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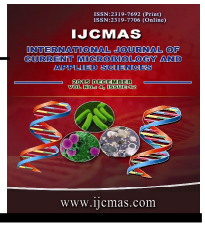

Case Study

Subcutaneous hyalohyphomycosis Caused by *Acremonium kiliense* in a Diabetic – A Case Report

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Keywords

Acremonium kiliense, Immuno-compromised, Subcutaneous Abscess

A B S T R A C T

Acremonium is a common mold present in the soil and decaying plant material. It rarely becomes pathogenic to humans, particularly affecting the immunocompromised individuals. A 60yr old diabetic male presented with a painless, fluctuant swelling over the medial side of right foot of one year duration. Fine needle aspiration cytology showed plenty of septate fungal hyphae with branching. X-ray foot revealed soft tissue swelling without any bony involvement. To identify the causative agent of subcutaneous abscess. Pus sample was aspirated from the lesion and KOHmount was done which showed septate branching hyphae. It was then inoculated on Sabouraud's Dextrose Agar with gentamicin. Young colonies were yeast-like and turned fluffy grey with age. Lactophenol cotton blue mount from the slide culture was positive for *Acremonium kiliense. Acremonium spp.*, has drawn the attention of clinicians and microbiologists, as an emerging opportunistic pathogen in immunocompromised patients. Consideration should be given to this unusual saprophytic fungal infection as opportunistic infection in the immunocompromised.

Introduction

Hyalohyphomycosis is a fungal infection caused by non-dematiaceous hyaline molds. At present, 74 species belonging to 20 genera are included under hyalohyphomycosis. Fungi causing opportunistic infections include *Acremonium*, *Geotrichium*, *Chrysosporium* spp. etc. and important human pathogens include *Pseudallescheria*, *Fusarium*[3] .

Members of the genus *Acremonium*, previously known as *Cephalosporium* are ubiquitous molds found in decaying vegetation, soil and air[1]. Infections due to *Acremonium* are extremely uncommon and are associated with immunosuppression[4] . It can lead to wide spectrum of clinical illnesses like eumycetoma, onychomycosis and subcutaneous hyalohyphomycosis. Other clinical manifestations caused by *Acremonium* include fungal infections, pneumonia, arthritis, osteomyelitis, peritonitis, endocarditis, meningitis and sepsis in immunocomprimisedhosts[4] .

Case History

A 60yr old male, a known diabetic since ten years, carpenter by occupation, attended the dermatology out-patient department with a painless swelling over the medial side of right foot of one year duration. The lesion was initially small in size and gradually increased to the present size of 4 cm x 4 cm x 3cm in size, non-tender with restricted mobility and the skin over the swelling was tense (Fig.1).

Fine Needle Aspiration Cytology (FNAC) report revealed the presence of inflammatory cells against a necrotic background with plenty of septate fungal hyphae with branching. X-ray foot, both antero-posteior and lateral views, showed soft tissue swelling with no evidence of bony involvement (Fig.2).

Under strict aseptic conditions, pus was aspirated from the most fluctuant part of the swelling and KOH mount was done. It showed the presence of branching, septate hyphae **(**Fig.3).

The pus sample was then inoculated on Sabouraud's Dextrose Agar (SDA) with gentamicin and was incubated at 25°C. After four days of incubation, SDA showed moist colonies, almost yeast-like in appearance, spreading over the agar surface. On 15th day of incubation, the colonies became fluffy and turned whitish grey (Fig.4). This suggested the slow-growing nature of the fungus.

Lactophenol cotton blue (LPCB) mount from growth showed the presence of hyaline hyphae with single-celled conidia arranged in clusters (Fig.5).Slide culture was done and was incubated at 25°C in a Biological Oxygen Demand (BOD) incubator (Fig.6).

LPCB mount was done from the slide culture. Small septate hyphae that produced single, unbranched, tube-like phialides that gradually tapered towards the apex were observed. These phialides gave rise to elliptical, single-celled conidia contained in a gelatinous mucinous cluster at their tips. Based on the morphological characteristics of the conidia, that is, straight, non-septate hyaline conidia at the end of phialides that are kept together by mucinous substance, the isolate was identified as *Acremonium kiliense*[5] (Fig.7).

Results and Discussion

In my case report, the causative agent was identified as *Acremonium kiliense.* Similar cases of subcutaneous hyalohyphomycoses in renal transplant recipients caused by *Acremonium spp*.have been reported by Ezra Israel et al., 2013[1] and Felipe Francisco Tuonet al., 2010[4].Clarisse Zaitz et al., 1995[5] have reported a similar case caused by *Acremonium recifei*. A case of *Acremonium kiliense* fungemia with involvement of the lungs in an allogeneic hematopoietic stem cell patient was reported by Milton Camplesi Junior et al., 2013[2].

Conclusion

Acremonium spp., has drawn the attention of clinicians and microbiologists, as an emerging opportunistic pathogen in immunocompromised patients. Consideration should be given to this unusual saprophytic fungal infection as opportunistic infection in immunocompromised.

Fig.1 Swelling Over the Medial Side of Right Foot

Fig.2 X-ray Foot showed Soft Tissue Swelling with No Evidence of Bony Involvement

Fig.3 DirectKOH Mount Showed Branching, Septate Hyphae

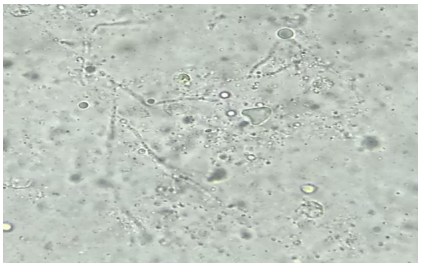


Fig.4 Sabouraud's Dextrose Agar with Fluffy Greyish-White Colonies

Fig.5 LPCB Mount from Growth - Hyaline Hyphae with Single Celled Conidia Arranged in Clusters

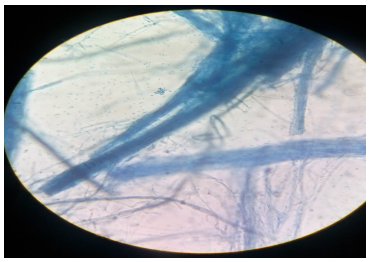


Fig.6 Slide Culture

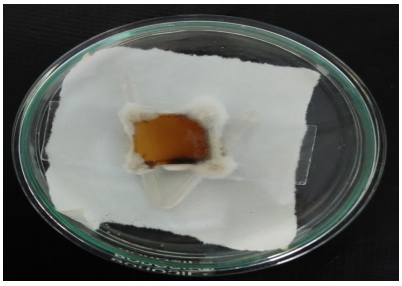
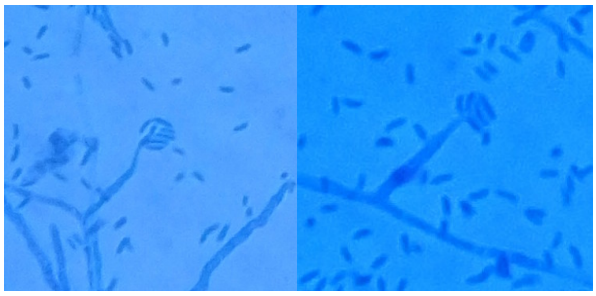


Fig.7 LPCB Mount from Slide Culture - Straight, Non-Septate, Single-Celled Hyalineconidia Contained in a Gelatinous Mucinous Cluster at the Tips of Phialides – Suggestive *of Acremonium Kiliense*



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