Abstract

Cutaneous alternariosis infection occurs mainly in immunocompromised individuals. The incidence of alternariosis in a heart transplant recipient is infrequent. Coincidence of the aforementioned infection with additional fungal agents is rare. We describe a case of alternariosis with *Trichosporon* fungal infection in a patient who was successfully treated with combined antifungal therapy, modulation of immunosuppressive regimen, and blood glucose management. The patient had a good response to treatment, and has had an uneventful 1-year follow-up at the time of this writing.

Key words: Heart transplant, Alternariosis, *Trichosporon* spp.

Introduction

Alternaria are dematiaceous (darkly pigmented) moulds in the atmosphere, soil, and are generally distributed worldwide. They are opportunistic fungi that typically infect immunocompromised or debilitated patients.\(^1\) Most affected individuals are immunosuppressed owing to Cushing’s syndrome, kidney transplants, hematologic malignant diseases, and acquired immunodeficiency syndrome.\(^4\)

Case Report

A 37-year-old-man was admitted to the Massih Daneshvari Hospital because of a cough, sputum, and a fever of 1 week’s duration. He took acetaminophen and the fever subsided; however, the cough and sputum did not improve. Moreover, he complained of an exertional dyspnea, especially at night. He had received a heart transplant 6 months before the current admission and was subsequently maintained with cyclosporine 250 mg every 12 hours, prednisolone 20 mg every day, and mycophenolate mofetil 500 mg every 12 hours. Additionally, he received two tablets every day of cotrimoxazole 400/80 as a prophylaxis for *Pneumocystis Jiroveci* infection. During his stay at our center, insulin therapy was started because his high fasting blood glucose.

On the physical examination, the patient was alert, afebrile, and he had no respiratory distress. The only positive finding was multiple pigmented nodular lesions on the lower extremities that had appeared several weeks earlier (Figure 1). The patient did not recall any preceding injury at this site.
Spiral computed tomography scan of the chest without contrast revealed multiple bilateral differently sized parenchymal nodules with excavation. Furthermore, a pleural effusion on his left side also was seen. Pleurocentesis was performed, and an exudative fluid was obtained for which the culture results for bacteria and fungi were negative. Plasma polymerase chain reaction for human herpesvirus 8, cytomegalovirus, and Epstein-Barr virus also were unremarkable.

Initial sputum smear samples were negative for acid-fast bacilli. Additionally, the bronchoscopy showed no endobronchial lesion, and a smear and culture of the bronchoalveolar lavage was negative for acid-fast bacilli and bacteria as well. Ultimately, the culture prepared from the bronchial biopsy yielded arthroconidia with budding blastoconidia in favor of Trichosporon spp.

A biopsy of the skin lesion was taken, and histologic examination showed an intense inflammatory process in the dermis, with a suppurative granulomatous reaction associated with pseudoepitheliomatous epidermal hyperplasia and ulceration. Organisms were present as brown branching septate hyphae, and cultures showed black colonies on the surface. The reverse side was composed of short chains of large, smooth-walled, multicelled macroconidia separated by cross and longitudinal septa that were compatible with Alternaria spp (Figure 2).

![Figure 2. Smear of Culture Showing Alternaria spp.](image)

Initially, the patient was treated with oral voriconazole at a dosage of 6 mg/kg/d, followed by 4 mg/kg/d in 2 divided doses thereafter. Voriconazole was well tolerated by the patient and within 3 months, the cutaneous and lung lesions regressed. Based on pathological findings and response to treatment, the diagnosis of cutaneous alternariosis with pulmonary Trichosporon coinfection was made.

**Discussion**

Alternariosis is a rare and potentially progressive infection whose incidence has increased in the past decade. A review of the literature shows that the incidence of invasive phaeohyphomycosis rose from 1 case to 43 cases per 100,000 patient-days in 1993 to 1996 and 2005 to 2008. Alternariosis tends to involve mostly transplant recipients who are more severely immunocompromised. In addition, clinical cure of alternariosis necessitates a combined approach of surgical excision, reduction in immunosuppression, and antifungal therapy.

Alternariosis most often manifests as a localized mucocutaneous lesion characterized by painless erythematous patches, papules, pustules, and nodules, resulting from traumatic implantation of the agents. Most reports of dermal cutaneous alternariosis are on exposed sites of the extremities.

As solid-organ transplant becomes increasingly widespread and recipients survive longer, cutaneous fungal infections will be more frequently encountered. Cutaneous alternariosis in a heart transplant recipient is rare. However, this case was unique owing to the coexistence of alternariosis with other fungal infections, which is extremely unusual. To our knowledge, this is the first report of cutaneous alternariosis with Trichosporon fungal infection in a heart transplant recipient.

Treatment of small lesion can be surgically excision. A diminution in immunosuppressive regimen should be considered. In most cases, systemic antifungal therapy is required. In our case, antifungal therapy was considered superior to surgical resection because of the location of the lesion and the patient’s weakness. The patient’s immunosuppressive regimen was modified, and tacrolimus was switched to cyclosporine.

In conclusion, the combination of the change in immunosuppressive medication, blood glucose management, and initiation of antifungal therapy led to significant improvement of symptoms and radiographic changes. This case highlights the importance of increased suspicion for cutaneous alternariosis in patients with underlying
immunosuppression, particularly at sites of the skin prone to autoinoculation.

References