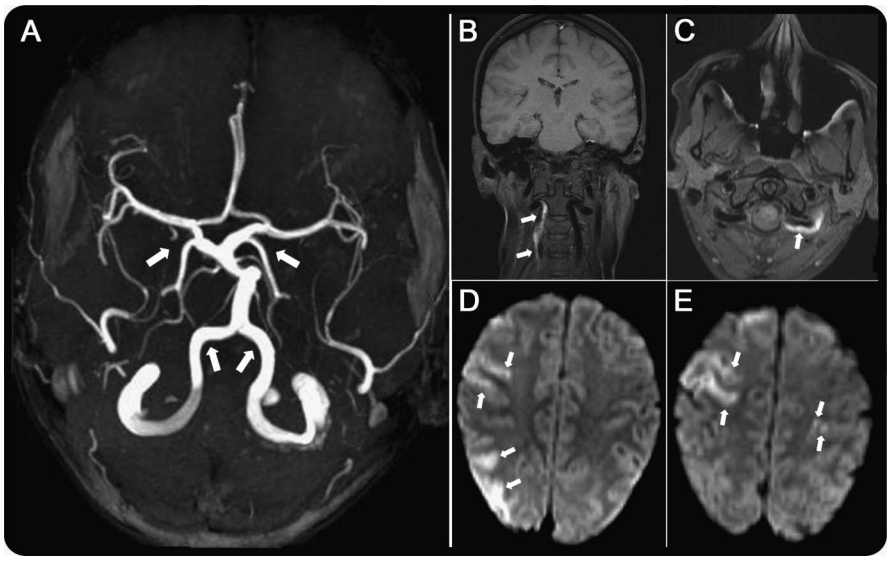
Bilateral vertebral artery dissection, agenesis of both ICAs, and connective tissue aberrations

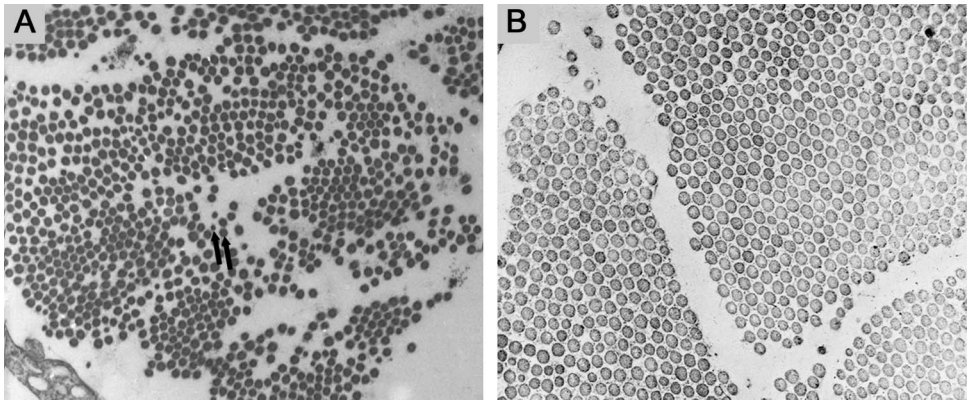
Figure 1 MRI with time-of-flight angiography shows bilateral internal carotid artery agenesis, vertebral artery dissections, and ischemias in both middle artery territories



Time-of-flight MRI angiography shows absence of both internal carotid arteries (A, upper arrows) and enlarged vertebral arteries (VAs) providing compensatory blood supply (lower arrows). It further reveals bilateral VA dissections, with cervical dissection in segment V2 on the right (B) and in segment V3 on the left (C). Ischemic lesions in both middle artery territories are visible (D, E).

A 35-year-old woman presented with acute signs of stroke (appendix e-1 on the *Neurology*® Web site at www.neurology.org). After initial CT with angiography, MRI with time-of-flight angiography confirmed agenesis of both internal carotid arteries (ICAs; figure 1A). It revealed bilateral vertebral artery (VA) dissections and ischemias in both middle artery territories (figure 1, A–E). Skin biopsy microscopy (figure 2) was consistent with ultrastructural

Figure 2 Electron microscopy of the skin biopsy shows evidence of ultrastructural connective tissue aberrations



Supplemental data at www.neurology.org

Electron microscopy of the skin biopsy (A, magnification ×35,000) shows loosely packed collagen bundles with caliber variability of fibrils (arrows) consistent with an ultrastructural connective tissue syndrome. (B) Historical control for comparison purposes.

connective tissue disease (uCTD), for which no further evidence was found apart from mild hypermobility of the finger joints. The underlying uCTD with structural instability of the arterial walls and the increased blood flow in the vertebrobasilar circulation due to the bilateral ICA agenesis may have promoted VA dissection.

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