Majocchi granuloma on a child's face

Nara Frota André, Mariana Canato, Danielle Arake Zanatta, Iwyna França Gomes Souza Vial, Kerstin Taniguchi Abage, Vânia Oliveira Carvalho

Affiliations: Department of Pediatrics, Division of Pediatric Dermatology, Federal University of Paraná Hospital de Clínicas da UFPR, Curitiba, Paraná, Brazil

Corresponding Author: Nara Frota André, [1]Division of Pediatric Dermatology, Hospital de Clínicas da UFPR, Rua General Carneiro 181 14 Floor, Curitiba, Paraná, Brazil, Tel: 55-41-33601800, Email: nara_frota@yahoo.com.br

Abstract

Majocchi granuloma (MG) is a rare dermal and subcutaneous fungal infection. We report a rare case of MG on the face of a six-year-old child caused by *Trichophyton mentagrophytes* after long term use of topical corticosteroids and other inadequate topical medications. He was treated with griseofulvin 25 mg/kg/day for 35 days unsuccessfully and successful treatment was obtained with terbinafine.

Keywords: infection fungal, corticosteroid topical, therapy topical, therapy systemic

Introduction

Tinea faciei is a dermatophytic infection that occurs on skin of the face. Children are often affected owing to direct contact with pets; the major pathogen involved is *Microsporum canis* [1]. Clinical findings may resemble contact dermatitis, lupus erythematosus, polymorphous light eruption, seborrheic dermatitis, steroid rosacea, and psoriasis [1, 2]. Because of misdiagnosis, these lesions are often treated erroneously with topical steroids or calcineurin inhibitors [1], which modify the appearance but do not clear the infection. Majocchi Granuloma (MG) is a rare deep mycosis that usually occurs on the legs of women who frequently shave [3]. The most frequently isolated dermatophyte is *Trichophyton rubrum*, but *T. mentagrophytes* can be found [3]. The purpose of this report is to describe MG on the face of a child caused by *Trichophyton mentagrophytes* and discuss effective treatment.

Case Synopsis

A six-year-old boy presented with a two-month history of infiltrated erythematous plaques with overlying follicular pustules and a discrete scaly area located in the right temporal and malar regions (**Figure 1**). He had been managed with mometasone furoate 0.1% and betamethasone dipropionate 0.05%, moderate and highly potent topical corticosteroids, respectively, for about ten days each, with metronidazole gel and 0.1% tacrolimus ointment during that time, without improvement. He reported contact with horses and birds because

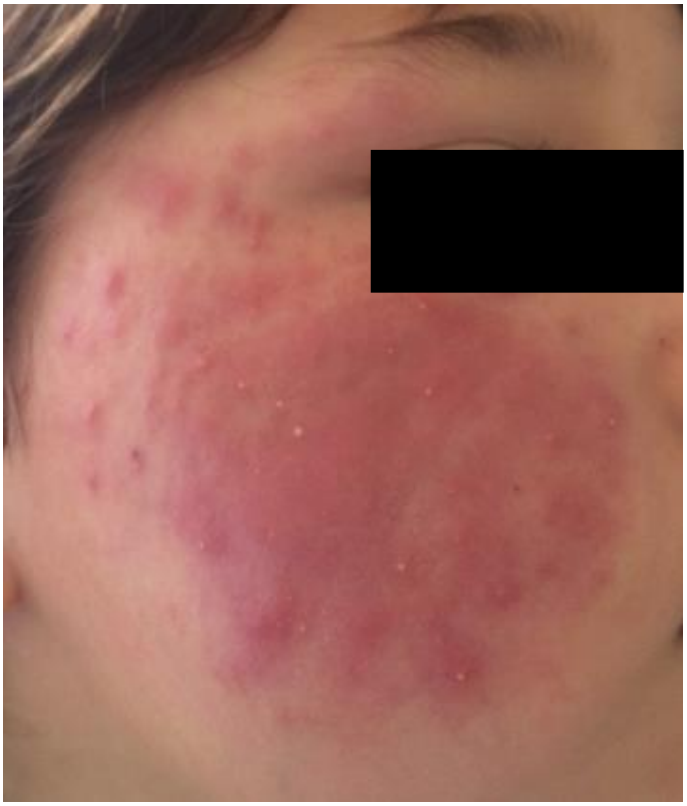

Figure 1. *Erythematous plaque infiltrated with overlying follicular pustules in right malar region of face.*

of his father's work with animals. On physical examination there was an infiltrated erythematous plaque with overlying follicular pustules and a discrete scaly area located in the right temporal and malar region (**Figure 1**). Direct mycological examination showed the presence of septal hyaline hyphae and arthroconidia. Treatment with griseofulvin in a 25 mg/kg/day dose was instituted. *Trichophyton mentagrophytes* was identified in the culture and as the infection showed no signs of clinical improvement after one month of treatment, medication was replaced with oral terbinafine 62.5 mg/day. After one month there was a good clinical response (**Figure 2A**). In the fourth month of treatment there was a significant improvement, but the child persisted with a 0.5cm nodule and slight erythema; a biopsy was performed. The histological study showed a chronic foreign body type of granulomatous dermatitis related to remnants of keratin with scarring dermal fibrosis, without evidence of fungi in PAS staining. The treatment was suspended after four months with remission of erythema; the cicatricial nodule persisted (**Figure 2B**).

Case Discussion

Majocchi Granuloma (MG) is a rare deep mycosis clinically characterized by inflammatory papules and pustules or nodules mainly on the limbs. Its predisposing factors include depilation, occlusion, friction, treatment with topical corticosteroids, and use of systemic immunosuppressants [4]. In the case reported herein, it presented as a single erythematous infiltrated plaque with pustules and slight scaling on the face, which made the diagnosis difficult. Fungal infection in MG is not always demonstrated by histology. In a report of four cases of Kerion celsi and five MG cases the histology was similar in both conditions: a perifollicular infiltrate in 77.7% and fungal elements in 66.6% [5]. Two clinical forms of MG are described: a perifollicular papule that affects immunocompetent individuals and a deep subcutaneous nodular one that occurs in immunocompromised patients [4]. Follicular invasion in MG is most commonly associated with *T. rubrum*. However, other dermatophytes such as *T. violaceum, T. mentagrophytes,* and *Microsporum canis* are also described in immunocompetent patients [6]. In the case reported *T. mentagrophytes* was identified and the patient was immunocompetent.

Systemic treatment is recommended in MG with itraconazole or terbinafine for 4 to 8 weeks [3]. In the reported patient, oral terbinafine resulted in clinical resolution only after four months of treatment.

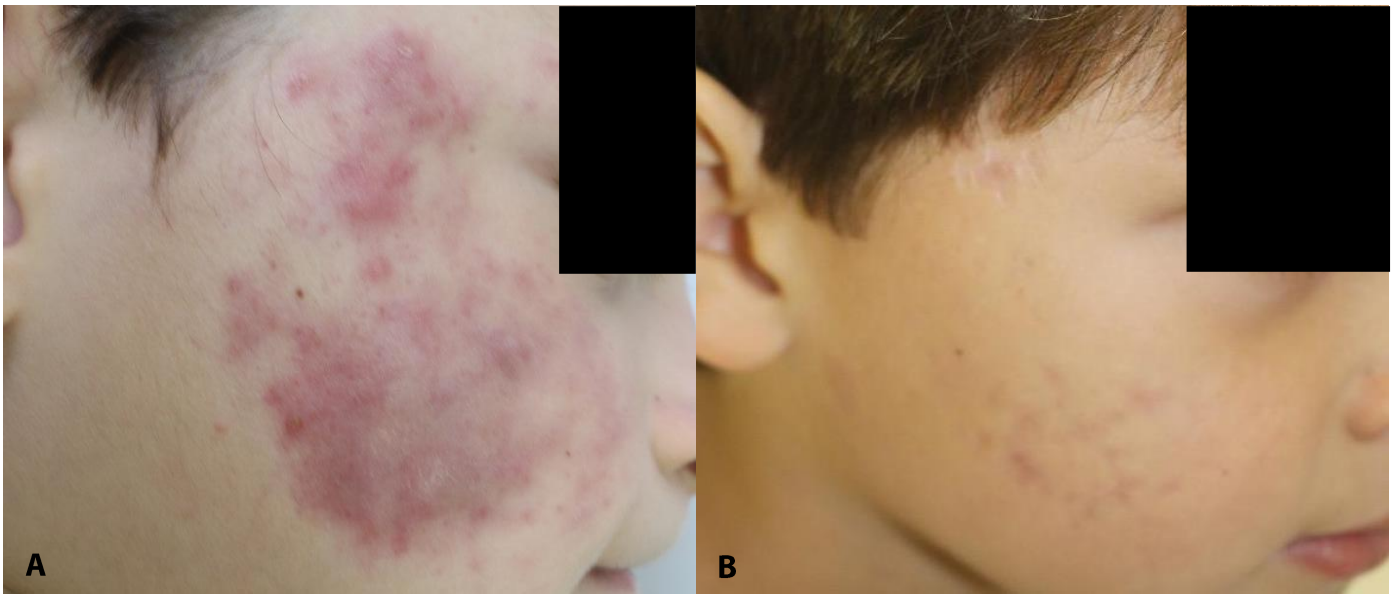

Figure 2. ***A)*** *Clinical presentation of the good therapeutic response, one month after systemic administration of Terbinafine 62.5mg per day.* ***B)*** *Complete remission of erythema with cicatricial nodules remaining after four months treatment with oral terbinafine.*

Conclusion

We emphasize the importance of including fungal infections in the differential diagnosis of chronic inflammatory lesions, which can be confirmed by noninvasive and low-cost exams such as fungal culture, especially in the pediatric age. We also stress that the use of topical corticosteroids may delay the correct diagnosis of fungal infections.

References

1. Lin RL, Szepietowski JC, Schwartz RA. Tinea faciei, an often deceptive facial eruption. *Int J Dermatol*. 2004;43:437-40. [PMID: 15186226].
2. Bhat YJ, Manzoor S, Qayoom S. Steroid-induced rosacea. A clinical study of 200 patients. *Indian J Dermatol*. 2011;56:30–2. [PMID 21572787].
3. Kanaan ICS, Santos TPB, Kac BK, Souza, AMV, Cerqueira, AMM. Majocchi's granuloma - Case report. *An Bras Dermatol*. 2015;90(2):251-3. [PMID: 25830999].
4. Trocoli ID, Vassilaki I, Bradley M. Majocchis Granuloma Caused by *Trichophyton mentagrophytes* in 2 Immunocompetent Patients. Actas Dermosifiliogr. 2017;108 (1):e6-e8. [PMID: 26952202].
5. Arenas R, Toussaint S, Isa-Isa R. "Kerion and dermatophytic granuloma. Mycological and histopathological findings in 19 children with inflammatory tinea capitis of the scalp. *Int. J. Dermatol.* 2006;45(3) 215-219. [PMID: 16533218].
6. Smith KJ, Neafie RC, Skelton HG 3erd, Barret TL, Graham JH, Lupton GP. Majocchi's granuloma, *J. Cutan. Pathol.* 1991;18(1) 28-35. [PMID: 2022763].