

Images in Clinical Tropical Medicine

Widespread Dermatophytosis in a Patient Treated for Leprosy Type II Reactional State after MDT/WHO-MB Release

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A 23 year-old male with no immunosuppressive diseases, including Cushing syndrome visited Souza Araújo Ambulatory, Fundação Oswaldo Cruz, Reference Center, Brazil, for treatment of leprosy, 3 years after a 12-month standard treatment of multibacillary lepromatous leprosy. He presented with a residual 3+ bacilloscopy index, ulnar nerve neuritis, and an exuberant erythema nodosum leprosum (ENL) reaction, which was not controlled with a previous corticosteroid therapy regimen. No signs of fungal infection were found this time. Therefore, thalidomide regimen was administered at a dose of 200 mg/day with 40 mg/day prednisone; both drugs were gradually reduced at monthly intervals during medical visits,

and the treatment was stopped after 3 months. However, 4 months later, the patient presented with new skin lesions (Figure 1A–C), suggesting that ENL had relapsed. Culture samples of the epithelium and nails showed the presence of *Trichophyton mentagrophytes* and *Trichophyton tonsurans* (Figure 1D and E). In addition, a skin biopsy showed histopathological features of leprosy activity (logarithmic index of biopsies: 3.8). The recommended treatment was to restart the rifampin, dapsone and clofazimine 12-month WHO/MDT MB scheme after dermatophytosis resolution with oral terbinafine administration.

Globally, Brazil ranks at the top in terms of the number of new leprosy cases. Erythema nodosum leprosum, a



FIGURE 1. (A) Tinea corporis presented as a disseminated, circinate, and scaly rash with an active, erythematous, well-defined border. (B) The patient presented with exuberant tinea barbae lesions, in addition to nail dystrophy due to onychomycosis and an ulnar neuropathy, leading to a partial claw hand deformity of leprosy. (C) The patient's earlobe exhibited an infiltration typically seen in lepromatous leprosy patients; the earlobe also developed skin peeling related to the fungal infection. (D) The white colonies of *Trichophyton mentagrophytes* and *Trichophyton tonsurans* showing variations in texture: granular to powdery, flat, and often with radial grooves. The growth of both dermatophytes on potato dextrose agar media for 30 days at 25°C. (E) Final fungal identification was based on chlamydospore-like structure identification by light microscopy from the cultured petri dishes. Microscopic morphology of *T. tonsurans* is described with numerous variably shaped microconidia formed along the septate hyphae; this feature is known as the birds on a wire pattern. Lactophenol blue stain was used, $\times 250$ magnification. This figure appears in color at www.ajtmh.org.

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leprosy reactional state, has a tendency to occur in multi-bacillary patients, mainly in those with a lepromatous pole. In most cases, immunosuppressive drugs are necessary to control the reaction, leading to an environment conducive to opportunistic infections, including fungal infections.¹

Dermatophytes are fungi causing superficial skin infections; they feed on the keratin present in the corneum skin. *Trichophyton mentagrophytes* are anamorphic species, that is, they are asexual or imperfect, besides being anthropophilic and zoophilic. They are also found in dogs, rodents, and rabbits.² Furthermore, *T. tonsurans* are ananthrophilic species, more commonly seen in infants and mainly affecting the scalp area; occurrence of this pathogen is also related to poverty.³

This article highlights the importance of dermatophytosis as a late potential iatrogenic effect of corticosteroid therapy; in addition, antifungal immune lymphocyte response in lepromatous leprosy pole is impaired due to Th2/Treg modulation.⁴ Furthermore, clofazimine can also play a role in dermatophyte dissemination via ichthyosis, its recognized adverse effect, which may also favor fungal proliferation.

Although possible, the association between leprosy and widespread dermatophytosis has rarely been described in the literature⁵; dermatophytosis can be often misdiagnosed by inexperienced physicians as syphilitic roseola, leprosy reactional states, such as erythema multiforme, or a leprosy relapse; therefore, histopathological and microbiological investigations must be encouraged, whenever possible.

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