Incidence of symptomatic vertebrobasilar stenosis in the general population

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Sir, In their interesting paper on the incidence of symptomatic vertebrobasilar stenosis in the general population, Marquardt et al. (2009) report the results of magnetic resonance angiography (MRA) studies of 141 patients with prior minor vertebrobasilar events, having detected ≥50% stenosis in 26.2% of cases. They also describe the results of carotid ultrasound studies performed on 357 patients who had suffered carotid transient ischaemic attack or minor stroke, with 11.5% of cases presenting ≥50% stenosis of the vessel responsible. They conclude that the prevalence of ≥50% symptomatic vertebrobasilar stenosis is...
greater than that of \( \geq 50\% \) symptomatic carotid bifurcation stenosis.

We find the data on the MRA-based prevalence of posterior circulation stenosis interesting and insightful. However, we consider the authors’ conclusion that vertebrobasilar stenosis has a higher prevalence to be incorrect. It is a conceptual inaccuracy to compare data of two unrelated imaging techniques performed on different vascular sites. There is no evidence that carotid ultrasound studies and vertebral MRA studies are comparable in regards of their specificity and sensibility. What is more, it is well known that MRA, of all imaging techniques, has a tendency to misjudge the grade of stenosis. This is especially true for vertebral arteries, as demonstrated by studies that compare MRA to digital angiography (Randoux, 2003). It is likely that the accuracy varies according to the location of the stenosis. The imaging of vertebral ostium in particular is very challenging. There are unavoidable movement artefacts because of pulsation from larger vessels and breathing (Khan, 2007). Conversely, the origin of the vertebral is often kinked, requiring a certain degree of suspicion regarding the existence of a stenosis in order to detect one (Parkhutik, 2009). Finally, no physiological reasons explaining a different prevalence of arteriosclerosis in the two territories have been acknowledged (Caplan, 1996).

As a practical example of the possible inaccuracy of vertebral MRA assessments, we present the case of a 35-year-old woman with diabetes mellitus type 1 and a patent foramen ovale who presented with a vertebrobasilar ischaemic stroke. Her MRA showed a significant left proximal vertebral artery stenosis, which was confirmed by a second study 5 months later. A digital arteriography was scheduled in order to evaluate the possibility of a vertebral angioplasty, but the vessel was revealed to be completely normal (Fig. 1). Therefore, it is our opinion that although MRA remains the best non-invasive method for posterior circulation screening, cases of symptomatic stenosis should be confirmed through arteriography in order to ensure the diagnosis.

References


Parkhutik V, Lago A, Tembl JI, Aparici F, Vazquez V, Mainar E. Angioplasty and stenting of symptomatic and asymptomatic vertebral artery stenosis: to treat or not to treat. Eur J Neurol 2009; [Epub ahead of print].