

Bilateral Thalamic Infarction After Traumatic Vertebral Artery Dissection

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CASE PRESENTATION

A 29-year-old female patient visited the emergency room for whirling dizziness and hypersomnolence. She had had a cervical chiropractic manipulation two weeks before admission. She had no previous history of stroke or vasculitis. Initial diffusion-weighted images showed diffusion restriction in the bilateral thalami, occipital lobes, and brain stem. Subsequent magnetic resonance angiography (MRA) and source images of time of flight (TOF) MRA demonstrated luminal irregularities of the bilateral vertebral arteries and intramural hematoma on the wall of right vertebral artery. Catheter angiography showed an artery of Percheron. This case acknowledges that anatomic variation and a patient's history leads to the correct diagnosis.

DISCUSSION

The thalamus is supplied by multiple perforators originating from the posterior communicating artery and the P1 and P2 segments of posterior cerebral arteries. An anatomic variation of the single trunk of the medial thalamic perforator, which branches out to bilateral smaller perforators, is called the artery of Percheron. The incidence of an artery of Percheron infarct is rare and is estimated to account for 0.1 to 0.3% of all ischemic strokes.¹ Vertebral artery dissection is one of the causes for the artery of Percheron in posterior circulation infarction and its incidence is estimated to be two per 100,000 person-years.² An epidemiologic association between chiropractics and vertebral artery dissection has been reported in a German nationwide survey.³ Clinical symptoms were noticed

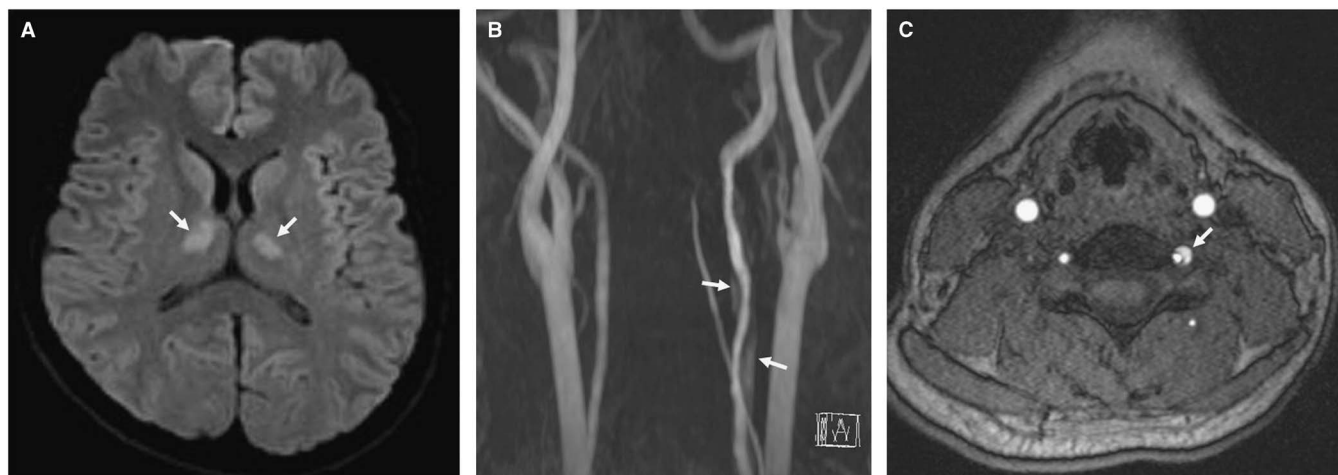


Figure 1: (A) High signal intensities (arrows) in bilateral thalami on diffusion-weighted image, suggestive of an acute infarct. (B) Irregular narrowing of the left vertebral artery and periluminal high signal intensities (arrows) on TOF-MRA. (C) A crescent-shaped high signal at the vertebral arterial wall on a TOF source image, suggestive of a dissection.

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Figure 2: Catheter angiography with a right vertebral arterial injection shows an irregular luminal narrowing of right vertebral artery, suggestive of a dissection (black arrow). A single trunk of the bilateral thalamic perforator, artery of Percheron, originates from the left posterior cerebral artery (white arrow).

within 12 hours after neck manipulation in 55% of patients. The prognosis was relatively benign in 34 of 36 patients of vertebral artery dissection with prior chiropractic neck manipulation. However, one patient died and the others remained in a persistent vegetative state.³

DISCLOSURES

Authors have nothing to disclose.

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