



# Fusarium osteomyelitis of the foot in non-immunocompromised patient: A case report

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The Foot and Ankle Online Journal 8 (3): 3

Fusarium is a large genus of filamentous fungi, part of a group often referred to as hyphomycetes, widely distributed in soil and associated with plants. Most species are harmless saprobes, and are relatively abundant members of the soil microbial community. Some species produce mycotoxins in cereal crops that can affect human and animal health if they enter the food chain. Some species may cause a range of opportunistic infections in humans. Human infections are usually precipitated by local / systemic predisposing factors and disseminated infection is associated with impaired immune responses. Fusarium causes serious morbidity and mortality and may mimic Aspergillosis. Here we report a case of fusarium osteomyelitis in a 40 year old immunocompetent male patient, who is agricultural laborer. In this case, patient is suffering from Fusarium osteomyelitis of the foot.

**Keywords** Fusarium, osteomyelitis, non-immunocompromised, Sabouraud's dextrose agar

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Foot infections are among the most common and serious in immunocompromised patients. Osteomyelitis involving the foot is more common in immunocompromised patients such as patients with diabetes mellitus. Fusarium is known to cause skin infections, infections of bone, endophthalmitis and keratitis [1,2]. The main route of acquisition of the pathogen is through direct inoculation / inhalation of spores. Here, we present a case of fusarium osteomyelitis of the foot in a young patient without any comorbid conditions or immunocompromise.

## CASE REPORT

A 40-year-old male patient presented with multiple discharging sinuses of the right foot of one year duration. There is no history of trauma. The patient had a history of pain and swelling which progressed gradually. There were multiple discharging sinuses over the plantar and dorsal aspects of the foot.

Patient was febrile with white granular discharge from the foot. On examination, the foot was swollen with multiple sinuses. There was induration of skin and subcutaneous tissue. There was obliteration of the normal curvature of the foot (Figure 1). The discharged granules were sent to microbiology department for diagnosis confirmation. Plain radiograph of the foot showed multiple lytic lesions of all tarsal bones (Figure 2). There was no evidence of any sclerosis and all the tarsal bones appear coalescent. He had raised ESR of 45mm/1st hour, with leukocytosis. His viral screening and other blood parameters were normal. The patient was kept on antibiotic therapy for 2 weeks for which patient did not respond.

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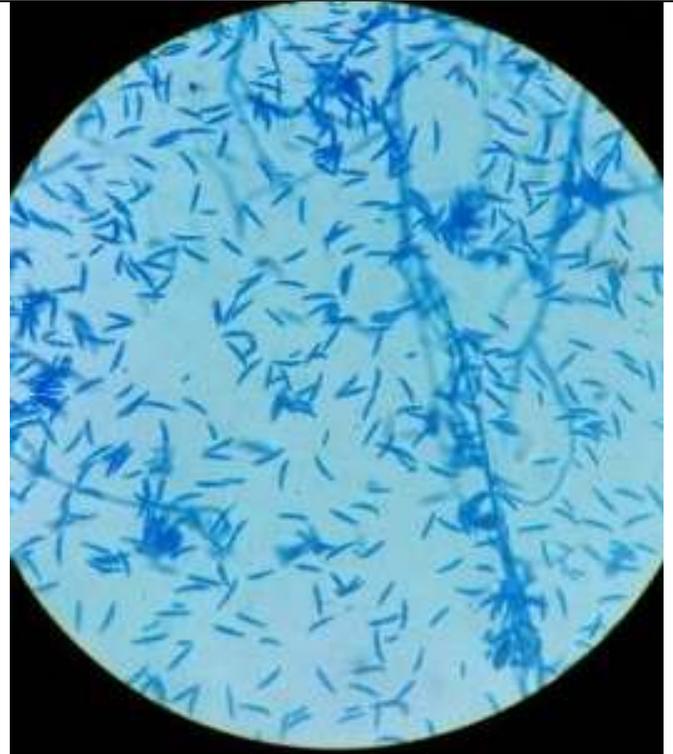


**Figure 1** Swollen Foot with multiple discharging sinuses.



**Figure 2** Radiograph showing the gross destruction of tarsal and metatarsal bones.

In India the most common causes of multiple discharging sinuses over foot are mycetoma of foot and tuberculous osteomyelitis. Tuberculosis infection was ruled out as his chest radiographs were normal and his sputum negative for Acid fast bacilli, no bacilli grew on Lowenstein-Jensen medium. The discharging granules were sent for microbiological examination. The fungal culture on Sabouraud's dextrose agar grew a mold with characteristic pink pigment, which on microscopy had septate macroconidia specific for fusarium genus of mold (Figure 3). With this we had made a diagnosis of fusarium osteomyelitis of the tarsal bones which is a rare entity in non-immunocompromised patients.



**Figure 3** Microscopic Picture of Fusarium, note macroconidia of Fusarium in LPCB mount (Lacto Phenol Cotton Blue Stain).

The patient was started on oral Itraconazole 200mg twice daily, After 1 week of Itraconazole therapy, local debridement was done. Further Itraconazole was continued for 12 weeks. Our patient responded well on local debridement and oral Itraconazole therapy. No resection of bones was planned as the patient is able to walk in spite of massive bone destruction.

## DISCUSSION

Fusarium species are filamentous fungi present as saprophytes in soil and animals. They can cause two forms of infections, localized and disseminated. Localized infections such as cutaneous infections, onychomycosis, osteomyelitis, and septic arthritis. Local infections are characterized by massive local tissue damage. Disseminated fusarium infections occur in immunocompromised patients and the main portals of entry are respiratory tract, sinuses, and skin [3,4]. Fusarium osteomyelitis can be part of disseminated form in immunocompromised patients [4,5].

Fusarium species have been reported to cause cutaneous infections in patients with diabetes mellitus and renal failure [6,7,8]. Fusarium osteomyelitis has been reported in healthy individuals in whom the predisposing factors were trauma and surgery. Nuovo et al reported a case of fusarium osteomyelitis in a 34 year old healthy male who suffered multiple lower extremities fracture during an automobile accident [9]. Bourguignon et al reported a case of fusarium osteomyelitis in a 7 year old healthy child after a puncture of his right knee with a thorn [10]. Finally, Page et al reported a case of fusarium toe osteomyelitis in a 56 year old black female after surgical resection of the head of proximal phalanx [11].

Our patient was a healthy male without any history of trauma. The diagnosis of fusarium infection may be made on histopathology, fungal culture, blood culture, or serology and doesn't need any special investigations.

## CONCLUSION

The fusarium species which have emerged as human infectious agents emphasize the need for correct etiological identification allowing for appropriate treatment. Though, fusarium species is a plant pathogen, it is an opportunistic infection in immunocompromised patients. Here we present this case because of its rarity in a young healthy patient. As such the fusarium species is uncommon even in immunocompromised patients and much rarer or not reported in the literature.

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