An Atypical Form of Asian Variant of Intravascular Large B-cell Lymphoma Presenting with Myelopathy Alone for 4 Months Prior to Pancytopenia

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Intravascular large B-cell lymphoma (IVLBCL), known as neoplastic angioendotheliosis or angiotrophic large cell lymphoma, is a rare systemic disease characterized by the occlusion of arterioles, capillaries, and venules throughout the body by malignant lymphomatous cells. Differences in the clinical features in IVLBCL between Western and Asian patients are known to be related to the geographical origin of the patients (1). Western IVLBCL patients display a relatively high frequency of central nervous system and skin involvement (2), while Asian IVLBCL patients, for whom the new disease entity termed “Asian variant of intravascular large B-cell lymphoma” has been proposed by Murase et al (3), preferentially present with hemophagocytic syndrome, bone marrow involvement, fever, hepatosplenomegaly and thrombocytopenia, but rarely with neurological symptoms or cutaneous lesions (4). Furthermore, CD5⁺CD10⁻ tumors are associated with higher frequencies of thrombocytopenia and involvement of bone marrow/peripheral blood, and lower frequencies of neurological abnormalities as compared with the CD5⁻CD10⁺ type. Here, we report a patient, who presented with progressive myelopathy alone as an initial symptom, and 4 months later suddenly developed pancytopenia. Based on the results of radiological and pathological examinations, we diagnosed an atypical form of the Asian variant of CD5⁺CD10⁻ IVLBCL presenting with myelopathy, which is a rare manifestation of the clinical features.

A 52-year-old man noticed slowly progressive weakness in both legs as an initial symptom. Two months later, he was admitted to our hospital because of pain in both thighs and urinary incontinence, in addition to paraparesis. Physical examination showed no lymphadenopathy, skin lesion or hepatosplenomegaly, but only low-grade fever. Neurological examination revealed distal-dominant flaccid paraparesis, hypesthesia below both thighs, reductions of knee and ankle reflexes, and no pathological reflexes. Spinal T2-weighted MR image demonstrated high intensity areas in the lower level of thoracic to lumbar spinal cord, with swelling (Fig. 1A), which was partially enhanced by gadolinium. No lesion was seen in brain MRI. Blood examinations were normal, including LDH level (325 U/l). Four months after the onset, he felt general malaise, and laboratory tests gave the following results: WBC 2,500/μl, RBC 287×10⁴/μl, hemoglobin 10.9 g/dl, hematocrit 31.0%, platelet 4.3×10⁴/μl, no tumor cells in peripheral blood, albumin 2.4 g/dl, LDH 737 U/l, and soluble interleukin-2 receptor 13,700 U/ml. Cerebrospinal fluid was almost normal: cells 4/mm³, protein 56 mg/dl and glucose 50 mg/dl. No abnormalities except for mild splenomegaly were seen in the gallium scan, abdominal echogram or abdominal CT scan. Ultimately, biopsies of the left biceps muscle (Fig. 1B) and nasal polyps (Fig. 1C) revealed venules filled with lymphoid cells having large pleomorphic nuclei. Most of the lymphoid cells were positive for CD79a, CD20, and bcl-2, indicating B cell lineage, and negative for CD5 and CD10. Bone marrow biopsy revealed tumor cells with monoclonal proliferation of B-cell, and increased numbers of macrophages, which hemophagocytized numerous cells of various haematopoietic lineages (Fig. 1D). Combination chemotherapy with CHOP and rituximab (8 cycles) improved pancytopenia and interleukin-2 receptor levels, and reduced the swelling in the spinal cord on MRI. At 3.5 years after the onset, the patient is in remission, although his paraparesis remains.

Based on the pathological findings, including intravascular proliferations of large B-cell lymphoma in muscle and nasal polyp biopsies and hemophagocytosis in bone marrow biopsy, we diagnosed Asian variant of IVLBCL, according to the diagnostic criteria proposed by Murase et al (3). However, the clinical features of this patient are atypical for Asian variant of IVLBCL because of the progressive myelopathy, which is frequently seen in Western, but not in Asian IVLBCL. Therefore, this patient’s disease can apparently be classified as intermediate in the spectrum between Asian and Western IVLBCL, and may therefore throw light on the relation between the two types. This is the first report in English to describe such a case, although several similar cases have been presented in the Japanese literature, including the report by Iwatsubo et al (5).

Another noteworthy feature of this case is that chemotherapy achieved remission for at least 3.5 years. So far, the ex-
Figure 1. A. T2-weighted MR image showing high intensity areas in the lower level of the thoracic to lumbar spinal cord. B. Histopathologic findings of biceps muscle biopsy, revealing lymphoid cells with large pleomorphic nuclei showing a positive reaction for CD20, filling venules (200×). C. Histopathologic findings of nasal polyp biopsy, revealing lymphoid cells with large pleomorphic nuclei filling venules (Hematoxylin and Eosin staining, 100×). D. Histopathologic findings of bone marrow biopsy, revealing hemophagocytosis (May-Grunwald Giemsa staining, 400×).

Estimated 3-year survival rate has been poor in both types of IVLBCL [27 ± 7% in Asian (4) and 25 ± 7% in Western (2) IVLBCL]. We speculate that diagnosis in the early stage of IVLBCL and the use of combination chemotherapy with CHOP and rituximab may have resulted in a good outcome in the present case.

References


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