Extensive Hyperintense Area on Diffusion-weighted MRI without Subsequent Infarct in a Patient with Transient Ischemic Attack

Masaya Ogawa¹, Masato Tanosaki¹, Kozo Kurahashi¹ and Hiroshi Midorikawa²

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A 75-year-old man with atrial fibrillation suddenly developed right hemiplegia and aphasia. As the initial diffusion-weighted MRI (DWI) acquired 75 minutes after the onset of symptoms revealed an extensive hyperintense lesion in the left middle cerebral artery territory (Fig. 1A), he was diagnosed as having cardioembolic stroke. The DWI lesion volume was estimated to be 21.1 cm³ (1). Apparent diffusion coefficient (ADC) value in the central area of the lesion was 0.50 × 10⁻³ mm²/s, and the ADC ratio (lesion/corresponding contralateral area) was 0.65. Shortly after the DWI acquisition, his clinical symptoms dramatically disappeared, presumably due to spontaneous reperfusion. Three weeks later, no subsequent infarct was found anywhere on fluid-attenuated inversion recovery images (Fig. 1B). This patient suggests that hyperacute DWI abnormalities in ischemic stroke do not necessarily indicate irreversible brain tissue damage when rapid reperfusion is achieved (2), even if the affected area shows extensive and pronounced signal changes.

References

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¹ Department of Neurology, Aomori Prefectural Central Hospital, Aomori and ² Department of Radiology, Aomori Prefectural Central Hospital, Aomori

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Correspondence to Masaya Ogawa, Department of Neurology, Aomori Prefectural Central Hospital, 2-1-1 Higashi-Tsukurimichi, Aomori 030-8553


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