Complete Anterograde Amnesia From Simultaneous Bilateral Hippocampal Infarction

The Neurohospitalist
2014, Vol. 4(3) 165-166
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DOI: 10.1177/1941874414524795
nhos.sagepub.com

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Keywords

stroke, cerebrovascular disorders, stroke and cerebrovascular disease, clinical specialty, general neurology, clinical specialty, cardiology, clinical specialty

Case report

A 71-year-old male with paroxysmal atrial fibrillation presented with acute-onset confusion. His family described that he was alert and fluent but suddenly began to repeat questions continuously. The examination confirmed severe anterograde amnesia without other neurologic impairments. For example, he registered 5 of 5 items but failed to recall any items after a 3-minute delay. In fact, he denied having registered the items at all. He frequently told the same jokes without being aware that he was repeating himself. Attention, comprehension, fluency, naming, and repetition were normal.

Magnetic resonance imaging (MRI) revealed diffusion restriction in both posterior hippocampi as well as in the right cerebellum and left occipital lobe (Figure 1). Magnetic resonance angiography and echocardiogram were within normal limits. The memory deficits began improving after several weeks but he still had residual deficits at 3-month follow-up.

Discussion

Although the sequelae of hippocampal lesions are well described, simultaneous bilateral cardioembolic infarcts are a rare cause.¹ The posterior two-thirds of the hippocampus receive its blood supply from proximal branches of the posterior cerebral artery (PCA).² In this case, the additional lesions in the PCA and superior cerebellar artery territories support vertebrobasilar cardioembolism as the likely mechanism of injury.

The initial clinical presentation of bilateral hippocampal infarction may mimic transient global amnesia (TGA). Patients with TGA may have isolated unilateral or bilateral hippocampal diffusion restriction on MRI but these lesions are typically punctate.³ In contrast, with hippocampal infarction, a

greater territory is generally involved, extrahippocampal lesions are likely, and the memory deficits may persist longer or be permanent.²

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

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Figure 1. Magnetic resonance imaging demonstrating bilateral hippocampal diffusion restriction. Brain MRI of a 71-year-old man demonstrating bilateral hippocampal diffusion restriction (arrows) on axial diffusion weighted images (A and B) and hyperintensities (arrows) on a coronal FLAIR image (C) consistent with infarction. Other punctuate lesions (arrows) were also present in the left occipital lobe and right cerebellum (D-F). MRI indicates magnetic resonance imaging; FLAIR, fluid attenuated inversion recovery.