Photogravure

Brain White Matter Changes during Treatment of a Child for Acute Lymphoblastic Leukemia

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Fig. 1A

Fig. 1B

A 13-year old boy with acute lymphoblastic leukemia had bilateral paresis of the upper extremities and aphasia 1 week after high dose methotrexate and triple intrathecal therapy (methotrexate, cytarabin, hydrocortisone). The stroke-like neurological symptoms disappeared on the third day. T2-weighted magnetic resonance imaging showed hyperintensities of white matter on the second day. Despite resolution of the neurological symptoms, magnetic resonance images were still abnormal 3 years after the attack.

Methotrexate has been considered to be responsible for ischemic damage to oligodendroglial cells, resulting in demyelination. The changes are occasionally prolonged without persistent neurologic symptoms.

**Fig. 1A** Axial T2-weighted images obtained 2 days after stroke-like symptom appeared. Hyperintensities are visible on a bilateral plane view of the deep parietal white matter (arrows).

**Fig. 1B** Axial T2-weighted images obtained after 1 month were more intense than those soon after the attack (arrows).

**Fig. 2A** Axial T2-weighted images obtained 1 year after initial presentation showed bilateral hyperintensities in white matter of the brain (arrows).

**Fig. 2B** Axial FLAIR images obtained after 1 year showed bilateral hyperintensities in the white matter of the brain (arrows).

**Fig. 2C** Coronal FLAIR images obtained after 1 year showed bilateral hyperintensities in the white matter of the brain (arrows).

**Fig. 3A** Axial-T2 weighted images obtained 3 years later showed persistent bilateral hyperintensities in the white matter of the brain (arrows).

**Fig. 3B** Axial FLAIR images obtained 3 years later showed bilateral hyperintensities in the white matter of the brain (arrows).

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