LETTERS TO THE EDITOR

We are pleased to receive Letters to the Editor on appropriate subjects. These letters should be submitted in typewritten form, double-spaced, and are not to exceed 21/2 pages. When appropriate, we will solicit comments from the original authors. All Letters to the Editor are subject to editing and possible abridgment.

LANGERHANS CELL

To the Editor:

I would like to raise some points regarding the extremely valuable paper of Dr. Bergstresser and his colleagues (“Natural and Disturbed Distributions of Langerhans Cells: Response to Ultraviolet Light, Heterotopic Skin Grafting, and Dinitrofluorobenzene sensitization” (J Invest Dermatol 75:73–77, 1980)).

Murine neonatal orthokeratotic tail skin develops its “blocks” of parakeratotic scale over the first 2 weeks of life [1]. Dermal dendritic cells bear the murine orthokeratotic (PK) Iridinals of back and perifollicular tail skin during the first week. Their dendritic nature and positivity for nonspecific esterase [2] and adenosine triphosphatase [3] suggest that they are Langerhans cells (LC). This ecotaxis avoids the parakeratotic scale regions to which dopa-positive melanocytes home [2].

1. Dr. Bergstresser reports (p 75) that there was an invasion of the scales by LC (replacing melanocytes) and that this skin became “indistinguishable from body wall skin,” except for the preservation of the hair follicle clusters. This occurred at the edges of the graft and a 25% area of the graft surface. First, was this 25% area randomly distributed, confined to a particular area spreading from the edge or was it related to hair follicles?

Also, in the following paragraph, Dr. Bergstresser writes that ATPase-positive LC were counted in the central portions of the graft (Table VI) and that their number was “slightly increased” in the scales. Surely there are normally no LC in the scales—they are strictly confined to the hair follicle (interscale) epidermis.

2. It would be very useful to hear more histological details of changes towards the surrounding body skin of the LC-invaded scale. In particular, was there dermal thinning, development of keratohyalin granules or changes towards the perifollicular type of orthokeratinization? Here the term “the retaining orthokeratotic” [4] differentiates from ortho- and parakeratotic horny layers [4] and Saurat’s cytoplasmic antibodies which appear to differentiate keratinizing tendencies [5] may be useful to compare different sites in the graft with normal tail and host body skin.

3. Changes in epidermal morphology apparently associated with LC invasion has been previously noted in several experimental alterations of keratinization (hypervitaminosis A in mucous membranes [6,7], retinyl acetate-treated parakeratotic tail skin [8] and some human disorders of keratinization [9]. As Dr. Bergstresser points out, it is fascinating that the epidermal changes towards host tissue occurred in a full-thickness graft. It would be very valuable in Dr. Bergstresser’s system, via LC tagging, to see if the scale-invading LC originate from the host or by localization of the hair follicle population of the graft, and subsequently to examine the stimuli for this and the immunological consequences on the long-term fate of the graft. If host in origin, could the LC mediate an insidious late rejection?

REFERENCES


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REPLY TO DR. WRENCH

We are pleased that our paper concerning perturbations in Langerhans cell distributions has been of interest to Dr. Wrench. We were intrigued, as she has been, by the observation that portions of a tail skin graft which was placed heterotopically on a body wall site developed the morphological appearance of body wall skin. This change did occur, as Dr. Wrench suspects, only in areas adjacent to recipient skin. We had hoped, for our own purpose of assessing in vivo immunologic functions of Langerhans cells, that this “conversion” might extend to include the entire graft. Such was not the case, as in a long-term study we observed no progression at all. In fact, most grafts exhibited “conversion” in less than 25% of the graft area, making the original observation much less interesting, and the various studies proposed by Dr. Wrench have consequently not been conducted.

With respect to the second question, Langerhans cells do not occur normally in the parakeratotic portion of murine tail scales. Our confusing terminology developed from the absence of an appropriate English word to define that area of tail skin which includes one central scale plus its adjacent interscale area (in which Langerhans cells do occur).

To enumerate Langerhans cells with respect to that area, we chose to phrase “Langerhans cells per scale”, even though the cells themselves were observed in the immediately adjacent orthokeratotic skin.

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