

## EPIDERMAL MULTINUCLEATED GIANT CELL IN PARAPSORIASIS GUTTATA AND ECZEMATOUS DERMATITIS

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**Abstract.** Multinucleated cells which originated from keratinocytes were found in the biopsy specimen from skin lesions of patients with parapsoriasis guttata, eczema follicularis or possible contact dermatitis. The individual nuclei and cytoplasm of these cells do not have the bizarre appearance of those in malignant epidermal tumors or viral skin diseases.

No description of epidermal multinucleated giant cells is to be found in the literature, as far as we know, except in cases of malignant tumor and viral skin disease. Here, epidermal multinucleated giant cells found in skin lesions of patients with parapsoriasis guttata and eczematous dermatitis are presented.

### REPORT OF CASES

#### Case 1.

**Parapsoriasis guttata.** An unmarried 26-year-old woman, first seen on 4 April, 1967, complaining of wide-spread, non-pruritic exanthema of 2 months' duration. The skin lesions consisted of small brownish-red to yellowish-red papules or macules covered with scales over trunk and extremities.

**Histologic findings.** A specimen was obtained from a slightly scaling papule on the flexor surface of left forearm. Focal parakeratosis, mild acanthosis, microvesicles and spongiosis accompanied by migrating mononuclear cells were found in the epidermis. At the periphery of the spongiotic area, an oval-shaped, large cell with six nuclei clumped together in its center and with a narrow zone of cytoplasm was observed (Fig. 1). The individual nuclei having one or two nucleoli appeared almost normal and the cytoplasm was slightly edematous. Adjacent to the large cell, a three-nucleated cell with similar appearance was present. The intercellular bridges were clearly demonstrated between the large cells and the neighboring prickle cells. The upper dermis showed vascular dilatation, edema and a perivascular infiltrate composed mainly of mononuclear cells. Throughout the sec-

tion, several prickle cells with two nuclei or one vacuolated nucleus were found, but no mitosis.

#### Case 2.

**Eczema follicularis.** A 27-year-old man was first seen on 21 April, 1967, complaining pruritic exanthema. Follicular

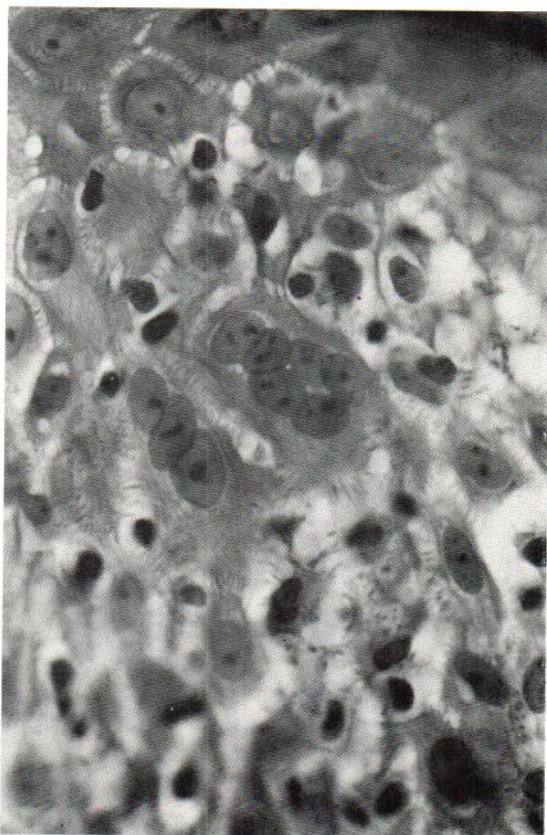


Fig. 1. A large, oval-shaped cell with 6 nuclei and one with 3 nuclei are seen in the spongiotic area. The intercellular bridges between the large cell and the neighboring prickle cells are well observed.  $\times 950$ .

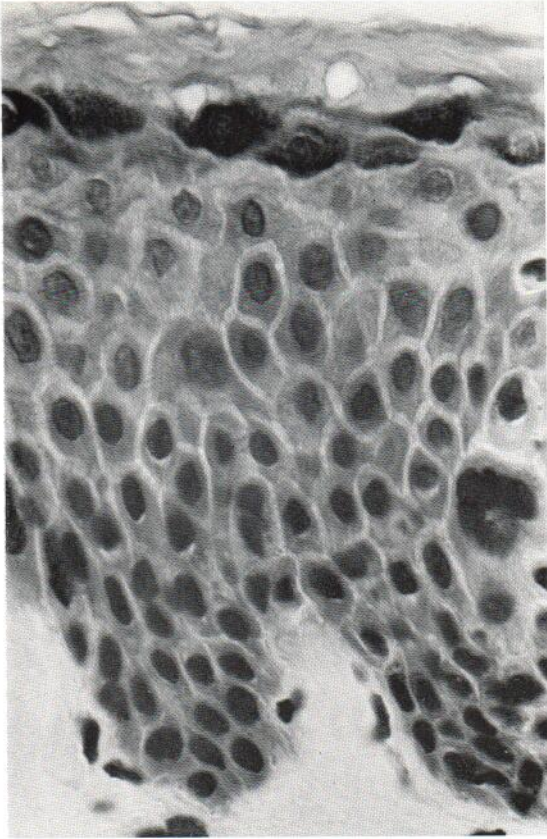


Fig. 2. A large cell with 5 nuclei is seen in the prickle cell layer. The intercellular bridges to the neighboring cells were well preserved.  $\times 950$ .

seropapules were scattered over the forearms and thighs. The skin eruptions disappeared in 2 weeks following topical corticosteroid therapy. The disease might have been contact dermatitis from an unknown agency.

*Histologic findings.* A specimen was taken from a papule on the left thigh. In the mildly acanthotic epidermis, a round, large cell was found in which four pyknotic nuclei and one lysed nucleolus were clumped together (Fig. 2). The intercellular bridges to the neighboring prickle cells with pyknotic nuclei were well preserved. Throughout the section, no binucleated cell or mitotic cell was found. The dermis showed vascular dilatation, edema and cell infiltration. In the serial sections a slightly spongiotic area with mononuclear cell in the outer root sheath was observed.

### Case 3

*Possible contact dermatitis.* A 31-year-old man was first seen on 27 April, 1967, complaining of pruritic exanthema on both forearms of 1 week's duration which started after he went fishing. In the above-mentioned sites, small papules were disseminated. The lesions disappeared after 10 days of topical corticosteroid therapy.

*Histologic findings.* In a specimen from a papule, parakeratosis, partial acanthosis and focal spongiosis with mononuclear cell infiltration were found. In the supra-basal layer of one of the spongiotic areas, a large cell was found in which four nuclei clumped together and a small quantity of cytoplasm were present (Fig. 3). A few prolonged intercellular bridges between the large cell and the neighboring cells were observed. Binucleated cells and cells with vacuolated nuclei were occasionally found in the section, but only one mitotic cell.

## DISCUSSION

It is obvious from the presence of the intercellular bridges that the giant cells seen in these cases originated from keratinocytes. The individual nuclei and cytoplasm do not have bizarre appearance of the giant cell in viral skin diseases and malignant epidermal tumors. In the literature and also in our experience the occurrence of epidermal multinucleated cells in parapsoriasis guttata

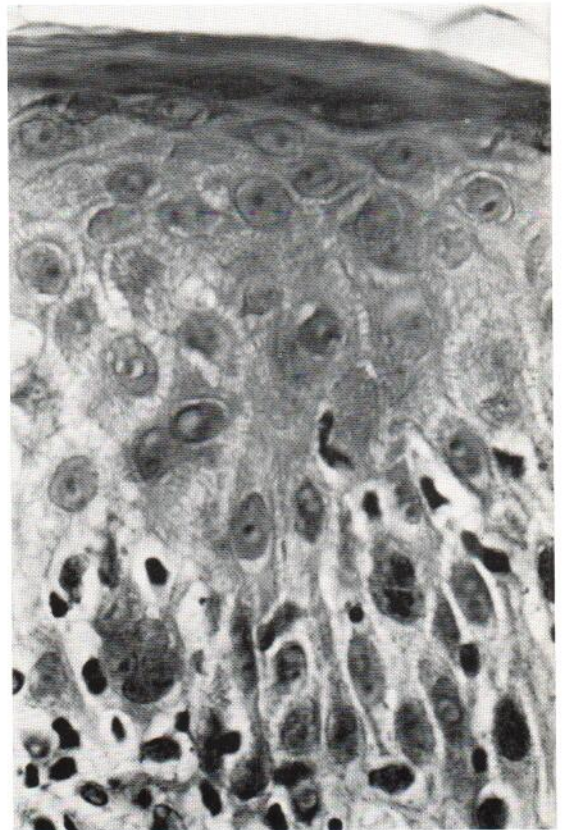


Fig. 3. A large cell with 4 nuclei is seen in the supra-basal layer in the spongiotic epidermis. A few prolonged intercellular bridges to the neighboring epidermal cells are seen.  $\times 950$ .

and eczematous dermatitis seems to be unusual, although binucleated keratinocytes are sometimes found in these diseases. Szymanski (2) noted the presence of abnormal cells in the prickle cell layer in many of the sections of the Juliusberg type parapsoriasis, but he did not refer to multinucleated giant cells.

Pinkus (1) stated that a fair number of binucleate cells appeared in the specimen taken 24 hours after the removal of horny layer by the strip method and suggested that amitosis may play a role in the early effort of the epidermis to maintain its integrity. That the giant cells in these 3 cases are located within or near the spongiotic areas where the nuclei of the prickle cells frequently show vacuolization or pyknosis, and that mitotic cells are infrequently seen in the sections in which the giant cells are observed suggest that the giant cells may occur perhaps by amitosis under the degenerative process of the epidermal cells.

#### REFERENCES

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2. Szymanski, F. J.: Pityriasis lichenoides et varioliformis acuta. *Arch Derm (Chicago)* 79: 7, 1959.

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