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IMAGES OF SPINE CARE

Extranodal non-Hodgkin's lymphoma with multiple vertebral and hepatic lesions without involvement of lymph nodes

A 55-year-old man was admitted to the hospital because of severe lumbago. Laboratory findings including soluble interleukin-2 receptor revealed almost normal levels except for alkaline phosphatase (367 U/L) and lactate dehydrogenase (511 U/L). Computed tomography, magnetic resonance imaging, and bone scintigraphy demonstrated bone lesions at Th7, 11, 12, and L4 (Fig. 1A–C). Because of the progressive paralyses of bilateral lower extremities, the pedicle of Th7 was urgently removed. Multiple masses in the liver were also observed (Fig. 1D), without splenomegaly or enlarged lymph nodes.

Metastatic cancer to the bone and liver was highly suspected because: he had no B symptoms associated with aggressive lymphoma; serum chemistry revealed elevated levels of ALP and LDH, which are frequently observed in bone tumors; and no other lesions in lymph node or organs were demonstrated. From the histologic examinations of the liver and the pedicle of Th7; however, we diagnosed the patient as diffuse large B-cell lymphoma (Fig. 2). Bone marrow examination from the right posterior iliac crest revealed no invasion by lymphoma cells.

The patient received six courses of chemotherapy with rituximab, which was followed by the complete remission.

Primary lymphoma of the bone is rare, representing 1% of malignant lymphoma. The long bones are biased for involvement, such as the femur and humerus [1]. In our case, the lesions were located at Th7, 11, 12, and L4, with no other bone lesions. Also, the extension of lymphoma cells to the spines from the whole bone marrow infiltration was ruled out. Although the incidence of a single vertebral lymphoma is reported to be 1.7% of all primary lymphomas of the bone, multiple primary vertebral lymphoma without involvement to other bones is extremely rare as we can find only two cases in the literature [2,3]. Primary hepatic lymphoma is also rare, representing 0.016% of non-Hodgkin's lymphoma (NHL) [4,5]. A previous report on a rare case of NHL of the bone and liver without

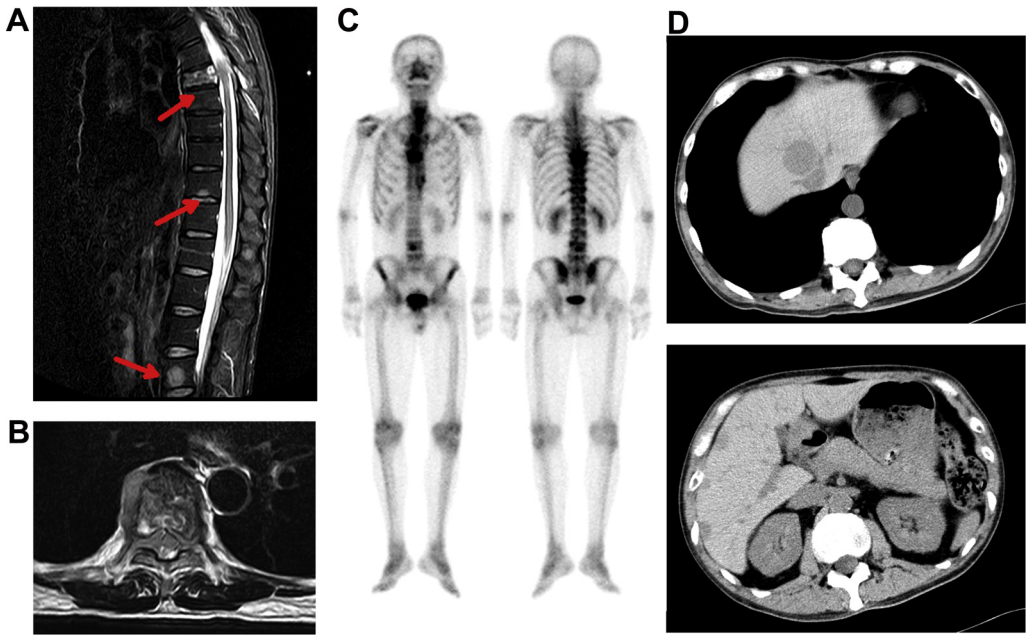

Fig. 1. Images of bone and liver. (A–C) Bone lesions. Magnetic resonance imaging of the spine (A, B) demonstrates bone masses at Th7 (B), 11, and L4 (arrows). The lesions were detected by ^{99m}Tc-bone scintigraphy (C), with no other bone lesions. The highest accumulation of ^{99m}Tc is observed at Th7. (D) Hepatic lesions. Multiple large masses are observed in the enhanced CT. The spleen is not enlarged and has no masses, and no enlarged lymph nodes are observed.

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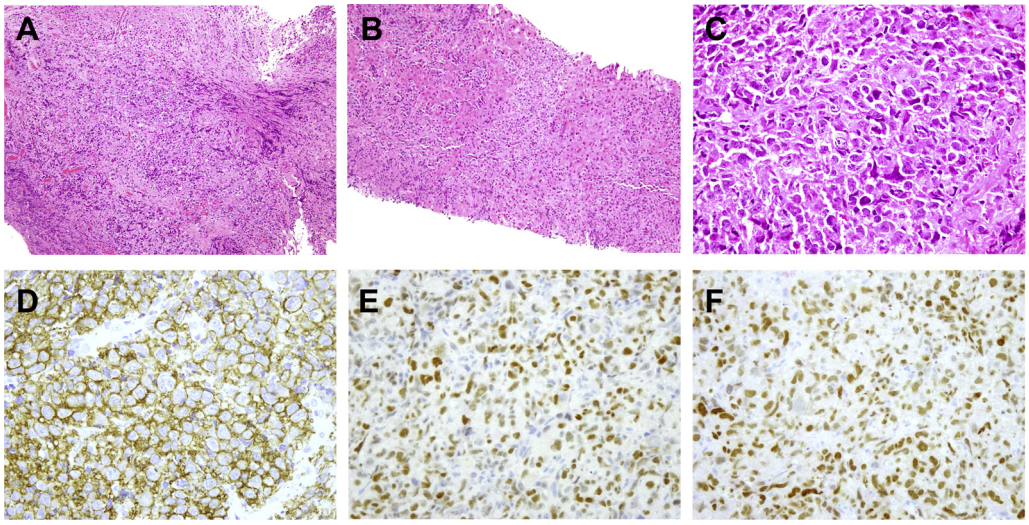

Fig. 2. Histologic findings. In the histologic studies of the pedicle of Th7 (A) and liver (needle-biopsied; (B), the lesion was characterized by a diffuse growth pattern of lymphocytes without follicles at a low-power field (A, B). At a high-power field, diffuse proliferation of medium-to-large-sized lymphoma cells with large nucleus was observed (C). An immunohistochemical study demonstrated that the lymphoma cells were negative for CD3, CD4, CD5, CD8, CD10, CD30, and ALK-1 and positive for CD20 (D), BCL6 (E), and MUM-1 (F). Chromosomal analysis and flow cytometric analysis were not available because of the limited size of the samples.

lymphadenopathy [6], showed that the affected bones were widely spread. However, to the best of our knowledge, this is the first report of NHL in only the vertebral bones and hepatic lesions. Clinicians should be aware of NHL that mimics metastatic cancer to the bone and liver in images and clinical findings, and future accumulation of similar cases is expected.

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