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Secondary Granulomatous Cutaneous Involvement in Peripheral T-cell Lymphoma

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Dear Editor:

A 40-year-old Korean man was referred to our department with a 1-month history of brownish macules and papules on the trunk, and a 10-day history of 2 walnut-sized brownish nodules on the left arm (Fig. 1). The patient had been experiencing persistent coughing for 1 month, and computed tomography of the chest revealed multiple reactive mediastinal lymph nodes. A skin biopsy examination of nodules on the left arm revealed small-to-medium-sized pleomorphic lymphocytes in the upper dermis, which were positive for cluster of differentiation CD3 and CD4, and negative for CD8, epidermotropism, and granuloma formation (Fig. 2). Some histiocytic cells were positive for CD68. A biopsy of the abdomen revealed epidermotropism and lymphocytes containing hyperchromatic and indented nuclei, but without granuloma formation. Molecular biological investigation of the skin biopsy samples showed monoclonal T-cell receptor-γ gene rearrangement. Bone marrow biopsy findings were normal, but positron emission tomography scanning showed multiple lymphadenopathies and testicular involvement. Biopsy of the testes showed T-cell lineage malignant lymphoma without granulomatous features. Based on the clinical, histological, and molecular genetic features, peripheral T-cell lymphoma, not otherwise specified, World Health Organization classification with secondary granulomatous cutaneous involvement, was diagnosed. Microbiological (bacterial, fungal, mycobacterial) studies

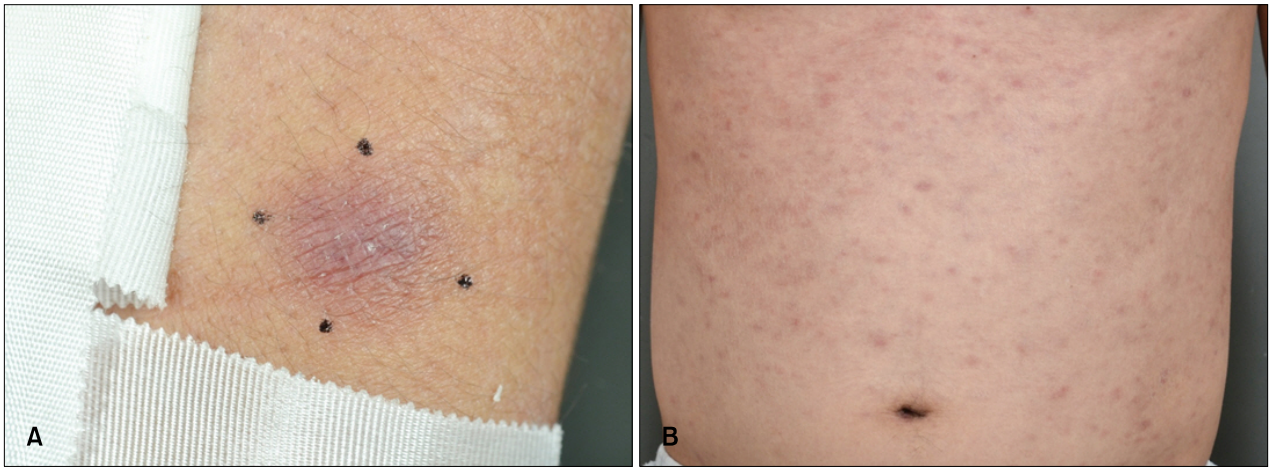

Fig. 1. (A) A 2×2-cm-sized hyperpigmented nodule on the left arm. (B) Multiple miliary grain to rice-grain-sized erythematous to brownish macules and papules on the trunk.

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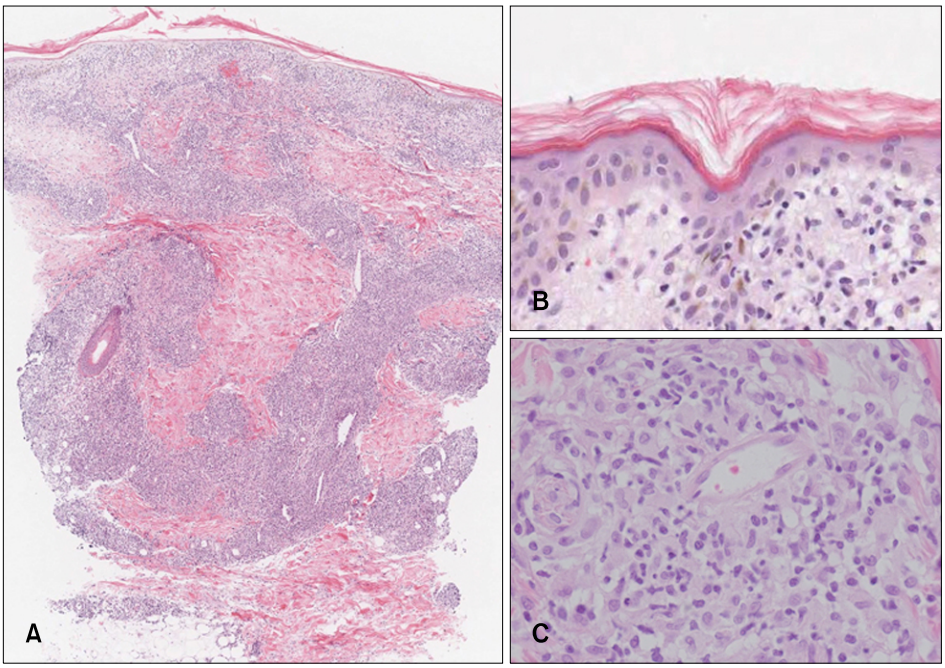

Fig. 2. (A) Dermal, perivascular nodular inflammatory cell infiltration. (B) Epidermotropism of lymphocytes, with hyperchromatic and indented nucleus. (C) Many histiocytes and atypical lymphocytes with hyperchromatic nuclei form sarcoid-like granuloma (H&E; A: ×40, B: ×200, C: ×200).

could not detect any specific infectious agent. Sarcoidosis or pulmonary tuberculosis was not evident in the complete hematological, biochemical, and radiological examinations. The patient was treated with narrow band ultraviolet B phototherapy (twice a week, suberythemal dose) and systemic chemotherapy (cyclophosphamide, doxorubicin, vincristine, prednisolone). Fourteen days after the initial treatment, the macules on the abdomen subsided and the sizes of the two nodules on the left arm were reduced.

Granuloma formation is rarely observed in secondary cutaneous lesions from T-cell lymphomas whose original lesions showed no granulomatous features. Granulomatous lymphomas (both primary and secondary) are reported to represent 1.6% of all lymphomas[1-3]. Sarcoid-like granulomas are most common, but tuberculoid, granuloma annulare-like, granulomatous rosacea, or granulomatous panniculitis types have also been reported[2]. In addition, various granulomatous patterns may coexist in the same patient[1].

The exact pathogenesis of secondary granulomatous cutaneous involvement in peripheral T-cell lymphoma remains unclear. It has been proposed that epithelioid cell reaction indicates secretion of chemotactic or migration-inhibiting lymphokines by the neoplastic T-cell, and these cytokines may in turn be responsible for attracting monocytes, thereby resulting in granuloma formation[1]. However, the prognostic value of this epithelioid response remains controversial. In contrast, some reports have suggested that granulomatous inflammation represents a host response against the tumor and may represent a good prognostic factor for the clinical behavior of cutaneous lymphoma[4]. However, because of the limited number of cases reported to date, determining a direct relationship between the presence of a granulomatous inflammatory infiltrate and the prognosis of secondary cutaneous lymphomas is difficult.

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