



CLINICAL IMAGES

## Stroke in the young

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A 42-year-old patient presented to the casualty unit complaining of unsteady gait and visual disturbance. There was a history of a motor vehicle accident 2 weeks before presentation. The patient was normotensive and afebrile and did not show any neurological deficit or obvious visual field fall-out.

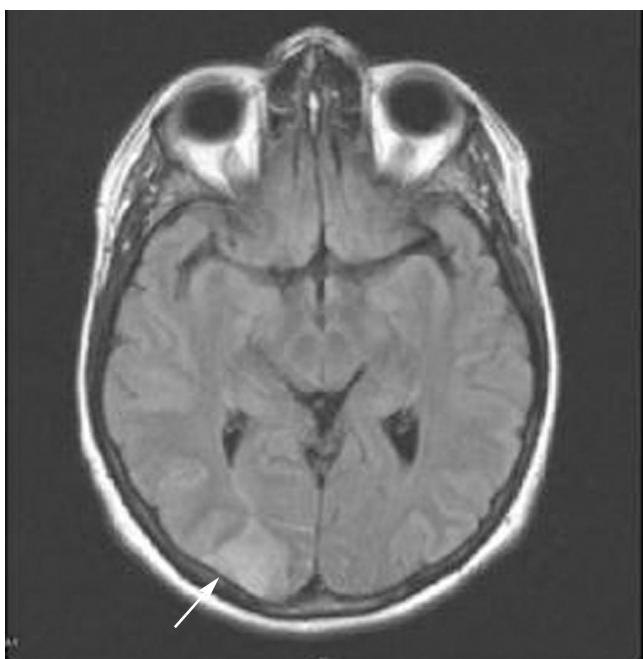


Fig. 1. MRI of the brain showing an axial FLAIR sequence. There is a nonspecific hyperintense lesion in the right cerebellar hemisphere.

A computed tomography (CT) scan of the brain showed a nonspecific, non-enhancing lesion in the right cerebellar hemisphere. Magnetic resonance imaging (MRI) of the brain showed a FLAIR (fluid attenuation inversion recovery) hyperintense lesion in the right cerebellar hemisphere (Fig. 1). There were also smaller hyperintense lesions in the right cerebral hemisphere. An intracranial and extracranial time-of-flight MR angiogram showed occlusion of the right internal carotid artery just distal to the bifurcation (Figs 2 – 6). The diagnosis of a post-traumatic dissection of the internal carotid artery with secondary cerebral and cerebellar infarction was made.

The patient was admitted and intravenous anticoagulation therapy was commenced. The patient made a complete recovery and was discharged with no neurological or vascular deficit.

Spontaneous dissection of the cervical internal carotid and vertebral arteries is a recognised cause of stroke, particularly in



Fig. 2. MRI of the brain showing a sagittal FLAIR sequence. There are multiple hyperintense foci in the cerebral hemisphere suggestive of embolic infarcts.

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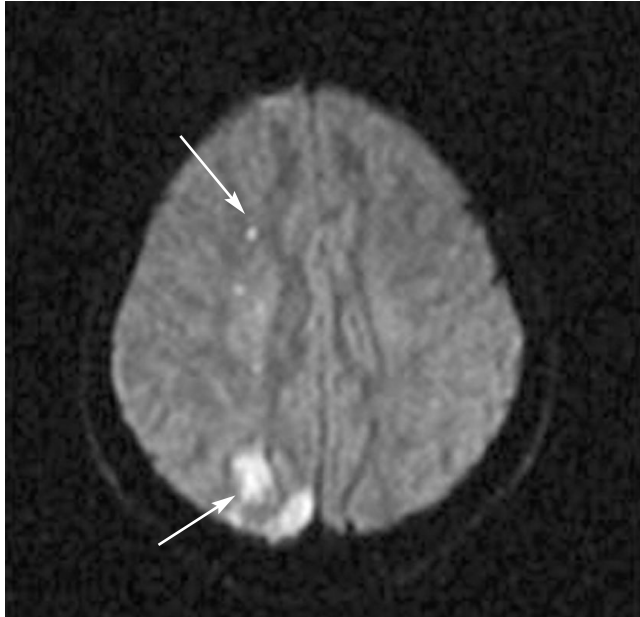


Fig. 3. MR of the brain — diffusion study. There are hyperintense foci in the right posterior cerebral hemisphere compatible with acute infarcts.

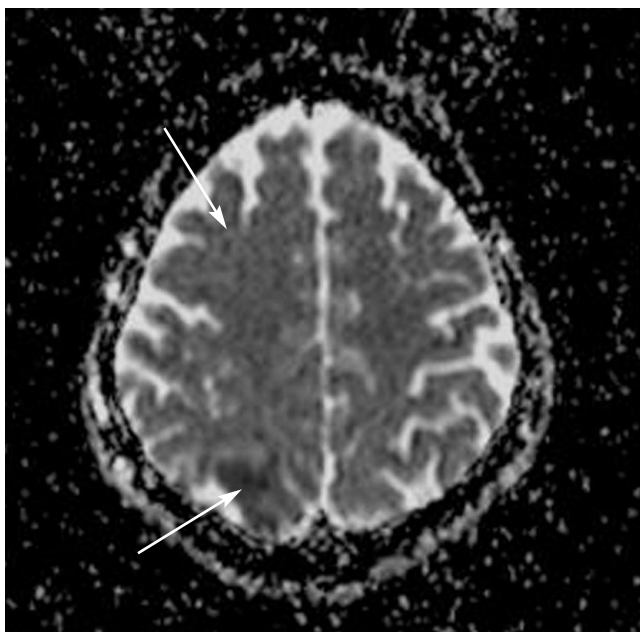


Fig. 4. MR of the brain. There is an ADC map sequence and corresponding hypointense foci compatible with acute infarcts.

young individuals. In addition to trauma, predisposing conditions for dissection include oral contraceptives, vigorous physical activity, hypertension and migraine. The angiographic appearance of internal carotid dissection is that of mid-cervical narrowing that spares the carotid bulb and terminates near the skull base. The internal flap or false lumen is rarely demonstrated. MR may show a perivascular haematoma with



Fig. 5. MR time-of-flight extracranial angiogram. Note the absence of flow in the right internal carotid artery distal to bifurcation.



Fig. 6. Contrasted turbo MR angiogram. Note the occlusion of the right internal carotid artery distal to bifurcation and cross flow via the circle of Willis to the right middle and anterior circulation.

narrowed vessel lumen. The dissections are usually subintimal, but may also be subadventitial.

Neurological deficit in the young should alert the clinician to the possibility of vascular occlusion of the neck vessels, especially with a history of recent trauma.

1. Osborne AG. *Diagnostic Neuroradiology*. St. Louis: Mosby, 1994: 380-382.