

Teaching NeuroImages: Complex bilateral corpus callosum infarction after paradoxical embolism

Lightning strikes twice

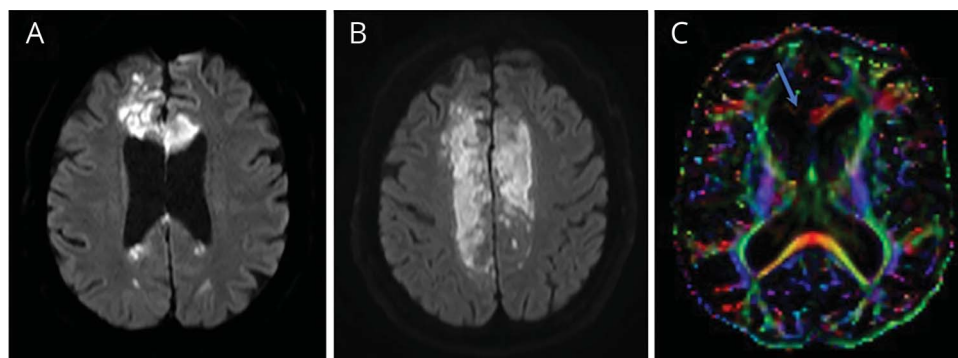
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Figure 1 Complex bilateral corpus callosum infarction



Axial diffusion-weighted images at the level of the genu and at the supraventricular level (A, B, respectively) show bilateral restricted diffusion area within anterior cerebral artery territory, including corpus callosum and other brain areas. Diffusion tensor imaging postprocessing colored map (C, arrow) demonstrates reduced volume and diffusion anisotropy of callosal commissural fibers.

A 47-year-old man developed sudden-onset abulia and alien hand syndrome (AHS). MRI revealed bilateral ischemic injury within anterior cerebral artery territory (a complex bilateral corpus callosum infarction¹) due to obstruction of a variant bihemispheric A2 branch by a thrombus (figures 1 and 2), also demonstrated on 3D volume-rendered CT angiography (figure 2). The finding of lower-limb deep venous thrombosis in a patient with right-to-left interatrial shunt accounted for the case, given workup was otherwise unremarkable.

This case is unique for paradoxical embolization of a variant artery (prevalence 2%–7%²) that led to a complex bilateral corpus callosum infarction presenting with AHS.¹

Author contributions

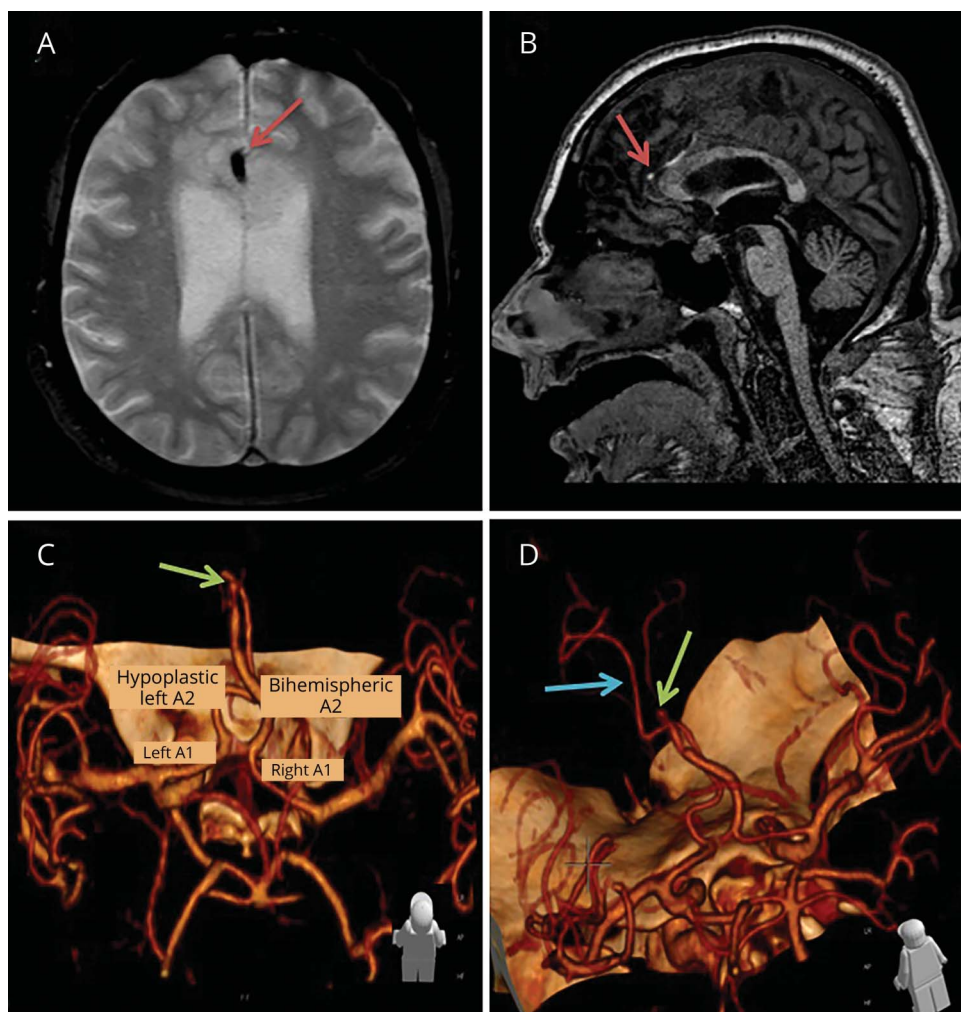
G. Vasconcelos Calheiros de Oliveira Costa: concept design, elaboration and critical revision of the case report. M.H. Lazaretto Padua: elaboration and critical revision of the case report. S.C. Ouriques Martins: elaboration and critical revision of the case report for intellectual content. J.A. Duarte: image selection and critical revision of the case report for intellectual content. R. Brondani: critical revision of the case report for intellectual content. A. Garcia de Almeida: critical revision of the case report for intellectual content.

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Figure 2 Vessel anatomy and occlusion



Axial gradient recalled echo T2* and sagittal T1-weighted images (A, B) reveal thrombotic occlusion of the variant right bihemispheric A2 branch (red arrows). 3D volume-rendered CT angiography also demonstrates absence of downstream blood flow (C, D, green arrows) and the hypoplastic left A2 branch (D, blue arrow).

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Disclosure

The authors report no disclosures relevant to the manuscript.
Go to [Neurology.org/N](https://www.neurology.org/N) for full disclosures.

References

1. Gao X, Li B, Chu W, Sun X, Sun C. Alien hand syndrome following corpus callosum infarction: a case report and review of the literature. *Exp Ther Med* 2016;12: 2129–2135.
2. Dimmick SJ, Faulder KC. Normal variants of the cerebral circulation at multidetector CT angiography. *Radiographics* 2009;29:1027–1043.

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