Case Report

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Successful surgical management of primary abdominal wall mucormycosis in an immunocompetent patient

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ABSTRACT

Primary abdominal wall mucormycosis rarely occur in immunocompetent, non-diabetic patients but may affectin patients with traumatic injury with contaminated wounds and patients underlying malignancies usually infiltrating into skin. Herein we are reporting a case of primary cutaneous mucormycosis in a 17-year-old male without immunodeficiency or any comorbidity. He was managed with multiple debridement of the wound and intravenous amphotericin B therapy with cumulative dose of 2000 mg of liposomal amphotericin B followed by split skin grafting. We would like to emphasize the importance of high index of suspicionof fungal sepsis and early start of antifungal therapy in this condition can reduce high rate of mortality and management of large wound with split skin grafting in same setting to avoid morbidity.

Keywords: Primary cutaneous mucormycosis, Immunocompetent, Abdominal wall, Skin grafting

INTRODUCTION

Mucormycosis is a rare, aggressive, opportunistic infection. It is caused by fungi in the class of Phycomycetes, first described by Paltaufin 1885. Orbitorhinocerebral mucormycosisis most common type. It is generally occurring in conjunction with sinus or nasal involvement usually in immunocompromised patients. Rarely it can occur in immunocompetent patients without any comorbidities. We report an extremely rare case of primary mucormycosis of anterior abdominal wall inan immunocompetent patient.

CASE REPORT

17-year male presented to emergency with complaint of blackish discoloration of skin with discharge over abdominal wall for 15 days associated with pain and fever followingspider bite over anterior abdominal wall. He had no history of diabetes, drug abuse or weight loss. His fasting blood sugar and postprandial blood sugar was 109 mg/dl and 126 mg/dl respectively and glycosylated haemoglobin (HbA1c), 5.6% were normal and rest of investigation including HIV status by ELISA for HIV (1 and 2), HIV group O antibodies and HIV-1 Antigen (p24) all were negative. He was clinically evaluated and hemodynamically stabilized. Extensive debridement of anterior abdominal wall was done. Intraoperative tissue was sent for culture and sent for biopsy. Broad spectrum antibiotics and injection liposomal amphotericin 150mg/day started with clinical suspicion of fungal infection. Later tissue culture came out as mucormycosis. His wound again had spreading infection for which he requires repeated debridement. His condition and wound was improved then he underwent split skin grafting with successful uptake of graft (Figure 1) and discharged.

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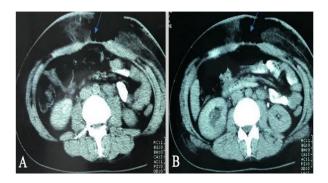


Figure 1: Pre op CT SCAN-defect in anterior abdominal wall. Arrow marks showing (A). Subcutaneous plane air foci present. (B). Abdominal wall thickness present.



Figure 2: (A). Preop wound (B) After debridement (C) Split skin graft of wound.

DISCUSSION

Mucormycosis is a rare but aggressive opportunistic infection caused by zygomycetes.3 Orbitorhinocerebral mucormycosis is most common type and involves sinuses and nose. Necrotizing lesions of the anterior abdominal wall are exceedingly rarecondition which mainly caused by Mucor or Rhizopus genera. It is a mixed suppurative and necrotising inflammatory reaction occurring in the dermis and subcutaneous tissue and the fungi also invades the lumen of blood vessels which cause to thrombosis through inflammatory occlusion and ischemia of involved tissue. Primary cutaneous mucormycosis is commonly seen in immunocompromised patients and diabetes, underlying malignancy and trauma patients are at increased risk. It is a rare condition to occur immunocompetent patients.⁴ Usually primary necrotising zygomycosis is caused by the traumatic implantation of fungal elements through the skin, especially in patients with extensive burns, diabetes, or immunocompromised state and this also reported to occur at insulin injection sites, spider bites, entry sites of intravenous or peritoneal catheters or operative wound.^{5,6} These necrotizing lesions which is occurred by mucor requires multiple times of debridement and high index of suspicion for invasive fungus to early start of antifungal therapy. The successful management of mucor infection requires an early diagnosis and treatment of any predisposing factors or underlying disease. Aggressive debridement and antifungal therapy (amphotericin-B being the drug of choice) are main stay of treatment.⁷ Combination of antifungal therapy intravenous amphotericin and topical nystatin with granulocyte macrophage-colony stimulating factor and hyperbaric oxygen have been used in the management of rhinocerebral and disseminated mucormycosis.8 Posaconazole is new recommended drug of choice.

In our index case this condition was occurred inanimmunocompetent young male, which is a rare condition to appear. We initially thought that it was necrotizing fasciitis but in view of intraoperative finding we had high suspicion of fungal infection for that we empirically started amphotericin B and given 2000 mg cumulative dose which is double than usual dose and patient had good outcome and considering very high morbidity in view of significantly large wound we did split skin grafting in same setting which showed very good uptake.

CONCLUSION

In a case of soft tissue infection at unusual location always keeps high index of suspicion for invasive fungal infection and after debridement should start broad spectrum antifungal like amphotericin B empirically and give cumulative dose double (2000 mg) than regular dose and once patient sepsis free skin grafting performed in same setting to avoid morbidity.

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