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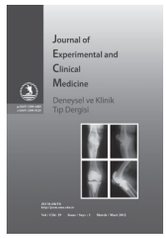

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Association of psoriasis and tinea capitis in a child

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ABSTRACT

Psoriasis patients were investigated for dermatophyte infection in the literature but the association of psoriasis and tinea capitis was not reported before. We reported a 12 years old psoriatic girl who was diagnosed as tinea capitis at the same time by using KOH examination as a diagnostic tool. Aggravation of her psoriatic lesions during that infection was also a remarkable point. Her hair grew up with oral antifungal treatment. Tinea capitis rarely appear in psoriatic patients and must be included in differential diagnosis especially in children.
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1. Introduction

Psoriasis vulgaris is a chronic disorder characterized by scaly, erythematous plaques and occasionally sterile pustules. It can be seen at any age. Both environmental and genetic factors have role in the etiology. In genetically susceptible individuals, innate immune mechanism activation and stimulation of T cells trigger psoriasis but the exact stimulus is still unknown (Fry and Baker, 2007; Roberson and Bowcock, 2010). Although streptococcal infections are reported to be the causative agent in guttate form, other infectious agents are still in search (Ko et al., 2010).

Tinea capitis is hair infection due to dermatophytes seen primarily in children. Fungi of the genera Trichophyton and Microsporum are the causative agents. A non-inflammatory scaling that resembles seborrheic dermatitis, pustular eruption with alopecia known as kerion and favus are the clinical patterns of tinea capitis. It was mostly seen in rural area because of poor hygiene and low socio-economic standards (Elewski, 2000).

Association of psoriasis and tinea capitis was not reported before in the literature. We reported a psoriatic girl whose lesions aggravated with occurrence of concomitant tinea capitis infection.

2. Case

A 12-year-old girl was admitted to our department due to increase of the lesions on her body and hair loss in her head. Her complaints were present for one month. She had been diagnosed as psoriasis for 3 years. Lesions of psoriasis had been on her knee and elbows and had responded to topical corticosteroids. She stated that, for the last one month, her lesions of psoriasis had aggravated and during that period she had also noticed hair loss. She had no complaint of fever or malaise for the last three months. She had also no history of any illness and any new medication during that period.

On dermatological examination there were erythematosquamous plaques on her body, upper and lower extremities (Fig. 1). On the scalp there was a scaly plaque without hair in certain areas (Fig. 2).

Potassium hydroxide (KOH) examination was performed from the lesion on the scalp and hyphae were recognized.

Fig. 1. Erythematosquamous plaques on the body

Fig. 2. A scaly hairless area on the scalp

Histopathological examination of the skin biopsy from the lesion on the body demonstrated hyperkeratosis, absence of granular layer, papillary edema and dilation of capillaries with perivascular infiltrate and was reported as psoriasis vulgaris. Laboratory investigations revealed normal values for complete blood cell count, liver function test, and urinalysis and erythrocyte sedimentation rate. Oral terbinafine 125 mg/day was prescribed, one week later acitretin 20 mg/day was added to the treatment. At the 6th week of therapy her hair was grown and oral terbinafine stopped (Fig. 3).

Since lesions of psoriasis decreased but persisted acitretin treatment continued for additional 6 week by gradually decreased dosage.

Fig. 3. Hair was grown with oral antifungal

3. Discussion

Psoriasis vulgaris is characterized by scaly, erythematous plaques. The relationship between psoriasis and dermatophyte infection was reported rare in the dermatological literature. Mostly onychomycosis had been reported in psoriatic patients, but data on prevalence was variable. Hamnerius et al. (2004) found the prevalence of onychomycosis similar both in the normal population and psoriatic patients and in psoriatic patients; susceptibility to dermatophyte infection was not detected.

In the pathogenesis of psoriasis, both adaptive and innate immune responses were investigated and all T cells, dentritic cells, macrophages, endothelial cells, neutrophils and keratinocytes were suggested to have an important role by managing the cytokine production. T cells have an important role among them, since it is exactly known that psoriasis is a T cell associated disease. Oligoclonality of lesional T cells is the significant feature. Clonal expansion of T cells was proposed to be triggered by super antigens which are produced by several infectious organisms such as streptococci (Macias et al., 2011). Kokolakis et al. (2010) reported a patient with guttate psoriasis after a varicella infection. Cutaneous infections of Malassezia and C.albicans were also reported to be related with the development of psoriatic lesions (Fry and Baker, 2007). In our report, tinea capitis was diagnosed in a psoriatic child at the same time and her lesions aggravated with this concomitant infection. Can dermatopytes be the source of super antigen like other infectious agents and trigger clonal expansion of T cells?

Although lesions of dermatophyte infection resemble the plaques of psoriasis, the induration is less and the borders of the lesions are more prominent. But in the scalp it is more difficult to differentiate these two entities clinically. Our patient had the diagnosis of psoriasis when she admitted to our department, so at first the scaling on her head made sense of a psoriatic lesion. But the lack of hair and also lack of erythema at the lesion was significant so, led us to perform a KOH examination. With this report we also want to emphasize the importance of KOH examination in the psoriatic patients when scaling is noticed at the scalp.

In the other siblings, tinea capitis was not diagnosed. Although it is contagious, age is on important factor for tinea capitis and her brothers were older than her. However topical

corticosteroid usage could increase the susceptibility to dermatophyte infection in the scalp or is psoriatic skin prompt to such infections?

KOH examination is the diagnostic tool for tinea capitis in this report. Culture for determining the genus of fungi wasn't used and this is the limitation of our report.

In the literature patients with psoriasis had been investigated for infectious agents but the relationship between dermatophyte infection and psoriasis has not been reported yet. We suggest careful evaluation of patients with psoriasis for possible dermatophyte infection and KOH examination should be done in psoriasis patients with scaling on the head especially in children.

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