



Published by
Department of Dermatology and
Venereology, Universitas Udayana

Tinea incognito due to misuse of steroids and whitening body lotion: a case report



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ABSTRACT

Background: Tinea incognito (TI) is a dermatophytic infection with atypical clinical manifestations resulting from inappropriate use of topical corticosteroids. The misuse of over-the-counter steroids and unregulated cosmetic products, such as whitening body lotions, can alter the classical presentation of dermatophytosis, leading to delayed diagnosis and treatment failure. This case report aims to highlight the clinical features of tinea incognito associated with topical steroid misuse and whitening body lotion application, emphasizing the importance of early recognition and appropriate management to prevent misdiagnosis and treatment delay.

Case: A 29-year-old woman presented with persistent pruritic erythematous patches on her back that had progressively enlarged over two months. The lesions initially appeared as small erythematous patches and were treated with topical corticosteroids prescribed by non-physician health practitioners. The patient continued self-medication with freely purchased topical steroids without improvement. She subsequently applied a whitening body lotion in an attempt to resolve the lesions; however, the patches worsened and expanded. Physical examination of the thoracolumbosacral region revealed ill-defined erythematous plaques with multiple peripheral erythematous papules and fine scaling. Laboratory examinations were not performed. The diagnosis of tinea incognito was established based on clinical history and physical findings. Treatment consisted of oral ketoconazole 200 mg daily, topical ketoconazole 2% cream, ketoconazole 2% shampoo twice weekly, nonsteroidal moisturizer, and antihistamines for two weeks. The patient was advised to discontinue topical steroids and whitening body lotion and received education on clean and healthy living behaviors. Significant clinical improvement was observed during follow-up.

Conclusion: Discontinuation of topical steroids and inappropriate cosmetic products, combined with appropriate antifungal therapy, resulted in favorable clinical outcomes. Improved regulation of steroid and cosmetic product distribution, along with increased awareness among healthcare providers, is essential to prevent misdiagnosis and the rising incidence of tinea incognito.

Keywords: Tinea incognito, topical steroid, whitening body lotion.

Cite This Article: Imaroh R, Lumaksono MA, Hardiati R, Imani I, Widasmara D. Tinea incognito due to misuse of steroids and whitening body lotion: a case report. Bali Dermatology Venereology and Aesthetic Journal. 2025;8(2): 32-36. DOI: 10.51559/balidervenaesthj.v8i2.122

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Submitted: 2025-12-15

Accepted: 2025-12-30

Published: 2025-12-31

INTRODUCTION

Tinea incognito (TI), also known as steroid-modified tinea, was first introduced in 1968. This term is used to describe dermatophyte infections that are misdiagnosed and subsequently treated with topical or systemic corticosteroids. Recent reports have shown that not only corticosteroids but also non-steroidal topical agents, including pimecrolimus and tacrolimus, can induce the development of tinea incognito.¹ The clinical presentation of tinea incognito is highly variable, with polymorphic manifestations, typically appearing as round or oval lesions with well-defined borders, and may be

accompanied by vesicles and scaling.² Tinea incognito can mimic various other dermatological conditions, including lupus erythematosus, contact dermatitis, psoriasis, and eczema.³⁻⁷ This resemblance often leads to diagnostic difficulty, necessitating supportive examinations such as skin scrapings and fungal cultures.^{8,9}

Several epidemiological data indicate an increasing incidence of tinea incognito. A retrospective study in Korea from 2002 to 2010 reported 283 patients with TI, consisting of 158 males and 125 females, with a mean age of 44 years.¹⁰ In Iran, a 16-year survey (1993–2008)

identified 56 patients with TI, including 29 males and 27 females, with a mean age of 32.6 years.³ Tinea incognito is most commonly caused by *Trichophyton rubrum*, *Trichophyton mentagrophytes*, *Epidermophyton floccosum*, *Microsporum canis*, and *Microsporum gypseum*.^{3,11} The diagnosis can be established by potassium/kalium hydroxide (KOH) examination demonstrating fungal elements, as well as fungal culture.¹² Management of tinea incognito involves discontinuation of steroid therapy and initiation of appropriate antifungal treatment.¹² Several authors have reported significant clinical improvement with this approach. We



Figure 1. Clinical photograph of the patient before treatment showing erythematous plaques with ill-defined borders in the thoracolumbosacral region (upper and lower back), surrounded by multiple erythematous papules with very fine scaling.



Figure 2. Clinical photograph of the patient after treatment showing hyperpigmented macules in the thoracolumbosacral region (upper and lower back).

report a case of tinea incognito induced by the use of both topical and systemic corticosteroids, as well as the application of a steroid-containing whitening body lotion.

Therefore, this case report aims to describe the clinical presentation, diagnostic challenges, and management of tinea incognito associated with prolonged misuse of topical corticosteroids and whitening body lotion, while underscoring the need for improved awareness and regulation in primary care settings.

CASE REPORT

A 29-year-old woman presented with intensely pruritic erythematous patches on her back. Initially, the lesions were few in number and round in shape; however, after treatment, the erythematous patches progressively enlarged. The lesions had been present for two months. The

Table 1. Clinical improvement over time

Parameter	Day 1	Day 7	Day 14
Subjective			
Pruritus	+++	+	-
Objective			
Erythematous macules	++	-	-
Multiple papules	++	-	-
Fine scaling	+	-	-
Hyperpigmented macules	-	+	-
Treatment			
Ketoconazole 200 mg/day	+	+	-
Cetirizine 10 mg twice daily	+	+	-
Non-steroidal moisturizer (twice daily)	+	+	+
Ketoconazole 2% cream (twice daily)	+	+	-
Ketoconazole 2% shampoo (twice weekly)	+	+	-

Note: (+++) severe, (++) moderate, (+) mild, (-) absent

patient had previously received topical corticosteroids (betamethasone) and systemic corticosteroids (dexamethasone) prescribed by a village healthcare worker. These medications were subsequently purchased over the counter by the patient without a prescription, but no improvement was observed, and the lesions continued to spread.

The patient then purchased a whitening body lotion containing steroid compounds from an online marketplace in an attempt to eliminate the lesions. However, there was still no improvement, and the lesions became more extensive. There was no history of similar complaints among family members, and no history of allergy was reported.

Physical examination revealed that the patient was in good general condition, with vital signs within normal limits. Dermatological examination showed erythematous plaques with ill-defined borders in the lumbosacral region (upper and lower back), surrounded by multiple erythematous papules with very fine scaling. Laboratory examinations could not be performed because of limited facilities at the primary healthcare center, and the patient declined referral for laboratory testing due to financial constraints. Based on a thorough history and physical examination, the patient was diagnosed with tinea incognito (TI).

The patient was treated with oral ketoconazole 200 mg daily and cetirizine 10 mg twice daily. A non-steroidal moisturizer containing amino ceramides, second-generation hyaluronic acid, copper tripeptide, bisabolol, and aloe vera was applied prior to ketoconazole 2% cream, with a 3-minute interval. The ketoconazole cream was applied twice daily (morning and evening) for two weeks. In addition, ketoconazole 2% shampoo was applied to the lesions and left in place for 3–5 minutes before bathing, twice weekly.

At the first follow-up visit one week later, the patient reported a reduction in pruritus, and physical examination revealed hyperpigmented macules. The treatment was continued, and the patient was advised to return for another follow-up one week later. At the subsequent visit, the patient reported complete resolution of symptoms, with clearance of the lesions and normal-appearing skin.

DISCUSSION

Tinea incognito is a dermatophyte infection in which the clinical presentation has been altered, often mimicking other dermatological conditions. It is typically caused by the use of corticosteroids or calcineurin inhibitors, usually due to misdiagnosis or unclear initial presentation.^{6,13} Dermatophytes are fungi capable of invading keratinized tissues, infecting the skin, hair, and nails.¹⁴ Dermatophyte infections occur through three stages: adhesion, penetration, and host response development. This process triggers an inflammatory response in the skin, resulting in dermatological abnormalities.¹⁵ The use of steroids can suppress the immune response and promote rapid fungal growth, leading to atypical or unclear clinical manifestations of fungal infections.¹²

The patient history is a key characteristic of tinea incognito. Lesions are initially treated with steroids, which reduce pruritus and signs of inflammation. When steroid use is discontinued, the eruption recurs and spreads rapidly. Repeated steroid application may temporarily resolve lesions, but discontinuation results in recurrence, creating a cyclical pattern that often leads patients to seek medical care due to persistent, relapsing lesions. Lesion distribution commonly involves the inguinal folds, face, hands, lower limbs, and trunk. In the present case, the patient initially had erythematous pruritic patches on the back, which were treated with topical (betamethasone) and systemic (dexamethasone) corticosteroids provided by a village healthcare worker. The patient then purchased these medications over the counter without improvement. She also used a whitening body lotion containing steroids purchased online, but the lesions continued to spread.

The diagnosis of tinea incognito is primarily based on thorough anamnesis and clinical presentation. Laboratory investigations were not performed due to limited facilities at the primary healthcare center, and the patient declined referral due to financial constraints. Management involves discontinuing corticosteroids or calcineurin inhibitors and initiating antifungal therapy.¹² While tinea corporis generally responds well to

topical treatment, tinea incognito often requires systemic antifungal agents. There is no evidence indicating superiority of one oral regimen over another, and the optimal duration of therapy has not been established.⁷ Several case reports have demonstrated complete resolution with cessation of topical corticosteroids and administration of oral itraconazole 100 mg/day combined with topical clotrimazole once daily for 30 days.¹¹ Other reports describe complete resolution using oral terbinafine 250 mg/day with topical isoconazole cream for four weeks.¹ In an Iranian study, systemic griseofulvin at 12.5 mg/kg/day for children and 250–500 mg twice daily for adults for 4–6 weeks yielded favorable outcomes.³

In this case, steroid therapy and the whitening body lotion were discontinued. The patient was treated with oral ketoconazole 200 mg/day, cetirizine 10 mg twice daily, a non-steroidal moisturizer applied before ketoconazole 2% cream with a 3-minute interval, applied twice daily for two weeks, and ketoconazole 2% shampoo applied to lesions for 3–5 minutes twice weekly before bathing. Clinical improvement was evident despite the absence of laboratory confirmation, due to limited diagnostic resources. The treatment plan was guided by a comprehensive anamnesis detailing prior topical and systemic steroid use and the use of steroid-containing whitening body lotion purchased online.

Ketoconazole is a broad-spectrum systemic antifungal in the imidazole class with fungistatic properties. Its mechanism involves inhibition of ergosterol biosynthesis, a key sterol for maintaining fungal cell membrane integrity, through blockade of the cytochrome P-450 14 α -demethylase enzyme, which is essential for ergosterol synthesis.^{19,20} Ketoconazole cream is a synthetic phenethyl imidazole derivative that inhibits ergosterol formation in fungal cell membranes. Imidazole agents are considered the most effective topical therapy for dermatophyte infections.²¹

Superficial fungal infections exhibit varied clinical presentations; therefore, supportive mycological investigations are often required for accurate diagnosis. In cases with long-standing erythematous

scaly lesions unresponsive to steroids or calcineurin inhibitors, especially if accompanied by tinea pedis or tinea unguium, mycological examination is recommended to confirm tinea incognita.¹⁰

The addition of a non-steroidal moisturizer twice daily for two weeks facilitated healing by soothing the skin, enhancing the skin barrier, alleviating irritation from scratching, and reducing pruritus. Application of ketoconazole 2% shampoo to lesions for 3–5 minutes twice weekly also accelerated clinical improvement.

A limitation in this case was the inability to perform laboratory confirmation, so diagnosis relied on a detailed anamnesis and physical examination. Anamnesis remains a critical component of clinical decision-making. Information obtained from patient history can provide approximately 75% of the data needed to establish a diagnosis before physical examination. In this case, thorough anamnesis regarding prior misuse of topical and systemic steroids and steroid-containing whitening body lotion allowed accurate diagnosis and guided appropriate therapy, resulting in clinical improvement.

CONCLUSION

Administration of oral ketoconazole 200 mg/day, a non-steroidal moisturizer applied 3 minutes before ketoconazole 2% cream twice daily, antihistamines for two weeks, and ketoconazole 2% shampoo applied for 3–5 minutes before bathing resulted in clinical improvement in tinea incognita caused by misuse of topical and systemic steroids and steroid-containing whitening body lotion purchased online. To reduce the increasing incidence of tinea incognita, it is crucial to regulate the sale of topical corticosteroids so that they are only available with a prescription, for the National Agency of Drug and Food Control (Badan Pengawas Obat dan Makanan or BPOM) to monitor the circulation of counterfeit or unregulated whitening body lotions containing medicinal substances on online marketplaces, and for the government to supervise medical practice, particularly in rural areas, to ensure treatments are administered by qualified physicians.

Knowledge of the clinical manifestations of superficial dermatophytosis is essential to prevent the rise of tinea incognita cases.

ETHICAL CONSIDERATION

Written informed consent was obtained from the patient for the publication of this case report, including the use of clinical images. The patient was informed that all personal identifiers would be anonymized to protect confidentiality, and participation was entirely voluntary.

CONFLICT OF INTEREST

None

FUNDING

None.

AUTHOR CONTRIBUTIONS

All authors contributed to this case report's case, literature, and publication

GENERATIVE ARTIFICIAL INTELLIGENCE (AI) DISCLOSURE

There was no use of AI in the construction of this article.

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