



(CASE REPORT)



## Extensive tinea corporis caused by *Microsporum canis* in a patient with AIDS

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### Abstract

Dermatophytosis in immunocompromised hosts is more varied and often more severe than in immunocompetent hosts. Early recognition and treatment with systemic therapy are important to people living with human immunodeficiency virus in order to prevent severe infection. We describe a case of disseminated extensive tinea corporis caused by *Microsporum canis* in a patient with acquired immunodeficiency syndrome, which has long been misdiagnosed, and we emphasize the importance of conventional mycological examination that enables a fast, correct diagnosis, and thus better medical care.

**Keywords:** Acquired immunodeficiency syndrome; Atypical; Extensive; *Microsporum canis*; Tinea corporis

### 1. Introduction

In people living with human immunodeficiency virus (PLHIV), the clinical presentation of dermatophytosis seems to greatly vary [1]. Unusual forms of tinea corporis with atypical, extensive and disseminated lesions are reported more often, mainly in association with the immunosuppression stage of HIV infection [2]. Less common etiologic agents of tinea in humans have been described as promoting atypical presentations, especially in association with severe immunosuppression. Among these agents, species of the genus *Microsporum* have been isolated [3]. We report in this case an atypical extensive tinea corporis due to *Microsporum canis* in a patient with acquired immunodeficiency syndrome (AIDS).

### 2. Case report

We report the case of a 31-year-old woman, followed for stage C retroviral infection since 2014, initially treated with ATRIPLA then replaced by AZT/3TC/LOPINAVIR® due to treatment failure and who was hospitalized in December 2021 for Varicella retinitis and meningitis due to *Streptococcus pneumoniae* confirmed by meningeal PCR. Her CD4 count and viral load were 12/mL and 469841 copies/mL, respectively.

The patient had a one-year history of pruritic eruption that started in the abdomen and spread to the back, chest and thighs. Despite several medical consultations, and several prescribed treatments, the eruption was still enlarging. Physical examination showed multiple rounded, marginated, erythematous scaly plaques (2-3 cm in diameter) with centrifugally advancing borders and vesicles. Further questioning revealed close contact with cats. (Figures 1 and 2).

Direct exam of skin scrapping obtained from edge of the lesion, and following KOH preparation revealed numerous septate and ramified hyphae. Samples were inoculated on Sabouraud Dextrose Agar, Sabouraud Chloramphenicol Agar

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and Sabouraud Chloramphenicol Actidione Agar. Cultures were incubated at 25°C to 30°C for three weeks, and yielded radiating fungal colonies that were whitish in color on the top side and dull yellow on the reverse side, with a cotton-like surface.

Identification was based on both macroscopic and microscopic features of the colonies revealing fusiform, rough walled macroconidia, with an interior portion divided into six or more compartments separated by broad cross-walls, indicative of *Microsporum canis*.



**Figure 1** Rounds, marginates, erythematous scaling lesions (2-3 cm in diameter) in in the thigh area



**Figure 2** Extensive scaly lesions on the abdomen

The patient was treated with oral terbinafine 250 mg/day. A complete blood count and liver panel were performed 1 week later and were within normal limits. The lesions cleared rapidly in 2 weeks with no further sequelae.

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### 3. Discussion

This case illustrates the unusual manifestations of dermatophytosis in PLHIV in whom extension and polymorphism of the skin lesions contributed to different erroneous diagnoses. Although dermatomycoses were clinically suspected, the disease was not confirmed until 12 months later when mycologic examination was carried out. The long-standing and progressive dissemination of the skin lesions could be related with successive misdiagnoses and the use of topical steroids in an immunocompromised host.

The frequency rate of epidermal dermatophytosis in PLHIV is not significantly higher than that in HIV-negative patients, but the severity and variability of presentation are definitely higher [4]. The prevalence of dermatophyte infection is up to 20% in PLHIV with T-cell counts below 400/mL [5]. The low incidence of dermatophytosis in HIV disease may be secondary to improved antiretroviral therapy and the treatment of individuals with mucosal candidiasis and invasive fungal infections with systemic azoles [4].

Tinea corporis classically presents with annular lesions. Margins are usually well defined, scaly, and often reddish. Lesions of tinea corporis expand concentrically, resulting in a polycyclic arrangement. Pruritus is a commonly associated symptom. Atypical disseminated clinical presentations may be seen in immunocompromised patients, including those living with HIV [6]. Manifestations of fungal infections include vesiculous or even bullous tinea, appearing as erythematous dermatitis characterized by annular lesions with raised vesicular edges. Reports in the literature also include purpuric tinea corporis, presenting as erythematous, purpuric, scaling lesions on a calf [7] as well as papulosquamous lesions on the trunk and extremities [6]. Further fungal infections may resemble different conditions such as lupus erythematosus psoriasis, atopic eczema, nummular eczema, erythema multiforme, granuloma annulare, granuloma facial, lymphocytic infiltration of the skin and others [8].

*Microsporum canis*, the causative agent of cat and dog ringworm, is the commonest of the zoophylic infections worldwide and its spread occurs directly from an infected animal and possibly from contaminated furniture, floors and carpets in domestic environment. In our case, the patient confirmed the close contact with domestic cats.

In immunocompromised patients, an early etiological diagnosis of dermatomycosis is essential in order to prescribe appropriate antifungal therapy and to prevent dissemination of the skin lesions.

#### 4. Conclusion

Our case report illustrates how important it is for clinicians to maintain a high index of suspicion when evaluating atypical presentations of common fungal infections, as any skin changes always constitute potential markers of internal disease.

#### Compliance with ethical standards

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##### *Disclosure of conflict of interest*

The authors declare that they have no conflict of interest

##### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

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