

## SHORT COMMUNICATION

# Eumycetoma in a gardener due to *Curvularia lunata*

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In this report a case of fungal mycetoma was reported caused due to dematiaceous fungus, *Curvularia lunata*, in a 45 year old male gardener with no underlying disease, who had received injury on his right foot with some contaminated wooden splinter about three years before. Clinical examination of the patient revealed swelling of the right foot, multiplenodules and sinuses which discharged black coloured granules. The diagnosis was confirmed by direct microscopy of the granules and biopsy tissues in 10 % solution of potassium hydroxide (KOH), and by isolation of *Curvularia lunata* from the clinical materials in pure growth on Sabouraud dextrose agar with chloramphenicol at 25°C. The patient responded well with itraconazole therapy. Clinical, mycological, and chemotherapeutic observations conclusively established the diagnosis of mycetoma due to *Curvularia lunata* in an immunocompetent person who received traumatic injury when working in the garden. It is emphasized that person with trauma on the skin should be prudently investigated for subcutaneous mycosis, and also seek immediate medical advice to mitigate the morbidity.

**Key words:** *Curvularia lunata*, Eumycetoma, gardener, Itraconazole, Narayan stain, trauma

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## INTRODUCTION

Mycetoma, caused by fungi and actinomycetes, is a chronic, suppurative, granulomatous infectious disease, and is mostly encountered in the tropical and sub-tropical regions of Africa India, Central and South America ( Mahgoub,1973; Talwar and Sehgal,1979; Hay,1998; Pal, 2007). It is considered as an occupational disease of agricultural worker, brick manufacturer, gardener, farm labourers, and others who have frequent direct contact with the soil.(Pal,2007). Mycetoma is sporadic in nature and

caused prolonged morbidity due to diagnostic delay. Eumycetoma affects mainly the limbs, sometimes the head, chest and abdominal walls (Rippon, 1988).The infection is rarely seen in children. However, the adults males between 20 to 40 years are most commonly affected. The disease is more common in rural farming community than people living in urban areas (Pal,2007). The source of infection is exogenous and the organisms enter the subcutaneous tissues usually through penetrating injury due to fungal contaminated objects, and most patients usually give history of traumatic injury. Mycetoma is prevalent in India, and sporadic cases have been reported from many parts of the

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country (Talwar and Sehgal,1979; Pankajlakshmi and Taralakshmi,1984; Ambekar *et al.*,1986; Garg *et al.*,2008). The common etiological agents of eumycetoma described from different regions are *Madurella mycetomatis*,*M.grisea*,*Aspergillus*, *Acrimonium* and *Fusarium* (Rippon,1988; Pal,2007). Other fungi such as *Curvularia lunata* is rarely encountered as cause of eumycetoma. Currently, no vaccine is available to immunize the susceptible population in endemic regions. Early diagnosis and therapy with antifungal drug is imperative as advance cases are difficult to treat, and may require amputation. As trauma is the prime predisposing factor, persons with high risks in endemic areas must wear protecting clothing, and should not walk bare foot (Pal,2007). The disease is rarely encountered in animals (Pal, 2007). The paucity of information about eumycetoma from Gujarat prompted us to put on record as case of mycetoma pedis due to *Curvularia lunata* , a rare fungus, in an immunocompetent patient, who was occupationally exposed to the soil.

#### MATERIALS AND METHODS

On physical examination, the patient showed non-tender, gross swelling of the right foot, multiple nodules and sinuses, which discharged black coloured granules. The skin over the entire foot was thickened and hyperpigmented. There was no enlargement of the regional lymph nodes. The patient was immunocompetent as laboratory examination for HIV, tuberculosis, and diabetes mellitus was noncommittal. Few black granules and biopsied tissues collected from the patients were subjected to direct microscopic examination in 10 % potassium hydroxide solution, and also cultured on to duplicate slants of Sabouraud dextrose agar (Pal, 2007).The inoculated media were incubated at 25<sup>0</sup>C, and examined daily for fungal growth. Microscopic examination of the isolate was done in Narayan stain, which was developed by Pal (Pal, 2004).The patient was prescribed oral therapy with itraconazole, 200 mg tablet, two times daily for 8 weeks.

#### RESULTS AND DISCUSSION

The direct microscopy of black granules in 10 % solution of potassium hydroxide (KOH) revealed brown coloured, septate hyphae morphologically resembling as dematiaceous fungi, and by isolation of *Curvularia lunata* from the clinical material

in pure growth On Sabouraud dextrose agar with chloramphenicol, pure, black coloured colonies with white raised hyphae were isolated at 25<sup>0</sup>C. The detailed morphology of the isolate in "Narayan stain" showed unbranched, erect, septate, brown coloured conidiophores along with smooth walled brown coloured conidia (four celled with three septa).The isolate was identified as *Curvularia lunata* ( Pal, 2007).The patient who was put on itraconazole tablet (200 mg twice daily) for two months showed good clinical response. The drug was well tolerated, and no side effects were noticed during the period of treatment.

A plethora of fungi are implicated in the etiology of eumycetoma (Pal, 2007).These fungi are widely prevalent in saprobic environment, and are recovered from a diverse types of environmental materials including soils of many countries of the world including India (Pal, 2007).The disease is mainly encountered in Africa, India, and South America. Majority of patients with eumycetoma have narrated the history of traumatic injury. There are 40 known species of *Cuvularia*, and the most commonly recognized species in humans is *C.lunata* followed by *C.geniculata* (Moody,2012). *C.lunata* can cause keratitis, sinusitis, phaeohyphomycosis besides mycetoma (Pal and Lee,1995; Hay,1998; Pal,2007; Janki *et al.* , 1999).The fungus has a predilection for the extremities, often following traumatic inoculation (Moody,2012). The clinical signs and history, identification of fungus by direct microscopy and cultural isolation, and good response with antifungal drug therapy clearly indicated that our patient was suffering with eumycetoma caused by *C.lunata*. As the fungus is present in Indian soil, it is very likely that our patient would have acquired the infection following injury at the work place. However, we did not conduct retrospective epidemiology to establish the source of infection. The disease should be differentiated from nocardiosis, chromoblatomycosis, coccidioidomycosis, sporotrichosis, tuberculosis, blastomycosis, botryomycosis, syphilis and neoplasm. It is emphasized that early diagnosis, and proper treatment is highly imperative to obviate the need for surgical intervention. This seems to be the first record of eumycetoma pedis due to *C.lunata* from this region of India. It is recommended that the etiologic role of *C.lunata*, an opportunistic fungus, should be elucidated in various clinical disorders of humans as well as animals.

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