

VIDEO **Tractography for an arteriovenous malformation**

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A 28-year-old woman presented with focal motor seizure involving the right upper extremity, which was well controlled with an antiepileptic agent. MRI demonstrated an arteriovenous malformation. This lesion depicted on MR angiography (figure, A) appeared to involve the sensorimotor cortices on transaxial T2-weighted MR images (figure, B; central sulcus on contralesional hemisphere is indicated by the arrow). Tractography (figure, C and video clip [available online at www.neurology.org]) of motor (purple) and sensory (green) tracts was obtained via MR data postprocessing in order to characterize the relationship between the lesion and the sensorimotor tracts; the tracts were completely separated in the anteroposterior direction by the nidus.

Surgical intervention of arteriovenous malformations poses higher risks when eloquent cortices of the brain, such as sensorimotor areas, are involved. Knowledge of the precise locations of sensorimotor cortex and their fiber tracts may decrease this risk. Tractography may aid the management of patients with neurological disorders and validation of the technique is underway.^{1,2}

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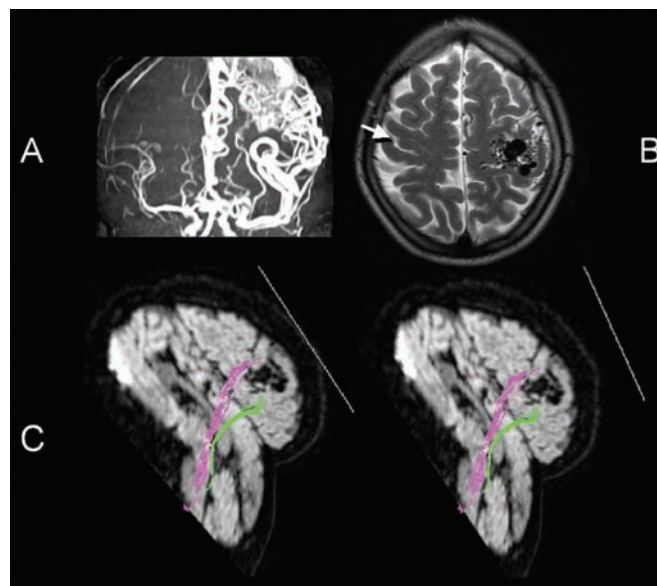


Figure. Diffusion tensor images were acquired over 3.5 minutes. These images were postprocessed to yield tractography information. Both sensory (green) and motor (purple) tracts are well depicted. Estimating the sensorimotor cortices tends to be straightforward when the landmark sulci and gyri are clearly depicted, but is more challenging when the lesion is large or when they are in close proximity with the sensorimotor cortices.

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2. Yamada K, Mori S, Nakamura H, et al. Fiber-tracking method reveals sensorimotor pathway involvement in stroke patients. *Stroke* 2003;34:159–162.

Neurology[®]

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Neurology 2004;62;669

DOI 10.1212/01.WNL.0000101677.99607.75

This information is current as of February 23, 2004

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