A rare case of onychomycosis in all 10 fingers of an immunocompetent patient

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Abstract

Onychomycosis, traditionally referred as a non-dermatophytic infection of the nail, is now used as a general term to denote any fungal nail infection. It is an important public health problem due to its increasing incidence and has significant clinical consequences in addition to serving as a reservoir of infection. We report a case of onychomycosis in all 10 fingers of an immunocompetent male with no co-morbid conditions caused by a non-dermatophytic fungus, Aspergillus niger. To the best of our knowledge, this is the first case of its kind to be reported.

Keywords: Aspergillus niger, onychomycosis, superficial infections

INTRODUCTION

Onychomycosis is a fungal infection of nails caused by dermatophytes, yeasts, and non-dermatophytic molds where dermatophytes account for nearly 70% of the cases.[1] It accounts for up to 50% of nail disorders[2] and 1.5-15% of patients presenting to the dermatologist.[1] Several factors have been implicated in the increase in disease incidence such as reduced peripheral circulation, diabetes, nail trauma, and poor nail hygiene. Although not life-threatening, it may have significant clinical consequences such as secondary bacterial infections, chronicity, therapeutic difficulties, and disfigurement apart from serving as a reservoir of infection.[2]

Dermatophytes are the most frequently implicated causative agents in onychomycosis (nearly 90% in toenail and at least 50% in fingernail infections). Previously regarded as contaminants, yeasts are now increasingly recognized as pathogens in fingernail infections, as are some non-dermatophytic molds.[3] Here, we report a case of onychomycosis due to Aspergillus niger. To the best of our knowledge, this is the first report of a non-dermatophytic mold infecting all 10 fingers of an immunocompetent male.

CASE REPORT

A 42-year-old male vegetable vendor by occupation, presented to the Dermatology out-patient
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Aspergillus onychomycosis is generally a distal subungual infection: It starts under the nail near the tip of the finger, where spores may have lodged or at the sides where the nail creases the skin. Once the fungus starts to grow, the infection spreads back toward the cuticle. It looks much the same as any fungal nail infection, discoloring the nail, causing it to become thick, distorted, and flaky. The fungus will not, however, spread to the surrounding skin like some other fungal causes of nail infection. Aspergillus species growing in nature often produce colorful pigments; therefore, an aspergillus nail infection may well appear greenish, black, brown, or various other shades.

It is not possible for a dermatologist to diagnose aspergillus onychomycosis just by looking at the affected nail. The proof of the ability of the organism to produce the nail infection depends on the direct demonstration of the fungus in the infected nail and its culture on artificial media. The need for meticulous examination of these preparations should be emphasized since it is quite possible that they may be overlooked in too cursory an examination.

Treatment of non-dermatophytic onychomycosis is not well standardized and can be difficult due to hardness of nail plate and location of infection between the nail bed and plate. However, aspergillus onychomycosis is shown to respond well to therapy.[4] Systemic antifungals such as itraconazole have been used successfully. The duration of therapy depends on the nails that are affected and the extent of infection. Affected fingernails typically require 3 months of therapy and toenails 6 months.[5] However, in our case, the patient was given itraconazole pulse therapy for 4 months because even though the microscopy and culture were negative after 2 months, the discoloration of the nails failed to improve indicating that there might be a persistent reservoir of infection.

Onychomycosis is a condition which may create a number of clinical and occupational complications which can significantly impair the quality of life of a patient. Thus, isolation of the causative fungi is essential in all suspected cases of onychomycosis and the type and duration of treatment varies according to the pathogen isolated. Though aspergillus species have been implicated in causation of onychomycosis, to the best of our knowledge, this is the first case of *Aspergillus niger* causing infection in all 10 fingernails in an immunocompetent patient.

### Footnotes

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**Conflict of Interest:** None declared.

### REFERENCES


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