial clinical and radiologic improvement. This case underscores that rare fungal disease should remain in the differential diagnosis of unusual oropharyngeal masses and that repeated biopsy with fungal stains and culture may prevent unnecessary radical surgery [2,7].

Key Words Basidiobolomycosis, Basidiobolus Ranarum, Oropharynx, Entomophthoramycosis, Voriconazole, Case Report

INTRODUCTION

Basidiobolomycosis is a rare infection caused by Basidiobolus ranarum, an environmental saprophyte classically associated with entomophthoramycosis rather than invasive mucormycosis [1,2]. It is most often described in tropical and subtropical climates and is typically linked to soil, decaying vegetation and the gastrointestinal tracts of reptiles and amphibians [2-5]. Unlike many opportunistic mould infections encountered in otorhinolaryngology practice, Basidiobolus infection may occur in apparently immunocompetent individuals [1,2-9].

Clinically, basidiobolomycosis is best known for subcutaneous disease, while gastrointestinal involvement has emerged as an important but uncommon manifestation that frequently mimics inflammatory or malignant conditions [3,4,6,10,11]. Head-and-neck disease is distinctly unusual. Reports from Saudi Arabia nevertheless suggest that the organism is regionally relevant, particularly in southern areas such as Aseer, where rhinofacial disease has been described [5]. The practical problem for ENT clinicians is diagnostic delay. Lesions may resemble malignancy, deep neck infection, granulomatous disease, or other fungal disorders on presentation and imaging. Histopathology remains pivotal: broad pauci-septate or aseptate hyphae embedded within eosinophil-rich granulomatous inflammation and surrounded by Splendore-Hoeppli material strongly support the diagnosis, while culture provides species confirmation when successful [1-3,9].

This report documents a rare case of oropharyngeal basidiobolomycosis in an immunocompetent adult that clinically mimicked malignancy, emphasizes the diagnostic pitfalls that required repeated biopsy and summarizes the favorable response to prolonged voriconazole therapy without radical surgery.

Case Presentation

A 50-year-old Saudi man with no known chronic medical illness presented to the otolaryngology clinic with persistent sore

throat, progressive dysphagia, odynophagia and an altered hot-potato voice of approximately 1 month duration. He denied fever, night sweats, weight loss, smoking, alcohol use and recent travel. Based on the history available in the source manuscript, there was no documented prior diabetes, chronic steroid exposure, malignancy, transplantation, or known immunodeficiency. However, a formal immunologic work-up and complete laboratory dataset were not available in the record used for this manuscript revision; this limitation is acknowledged explicitly.

On examination, the patient appeared uncomfortable while swallowing. Oropharyngeal examination revealed a firm, irregular, erythematous mass involving the posterior pharyngeal wall and extending into the oropharynx. No palpable cervical lymphadenopathy or hepatosplenomegaly was documented. The initial clinical differential diagnosis included squamous cell carcinoma, lymphoma, tuberculous/granulomatous infection, deep neck space abscess and fungal infection.

Routine blood investigations were described in the original record as being within normal limits, although exact values for complete blood count, eosinophil count, ESR and CRP were not preserved in the manuscript draft.

Contrast-enhanced CT of the neck showed ill-defined left submandibular and masticator space collections with internal air foci and peripheral enhancement, extension superiorly to the nasopharynx and inferiorly to the hypopharynx, obliteration of the left parapharyngeal space, associated mild cervical lymphadenopathy and significant airway compromise with leftward shift (Figure 1). No sizable glottic, supraglottic, or infraglottic mass was identified.

An initial biopsy was non-diagnostic because of insufficient tissue. Multiple repeat biopsies were then obtained from the lesion. Histopathologic examination demonstrated broad aseptate fungal hyphae within granulomatous inflammation accompanied by conspicuous eosinophilic Splendore-Hoeppli material. PAS and GMS stains highlighted the fungal elements and fungal culture confirmed Basidiobolus ranarum, establishing the diagnosis [2,3,5,9].

The patient was managed medically with oral voriconazole 200 mg twice daily for 6 months. Supportive treatment included analgesia with nonsteroidal anti-inflammatory drugs and nutritional advice because of dysphagia. Serial clinical follow-up and repeat imaging showed marked improvement after 1 month and complete clinical resolution by the end of treatment. The available manuscript record did not contain a detailed laboratory monitoring table for liver function or drug-interaction surveillance; this is retained as a reporting limitation. No surgical resection was required (Table 1 and 2).

Figure 1: Contrast-Enhanced Neck CT Showing Extensive Left Submandibular and Masticator Space Collections with Internal Air Foci and Mass Effect Causing Airway Compromise

Table 1: Clinical Timeline

Time point	Key findings/action
~1 month before diagnosis	Progressive sore throat, odynophagia, dysphagia, hot-potato voice
Initial assessment	Posterior pharyngeal wall/oropharyngeal mass; malignancy and deep neck infection considered
Baseline CT	Left submandibular and masticator space collections with airway compromise
Initial biopsy	Non-diagnostic / insufficient tissue
Repeat biopsies	Broad aseptate hyphae, granulomatous inflammation, Splendore-Hoeppli reaction; PAS/GMS positive
Microbiology	Fungal culture confirmed Basidiobolus ranarum
Treatment	Oral voriconazole 200 mg twice daily started
1 month follow-up	Marked symptomatic and radiologic improvement
6 months	Completed treatment; clinically resolved, no surgery required

Table 2: Main Differential Diagnoses and Diagnostic Clues

Differential diagnosis	Reason initially considered	How excluded/ revised
Squamous cell carcinoma	Irregular mass, dysphagia, voice change	Histopathology showed fungal hyphae rather than malignant cells
Lymphoma	Mass lesion with upper aerodigestive symptoms	No supportive histology; fungal stains/culture positive
Deep neck space abscess	CT collections, airway compromise	Chronic course and biopsy/culture established fungal etiology
Tuberculous/granulomatous infection	Chronic inflammatory lesion	Special stains and culture identified Basidiobolus ranarum
Other mould infection (e.g., mucormycosis/entomophthoramycosis)	Fungal morphology possible	Clinical context and culture supported basidiobolomycosis specifically

DISCUSSION

This case is notable for three reasons: the unusual oropharyngeal site, the absence of a documented immunocompromising disorder and the strong initial impression of malignancy/deep neck infection. Basidiobolomycosis is uncommon in ENT practice, yet the broader literature on entomophthoramycosis shows that these infections often affect immunocompetent hosts in tropical and subtropical settings [1,2]. Saudi reports from the Aseer region further support regional relevance of Basidiobolus infection, even though most published head-and-neck cases involve rhinofacial rather than oropharyngeal disease [5].

The principal diagnostic lesson is that imaging alone is not specific. In the present case, CT mainly demonstrated an infiltrative infective-appearing process with airway compromise. Similar to gastrointestinal basidiobolomycosis, which has repeatedly been reported to mimic inflammatory bowel disease or malignancy, extrapolating clinicians may encounter head-and-neck lesions that imitate cancer or abscess more convincingly than fungal disease [6,10,11]. Accordingly, persistence of an unusual lesion despite the initial working diagnosis should prompt adequate tissue sampling, repeat biopsy when necessary and explicit communication with pathology to perform fungal stains and culture.

Histopathology remains central. Broad hyphae surrounded by eosinophilic Splendore-Hoeppli material in an eosinophil-rich granulomatous background are classic diagnostic clues for basidiobolomycosis and other entomophthoramycoses [1-3,9]. The Splendore-Hoeppli phenomenon is not entirely specific, but in the correct clinical context it is highly supportive and should trigger microbiologic confirmation. Culture confirmed Basidiobolus ranarum in this patient, which strengthened the diagnosis. Molecular confirmation such as PCR/ITS sequencing was not available.

There is no single standardized treatment regimen for every presentation of basidiobolomycosis. Prolonged azole therapy has been repeatedly used and voriconazole has shown activity in cases that are extensive or refractory to other azoles [6,9,10]. In this case, oral voriconazole 200 mg twice daily for 6 months led to clinical and radiologic resolution without surgery. Nevertheless, this favorable outcome should not be generalized to all patients. Surgery may still be necessary for airway compromise not controlled medically, diagnostic uncertainty, necrotic tissue requiring debridement, or lack of response to antifungal therapy [1,2,8].

Several limitations deserve emphasis. First, this is a single case report. Second, some baseline data requested by the reviewer-such as exact CBC indices, eosinophil count, inflammatory markers, environmental exposure history, occupation and structured liver-function monitoring during therapy-were not available in the original draft and could therefore only be acknowledged rather than reconstructed. Third, the follow-up record provided to us documented resolution by the end of 6 months of therapy; longer surveillance should be confirmed by the treating team before submission. Even with these limitations, the case remains clinically valuable because it illustrates a high-risk diagnostic pitfall and demonstrates the importance of repeated biopsy, fungal stains and multidisciplinary management.

CONCLUSION

Oropharyngeal basidiobolomycosis is rare but important not to miss because it can closely mimic malignancy and deep neck infection. Early adequate biopsy, fungal stains, culture and timely prolonged azole therapy can lead to cure while helping avoid unnecessary radical surgery. Close endoscopic and radiologic follow-up is advisable and the treating team should document long-term surveillance whenever possible.

Care Reporting Guideline

This revised manuscript has been structured in line with CARE principles for case reporting.

Patient Consent/Ethics

To be completed and verified by the authors before journal submission, as explicit consent/ethics wording was not available in the uploaded draft.

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Conflicts of Interest

The authors should confirm no conflicts of interest, or revise this statement before submission.

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