"Generalized exanthematous pustular dermatophytid" in a 4-year-old child: A misdiagnosed entity

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Sir,

A previously healthy 4-year-old child was referred to the dermatology department for an inflammatory, crusted, matted mass over the scalp progressing for 2 weeks [Figure 1].

Direct microscopic examination of the hair sample from the affected area in 10% potassium hydroxide revealed an endothrix pilar invasion with the presence of septate hyaline hyphae. After 4 weeks, *Trichophyton tonsurans* was isolated from the culture using Sabouraud agar.

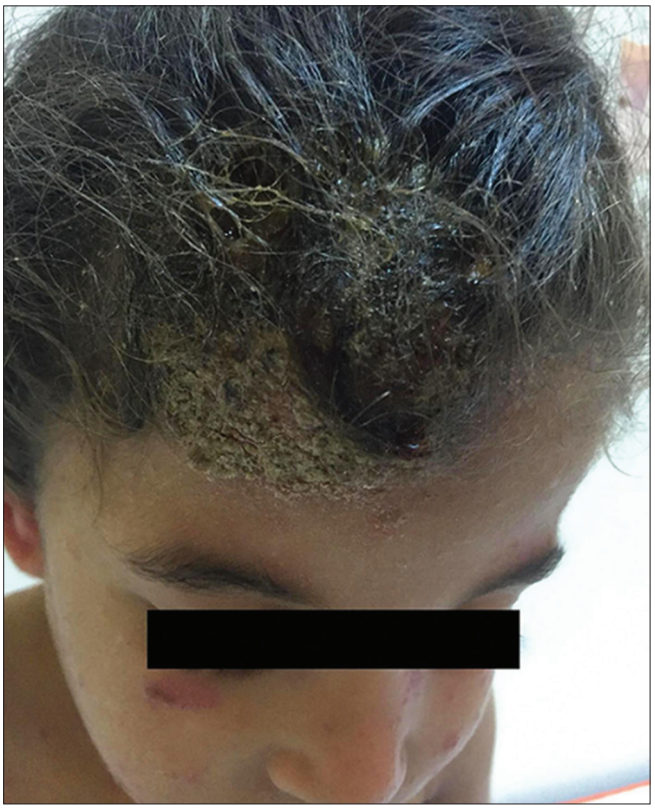

Figure 1: Inflammatory and crusted, matted mass on the scalp (kerion)

The diagnosis of a kerion was made. Three days after oral micronized griseofulvin initiation (22 mg/kg/d), the child presented with a generalized pustular eruption initially localized to the palms and soles which then rapidly spread over the entire body in the next few days. She had no fever and no other constitutional symptoms. On clinical examination, we found multiple, large, non-follicular pustules on a non-erythematous base especially on the palms and soles; also on her face, trunk and arms [Figures 2-4]. Intertriginous areas were spared. Blood analysis showed leucocytosis (12000/µl), neutrophilia (7000/µl) and a slight increase in C-reactive protein (20 mg/l). Bacteriological and mycological cultures of samples obtained from the pustular lesions were sterile. Biopsy revealed a subcorneal pustule containing a small amount of neutrophils. The dermis showed a moderate perivascular, lymphohistiocytic inflammatory infiltrate with the presence of some eosinophils [Figures 5 and 6]. A diagnosis of "generalized exanthematous pustular dermatophytid"

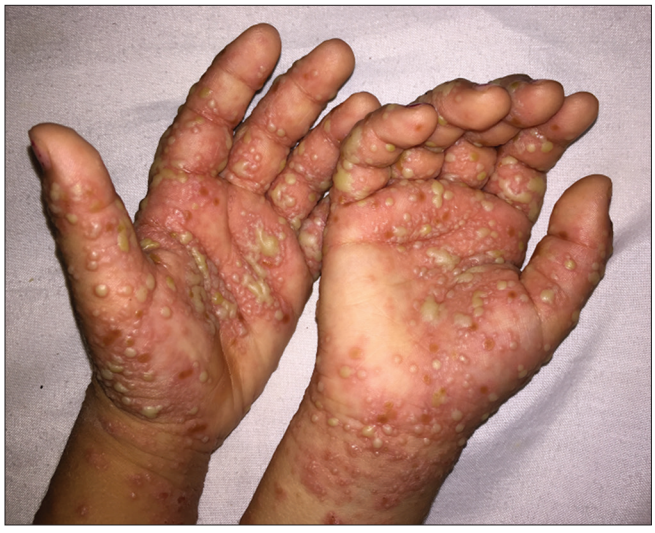

Figure 2: Multiple, large, non-follicular pustules on the palms

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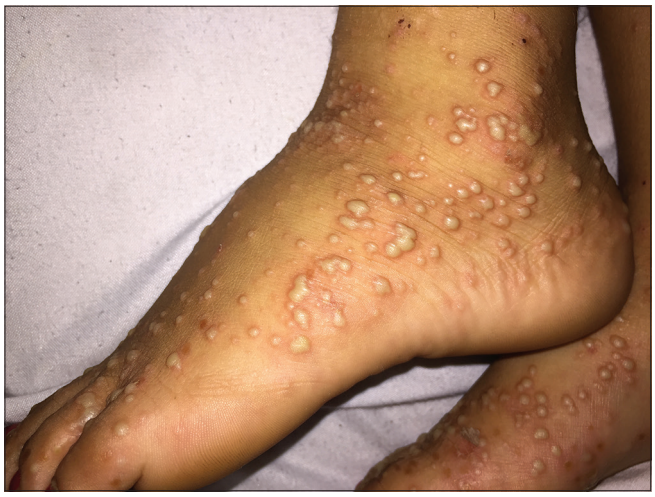

Figure 3: Pustules on the soles

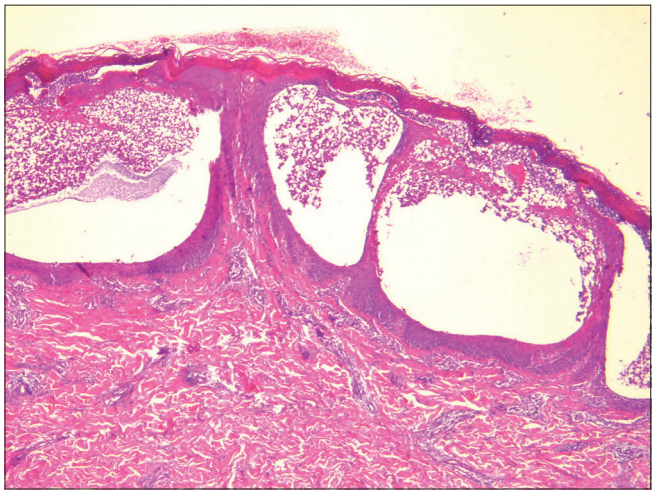

Figure 5: Subcorneal pustule containing neutrophils (H and E, ×40)

was suspected. We opted to maintain griseofluvin at the same dose, and to add a high-potency topical steroid and systemic corticosteroids (dexamethasone sodium phosphate) (0.5 mg/kg/d) to the treatment protocol. The eruption resolved completely within 5 days of starting the treatment [Figure 7]. Systemic corticosteroids were stopped and griseofulvin was continued for 2 months.

The diagnosis of generalized exanthematous pustular dermatophytid was established based on the presence of a mycologically documented dermatophyte infection (kerion), the absence of dermatophytes in distant pustular lesions and the resolution of all symptoms after maintaining antifungal therapy and initiating systemic corticosteroid therapy.

This entity is a rarely reported form of dermatophytids, which are immunologically mediated dermatologic reactions secondary to dermatophyte infections commonly seen in patients with tinea pedis and typically described as a vesicular eruption. Dermatophytids secondary to kerion are

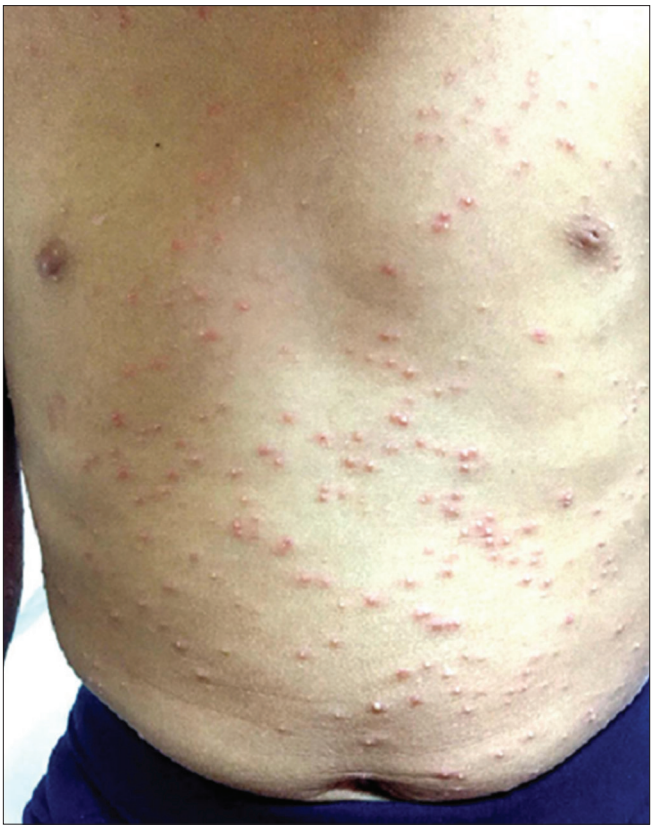

Figure 4: Generalized pustular eruption on the trunk

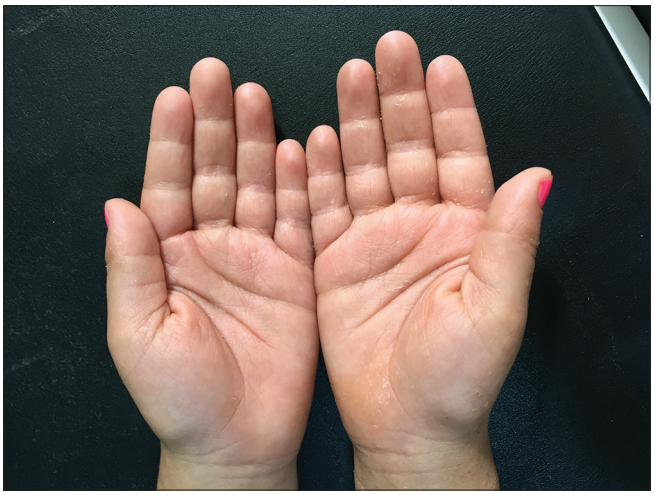

Figure 6: Complete resolution of the eruption

less common. A recent prospective study revealed that 13 of 19 patients (68%) with kerion celsi developed dermatophytid reactions[1]. The main clinical manifestations of these reactions are: eczematous eruptions (36.8%), pruritic papules (15.8%), eczematous eruptions, excoriated papules and pustules (10.5%) and angioedema-like reaction (5.3%).[1]According to literature, only four cases of generalized exanthematous pustular dermatophytid have been reported [features of all reported cases are summarized in Table 1].[2,3] Three of those reported cases occurred within 2-3 days of griseofulvin

Table 1: All reported cases of generalized exanthematous pustular dermatophytid secondary to kerion

Reported cases	Age (years)	Sex	Lesion/ Causative agent	Clinical appearance	Time to 'id' eruption	Laboratory parameters	Treatment
Liu *et al*., 2011[3]	8	Female	Multiples kerion/TM	Widespread pustules, head+Fever 38.9	17 days after kerion	Leucocytosis 20,300/mm^3 Blood cultures (−)	Oral itraconazole (5 mg/kg/day) + low-dose Dexamethasone (0.075 mg/kg/day)
Ronjat 2015[2]	11	Male	Kerion/TT	Fever 39 Widespread pustules, head+Lymphadenopathy Bilateral chondritis	2 months after kerion 2 days after Griseofulvin	Polynucleosis 7200/mm^3 Monocytosis 1200/mm^3 Eosinophilia 500/mm^3 CRP: 28 mg/L	Oral corticosteroid 0.75 mg/kg/day + amoxicillin/clavulanic acid + griseofulvin (25 mg/kg/day)
Ronjat 2015[2]	6	Male	Kerion/TS	Widespread pustules, head+	6 weeks after kerion 2 days after Griseofulvin	Normal	High-potency topical steroids + griseofulvin (20 mg/kg/day)
Ronjat 2015[2]	6	Female	Kerion/TM	Widespread pustules, head+Eczematous eruption Lymphadenopathy	8 weeks after kerion 3 days after Griseofulvin	Normal	High-potency topical steroids + griseofulvin (19 mg/kg/day)
Our case	4	Female	Kerion/TM	Widespread pustules, palms and soles++	2 months after kerion 3 days after Griseofulvin	Leucocytosis 12,000/mm^3 CRP: 15 mg/L	Griseoulvin + high-potency topical steroids + oral corticosteroid (0.5mg/kg/day)

TM: Trichophyton mentagrophyte, TT: Trichophyton tonsuran, TS: Trichophyton soudanense, CRP: C-reactive protein

intake and in one case, the eruption occurred spontaneously. All cases were characterized with a pustular eruption predominating initially in the cephalic region then spreading to the entire body. Fever was present in two cases and only one case was complicated with inflammatory chondritis. The palmoplantar onset of the rash, as noted in our case, had never been previously reported.

The most concerning differentials diagnosis of generalized pustular psoriasis was ruled out because of the clinical and pathological findings. The main differential diagnosis in our case was acute generalized exanthematous pustulosis. The lack of diffuse erythema, the absence of the involvement of intertriginous areas and the favorable evolution despite continued griseofluvin treatment made this diagnosis unlikely. Moreover, griseofulvin-induced acute generalized exanthematous pustulosis has not been previously reported. The typical histopathology of acute generalized exanthematous pustulosis shows spongiform subcorneal and/or intraepithelial pustules, an edematous papillary dermis and perivascular infiltrates with neutrophils and some eosinophils. In some cases, necrotic keratinocytes and leucocytoclastic vasculitis can also be found. In our case, histopathological aspect was not different from acute generalized exanthematous pustulosis. We were unable to find any previous reports with histological description of generalized exanthematous pustular dermatophytid. Thus, we cannot conclude on the existence of a distinctive criteria to differentiate between these two entities. Further histological studies may be helpful to identify possible histologic characteristics of generalized exanthematous pustular dermatophytid.

The exact mechanism of generalized exanthematous pustular dermatophytid is still unknown. To the best of our knowledge, no case of terbinafine-associated generalized exanthematous pustular dermatophytid has been reported. Some authors have linked the flare of dermatophytid reaction after the administration of griseofulvin or terbinafine to the release of fungal antigens as a result of antimycotic therapy.[4,5] Others suggest a local immunological response to systemically absorbed fungal antigen, especially some zoophilic species.[3] The treatment of generalized exanthematous pustular dermatophytid is non-codified, due to the scarcity of reported cases. Oral corticosteroid treatment and/or high-potency topical steroids given as an adjunct to griseofulvin treatment (19 to 23 mg/kg/d) were used with a favorable resolution in the reported cases.[2,3]

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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Scrotal plaques as a predominant presentation in a case of secondary syphilis

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Sir,

A 28-year-old male presented to the dermatology out-patient department with a 20-day history of multiple, mildly pruritic, erythematous lesions over the scrotum. There was a history of unprotected sexual exposure with a commercial sex worker in the 3 months back. General physical examination and systemic examination revealed no significant abnormalities. Cutaneous examination showed multiple, erythematous, flat-topped, round to oval, firm, non-tender plaques distributed over the scrotum [Figure 1a]. A few pigmented macules were seen over the soles [Figure 1b]. Mucosal examination revealed no abnormal findings. A skin

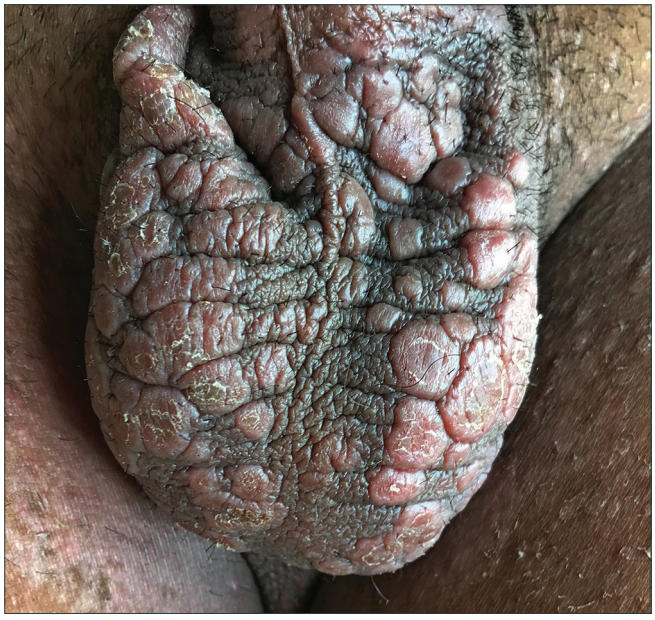

Figure 1a: Multiple erythematous, flat-topped, round to oval plaques over the scrotum

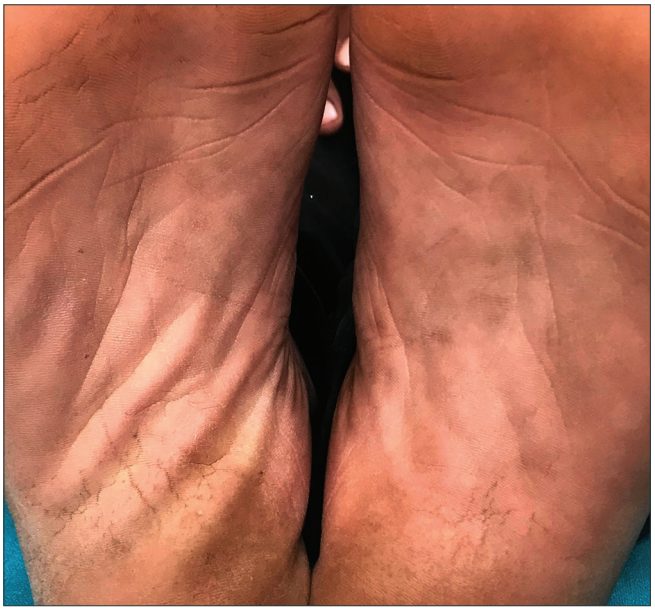

Figure 1b: A few pigmented macules over instep of soles

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