Teaching NeuroImage: Atypical Anterior Cerebral Artery Syndrome From Pericallosal Artery Infarct

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Neurology® 2022;98:e209-e210. doi:10.1212/WNL.0000000000013002

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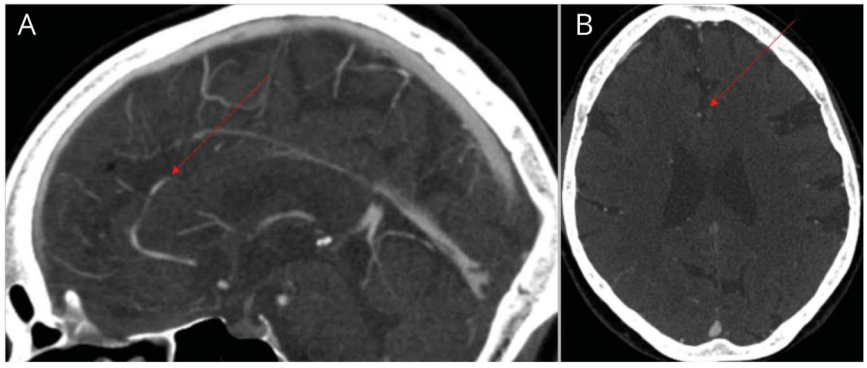
Figure 1 CT Angiogram Demonstrates Acute Occlusion (Red Arrow) of A3 Segment of Left ACA Artery in the Pericallosal Branch



A 76-year-old right-handed woman presented with sudden right-sided weakness and mutism. Examination revealed transcortical motor aphasia, right arm apraxia and spasticity, and right leg hemiplegia. She demonstrated abulia, anosognosia, and emotional lability. CT angiogram demonstrated a left pericallosal artery occlusion (Figure 1). The patient received tPA. MRI demonstrated an infarct spanning the left supplementary motor area (SMA) and anterior cingulate cortex (Figure 2).[1]

Acute onset of aphasia, contralateral dyspraxia, and motor hemineglect should raise suspicion for SMA territory infarct while anterior cingulate involvement may result in acute spasticity and neuropsychiatric symptoms; these are rarely reported simultaneously in ACA infarcts.[1] Atypical ACA stroke syndromes are rare; clinical recognition avoids misdiagnosis.[1,2]

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Study Funding
The authors report no targeted funding.

Disclosure
The authors report no disclosures relevant to the manuscript. Go to Neurology.org/N for full disclosures.

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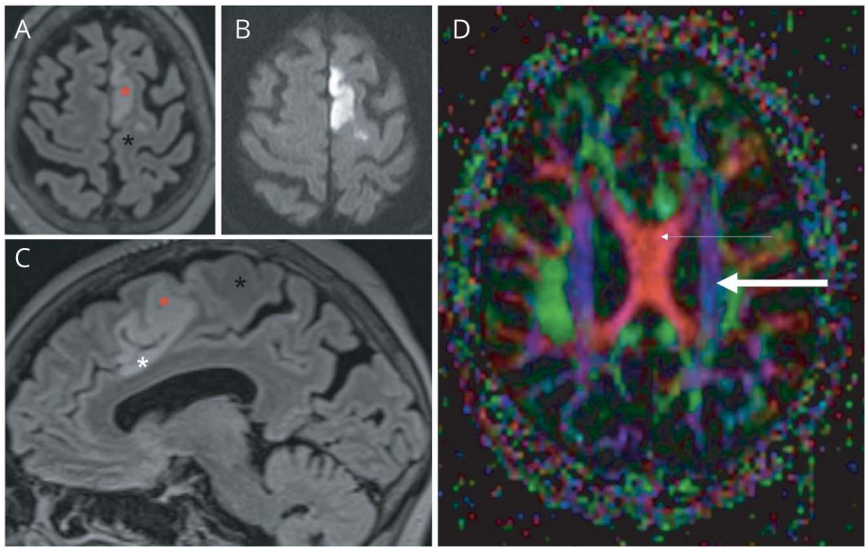
Figure 2 Follow-up MRI Showing Axial FLAIR (A), DWI (B), Sagittal FLAIR (C), and Axial DTI (D) Sequences



MRI confirms the area of infarct involving the supplementary motor area (red asterisk), cingulate cortex (white asterisk), and sparing of the primary motor cortex (black asterisk), with corresponding DWI restriction. Axial DTI sequences confirm the sparing of corticospinal tracts (thick arrow) and commissural fibres (thin arrow).

Appendix Authors

Name	Location	Contribution
Diana J. Kim, MD	University of British Columbia, Vancouver, Canada	Drafted and revised the manuscript and prepared figures
Sina Marzoughi, MD	University of British Columbia, Vancouver, Canada	Drafted and revised the manuscript and prepared figures
Thalia S. Field, MD, MHSc, FRCPC	University of British Columbia, Vancouver, Canada	Revised manuscript for intellectual content

References

1. Kang SY, Kim JS. Anterior cerebral artery infarction: stroke mechanism and clinical-imaging study in 100 patients. *Neurology*. 2008;70(24 pt 2):2386-2393.
2. Mathew P, Batchala PP, Muttikkal T. Supplementary motor area stroke mimicking functional disorder. *Stroke*. 2018;49(10):e28-30.

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Neurology 2022;98;e209-e210 Published Online before print October 21, 2021
DOI 10.1212/WNL.0000000000013002