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QUIZ SECTION

An Erythematous Plaque on the Breast: A Quiz

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A 57-year-old Japanese woman presented with a 2-year history of a solitary skin plaque on the left breast. A sharply demarcated, itchy erythematous plaque measuring 80×60 mm was seen on the left breast (Fig. 1a). The patient's general condition was good, and she was not taking any medications. Laboratory data showed no significant abnormalities, and whole positron emission tomograph-computed tomography scanning revealed no remarkable uptake in the lesion or the lymph nodes. A skin biopsy taken from the plaque showed band-like infiltration of lymphocytes with dense chromatin in the superficial dermis, and focal epidermotropic infiltration was observed (Fig. 1b, c). Pautrier's microabscesses and mitotic figures were absent. On immunohistochemical staining, $CD3^+$ cells, and $CD20^+$ cells were observed in almost equal amounts among the infiltrating lymphocytes. $CD4^+$ cells and $CD79a^+$ cells were also diffusely observed; however, $CD8^+$ cells were rare. No loss of CD7 expression was found. T-cell receptor (TCR) gene rearrangement was identified in the extracted DNA from the regional skin; however, immunoglobulin H (IgH) gene rearrangement was not detected.

What is your diagnosis? See next page for answer.

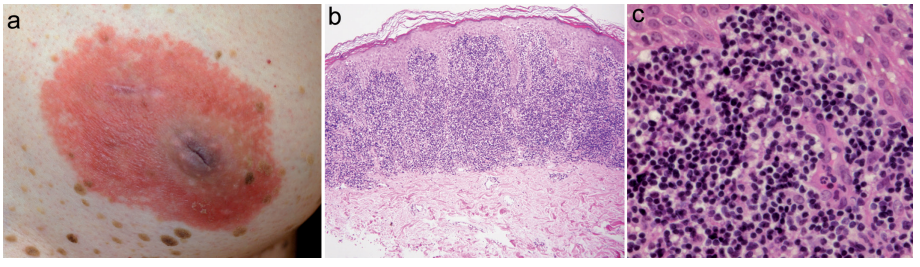

Fig. 1. (a) An erythematous plaque on the left breast. (b, c) Histopathology reveals band-like lymphocytic infiltration in the papillary dermis with focal epidermotropism (haematoxylin-eosin, magnification: (b) × 100, (c) × 400).

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ANSWERS TO QUIZ

An Erythematous Plaque on the Breast: Comment

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Diagnosis: Solitary T-cell pseudolymphoma, superficial type

"Solitary T-cell pseudolymphoma, superficial type" is characterized by superficial lesions with clinicopathological features similar to those observed in mycosis fungoides (MF); however, it does not extend to the advanced stage of MF, and it has favourable prognosis (1). To our knowledge, there are 16 cases in the English literature with characteristics similar to those of our case: a localized lesion, band-like lymphocytic infiltration in the papillary dermis resembling MF, and no drug history (2–4). Clinically, the lesions of superficial type solitary T-cell pseudolymphoma are frequently located on the breasts of adult women (1). The lesion is usually 1–3 cm in diameter (2, 3). In our case the plaque was relatively large, and mammary Paget's disease, rather than pseudolymphoma, was clinically suspected at the initial visit. The histopathology of superficial-type solitary T-cell pseudolymphoma reveals band-like infiltration in an expanded papillary dermis, sometimes with exocytosis of lymphocytes within the epidermis (1). Immunohistopathology has shown a predominance of T lymphocytes admixed with a distinct B-cell compartment in more than half of cases (2). Positivity for TCR gene rearrangement is variable. Of the above 16 cases, the TCR gene was analysed in 7 cases, and 4/7 cases revealed monoclonal rearrangement (2–4). In our case, TCR Cβ1 and Jγ rearrangement were identified by southern blotting, although IgH gene rearrangement was negative. This means that the infiltrating T lymphocytes were partly monoclonal; however, it does not necessarily indicate malignant lymphoma in and of itself. We collectively diagnosed our patient as having pseudolymphoma by the clinical features and the mixed cellularity of the lymphocytic infiltrates.

Treatment of solitary T-cell pseudolymphoma in previous reports includes total excision and administration of topical steroids and psoralen plus ultraviolet A (PUVA), although 3 patients presented spontaneous complete resolution (1–4). Recurrence was observed in one case (2); therefore, careful follow-up is necessary for all cases. Radiation therapy, which is often used for MF treatment, has not been performed for this disease. Our case was resistant to topical steroid therapy, and it did not seem preferable to perform surgical excision, given the size and region. Therefore, we chose electron beam radiation (total of 30 Gy) and the plaque finally disappeared leaving pigmentation. Radiation may be a good choice, particularly for cases in which surgical removal is undesirable and topical therapies are ineffective.

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