Subcutaneous Phaeohyphomycosis Caused By Pyrenochaeta Romeroi in a Kidney Transplant Recipient: A Case Report

Manjunath Kulkarni,1 Tukaram Jamale,2 Niwrutti Hase,2 Milind Ubale,3 Vaibhav Keskar,2 Pradeep Kiggal Jagadish2

Abstract

Infections are Achilles heel of kidney transplant recipients. Opportunistic fungal infections are increasingly recognized in these patients. We report a case of kidney transplant recipient with skin and soft tissue infection caused by Pyrenochaeta romeroi, a dematiaceous fungi. Infection by this organism is rare.

Key words: Fungal infection, Kidney transplant recipient, Opportunistic infection

Introduction

Phaeohyphomycosis is an opportunistic infection caused by dematiaceous fungi. Though ubiquitous, these organisms rarely cause human disease. However, in immunosuppressed organ transplant recipients, they are increasingly recognized as human pathogens. Here, we present a case of a kidney transplant patient with nodular lesions of the skin who had a diagnosis of phaeohyphomycosis caused by Pyrenochaeta romeroi.

Case Report

A 43-year-old farmer presented with painless nodular lesions over his left thigh, left calf, and right shin. Six months earlier, he underwent a kidney transplant with wife as the donor. For transplant, he received antithymocyte globulin for induction. Maintenance immunosuppression was accomplished with tacrolimus, mycophenolate mofetil, and prednisolone. He was also given valganciclovir prophylaxis for 100 days after the transplant. Except for new onset diabetes mellitus after the transplant, his posttransplant course was uneventful, and he had stable graft function.

As a farmer, he had a history of working on a farm and in a garden after the transplant. He had no history of fever or decreased urine output. On examination, the patient was hemodynamically stable. Multiple painless nodular lesions were seen over his left thigh, left calf, and right shin measuring about 1 to 1.5 cm in diameter. Systemic examination was unremarkable (Figure 1).

On investigation, he had hemoglobin of 15.6 g/dL, a total leucocyte count of 7250/mm3. His differential leucocyte count showed 89% neutrophils, 6% lymphocytes, and 5% monocytes. His platelet count was 1.53×10^9/L. Blood urea nitrogen was 4.9 mmol/L (14 mg/dL) and serum creatinine was 106.8 μmol/L (1.2 mg/dL). A urine examination was normal. An excision biopsy of the swollen left thigh showed granuloma with fungal hyphae. Aspirates from the...
lesions grew organisms belonging to the group called Phaeohyphomycosis. DNA sequencing showed that this organism was Pyrenochaeta romeroi. He was treated initially with itraconazole and terbinafine along with a reduction in his immunosuppression medications. During the course of the next 2 months, the lesions increased. New lesions were seen on his upper limbs and lower limbs (Figure 2). Some of the lesions developed ulcerations. Surgical debridement of the lesions was performed, and the patient was started on voriconazole. After starting this treatment, no new lesions were observed. The patient was continued on voriconazole.

Figure 2. Ulcerative Nodule on the Second Toe

Discussion

This patient had an unusual fungal infection caused by Pyrenochaeta romeroi. This dematiaceous fungus belongs to a group called Phaeohyphomycosis that has characteristic melanin like pigment in their cell wall.1 Pyrenochaeta is widely distributed in the soil or in association with wood and plant debris. This patient may have acquired this infection while farming.

Infection by this particular organism is rare. To the best of our knowledge, only 4 cases in a non-transplant setting and 3 cases in transplant recipients have been described to date.2-8 Nodulocystic lesion, subcutaneous abscess, and lesions mimicking plantar warts can be caused by this organism and have been described in kidney transplant recipients. Infection with Pyrenochaeta romeroi at multiple sites that cause such extensive lesions have not been described.

Treatment of this fungal infection can be difficult. No standard-of-care guidelines are available. The organism is usually resistant to fluconazole, ketoconazole, amphotericin B, and fluconosine. Voriconazole and posaconazole have been found to be effective in some cases.4,9 The combination of surgery and antifungal therapy can yield good results. Although not evidence based, a reduction of immunosuppression may quicken the patient’s recovery. One important consideration is drug interaction while using triazoles. Triazoles can increase the blood levels of tacrolimus. Careful dose modification with therapeutic drug monitoring is needed during treatment.

References