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Address: 1 Kraljice Natalije Street, Belgrade 11000, Serbia
☏ +381 11 4092 776, Fax: +381 11 3348 653
E-mail: office@srpskiarhiv.rs, Web address: www.srpskiarhiv.rs

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Case Report / Приказ болесника

Danijela Milčić[1,2], Jelena Stojković-Filipović[1,2], Branislav Lekić[2], Marija Malinić[1], Mirjana Milinković-Srećković[1,2,♣]

Tinea incognita misdiagnosed as rosacea and eczema of the face

Tinea incognita на лицу погрешно дијагностикована као розацеа и екцем

[1]University Clinical Center of Serbia, Clinic of Dermatology and Venereology, Belgrade, Serbia;
[2]University of Belgrade, Faculty of Medicine, Belgrade, Serbia

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♣Correspondence to:
Mirjana MILINKOVIĆ-SREĆKOVIĆ
Clinic of Dermatovenereology, University Clinical Center of Serbia, 34 Deligradska St. Belgrade 11000, Serbia;
Faculty of Medicine, University of Belgrade, 8 Dr Subotića St. Belgrade 11000, Serbia
E-mail: **mirjana.milinkovicsreckovic@yahoo.com; mirjana.milinkovic@med.bg.ac.rs**

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SUMMARY

Introduction Tinea incognita is a dermatophyte skin infection with atypical clinical presentation modified using previous topical immunosuppressive therapy.

Case outline We present a 59-year-old female patient with a pruritic rash on her face. Over three months, she was misdiagnosed with rosacea, contact dermatitis, and atopic dermatitis, and treated with various topical steroids, metronidazole cream, oral antihistamines, dexamethasone, and methylprednisolone. At the first examination in our clinic, she had a pruritic widespread erythema, papules, and plaques on the face, eyelids, and neck, and a few plaques on the chest and extremities (covered with a thick layer of corticosteroid ointment), resembling various skin conditions. Two days after the exclusion of topical treatment, sharply demarcated erythematous lesions with raised scaly edges and numerous pustules appeared. Fungal culture was positive for *Trichophyton mentagrophytes var. granulosum*. A skin biopsy confirmed dermatophyte fungal infection, and the lesions resolved after systemic and topical antifungal therapy.

Conclusion We present the case of an unrecognized fungal infection of the skin to highlight the importance of a simple laboratory examination of fungal smears and culture before prescribing topical steroids and other immunosuppressive agents in order to avoid misdiagnosis and inappropriate treatment of patients in the future.

Keywords: tinea incognita; tinea atypica; *Trichophyton mentagrophytes*; topical immunosuppressive therapy

САЖЕТАК

Увод *Tinea incognita* представља дерматофитну инфекцију коже са атипичном клиничком презентацијом која је последица претходне локалне примене имуносупресивне терапије.

Приказ болесника Приказујемо болесницу старости 59 година са пруригинозним променама на лицу које има уназад три месеца. Иницијално је лечена под дијагнозом розацее, контактног дерматитиса, а потом и атопијског дерматитиса, различитим топикалним кортикостероидним препаратима, метронидазолом, оралним антихистаминицима, декстаметазоном и метилпреднизолоном. Приликом првог прегледа на нашој Клиници болесница је имала на читавом лицу, укључујући и капке и на врату еритематозне плакове и папуле, као и неколико сличних промена на предњој страни грудног коша и на горњим екстремитетима (промене прекривене дебелим слојем кортикостероидне масти). Два дана након обуставе локалне кортикостероидне терапије, диференцирале су се јасно ограничене еритематозне лезије са издигнутим ивицама, прекривене беличастом сквамом, уз то биле су присутне и бројне пустуле. Миколошком културом изолован је *Trichophyton mentagrophytes var. granulosum*. Учињена је биопсија коже чији је налаз одговарао гљивичној инфекцији. Након примене системске и локалне антимикотичне терапије дошло је до комплетне регресије промена.

Закључак Приказујемо случај иницијално непрепознате гљивичне инфекције коже са циљем да истакнемо значај спровођења једноставног лабораторијског теста – преглед скарификата коже на присуство гљивичних елемената и његово култивисање, пре прописивање топикалне кортикостероидне и имуносупресивне терапије како би се избегло постављање погрешне дијагнозе и неадекватно лечење таквих болесника.

Кључне речи: *tinea incognita*; *tinea atypica*; *Trichophyton mentagrophytes*; топикална имуносупресивна терапија

INTRODUCTION

Tinea incognita (TI) is a dermatophyte infection modified by inappropriate and prolonged use of topical or systemic steroids and topical immunomodulating agents [1–5]. It may resemble various skin disorders and the diagnosis is frequently missed or delayed. [4, 6–10]. Immunosuppressive effects of topical corticosteroids allow unhindered fungal growth, and their anti-inflammatory activity alters clinical features of the skin lesions, which could explain such a variety of clinical manifestations [9].

CASE REPORT

A 59-year-old female was referred to the dermatologist with a pruritic rash on her face that appeared three months earlier when she was moving to a new house and was exposed to dust. She was misdiagnosed with rosacea, contact, and atopic dermatitis by several doctors, including dermatologists, and treated unsuccessfully with various topical steroids, metronidazole cream, oral antihistamines, dexamethasone, and methylprednisolone.

During the first examination in our clinic, she had a burning sensation on her skin, and could not sleep for days. Physical examination revealed widespread pruritic erythema, papules, and plaques on the face, eyelids, and neck, and a few on the chest and the extremities. The scaling was not found. Two days after the suspension of topical treatment, sharply demarcated erythematous lesions with raised scaly edges and numerous pustules appeared (Figure 1). Due to the long-lasting use of corticosteroids, the cushingoid aspect of her face was noticed. Direct microscopy was positive for fungal hyphae; *Trichophyton mentagrophytes var. granulosum* grew in the fungal culture on *Sabouraud* agar. Histopathological findings suggested dermatophyte fungal infection and fungal hyphae were detected in the corneal layer with periodic acid-Schiff (PAS) staining. The lesions resolved after five weeks of systemic treatment with terbinafine (250 mg daily) and topical antifungal therapy (Figure 1).

This report does not contain any studies with human participants or animals performed by any of the authors. Formal informed written consent was obtained from the patient for the publication of this case report and any accompanying images.

DISCUSSION

The disease was first described by Ive and Marks [11] in 1968 as a dermatophyte skin infection incorrectly treated with topical and systemic corticosteroids. Due to the wide use of calcineurin inhibitors, numerous authors reported an increased number of patients with modified tinea. They proposed that TI should be redefined as dermatophytosis with unusual clinical presentation after prolonged use of systemic or topical corticosteroids or topical calcineurin inhibitors [1, 4, 12].

Lesions in patients with TI have a less scaly look, less raised margins, pustules, and are often highly irritated. Atzori et al. [13] proposed a new term – *tinea atypica* – instead of *tinea incognito*. Hematoxylin and eosin staining has a rather typical finding, but bearing in mind the sensitivity of this staining, it is advised to also perform PAS staining [14]. The most frequently

identified anthropophilic dermatophyte was *Trichophyton rubrum* [1, 4, 15], followed by two zoophilic dermatophytes, *Trichophyton mentagrophytes* and *Microsporum canis* [1]. Studies suggest that the most affected site was the trunk, followed by the face [1, 4]. In a Korean study, one-third of patients also had fungal disease involving distant body areas, such as feet and nails [4]. This coexistence of fungal infection could be important for clinicians because *tinea pedis* or *tinea unguium* could cause autoinoculation for any other body part, especially if a patient has been previously treated with immunosuppressants [4]. Our patient developed lesions predominantly on her face, a rarely involved site. The infection was caused by *Trichophyton mentagrophytes*, which is a less common culprit.

The incidence of TI has increased worldwide. In multiple articles, a vast number of TI patients were misdiagnosed by dermatologists. TI can mimic various skin diseases, and this should be the prime reason for properly conducting mycological evaluation before starting topical treatment with corticosteroids or calcineurin inhibitors [16, 17].

We presented a case of TI to highlight the importance of a simple laboratory examination of fungal smear and culture before prescribing topical steroids or calcineurin inhibitors to avoid misdiagnosis and inappropriate treatment of patients in the future.

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Conflict of interest: None declared.

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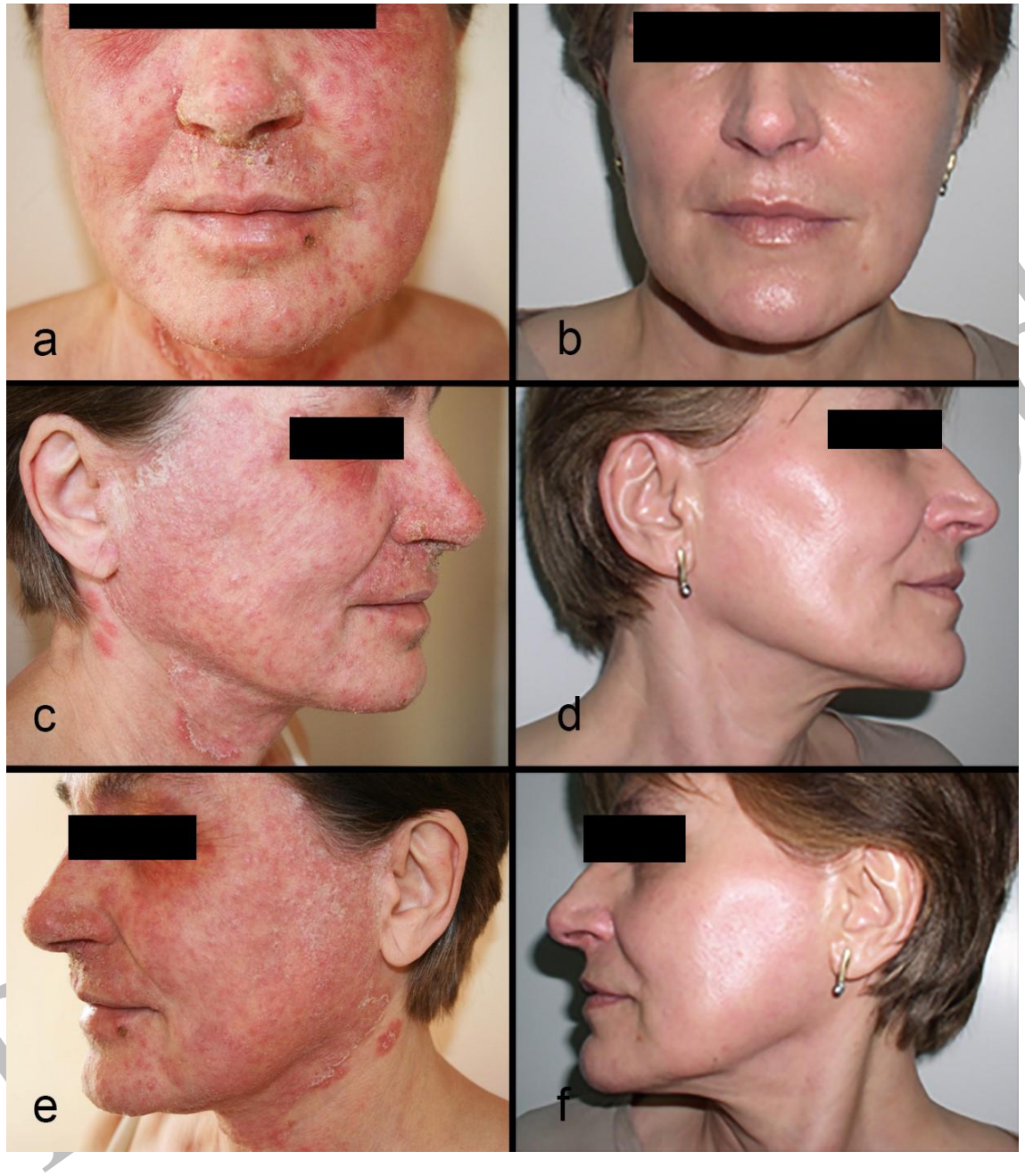

Figure 1. Photographs before (a, c, e) and after (b, d, f) the treatment; lesions covered the face (a), extending to submandibular and upper neck regions (c, e); note prominent scaling (e), and pustules (a); complete resolution after treatment (b, d, f)

