

EDITORIAL

Clinical role of cerebrovascular imaging

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Stroke is the third commonest cause of death¹ and a major contributor to long-term disability in Australia. Until about 20 years ago, our ability to investigate patients with stroke was limited. Since then there have been remarkable advances in the development of non-invasive cerebrovascular neuroimaging. The two most important techniques are, undoubtedly, magnetic resonance imaging and ultrasound.

Transcranial doppler ultrasound is cheaper and easier to apply than magnetic resonance angiography (MRA). It provides less information, but transcranial doppler can be useful as a screening tool for intracranial vessel stenoses.² However, the management of such stenoses is still somewhat contentious because of limited data on their natural history and the efficacy of interventions. Given this state of play, the use of transcranial doppler should be discussed with an expert in the field such as a neurologist.

MRA is much more expensive and cumbersome to use but provides much more information about a variety of intracranial pathologies. One of the most useful applications is the

identification of intracranial/extracranial carotid or vertebral artery dissection – a more common cause of stroke in people under the age of 45 years than previously realised. If a general practitioner suspects this condition, because a patient complains of a sudden onset of neck or eye pain with headache (sometimes without any other neurological accompaniments), they should discuss the need for an MRA with a neurologist urgently.

The other common application of MRA is quantifying the degree of extracranial carotid artery stenosis. Bearing in mind that MRA tends to overestimate the degree of carotid stenosis³, the degree of stenosis can be established with reasonable precision if the results of duplex ultrasound of the carotid arteries are also taken into consideration. In many centres the need for digital subtraction angiography is obviated⁴ and carotid endarterectomy is performed on the basis of the information supplied by MRA and duplex ultrasound.

The methods used to screen patients at risk of stroke are advancing rapidly. The use of these two non-invasive techniques is very much part of this dynamic phenomenon. Technological advances are likely to further reduce the need for invasive investigations such as angiography.

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Conflict of interest: none declared

In this issue...

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Just because a condition is common does not mean it needs drug treatment. Noel Cranswick points out that many medicines given to children have few proven benefits. Although there are hundreds of paediatric preparations which can be purchased without a prescription, they are not necessarily free of harmful effects.

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