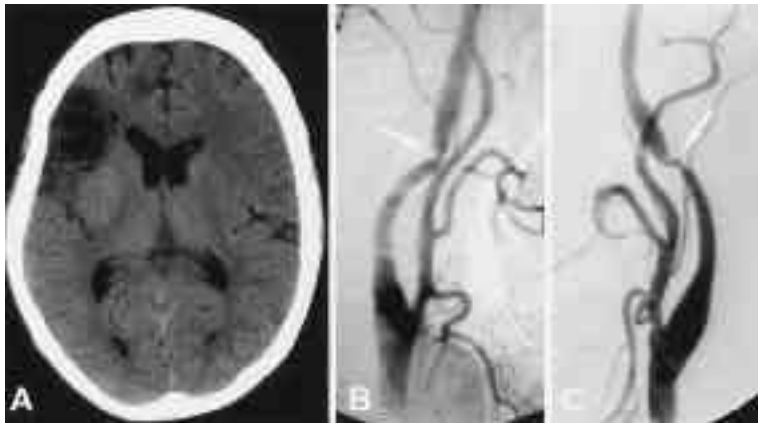
Case report

A strangled wife

Adel M Malek, Randall T Higashida, Constantine C Phatouros, Van V Halbach

A 43-year-old woman was referred in May, 1997, to our neurointerventional unit for cervical and cerebral angiography. She had been seen at another hospital 3 weeks earlier with sudden onset of weakness of her left arm. She had been treated for hypertension and hyperthyroidism. Upon arrival she was awake, alert, and oriented, with normal cognition and speech. The function of her cranial nerves was intact with no signs of Horner's syndrome. Motor examination showed left pronator drift, decreased left hand and arm strength, and poor rapid finger movements. Sensory examination was normal to all modalities. Auscultation revealed a carotid bruit on the left side. A computed tomograph scan showed right middle frontal and opercular gyrus infarcts (figure, A). Carotid angiography showed bilateral symmetrical stenoses of the internal carotid arteries at the level of C2–C3 (figure, B, C). There was no evidence of atherosclerosis. A filling defect suggestive of an embolus was shown in the ascending frontal branch of the right middle cerebral artery. Renal angiography showed no evidence of fibromuscular dysplasia. The angiographic appearances of the carotid lesions were consistent with healed spontaneous or traumatic carotid dissections.[1]



Axial computed tomogram reveals hypoattenuation in the right frontal lobe consistent with a previous cerebral infarct (A)

Digital subtraction angiography of the right (B) and left (C) common carotid artery reveals symmetric focal segments of severe stenosis in the internal carotid artery at the level of the C2–C3 intervertebral space (arrows)

When questioned about trauma to her neck, the patient reported that her husband had tried to strangle her 3 months before she first attended hospital. Transcranial doppler ultrasonography showed flow reversal in both ophthalmic arteries (mean −14 cm/s [right] and −18 cm/s [left]). She was anticoagulated with heparin and underwent staged percutaneous balloon angioplasty of both carotid stenoses. Post-angioplasty transcranial doppler confirmed improved middle cerebral artery flow velocities and a return to normal flow direction in the ophthalmic arteries (mean +22 cm/s [right] and +29 cm/s [left]). She was discharged on ticlopidine (250 mg twice daily) for 6 weeks and on daily aspirin (325 mg). At 18 months follow-up she had fully recovered strength in her left arm and had no further symptoms. She had divorced her husband.

Carotid artery dissection is the most common cause of stroke in people under 45 years of age. In most cases no cause is found (spontaneous dissection). Some strokes, however, result from trauma associated with severe head injury and neck hyperextension.[2] Fibromuscular dysplasia is a predisposing condition in women with carotid dissection. Patients with spontaneous dissections have a good long-term prognosis when treated with anticoagulation or aspirin as generally the mechanism of stroke is primarily embolic.[1] However, patients with bilateral carotid dissections (20% of all cases) resulting in severe flow restriction may present with ischaemia in watershed regions.[3] Domestic violence is a pervasive threat to women's health worldwide and may go undetected in the absence of overt external evidence of trauma such as a black eye or bone fracture.[4] In a young woman, transient ischaemic attacks should prompt clinical suspicion of domestic violence and thus lead to appropriate history taking.[5] Manual strangulation should be included in the differential diagnosis of stroke in a young woman without evidence of fibromuscular dysplasia or other trauma. Since this case, we have encountered two young women who were victims of domestic violence culminating in strangulation. Both presented with delayed onset of stroke (one embolic and one watershed) and had traumatic carotid lesions of similar morphology and distribution—symmetric high cervical internal carotid stenoses consistent with healed subacute dissection. The presence of bilaterally symmetric high cervical dissections should further raise the level of suspicion for strangulation as this was a constant finding in all our three cases.

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Department of Radiology, Division of Interventional Neurovascular Radiology, University of California, San Francisco, CA94143, USA
(A M Malek MD, R T Higashida MD, C C Phatouros FRACR, V V Halbach MD)

Correspondence to: Dr Adel M Malek
(e-mail: ammalek@bics.bwh.harvard.edu)

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