

## Case Report

# ONYCHOMYCOSIS WITH *ASPERGILLUS FLAVUS*; A CASE REPORT FROM IRAN

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### ABSTRACT:

A 60-year-old woman who had no underlying disease was examined for fungal fingernails infection. Direct DMSO/KOH preparations from nail clippings revealed hyaline septate branching mycelium with conidiophores, phialide and conidia. Diagnosis was confirmed by cultures from samples, which repeatedly yielded several colonies of *Aspergillus flavus*.

**KEY WORDS:** Onychomycosis, *Aspergillus flavus*.

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## INTRODUCTION

Non-dermatophytic onychomycosis is a fungal infection of fingernails or toenails caused by moulds and yeasts.<sup>1</sup> Onychomycosis is an opportunistic fungal disease and is usually caused due to impaired barrier functions in healthy individuals, for example, trauma in nail. Disease has worldwide distribution and represents 1.45-17.6% of all fungal nail infection.<sup>2</sup> Onychomycosis is a chronic infection of nail plate that is characterized by brownish or greenish discoloration arising from lateral borders and erosion of the nails. Hardness, thickness and deformation of nails are the other symptoms of onychomycosis.

Published papers revealed that most saprophytic fungi isolated from onychomycosis are species of *aspergillus*, *fusarium*, *acremonium*, *penicillium* and *scopulariopsis*.<sup>3,4,5</sup> Dematiaceous hyphomycetes were also reported as etiologic agents of onychomycosis.<sup>6</sup> *Aspergillus* species are a large

group of common saprophytic moulds. *Aspergillii* are often isolated from soil, air and plant materials. This group of fungi is normally considered as common contaminants in immuno suppressed patients. *Aspergillus* species are the second most common agents of non-dermatophytic onychomycosis.<sup>2</sup>

## CASE REPORT

A 60-year-old housewife with chronic onychomycosis associated with deformation deep brown discoloration of three finger nails was referred to the medical mycology department of Ahwaz Medical School. Nail clippings were collected from the deepest part of the affected nails (Fig. 1). KOH/DMSO (dimethyl sulphoxide) solution was used for the preparation of microscopy slide from samples. Septate branching mycelium, conidiophores, phialide and conidia of *A. flavus* were detected in materials from patient (Figs. 2&3). Clinical materials were cultured on several plates contained Sabouraud's dextrose agar with chloramphenicol (SC) and incubated at 25-27°C aerobically. Several yellowish colonies yielded repeatedly after 5 days. *A. flavus* was detected by morphology of colony on SC medium and slide culture.

## DISCUSSION

Mycotic nail infections with non dermatophytes (moulds and yeasts) are referred as

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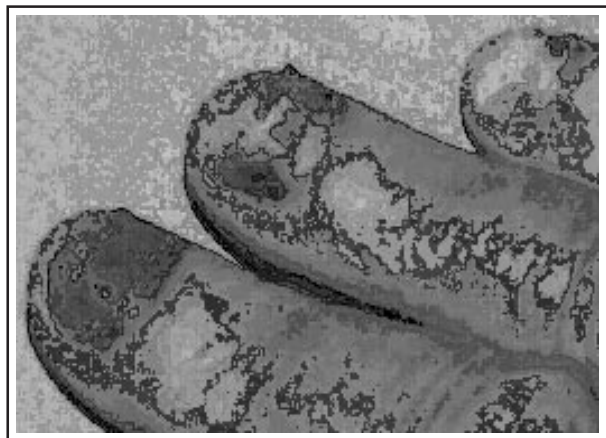


Fig-1: Onychomycosis in finger nails

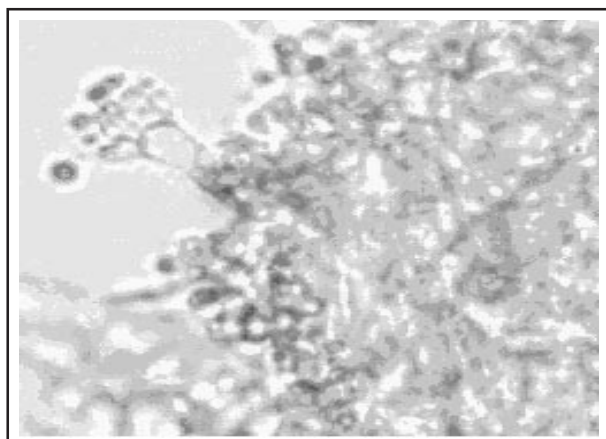


Fig-2: Septate branching mycelium, conidiophore, phialide and conidia of *A. flavus* in nail materials



Fig.-3: Conidiophore and phialide of *A. flavus* in nail materials

onychomycosis. Moulds most commonly infect the toenails whereas yeasts invade the finger-nails. The general risk factors for onychomycosis are increasing age, male gender, diabetes, nail trauma, hyperhidrosis, peripheral vas-

cular disease and poor hygiene. Onychomycosis is mainly detected in elderly people.<sup>3,7</sup> In our study patient continuously worked with plant materials. Probably nails trauma and wet work were the predisposing factors for disease. The clinical picture in onychomycosis due to *A. flavus* was distal-lateral subungual form similar to Gianni and Romano report<sup>2</sup>. Several authors have reported cases of onychomycosis due to aspergillus species in the world; however a few cases of onychomycosis with *A. flavus* have been documented from Iran.<sup>3</sup> The patient's history showed that disease firstly occurred in one nail then extended to other nails during two years.

Onychomycosis routinely diagnosed with the benefit of microscopy or culture and in many cases thus diagnosed. Direct microscopy in diagnosing onychomycosis is more important than cultures. Presence of saprophytic form of aspergillus (fruiting bodies) in clinical materials was usually seen in aspergilloma and otomycosis and is unusual in nail infection.<sup>2</sup> In our study typical form of *A. flavus* include; mycelium, conidiophore, vesicle, phialide and chain of conidia were detected (Figs 2, 3). In contrast to dermatophytes, culture of saprophytes from nails is easy. Saprophytes usually grow on mycological media without antibiotics agents during one week at ambient temperature. However both tests are necessary for providing clues about the identity of etiologic agents.

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