

Tinea capitis favosa due to Trichophyton schoenleinii

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SUMMARY

A case of a tinea capitis caused by *Trichophyton schoenleinii* is presented. It involves a 6-year old Tunisian boy that had presented with diffuse scaling of the scalp misdiagnosed as psoriasis and was treated unsuccessfully with keratolytic shampoos for two years. Tinea favosa due to *Trichophyton schoenleinii* was confirmed by mycological examination. He was successfully treated with griseofulvin for 6 weeks and topical application of imidazole.

Trichophyton schoenleinii is an important anthropophilic dermatophyte that causes tinea favosa. It is transmitted by contagion between humans and is currently endemic in Africa. Ringworm is still frequent in Tunisia, but favus is becoming exceptional due to improvements in living conditions and hygiene.

Introduction

Trichophyton schoenleinii is an important anthropophilic dermatophyte that causes tinea favosa and is transmitted by contact between humans. It is currently endemic in Africa. Improvements in living conditions and hygiene in developing countries after the Second World War have been associated with the almost complete disappearance of many anthropophilic species, including *Trichophyton schoenleinii*. In Tunisia, favus is becoming exceptional.

We describe a patient that had an unusual variant of tinea capitis caused by *Trichophyton schoenleinii*.

Case report

A 6-year old Tunisian boy, living in the city of Tunis, was seen at the Department of Dermatology for large adherent scales surrounding the hair shafts. Examination revealed multiple scaly hairless patches (Figure 1). He had been treated unsuccessfully for psoriasis with salicylic acid shampoos for two years. No other dermatological abnormality was observed; he was otherwise a healthy boy. A Wood's light examination revealed a green fluorescence. Scales and altered hairs were collected. Direct microscopic examination of the hairs in 10% potassium hydroxide revealed an endothrix inva-

KEY WORDS

Trichophyton schoenleinii,
favus,
Tunisia

sion, with hyphae and air spaces in the hair shafts. Culture on Sabouraud glucose agar with antibiotics produced waxy colonies that later became velvety and whitish. They consisted of irregular, dichotomously branched hyphae with favic chandeliers and a few intercalate chlamydoconidia (Figure 2). A diagnosis of tinea capitis with *Trichophyton schoenleinii* was made. The patient was treated with 20 mg/kg/day of oral griseofulvin (400 mg twice daily) for 6 weeks and topical imidazoles for 8 weeks. The follow-up direct examination and culture were negative at the end of the treatment. No alopecia was observed. All the family members (parents, 1 brother) had apparently healthy scalps.

Discussion

Favus is a chronic fungal infection of the scalp, glabrous skin, and/or nails caused by *Trichophyton schoenleinii*. Occasionally *Trichophyton violaceum* or *Microsporum gypseum* may cause similar lesions.

Although favus occurred worldwide in the past, due to the great improvement in socio-economic conditions it is now limited to some endemic regions (1). It can still be found in areas where the population suffers from poor hygiene and malnutrition.

Favus has been observed worldwide, including Southern and Northern Africa, Pakistan, the United Kingdom, Australia, South America, the Middle East, and Poland (2).

Trichophyton schoenleinii is now rare throughout Europe, as mentioned in Korstanje's paper on tinea capitis in northwestern Europe from 1963 to 1993 (1). In Poland, *T. schoenleinii* was isolated in 0.2% of 1,045 specimens taken from cases of tinea capitis during a period of 20 years (3). One case of *T. schoenleinii* was isolated out of the 190 cases of tinea capitis in Spain between 1977 and 1997 (4). In Greece, only 35 cases of tinea capitis were identified between 1981 and 1995, and 5.7% of them were due to *T. schoenleinii* (5). There has been a shift in organisms associated with tinea capitis in the Netherlands from *T. schoenleinii* to *T. violaceum*; this can be explained by the increase of immigrants from Mediterranean countries (1).

In a survey on dermatophytes isolated from 1979 to 1981 in the United States, less than 1% of the total were *M. gypseum*, *M. fulvum*, *M. ferrugineum*, or *T. schoenleinii* (6). No isolation of *T. schoenleinii* was reported in a survey of dermatophytes isolated from 1982 to 1984 (7).

There has been a dramatic decrease in the incidence of favus, with complete disappearance of *T. schoenleinii* as a causative agent of tinea capitis in Benghazi, Libya (8).

A total of 12,150 cases of suspected dermatophytoses in different areas of Iran were studied between 1986 and 1991, where 5.5% of the 9,345 laboratory-examined cases were caused by *T. schoenleinii* (9).



Figure 1. Multiple scaly hairless patches.

At the department of Dermatology and Venerology in Tunis, tinea capitis was diagnosed in 349 patients during a period of 10 years (1995 to 2005). Tinea favosa was diagnosed in only 4 instances (1.14%).

Tinea favosa caused by *T. schoenleinii* is a chronic disease, characterized by the presence of yellowish, cup-shaped crusts called "scutula" on the scalp and glabrous skin, with severe alopecia (10). In addition to the classic clinical type, there are erythematous follicular forms without alopecia, similar to seborrheic lesions, psoriasis, or tinea amiantacea (11). Because of its non-inflammatory appearance, the disorder may persist undiagnosed for many years with an ultimate evolution into scarring alopecia (11).

Our patient presented a diffuse scaling of the scalp, which was misdiagnosed as psoriasis and treated un-

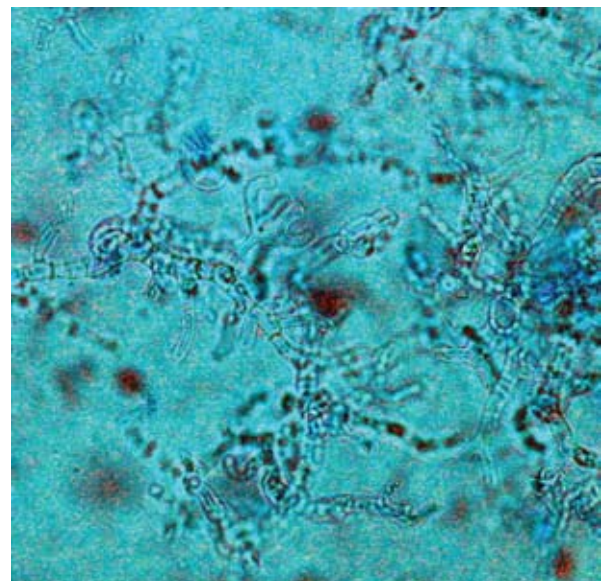


Figure 2. Irregular dichotomously branched hyphae with favic chandeliers.

successfully with keratolytic shampoos for two years. We emphasize the importance of mycological examination in similar cases.

The specific type of hair invasion (endothrix favosa) contributes to the chronic course of favus, which may persist into adulthood (12). Endothrix infections are more likely to result in outbreaks among family members or intimate friends (13). Continuous contact with affected family members seems to be the most important factor for anthropophilic tinea capitis infection. *Trichophyton schoenleinii* can also be transmitted from person to person by sharing towels or clothing (14).

It has been shown that asymptomatic adult carriers act as reservoirs of infection and are responsible for the spread and persistence of the scalp ringworm within a community (12).

The treatment of tinea favosa consisted of griseofulvin and micronazole in our patient (13). Fungal resistance to griseofulvin has been described (14). The multiple-layered, thick cell wall of the fungi may act as a barrier impermeable to griseofulvin (14).

Conclusion

The patient presented an atypical variant of tinea capitis caused by *Trichophyton schoenleinii* without displaying the characteristic scutula. In any dermatosis of the scalp in a child, the clinician should investigate the possibility of a mycotic infection by means of mycological examination. Prompt treatment is necessary in order to avoid evolution to a definitive cicatricial alopecia.

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