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LETTER TO THE EDITOR

Positron-emission tomography findings indicating the involvement of the whole body skin in subcutaneous panniculitis-like T cell lymphoma

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Dear Editor,

We report, for the first time, the imaging findings of a 31-year-old man who was diagnosed with massive subcutaneous panniculitis-like T cell lymphoma based on positron-emission tomography (PET) scan findings of multiple area involvement, including the subcutaneous layer of the whole body and the bone marrow. He visited our hospital with complaints of fever occurring off and on for 1 month. Other associated symptoms and signs were general malaise and skin nodules over the abdomen and bilateral hands. He denied any underlying disease. We noted nodular lesions with brownish-like plaques over the skin of the face, neck, bilateral hands, and abdomen. Further, ulcerative lesions were observed over the left upper arm. Initial laboratory findings revealed a white blood cell (WBC) count of 3,400/μl, hemoglobin of 15 g/dl, and platelets of 193,000/μl. The renal and liver functions were normal. After 10 days, WBC count of 2,000/μl, hemoglobin of 11.2 g/dl, and platelets of 68,000/μl indicated pancytopenia. The results of liver function test revealed aspartate aminotransferase/alanine aminotransferase, 589/428 IU/l; bilirubin (T/D), 7.72/4.82 mg/dl; gamma-glutamyl transpeptidase, 1,756 IU/l; and alkaline phosphatase, 198 IU/l. Other lab data revealed that serum ferritin level was 66,430 ng/ml; fibrinogen, 73 mg/dl; and triglyceride, 401 mg/dl. Bone marrow examination was performed to determine the cause of unexpected pancytopenia, and it revealed fulminant hemophagocytosis (Fig. 1). Neck nodular biopsy revealed lymphoid infiltration involving the fat lobules with the sparing of septa. The neoplastic lymphoid cells showed irregular and hyperchromatic nuclei with rimming of pale-staining cytoplasm (Fig. 1). Immunohistochemical analysis revealed that the neoplastic cells were positive for CD3 (Fig. 1) and Ki67 (data not shown), but negative for CD20, CD30, and CD56. The diagnosis put on subcutaneous panniculitis-like T cell lymphoma, and αβ phenotype of T cell receptor was favorable. Bone marrow biopsy revealed subcutaneous panniculitis-like T cell lymphoma (SPTCL) with bone marrow invasion (data not shown), and immunohistochemical findings were positive for CD3 but negative for CD20 and CD30. PET revealed diffuse subcutaneous infiltration with increased fluorodeoxyglucose (FDG) avidity over the subcutaneous area of the whole body (Fig. 1) and the bone marrow of bilateral lower limbs. This patient started to receive systemic chemotherapy with EPOCH (Etoposide, Epirubicin, Vincristine, Cyclophosphamide, and Prednisolone) after detecting SPTCL, stage IV with hemophagocytic syndrome. After two cycles of treatment, the skin lesions, hemogram, liver function test, and hemophagocytosis showed gradual improvement.

SPTCL is a primary T cell lymphoma that specifically involves the subcutaneous tissue. The skin presentation can mimic that of benign panniculitis. SPTCLs constitute less than 1% of the non-Hodgkin lymphomas [1]. In 1991, Gonzalez et al. first described eight cases of T cell lymphoma localized primarily in the subcutaneous area [2]. In 2005, the World Health Organization-European Organization for Research and Treatment of Cancer

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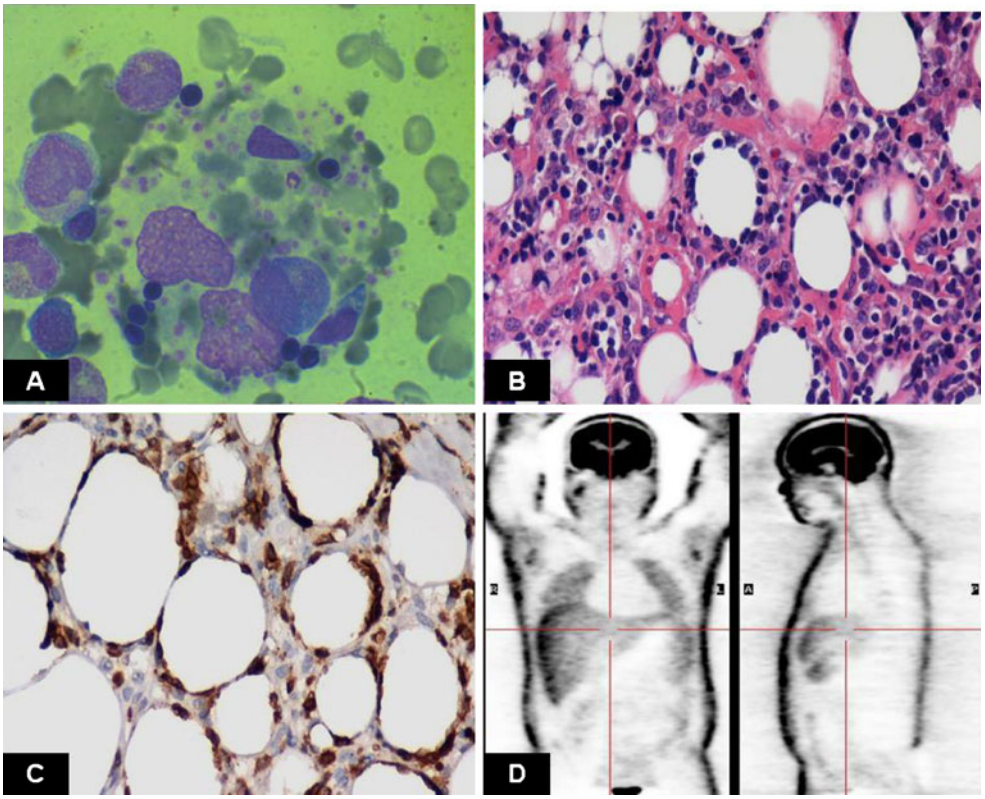

Fig. 1 **a** Activated macrophages with phagocytosed platelets, normoblasts, red blood cells, and some myelocytes in the cytoplasm (original magnification, ×1,000). **b** Pathologic findings of the nodular lesion at the neck revealed neoplastic lymphoid cell revealing irregular and hyperchromatic nuclei with rimming of pale-staining cytoplasm surrounding the fat cell and admixed with histiocytes and plasma cells. This is accompanied by necrosis and karyorrhexia. **c** Positive immunohistochemical staining for CD3 of the neoplastic cells (original magnification, ×400). **d** Positron-emission tomography (PET) revealed diffuse subcutaneous infiltration with increased fluorodeoxyglucose (FDG) avidity over the s ubcutaneous area of the whole body

classification defined SPTCL as restricted to the T cell receptor αβ phenotype [3].

FDG–PET/CT combined with bone marrow biopsy are very important techniques for examining patients with Hodgkin's disease and aggressive non-Hodgkin's lymphoma [4]. PET/CT is being commonly used to detect/stage lymphoma at present. Only a few cases of PET/CT findings with localized skin involvement in SPTCL have been reported [5–9]. We report, for the first time, the imaging findings of subcutaneous panniculitis-like T cell lymphoma of PET with high FDG uptake lesions involving the whole subcutaneous area and bone marrow. This patient also had hemophagocytic syndrome as a presentation of SPTCL. Herein, we describe a rare case of SPTCL involving the subcutaneous area of the whole body and the bone marrow with fulminant hemophagocytosis by PET/CT.

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