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Case Presentation

A case of tinea incognito

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Abstract

Tinea incognito is a dermatophyte infection of the skin that presents atypically because it has previously been treated with imunnosuppresive medication. Herein we present a case of a middle-aged man who was initially clinically diagnosed to have plaque-type psoriasis on his arms. Over the course of two months of topical hydrocortisone and calciptriol treatment as well as phototherapy, the rash worsened. At the time of presentation to hospital the patient had a pruritic, widespread, sloughing, erythematous rash with areas of eschar. A punch biopsy skin confirmed dermatophyte fungal infection of the skin. Fungal culture was positive for *Trichophyton Rubrum* and the eruption resolved with systemic anti-fungal therapy. Patient specific risk factors for atypical presentation included poor hygiene and hepatatic disease.

Key Words: Tinea corporis, tinea incognito, *Trichophyton Rubrum*

Introduction

Tinea corporis is a dermatophyte infection of the superficial, skin. It generally appears as annular erythematous scaly papulosquamous lesions with elevated borders and central sparing on the trunk or limbs. It is transmitted from one person to another or one site to another via fomites. Microscopy and cultures are useful for diagnosis, whereas topical or systemic antifungals may be used for treatment [1].

Tinea incognito, a term first coined by *Ive and Marks*, is a dermatophyte infection that presents with an atypical appearance owing to modification from previous topical immunosuppressive therapy [2]. Herein we report such a case.

Case Report

A 57 year-old man was admitted to the hospital with a widespread pruritic eruption. The rash first appeared on his arms two months prior and a community dermatologist diagnosed it as plaque-type psoriasis. He was treated with topical hydrocortisone 1%, calcipitriol, and weekly ultraviolet phototherapy. Over the course of treatment the eruption spread extensively to his torso and began to exfoliate and crust.

The patient was a 40 pack-year smoker and had a remote history of alcohol misuse. He was unemployed for the previous five years and at times had experienced a transient lifestyle. He had no personal history of skin disorders, although his father had psoriasis.

Physical examination demonstrated annular erythematous scaly lesions with occasional central sparing that coalesced into diffuse plaques with areas of scale and eschar (Figure 1). The lesions were present on the patient's arms, torso, head, and neck, sparing the groin and legs. There was some mucosal involvement with oral ulceration. The abdomen was somewhat distended.

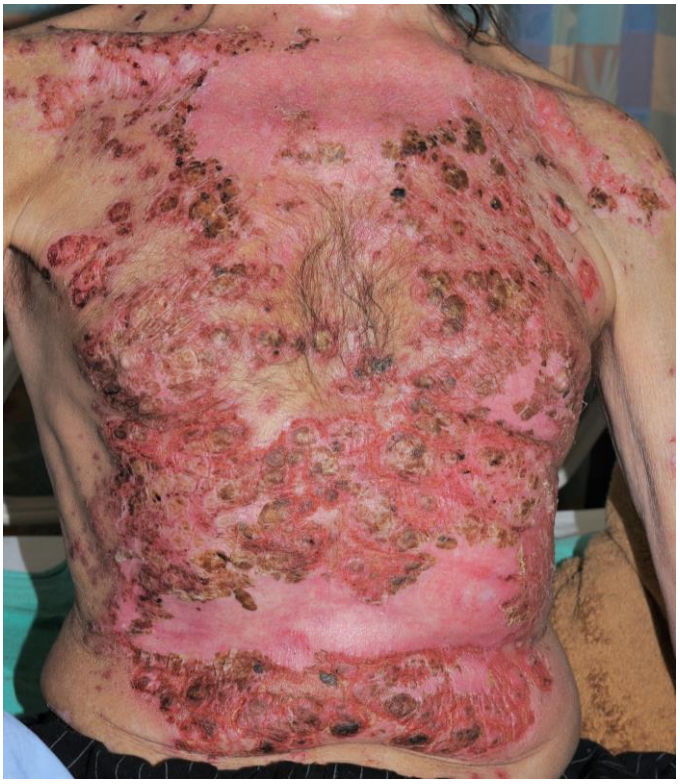
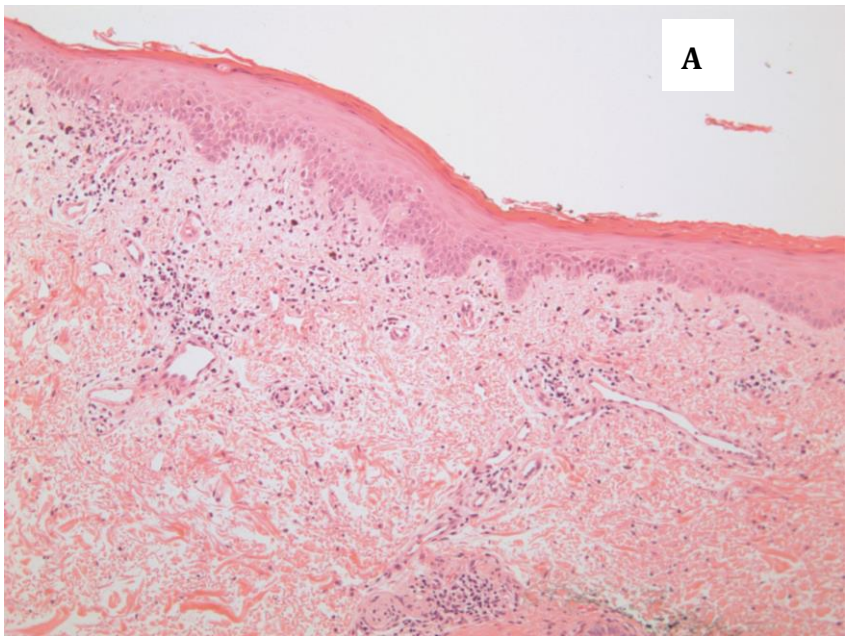


Figure 1. Eruption at presentation to hospital.

Blood work revealed a macrocytic anemia and evidence of liver disease with decreased albumin (24 g/L) and elevated liver enzymes (alanine aminotransferase 87, aspartate aminotransferase 59). An abdominal ultrasound demonstrated ascites. HIV and hepatitis A, B, and C serologies were negative. The patient was subsequently referred to the hepatology clinic. Investigations including liver biopsy found mixed, nodular cirrhosis of indeterminate etiology.



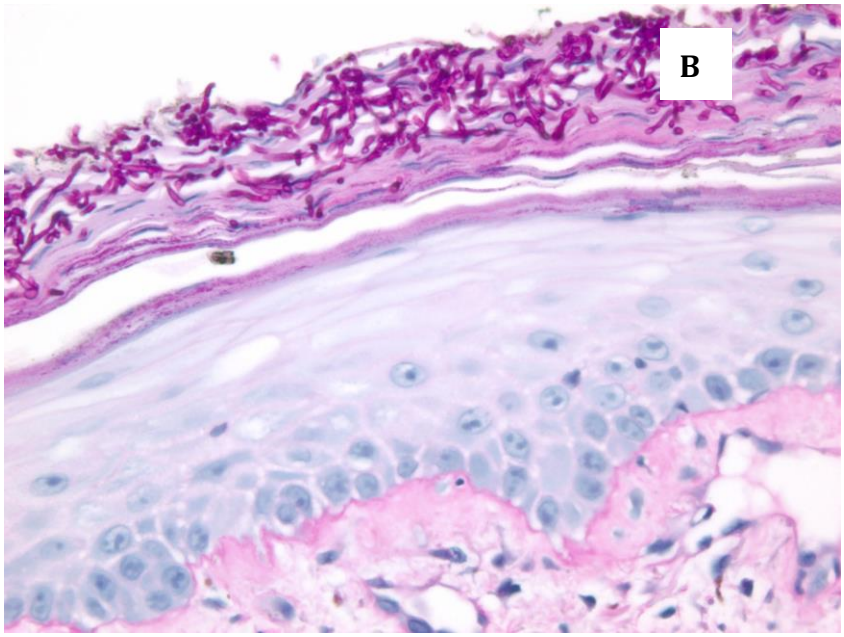


Figure 2. Skin biopsy. **A.** There is hyperkeratosis, focal interface change, and dermal inflammation (H&E, magnification X 100). **B**. Abundant fungal hyphae in the stratum corneum (PAS stain, magnification X 400).

A punch biopsy skin taken from a back lesion showed confluent hyperparakeratosis, focal interface dermatitis with necrotic keratinocytes, and dermal inflammation composed mostly of lymphocytes and some melanophages. There was telangiectasia and dermal edema (Figure 2A). A Periodic acid-Schiff stain showed abundant fungal hyphae on the stratum corneum in keeping with a dermatophyte fungal infection. (Figure 3B). The direct immunofluorescence study was negative on a separate lesional punch biopsy.

A skin culture subsequently grew *Trichophyton rubrum*.

The patient was prescribed oral fluconazole 200 mg daily and he experienced a full resolution of the pruritic rash within four weeks of treatment (Figure 3).

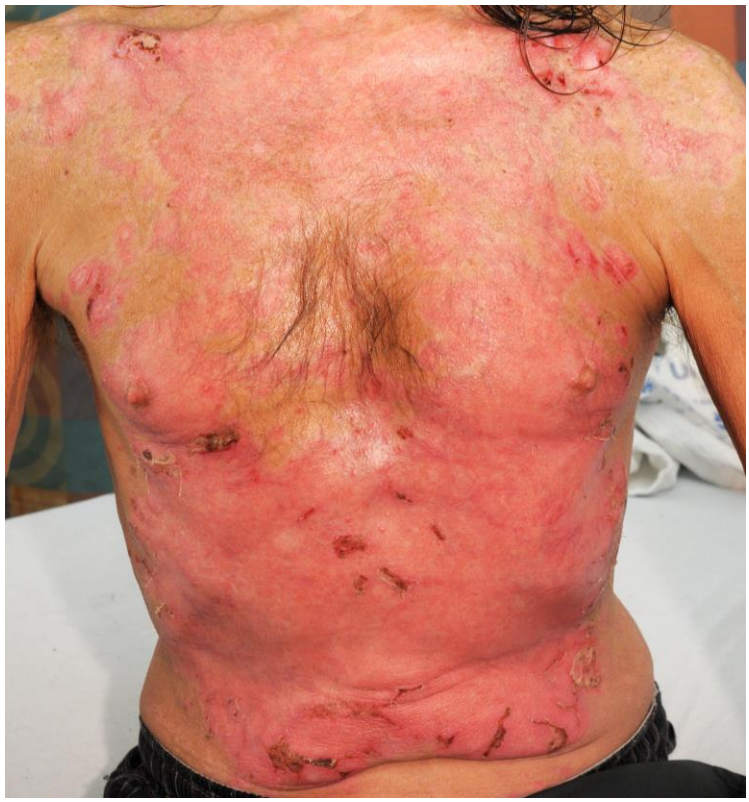


Figure 3: Rash after eight days of antifungal therapy.

Discussion

Tinea corporis is traditionally described as an annular eruption with fine scale and an erythematous border. Tinea incognito, which represents approximately 40 % of tinea infections, is a term ascribed to a dermatophyte infection with atypical appearance resulting from previous immunosuppressive treatment with steroids, topical tacrolimus, or pimecrolimus [2,3,4,5]. Tinea incognito often presents a diagnostic challenge for clinicians because it mimics various other dermatological conditions. In an Italian survey of 200 cases of tinea incognito, this disease was found to mimic eczema, impetigo, lupus erythematosus, rosacea, and psoriasis. [6]

In our patient's case, topical corticosteroid therapy was initially prescribed for a preliminary clinical diagnosis of psoriasis. As Figure 1 demonstrates, the appearance at presentation after several weeks of topical and ultraviolet immunosuppressive therapy was atypical for tinea corporis and our differential diagnosis at this time included psoriasis and lupus erythematosus. The skin biopsy and culture confirmed *T. rubrum* as the causative agent for this extensive rash. *T. rubrum* infection is the most common cause of tinea corporis [1], and was the most frequently speciated organism in the Italian case series as well [6].

In addition to topical immunosuppressive therapy, other risk factors for tinea incognito with atypical presentation have also been proposed. The virulence of an organism and its invasive capacity, the site of infection, the host's innate physiology, and acquired host factors may all have a role to play [7]. Poor hygiene and unsanitary conditions are associated with superficial dermatophyte infections [8] and one case report proposed that these factors may contribute to a more atypical presentation [9]. An atypical presentation has also been reported in a patient whose only risk factor was hepatic disease [10]. Such risk factors may have contributed to the atypical appearance of our patient's eruption.

This case highlights the unusual appearance of tinea incognito following inappropriate treatment with local corticosteroids and the value of obtaining pathological confirmation of the diagnosis. Potassium hydroxide preparation of skin scrapings or punch biopsy skin would confirm the diagnosis. It also underscores the importance of entertaining tinea incognito in the differential diagnosis of an atypical skin rash that changes or worsens during a course of topical immunosuppressive therapy.

References

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