

# Tinea capitis mimicking favus in rural Washington State



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## INTRODUCTION

Favus or tinea favosa is an uncommon form of tinea capitis. The most commonly identified causative organism is *Trichophyton schoenleinii*, transmitted indirectly through fungal hyphae associated with loose hairs or cornified squamous cells.<sup>1</sup> Favus is most frequently observed in settings of poor sanitation, in resource-poor countries, or in places with limited access to care. Here we present a case of widespread cutaneous fungal infection mimicking favus, unexpectedly caused by *Trichophyton rubrum* in Washington State.

## CASE REPORT

A 55-year-old man was transferred from an outside hospital in rural Washington for skin grafting in the setting of Fournier gangrene. The dermatology service was consulted regarding a reported 7-year history of a densely scaly cutaneous condition involving the scalp and face that had subsequently spread to the extremities. The patient reported he first noticed skin changes on his scalp after a bleach solution dripped onto his scalp at work. The eruption then became widespread. Topical steroids were prescribed, but he did not apply them. He was lost to follow-up for the next several years.

On presentation to the hospital, physical examination showed a thick, hyperkeratotic plaque involving the entire crown and parietal scalp (Fig 1). Large hyperkeratotic plates were removed with little difficulty, revealing yellow papillary projections into the dermis. The patient also had scattered verrucous hyperkeratotic papules and plaques in acral regions of his extremities and 20 nail onychodystrophy. Potassium hydroxide preparations of scale from

multiple sites were floridly positive. A skin biopsy was performed to rule out alternate diagnosis, and periodic acid–Schiff staining showed numerous fungal hyphae in the stratum corneum and within follicles (Fig 2). Tissue culture grew *T rubrum*. The patient was treated with oral terbinafine for 3 months with complete resolution.

## DISCUSSION

Favus is a chronic inflammatory dermatophyte infection of the scalp. This condition occurs more commonly in impoverished countries and is associated with poor sanitation. The responsible organism is typically *T schoenleinii*, with *T rubrum* cited as the cause less than 1% of the time.<sup>2,3</sup> *T rubrum* infections most commonly present as tinea pedis, tinea unguium, tinea corporis, or tinea cruris. *T rubrum* causing scrotal favus has been observed in immunocompromised patients.<sup>4</sup> Cases of tinea capitis caused by *T rubrum* have been reported in pediatric as well as adult patients in developed countries.<sup>5,6</sup>

Classical favus begins with folliculocentric erythema of the scalp followed by formation of the pathognomonic scutulum. Severe presentations involve more than one-third of the scalp, extensive hair loss, atrophy, and scarring.<sup>1</sup> Affected skin may have an unpleasant “cheesy” or “mousy,” odor and secondary bacterial infections can occur. Favus may also have a honeycomb appearance, as our patient’s scalp demonstrated.

The scutula of favus are concave, cup-shaped yellow keratotic crusts on the scalp that contain fungal hyphae. Despite our patient’s presentation with extreme heaped up crusts and abundance of fungal forms, the lack of scutula and atypical

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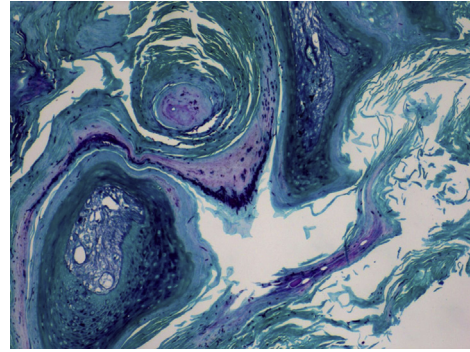
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**Fig 1.** Thick, hyperkeratotic plaque involving the entire crown and parietal scalp.

causative organism suggest the possibility of tinea capitis mimicking favus, rather than a classic favus case. Tinea capitis mimicking favus caused by *Trubrum* has been reported previously in an elderly woman with dementia.<sup>5</sup> Additionally, favus is unusual in developed countries, and this patient lives in a private home.

We suspect this patient's skin condition was caused by the combination of unsanitary living environment and delay to treatment. The patient's living conditions and access to care resembled that of a resource-poor region where favus typically presents. Our case report supports the rare but potential occurrence of tinea capitis mimicking favus in developed countries such as the United States in this setting. It also highlights an alternate fungus, *T rubrum*, as a less commonly encountered



**Fig 2.** Punch biopsy shows abundant fungal hyphae within the stratum corneum. (Periodic acid–Schiff stain; original magnification:  $\times 10$ .)

organism capable of causing an exuberant cutaneous fungal infection.

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