

Diffusion Weighted Imaging in a Patient with Transient Global Amnesia

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A 62-year-old woman presented to the emergency department with a complaint of memory loss of events that occurred for three hours after waking up in the morning. Upon arrival, her level of consciousness was normal and there were no signs of impairment. She had no history of smoking and her alcohol consumption was occasional. Additionally, she had no previous incidents of stroke, seizure, drug abuse, migraine headaches, or recent brain trauma. Her blood pressure was 132/101 mmHg and her pulse rate was 97 beats per minute. Her cranial nerve examination showed no abnormalities. Laboratory tests revealed mildly elevated levels of serum cholesterol (246 mg/dL; reference value, 20-220 mg/dL) and triglycerides (178 mg/dL; reference value, 30-149 mg/dL), but no other laboratory abnormalities were found. She underwent a magnetic resonance imaging (MRI) scan of the head. Diffusion-weighted images (DWI) revealed punctate high signal intensity lesions in the bilateral hippocampal heads (Fig. 1A) and the left hippocampal body (Fig. 1B). These clinical and MRI findings led to a diagnosis of transient global amnesia (TGA). A follow-up brain MRI conducted one month later demonstrated the complete disappearance of the punctate high signal intensities in the bilateral

hippocampus. She has been doing well without experiencing any further episodes of TGA.

TGA is estimated to occur at a rate of 5.2 to 10 cases per 100,000 individuals per year with the majority of episodes observed in people between the ages of 50 and 80 years, and a mean age of onset between 60 and 65 years.^{1,2} TGA is characterized by sudden and temporary memory loss that typically lasts for several hours. Despite this memory loss, other cognitive functions remain intact. The patients may have difficulty recalling events during an episode of TGA, but their long-term memories usually remain unaffected. Several risk factors associated with TGA have been identified, including physical or emotional stress, exposure to cold water, vigorous physical activity, sudden changes in temperature, and sexual intercourse.² While many studies reported a significant association between TGA and migraine,³ not all individuals with migraines will experience TGA, and vice versa. TGA is believed to be related to transient brain ischemia, which can result in damage to the hippocampus. In cases of TGA, the CA1 region of the hippocampus, known to be the most vulnerable to ischemia, is often affected.⁴ The diagnosis of TGA is based on the patient's clinical symptoms. MRI, especially DWI, can be useful in confirming the diagnosis by showing temporary changes in the hippocampus.⁴ There is no specific treatment for TGA because the condition usually resolves on its own within 24 hours.⁵ The prognosis for TGA is generally excellent, with recurrence being rare.²

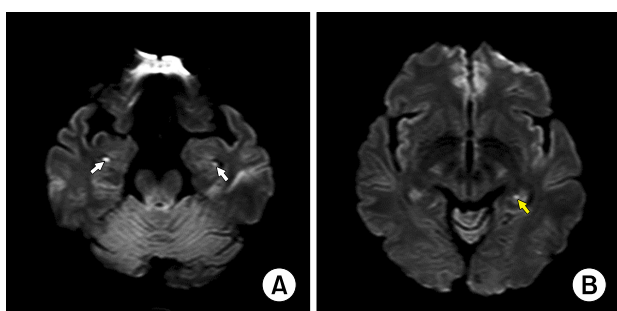


FIG. 1. Axial DWI showed small punctate high signal intensity lesions in the CA1 subregions of bilateral hippocampal heads (A; white arrows) and the dorsal part of the left hippocampal body (B; yellow arrow).

CONFLICT OF INTEREST STATEMENT

None declared.

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