

Phaeohyphomycosis of the unguinal apparatus - Case report*

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Abstract: Phaeohyphomycosis is a disease caused by dematiaceous fungi with a worldwide geographic distribution and broad spectrum. It is most commonly found in adult individuals of both genders and all races. We report the case of a 57-year-old woman with phaeohyphomycosis in the unguinal apparatus.

Keywords: Antifungal agents; Fungal structures; Fungi; Mycoses; Nails; Onychomycosis

INTRODUCTION

Phaeohyphomycosis refers to a subcutaneous and systemic infection caused by dematiaceous fungi, which are primarily recognized as soil saprophytes, plant pathogens, and contaminants living in the environment. This infection affects mainly immunocompromised individuals and presents a great morphologic variety. Its most common form is subcutaneous while nail infection rarely occurs. No reports were found with regards to unguinal fibrokeratoma. The authors report a case of unguinal phaeohyphomycosis occurring simultaneously as onychomycosis and fibrokeratoma in an immunocompetent patient.

CASE REPORT

A 57-year-old white woman has presented onycholysis, chromonychia and subungual hyperkeratosis for the last 6 months, accompanied by a hardened and fibrotic lesion in the lateral unguinal fold located in the right toenail (Figure 1). She denied having other comorbidities.

On direct mycological examination, dark and irregular hyphae and *Exophiala spp.* culture were found (Figures 2 and 3). The fibrokeratoma was excised. Its anatomic-pathological exam showed positive results for blastoconidia and dematiaceous septate hyphae, suggesting phaeohyphomycosis (Figures 4 and 5).



FIGURE 1: Right toe nail: onycholysis, chromonychia and subungual hyperkeratosis

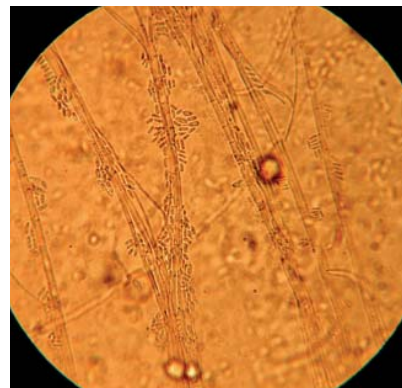


FIGURE 2: Optical microscopic examination (60X): Dematiaceous Hyphae

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FIGURE 3: Culture examination: presence of dematiaceous, filamentous colony

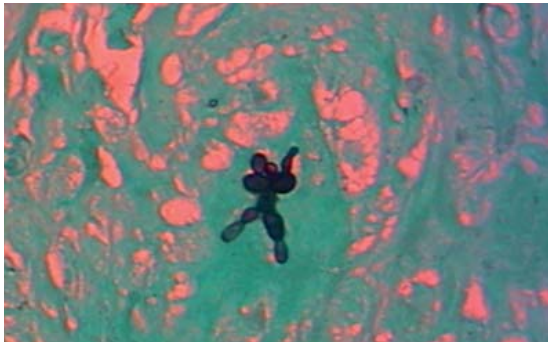


FIGURE 4: Blastoconidia and dematiaceous fungi with septated hyphae

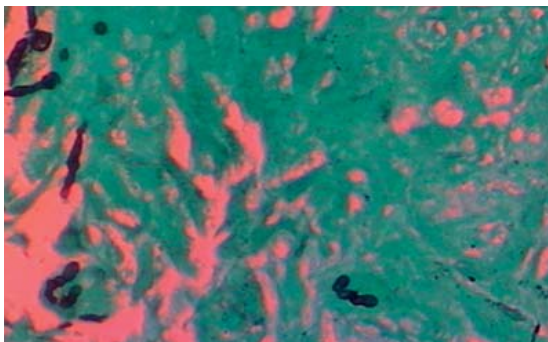


FIGURE 5: Blastoconidia and dematiaceous fungi with septated hyphae

The patient received itraconazol pulse therapy (1 week 400 mg daily, 21 day interval) and amorolfine nail lacquer (1 week). Seven days post itraconazol therapy, the patient developed pharmacodermia, with skin rash, intense itching, especially on the trunk, which is rarely caused by this antifungal agent (Figure 6).



FIGURE 6: Pharmacodermia: Erythematous confluent papules over the back

Consequently, the oral medication had to be discontinued. After clinical improvement of the allergic reaction, the patient received terbinafine therapy (oral 250 mg daily) with good evolution and clinical improvement of the onychomycosis lesions, without recurrence of the excised nail fibrokeratoma.

DISCUSSION

Phaeohyphomycosis is a fungal infection with a worldwide geographical distribution. Adult patients with chronic and debilitating diseases are the most affected by this infection, which is considered rare in healthy individuals. It may affect adult individuals of both genders and all races.¹ The main morphological features of these pathogens are pigmented and septate hyphae, sometimes with blastoconidia. The disease is classified into four types, depending on the extent and depth of invasion: surface, subcutaneous, cerebral and systemic.² Predisposing factors include the use of systemic corticosteroids, intravenous drug abuse, diseases such as leukemia, lymphoma, peritoneal dialysis and AIDS.² Virulence factors for the development of the disease include the production of melanin by *proteolytic enzymes* and *hyaluronidases*. The subcutaneous form occurs when the agent penetrates the skin by trauma or solution of continuity. Fungi have their habitat in the soil or organic matter. Systemic fungal infections occur when spores are inhaled or the skin is invaded.¹ Subcutaneous lesions affect men and women equally, and the highest incidence is between the third and fifth decades of life.¹ It manifests as phaeomycotic cysts, common in the phalanges of the fingers or well demarcated, slow-growing nodules. They are generally located in exposed areas such as the lower and upper limbs. The cystic form is the most common subcutaneous lesion and is characterized as a firm tumor with marked edges and intact skin surface.² *E. jeanselmei* is a recognized causative agent of phaeohyphomycosis due to its abundance in nature.³

This is a rare type of infection and there are no clinical trials to guide the appropriate treatment to manage this disease. The subcutaneous subtype may occur in immunocompetent and immunocompromised subjects, with greater risk of therapeutic failure in the latter.⁴

The diagnosis was based on a direct mycological exam of the skin lesions, where brownish, septate hyphae and yeast cells were detected. The histological examination showed that these elements resulted in granuloma formation and abscesses. Different etiological agents were isolated in culture and later identified by their macro and microscopic features.¹ The differential diagnosis is made between benign and malignant tumors, and mycetoma.¹

An appropriate therapy is difficult to establish because the etiologic agents are diverse and hard to identify. Surgical excision is recommended for skin lesions.¹ However, a combined antifungal therapy is recommended for recurring cases in immunocompromised patients.⁵

The involvement of the unguis apparatus is little described in the literature. The recommended treatment in this case is the use of itraconazole. In the present case report, the treatment was discontinued due to adverse reactions, which may affect up to 8.6% of patients using itraconazole. Terbinafine could be an alternative treatment option as it has provided good results in clinical laboratory tests.⁶ □

REFERENCES

1. Ramos-e-Silva M, Castro MCR. Fundamentos de Dermatologia. 2. Ed. Rio de Janeiro: Atheneu; 2010.
2. Perusquia-Ortiz AM, Vázquez-González D, Bonifaz A. Opportunistic filamentous mycoses: aspergillosis, mucormycosis, phaeohyphomycosis and hyalohyphomycosis. *J Dtsch Dermatol Ges.* 2012;10:611-21.
3. Severo CB, Oliveira Fde M, Pilar EF, Severo LC. Phaeohyphomycosis: a clinical epidemiological and diagnostic study of eighteen cases in Rio Grande do Sul, Brazil. *Mem Inst Oswaldo Cruz.* 2012;107:854-8.
4. Chen YC, Su YC, Tsai CC, Lai NS, Fan KS, Liu KC. Subcutaneous phaeohyphomycosis caused by *Exophiala jeanselmei*. *J Microbiol Immunol Infect.* 2012;27. [Epub ahead of print].
5. Isa-Isa R, García C, Isa M, Arenas R. Subcutaneous phaeohyphomycosis (mycotic cyst). *Clin Dermatol.* 2012;30:425-31.
6. Odds FC. Itraconazole-a new antifungal agent with a very broad spectrum of activity in superficial and systemic mycoses. *J Dermatol Sci.* 1993;5:65-72.

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