Tinea Incognita in a Patient with Crest Syndrome: Case Report

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ABSTRACT Tinea incognita is a dermatophytic infection that is difficult to diagnose, usually modified by inappropriate topical or systemic corticosteroid therapy. We report an extensive case of tinea incognita caused by the zoophilic dermatophyte *Trichophyton mentagrophytes* (var. *granulosa*) in a 49-year-old female patient with CREST (**C**alcinosis; **R**aynaud phenomenon; **E**sophageal involvement; **S**clerodactyly; **T**eleangiectasia) syndrome. Immunocompromised patients, as well as patients with keratinization disorders, seem to be especially susceptible to dermatophytic infections with atypical clinical presentation that is sometimes bizarre and difficult to recognize. Therefore, close monitoring and mycological skin examination is recommended in order to avoid misdiagnosis and to give the patient the best chance of recovery.

KEY WORDS: Tinea incognita, *Trichophyton mentagrophytes* (var. *granulosa*), CREST

INTRODUCTION

Tinea incognita is a dermatophytic infection that is difficult to diagnose, usually modified by inappropriate topical or systemic corticosteroid therapy. Additionally, cases of tinea incognita induced by topical immunomodulators such as pimecrolimus (1,2) and tacrolimus (3) have been reported recently. Shortly after topical corticosteroids were introduced, the first cases of tinea incognita were described (4). Both immunocompetent and immunocompromised patients can be involved.

The most frequently reported agent in Europe is the antropophilic dermatophyte *Trichophyton rubrum* (5,6). Zoophilic and even geophilic dermatophytes can also be implicated with tinea incognita (5,7).

We report a case of an extensive tinea incognita caused by the zoophilic dermatophyte *Trichophyton mentagrophytes* (var. *granulosa*) in a patient with CREST (Calcinosis; Raynaud phenomenon; Esophageal involvement; Sclerodactyly; Teleangiectasia) syndrome.

CASE REPORT

A 49-year-old female patient was referred to our Department due to extensive, erythematous, and not well demarcated lesions on the trunk, neck, and arms (Figure 1). Ichthyosiform scales and punctiform excoriations were observed as well. Prior to admission, the lesions had been unsuccessfully treated with topical

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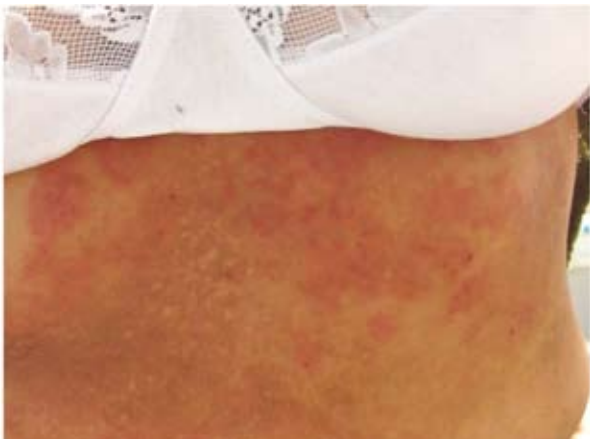

Figure 1. The trunk lesions (not well demarcated), with punctiform excoriations due to the very intensive pruritus.

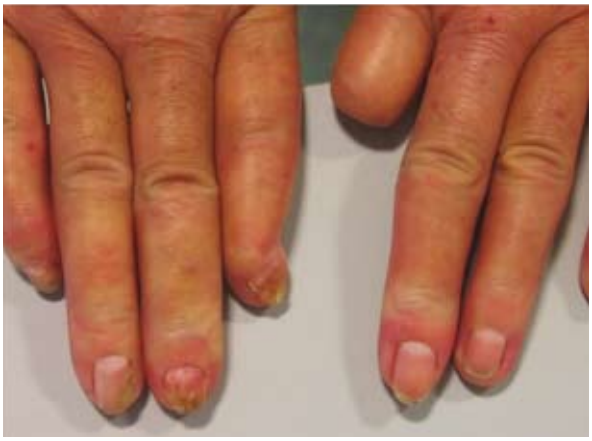

Figure 2. Sclerodactyly and calcinosis of the fingers with yellowish discoloration of the nails (part of the CREST syndrome).

betamethasone cream. Very intensive pruritus induced the patient to visit a dermatologist.

Fifteen years earlier, the patient had been diagnosed with CREST syndrome with biliary cirrhosis and had been continuously receiving systemic steroids. Eventually, the maintenance dose became 10 mg of prednisone daily. Apart of the previously described skin lesions, the physical examination also revealed sclerodactyly and calcinosis of the fingers, with yellowish discoloration of the nails (Figure 2). Numerous teleangiectasias were spread over the face, neck, upper trunk, and even the lips (Figure 3).

Direct microscopic potassium hydroxide (KOH) examination of the skin scrapings was positive, revealing fungal hyphae. *Trichophyton mentagrophytes* (var. *granulosa*) was confirmed by cultureon the glucose-modified Sabouraud medium. Direct examination and fungal culture of the nails were negative. Topical treatment with terbinafine cream was initiated. Systemic antimycotic therapy was not administered because of the very good response to the topical therapy and due to the high level of liver enzymes. After four weeks of treatment, a complete clinical and mycological regression was observed (Figure 4).

DISCUSSION

CREST syndrome is a clinical variant of scleroderma. It is not entirely a benign syndrome since esophageal dysfunction, pulmonary hypertension, and (as in our patient) biliary cirrhosis can occasionally occur (8). Systemic immunosuppressive agents are sometimes used in order to ameliorate morbidity and decrease potential mortality. In our patient, systemic and prolonged immunosuppression and inappropriate topical corticosteroid therapy resulted in extensive pruritic lesions with peculiar clinical appearance. The lesions were erythematous, not well demarcated, with ichthyosiform scaling, and excoriated due to the very intensive pruritus. The most frequently isolated fungus in Europe is anthropophilic dermatophyte *Trichophyton rubrum* (5), whereas in our patient zoophilic *Trichophyton mentagrophytes* (var. *granulosa)* was confirmed by culture. However, no zoophilic source of infection could be detected, so the exact route of infection remained unclear in our patient. The unregistered or disregarded contact with the zoophilic source might have taken place in the patient's history, and such a clinical presentation might have occurred due to the pre-existing keratinization disorder.

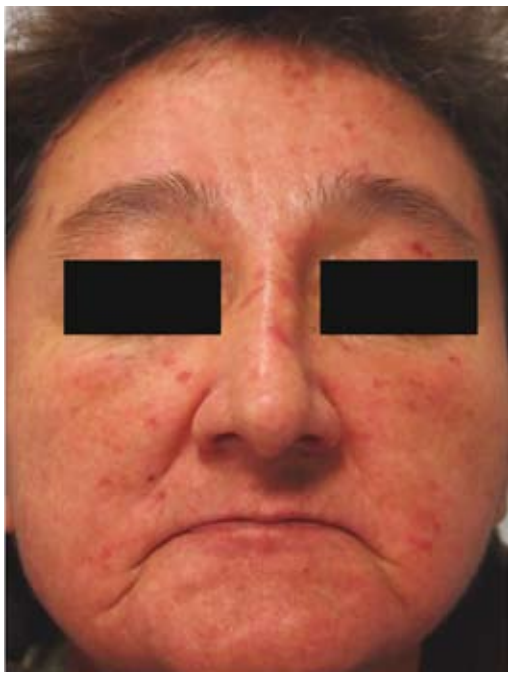

Figure 3. Numerous teleangiectasias spread over the face (part of the CREST syndrome).

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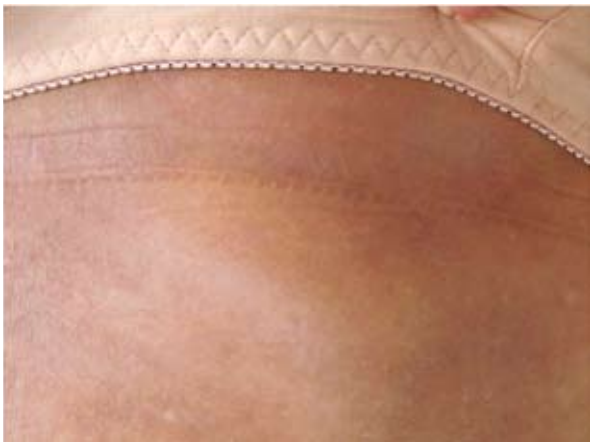

Figure 4. Complete clinical (and mycological) regression after the four-week treatment with topical terbinafine.

A case of tinea incognita has been also reported in a patient with pemphigus foliaceus on a potent topical and prolonged systemic steroid therapy. The reported lesions were pustular, extensive, and irritable, with less-raised margins and less scaly surface, resembling the basic ones due to the pemphigus foliaceus (9). Unrecognized dermatophyte infections have been furthermore reported in patients with ichthyosis vulgaris and some other disorders of keratinization (10,11). In those disorders, excessive keratin production seems to provide a more favorable habitat for fungi compared with normal skin (12). In patients with lupus erythematosus, fungal infections are also a major cause of morbidity. Disseminated dermatophytic infection due to *Microsporum gypseum* has been described in a patient with systemic lupus erythematosus. Intrinsic immunological defects in lupus erythematosus and prolonged immunosuppressive therapy have been suggested as triggering factors (13).

Immunocompromised patients with HIV/AIDS seem to be especially susceptible to dermatophyte infections. Thus, widespread dermatophyte infections with atypical appearance, resistant to the conventional therapy, have also been reported (7,14,15).

Tinea incognita is reported not only in immunocompromised patients, but also in otherwise healthy patients (16,17), including children (18-20). The clinical appearance of such infections can mimic numerous skin diseases, e.g. lupus erythematosus, eczema, rosacea psoriasis, purpura, seborrheic dermatitis, and lichen planus (5).

CONCLUSION

Immunocompromized patients are susceptible to dermatophyte infections with atypical clinical presentation. The clinical appearance is sometimes bizarre and difficult to recognize. Therefore, close monitoring and mycological skin examination is recommended in order to avoid misdiagnosis and to give the patient the best chance of recovery.

References

1. Crawford KM, Bostrom P, Russ B, Boyd J. Pimecrolimus-Induced tinea incognito. Scinmed 2004;3:352-3.
2. Rallis E, Koumantaki-Mathioudaki E. Pimecrolimus induced tinea incognito masquerading as intertriginous psoriasis. Mycoses 2007;51:71-3.
3. Siddaiah N, Erickson Q, Miller G, Elston DM. Tacrolimus-induced tinea incognito. Cutis 2004;73:237-8.
4. Ive FA, Marks R. Tinea incognito. Brit Med J 1968;3:149-52.
5. Romano C, Maritati E, Gianni C. Tinea incognito in Italy: a 15-years survey. Mycoses 2006;49:383-7.
6. Kastelan M, Massari LP, Brajac I. Tinea incognito due to *Trichophyton rubrum*-a case report. Coll Antropol 2009;33:665-7.
7. Polilli E, Fazii P, Ursini T, Fantini F, Di Massi F, Tontodonati M, *et al*. Tinea incognito caused by *Microsporum gypseum* in a patient with advanced HIV infection: a case report. Case Rep Dermatol 2011;3:55-9.
8. Connolly MK. Systemic sclerosis (Scleroderma) and related disorders. In: Bolognia JL, Jorizzo JL, Rapini RP, editors. Dermatology, Second Edition. Elsevier; 2008. pp. 585-96.
9. Guenova E, Hoetzenecker W, Schaller M, Rocken M, Fierlbeck G. Tinea incognito hidden under apparently treatment-resistent pemphygus foliaceus. Acta Derm Venereol 2008;88:276-7.
10. Grahovac M, Budimčić D. Unrecognized dermatophyte infection in ichthyosis vulgaris. Acta Dermatovenerol Croat 2009;17:127-30.
11. Agostini G, Geti V, Difozo EM, Gianotti B. Dermatophyte infection in ichthyosis vulgaris. Mycoses 1992;35:197-9.
12. Hoetzenecker W, Schanz S, Schaler M, Fierlbeck G. Generalized tinea corporis due to *Trychophyton rubrum* in ichthyosis vulgaris. J Eur Acad Dermatol Venereol 2007;21:1129-31.
13. Macedo DPS, Neves RP, Lopes FC. Case report: Disseminated dermatophytosis by *Microsporum gypseum* in a systemic lupus erythematosus patient. Braz J Microbiol 2008;39:25-7.

14. Kaviarasan PK, Jaisankar TJ, Thappa D, Sujatha S. Clinical variations in dermatophytosis in HIV infected patients. Indian J Dermatol Venereol Leprol 2002;68:213-6.
15. Fernandes NC, Lamy F, Akiti T, Barreiros MGC. *Microsporum gypseum* infection in Aids patient: a case report. An Bras Dermatol 1998;73:39-41.
16. Celić D, Radoš J, Skerlev M, Dobrić I. What do we really know about "tinea incognita"? Acta Dermatovenerol Croat 2005;13:17-21.
17. Feili A, Namazi MR, Seifmanesh H. Generalized pustular psoriasis-like dermatophytosis due to *Trichophyton rubrum*. Acta Dermatovenerol Croat 2011;19:206-11.
18. Sanchez-Castelanos ME, Mayorga-Rodriguez JA, Sandoval-Tress C, Hernandez-Torres M. Tinea incognita due to *Trichophyton mentagrophytes*. Mycoses 2007;50:85-7.
19. Skerlev M, Miklić P. Superficial and Deep Fungal Diseases. In: Parish LC, Brenner S, Ramos-e-Silva M, Parish JL, editors. Manual of Gender Dermatology. New York, USA: Elsevier Inc; 2010. pp. 72-78.
20. Skerlev M, Miklić P. The changing face of *Microsporum spp* infections. Clin Dermatol 2010;28:146-50.