Diffusion-weighted Imaging Changes in a Case of Severe Hypoglycemic Encephalopathy

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A 75-year-old man with a history of diabetes mellitus on treatment with three oral hypoglycemic drugs was admitted to our hospital after being found unresponsive at home. Upon arrival, his blood glucose level was 11 mg/dL. The initial brain diffusion-weighted image (DWI), obtained between two and 19 hours after onset, revealed the presence of symmetric hyperintense lesions in the bilateral deep white matter (Picture 1). Five days later, new cerebral cortex lesions were found on DWI, while the previous lesions had disappeared (Picture 2). The patient died 14 days later due to pneumonia without regaining consciousness. Hypoglycemic encephalopathy often produces abnormal signals on brain DWI, especially in the cerebral cortex, hippocampus, basal ganglia and deep white matter (1). However, reports of serial DWI changes, such as that observed in the present case, are uncommon (2). Although the exact mechanisms underlying serial DWI changes are unknown, the observations in this case may provide a basis for predicting a poor prognosis due to hypoglycemic injury.

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References


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