Bubble Study in Patients With Massive Right-to-Left Shunt and Recurrent Stroke

To the Editor:

We thank Serena and colleagues for their important contribution with this prospective, multicenter, observational study analyzing the risk of recurrent stroke with the presence of right-to-left shunt (RLS). In this study, the presence and magnitude of RLS through a patent foramen ovale (PFO) were not associated with stroke recurrence in patients with a first cryptogenic stroke. The transcranial Doppler procedure used in this study was an agitated saline solution injected 3 times during normal breathing and 3 times during Valsalva maneuver. Patients were divided into 5 groups and analyzed on the basis of the maximum number of microbubble signals (MBS) in the middle cerebral artery in any single frame. The article did not address the differences in MBS based on the type of procedure if it was done at rest or with Valsalva maneuver. In addition, no separate analysis was done to define whether RLS at rest or with Valsalva maneuver is a predictor of stroke recurrence. MBS counts are typically higher with Valsalva maneuver than at rest, but MBS counts at rest may be more clinically important.

De Castro et al reported that cumulative risk of cerebrovascular event recurrence at 3 years was higher (12.5%) in high-risk PFO defined as a mobile septum and RLS at rest than in low-risk PFO defined as RLS only with Valsalva maneuver (event rate of 4.3%). It is also known that patients with a shunt during quiet breathing have an increased exposure time for paradoxical embolism and should in theory be at increased risk of stroke recurrence. The pathophysiological impotency of provocative-only (Valsalva) shunts was found to be low. It would be reasonable if the authors provide the stroke event rates based on the MBS groups defined by the maximum number of MBS at rest.

Some RLS appear to have been quite large. Were there cases of PFO closure with interventional devices or by surgery in the study? If so, could the authors provide the stroke event rates in the 5 MBS groups excluding such patients because such a procedure could alter the natural history.

Disclosures

None.

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