In the name of God

Shiraz E-Medical Journal
Vol. 8, No. 4, October 2007

http://semj.sums.ac.ir/vol8/oct2007/mucormycosis.htm

Cutaneous Mucormycosis in a Renal Transplanted Man, Case Report and Review of Literature.

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Received for Publication: April 12, 2007, Accepted for Publication: August 2, 2007.

Abstract:

Mucoromycosis is common term used to different clinical manifestation caused by fungi of order Mucorales. Almost always aggressive forms of infection manifest in immunocompromised hosts and several organs can be infected. We report the case of an immunocompromised patient with an aggressively progressing, painful non-traumatic ulceration and poorly responsive to standard treatment.

Key Words: Mucoromycosis, Immunocompromised.

Introduction:

Mucoromycosis is common term used to different clinical manifestation caused by fungi of order Mucorales. Several different species have been implicated as etiologic agents of similar clinical syndromes. Almost always aggressive forms of infection manifest in immunocompromised hosts and several organs such as rhinocerebral, pulmonary, Cutaneous, gastrointestinal and central nervous system involved in this infection. We report the case of an immunocompromised patient with an aggressively progressing, painful non-traumatic ulceration, poorly responsive to standard treatment.

Case Report:

A 66-year-old man, with a 2 month history of immunosuppressive treatment for renal transplantation, was noted to have an ulcer on the left anterior surface of chest wall since 1 month ago. The patient underwent renal transplantation 2 month ago due to end stage diabetic nephropathy and during this period he had poor control of blood sugar. 1 month after renal transplantation he developed erythematous skin lesions over chest wall that after some days these lesions became purulent and patient became febrile. The patient was referred to our institute on postoperative day 30 with signs and symptoms of fever and spreading cellulites of the lateral chest wall (Figure 1). At the time of admission, he was noted to be dehydrated, with a pulse rate of 102/min. He had an anxious look and was restless. Edema and swelling of the left chest wall accompanied by purulent discharge from small orifice were noticed. Examination of chest wall revealed collection of puss under subcutaneous area which drainage was increased by applying pressure. At the time of admission, he was on oral prednisolon but had received multiple immunosuppressive agents over past 2 months, such as cyclosporine and mycophenolate.

Broad-spectrum antibiotic coverage consisting of vancomycin, gentamicin, and metronidazole, active against both aerobic and anaerobic bacteria, was started. Culture from skin discharge demonstrated klebsiella pneumonia which was showed to be sensitive to the administrated medications by antiobiogram. Regardless of antibiotic therapy fever of patient continued and drainage didn't stopped, and soa clinical diagnosis of fasciitis and abscess formation of the left chest wall region was made. The necrotic process was found to be spreading rapidly and extensively involving other parts of chest wall. An emergency debridement was carried out (figure-2). The excised tissue was submitted for histopathologic and microbiologic evaluation. Histopathology of the tissue, received later, showed many areas of necrosis and inflammation with randomly branched, broad nonseptate hyphae (Fig. 3). Necrotizing vasculitis involving arteries and veins was also seen. Morphological features were reported to be characteristic of zygomycosis.

In view of the histopathology findings described above and considering the poor response to antibiotic therapy, a high dose of amphotericin B (1 mg/kg) was added to the treatment regimen. This

was continued over a 4-week period and, with surgical debridement of necrotic tissue, resulted in a dramatic clinical improvement.

Figure 1

Figure 2

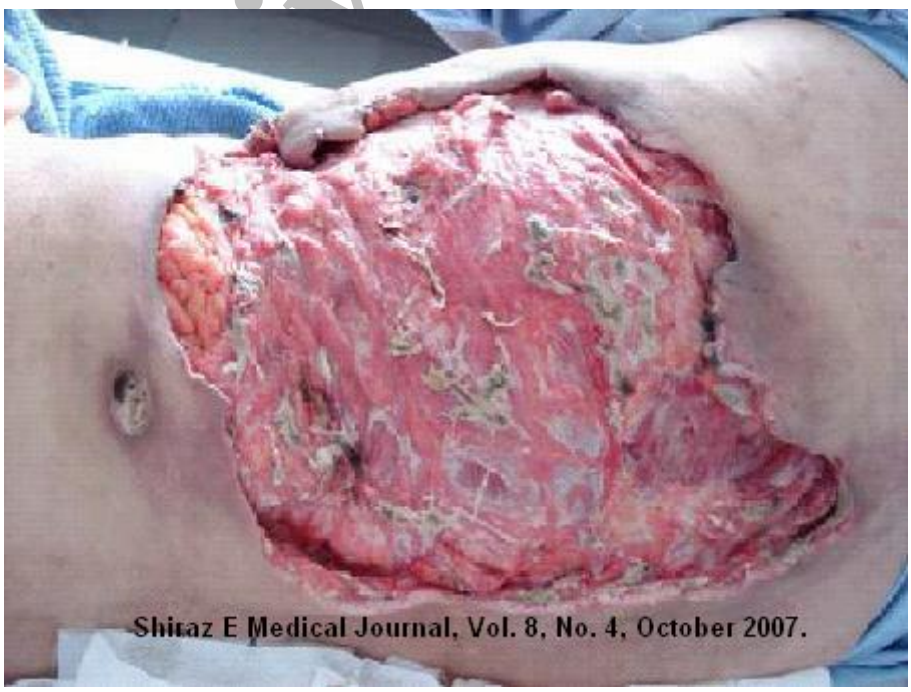

Figure 3

Discussion:

Mucor mycosis is a saprophytic opportunistic fungus belonging to the family zygomycetes. The three most important members are rhizopus, rhizomucor and cunnighamella [(1)]. They produce a deep-seated infection, usually affecting the dermis and subcutis, although a report of epidermal invasion was noted in a patient with severely disseminated disease. The mucor species invade the walls of blood vessels proliferating to cause thrombosis and subsequent infarction of the vessel involved [(1)]. Thus resulting in local tissue destruction.

Infection primarily affects the immunocompromised patient, the poorly controlled diabetic, and patients with iron-overload states and extensive burns. The use of broad-spectrum antibiotics has also been associated with an increased risk of mucormycosis [(2)]. Mucormycosis has been reported occasionally in immunocompetent individuals, usually following trauma.[(3,4)].

In present case, patient suffer from poorly controlled diabetes mellitus and immunosupression due to recent kidney transplantation that both of them predispose him to acquaint of mucoromycosis.

A skin biopsy of new ulcerative or plaque-like lesions should be obtained in immunocompromised patients. Specimens should be submitted for culture and histological examination. Diagnosis is dependent on demonstrating the organism in the tissue of a biopsy specimen. Typically, the mucorales appear as broad, nonseptate hyphae with branches occurring at right angles. In our patient, we found same pathologic changes in debrided skin. Wound cultures are inadequate and should not be relied for a false sense of security [(5)]. Blood cultures are

rarely useful, so because of the infrequent and potentially fatal nature of the disease, a high index of suspicion and a low threshold for wound biopsy must be maintained.

The hallmarks of treatment are early diagnosis, systemic antifungal therapy, and aggressive surgical debridement [6]. Control of the underlying disease is also essential. The antifungal agent of choice is amphotericin B, which is administered until disease progression is halted. The minimum dose of amphotericin B is 1 mg/kg following a 1.0 mg test dose [7]. Liposomal formulations of amphotericin B may allow for more aggressive medical therapy and have shown an improvement in outcome [8].

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