

## TO BE OR NOT TO BE TINEA – MISDIAGNOSIS AND INAPPROPRIATE TREATMENT

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### Summary

We present a hallmark case of an overweight male patient with extensive tinea corporis and tinea cruris, as well as Majocchi's granuloma, who was misdiagnosed for several years and therefore had received inappropriate treatment, leading to extension of lesions. The clinical diagnosis of tinea was confirmed by microscopic mycological examination, and the patient was also diagnosed with diabetes mellitus; therefore, the therapeutic management consisted of combination of systemic and topical antifungal treatment (itraconazole and terbinafine spray), with complete resolution of lesions within 5 weeks. We emphasize the importance of paraclinical tests for confirming the diagnosis before initiating treatment.

**Key words:** dermatophytosis, tinea corporis, tinea cruris, Majocchi's granuloma.

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### Introduction

A 63 years old overweight male patient presented with inflammatory skin lesions on forearms which appeared 6 weeks earlier. Similar lesions were present on lower back, thighs and inguinal folds for almost 5 years, slowly expanding in time and with discrete pruritus. The patient was previously treated by the general practitioner and 2 dermatologists who suspected the diagnosis of exfoliative dermatitis and prescribed the application of ointments containing high potency dermatocorticoids and antibiotics. He reported having initially a small reddish plaque of almost 5 cm<sup>2</sup> on lower back, moderately pruritic. No improvement was achieved during the treatment and skin lesions have progressed, leading to inflammation. The patient lives at the countryside, works as a farmer and owns dogs.

### Material and methods

On dermatological examination, the patient presented a large reddish – purple annular plaque of almost 20 cm in diameter, with irregular surface, covered with slight scales and numerous follicular pustules, papules and nodules, distributed on the extensor surface of the right forearm (Fig. 1), associating pain and pruritus. The lesion was slowly progressing for almost 6 weeks and was previously treated with dermatocorticosteroids.

On lower back and buttocks there was a large erythematous serpiginous patch of almost 30 cm<sup>2</sup>, with reddish advancing edge and discrete scales (Fig. 2). Furthermore, clinical examination revealed symmetric large patches of erythema with central clearing in the groin that extended distally down the medial aspects of the thighs (Fig. 3) and proximally to the lower abdomen (Fig. 4) and pubic area, sparing the penis and

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*Fig. 1. Majocchi's granuloma left forearm. Multiple follicular pustules, papules and firm, violaceous nodules.*



*Fig. 3. Tinea cruris. Symmetric large erythematous patches with arciform borders and central clearing in the groin that extend down the medial aspects of the thighs and to the lower abdomen*



*Fig. 2. Tinea corporis. Large erythematous scaly patch on lower back, extending to the buttocks, with reddish advancing edge*



*Fig. 4. Tinea cruris. Symmetric large erythematous patches with arciform borders and central clearing in the groin that extend down the medial aspects of the thighs and to the lower abdomen*

scrotum, with arciform border and scarce scales at the periphery. Also, on upper trunk and both thighs, there were 3 round erythematous scaly plaques of approximately 10-15 cm<sup>2</sup>. To confirm the diagnosis and to further evaluate the patient's overall status we performed a direct microscopic examination from cutaneous lesions and complete blood count, hepatic enzymes, lipid profile and glycemia.

## Results

The results revealed positive skin scrapings from the lower back plaque, confirming the diagnosis of *Tinea corporis*, and hyperglycemia (146 mg/dl). After repeating the test, the patient was referred to diabetologist for further investigations and proper treatment, confirming the diagnosis of type II diabetes.

Considering the extent and duration of lesions on an overweight male patient with diabetes mellitus, the therapeutic management consisted of combination of systemic and topical antifungal treatment. Therefore, the patient initiated short term therapy with 200 mg positraconazole daily for 7 days, along with local antiseptic agents and terbinafine spray, twice daily, for 3 weeks. At follow-up, 70% of lesions have cleared out, and we decided to repeat oral treatment with 200 mg itraconazole daily for one week, and to continue with local application of terbinafine spray for 2 more weeks. At endpoint there was complete resolution of lesions and symptomatology.

## Discussions

Dermatophytosis are classified according to the transmission route as anthropophilic, zoophilic, and geophilic. Epidemiologically there are three major groups of fungus that cause tinea infections, which are *Trichophyton*, *Epidermophyton*, and *Microsporum*. Clinically, dermatophytic infections can be classified according to the involved area as following: tinea capitis (scalp), tinea faciei (face), tinea barbae (beard), tinea corporis (trunk and members), tinea manuum (volar aspects of hands), tinea cruris (groins), tinea pedis (volar aspects of feet), and tinea unguium (nail plate). There are also special clinical variants that include tinea imbricata,

tinea pseudoimbricata, and Majocchi's granuloma. [1,2].

Tinea corporis is the term used for superficial dermatophytosis of glabrous skin, with the exception of palms, soles and groins. It usually presents as an annular scaly plaque, with ringworm-like appearance, active erythematous borders and central clearing [2,3,4]. Any dermatophyte may cause tinea corporis, but it is mainly due to *T. rubrum*, *Epidermophyton-floccosum*, *T. interdigitale*, *M. canis* and *T. tonsurans*. Differential diagnosis for tinea corporis is made with eczema (nummular eczema, atopic dermatitis), pityriasis rosea, pityriasis versicolor, annular psoriasis, parapsoriasis, granuloma annulare, lupus erythematosus (subacute cutaneous) and mycosis fungoides [2,3,4,5]. In our patient's case we could consider the differential diagnosis of plaque mycosis fungoides, due to the extense of polycyclic confluent erythematous scaly plaques, slowly evolving for 5 years. However, the annular lesions in our patient were well-defined, scaly, with reddish margins, and discrete central clearing.

Majocchi's granuloma is a superficial dermatophytic infection with subcutaneous involvement of deeper portions of hair follicles which presents with an irregular red, scaly, usually annular shaped plaque, in which there are follicular papules, pustules and nodules. It usually appears on one lower leg, especially in female patients who shave their legs and apply topical steroids. In our patient's case, Majocchi's granuloma developed on the extensor surface of the forearm with painful follicular papules and pustules on a bright red plaque [2,4,6].

Tinea cruris occurs 3 times more frequently in men than in women, and the main risk factors involved are obesity diabetes mellitus and humidity. Chronic tinea cruris treated with topical corticosteroids has brighter erythema, and the surface is less scaly but with more follicular pustules. Our patient has developed tinea cruris after an initial tinea lesion on upper trunk, which has later on expanded to form a massive confluent plaque, because of improper treatment [2,3,4].

The diagnosis of tinea is confirmed by skin scrapings prepared with potassium hydroxide

for microscopic examination, or a cotton swab for fungal culture, with a sensitivity of up to 88% and a specificity of 93% [3,7,8].

Combination therapy has better results in terms of mycological clearance than monotherapy alone, either systemic or topical. It is best to combine antifungal agents from different groups in order to provide a wider coverage and to prevent antifungal resistance. Studies have concluded that short term therapy with high doses is less likely to induce resistance than long term therapy with lower doses [3,7].

## Conclusions

Even though tinea corporis or cruris is usually a diagnosis that may be established based on clinical aspects, it is best to confirm the diagnosis using direct microscopic examination from cutaneous lesions, since misdiagnosis leads to improper treatment and prolonged evolution of disease. Furthermore, the patient should be evaluated for other systemic diseases that may influence the course of the dermatophytosis, such as diabetes.

In conclusion, short term targeted local and systemic antifungal therapy with antifungal agents from different groups is considered the best combination treatment for tinea infection.

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Conflict of interest  
NONE DECLARED

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