

An Unusual Case of Tinea Capitis Presented as Erythematous, Hyperkeratotic, Scaly Plaque with Alopecia

Dear Editor,

Tinea capitis is a superficial fungal infection of the scalp and hair caused chiefly by dermatophytes of the genera *Trichophyton* and *Microsporum*. While it is a very common form of cutaneous mycosis in prepubertal children, its occurrence in immunocompetent adults is rare. Tinea capitis is, however, known to occur in immunocompromised adults and postmenopausal women, though the clinical presentation usually differs from that in children.^[1]

A 45-year-old woman presented to our clinic with a history of a non-itchy, warty lesion on the scalp for the last 2 years. She also complained of some hair loss and dryness of the scalp in the affected area. Examination of the scalp revealed an ill-defined, erythematous, hyperkeratotic, scaly plaque over the frontal scalp. The lesion was associated with partial, non-cicatricial alopecia [Figure 1]. The medical history of the patient did not reveal any underlying disorders or any significant medication intake by the patient. There was no history of contact with any animals. The baseline laboratory investigations did not reveal any abnormality. The patient had been treated previously with steroid-salicylic acid lotions multiple times to which she had responded minimally.



Figure 1: An ill-defined, erythematous, hyperkeratotic, scaly plaque over the frontal scalp with associated alopecia

Histopathological assessment using hematoxylin and eosin staining of the punch biopsy taken from the lesion revealed abundant round basophilic fungal spores filling up the whole infundibulum of the hair follicle [Figure 2]. The presence of abundant fungal spores was confirmed by periodic acid-Schiff (PAS) staining, where the whole of the hair shaft showed infiltration by innumerable deeply stained pink-colored fungal spores [Figure 3]. A diagnosis of tinea capitis was made, and the patient was treated with itraconazole for 8 weeks and showed a good response to treatment.

Tinea capitis is one of the most common cutaneous mycoses in children but as the quantity of fungistatic saturated fatty acids in the sebum increases at puberty, the incidence of tinea capitis falls dramatically in postpubertal children and adults. The thicker caliber of the adult hair and colonization by *Pityrosporum orbiculare* may also be protective against dermatophyte invasion. Tinea capitis has, however, been reported in adults with severe immunosuppression (due to underlying leukemia or lymphoma, Human Immunodeficiency Virus (HIV) infection, diabetes mellitus, systemic lupus erythematosus, and severe anemia or in patients taking immunosuppressive drugs. Tinea capitis may also be seen in postmenopausal immunocompetent females, where decreased estrogen levels are known to cause pH changes in the scalp and decrease in the quantity and quality of medium- and long-chain fatty acids in the sebum, thus marring the sebum's protective effect against dermatophyte infections. In immunocompetent adult males and premenopausal females, the occurrence of tinea capitis is quite rare.

Tinea capitis, when present in adults, tends to have unusual presentations. The classical presentation is as seen in children in the form of hair loss, and black dots and gray patches may not be as evident in adults. Interestingly, alopecia is an uncommon presentation of the infection in adults.^[1] Tinea capitis in adults may manifest as mild scaling and inflammation of the scalp suggestive of seborrheic dermatitis or may occasionally mimic

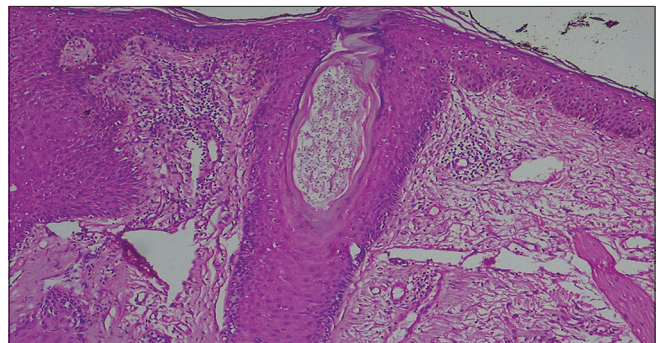


Figure 2: The whole infundibulum is filled up with round basophilic fungal spores (H & E, 100x)

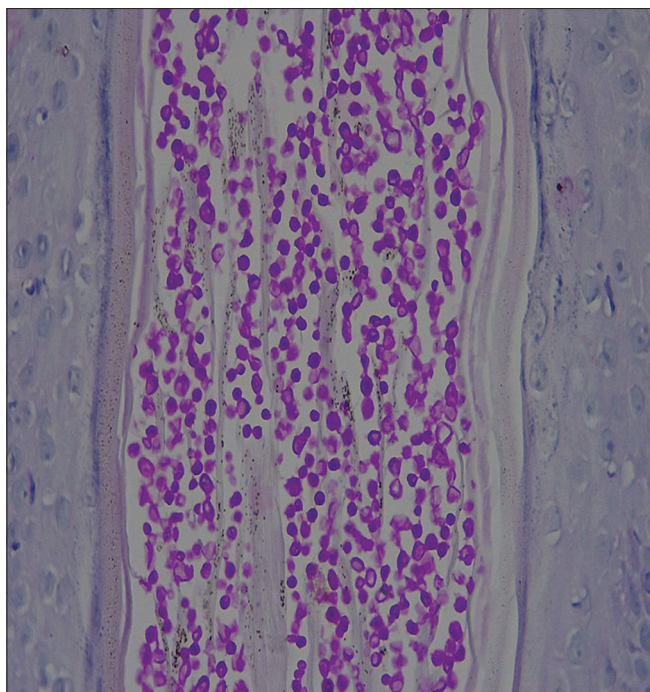


Figure 3: The whole of the hair shaft is infiltrated with an innumerable number of deeply stained pink-colored fungal spores (PAS stain, 400x)

severe forms of bacterial folliculitis, folliculitis decalvans, and dissecting cellulitis.^[2] The differences in clinical appearance are largely determined by the causative organism. In adults, *Trichophyton tonsurans* infection, usually acquired from infected children in the family, produces very subtle signs or none at all, as seen in nearly 30% of such infections.^[3] Perifollicular erythema and follicular plugging seen at times in these cases may be confused with lichen planopilaris.^[3] Large-spore endothrix fungus, as seen in our case, may be evident on histopathological examination even without PAS staining. In such cases, the identification of infected children and their concurrent treatment is also mandated. However, in cases asymptomatic scalp carriage in the household, fungal cultures may be needed to identify the source.^[4] However, *Microsporum* infections acquired from infected pets and other animals usually manifest as more severe inflammatory lesions.

While the treatment of tinea capitis in adults is largely similar to that in children, the choice of systemic therapy in adults and elderly patients also depends on any underlying systemic conditions and concomitant use of other medications.

Delay or error in diagnosis of tinea capitis is common due to the rarity of infection in immunocompetent adults. This may lead to unnecessary investigations and inappropriate treatment in such cases. Hence, the possibility of tinea capitis needs to be considered in adults with patchy, inflammatory scalp disorders not responding to conventional treatment.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have

given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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