

Photogravure

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

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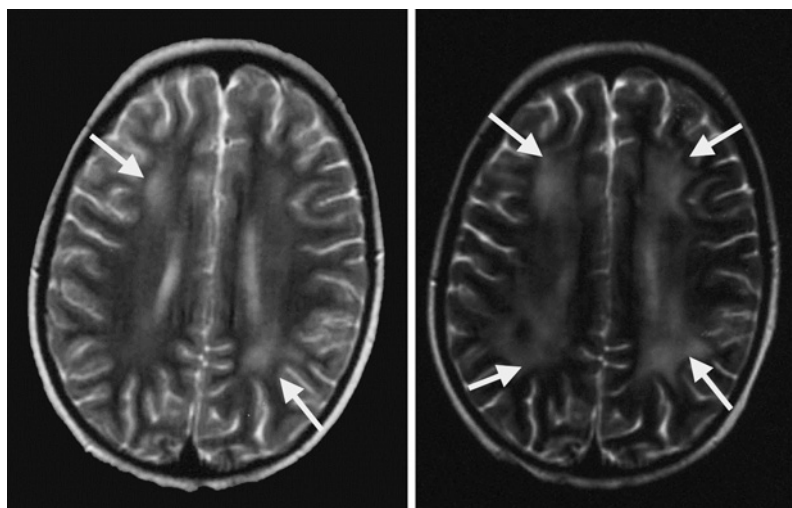


Fig. 1A

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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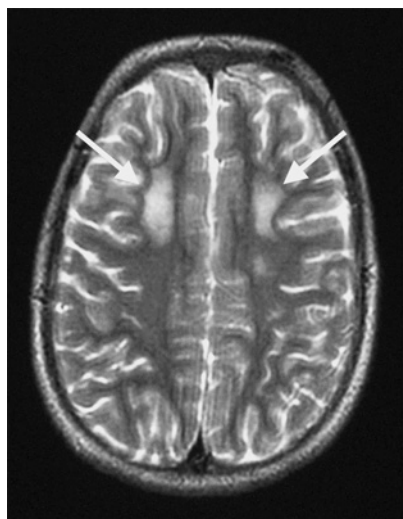


Fig. 2A

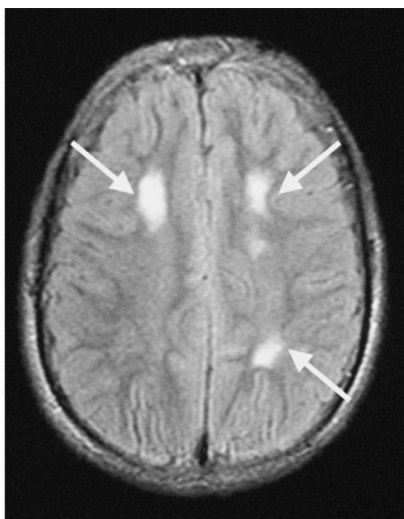


Fig. 2B

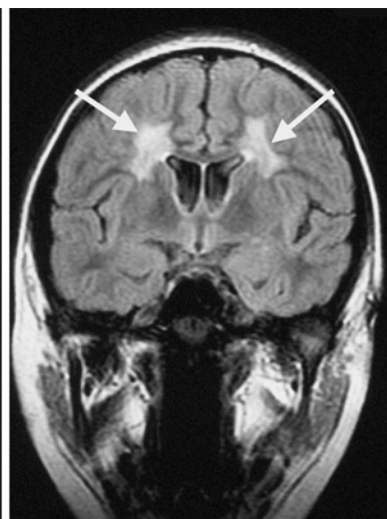


Fig. 2C

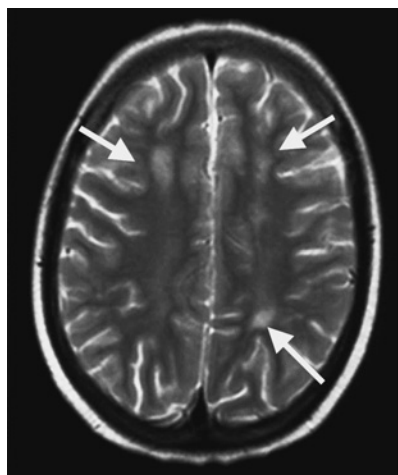


Fig. 3A

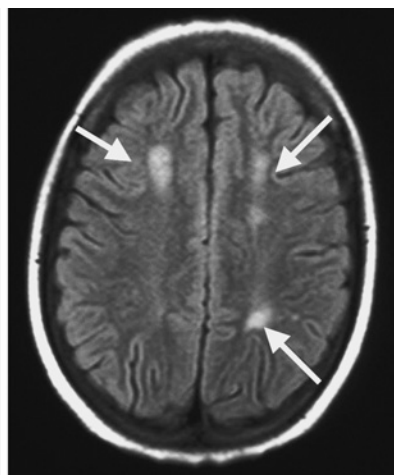


Fig. 3B

References

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- 2 . Rubnitz JE, Rellong MV, Harrison PL, Sandlund JT, Ribeiro RC, Rivera GK, Thompson SJ, Evans WE, Pui C-H: Transient leukoencephalopathy following high-dose methotrexate treatment in childhood acute lymphoblastic leukemia. *Leukemia* 1998; 12: 1176-1181.