

## Onychomycosis due to *Trichosporon mucoides*

Sir,

Onychomycosis is the fungal infection of nails caused by dermatophytes, yeasts, and non-dermatophytic molds where dermatophytes account for nearly 70% of cases.<sup>[1]</sup> Onychomycosis is one of the most common nail diseases and about 1.5% to 15% of patients presenting to dermatologists have this condition.<sup>[2]</sup> Yeasts earlier regarded as contaminants are now increasingly being recognized as pathogens in fingernails.<sup>[1]</sup> *Candida* species are the most common yeasts causing nail infection among which *Candida albicans* accounts for 70% of cases.<sup>[1,2]</sup> *Trichosporon* species have rarely been implicated as causative agents of onychomycosis. Here we report a case of onychomycosis due to *Trichosporon mucoides*. To the best of our knowledge this is the first report of onychomycosis due to *T. mucoides*.

A 31-year-old male, electrician by occupation, presented to the dermatology OPD of our hospital with the complaint of brownish discoloration of all the ten finger nails for the past 1 year.

On examination all the fingernails were brownish black in color. There was distal onycholysis in all the finger nails. Subungual hyperkeratosis was also seen in most of the nails [Figure 1].

Multiple specimens of nail scrapings and nail

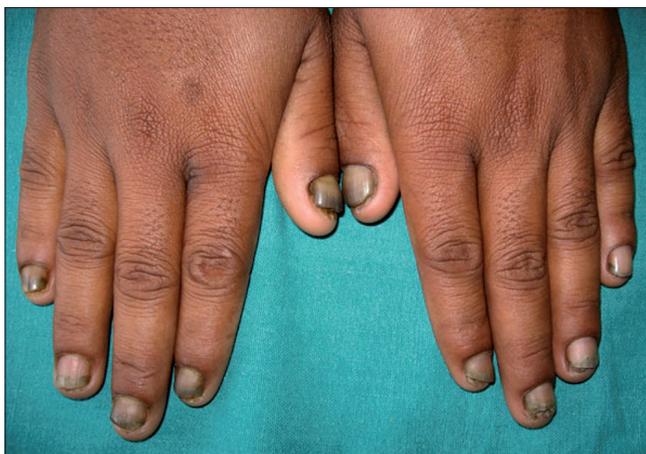
clippings from the different parts of the nail were collected after cleansing the nail area with alcohol. Direct examination of the nail clippings with 40% KOH kept overnight showed septate hyphae. The nail clippings were inoculated on two sets of Sabouraud's dextrose agar (SDA) with antibiotics and SDA with cycloheximide, which were incubated at room temperature (RT) and at 37° C. SDA with antibiotics showed white pasty, feathery colony after 2 days of incubation both at RT and 37°C [Figure 2, inset]. SDA with cycloheximide did not show any growth. Lactophenol cotton blue (LPCB) tease mount of the culture showed arthroconidia. On cornmeal agar it showed arthroconidia and blastoconidia [Figure 2]. It was urease positive. Sugar assimilation test on yeast nitrogen base agar showed that it assimilated galactitol, sorbitol, and arabinitol [Figure 3].

Based on the above findings, it was identified as *T. mucoides*.<sup>[3]</sup> Repeat culture of the nail sample yielded the same organism. The patient was started on oral fluconazole 150 mg once a week for 9 months but was lost to follow-up.

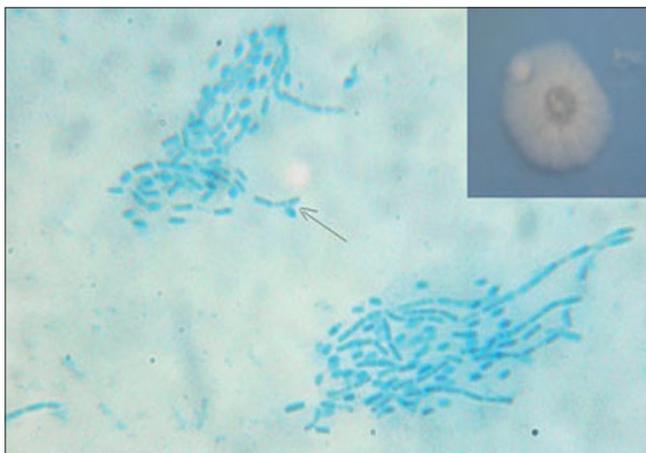
Onychomycosis due to yeast and molds constitute about 5% of cases. Yeasts due to the lack of keratinolytic activity are considered rarely as primary pathogens.<sup>[4]</sup> Factors such as aging, immunodeficiency, trauma, hyperhidrosis, socioeconomic status, climatic conditions, and paronychia are predisposing to onychomycosis.<sup>[1,4]</sup> In our case the climatic conditions causing excessive sweating and his occupation could have been the predisposing factors.

*Trichosporon* species are found in soil and water and also occurs as normal flora in human skin.<sup>[3]</sup> The role of *T. mucoides* as the causative agent was established by isolation of the same organism from a repeat nail sample. *Trichosporon* species are emerging pathogens in immunocompromised individuals. Seven species of *Trichosporon* are known to cause human infections – *T. asahii* (called as *T. beigilii* earlier) and *T. mucoides* are associated with life-threatening infections and *T. inkin*, *T. asteroides*, *T. cutaneum*, *T. ovoides* and *T. loubieri* are associated with superficial infections.<sup>[4]</sup>

*Trichosporon* species are differentiated by the sugar assimilation pattern on yeast nitrogen base agar. Galactitol, sorbitol, and arabinitol can be used to differentiate between the species. *T. asahii* being the



**Figure 1: Brownish discoloration and distal onycholysis involving all fingernails**



**Figure 2: White feathery and pasty colony of *Trichosporon mucoides* on SDA (inset). LPCB mount of the culture on cornmeal agar showing the arthroconidia and blastoconidia (arrow)**



**Figure 3: Sugar assimilation test on yeast nitrogen base agar showing the assimilation of galactitol, sorbitol, and arabinitol by *T. mucoides***

most common species assimilates only arabinitol. *T. mucoides* assimilates galactitol, sorbitol, and arabinitol. *T. cutaneum* assimilates arabinitol and sorbitol. *T. inkin* and *T. ovoides* do not assimilate any of these three sugars.<sup>[3]</sup> Hence it was identified as *T. mucoides* in our case.

*T. asahii* is the most common species causing human infections. It is known to cause white piedra and less commonly onychomycosis in an immunocompetent host. In an immunodeficient host it causes systemic infections like pneumonia, glomerulonephritis, brain abscess, and endocarditis including onychomycosis.<sup>[3]</sup> *T. mucoides* causing a disseminated infection in a transplant recipient has been described earlier.<sup>[5]</sup> To the best of our knowledge, *T. mucoides* causing nail infection has not been reported. Hence, we report this interesting case.

**Sageerabano, Malini A., Oudeacoumar P.<sup>1</sup>,  
Udayashankar C.<sup>1</sup>**

Departments of Microbiology, and <sup>2</sup>Dermatology, Aarupadai Veedu Medical College, Pondicherry, India

**Address for correspondence:** Dr. Malini A,  
Department of Microbiology, Aarupadai Veedu Medical College,  
Kirumampakkam, Pondicherry - 607 402, India.  
E-mail: drmalinirb@yahoo.co.in

#### Access this article online

Quick Response Code:



Website:

[www.ijdvil.com](http://www.ijdvil.com)

DOI:

10.4103/0378-6323.75001

#### REFERENCES

1. Kaur R, Kashyap B, Bhalla P. Onychomycosis-epidemiology, diagnosis and management. *Indian J Med Microbiol* 2008;26:108-16.
2. Geramishoar M, Zomorodian K, Emami M, Tarazoei B, Saadat F. Study and identification of the etiological agents of onychomycosis in Tehran, capital of Iran. *Iran J Public Health* 2002;31:100-4.
3. Chander J. Miscellaneous opportunistic mycosis. In: Chander J, editor. *Textbook of Medical Mycology*. 3<sup>rd</sup> ed. New Delhi: Mehta publishers; 2009. p. 388-90.
4. D'Antonio D, Romano F, Iacone A, Violante B, Fazii P, Pontieri E, et al. Onychomycosis caused by *Blastoschizomyces capitus*. *J Clin Microbiol* 1999;37:2927-30.
5. Nettles RE, Nichols LS, Bell-McGuinn K, Pipeling MR, Scheel PJ Jr, Merz WG. Successful treatment of *Trichosporon mucoides* infection with fluconazole in a heart and kidney transplant recipient. *Clin Infect Dis* 2003;36:e63-6.