Tinea Pedis Presenting as Asymmetric Purpuric Papules on the Sole of the Foot: A Case Report

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Key Words

Tinea pedis · Asymmetric purpuric papules · Sole of the foot · *Trichophyton mentagrophytes*

Abstract

In this report we describe a unique case of tinea pedis. A 29-year-old man presented with a 3-day history of asymptomatic purpuric papules predominantly on his left foot. Potassium hydroxide preparation demonstrated fungal hyphae and culture yielded *Trichophyton mentagrophytes*. This patient presented unusually with purpuric papules, unlike the three commonly described types of tinea pedis. Given the morphology, positive potassium hydroxide slide preparation, *T. mentagrophytes* on fungal culture and clinical response to ketoconazole cream, we conclude that this represents a unique variant of tinea pedis. We recognize that even common dermatological diagnoses can have unique presentations, and it is important for clinicians to maintain a broad differential for new dermatologic cases.

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Case Report

A 29-year-old man was referred from the emergency room with suspected vasculitis. He had a 3-day history of an eruption affecting his left foot worse than the right one. He was otherwise asymptomatic. He tried applying a relative's 'corticosteroid' he found at home, but it only worsened the eruption. On examination he was found to have slightly elevated, well-demarcated purpuric papules over much of the plantar surface of his left foot with evidence

of some dry desquamative scale (fig. 1). His right foot showed fewer and fainter, but otherwise similar, lesions scattered on the plantar surface (fig. 2). He denied any associated pain. He was an otherwise healthy male, on no medications, and reported no history of fungal infections. A potassium hydroxide (KOH) preparation of the scrapings directly from a papule showed fungal hyphae, and culture yielded *Trichophyton mentagrophytes*. Blood work from the emergency room and clinic was normal. The patient was treated with ketoconazole 2% cream applied b.i.d. Follow-up at 2 weeks demonstrated complete clearance with no residual lesions. There has been no recurrence.

Discussion

T. mentagrophytes tinea pedis typically presents bilaterally with a severe inflammatory response as well as vesicles and/or bullae [1]. However, this patient presented uniquely, without overt inflammation, and instead of the vesicles or bullae usually associated with *T. mentagrophytes* infection, he had scattered purpuric papules on the plantar surface. He also did not demonstrate the painful blisters, erythema and pruritus that are commonly found with *T. mentagrophytes*. With a high index of suspicion as well as appropriate KOH microscopy and fungal culture, this unusual presentation was correctly established as tinea pedis. The eruption's response to treatment was characteristic of a fungal infection as it improved immediately upon introduction of ketoconazole and worsened with topical steroids [2]. This patient presented unusually with purpuric papules, unlike the three commonly described types of tinea pedis. Given the morphology, positive KOH slide preparation, *T. mentagrophytes* on fungal culture and clinical response to ketoconazole cream, we conclude that this represents a unique variant of tinea pedis.

This purpuric presentation of tinea pedis is highly unusual and important for clinicians to be aware of, since untreated tinea pedis will persist indefinitely and the unsuspecting patient will continue to shed the arthrospores at public facilities. Tinea pedis has also been found to be a significant risk factor for acute bacterial cellulitis of the leg [3]. More importantly, the atypical purpuric presentation could easily lead to misdiagnosis, overinvestigation with skin biopsy and inappropriate treatment with topical corticosteroids. The decreased host local immunologic reaction from the use of topical corticosteroids can mask the appearance of tinea pedis, with reduced erythema and scale formation [4]. Corticosteroids allow enhanced fungal growth and can lead to Majocchi granuloma [4].

This is a unique case of tinea pedis where the patient presented with purpuric papules along the plantar surface instead of vesicles or bullae associated with *T. mentagrophytes*. Our case highlights the fact that common entities can sometimes present in a novel fashion and underscores the importance of KOH microscopy and fungal culture. It is crucial for clinicians to maintain a broad differential to avoid the easily preventable complications of tinea pedis, such as inappropriate corticosteroid treatment and Majocchi granuloma.

Disclosure Statement

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Fig. 1. Sole of the patient's affected left foot.

Fig. 2. Sole of the patient's minimally affected right foot.