Multiple erythematous plaques on the trunk and extremities

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CLINICAL FINDINGS

A 32-year-old man presented with multiple itchy red skin lesions on the trunk and extremities since 10 weeks. The lesions started on the trunk, then proceeded into the extremities with remission and exacerbation course. The lesions were usually subsided partially with treatment (mainly oral antihistamines) but recurred with aggressive course. Clinical examination revealed multiple bilateral, asymmetrical erythematous plaques distributed mainly on the trunk and both thighs (Fig. 1). The lesions were mostly well defined with wheal-like configuration. Old lesions were subsided with post inflammatory hyperpigmentation (Fig. 2). There was no history of previous similar attacks or associated internal diseases or malignancy. Laboratory investigations showed marked blood eosinophilia. Direct and indirect immunofluorescence examination was negative.

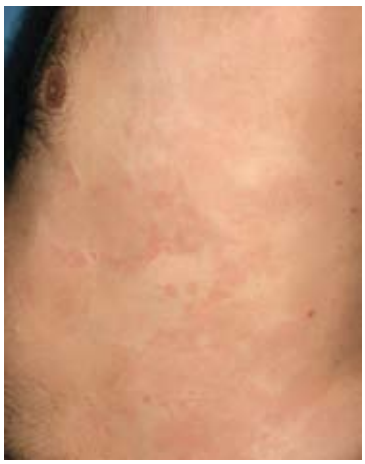

Fig. 1 Widespread erythematous plaques on the trunk

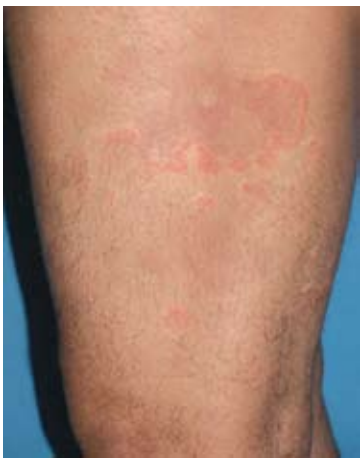

Fig. 2 Urticaria-like lesions on the thigh with edematous and erythematous surface

What is your clinical differential diagnosis?

Urticaria, urticarial vasculitis, eosinophilic cellulitis, sweet syndrome and urticarial stage of bullous pemhigoid.

PATHOLOGICAL FINDINGS

Histological examination revealed moderately dense perivascular and interstitial inflammatory infiltrate formed mainly of eosinophils with few lymphocytes and histiocytes (Fig. 3). The eosinophils especially on the interstitial dermis were markedly degranulated with wide spreading of the granules along the sides of collagen bundles forming flame figure-like structure (fig. 4). The blood vessels were mildly congested with swelling of the endothelial cells but without any signs of vasculitis. There was mild edema in the dermis and the epidermis didn't show significant changes.

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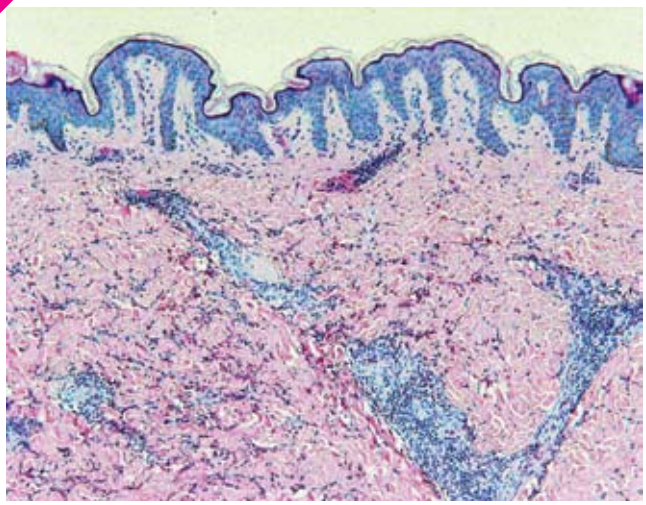

Fig. 3 Pandermal perivascular and interstitial mixed inflammatory infiltrate

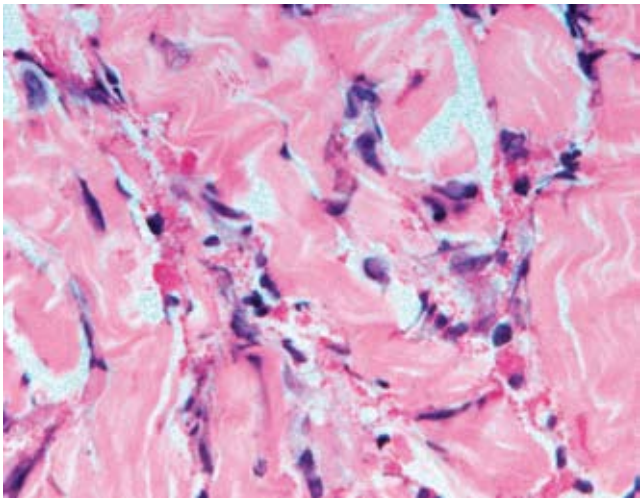

Fig. 4 Collections of eosinophils and eosinophilic debris around the collagen bundles

DIAGNOSIS

Wells' syndrome (Eosinophilic cellulitis)

COMMENT

Wells' syndrome is a rare condition characterized by tissue and almost blood eosinophilia. The disease was first described by George Wells in 1971 as a recurrent granulomatous dermatitis with eosinophilia.[1] In 1979, Wells and Smith renamed this condition as eosinophilic cellulitis (EC).[2]

The underlying etiology of the disease is unknown but there are some factors suggested to precipitate EC including; arthropod bites, cutaneous parasitic infestations, fungal infections, medications and atopic dermatitis. The disease was reported also in association with other conditions such as idiopathic hypereosinophilic syndrome,[3] herpes simplex virus infections,[4] and malignancy.[5]

The disease affects both sexes and usually occurs in adult life although it was reported in early life either congenital,[6] neonatal,[7] or during childhood.[8] The clinical presentation may differ in childhood from adults; while the annular granuloma–like variant is more common in adults, the classic plaque type found to be more common in children.[9]

There are no predilected sites for the disease and it can affect any region with either single or multiple lesions. The clinical presentation may vary widely from annular erythematous and edematous plaques to papules, nodules, vesicles or bulla. The lesions may also simulate urticaria,[10] similar to our patient.

The pathological criteria may differ according to the stage of the disease. In early acute stage, there is considerable edema with marked eosinophilia and characteristic flame-figures which represent the clusters of eosinophils and histiocytes around a core of collagen and eosinophilic debris. In late lesions, the flame figures may disappear and edema subsided gradually.[11,12]

Although the histopathologic findings of eosinophilia, histiocytes, and flame figures are characteristic of Wells syndrome, they are also found in other conditions, including bullous

pemphigoid, eczema, tinea infection, and insect bites.[13] Usually there are no signs of vasculitis in Wells' syndrome, but the successive occurrence of vasculitis, Wells syndrome, and Sweet syndrome was previously reported.[14]

The treatment of wells' syndrome includes numerous therapeutic options ranging from the use of topical corticosteroids to systemic therapy such as griseofulvin, H1 antihistamines, cyclosporine, dapsone, and systemic corticosteroids. The

The Clinico-patholigical challenges of Wells' syndrome

	Clinical	Pathology
Chronic Urticaria	Itchy erythematous macules develop into wheals often with a surrounding red flare.	Interstitial dermal edema and a perivascular and interstitial mixed-cell infiltrate with variable numbers of lymphocytes, eosinophils and neutrophils.
Urticarial vasculitis	Urticarial lesions persist for 1 to 3 days, produce burning or stinging sensations and may resolve with purpura or hyperpigmentation. Often associated with arthralgia and abdominal pain.	Leukocytoclastic vasculitis characterized by 1. An infiltrate predominantly within and around the walls of small blood vessels composed largely of neutrophils, some of which show fragmentation of their nuclei (leukocytoclasis). 2. Minimal to absent deposits of fibrin in the vessel walls. 3. Slight to moderate extravasation of erythrocytes.
Acute superficial cellulitis	Well-demarcated, slightly indurated, dusky red area with an advancing, palpable border Most cases occurred on the face.	Marked edema and dilatation of the lymphatics and capillaries. Diffuse neutrophilic infiltrate, extends into the subcutaneous fat. Dilated blood and lymph vessels.
Sweet syndrome	Abrupt onset of fever and erythematous plaques. More on the face or extremities. Marked leukocytosis.	Dense perivascular infiltrate composed largely of neutrophils that may show nuclear fragmentation (leukocytoclasis). Prominent edema of the upper dermis. Vasodilation and swelling of endothelium with moderate erythrocyte extravasation.
Bullous pemphigoid (urticarial stage)	Itchy urticarial lesions. More on the extremities. Usually lasts for 1–3 weeks before blisters occur.	Dermal inflammatory infiltrate containing many eosinophils and neutrophils with lymphocytes and histiocytes. Eosinophilic spongiosis may also be seen.

low dose of cyclosporine[15] or alternate-day prednisone[16] was reported as successful treatment options in wells' syndrome.

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