



A CASE OF ONYCHOMYCOSIS DUE TO *ASPERGILLUS FLAVUS* IN A HEALTHY INDIVIDUAL

Microbiology

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ABSTRACT

Onychomycosis is a common infection of nail apparatus by agents like dermatophytes, molds and yeasts. Out of all these pathogens dermatophytes alone account for majority of nail infections, followed by yeast and then molds, least cases have been attributed to mixed flora. There is increase in onychomycosis cases due to non-dermatophyte fungi. The most frequent NDF are *Aspergillus* spp, *Fusarium* spp, *Acremonium* spp and *Scopulariopsis* spp, which are having variable incidence rate as it all depends on epidemiological factors like population and geographical area etc. Here, we report a case of onychomycosis due to *Aspergillus flavus*.

KEYWORDS

INTRODUCTION:

Onychomycosis is a common infection of nail apparatus. This type of infection results when fungus penetrates into the nail plate. It accounts for approximately 40% of superficial mycosis and involves toe nail or finger nail. [1] The etiological agents of these kinds of infections are dermatophytes, non-dermatophytic moulds (NDMs) and yeasts. Out of all these pathogens dermatophytes alone account for majority of nail infections i.e 68% followed by yeast 29%, molds 3% and mixed flora 5-15%. [2] There is an increase in onychomycosis cases due to non-dermatophyte fungi (NDF). The most frequent NDF are *Aspergillus* spp, *Fusarium* spp, *Acremonium* spp and *Scopulariopsis* spp, which are having variable incidence rate which depends on epidemiological factors like population and geographical area etc. ([3,4]) The clinical presentations of NDF onychomycosis resemble that of dermatophytic onychomycosis hence making their clinical diagnosis difficult and unreliable. [5]

CASE REPORT:

A 40 year old female presented to the Dept of Microbiology, Dr. Harvansh Singh Judge Institute Of Dental Sciences, Panjab University, Sec 25, Chandigarh with a lesion on her left foot finger nail (Figure 1). The patient reported history of trauma few months back. The nail surface was rough and showed brownish black discoloration which expanded to entire nail plate. The nail had painful perionyxis without pus and was suggestive of Onychomycosis. There was no sign of surrounding skin involvement though the lesion was present for months. The patient was in overall good health. Although the nail plate was substantially intact from a structural standpoint, the patient came for nail examination as it started to pain.

Direct microscopy of the nail showed septate fungal hyphae with dichotomous branching. The primary inoculation on Sabouraud dextrose agar showed yellow to green colonies and reverse was golden to brown. (Figure 2) Direct microscopy and fungal culture was repeated three times before starting the treatment. All direct microscopic findings and culture confirmed the presence of *Aspergillus flavus*. The staining from the culture showed conidial heads, each consisting of a vesicle and radially arranged conidia. (Figure 3)

The patient was treated with both systemic and topical preparation. The pulse therapy comprised of 400mg Itraconazole daily for one week per month to be continued for four months. The topical therapy comprised of application of Amorolfine based nail enamel which was applied twice a week. The symptoms disappeared after four months of treatment and no recurrence was seen till date.

DISCUSSION:

As an etiological agent for NDMs its frequency varies from place to place. [6-8] Since NDM onychomycosis mimics clinical picture of dermatophytic onychomycosis so the diagnosis becomes very difficult and unreliable. [9] Their diagnosis requires more stringent criteria rather than that of dermatophytes. To rule out contamination, at least 3 of the criterion proposed by *Gupte et al* [10] should be satisfied, demonstration of NDM by microscopy, isolation in culture and repeated positive culture of NDM without the isolation of dermatophytes and histopathological findings. In this case repeated microscopic finding and repeat culture without the isolation of dermatophytes confirms the presence of *Aspergillus flavus*. Onychomycosis due to *Aspergillus* has been rarely reported. In conclusion this represents a rare case of *Aspergillus* onychomycosis signifying the role of this genus as an emerging important etiological agent of onychomycosis.



Figure 1: Clinical picture at presentation

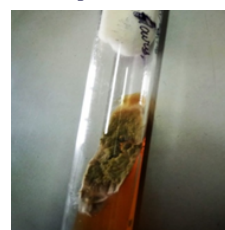


Figure 2: Colonies after two weeks of incubation at 25°C in SDA

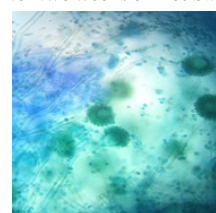


Figure 3: LCB preparation showing *Aspergillus*

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