

PRURIGO REACTION IN ATOPIC DERMATITIS

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Abstract. A total of 41 biopsy specimens of the first visible prurigo papule were obtained from 32 adult patients with atopic dermatitis. In 38 of the 41 biopsy specimens, histological changes were seen in connection with hair follicle. The follicular wall showed spongiosis and vesicle formation with mononuclear cell migration. The remaining 3 biopsy specimens revealed an eczematous change which involved the surface epidermis. Multinucleated epidermal cells were observed in 34 of the 41 biopsy specimens. The giant cells occurred at skin sites of eczematous inflammation.

Key words: Prurigo reaction; Spongiosis; Multinucleated giant cells.

Skin manifestations of atopic dermatitis are usually classified into three types of reaction: eczematous reaction, lichenification, and prurigo reaction. The eczematous lesions and lichenified patches of atopic dermatitis may occur in any part of the body, including the palms and soles. The prurigo lesions of this condition, however, do not develop in the palmo-plantar skin areas. The anatomical basis for the absence of prurigo lesions in palmo-plantar skin is unknown.

It is interesting to note that the palms and soles are also intact in prurigo simplex subacuta, which is a representative of subacute to chronic forms of prurigo diseases. Some reports (1, 2, 5) suggest that the early changes of prurigo simplex subacuta may occur in connection with hair follicles.

The main aim of the present study was therefore to determine whether or not the primary changes of prurigo lesion in atopic dermatitis begin to take a follicular pattern.

MATERIALS AND METHODS

Selection of patients. A total of 32 adult patients with atopic dermatitis were selected for this study. They had lichenified patches in the flexor aspects of limbs and prurigo lesions on the trunk or extensor surfaces of extremities. They were healthy except for the pruritic skin disease.

Clinical observations. In all patients, the first discernible lesions of prurigo reaction were normal colored or slightly reddish papules 1-2 mm in diameter. These prurigo papules

were deep-seated in the skin, and were recognized more easily by palpation than by inspection.

Histological studies. A total of 41 biopsy specimens of first visible prurigo papules were obtained. 30 specimens were taken from the lesions on the extremities, and 11 specimens were from those on the trunk. To visualize three-dimensionally the histological features of the early prurigo papule, all biopsy specimens were serially sectioned and stained with hematoxylin-eosin.

RESULTS

In 38 of the 41 biopsy specimens, the histological changes occurred in connection with hair follicles. The follicular epidermis showed spongiosis and vesicle formation with mononuclear cell migration. The dermis around the involved follicle revealed perivascular infiltrates of mononuclear cells. Sweat ducts and the surface epidermis far from the affected follicle were intact. In the remaining 3 specimens, spongiosis and migration of mononuclear cells were seen at the surface epidermis. Thus, in all specimens examined, the histological change was eczematous in nature.

Multinucleated epidermal cells were frequently found in the involved follicular epidermis and in the adjacent surface epidermis. The epidermal giant cell had 3 to 10 nuclei. Intercellular bridges were clearly demonstrated between giant cells and neighboring prickle cells.

DISCUSSION

This study demonstrated that the majority of the first discernible prurigo papules of atopic dermatitis follow a follicular pattern. The papules were deep-seated in the skin. Histologically, they showed an eczematous change which involved the follicular epidermis.

Some investigators (4) consider that the first-visible papular lesion of atopic dermatitis implies more than epidermal involvement, simply because the surface epidermis above the papule is intact. They then adhere to the view that the corium is the

most likely site of the primary lesion of atopic dermatitis. However, to my knowledge, they do not perform histological examinations of the first visible eruption.

From the results of the present study, it seems most reasonable to consider that the first-visible prurigo papule of atopic dermatitis is deep-seated because an eczematous change occurs at the site of follicular epidermis. This hypothesis may account for the absence of prurigo lesions in the palmo-plantar skin areas where there are no hair follicles.

The present study also demonstrated multinucleated epidermal cells in the involved follicular wall and in the neighboring surface epidermis. The nuclei and cytoplasm did not have the bizarre appearance of the giant cell in viral skin diseases and in malignant skin tumors. The multinucleated epidermal cells resemble those seen in parapsoriasis guttata and eczematous dermatitis (3).

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DISCUSSION

Scarpa (Trieste). Q: Are the multinucleated epidermal cells you show in these patients really multinucleated, or are they only group cells? Have you done ultrastructural studies?

A: We have not done electronmicroscopical studies. Quite similar epidermal cells have been described in parapsoriasis guttata and various eczematous conditions.