Transient global amnesia and hippocampal foci of restricted diffusion

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DESCRIPTION

A 63-year-old man was admitted owing to the onset upon awakening of anterograde amnesia and spatio-temporal disorientation accompanied by repetitive questioning. No disturbances of consciousness and self-awareness or others focal neurological symptoms were found. The EEG examination was normal.

The patient had no medical history for neurological abnormalities or neuroactive drugs and no cardiovascular risk factors. The symptoms resolved spontaneously within 24 h, with no persistent neurological impairment.

A brain MRI examination, performed 48 h after the onset, showed bilateral hippocampal restricted diffusion foci with low apparent diffusion coefficient (figure 1A,B); no significant white-matter hyperintensities, lacunes or chronic infarcts were detected. Brain MRI angiography was not performed.

Transient global amnesia (TGA) is a syndrome characterised by sudden anterograde memory impairment, usually associated with spontaneous remission within 24 h.^{1 2} In such cases, amnesic gap may persist after 24 h.

Several factors have been proposed to explain the pathophysiology of TGA such as emotional stress, arterial thromboembolism, psychological disturbances, migraine, cerebral small-vessel disease, Valsalva-like manoeuvres and jugular vein incompetence; however, the exact pathophysiology of TGA is still not completely understood.^{1 2}

Although the diagnosis of TGA is mainly clinical, brain MRI study, besides to rule out other diagnoses, enables to confirm diagnosis by detecting hippocampal restricted diffusion focal lesions.^{1 2} Hippocampal signal changes are found in 11–85% of the patients, according to the MRI parameters and to the time elapsed from the onset (maximum detection rate at 48–72 h).²

Learning points

- ▶ Transient global amnesia is a syndrome characterised by sudden anterograde memory impairment with spontaneous remission within 24 h.
- ▶ The diagnosis of transient global amnesia is clinical; however, brain MRI study enables to rule out other diagnoses and to confirm the diagnosis by detecting hippocampal restricted diffusion focal lesions.
- ▶ The maximum detection rate of hippocampal lesions on diffusion-weighted sequences is at 48–72 h from the onset of symptoms.

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Figure 1 Bilateral hippocampal MRI signal changes: axial diffusion tensor imaging obtained by a 12-direction, single-shot, spin-echo echo-planar sequence (A) and apparent diffusion coefficient map (B). Focal areas of restricted diffusion with low apparent diffusion coefficient are shown within the right hippocampus head/body and the left hippocampus body/tail.

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