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Case Report

Cutaneous Hyalohyphomycosis in a Woman with Normal Immune System

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Abstract

Paecilomyces Sp. are saprophytic fungi, which have rarely been pathogen for human. Herein, we report a case of cutaneous infection with *Paecilomyces lilacinus* with unusual presentations in a healthy young woman. A biopsy provided an initial diagnosis of fungal elements in the tissue. Multiple positive fungal cultures were obtained from the biopsied tissue. Microscopic and macroscopic examination of the biopsy revealed the presence of *Paecilomyces lilacinus.* This case was successfully treated by prescribing oral ketoconazole (200 mg/day).

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Keywords ● *Paecilomyces* ● fungi ● infection

Introduction

Species of the hyalohyphomycete genus *Paecilomyces* are common inhabitants of a wide variety of environmental niches such as soil and decaying organic materials.[1-3] Some particularly *Paecilomyces lilacinus* (Thom) Samson and *P.variotii*, are occasionally encountered as agents of human and animal diseases.[4,5] Most cases of *paecilomyces infection* are cutaneous or transient catheter-related infections, but deep infections are also known.[5] Primary cutaneous hyphomycosis seems to be an emerging infection in immunocompromised patients. It is rare in subjects with normal immune status. The present article describes cutaneous infection with *Paecilomyces lilacinus* (Thom) Samson in a woman with normal immune system.

Case Description

The patient was a 30-year-old woman with scaly and erythematous plaques on her right forearm. The forearm lesion had initially been presented one year earlier as an erythematous pruritic papule, which took variable forms later and eventually became an erythematous patch (fig 1). The lesion had an erythematous sharp border. There was no history of trauma or occupational exposure to plants or soil.

A biopsy was taken for direct examination and culture. Hematoxylin and eosin–stained sections of the biopsy showed granulomatous reaction and fungal elements in the dermis (fig 2). The granulomas contained histiocytes, Langhans giant cells, lymphocytes, and a significant number of polymorphonuclear granulocytes. Biopsy specimen from hand lesion was ground and cultured on Sabouraud dextrose agar, Sabouraud dextrose agar with chloramphenicol (50 mg/ml), blood agar, and Brain Heart Infusion (BHI) agar. Two cultures on each medium were incubated at 35°C and 25°C, *Paecilomyces lilacinus* grew on

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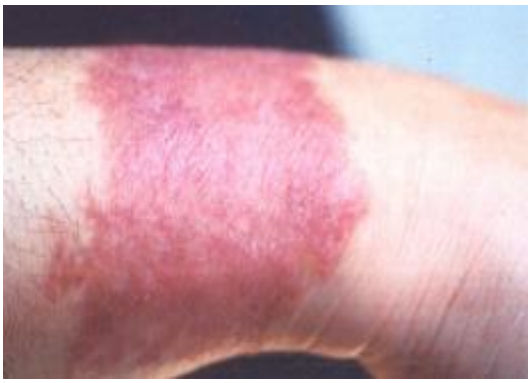

Fig 1: Clinical appearance of the cutaneous lesion.

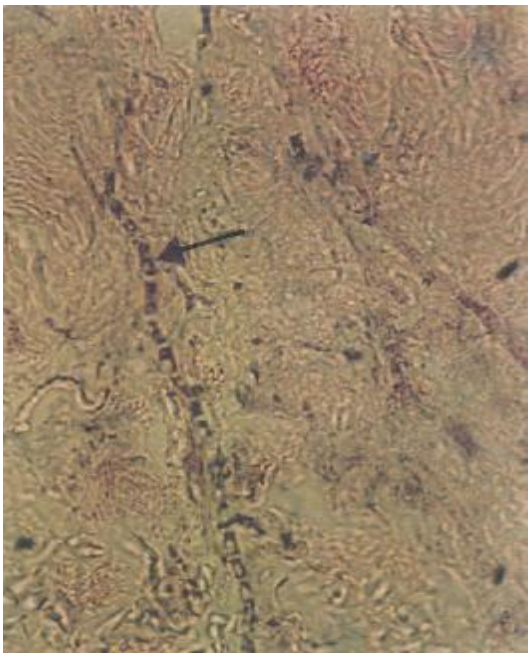

Fig 2: Histopathological section of biopsy specimen, showing numerous hyphae (hematoxylin–eosin stain).

blood agar, and BHI agar as well as on Sabouraud dextrose agar with more vigorous growth at 25°C. The fungus developed in 4 days on the cultures media, forming floccose, pinkish colonies. The cultures of specimens covered the agar surface thinly, and became lilac and powdery due to an abundant production of conidia (fig 3). Microscopic features of the isolates from biopsy specimen's culture were studied by slide culture preparation. The conidia occurred in unbranched chains cut off from the tip of flask-shaped stigmata, which not only appeared vertically arranged on the ends of hyphae, but a single stigma might also appear along a hypha. The appearance of the single stigma from the hypha and its characteristic taper into a long, conidial-bearing tube, which bends away from the main axis of the stigma, and the accessory cells or macro spores found in or close to the

Fig 3: Colony of *Paecilomyces Sp*. on Sabouraud dextrose agar.

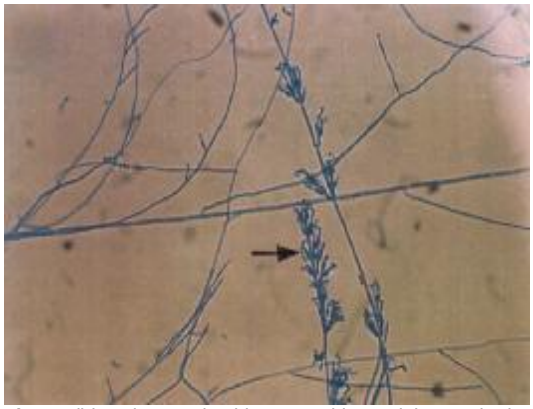

Fig 4: Slide culture stained by cotton-blue staining method.

surface of the agar, distinguished this fungus from those of the genus of *Penicillium* (fig 4). After diagnosis, the patient was treated for 40 days with oral ketoconazole (200 mg/day). The patient tolerated the treatment well, and after 40 days follow up she completely recovered.

Discussion

Paecilomyces lilacinus is a saprophytic fungus, which can be a pathogen in the presence of debilitation or immunosuppression.[1,6] It was reported to cause pneumonia, abdominal wall abscesses and central nervous system infection in patients with diabetes mellitus,[7] chronic granulomatous disease,[8] and cancer,[9] respectively. *Paecilomyces lilacinus* was also reported to cause scaly patches on the skin of an otherwise healthy woman.[10] *Paecilomyces lilacinus* is generally an opportunistic pathogen. It was reported to be seen most commonly in patients with renal transplantation,[11,12] chronic granulomatous disease,[8] hyperglycemia,[7] and leukemia,[13] as well as those receiving high corticosteroid doses,[9] or with an age over 40 years.[14]

The global frequency of *P.lilacinus* infections

appears to be increasing, and it is considered as an emerging pathogen, not only in patients with a compromised immune system, but also in apparently healthy people.[15] With regard to the skin, infections in immunocompetent persons are still very uncommon. A review of the literature has shown only six cases of cutaneous infection clearly induced by *P. lilacinus*,[10,15-19] among which one had a previous trauma on the site of the infection,[18] and three were predisposed to minor injuries because of their jobs.[15-17] The patient in the present study did not have history of such diseases or predisposing factors. The organism was demonstrated in the dermis in pure cultures from two separate biopsies. It was concluded that it might be the etiology of the patient's infection. Therefore, oral treatment with ketoconazole (200 mg/day) was initiated for 40 days. By the end of the treatment the lesion had been limited and erythema had reduced. This suggests that ketoconazole and miconazole might be beneficial in the treatment of *Paecilomyces lilacinus* infection. In patients with an impaired immune system; however, recovery from immunosuppression is often mandatory for the eradication of the mold.[20]

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