

Dermatophytic blepharitis due to *Microsporium gypseum*. An adult variety of *Tinea faciei* with dermatophytoma

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ABSTRACT

Tinea faciei, is a facial superficial mycosis. The most frequent etiological agents are *Microsporium canis*, *Trichophyton rubrum* and *T. tonsurans*. We report a 40 year-old woman, with an eight days history of an erythematous plaque on her superior right eyelid. Hyphae and dermatophytoma were easily visualized in KOH examination, and *Microsporium gypseum* was isolated.

Key words: *Tinea*; *Microsporium gypseum*; dermatophytoma; blepharitis

INTRODUCTION

Tinea (ringworm) is a superficial dermatophytosis, first described by the Greeks and Romans. The etiology are well known fungal agents of the genus *Trichophyton*, *Microsporium* and *Epidermophyton* [1].

Tinea faciei occurs primarily in pediatric patients and also in the second and fourth decades of life, usually with animal contact, predominantly in tropical regions and it is considered a variety of *tinea corporis*.

Microsporium gypseum is the most important geophilic dermatophyte with fast growth of light brown, powdery colonies and under the microscope, with fusiform blunt tips macroconidia, with less than six septa and thick walls [1].

Long septate or arthrospored filaments can be observed with potassium hydroxide and dimethyl sulfoxide (KOH - DMSO) or chlorazol black. It

is sometimes possible to show masses of hyaline filaments with presence or absence of spores, known as dermatophytomas. This phenomenon may hinder the effects of antifungal treatments; and it also has been reported, especially in onychomycosis [1].

CASE REPORT

A 40 year old female from southwest Guatemala, denying previous animal contact, presented with an 8 days history, of an ill-defined 3.5 × 2.5 cm erythematous scaly plaque with irregular borders on her right superior eyelid, and intense pruritus. She received irregular treatment with oral terbinafine for one week without improvement (Fig. 1).

KOH-DMSO showed hyaline hyphae and clusters of filaments (dermatophytoma). Culture in Sabouraud agar with cycloheximide and chloramphenicol (quadruplicate), after 3 weeks revealed a flattened colony, with beige and powdery surface, suggestive of

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Figure 1: Clinical presentation (erythematous plaque of superior right eyelid)

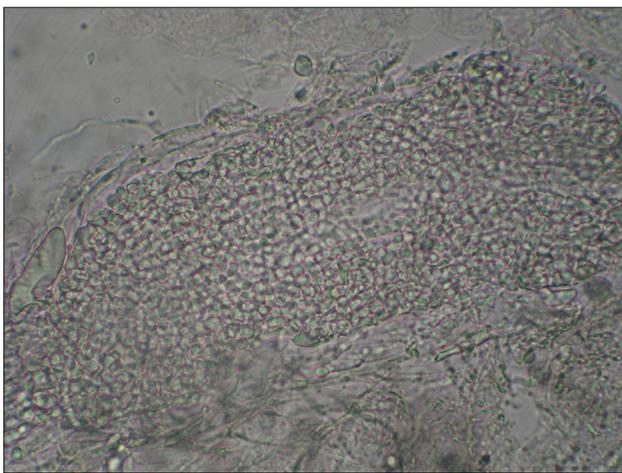


Figure 2: Dermatophytoma (KOH _ DMSO examination)



Figure 3: Powdery flattened surface colony, suggestive of *M. gypseum*

Microsporum gypseum (Figs 2 and 3). It was confirmed by direct microscopic examination with lactophenol cotton blue, showing fusiform blunt-topped macroconidia, each one with six septa and scant hyaline mycelium (Fig. 4).

The patient was treated with topical terbinafine, with complete resolution within two weeks.

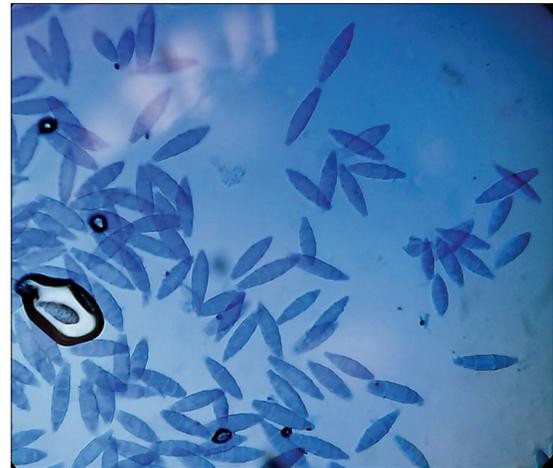


Figure 4: Fusiform blunt – topped macroconidia (lactophenol cotton blue)

DISCUSSION

Tinea faciei may represent up to 20% of *tinea corporis* (which predominates on the trunk and limbs) [2], and is characterized by pruritic erythematous scaly lesions with annular centrifugal growth, but sometimes it may vary in its morphology [2].

Dermatophytomas are defined as a conglomerate of hyphae with or without spores; first described by Roberts and Evans [3], as a subungual microscopic phenomenon.

Martinez et al. in previous studies, indicated that this phenomenon predisposes to a poor response to treatment with oral antifungal agents, so it requires a combination therapy (oral-topical), to obtain clinical remission [4].

It is important to emphasize the absence of onychomycosis or any other fungal skin infections that could predispose to *tinea faciei*, as it has been reported in some of these cases, with a direct relationship with any superficial mycosis [5,6].

In some studies, like the one conducted by Romano et al., it is mentioned that the mean average age of *tinea faciei* is 27 [7], while Aste et al. reported that is more common from 36 to 45 years of age, as well as in pediatric patients, which is consistent with our report [2,8].

Probably in our case, the irregular previous treatment with oral terbinafine could be related to the development of dermatophytoma, as a defense mechanism against the antifungal agent [4].

The main causative agents of *Tinea faciei* are *Trichophyton rubrum*, *M. canis* and *T. tonsurans*, which may vary according to geographical region [2], so, in our case, the development of *Microsporium gypseum* is rare among the most frequent species.

According to a previous epidemiological study conducted in Guatemala by Martínez et al., the most common etiologic agent was *M. gypseum* in *Tinea faciei*, in 9 of 15 cases (60%) [4]. However, the results of this case series, reveal the dermatophyte condition in other areas such as the nose, chin and malar region [4], so our case, could be regarded as an exceptional case of fungal blepharitis by *M. gypseum* in Guatemala, which is an agent easily isolated from soil [9] and infection occurs from direct contact with infected animals [10].

Microsporium gypseum is an agent infrequently isolated. It has been identified in an epidemiological study by Bhagra in Brazil, in 71 cases over 30 years and in some microepidemics reported in Ivory Coast, England, Colombia and Brazil. Lavalle et al. identified this agent in Mexico in 41 cases from 11,148 dermatophyte isolates over a period of 45 years [9,10]. Infrequent manifestations in immunocompromised HIV-infected patients have been described such as subungual hyperkeratosis, *facial tinea incognito* and cerebral mycosis.

Because of its location and morphology (a single lesion) this could be considered within the clinical range described as “mini-tinea”, caused precisely by *Microsporium gypseum*, and informed by Lavalle et al. in 2002, where the most frequent location were the face and folds (27%), possibly because in these areas the accumulation of dust is more feasible; it also occurred on the scalp (22%), trunk (12.5%) and hands (10%) [9].

According to Lin et al., the most widely used treatments include the group of azoles and topical allylamines, according to the extent of the disease, which may require the use of oral treatment in disseminated forms [2].

In *tinea* associated with dermatophytoma, the best results have been observed with combination of oral and topical antifungal treatments; the most widely used are oral terbinafine and topical 2% ketoconazole [4].

In our case, treatment with topical terbinafine for two weeks, achieve remission of the disease, and the previous poor antifungal oral treatment probably led to the formation of dermatophytoma.

CONCLUSION

Tinea faciei may represent up to 20% of cases of *tinea corporis*, especially in tropical regions, and is characterized by lesions with variable morphology, so it is necessary to confirm the diagnosis by KOH-DMSO, which could highlight the presence of dermatophytoma, since biofilms or this structure, predispose to a poor response with oral antifungal agents.

In previous studies in Guatemala, *Microsporium gypseum* has been identified as the causative agent of *tinea faciei*, however this is the first case of dermatophytic blepharitis with dermatophytoma due to this agent.

CONSENT

The examination of patient is conducted according to the Declaration of Helsinki principles. Written informed consent was obtained from the patient for publication of this article.

REFERENCES

1. Arenas R. *Micología Médica Ilustrada*. 4ª Ed. México, McGraw Hill, 2011; 61-91.
2. Lin R, Szepietowsky J, Schwartz R. *Tinea faciei, an often deceptive facial eruption*. Int J Dermatol. 2004;43:437-40.
3. Roberts D, Evans E. *Subungual dermatophytoma complication dermatophyte onychomycosis*. Br J Dermatol. 1998;28:425-8.
4. Martínez E, Pérez-Cantillo M, Alas-Carbajal R, Rivas E, Escalante K, Valencia C, et al. *Dermatofitoma extraungueal. Comunicación de 15 casos*. Dermatología Rev Mex. 2010;54:10-3.
5. Kawachi Y. *Chronically recurrent and disseminated tinea faciei/corporis-autoinoculation from asymptomatic tinea capitis carriage*. Pediatr Dermatol. 2010;27:527-53.
6. Nenoff P, Mügge C, Herrmann J, Keller U. *Tinea faciei incognito due to Trichophyton rubrum as a result of autoinoculation from onychomycosis*. Mycoses. 2007;50:20-5.
7. Romano C, Ghilardi A, Massai L. *Eighty-four consecutive cases of tinea faciei in Siena, a retrospective study (1989-2003)*. Mycoses. 2005 Suppl 2;48:343-6.
8. Aste N, Atzori L, Aste N, Pau M. *A 20-year survey of tinea faciei*. Mycoses. 2009;53:504-8.
9. Lavalle P, Padilla-Desgarenes MC, Reynoso S. *Microsporium gypseum. Su aislamiento del suelo y de dermatofitosis humanas. Las mini-tineas de M. gypseum*. Dermatología Rev Mex. 2002;46:101-7.
10. Bhagra S, Ganju SA, Sood A, Guleria RC, Kanga AK. *Microsporium gypseum dermatophytosis in a patient of acquired immunodeficiency syndrome: A rare case report*. Indian J Med Microbiol. 2013;31:295-8.

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