Topographic disorientation following mesial left temporo-occipital hemorrhage

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Supplemental Data

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A 52-year-old left-handed man with a history of uncontrolled hypertension presented complaining of “memory problems.” Further description of his symptoms, however, revealed relatively isolated dysfunction in finding his way around previously known routes (audio clip at neurology.org/cp), despite recognition of landmarks. This was sudden in onset and nonprogressive. Formal neuropsychological testing revealed moderate impairment in verbal greater than visual memory, with additional impairments on tasks of working memory, processing speed, mental flexibility, and phonemic word fluency. Color naming and face recognition were normal. Brain MRI showed a mesial left temporo-occipital hemorrhage with extension into the left parahippocampal region (figure, A and B). Multiple subcortical T2 and fluid-attenuated inversion recovery hyperintensities were also evident (figure, B). Gradient-echo revealed multiple areas of hemosiderin, evidence of microbleeds (figure, C). A diagnosis of topographic disorientation due to mesial left temporal hemorrhage was made.

Topographic perception and memory consist of several components: recognizing landmarks, having a “mental map,” learning new routes, and others. Deficits in any of these components may lead clinically to topographagnosia, “the family of defects in orientation and navigation in the real environment.”¹ Topographagnosia most often occurs in combination with achromatopsia and prosopagnosia, often in the setting of an underlying neurodegenerative disorder. Topographic disorientation, or a deficit in navigating previously known routes using recognized landmarks, has rarely been described as occurring in isolation, most commonly resulting from nondominant posterior mesial lesions often involving the parahippocampus. The parahippocampus and adjacent fusiform gyrus play a crucial role in topographic learning in humans.²

REFERENCES

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Figure Imaging

(A) Axial T2-weighted and (B) fluid-attenuated inversion recovery (FLAIR) MRI show mesial left temporo-occipital hemorrhage with extension into the left parahippocampus. Subcortical white matter disease is also evident on the FLAIR images. (C) Gradient-echo sequences show evidence of hemosiderin.

DISCLOSURES

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