# Tinea Incognito in a Tattoo

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**PRACTICE POINTS**

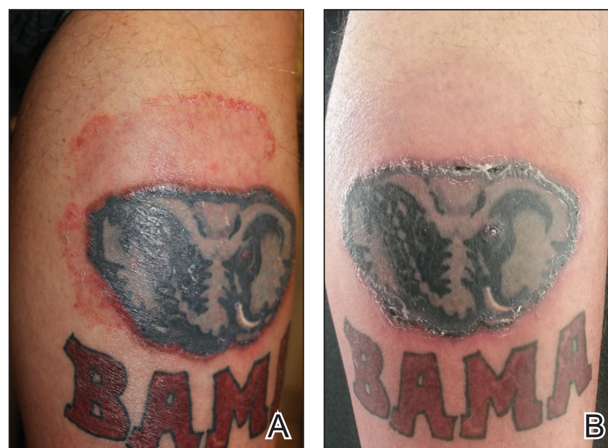
- Health care providers should have a low threshold to perform a potassium hydroxide preparation when the possibility of a superficial fungal infection is considered.
- Tinea incognito occurs when a superficial fungal infection has unusual clinical features in the setting of local immune suppression.

To the Editor:
Tinea incognito occurs when superficial fungal infections fail to demonstrate typical clinical features in the setting of immune suppression caused by topical or systemic steroids.[1,2] A case of tinea corporis obscured by an allergic tattoo reaction is presented.

A 52-year-old man presented for evaluation of a rash overlying a tattoo on the right calf of 3 weeks' duration (Figure, A). The tattoo was placed 4 years prior to presentation. Within 6 months of the tattoo's placement, pruritus, scaling, and edema developed in a 2-mm rim around the outer border and in the eyes of the elephant tattoo but not in the lettering portion of the tattoo, which was added by a different tattoo artist with a different red dye. A diagnosis of red dye tattoo allergic reaction was made. Daily treatment with tacrolimus ointment 0.1% and halobetasol propionate cream 0.05% under occlusion for 18 months provided only partial relief of incessant pruritus. Three months prior to presentation the tattoo reaction appeared to become worse with more pruritus and extension outside the bounds of the original tattoo.

Physical examination revealed the red rim of the tattoo was erythematous, edematous, and crusted. In addition, a 5×4-cm well-demarcated, erythematous, scaling patch was present overlying the elephant tattoo on the right calf and extending superiorly and laterally away from the tattoo. Scaling and maceration also were present in the web spaces between the fourth and fifth toes, and the toenails were yellowed, thickened, and dystrophic with signs of distal onycholysis. A potassium hydroxide preparation performed from the plaque on the right calf demonstrated septate fungal hyphae.

The diagnosis of tinea corporis secondary to tinea pedis overlying a red dye tattoo allergic reaction was made. Tacrolimus and halobetasol propionate were discontinued and treatment with ketoconazole cream 2% twice daily and oral terbinafine 250 mg once daily was started. The erythematous patch beyond the borders of the tattoo cleared within weeks, but the patient reported worsening of cracking, itching, and swelling overlying the red dye in the rim of the tattoo following discontinuation of topical anti-inflammatory drugs (Figure, B).




Tinea incognito caused a 5×4-cm well-demarcated erythematous patch with an expanding scaling border associated with the red rim and red eyes of an elephant tattoo on the right calf before treatment (A). Clearing of the superficial fungal infection had no impact on the persistent fissured edematous and pruritic red dye tattoo allergic reaction at the rim and red eyes of the tattoo (B).

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A potassium hydroxide preparation demonstrated that the expansible rash was tinea corporis disguised in its character by the coloration of the tattoo; the erythematous, edematous, pruritic tattoo allergic reaction at its rim; and suppression of the normal inflammatory response by daily use of a topical steroid and a calcineurin inhibitor. The latter effect (an immunocompromised district) impacts the classic exaggerated scaling, inflamed rim, and central clearing of tinea corporis present in individuals with a normal inflammatory response.[2] Although tinea incognito is classically described on the ankles and lower legs of patients with stasis dermatitis chronically treated with topical steroids, it could occur anywhere in the setting of immunosuppression.[3]

An analysis of this case using Occam's razor suggests that the association of this tattoo and tinea was not a coincidence. This guiding principle (heuristic) suggests that economy and succinctness in the logic of science is most likely to produce a correct medical diagnosis (eg, associated findings can be explained by identifying one underlying cause).[4] The topical anti-inflammatory drugs increase the likelihood that the patient's interdigital tinea would spread to this precise location symmetrically expanding in the outline of the tattoo.[2]

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