

Psoriasiform Dermatophytosis in a Bulgarian Child

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Abstract

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Although tinea capitis is the most common fungal infection in children, significant changes have been reported in its epidemiology worldwide, as a result from certain geographic, climatic and cultural differences in one hand, as well as the changes in its etiologic pattern. The clinical manifestation of the infection and the stage of inflammation vary from mild desquamation to severe suppurative indurated plaques in kerion - like the pattern, depending on the nature of the etiologic agent and the host-immune response. We report a case of tinea capitis profunda, caused by *Trichophyton verrucosum* in a 5 – year - old male patient, presented as a severe scalp and cutaneous desquamation, resembling histopathologically psoriasis, associated with severely indurated ringworm plaque in the temporal area. The performed histological examination revealed a psoriasiform pattern, without the typical Munro abscesses or Kogoj pustules. With the presented case, we want to emphasize the importance of the host's immune reaction to zoophilic dermatophytes, such as *Trichophyton verrucosum*, resulting in severe and often atypical clinical manifestation, as well as the possible "Id reaction", to avoid or minimise misdiagnosis and delayed therapy. The presented patient was treated with topical oleum acy salicylic 10% and Terbinafine 125 mg daily with significant resolution of the complaints within the following two months.

Introduction

Although tinea capitis is the most common fungal infection in children, significant changes have been reported in its epidemiology worldwide, as a result from certain geographic, climatic and cultural differences in one hand, as well as the changes in its etiologic pattern [1]. All of the three genera dermatophytes can cost the infection – Epidermophyton, Trichophyton and Microsporum [2]. Most important among them are still *Microsporum Canis*, *Trichophyton verrucosum* et. mentagrophytes [1]. The clinical manifestation of the infection and the stage of inflammation vary from mild desquamation to severe suppurative indurated plaques in kerion - like

pattern, depending on the nature of the etiologic agent in one hand, as well as the host's immune response in other [1]. Furthermore, new etiological agents have been implicated in the aetiology of the disease, mostly associated with atypical clinical manifestation in indigent patients [2].

Case Report

A 5 – year - old male patient presented with a 6 - months history of desquamation of the scalp. Initially, the symptoms had been poorly presented, as

a mild dandruff-like eruption, but gradually became more pronounced. One month ago, a well-demarcated erythematous lesion occurred at the left temporal area of the scalp, while the hairs gradually fall in the affected area. Subjective, the condition was accompanied by mild itching. No family history, nor comorbidities, neither medication were reported. Clinical examination revealed erythematous and edemas plaque, without hairs, with severe induration and inflammation, located on the left temporal area of the scalp, while severe desquamation was observed, covering the whole scalp surface and the left cheek (Fig. 1).



Figure 1: a, b - Clinical manifestation of tinea capitis profunda in a 5-year-old patient; c, d - Closer view of the tinea capitis profunda and scalp desquamation, resembling psoriasis

Histopathological examination after performed scalp biopsy revealed a psoriasiform pattern, while the mycological examination of scales on Sabouraud agar, established growth of *Trichophyton verrucosum*. The diagnosis of tinea capitis profunda was made. Patient was treated with topical application of oleum acid salicylic 10% and systemic administration of Terbinafine 125 mg daily with significant resolution of the complaints within the following 2 months.

Discussion

It is well known that zoophilic dermatophytes usually cause more severe inflammation, with Kerion Celsii pattern, due to the delayed type of allergic immune reaction and further releasing of Th2 cytokines from mononuclear leukocytes, and increased serum levels of IgE and IgG4 [3]. The

immune response in severe infiltrative cases, caused by zoophilic dermatophytes, as *Trichophyton verrucosum*, could be so strong in healthy individuals that it could lead not only to the so called "Bruno Block phenomenon", which represents a further resistance to fungal infection with the same localization, but also to severe, deep infiltration and suppuration, which is otherwise unusual in non-immune-suppressed patients [4]. Despite this, the clinical manifestation in such severe cases could lead to diagnostic challenges and therapeutic delay.

Other atypical manifestation of tinea capitis, with widespread eruption could be a result from the so called "Id reaction" [5]. It is clinically presented as disseminated symmetrical cutaneous eruption, either follicular, or psoriasiform, typically in response to a scalp ringworm of Kerion-type, caused by *Trichophyton verrucosum*, as in the presented case [5]. In such cases, mycological examination of body scales is negative as a rule, while the condition is incorrectly interpreted as psoriasis, associated with tinea capitis profunda [5].

We report a case of tinea capitis profunda, caused by *Trichophyton verrucosum* in a 5-year-old male patient, presented as a severe scalp and cutaneous desquamation, resembling psoriasis, associated with severely indurated ringworm plaque in the temporal area. The performed histological examination revealed psoriasiform pattern, without the typical Munro abscesses or Kogoj pustules in the histological slides.

With the presented case, we want to emphasize the importance of the host's immune reaction to zoophilic dermatophytes, such as *Trichophyton verrucosum*, resulting in a severe and often atypical clinical manifestation, as well as the possibility of the "Id reaction", in order to avoid or minimize misdiagnosis and delays in therapy.

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