

# Total Dystrophic Onychomycosis Caused by *Syncephalastrum recemosum*: A Case Report

Ramya Kumaran<sup>1</sup>, KG Rudramurthy<sup>2</sup>

<sup>1</sup>Tutor, Department of Microbiology, Karuna Medical College, Palakkad, Kerala, India, <sup>2</sup>Assistant Professor, Department of Microbiology, Karuna Medical College, Palakkad, Kerala, India

## Abstract

Onychomycosis is a common nail infection caused by two groups of pathogenic fungi, dermatophyte and yeast. However in a small portion of the cases, the etiological agents are non-dermatophyte molds, belonging to different genera and species. The present study reports a case of total dystrophic onychomycosis associated with *Syncephalastrum recemosum*, belonging to the family zygomycetes, in a 24-year-old male patient. Samples were taken and examined under potassium hydroxide mount and fungal culture was done. Growth appeared within 48 h, lactophenol cotton blue was done and identified the fungi by morphological characteristics. Identification of the causative agent is indispensable to select the proper treatment for onychomycosis.

**Keywords:** Onychomycosis, *Syncephalastrum recemosum*, Zygomycetes

## INTRODUCTION

Onychomycosis is a common fungal infection of the toe or finger nails, which is caused by dermatophytes, yeast and non-dermatophyte molds. The non-dermatophyte fungi are normally seen in soil and decayed plant debris. These are generally considered as the secondary pathogens of onychomycosis. Onychomycosis affects approximately 5% population worldwide,<sup>1</sup> but variable frequency depending on different climatic, occupational and socioeconomic conditions.

*Syncephalastrum recemosum* is a fungus belonging to the order mucorales with very low human pathogenicity. To the best of our knowledge, only few cases are reported in the medical literature. We report a case of total dystrophic onychomycosis caused by *S. recemosum*.

## CASE REPORT

A 24-year-old male patient presented with a history of nail dystrophy in the hands for the past 6 months. On

examination of the nail were yellowish brown in color and complete destruction of the nail and signs of inflammation (Figure 1). The patient is working as a building construction labor since 2012. The nail clipping and scrapings were collected and sent to the microbiology laboratory.

Direct wet mount examination of the nail sample at 40% of potassium hydroxide showed thick walled aseptate hyphae. The nail sample cultured on to sabouraud dextrose agar and incubated at 37°C for 48 h. The colony were cottony to fluffy, white to gray in colour. After 72 h of incubation, the colonies become dark gray in color (Figure 2). Lactophenol cotton blue mount showed aseptate hyphae branching sporangiospores with terminal ovoid vesicle, which bear finger like merosporangia. Based on the above morphological features, the isolate was identified as *S. recemosum*. The fruiting body of *S. recemosum* are similar to *Aspergillus* sp. But *S. recemosum*, the spores were confined within the merosporangia around the entire circumferences giving “daisy head” appearance and the hyphae were broad and aseptate (Figure 3). The patient was started on fluconazole 150 mg orally for 4 week and is under follow-up.

## DISCUSSION

Onychomycosis is caused by three types of fungi, dermatophytes cause 90% of cases, yeast causes 8% of

Access this article online



Website:  
www.ijss-sn.com

## Corresponding Author:

Dr. KG Rudramurthy, Karuna Medical College, Palakkad, Kerala, India. Phone: +91-9746804981/8105907207.  
E-mail: rudramurthy.kargool@yahoo.com



Figure 1: Dystrophic onychomycosis in right index finger



Figure 2: Fungal growth on sabouraud dextrose agar plate

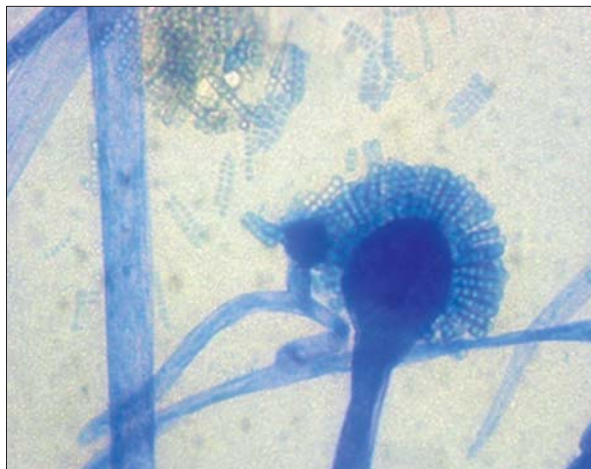


Figure 3: Lactophenol cotton blue preparation of *Syncephalastrum racemosum*

cases and non-dermatophyte molds cause 2% of cases. During the recent years, there has been an increase in the reporting of onychomycosis caused by non-dermatophyte molds and yeast. The common non-dermatophyte molds are *Scopulariopsis*, *Aspergillus*, *Acremonium*, *Fusarium* and *Alternaria* sp.<sup>2</sup> *Syncephalastrum* is a saprophytic fungi belonging to Zygomycetes with very low pathogenicity. Only few cases of onychomycosis caused by *S. racemosum* have been reported worldwide. A case of great toenail onychomycosis has been described in a 45-year-old man by Pavlovic and Bulajic<sup>3</sup> The other published case of *Syncephalastrum* are cutaneous infection,<sup>4</sup> intra-abdominal zygomycosis, successfully treated with partial surgical debridement and high dose amphotericin B lipid complex,<sup>5</sup> sino-orbital infection in chronic hepatorenal disease,<sup>6</sup> mycetoma such as lesion,<sup>7</sup> subcutaneous zygomycosis,<sup>8</sup> rhino orbital cerebral infection,<sup>9</sup> and subcutaneous infection in anterior chest wall.<sup>10</sup>

## CONCLUSION

Onychomycosis is caused by the dermatophyte and non-dermatophyte molds. *Syncephalastrum* is a rare isolate. Onychomycosis is a not life-threatening, but it can be a source of pain and discomfort. It is a disease of considerable value that can generate many psychological and occupational problems impairing patient's quality of life.

## REFERENCES

1. Murray SC, Dawber RP. Onychomycosis of toenails: Orthopaedic and podiatric considerations. *Australas J Dermatol* 2002;43:105-12.
2. Bassiri-Jahromi S, Khaksar AA. Nordermatophytic moulds as a causative agent of onychomycosis in Tehran. *Indian J Dermatol* 2010;55:140-3.
3. Pavlovic MD, Bulajic N. Great toenail onychomycosis caused by *Syncephalastrum racemosum*. *Dermatol Online J* 2006;12:7.
4. Kamalam A, Thambiah AS. Cutaneous infection by *Syncephalastrum*. *Sabouraudia* 1980;18:19-20.
5. Schlebusch S, Looke DF. Intraabdominal zygomycosis caused by *Syncephalastrum racemosum* infection successfully treated with partial surgical debridement and high-dose amphotericin B lipid complex. *J Clin Microbiol* 2005;43:5825-7.
6. Baradkar VP, Mathur M, Panda M, Kumar S. Sino- orbital infection by *Syncephalastrum racemosum* in chronic hepatorenal disease. *J Oral Maxillofac Pathol* 2008;12:45-7.
7. Amatya R, Khanal B, Rijal A. *Syncephalastrum* species producing mycetoma-like lesions. *Indian J Dermatol Venereol Leprol* 2010;76:284-6.
8. Ramesh V, Ramam M, Capoor MR, Sugandhan S, Dhawan J, Khanna G. Subcutaneous zygomycosis: Report of 10 cases from two institutions in North India. *J Eur Acad Dermatol Venereol* 2010;24:1220-5.
9. Mathuram AJ, Mohanraj P, Mathews MS. Rhino-orbital-cerebral infection by *Syncephalastrum racemosum*. *J Assoc Physicians India* 2013;61:339-40.
10. Mangaraj S, Sethy G, Patro MK, Padhi S. A rare case of subcutaneous mucormycosis due to *Syncephalastrum racemosum*: Case report and review of literature. *Indian J Med Microbiol* 2014;32:448-51.

**How to cite this article:** Kumaran R, Rudramurthy KG. Total dystrophic onychomycosis caused by *Syncephalastrum racemosum*: A case report. *Int J Sci Stud* 2014;2(9):115-116.

**Source of Support:** Nil, **Conflict of Interest:** None declared