

CASE REPORT

ONYCHOMYCOSIS BY *Scytalidium dimidiatum*: REPORT OF TWO CASES IN SANTA CATARINA, BRAZIL

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SUMMARY

Onychomycoses constitute pathologies frequently seen in dermatological practice worldwide. Usually, they are caused by two groups of pathogenic fungi: dermatophytes and yeasts of the *Candida* genus. However, in a small fraction of the cases, the etiologic agents comprise nondermatophyte molds, belonging to several genera and species. The objective of this study was to present two cases of onychomycosis associated to the mold *Scytalidium dimidiatum* in patients residing in two cities of Santa Catarina State, Brazil. Aspects of fungal pathogenesis, as well as the epidemiological characteristics and laboratory diagnosis, are discussed.

KEYWORDS: Onychomycosis; *Scytalidium dimidiatum*; Nondermatophyte.

INTRODUCTION

Onychomycoses constitute frequent fungal infections seen in dermatological practice worldwide. The clinical picture is very variable, but that in general is characterized by nail architecture alterations, such as changes in color, thickness, onycholysis and onychodystrophy^{2,6}. In most cases they are caused by species of filamentous fungi like the dermatophytes or yeasts of the genus *Candida*^{15,18}. However, in a small fraction of the cases, the etiologic agents comprise nondermatophyte filamentous fungi, belong to several genera and species^{7,19}.

The prevalence of nondermatophyte onychomycosis varies widely, according to geographical location or the climate, but it is more frequent in hot and humid tropical areas⁷. Often they are considered simple contaminants or secondary pathogens, invading nails previously damaged by trauma or disease, although in some cases they actually act as primary pathogens⁵, as has been seen for species of the genus *Scytalidium*^{7,12}.

The objective of this report was to present two cases of onychomycosis caused by *Scytalidium dimidiatum*, in patients living in two cities of Santa Catarina, Brazil, who were attended at the Dermatology Service of University Hospital of Federal University of Santa Catarina.

CASE REPORTS

Case 1: The case one comprised a 29 year-old, male patient, white, married, residing in Florianópolis city, State of Santa Catarina. The patient presented nail alterations in the right hallux (Fig. 1) for about three years, with no previous use of antifungals. At the clinical examination he presented onycholysis and onychodystrophy, with no apparent thickening of ungueal bed. The microscopic exam of material collected from the nail revealed the presence of hyphae as well as arthroconidia. The material was cultured in Sabouraud dextrose agar slant tubes and Sabouraud dextrose agar slant tubes containing chloramphenicol and cycloheximide. The culture grew up after ten days, forming wooly brown colonies. The microscopical evaluation revealed the presence of brown hyphae and arthroconidia. The fungus was identified as *S. dimidiatum* according to morphological criteria described by SUMMERBELL (1997a)¹⁷. After the first diagnosis, a second sample was taken, the laboratory procedures were repeated and the diagnosis was confirmed. The patient then received itraconazole (400 mg/day), but he did not return for a therapeutic success evaluation.

Case 2: Case two comprised a 53 year-old, female patient, white, married, residing in the city of Capivari de Baixo, State of Santa Catarina. The patient has been treated for vitiligo for some years and during one consultation she requested a clinical exam for an itchy scaling of the left foot. At examination nail alterations in the right

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Fig. 1 - Right hallux of patient 1, displaying onychodystrophy.

hallux were also observed (Fig. 2). These alterations, which comprised hyperkeratosis and yellowish opacification, lasted for about three years. The laboratory procedures were the same ones carried in the case 1. The fungus was identified as *S. dimidiatum*. Treatment began with fluconazole 150 mg/week and topical amorolfine (Loceryl®). However, the patient did not return for a new clinical evaluation.



Fig. 2 - Right hallux of patient 2, displaying onychodystrophy and scaling of foot lateral borders.

DISCUSSION

The role of species of the genus *Scytalidium* as etiologic agents of onychomycosis has been known since 1970, when GENTLES & EVANS⁸ described what seemed to be an unusual infection of a patient's nails, feet and hands. They named the isolated fungus as *Hendersonula toluoidea*. Later, CAMPBELL & MULDER³ reported a patient with identical disease to which they named the etiologic agent *Scytalidium hyalinum*. Afterwards, genetic studies showed that the two species were phylogenetically very close to each other and the name *Scytalidium*, comprising the species *S. hyalinum* and *S. dimidiatum* were then considered the most appropriate taxonomic designation¹².

In Brazil, some reports, describing the etiology of *S. dimidiatum* on cutaneous mycosis cases have been published. COSTA *et al.*⁴ described three cases of cutaneous infections, caused by *Scytalidium lignicola*, now considered as *S. dimidiatum*. The lesions were observed in the nails and amidst the interdigital spaces of feet of two patients and in the foot

of a third patient. The patients resided in the states of Rio de Janeiro, Paraíba and Sergipe. The authors also reported that, at the microscopical examination the fungi appeared as distorted hyphae and arthroconidia, and that they were very similar to dermatophyte structures⁴.

LACAZ *et al.*¹³ reported two cases of onychomycosis, one of them in a HIV positive patient, caused by *S. dimidiatum*. They also made a taxonomic review of this species, presenting it as a synonym of *Natrassia mangiferae*.

ARAÚJO *et al.*¹ evaluated a total of 2,290 patients of several dermatological clinics in Rio de Janeiro. They found that the overall prevalence of onychomycosis was 19.35%. As expected, most of the cases were caused by both dermatophytes and *Candida*. However, in five cases the etiologic agent was *S. dimidiatum*.

No cases of *Scytalidium* infection have been reported in the Southern region of Brazil so far. In a ten-year study carried in Rio Grande do Sul State, LOPES *et al.*¹⁴ evaluated 377 patients with onychomycosis and verified that 98.5% of the cases were caused by dermatophytes and *Candida* sp. In the remaining cases the etiologic agents were *Scopulariopsis brevicaulis*, *Penicillium* sp., *Aspergillus* sp. and *Acremonium killiense*, with no report of *Scytalidium* infections¹⁴.

From the clinical view point, the lesions caused by infecting species of the genus *Scytalidium* are often very similar to those caused by dermatophytes⁵. The affected nails display dystrophy and onycholysis, usually with alterations of the distal subungueal region^{8,11}, as was also observed by us in this report. At the microscopical examination of scraped of a infected nail, the hyphae of *Scytalidium* are long, sinuous, of irregular diameter, less refractile than the dermatophyte hyphae, usually forming dilations to irregular spaces, together to the septa. Occasionally, the hyphae fragment into structures of different sizes to form arthroconidia³.

Regarding the laboratory diagnosis of *Scytalidium* infections, as in other nondermatophyte mold infections, it is always necessary to confirm if the fungus is the real etiologic agent of the onychomycosis, by the repetition of the exams with a new collected sample¹⁰. Another important aspect that should be taken in consideration during its culturing is that species belonging to this genus are sensitive to cycloheximide, and thus it grows very poorly or do not grows at all in the media routinely used for the isolation of dermatophytes in cutaneous samples¹⁰.

The treatment of *Scytalidium* infections is generally ineffective as the fungus does not responds well to the antifungals traditionally intended for onychomycosis, although infection remission after the use of itraconazole has been observed for some patients^{9,16}. However, in our case, it was not possible to assess if the therapeutic offered to patients was successful in curing the infection since they did not return for a new evaluation.

RESUMO

Onicomiose por *Scytalidium dimidiatum*: relato de dois casos em Santa Catarina, Brasil

Onicomioses se apresentam como infecções fúngicas localizadas,

muito freqüentes na prática dermatológica. Na grande maioria das vezes, são causadas por dois grupos: dermatófitos e leveduras do gênero *Candida*. Entretanto, em um pequeno percentual dos casos, os agentes etiológicos compreendem fungos filamentosos não-dermatófitos, pertencentes a vários gêneros e espécies. O objetivo deste trabalho foi o de apresentar dois casos de onicomicose associados à espécie *Scytalidium dimidiatum* em pacientes residentes em dois municípios do estado de Santa Catarina, Brasil. São discutidos aspectos relacionados a sua patogênese, epidemiologia, diagnóstico laboratorial e tratamento.

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