Figure. Tractography was done using DWI obtained in 4 minutes. The arcuate fasciculi (shown in purple) are seen superimposed on the DWI. Note that the arcuate fasciculus (AF) is smaller on the left side. Size laterality may exist in normal subjects, but usually the AF is smaller on the right side.² The measured anisotropy index (fractional anisotropy) was 0.43 ± 0.10 for the lesional fibers and 0.46 ± 0.10 for the contralesional fibers. Lower anisotropy for the lesional fibers may have indicated damage to the tract.

VIDEO

MR tractography depicting damage to the arcuate fasciculus in a patient with conduction aphasia

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An 84-year-old right-handed man with a history of atrial fibrillation and a left parietal lobe infarct was admitted to the stroke unit due to a sudden decline in responsiveness. He was awake but

silent, though his comprehension was intact. Slight weakness was noted in his right upper and lower extremities. On the third day, the patient regained his voice, but his speech was impaired with paraphasic errors and naming difficulties. Repetition was markedly impaired. The clinical findings suggested motor/conduction aphasia. An MR examination showed a left middle cerebral artery infarction involving the parietal lobe. Since both the Broca and Wernicke areas were not directly involved on the diffusion-weighted imaging (DWI) study, we did MR tractography on the assumption that the left arcuate fasciculus may be damaged. These images revealed a brain infarct completely engulfing the left arcuate fasciculus, supporting the diagnosis of conduction aphasia¹ (figure; see also the video at www.neurology.org).

Additional material related to this article can be found on the *Neurology* Web site. Go to www.neurology.org and scroll down the Table of Contents for the March 6 issue to find the title link for this article.

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1. Geschwind N. Disconnexion syndromes in animals and man. *Brain* 1965; 88:237–294.
2. Nucifora PG, Verma R, Melhem ER, Gur RE, Gur RC. Leftward asymmetry in relative fiber density of the arcuate fasciculus. *Neuroreport* 2005;16:791–794.

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