CHRONIC DERMATOPHYTIC INFECTION OF THE FACE AND HANDS: A CLINICAL REVIEW OF TINEA FACIEI AND TINEA MANUUM

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Abstract

Background: Tinea faciei and tinea manuum are superficial dermatophyte infections affecting the glabrous skin of the face and the hands, respectively. Although they are well-recognized clinical entities, both are frequently misdiagnosed because their morphology may mimic eczema, lupus erythematosus, rosacea, contact dermatitis, and other inflammatory dermatoses. Persistence of lesions beyond several weeks of topical antifungal therapy in immunocompetent adults is increasingly reported and represents a relevant clinical challenge.
Case Presentation: A 40-year-old immunocompetent male presented with a two-month history of erythematous, scaly lesions on the cheeks, forehead, and dorsal aspects of both hands. Initial empirical therapy with topical miconazole for three months produced no clinically significant improvement. Direct microscopy of skin scrapings with 20% potassium hydroxide (KOH) revealed septate fungal hyphae, confirming a diagnosis of concomitant tinea faciei and tinea manuum. Systemic therapy was initiated with oral fluconazole 150 mg once weekly for eight weeks, with concurrent skin care advice and hygienic measures. Marked clinical improvement was observed within four weeks, and complete resolution of the lesions was achieved at the end of the treatment course. No adverse effects were reported, and no recurrence was observed during follow-up.
Discussion: Failure of topical antifungal therapy in adult dermatophytosis of the face and hands is multifactorial and may reflect inadequate drug penetration in hyperkeratotic lesions, poor adherence, large affected surface area, prior use of topical corticosteroids, and the emergence of less susceptible dermatophyte strains. In such circumstances, systemic azole therapy, particularly weekly fluconazole, has been shown to be both effective and well tolerated, providing a reasonable second-line option when first-line topical regimens fail.
Conclusion: This case underlines the importance of mycological confirmation of facial and hand dermatoses that fail to respond to topical therapy, and the role of weekly oral fluconazole as an effective treatment option for chronic, topically-resistant tinea faciei and tinea manuum in immunocompetent adults.

Keywords: tinea faciei; tinea manuum; dermatophytosis; fluconazole; topical antifungal failure; KOH examination; case report.

Introduction

Dermatophytoses are superficial fungal infections of keratinized tissues caused by a group of closely related filamentous fungi belonging to the genera *Trichophyton*, *Microsporum*, and *Epidermophyton*. They constitute one of the most prevalent infectious conditions worldwide, with an estimated 20–25% of the general population affected by superficial mycoses at some point in life (Havlickova, Czaika, & Friedrich, 2008). Among the various clinical presentations, tinea faciei and tinea manuum represent two regional variants whose clinical importance is often underestimated, because their atypical morphology frequently leads to delayed or incorrect diagnosis (Lin, Szepietowski, & Schwartz, 2004).
Tinea faciei is a dermatophyte infection limited to the glabrous skin of the face, sparing bearded areas in adult males (which are instead affected by tinea barbae). It can occur at any age but has historically been described more often in children and women (Romano, Ghilardi, & Massai, 2005; Atzori, Aste, Aste, & Pau, 2012). Recent studies, however, suggest that tinea faciei is increasingly observed in immunocompetent adults, with a wide spectrum of clinical presentations ranging from typical annular plaques with raised scaly borders to atypical, erythematous, or eczematoid lesions without a clearly defined edge (Noguchi, Jinnin, Miyata, Hiruma, & Ihn, 2014; Borges, Brasileiro, Galhardas, & Apetato, 2018). Because of these atypical features, tinea faciei has been described as the most frequently misdiagnosed

cutaneous mycotic infection, with reported misdiagnosis rates approaching 70% in some series (Lin et al., 2004; Khiewplueang et al., 2024).

Tinea manuum, on the other hand, is a dermatophytosis of the palmar or dorsal surface of the hand. It frequently coexists with tinea pedis in the so-called "two feet–one hand syndrome", in which both feet are affected by chronic, often hyperkeratotic plantar tinea and one (more rarely both) hand becomes secondarily involved (Daniel, Gupta, Daniel, & Daniel, 1997; Mizumoto, 2021; Suphatsathienkul et al., 2025). The most commonly isolated pathogens are anthropophilic species, particularly *Trichophyton rubrum*, followed by *Trichophyton mentagrophytes* complex and, less frequently, zoophilic species such as *Microsporum canis* (Veraldi & Esposito, 2019; Zhan et al., 2013; Suphatsathienkul et al., 2025). Tinea manuum is more common in adolescent and adult males, and certain occupations involving repeated skin contact with humid environments, animals, or other infected individuals (e.g., masseurs, barbers, cattlemen, masons, mechanics, veterinarians) have been identified as risk factors (Veraldi & Esposito, 2019).

From a clinical standpoint, both entities share the typical features of dermatophyte infection of glabrous skin: erythema, scaling, mild to moderate pruritus, and centrifugal extension of the lesions, often with a more inflammatory peripheral border. However, in tinea faciei the morphology is frequently modified by the complex anatomy and high vascularization of the face, by exposure to ultraviolet light, and by the inappropriate use of topical corticosteroids and calcineurin inhibitors, all of which may produce so-called "tinea incognito" (Hainer, 2003; Ansar, Farshchian, Nazeri, & Ghiasian, 2011). In tinea manuum, the dominant clinical pattern is a chronic, dry, hyperkeratotic scaling of the palms with accentuation of skin markings, often unilateral and only mildly symptomatic, which explains the frequently long delay before patients seek medical attention (Suphatsathienkul et al., 2025).

The diagnosis of these conditions is essentially based on a high index of clinical suspicion, supported by direct microscopic examination of skin scrapings using 20% potassium hydroxide (KOH), and confirmed when possible by fungal culture on Sabouraud dextrose agar (Drake et al., 1996; Hainer, 2003). The treatment relies primarily on topical antifungal agents (azoles, allylamines, ciclopirox), reserving systemic therapy for extensive, recalcitrant, or recurrent disease, in cases with hair follicle involvement, or when topical therapy has failed despite adequate adherence (El-Gohary et al., 2014; Gupta & Cooper, 2008). Among oral antifungals, terbinafine, itraconazole, and fluconazole are the agents most frequently used in clinical practice, each with specific pharmacokinetic and tolerability profiles (Faergemann & Mörk, 1999; Gupta & Cooper, 2008).

Despite the availability of several effective therapeutic options, the management of chronic, topically-resistant dermatophytosis of the face and hands in immunocompetent adults can be problematic. Treatment failure rates of topical regimens are not negligible, and recent reports from various geographical regions have highlighted an increasing prevalence of chronic, relapsing, and treatment-resistant tinea, including in the head, neck and hand region (Sahoo & Mahajan, 2016; Khiewplueang et al., 2024). In this context, oral fluconazole, used as a once-weekly pulse regimen, represents an attractive therapeutic alternative because of its long tissue half-life, favorable safety profile, ease of administration, and low cost (Suchil et al., 1992; Faergemann & Mörk, 1999).

Aim of the Study

The present article has two complementary objectives. First, it aims to provide a focused clinical review of tinea faciei and tinea manuum, summarizing current evidence on their epidemiology, microbiology, clinical presentation, diagnostic workup, and therapeutic options, with particular attention to the management of chronic, topically-resistant disease in

immunocompetent adults. Second, it reports the case of a 40-year-old immunocompetent male with simultaneous tinea faciei and tinea manuum that failed to respond to a three-month course of topical miconazole and was successfully treated with weekly oral fluconazole. The intended contribution of the report is to underline the relevance of mycological confirmation of facial and hand dermatoses that do not respond to first-line topical antifungals, and to discuss, in the light of available literature, the role of systemic azole therapy as a second-line option for persistent dermatophyte infections of the face and hands.

Case Report

3.1. Patient and clinical history: A 40-year-old male presented to the dermatology outpatient clinic with a two-month history of erythematous, scaly lesions involving the face and the dorsal surface of both hands. The patient had no significant past medical history, was not taking any chronic medication, denied known allergies, and reported no comorbidities such as diabetes mellitus, immunodeficiency, or atopic disease. He had not previously been hospitalized and had no history of skin disease prior to the current episode.

The lesions had appeared insidiously, initially as small, slightly erythematous, scaly patches on the cheeks and on the dorsa of the hands. Over the following weeks they had progressively enlarged and became more confluent, accompanied by mild pruritus and a sensation of cutaneous tightness. The patient reported that the hand lesions caused a degree of functional discomfort, particularly when performing manual tasks involving frequent washing or contact with detergents. He denied any recent close contact with persons with similar lesions, contact with pets or farm animals, recent travel, or new occupational exposures. There was no history of facial trauma, prior topical corticosteroid application, or self-medication with herbal preparations.

3.2. Physical examination: On dermatological examination, the patient presented well-demarcated, erythematous, scaly patches on both cheeks and on the forehead. The facial lesions were relatively flat, with mildly elevated borders and centrally less inflammatory areas. On the dorsal aspects of both hands, several erythematous, slightly raised plaques with peripheral scaling were observed; the lesions extended towards the wrists but spared the palms and the interdigital spaces. There were no vesicles, pustules, fissures, or signs of secondary bacterial infection. The scalp, trunk, lower limbs, nails, and genital region were unremarkable. There was no regional lymphadenopathy. The general physical examination was within normal limits.

3.3. Diagnostic workup: A clinical differential diagnosis was considered, including seborrheic dermatitis, contact dermatitis, discoid lupus erythematosus, rosacea, and superficial dermatophytosis. To confirm the etiology, skin scrapings were obtained from the active borders of two facial lesions and from one hand lesion. Direct microscopic examination of the scrapings prepared with 20% potassium hydroxide (KOH) revealed numerous septate, branching hyphae compatible with a dermatophyte infection. Routine laboratory investigations, including complete blood count, fasting glucose, hepatic transaminases, and serum creatinine, were within normal limits. Based on the clinical morphology and the positive direct mycological examination, a diagnosis of concomitant tinea faciei and tinea manuum was established.

3.4. Initial treatment and clinical course: Prior to dermatological referral, the patient had been treated empirically with topical miconazole 2% cream applied twice daily for approximately three months, with strict adherence as confirmed during a structured medication interview. Despite this prolonged topical regimen, the lesions persisted and showed only minimal subjective improvement, with no objective reduction in extent or scaling. There was no clinical

evidence of contact sensitization, and the patient had not used topical corticosteroids on the affected areas.

3.5. Systemic therapy and outcome: In view of the persistence of the lesions despite an adequate course of topical therapy, the absence of contraindications, and the relatively wide cutaneous involvement, systemic antifungal therapy was initiated. The patient was started on oral fluconazole 150 mg once weekly, for a planned duration of eight weeks. He was instructed to continue careful skin hygiene, to avoid sharing personal items such as towels and razors, to keep the affected areas dry, and to refrain from any topical corticosteroids.
At the one-month follow-up, the patient reported a clear subjective improvement, with marked reduction in erythema, scaling, and pruritus on both the face and hands. By the end of the eight-week treatment course, the facial and hand lesions had almost completely resolved, with only mild post-inflammatory hyperpigmentation visible on the dorsa of the hands. The patient tolerated fluconazole well; no adverse effects, gastrointestinal symptoms, or laboratory abnormalities were reported. At a follow-up visit three months after the end of treatment, no clinical recurrence was observed and the patient remained asymptomatic.

Discussion

The clinical course described in this report illustrates several aspects that have been progressively recognized as relevant in the modern epidemiology of dermatophytoses: the simultaneous involvement of two anatomical sites (face and hands) in an immunocompetent adult, the failure of an adequate course of topical azole therapy, and the favorable response to a relatively short, well-tolerated, weekly oral fluconazole regimen. Each of these aspects is worth discussing in the light of current literature.

4.1. Epidemiology of tinea faciei and tinea manuum: Although superficial dermatophyte infections are common worldwide, regional differences in epidemiology and in the spectrum of causative species are well established (Havlickova et al., 2008; Ameen, 2010). *Trichophyton rubrum* remains the predominant anthropophilic dermatophyte in most parts of the world and is the most frequent agent of tinea corporis, tinea pedis, tinea manuum, and onychomycosis in adults (Havlickova et al., 2008; Suphatsathienkul et al., 2025). Tinea faciei has historically been considered uncommon, with the literature emphasizing its predominance in pediatric populations, particularly when caused by zoophilic species such as *Microsporum canis* (Atzori et al., 2012; Del Boz, Crespo, & De Troya, 2012). However, several recent series have shown that tinea faciei is increasingly diagnosed in adults, with *T. rubrum* and *T. mentagrophytes* being among the most frequent isolates (Romano et al., 2005; Noguchi et al., 2014; Borges et al., 2018; Khiewplueang et al., 2024).
Tinea manuum is comparatively less studied than tinea pedis. In a recent five-year retrospective study of 107 patients, dermatophytes accounted for approximately 86% of culture-positive cases, with *T. rubrum* being responsible for more than half of these (Suphatsathienkul et al., 2025). The same study confirmed that tinea manuum predominantly affects adult males, with a male-to-female ratio reflecting both biological and occupational factors, and reported that itching and palmar scaling were the most common symptoms and signs, respectively (Suphatsathienkul et al., 2025). The Italian series by Veraldi and Esposito (2019) similarly highlighted the relevance of occupational exposure: in their cohort of 18 patients with mycologically confirmed tinea manuum, masseurs were the most frequently affected occupational category, followed by barbers, masons, and cattlemen, with *T. rubrum* and *M. canis* as the main isolated species. The patient described in our case, while not declaring a high-

risk occupation, did report frequent manual activities that may have contributed to the chronicity of hand involvement.

4.2. Clinical presentation and diagnostic challenges: Tinea faciei is renowned for its protean clinical presentation. Lin and colleagues (2004), in a seminal review entitled "Tinea faciei, an often deceptive facial eruption", emphasized that the disease is often misdiagnosed and that, in many cases, the diagnosis is established only after a long delay during which patients are treated for other dermatoses. In a histopathological case report, Meymandi, Wiseman, and Crawford (2003) described tinea faciei mimicking cutaneous lupus erythematosus, illustrating how the absence of typical annular, raised, scaly borders can mislead even experienced clinicians. Other authors have reported tinea faciei mimicking seborrheic dermatitis, contact dermatitis, rosacea, polymorphous light eruption, granuloma faciale, and dermatomyositis (Romano et al., 2005; Atzori et al., 2012; Borges et al., 2018). Most recently, an association has been suggested between prolonged use of facial masks during the COVID-19 pandemic and an increased incidence of tinea faciei, the so-called "mask tinea" (Khiewplueang et al., 2024).
Tinea manuum can also pose diagnostic difficulties. The classic palmar hyperkeratotic form, with chronic, dry, fine scaling and accentuation of skin creases, is frequently confused with chronic hand eczema, irritant contact dermatitis, palmar psoriasis, or hyperkeratotic eczema (Drake et al., 1996; Suphatsathienkul et al., 2025). The unilateral distribution and the simultaneous involvement of both feet ("two feet–one hand syndrome") are important clinical clues that should always raise suspicion of a dermatophyte etiology (Daniel et al., 1997; Mizumoto, 2021). On the dorsum of the hand, by contrast, the presentation tends to resemble tinea corporis, with annular or polycyclic, erythematous, scaly plaques with active borders, as observed in the present case.
In both entities, KOH examination of skin scrapings remains the cornerstone of microbiological confirmation, given its rapidity, low cost, and good sensitivity in experienced hands (Hainer, 2003; Drake et al., 1996). Fungal culture on Sabouraud dextrose agar is recommended whenever feasible, in order to identify the species and to support epidemiological surveillance, although in routine clinical practice the diagnosis is often established on the basis of typical morphology and a positive direct examination (Khiewplueang et al., 2024; Suphatsathienkul et al., 2025). In the present case, the absence of fungal culture is a limitation, but the presence of typical septate hyphae on direct examination, combined with the clinical picture and the favorable response to antifungal therapy, supports the diagnosis.

4.3. Tinea incognito and the role of prior topical therapy: The concept of tinea incognito refers to dermatophyte infections whose typical clinical features have been altered by the use of topical or systemic immunomodulatory agents, particularly corticosteroids and calcineurin inhibitors (Ansar et al., 2011). Although the patient described here did not report use of topical corticosteroids, three months of topical antifungal therapy without effect can itself modify the lesion morphology and complicate clinical diagnosis. Furthermore, partial treatment may select for less susceptible fungal populations, although robust epidemiological data on this phenomenon in tinea faciei and tinea manuum are still limited. In any case, the literature consistently recommends that any chronic facial or hand dermatosis that fails to respond to appropriate first-line therapy should prompt mycological investigation before adopting a different therapeutic strategy (Lin et al., 2004; Hainer, 2003).
4.4. Why does topical therapy fail?: Several factors may explain the failure of topical antifungal monotherapy in chronic tinea faciei and tinea manuum. First, the affected surface area, although limited in absolute terms, can be functionally extensive when multiple anatomical sites are involved simultaneously, as in our patient, making consistent and adequate application of topical therapy more difficult (Drake et al., 1996; Sahoo & Mahajan, 2016). Second,

hyperkeratotic lesions, particularly on the hands, may impair drug penetration through the stratum corneum (Suphatsathienkul et al., 2025). Third, repeated cleansing of the face and hands removes the topical agent and reduces effective contact time. Fourth, a Cochrane systematic review by El-Gohary and colleagues (2014) showed that, despite generally good efficacy, topical antifungals can yield variable cure rates depending on the molecule, formulation, and treatment duration, and treatment failures are not infrequent in routine clinical practice. Finally, recent global trends suggest an increasing proportion of chronic, relapsing, and partially resistant dermatophyte infections, particularly in regions where over-the-counter steroid–antifungal combinations are widely used (Sahoo & Mahajan, 2016).

4.5. Rationale for oral fluconazole: Oral antifungal therapy has been a recognized option for dermatophytoses since the introduction of griseofulvin, but the development of newer azoles and allylamines has substantially expanded the therapeutic armamentarium (Gupta & Cooper, 2008; Faergemann & Mörk, 1999). For tinea corporis and related variants such as tinea faciei, tinea cruris, and tinea manuum, three oral agents are most commonly used: terbinafine, itraconazole, and fluconazole. Each has distinct pharmacological characteristics and a specific risk-benefit profile (Drake et al., 1996; Faergemann & Mörk, 1999).

Fluconazole is a triazole antifungal that inhibits fungal lanosterol 14-α-demethylase, leading to depletion of ergosterol in the fungal cell membrane. It has a long half-life, good oral bioavailability, low protein binding, and prolonged retention in the stratum corneum, properties that make it particularly suitable for once-weekly pulse regimens (Suchil et al., 1992; Faergemann & Mörk, 1999). Suchil and colleagues (1992) reported that once-weekly fluconazole 150 mg was effective in the treatment of tinea corporis, tinea cruris, and cutaneous candidiasis, with high mycological cure rates and good tolerability. A subsequent review by Faergemann and Mörk (1999) summarized the evidence supporting the use of fluconazole 50–100 mg daily or 150 mg once weekly for 2–4 weeks in tinea corporis and tinea cruris. More recent literature has confirmed that, although fluconazole is not necessarily considered a first-line option for typical, uncomplicated tinea corporis or tinea pedis—where terbinafine often offers slightly higher cure rates—it remains a valuable therapeutic option in chronic, resistant, or relapsing disease, especially when good adherence to a daily regimen cannot be guaranteed or when other oral agents are contraindicated (Gupta & Cooper, 2008).

In the present case, the choice of weekly fluconazole 150 mg for eight weeks was based on three considerations. First, the patient had failed an adequate trial of topical therapy, justifying escalation to systemic therapy (Drake et al., 1996; El-Gohary et al., 2014). Second, the simultaneous involvement of two anatomical regions, including the face, made a regimen that achieves rapid systemic distribution and high cutaneous concentrations particularly attractive (Faergemann & Mörk, 1999). Third, the simplicity of a weekly regimen offered an obvious advantage in terms of adherence over a daily or twice-daily oral regimen, which is particularly relevant in working-age patients. The favorable clinical course observed, with marked improvement at four weeks and complete resolution at eight weeks, is consistent with previous reports of weekly fluconazole regimens in dermatophytoses of the glabrous skin (Suchil et al., 1992; Faergemann & Mörk, 1999).

4.6. Safety considerations: Fluconazole is generally well tolerated, with a low overall incidence of clinically relevant adverse effects when used at the doses and durations applied in dermatophytoses (Faergemann & Mörk, 1999; Gupta & Cooper, 2008). The most common adverse effects include mild gastrointestinal symptoms, headache, and rash. Hepatic enzyme abnormalities and, more rarely, hepatotoxicity have been reported, particularly with longer treatment courses, higher doses, or in patients with significant hepatic comorbidity. Drug–drug interactions are another important consideration, since fluconazole inhibits cytochrome P450

isoenzymes (notably CYP2C9, CYP2C19, and CYP3A4) and may therefore alter the metabolism of warfarin, certain statins, sulfonylureas, calcium channel blockers, and several other drugs. In our patient, who was not on any chronic medication, the safety profile was favorable, and no clinical or biochemical adverse effects were observed. Nevertheless, baseline and follow-up monitoring of liver function tests is generally advisable when prolonged courses of azole therapy are employed (Gupta & Cooper, 2008).

4.7. Practical lessons from the case: From a practical standpoint, the present case illustrates several lessons that align with consolidated literature. First, the simultaneous occurrence of facial and hand dermatosis in an immunocompetent adult should always include dermatophytosis in the differential diagnosis, even in the absence of obvious epidemiological risk factors (Lin et al., 2004; Suphatsathienkul et al., 2025). Second, mycological confirmation, particularly by KOH examination, is rapid, inexpensive, and indispensable when topical therapy fails (Hainer, 2003; Drake et al., 1996). Third, prolonged courses of topical antifungals without clinical improvement should not be perpetuated indefinitely; rather, they should prompt diagnostic re-evaluation and, where appropriate, escalation to systemic therapy (El-Gohary et al., 2014). Fourth, weekly oral fluconazole 150 mg is a reasonable, well-tolerated, and adherence-friendly option for adults with chronic, topically-resistant tinea faciei and tinea manuum (Suchil et al., 1992; Faergemann & Mörk, 1999). Finally, hygienic and behavioral measures, including avoidance of sharing of personal items, treatment of any concomitant tinea pedis or onychomycosis, and management of predisposing factors (such as occlusion or hyperhidrosis), are an essential component of management aimed at preventing recurrence (Drake et al., 1996; Mizumoto, 2021).

4.8. Limitations: This report is subject to the inherent limitations of a single-patient case description. Fungal culture and species identification were not performed, and antifungal susceptibility testing was not available, so it is not possible to identify the specific causative species or to comment definitively on its susceptibility profile. Furthermore, the relatively short follow-up after the end of treatment does not allow firm conclusions to be drawn regarding long-term recurrence rates. Despite these limitations, the case is clinically informative because it documents a real-world scenario in which weekly oral fluconazole was effective and well tolerated in a chronic, topically-resistant dermatophytosis of the face and hands.

Conclusion

Tinea faciei and tinea manuum are dermatophyte infections that, despite being well characterized, are still frequently misdiagnosed or undertreated, particularly in immunocompetent adults. Atypical morphology, prior empirical topical therapy, and prolonged use of antifungal creams without microbiological confirmation can all delay correct diagnosis and effective treatment. The case described here, of a 40-year-old male with concomitant tinea faciei and tinea manuum unresponsive to a three-month course of topical miconazole and successfully treated with eight weeks of weekly oral fluconazole 150 mg, supports the role of systemic azole therapy as a second-line option in chronic, topically-resistant disease. The case also reinforces the importance of mycological confirmation, particularly by KOH examination, before initiating prolonged or escalated treatment regimens. Further prospective studies and well-designed randomized trials would be useful to better define the optimal dose, duration, and place of weekly oral fluconazole in the therapeutic algorithm of chronic dermatophytosis of the face and hands, particularly in light of the increasing global prevalence of resistant and recalcitrant tinea infections.

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