



# Widespread Dermatophytosis in A Ukrainian Patient with AIDS: A Case Report

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## Article Info

### Article Notes

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A 45-year-old woman was referred from the Department of Infectious Diseases to the Department of Dermatology due to a persistent rash. The rash, which began on the scalp seven months before the referral, had progressively spread from the trunk to the extremities, buttocks, and labia majora. At the time of referral, the patient presented with a widespread itchy rash.

The patient was from Ukraine and lived as a refugee in Denmark for a couple of years in a homeless shelter. Upon her arrival in Denmark, she was diagnosed with AIDS and cerebral toxoplasmosis.

At the time of referral, the patient was treated with sulfamethoxazole and trimethoprim for AIDS-related cerebral toxoplasmosis, and her HIV infection was managed with a combination of darunavir, cobicistat, emtricitabine, and tenofovir alafenamide. The patient was not considered adherent to her antiviral medications and had a CD4 cell count of 30 cells/mm<sup>3</sup> and a viral load of 448.000 HIV RNA copies per mL.

On objective examination, the patient exhibited leukonychia on her left great toe (Figure 1.A.) and erythematous plaques with satellite lesions on her back (Figure 1.B.), flanks (Figure 1.C.), and upper arms (Figure 1.D.).

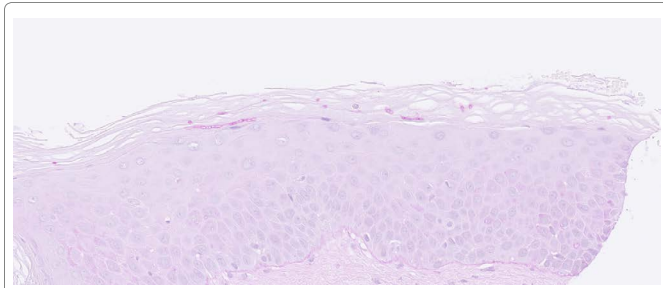
We performed a 4 mm skin punch biopsy from the left brachium and collected mycological skin and nail scrapings.

## Histopathological Findings

The biopsy revealed that the stratum corneum was slightly hyperkeratotic with focal parakeratosis, forming compact and



**Figure 1:** The patient presented with leukonychia on her left great toe (1.A) and erythematous plaques with satellite lesions on her back (1.B.), flanks (Figure 1.C.) and upper arms (Figure 1.D.).



**Figure 2:** Light microscopy reveals a slightly hyperkeratotic stratum corneum with focal parakeratosis, forming compact and lamellar orthokeratosis. Intracorneal hyphae and spores of fungal elements were present. The epidermis was hyperplastic, reactive, and irregular, with focal spongiosis and lymphocytic exocytosis.

lamellar orthokeratosis (Figure 2). Intracorneal hyphae and spores of fungal elements were present. The epidermis was hyperplastic, reactive, and irregular, with focal spongiosis and lymphocytic exocytosis.

### Fungal Tests

Fungal PCR tests identified *Trichophyton interdigitale/mentagrophytes* from the skin and *Trichophyton rubrum* from the great toenail. Subsequent mycological swabs were sent for culture and susceptibility testing at her second visit, after initiation of treatment. The skin culture was negative, and it was therefore not possible to further differentiate the *T. interdigitale/mentagrophytes*. The toenail culture confirmed *T. rubrum*, which was susceptible to terbinafine.

### Discussion

The patient cleared her dermatophytosis within six weeks of oral and topical terbinafine treatment<sup>1</sup>. The widespread nature of the dermatophytosis was likely due to her HIV infection, which progressed to AIDS. Currently, there are at least 260,000 individuals living with HIV in Ukraine, posing a significant barrier to the distribution of antiviral therapy<sup>2</sup>. Widespread dermatophytosis may have a polymorphic presentation, which can make the clinical diagnosis difficult<sup>3</sup>. Nine cases of severe dermatophytosis in HIV-infected individuals were reported from 1999-2004 at the height of the AIDS epidemic<sup>3,4</sup>. With the evolution of antiretroviral therapy, opportunistic fungal infections have declined, and the fungal infections have become a more neglected pathogen<sup>4,5</sup>. Polymerase Chain Reaction (PCR) test enables rapid detection of dermatophytes in patients with AIDS, reducing mean turn-around time

from 19 days with culture to 16 hours with PCR<sup>6</sup>. With the emergence of the rapidly spreading *T. Indotineae*, species-level confirmation by molecular methods has become more important if the patient is non-responsive to terbinafine<sup>7</sup>. Therefore, clinicians should consider dermatophytosis as a differential diagnosis when treating widespread rashes, especially in patients with immunodeficiencies and those from countries with a higher prevalence<sup>3-5</sup>.

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### Conflict of Interest

None to declare.

### Data Availability

The data underlying this article will be shared on reasonable request to the corresponding author.

### Ethics Statement

The patient provided informed written and verbal consent for this publication, including the use of anonymized clinical information and images.

### References

1. Goldstein AO. Dermatophyte (tinea) infections. Connor RF (Ed), Wolters Kluwer. Accessed April 20, 2025. <https://www.uptodate.com/contents/dermatophyte-tinea-infections>.
2. Holt E. Russia's invasion of Ukraine threatens HIV response. *Lancet HIV.* Apr 2022;9(4):e230. doi: 10.1016/s2352-3018(22)00064-9.
3. Rouzaud C, Hay R, Chosidow O, et al. Severe Dermatophytosis and Acquired or Innate Immunodeficiency: A Review. *J Fungi (Basel).* Dec 31 2015; 2(1). doi: 10.3390/jof2010004.
4. Rodrigues ML, Nosanchuk JD. Fungal diseases as neglected pathogens: A wake-up call to public health officials. *PLoS Negl Trop Dis.* Feb 2020; 14(2): e0007964. doi: 10.1371/journal.pntd.0007964.
5. Seagle EE, Williams SL, Chiller TM. Recent Trends in the Epidemiology of Fungal Infections. *Infect Dis Clin North Am.* Jun 2021; 35(2): 237-260. doi: 10.1016/j.idc.2021.03.001.
6. Aho-Laukkanen E, Mäki-Koivisto V, Torvikoski J, et al. PCR enables rapid detection of dermatophytes in practice. *Microbiol Spectr.* Nov 5 2024; 12(11): e0104924. doi: 10.1128/spectrum.01049-24.
7. Marbaniang YV, Leto D, Almohri H, et al. Treatment and diagnostic challenges associated with the novel and rapidly emerging antifungal-resistant dermatophyte, *Trichophyton indotineae*. *J Clin Microbiol.* Jun 11 2025; 63(6): e0140724. doi: 10.1128/jcm.01407-24.