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Urticarial Dermatitis – a Define Clinical Entity or a Predilection Histological Marker?

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Urticarial dermatitis is introduced as a descriptive term to correlate a specific dermal hypersensitivity reaction pattern to urticarial papules and plaques, appearing in the context of a large spectrum of inflammatory skin conditions. Despite the unspecific clinical features, urticarial dermatitis is considered distinctive pathological finding, which should be considered in all cases with a long history of refractory itch in elderly patients. Herein, we present a 73-year-old patient with a long-lasting disseminated urticarial rash, which revealed the histology features of urticarial dermatitis. The diagnosis of bullous pemphigoid was established upon direct immunofluorescence finding.

Key words: urticarial dermatitis, dermal hypersensitivity

Introduction

Excoriated urticarial papules and plaques that last more than 24 hours with the histological picture of perivascular round cell inflammatory inflammation with plenty of eosinophils in the upper dermis, are designated as urticarial dermatitis (UD) by Kossard et al. in 2006 [8]. Although the term totally corresponds to the histopathology findings of dermal hypersensitivity reaction, it requires a close clinico-pathological correlation with intensively pruritic urticarial lesions, which show pityriasiform desquamation and persist longer than 24 hours [4]. This clinical presentation is not considered specific to a certain nosology and is most commonly associated with eczema or drug-induced dermatosis [3].

Herein, we present a 73-year-old man with a history of extremely itchy urticarial papules and plaques that stay longer than 24 hours and resorb with postlesional hyperpigmented macules. The lack of pathognomic clinical signs in association with

persistent pruritus and strictly dermal histological changes coin the diagnosis of UD.

Case report

A 73-year-old Caucasian man with a 5-year history of severely itchy erythematous papules, plaques and patches disseminated on the trunk and extremities, is presented. The patient had no personal or family history of atopy or any other dermatological condition. He was treated for parasitic infestation with no therapeutic result. He claimed to have no effect on topical corticosteroids, peroral antihistamines and leukotriene antagonists. Physical examination revealed good general health with no concomitant diseases and medications. Multiple erythematous urticarial papules and plaques, excoriations and eczematous lesions were disseminated on the lateral aspects of the trunk and dorsal extremities. Elevated dermographism was demonstrated. The clinical suspicion encompassed chronic contact eczema, autoimmune bullous dermatosis, spontaneous urticaria, unrecognized drug eruption, and viral exanthema. Since the erythematous wheals lasted more than 24 hours, all urticarial-like dermatoses such as urticaria-vasculitis and Schnitzer syndrome, were also considered. Histological analysis showed intact epidermis with slight papillary edema, mild perivascular lymphocytic infiltrate with many interstitial eosinophils in the superficial dermis (**Fig. 1, Fig. 2**).

The eczematous skin lesions in association with dermal hypersensitization and the lack of epidermal histopathological changes constellated UD. In order to further verify the underlying dermatological condition a direct immunofluorescence was performed, which showed linear IgG and C3 (**Fig. 3**) deposits on the dermal-epidermal junction. The patient was recognized as an urticarial, pre-bullous form of pemphigoid and put on pathogenetic therapy. Full remission was achieved a month later.

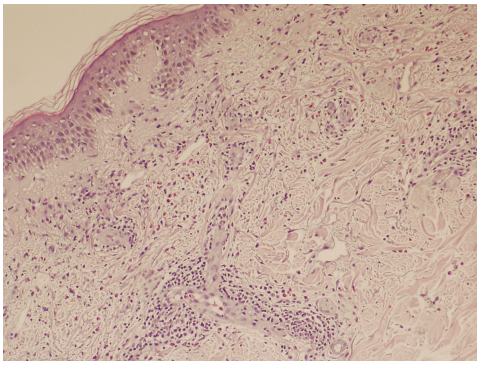

Fig. 1. Hyperkeratosis, intact epidermis, mild perivascular lymphocytic infiltrate and abundance of eosinophils in the interstitium of the papillary dermis (hematoxylin and eosin staining × 200).

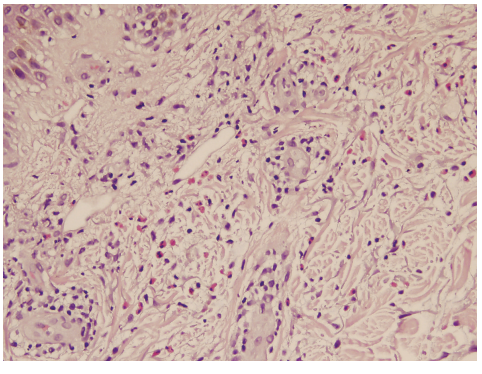

Fig. 2. Edematous papillary dermis with a lot of eosinophils gathered around the dilated capillary loops and intermixed with lymphocytes along the collagen bundles in the upper dermal segment (hematoxylin and eosin staining, × 400).

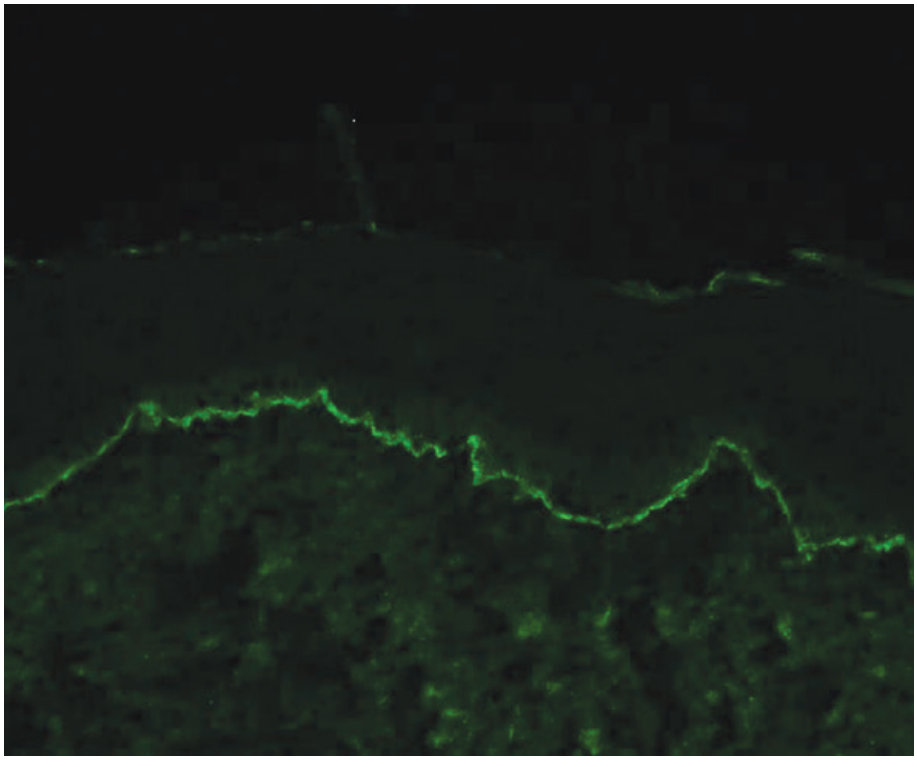

Fig. 3. Linear C3 deposits on the dermal-epidermal junction (direct immunofluorescence, × 100)

Discussion

UD is a term, introduced to encompass a group of skin diseases that have similar clinical and histological features. The original description classified most of these cases as drug-induced or eczematous, while later studies demonstrated more idiopathic origin [5]. The clinical presentation is polymorphous, interacting specific urticarial lesions with lichenifications and excoriations, typical for eczema. These second type of skin changes may result from diffuse xerosis, which usually affects the predilected age group of elderly patients, who are commonly co-morbid and take a lot of concomitant medications and home remedies to relief itch. Dermographism is more common in chronic urticaria and drug-induced dermatoses, however, it may sometimes correspond to blistering dermatoses, as in our case.

Some histopathological clues may facilitate the clinical diagnosis, especially in the initial stages of the disease. It has been well-documented that mild spongiosis and horizontal parakeratosis is more suggestive of contact dermatitis. Tortuous capillaries in the subepidermalspace and lymphocytic exocytosis constitute viral infection, while papillary edema is more common in chronic urticaria and drug reactions [8]. Dermal fibrosis and eosinophilic exocytosis is seen in subacute prurigo. It is always advisable to conduct a direct immunofluorescence study to rule out a pre-bullous stage of subepidermal autoimmune bullous dermatosis.

The pathogenesis of UD is not clearly understood. A dominant T helper inflammatory profile is suspected to enhance production of IL-4 and especially IL-5, which activate eosinophil synthesis and tissue infiltration [9]. Some physical triggers such as mechanical friction and solar exposition can serve as inductors, too. Recent studies demonstrated that nerve fibers often penetrate into the epidermis of patients with atopic dermatitis, thus stimulating IL-13 production from keratinocytes to induce metalloproteinase-9 and degrade collagen type IV [7]. In contrast, basal membrane in UD is intact and shows no changes on special stains, indicating that only the dermal hypersensitivity inflammatory pattern plays a causative role in itch induction.

No specific therapeutic options for UD exist. Since the exact etiology and pathogenetic pathway is obscure, only symptomatic treatment is introduced. Topical corticosteroids, calcineurin inhibitors and emollients together with itch-relieving agents (antihistamines, gabapentin) and phototherapy modalities are partially effective [1]. Anecdotal reports reveal good results by pathogenetic immunosuppressive therapy with azathioprine, cyclosporine, mycophenolate mofetil, hydroxyurea, and dapsone [2, 6].

UD manifests with clinical features of a broad spectrum of skin diseases triggered by a similarpatho-physiological mechanism. A thorough work-up and often a long-term follow-up is needed to establish the final diagnosis since the skin changes can mimic a plethora of dermatological conditions, which only feature dermal hypersensitivity reaction pattern. UD is considered a descriptive term to embrace various clinical scenarios that often require more sophisticated laboratory investigations and an extensive monitoring of the patients.

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