Dermatology Practical & Conceptual

# Black Superficial Onychomycosis Caused by *Neoscytalidium Dimidiatum*: A Clinical Overview

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## Introduction

Dematiaceous fungi cause several diseases in humans. Species identification can be a challenge, since colonies do not always grow in conventional culture media, and even when they do, identification can be impaired due to the atypical appearance, making it necessary to resort to other methods for diagnosis [1,2].

This case highlights an unusual presentation of a rare superficial onychomycosis in an elderly patient and illustrates the role of advanced diagnostic methods in identifying rare fungal pathogens.

## Case Presentation

During a routine dermatological examination, a 71-year-old Caucasian man with a history of frequent beach exposure and recreational fishing presented with a pigmented alteration on the third toenail of his left foot (Figure 1A). He had no known comorbidity or history of immunosuppressive conditions that could predispose him to fungal infections. On dermatological examination, there was an irregular superficial brownish pigmentation of the nail plate. There was no evidence of subungual hyperkeratosis and periungual inflammation, and fingernails were spared. The rest of the mucocutaneous examination was noncontributory. The patient reported occasionally rubbing the nail surface to remove the discoloration, but the pigmentation would recur within weeks. Dermoscopy revealed an asymmetric, reticulated brown pattern (Figure 1B). Based on the suspicion of superficial onychomycosis, a direct scraping was performed on the nail plate, removing all brownish material.

The collected specimen was then processed for direct mycological examination (DME) and cultured on Sabouraud and Mycosel media. DME showed septate branched brown hyphae. Culture yielded a cottony, loose, disorganized colony with a black surface and reverse, consistent with a dematiaceous fungus (Figure 2). Microculture did not reveal reproductive structures, thus preventing phenotypic characterization. To further clarify the species, MALDI-TOF mass


**Figure 1.** (A) Irregular superficial brownish pigmentation on the nail plate of the left third toe. (B) Asymmetric brownish reticular pattern observed on dermoscopy.

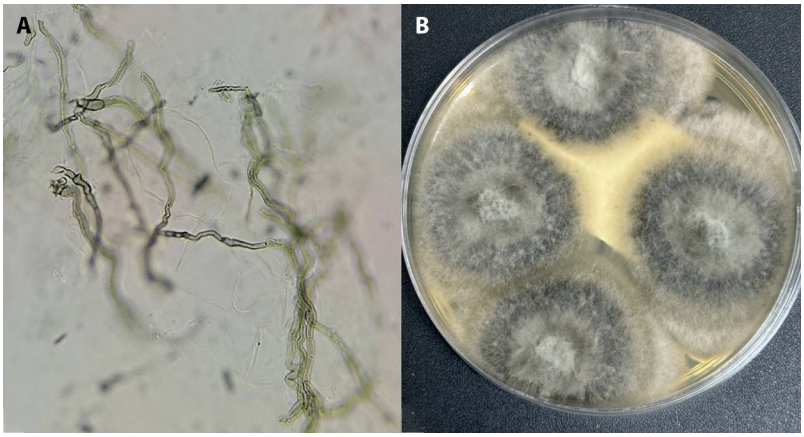


**Figure 2.** (A) Septate branched brown hyphae were observed on direct mycological examination. (B) The culture shows a cottony, loose, disorganized colony with a black surface and black reverse, characteristic of a dematiaceous fungus.

spectrometry was utilized, which identified *Neoscytalidium dimidiatum* as the causative agent.

No type of specific antifungal treatment was necessary, as mechanical removal was effective for the patient to remain free of the fungus. The patient was also advised on how to take care of local humidity and take care of closed shoes.

## Conclusion

This case illustrates an unusual presentation of superficial black onychomycosis, a form of onychomycosis rarely reported in the literature [3]. Dermoscopy helped rule out ungual melanoma, and species identification was not possible after colony growth, making it necessary to employ other methods for the correct diagnosis and management of the case. This case emphasizes the importance of dermoscopy and advanced mycological techniques, such as MALDI-TOF, in diagnosing atypical presentations of superficial onychomycosis, particularly with dematiaceous fungi like *Neoscytalidium dimidiatum*.

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