Central Nervous System Leukemia on Magnetic Resonance Imaging

Takaaki Konuma, Jun Ooi, Satoshi Takahashi, Akira Tomonari, Nobuhiro Tsukada,
Seiko Kato, Senji Kasahara, Kaoru Uchimarui and Arinobu Tojo

Key words: CNS, leukemia, MRI

Picture 1.

Picture 2.

(Inter Med 47: 477, 2008)

(DOI: 10.2169/internalmedicine.47.0688)

A 32-year-old man 5 years previously received allogeneic bone marrow transplantation from his mother for Philadelphia chromosome positive acute lymphoblastic leukemia. He presented with headache, nausea, and pain in the left arm. The neurologic examination revealed no abnormalities except for stiffness of the neck. Gadolinium-enhanced T₁-weighted magnetic resonance imaging (MRI) showed diffuse contrast enhancement in the cerebral sulci (Pictures 1, 2). Lumbar puncture revealed the presence of lymphoblasts (1,109/mm³). Fluorescence *in situ* hybridization analysis

demonstrated that most of the cells in the cerebrospinal fluid (CSF) were Philadelphia chromosome positive, which confirmed the diagnosis of central nervous system (CNS) leukemia. The patient was treated with intrathecal chemotherapy. The number of lymphoblasts in the CSF was gradually decreased and the symptoms were improved. He experienced a bone marrow recurrence 2 months after CNS relapse and died 18 months later. This case shows that enhanced MRI is also useful in the diagnosis of CNS leukemia.