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Mucormycosis in an Open Medial Malleolus Fracture: A Case Report

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ABSTRACT

Mucorales fungi of Zygomycetes class are found ubiquitously in the environment. Mucormycosis is uncommon and typically associated with patients who are diabetic or otherwise immunocompromised. Cutaneous mucormycosis in healthy patients is frequently the result of trauma and occurs via direct inoculation in to the traumatic wound. These fungal infections were associated with substantial morbidity and mortality. We report a case of 35 year old male patient presented to the casualty after sustaining machinery injury to the left ankle. Swab from the wound site was taken and processed for fungal isolation and identification done as per standard guidelines in Microbiology lab at Andhra Medical College. KOH mount shows broad aseptate hyaline hyphae. Culture on Sabouraud's dextrose agar (SDA) agar showed cottony woolly colonies. Lactophenol Cotton Blue (LPCB) mount of colonies revealed broad aseptate hyaline hyphae with sporangiophores and sporangium without rhizoids. *Mucor spp.* was isolated and was correlated with clinical findings. The patient was kept on systemic anti-fungals and wound debridement with K-wire fixation and tendon repair was done. This case illustrated the need of timely microbiological diagnosis and the treatment with ideal anti-fungal agents that have substantial activity against cutaneous mucormycosis, may prove useful for preventing overwhelming infections.

Keywords: medial malleolus; fracture; cutaneous mucormycosis; KOH mount; aseptate hyphae

INTRODUCTION

Mucorales fungi of the zygomycetes class are ubiquitous in nature and frequently associated with patients who are diabetic or otherwise immunocompromised. In healthy patients, cutaneous mucormycosis frequently results from trauma and is brought on by the direct inoculation of fungi into the site of the trauma. These fungal infections were associated with substantial morbidity and mortality.

Mortality due to these infections can be high due to delayed diagnosis from a subtle clinical presentation and spread of infection by angioinvasion. Early recognition and prompt treatment is critical for survival. We describe a case of cutaneous mucormycosis in a trauma patient who was previously healthy and was being treated at a tertiary care hospital. (1)

CASE REPORT

A 35 year old male presented to Emergency Room after sustaining machinery injury to Left ankle. Laceration of 7*2*2 cm present over left ankle anteriorly extending from medial malleolus to lateral malleolus. Cut ends of Extensor digitorum longus, Extensor

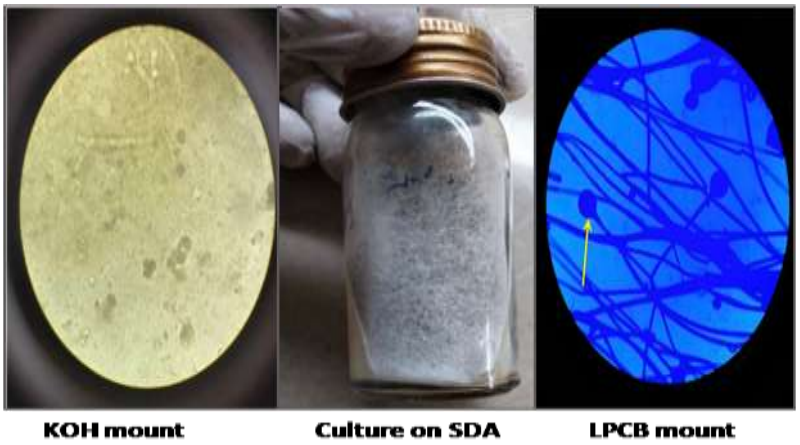
hallucis longus and Tibialis anterior tendons were noted. Provisionally diagnosed as Grade III B Left Medial malleolus fracture. X ray of left ankle AP and Lateral views showed Left Medial Malleolus fracture.

Initial treatment: Debridement and K wire fixation with Tendon repair was done on the day of presentation. Patient was kept on broad spectrum IV antibiotics. (Figure 1)

Figure 1 showing Lacerated wound, X-ray (AP & Lateral view) of medial malleolus fracture and K-wire fixation of the fracture

Investigations: Swab from wound site was taken and was processed for gram stain, KOH mount and fungal culture and sensitivity at Microbiology lab, Andhra Medical College. Direct microscopy with 10% KOH mount showed broad aseptate hyaline hyphae with wide angle branching. Culture on Sabouraud dextrose agar (SDA) at 25^0 c showed cottony woolly colonies with tube filling growth. LPCB (Lactophenol cotton blue) mount of colonies revealed broad aseptate hyaline hyphae from which sporangiophore arises and then ending at sporangium which contains numerous sporangiospores. Rhizoids are absent. From the culture and microscopic findings, the organism isolated was identified as Mucor species. (Figure 2)

Figure 2 showing KOH mount, Culture on SDA and LPCB MOUNT



Treatment: In view of angioinvasive properties of Zygomycetes, after checking renal parameters patient was started on Inj. Liposomal Amphotericin B 1mg/kg intravenously for 4 days and later converted to Tablet Posaconazole 600mg BD for 6 weeks.

Outcome and Follow up: Patient had significant clinical improvement and discharged in stable condition and advised for further follow up. At 3 months follow up wound healed completely (Figure 3).

Figure 3 showing healed wound after initiation of antifungal therapy

CONCLUSION

Primary cutaneous mycosis is an infection that is becoming more common. Microbiological culture and sensitivity are required for diagnosis confirmation. The key to effective management is early detection, prompt debridement, and antifungal treatment. The treatment of our patient highlights the significance of early clinical presentation recognition, microbiological confirmation, prompt antifungal therapy initiation, and forceful wound debridement.

Declaration by Author:

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Conflict of Interest: The authors declare no conflict of interest.

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