Cutaneous Curvularia infection in a neutropenic patient

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Background: Cutaneous Curvularia is a rare fungal infection which presents itself as erythematous, non-tender, non-pruritic, ulcerative lesions. To the best of our knowledge, only a few cases reported in the literature have occurred in immunocompromised and/or neutropenic patients, none of which have been published within the past five years.

Objective: We report the case of a 53-year-old man diagnosed with diffuse large B cell non-Hodgkin’s lymphoma and associated neutropenia who developed several erythematous macular lesions with central excoriations and crusting on his bilateral anterior tibiae, and whose fungal culture was positive for Curvularia sp.

Keywords: Curvularia, cutaneous, fungi, neutropenic, immunocompromised/immunochallenged.

Case report

A 53-year-old man with a past medical history pertinent for follicular non-Hodgkin’s lymphoma (NHL) with progression to diffuse large B-cell lymphoma presented to the Emergency Department of H. Lee Moffitt Cancer Center, complaining of a rash on his bilateral tibiae. The patient had recently completed treatment with a fourth cycle of ESHAP (etoposide, methylprednisolone, cytarabine, and cisplatin) one month prior to presentation in the Emergency Department. The patient reported a several-day history of a non-tender, non-pruritic rash with scant serous exudate on his anterior tibiae, with slightly increased involvement of his left tibia. He described the lesions’ initial presentation as small macules which spread centrifugally with crusting, and subsequently developed a macerated, ulcerated center. The patient applied Neosporin ointment to several of the lesions one day prior to presentation at the hospital, after which he had noticed marked worsening of the erythema.

Upon physical examination, the bilateral anterior tibiae were scattered with multiple 2- to 3-mm ulcerated, necrotic, and crusted macules which were...
nontender and had an excoriated appearance (see Fig. 1). The lesions did not blanch with pressure and had ill-defined borders. The largest lesion was noted to be 12-14mm in diameter. The distribution of these lesions was confined to the anterior tibiae and did not extend inferiorly beyond the ankles or superiorly beyond the knees. The remainder of the physical examination was unremarkable and yielded no significant findings.

The patient's WBC count was 6,950 at the time of presentation, and 11,300 on the following day. A basic metabolic panel at this time was within normal limits.

Two punch biopsies of a lesion were performed; one was sent for histopathology and the other was sent for bacterial, fungal, and acid-fast bacilli (AFB) cultures. Histopathologic evaluation of the skin biopsy revealed septate hyphae. The biopsy was negative for AFB, but the fungal culture was positive for *Curvularia*. Although the culture was not speciated, *Curvularia lunata* is the most likely culprit in this case, as it is the most common species involved in human host infections [4].

The patient was then given a prescription for oral voriconazole 400 mg bid during the next 24 hours, then 200 mg once daily for the following four weeks. On follow-up at one month, the patient reported that the lesions had significantly improved on the course of voriconazole. This was confirmed on physical examination.

However, within several weeks of finishing the voriconazole regimen, the lesions began to recur and it was noted that the patient’s WBC count was 290 at this time. A computed tomography scan of the patient’s neck, chest, abdomen, and pelvis at this time showed stable lymphadenopathy. The patient was then placed on voriconazole 200mg once daily for one year. At follow-up one month later, the WBC count was 260 and the lesions had begun to improve once again. At his last follow up appointment, two years after his initial presentation to the Emergency Department, the lesions have completely resolved without recurrence.

**Discussion**

*Curvularia* is a dematiaceous fungus, found mostly in soil and decomposing plant material. Systemic infections have been reported to occur in both immunocompetent and immunocompromised patients, although fewer of such reports appear in the latter group [1, 2]. Cutaneous *Curvularia* infection is an even rarer disease and our review of the literature yielded few reports of occurrence in neutropenic patients [2]. In one such case reported by Bonduel M et al., a 9-year-old-boy diagnosed with severe aplastic anemia had experienced febrile episodes and neutropenia for several months and subsequently developed ecthyma gangrenosum-like lesions on the forearm [2]. These lesions were later demonstrated to be cutaneous *Curvularia* infection [2]. The patient was treated successfully with imipenem, amikacin, and amphotericin B deoxycholate, which was later replaced with liposomal amphotericin B due to the potential for nephrotoxicity secondary to long-term amphotericin B deoxycholate usage [2].

Due to the lack of available evidence, little is known regarding the management and treatment of

![Fig. 1 Ulcerated, necrotic and crusted macules infected with *Curvularia* spp.](image)
Cutaneous Curvularia infection, although antifungals such as amphotericin, itraconazole, miconazole, fluconazole, ketoconazole, voriconazole, and terbinafine have been reported to be used with some success [1-10]. Combination therapy with amphotericin plus an azole does not appear to have any advantages over monotherapy with one of the aforementioned antifungal agents [8]. In severe cases, excision and grafting has also been reported to be successful [9].

We report the case of a 53-year-old neutropenic patient diagnosed with diffuse large B cell lymphoma who presented with necrotic macular crusting lesions on his bilateral anterior tibiae. Following treatment with oral voriconazole, the patient’s lesions had resolved, and subsequently recurred several weeks after antifungal treatment had ceased. Re-treatment with voriconazole for one year appears to have induced a permanent resolution of these lesions.

The authors have no conflict of interest to declare.

References