MR Images in a Patient with Chronic Toluene Poisoning

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A 32-year-old woman who, for many years, had a habit of inhaling paint thinner presented with tremors, spasticity of the lower extremities and ataxia. A high level of hippuric acid (19.90 g/L) was detected in the patient’s urine. T2WI (Picture A) and fluid-attenuated inversion recovery (FLAIR) images (Picture B) revealed moderate hyperintensity in the posterior limb of the internal capsule, mild hyperintensity in the cerebral white matter and the middle cerebellar peduncle (Picture C, D), and mild hypointensity in the substantia nigra, red nuclei and bilateral dentate nuclei. These results were consistent with toluene poisoning (1, 2). Although diffusion-weighted image (DWI) and apparent diffusion co-

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efficients (ADC) mapping has been reported in cases of acute toluene poisoning (2), we could not find any studies involving chronic toluene poisoning. In the patient of the present case, a DWI map (Picture E) also showed hyperintensity in the posterior limb of the internal capsule and the corpus callosum. An ADC map (Picture F) revealed no remarkable signal changes. Demyelination in the white matter was reported as a histological change which occurred due to chronic toluene abuse (1). These findings suggest that demyelination may occur through chronic toluene poisoning.

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References