

CASE REPORT

Rare clinical presentation of tinea corporis in adolescent caused by trichophyton mentagrophytes

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ABSTRACT

Dermatomycosis is commonly caused by dermatophytes. *Trichophyton rubrum* is the most common species, causing infections followed by *Trichophyton mentagrophytes*. When it affects humans, it tends to produce more inflammatory lesions, forming microabscesses and pustules. The case of a 14-year-old patient with long-lasting lichenified and annular plaque on the back is presented. Mycological culture reported *trichophyton mentagrophytes*. Oral and topical antifungal treatment was prescribed.

INTRODUCTION

Dermatomycosis can be divided according to the pathogen responsible for infections, such as dermatophyte, yeast and mold.¹ Tinea or dermatophytosis are common skin infections caused by dermatophytes, capable of invading keratinized tissue, producing annular, erythematous and desquamative plaques. *Trichophyton mentagrophytes* is a zoophilic fungus affecting mammals and birds. It is reported to be the second microorganism after *Trichophyton rubrum*.² When it affects humans, it tends to produce more inflammatory lesions forming microabscesses and pustules.³

CLINICAL CASE

The case of a 14-year-old male patient is presented. He consults with the Dr. Úraga Dermatology Center,

presenting no significant pathological history and a large 3-year-old erythematous lichenified annular plaque located in the lumbar and gluteal area (fig 1A). In addition, there is another erythematous annular lesion with irregular margins of smaller size in the upper third of the back, of short duration (fig 1B.). These were accompanied by intense pruritus. Fungal culture was requested. It tested positive for *Trichophyton mentagrophytes*.

Dermoscopy shows lesions with pointed vessels, superficial white scales on violet base (Fig. 2).

Mycological study reveal the presence of hyphae (fig.3)

Treatment with oral itraconazole 200 mg/d and antifungal cream is indicated with sertaconazole. Improvement observed during control.

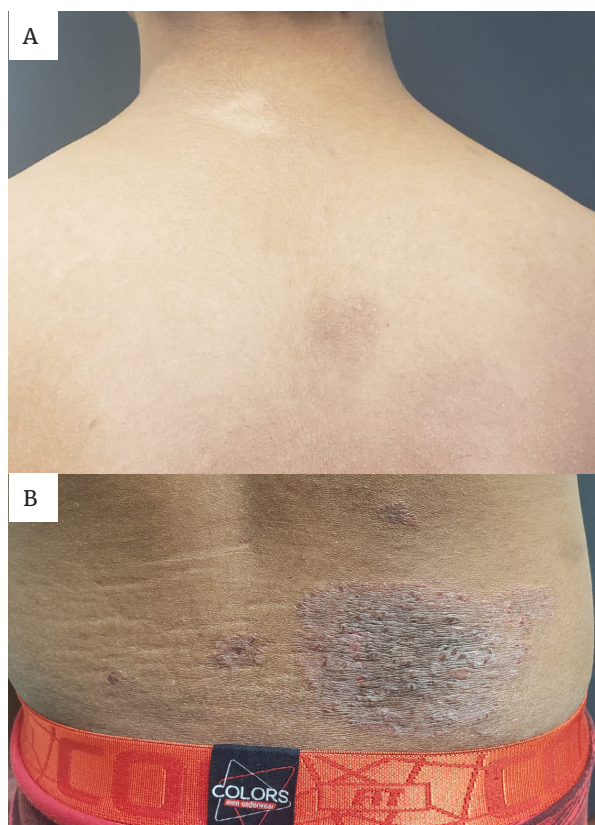


Figure 1. A) Brownish plaques, infiltrated with scaling surface, with regular margins, located in the midline of the upper third of the back. B) Brownish, infiltrated, desquamative plaque with defined margins in right lumbar area.

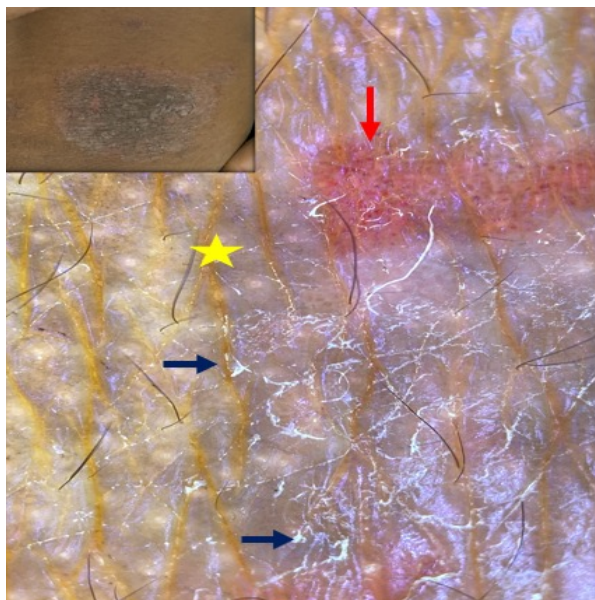


Figure 2. Dermoscopy reveals shallow white scales (blue arrows) and pointed vessels (red arrow), on violet erythematous base. [polarized mode with 10x magnification]

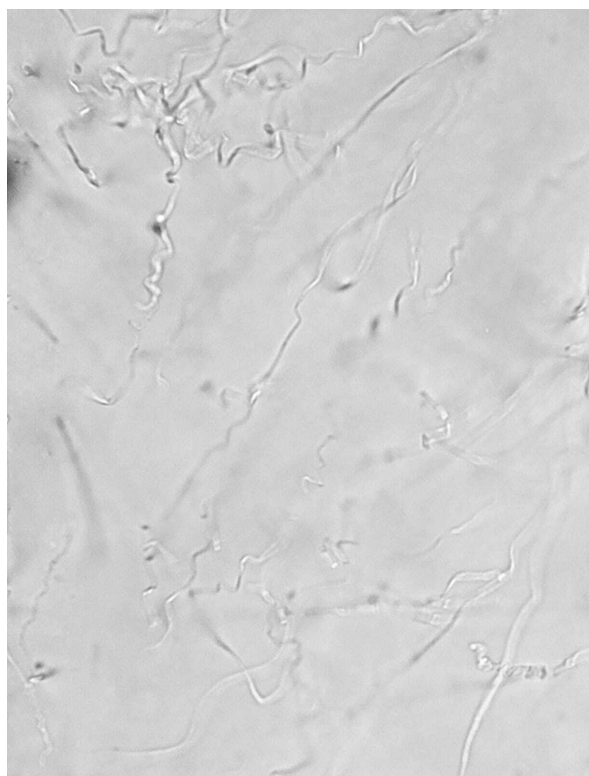


Figure 3. Mycological study: presence of hyphae.

DISCUSSION

Dermatophytes are a group of invasive fungi of keratinized tissue (skin, hair and nails) of humans and animals that cause acute and chronic dermatophytosis.⁴

Three anamorphic genera (asexual or imperfect) cause dermatophytosis: *Trichophyton*, *Microsporum* and *Epidermophyton*. Dermatophytes can infect humans (anthropophilic) or non-human mammals (zoophilic), or they can reside mainly in the soil (geophilic). *Trichophyton rubrum* is the most common species, causing dermatophyte infections during the last 70 years. It accounts for 80 to 90% of strains. Other common isolates include *Trichophyton mentagrophytes* and *Microsporum audouinii*. The infection usually occurs because of direct contact of the skin with soil, animals, or other human beings.⁵

The severity of dermatophyte infection can vary from mild to severe, as a result of host responses to fungal

metabolic products, virulence of the infecting strain or species, anatomical location of the infection, and local environmental factors.⁴

Skin dermatophytosis or ringworm can sometimes simulate other dermatoses and present multiple atypical clinical symptoms, including erythema multiforme, seborrheic dermatitis, lupus erythematosus, dermatitis herpetiformis, eczema dermatitis, polymorphous rash, psoriasis. Although these are more common in immunocompromised individuals, they can be seen in immunocompetent people as well. There are cases with rare manifestations of ringworm called atypical ringworm.⁶

Trichophyton mentagrophytes stands out as the second most frequent causative agent of dermatophytosis after T. rubrum. Characterized morphologically based on the development of macro and microconidia with soft walls. The taxonomy of T. mentagrophytes is complex due to the changes it has undergone in recent years. However, today, only five species are considered: T. mentagrophytes, T. interdigitale, T. erinacei, T. quinckeanum and T. benhamie, as well as nine different genotypes of T. mentagrophytes.⁷

There is a report of Trichophyton mentagrophytes variant erinacei in a 10-year-old girl with two two-week erythematous lesions on her face that did not appear as inflammatory. It was caused by contact with a pet hedgehog.⁸

Diagnosis of dermatophytosis is based on medical history and physical examination. However, tests with potassium hydroxide (KOH) reveal long, narrow, branched and septate hyphae. Another method of confirmation is fungal culture (Sabourad agar), in which the growth is about five days to four weeks in certain species.⁵

Molecular biology techniques contribute to the identification of dermatophytes with high specificity and sensitivity in their detection from clinical samples, even when cultures evaluated by conventional methods are negative.⁹

Dermoscopy can be a diagnostic tool. The study by Ankad, et al shows dermoscopic patterns that vary according to the evolution of lesions, such as the color of blood cells, the color of the background of the lesion, the presence of scales and follicles. Table 1.¹⁰

Dermatophytosis requires long-term treatment, usually with terbinafine, fluconazole, itraconazole and azoles, such as ketoconazole, miconazole. Early-stage dermatophytosis is often treated successfully with topical fungal agents based on the afore-mentioned chemical-based antifungal agents. However, if not treated immediately and appropriately, these infections can become chronic, requiring oral fungicide medications.^{11,12}

Table 1: Dermoscopy of dermatophytosis. Ankad et al

DERMOSCPIC PATTERNS		
PATTERN	SHORT DURATION	LONG DURATION
Globules colour	Red, Red/brown	Dark brown to black
bud scales	minimum	broad, free
Lesional background color	Pale pink to deep red	Grey to black
Follicle*	Hypopigmented terminal hairs	Perifollicular scales
	Translucent hairs	Translucent hairs
	Blackheads, corkscrew hairs, broken hairs	Hypopigmented terminal hairs

*Preliminary observations, need further evaluation to confirm these changes.

CONCLUSION

Dermatophyte infections can manifest in multiple forms, simulating other dermatological lesions. Trichophyton mentagrophytes manifests as an itchy rash, extremely inflammatory. Long duration and recalcitrant ones, are recommended to undergo mycological examination, along with exhaustive clinical examination. These provide the key to correct diagnosis and treatment.

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