Successful Treatment of Recurrent Cutaneous *Purpureocillium lilacinum* (Paecilomyces lilacinus) Infection with Posaconazole and Surgical Debridement

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*Purpureocillium lilacinum*, previously known as *Paecilomyces lilacinus*, is a saprophytic and filamentous mould that exists in soil, decaying food, and paper. It can produce conidia and spores in human tissue, but it seldom results in infectious disease because of its low virulence (1,2). Nonetheless, *P. lilacinus* has become an emerging pathogen in both immunocompromised and immunocompetent hosts recently (3–5). A chronic recalcitrant cutaneous ulcer induced by *P. lilacinum* is rare, and there is no consensus regarding its treatment. Treatment response to traditional antifungal agents, such as amphotericin B, fluconazole, griseofulvin, and echinocandins, was poor. Newer triazoles, including voriconazole and posaconazole, have lower minimum inhibitory concentration (MIC) *in vitro*. Previously reported patients with cutaneous infection treated with voriconazole responded well. However, only one patient was treated with posaconazole for 4 weeks but was lost to follow-up (3,6). Herein, we describe a rare case of recurrent cutaneous *P. lilacinum* infection in a patient with Evans’ syndrome who was successfully treated with oral posaconazole and surgical debridement.

CASE REPORT

A male farmer in his 40s presented with painful papules on his right arm for a month and ulcerations on his left shin for 6 months. The lesions started as asymptomatic small erythematous papules that slowly progressed to painful ulcers surrounded by purpuric papules. The patient stated that he did not experience any trauma or have insect bites. He had a history of Evans’ syndrome and was treated with oral eltrombopag (50 mg/day) and prednisolone (10 mg/day) for more than 10 years. Azathioprine, mycophenolate, and dapsone were also given when acute exacerbation occurred. His wounds healed completely. However, a recurrent deep necrotic ulcer surrounded by haemorrhagic bullae and papules developed on the same site on his left shin 5 months later after discontinuing voriconazole (Fig. 1C). Results of the biopsy and culture showed a woolly colony with a faint lilac colour in the centre and white colour in the peripheral area (Fig. 2C). Slide cultures revealed septate branching hyaline hyphae with elongated, tapering phialides and chain-like conidiophores (Fig. 2D). Cutaneous hyalohyphomycosis caused by *Purpureocillium* infection was diagnosed, based on findings from the mycological examinations and fungal culture. Genotypic identification of the clinical isolate by sequencing the internal transcribed spacer (ITS) region of the ribosomal RNA gene (7) confirmed *P. lilacinum* infection. The nucleotide sequence identity of the region was 100% *P. lilacinum* and matched the ribosomal RNA gene sequence deposited in the National Center for Biotechnology Information (GenBank: MK713625.1).

Oral voriconazole (400 mg daily) was given for 12 weeks, and his wounds healed completely. However, a recurrent deep necrotic ulcer with peripheral haemorrhagic bullae and papules developed on the anterior shin 5 months later after discontinuing voriconazole (Fig. 1C). Results of the biopsy and culture showed that the patient had recurrent *P. lilacinum* hyalohyphomycosis. The susceptibility test showed that the minimum inhibitory concentration (MIC) values for voriconazole and posaconazole were 0.5 mg/l and 1 mg/l. Then voriconazole was switched to oral posaconazole (300 mg daily) for 11 weeks, and surgical debridement followed by split-thickness skin grafting was performed. No recurrence was noted for more than 2 years (Fig. 1D).

DISCUSSION

*P. lilacinum* can invade multiple human organs and cause various infections. Oculomycosis accounted for the most cases (51.3%), and it led to cutaneous and subcutaneous infections (35.3%). The prevalence of cutaneous infection is still unknown. Forty-two cases were reported from 1977 to 2004 (1). It can be transmitted by both direct inoculation and hematogenous dissemination. Outbreaks induced by contaminated skin cream have been reported (8). The predisposing factors of the infection are malignancy,

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**Fig. 1. Photographs of the patient’s clinical course.** A) A necrotic ulcer with peripheral sinus tract formation on the right forearm. B) Several brownish to violaceous papules and sinus tracts on the left anterior shin. C) A huge necrotic ulcer with peripheral haemorrhagic vesicles and bullae has developed after discontinuation of voriconazole for 5 months. D) Ulcers and bullae are resolved after posaconazole treatment (300 mg/day) for 11 weeks and surgical debridement with split-thickness skin grafting.
However, the low MIC levels of voriconazole and posaconazole showed remarkable improvement at week 4, but the patient was lost to follow-up (9). In our case, the patient did not have any recurrence for 2 years. The authors have no conflicts of interest to declare.

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**Fig. 2. Microscopic finding, fungal colony morphology, and slide culture.** A) Multiple hyaline spores and branching hyphae with septa are found (haematoxylin and eosin stain, original magnification ×400). B) Grocott’s methenamine silver stain highlights the spores and hyphae (original magnification ×400). C) The fungal colony has a woolly surface with a faint lilac colour in the centre and white colour in the peripheral area (original magnification ×200). D) Long branching hyphae with septa, tapering phialides, and chain-like conidiophores are found.