Onychomycosis due to Fusarium oxysporum

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Citation

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Abstract

Fusarium species which are well known as plant pathogens and soil saprophytes have a worldwide distribution. Several species of Fusarium have reported to cause keratomycoses, mycetoma, and onychomycosis. Among the several species, F.oxysporum has a tendency to produce chronic nail infections[1]. The special nature of F.oxysporum is documented with involvement of big toe nail following a traumatic injury. Here we document a typical isolate of F.oxysporum in an immunocompetent healthy young man.

INTRODUCTION

Fungal infections of the nail cause chronic destruction and disfiguration apart from cosmetic problems. Several Dermatophytes are commonly isolated. With advances in Mycology specific identification of genus and species will make the difference in optimal use of antifungal therapy. On few occasions Fusarium species may cause cutaneous hyalohyphomycoses that may involve the cornea, skin and nail. But F.oxysporum has a greater affinity to produce Onychomycosis usually damaging the big toe nail, after a traumatic injury[2]. The advances in the field of mycology help in the identification of the isolates to the genus and species level that will make difference in the selection of antifungal agents for therapy. Fusarium species are susceptible to Imidazole but not to Flucytosine[1].

CASE HISTORY

A healthy male aged 36 years presented with deformity and discoloration of big toe nail since last eight months at Jubilee Mission Medical College and RI, Thrissur. The past history revealed that had he hurt his big toe after being hit by a cricket ball about 1 ½ years back. The physical examination revealed a discolored and distorted terminal part of big toe nail, with prominent milky lesion. Since we were not able to cut the nail tip we had scraped the terminal part of the nail and obtained a soft, cheesy white material. In the direct microscopic examination of a 10% KOH mount, there were numerous hyaline septate hyphae. By culturing on Sabourauds Dextrose agar at room temperature growth appeared in 5 days. Colonies were fluffy, initially white, later turned to light pink. The reverse side of the agar had a salmon pink pigmentation. Microscopic examination of a Lacto phenol cotton blue mount had shown septate hyphae with abundant macro conidia and few single celled micro conidia. Macro conidia were slightly sickle shaped and thin walled with an apical cell and foot shaped basal cells, and the isolate was morphologically characterized as F.oxysporum[2,3].

DISCUSSION

F. oxysporum, a known plant pathogen exists in nature and encroaches on humans and manifest as Onychomycosis. The typical picture of Onychomycosis by this nondermatophytic mould is a ‘white superficial Onychomycosis’ which usually affects the great toe nail with the pathology occurring after trauma[5]. Only few cases of fingernail infections by this organism have been described in the literature. It is important to identify the nondermatophytic moulds as they are resistant to the common antifungals. Patients with Fusarium Onychomycosis have been cured following therapy with Itraconazole, Terbinafine, Ciclopirox, Olamine lacquer or topical antifungal agent. In other instances nail avulsion plus antifungal therapy has been successful[6]. At present several Fusarium species have been increasingly reported causing colonization and localized infections[1]. Infections also been reported in cancer patients undergoing chemotherapy or bone marrow transplantation causing Fusariosis apart from Onychomycosis. Other Fusarium species reported from human infections include F. solani and F.moniliforme. But F.chladosporum and F. roseum have been reported rarely[1]. Fusarium causes serious morbidity and

mortality, and may mimic Aspergillosis. Fusarium and Aspergillus are similar not only in tissue morphology but in their propensity for vascular invasion which cause thrombosis and tissue necrosis[4].

The studies on species identification are gaining importance as some Fusarium species, are causing infections in immunocompromised, particularly those with hematopoietic malignancies. Most patients with disseminated Fusariosis are neutropenic[1]. Flucytosine has the potential for delaying return of bone marrow function which is its major limitation[1].

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