BASIDIOBOLOMYCOSIS IN A 14-YEAR-OLD GIRL

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Case report. A 14-year-old girl was evaluated for a suspected deep fungal infection of the right thigh. Seven months earlier, she had noticed a painful, quail egg-sized nodule at the site, which progressively enlarged and became indurated, with overlying skin changes. There were no systemic symptoms such as chronic cough, weight loss, fever, gastrointestinal complaints, or constitutional signs. The patient denied recent trauma, insect bites, or environmental exposure to soil, gardens, or wooded areas.

On examination, her general condition was good. Dermatologic evaluation revealed a 10 × 15 cm indurated subcutaneous mass in the right femoral region with a firm, woody consistency. Multiple erythematous nodules with minimal surface erosion were noted (Fig. 1). No regional lymphadenopathy or systemic involvement was detected.

Given the clinical suspicion of subcutaneous mycosis, a biopsy was performed. Histopathological evaluation with periodic acid–Schiff (PAS) staining showed broad, aseptate fungal hyphae surrounded by an intense eosinophilic halo consistent with the Splendore-Hoeppli phenomenon (Fig. 3), a hallmark of entomophthoromycosis, particularly caused by *Basidiobolus ranarum*.

Fungal culture on Sabouraud dextrose agar incubated at 30°C demonstrated rapid growth of flat, yellowish, waxy colonies (Fig. 4). Microscopic examination with lactophenol cotton blue preparation revealed thick-walled zygospores with beak-like appendages and broad hyphae (Fig. 5), confirming the diagnosis of *Basidiobolus ranarum*.

The patient was treated with oral ketoconazole 400 mg once daily. After six months of therapy, significant clinical improvement was observed, including marked reduction in lesion size, resolution of edema (Fig. 2), and improved skin consistency and mobility.

Fig. 1

Fig. 2

Fig. 1, 2: Basidiobolomycosis in a 14-year-old girl: hard, woody plaque on the thigh (Fig. 1), significantly improved after 6 months of oral ketoconazole (Fig. 2).

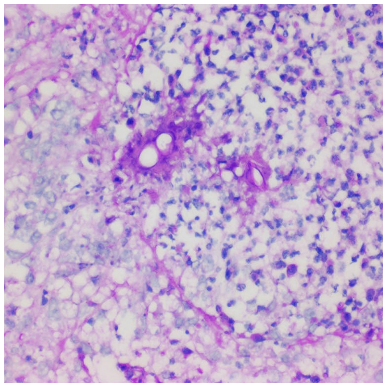

Fig. 3

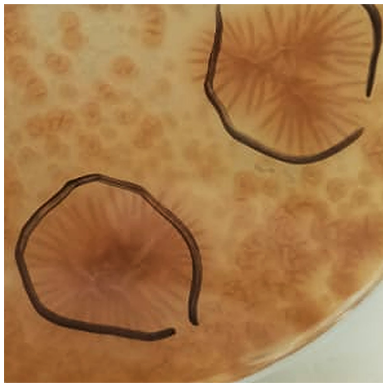

Fig. 4

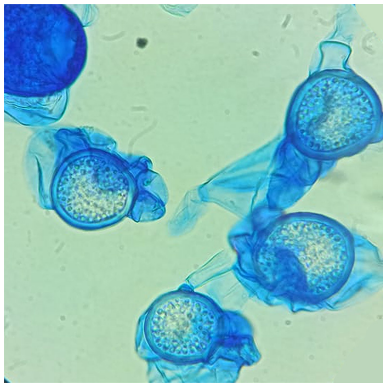

Fig. 5

Fig. 3, 4, 5: In Fig. 3 (PAS, x40), fungal hyphae with Splendore-Hoeppli's phenomenon. Mycological culture examination shows yellowish, waxy colonies (Fig. 4); microscopic examination with lactophenol cotton blue (Fig. 5, x100) reveals thick-walled zygospores.

Discussion. Basidiobolomycosis is a rare and underrecognized fungal infection caused by *Basidiobolus ranarum*, a saprophytic organism belonging to the order Entomophthorales. It primarily affects immunocompetent children and adolescents living in tropical and subtropical climates, where transmission typically occurs through traumatic inoculation of spores from contaminated soil, decaying vegetation, or animal excreta (1).

Cutaneous basidiobolomycosis often presents as a slowly progressive, firm, and painless subcutaneous mass involving the limbs, buttocks, or trunk. Its indolent nature and nonspecific clinical features frequently result in diagnostic confusion with neoplastic, granulomatous, or other infectious conditions such as cutaneous tuberculosis or panniculitis (2). Delayed recognition may lead to extensive tissue involvement, fibrosis, or disfigurement.

Here, we report an unusual case of cutaneous basidiobolomycosis in a young female patient, highlighting its diagnostic challenges and the need for prompt treatment (3). The lesion in this case mimicked other chronic inflammatory or infectious conditions. The differential diagnosis included cutaneous tuberculosis, panniculitis, and granuloma annulare. Cutaneous tuberculosis usually presents with ulcerated nodules or plaques and is confirmed by acid-fast bacilli staining, which was negative in this patient (4). Panniculitis may present with painful subcutaneous nodules but lacks the fungal elements and eosinophilic reaction seen here (5). Granuloma annulare is a benign inflammatory dermatosis characterized histologically by necrobiosis and mucin deposition, rather than fungal hyphae (6).

The definitive diagnosis of basidiobolomycosis relies on histopathological and microbiological evidence. The presence of broad, aseptate hyphae surrounded by eosinophilic material – the Splendore-Hoeppli phenomenon – is a hallmark of entomophthoromycosis (7) and was clearly observed in PAS-stained tissue sections in this case. While GMS and H&E stains may provide supportive evidence, PAS offers superior contrast for highlighting hyphal walls. The diagnosis was further confirmed by fungal culture showing rapid colony growth on Sabouraud agar and the identification of thick-walled zygospores with beak-like appendages, characteristic of *Basidiobolus ranarum* (8).

There is no standardized antifungal regimen for basidiobolomycosis, but azole antifungals – particularly itraconazole and ketoconazole – have demonstrated favorable clinical responses. Amphotericin B, although widely used for other invasive fungal infections, has shown inconsistent efficacy and higher toxicity in basidiobolomycosis (9). In this case, oral ketoconazole 400 mg daily for six months led to marked clinical improvement, consistent with reports emphasizing the effectiveness of azole monotherapy in early or localized disease (10).

This case highlights the importance of early tissue biopsy and fungal culture in patients with indurated, atypical subcutaneous lesions in endemic regions. Given the potential for misdiagnosis and delayed treatment, increased clinical awareness and familiarity with basidiobolomycosis among dermatologists and infectious disease specialists are essential for timely and effective management.

Conclusion. This case underscores the importance of including basidiobolomycosis in the differential diagnosis of chronic subcutaneous masses and demonstrates the effectiveness of oral ketoconazole in achieving favorable clinical outcomes.

Conflicts of interest

The authors declare that they have no conflicts of interest.

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