EDITORIAL COMMENTARY

Detecting carotid stenoses

Carotid colour Doppler imaging is now available in many district general hospitals. However, there are often long waiting lists during which time patients are at their greatest risk of a major stroke. Mead *et al* (this volume, pp 16–19) have analysed the Doppler results in 726 patients who had had a carotid transient ischaemic attack or minor stroke in an attempt to define those clinical criteria which could be used to identify patients most likely to have a carotid stenosis of 70–99%.

Although ipsilateral bruit is the best predictor, in isolation it identified only about 50% of all carotid stenoses. The presence of any three of ipsilateral bruit, diabetes mellitus, previous transient ischaemic attack, and absence of lacunar syndrome improved the specificity to 97% but reduced the sensitivity to only 17%. The presence of one or more of these four factors increased the sensitivity to 99% but reduced the specificity to 22%. This neatly summarises the dilemma. There are no clinical criteria which are sufficiently useful either alone or in combination to allow the prompt identification of most stenoses without scanning the vast majority of patients with carotid transient ischaemic attack or minor stroke.

Furthermore in this series, the patients were carefully examined by skilled investigators for the presence or absence of carotid bruits. The value of the bruit is much less when taken from referral letters.¹

Two other factors need to be considered. Firstly, Hankey *et al* have identified clinical indices which carry the greatest risk of stroke after a transient ischaemic attack.² Hemispheric rather than ocular symptoms, male sex, coexisting

peripheral vascular disease, increasing age, and increasing number of transient ischaemic attacks in the previous 3 months all carry a worse prognosis. These patients need the most prompt assessment.

Secondly, the reliability of ultrasound assessment needs to be assured. As part of the multicentre asymptomatic carotid atherosclerosis study (ACAS), Howard *et al* analysed the sensitivity of the ultrasound units taking part in this trial.³ There was a wide variability in the reliability of the different ultrasound units involved. This is even more worrying when it is presumed that most of the units in ACAS will have a particular interest in cerebrovascular disease. This contrasts with the high sensitivity and specificity often quoted in the literature for carotid ultrasound.

As Mead *et al* state, there can only be one conclusion for this study. All patients with carotid transient ischaemic attacks and minor stroke who are candidates for carotid endarterectomy require rapid neurovascular assessment with immediate ultrasound; this needs to be of high quality and established accuracy.

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- 1 Davies KN, Humphrey PRD. Do carotid bruits predict disease of the internal carotid artery? *Postgrad Med J* 1994;70:433–5.
- 2 Hankey GJ, Slatery JM, Warlow CP. Transient ischaemic attacks: which patients are at high (and low) risk of serious vascular events. *J Neurol Neurosurg Psychiatry* 1992;55:640–52.
- 3 Howard G, Chambliss LE, Baker WH, *et al*. A multicenter validation study of doppler ultrasound versus angiography. *J Stroke Cerebrovasc Dis* 1991;1:166–73.