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CASE REPORT

Cutaneous *Paecilomyces lilacinus* infection mimicking cellulitis in an immunocompetent patient: Report of a case and review of the literature

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ABSTRACT

Paecilomyces lilacinus, a ubiquitous saprophytic mold found in the environment, is an emerging pathogen that causes localized to severe systemic diseases, especially in immunocompromised patients. Thus far, there are only eight reports on immunocompetent patients with cutaneous *P. lilacinus* in the English literature. We herein present the case of an 87-year-old immunocompetent Taiwanese man who presented with a progressive, tender, erythematous plaque mimicking cellulitis on the ventral surface of the right forearm for 2 weeks. The patient was initially diagnosed as a case of cellulitis; however, due to unresponsiveness to the treatment for 1 week, we decided to perform skin biopsy and tissue culture. Results of histopathologic analysis, tissue culture, and polymerase chain reaction assay indicated cutaneous *P. lilacinus* infection. Consequently, systemic antifungal treatment with oral itraconazole (200 mg/d) was initiated and the skin lesion resolved after a 4-week treatment.

Introduction

Paecilomyces species are saprophytic molds found ubiquitously in the environment. Although they were deemed as laboratory contaminants in the past, recently there has been an increase in the number of *Paecilomyces*-related infections. The most commonly reported pathogenic species are *Paecilomyces lilacinus, Paecilomyces variotii*, and *Paecilomyces marquandii.* Clinically, cutaneous and subcutaneous infection was the second most common manifestation, following oculomycosis.[1] Most of these cases were found in immunocompromised patients who were under post-transplantation status, with hematological malignancies or AIDS.[1–9] The main route of cutaneous infection reported in the literature was direct cutaneous inoculation through the colonization of clinical materials, such as applying contaminated skin lotion or using incompletely sterilized central venous catheter, although some patients contracted the infection through dog bite, contaminated water after flooding, or wounds of mechanical trauma.[1–3,10] *Paecilomyces* infection is an emerging hyalohyphomycosis in humans, but there is relative inexperience in treating this infection. In this paper, we present the case of a cutaneous *P. lilacinus* infection in an elderly but immunocompetent patient, who had been successfully treated with oral itraconazole. We also reviewed all the cases of cutaneous *P. lilacinus* infection in immunocompetent patients reported in English literature to provide treatment guidance for physicians in the future.

Case Report

An 87-year-old Taiwanese man, with no known immunocompromised status, presented with a progressive, tender, erythematous plaque on the ventral surface of the right forearm for 2 weeks (Figure 1A). Before the skin lesion developed, he alleged that there were some itchy rashes over the area, and excoriated wounds due to frequent scratching were noted by his daughter. Under the initial impression of cellulitis, he was admitted to our hospital and empiric treatment with intravenous oxacillin was initiated.

Conflicts of interest: The authors declare that they have no financial or nonfinancial conflicts of interest related to the subject matter or materials discussed in this article.

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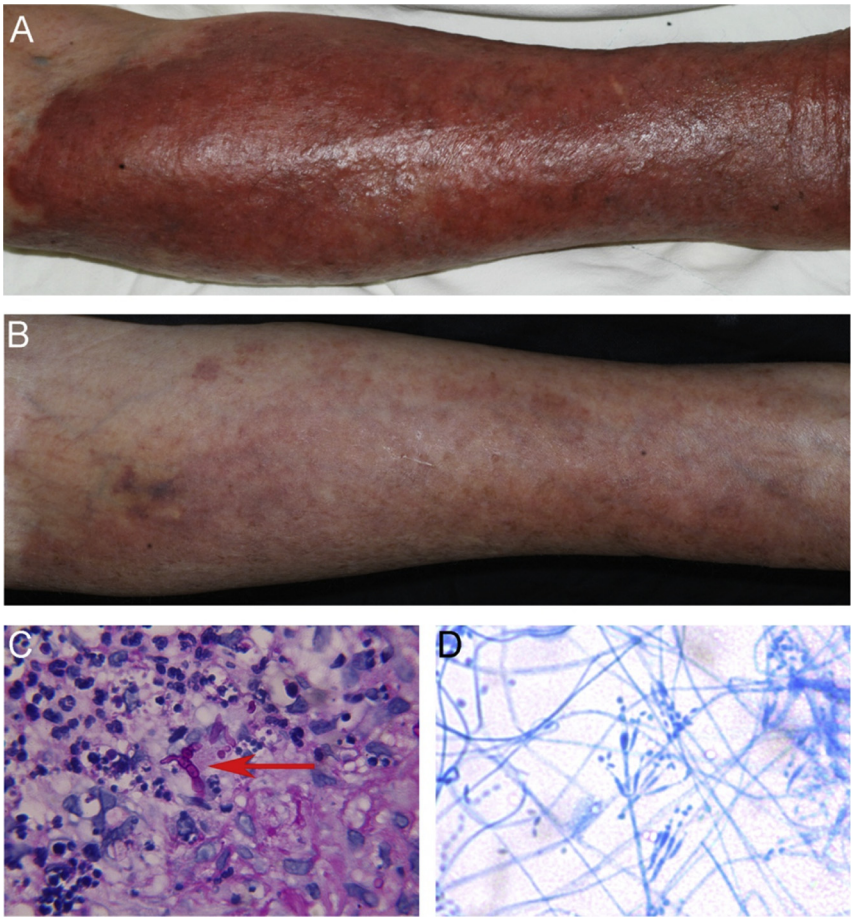

Figure 1 (A) A cellulitis-like erythematous plaque on the ventral surface of the right forearm. (B) After oral itraconazole treatment (200 mg/d) for 4 weeks, the skin lesion resolved drastically. (C) Nonpigmented, septated, branching hyphae demonstrated by periodic acid–Schiff-diastase staining (original magnification 1000×). (D) Morphological identification of *Paecilomyces lilacinus*: conidiophores with clustered tenpin-shaped phialides and round to oval nonbranching conidia (original magnification 400×).

Nevertheless, due to unresponsiveness to the treatment for 1 week, we decided to perform skin biopsy and tissue culture to diagnose the underlying condition. Histopathologic analysis of the skin specimen revealed suppurative granulomas with pathogens showing nonpigmented, septated, branching hyphae, which were highlighted by periodic acid–Schiff-diastase (PAS-D) stain (Figures 1C and 1D). The tissue culture on Sabouraud dextrose agar (SDA) showed whitish floccose colonies with central lilac discoloration and brownish pigmentation on the reverse side of the culture plate. However, due to the lack of malt extract agar in our hospital, we did not demonstrate fungal culture result on it. The fungal morphology under a microscope revealed erection of the conidiophores with clustered tenpin-shaped phialides and round to oval nonbranching conidia (Figures 1D, 2A, and 2B). The pathogen

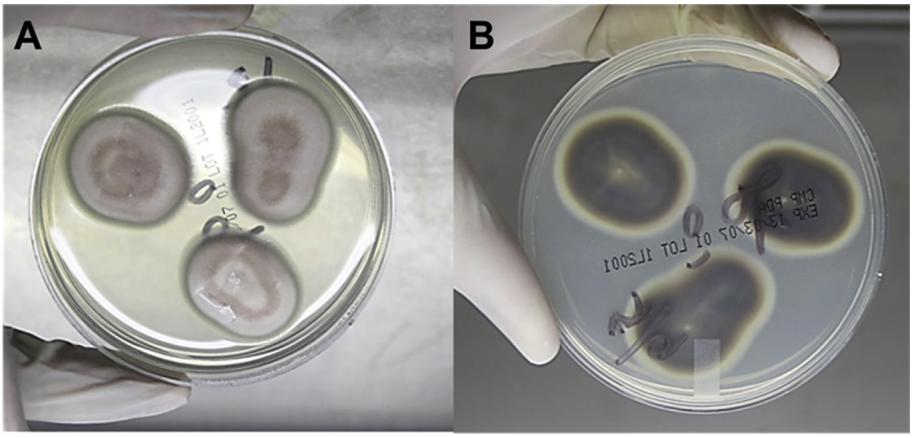

Figure 2 (A) White floccus colonies with central brownish discoloration on the Sabouraud dextrose agar culture plate. (B) *Paecilomyces lilacinus* shows brownish pigmentation on the reverse side of the culture plate.