Letter by Schuchlenz Regarding Article, “Transesophageal Echocardiography in Cryptogenic Stroke and Patent Foramen Ovale Analysis of Putative High-Risk Features From the Risk of Paradoxical Embolism Database”

To the Editor:

I read with a great interest the Risk of Paradoxical Embolism (RoPE) Study of Wessler et al.,1 who demonstrated that previously proposed high-risk transesophageal echocardiography (TEE) findings of septal hypermobility, shunt at rest, and a physiologically large shunt do not seem to be found more frequently in patients whose clinical and neuroimaging features (ie, superficially located lesions) are highly suggestive of a patent foramen ovale (PFO)-attributable index stroke.

They concluded that, “Due to numerous technical limitations, TEE may be unreliable in risk stratifying PFO on the basis of physiological and anatomic features.”

In my opinion, these findings don’t come unexpectedly.

I agree with the statement that these results may relate to the limitations in how TEE was applied.

Besides the technical limitations that are discussed in the article, it was demonstrated earlier that for a given PFO, the amount of right-to-left shunting is a matter of expiratory pressure during the Valsalva maneuver.2,3 It is a matter of fact that patients (with or without sedation) do have problems performing this maneuver during a TEE study. We have shown that using contrast transthoracic echocardiography and contrast TEE complimentary increases the sensitivity of shunt detection through a PFO by the contrast-echo techniques.4

We should be careful about using the term physiological shunt, applying the technique that is currently used and analyzed in the RoPE database.

Previously, we and others have shown that in any PFO, right-to-left shunting varies considerably and that the magnitude of contrast shunting does not necessarily correlate with the true anatomic size of the PFO if contrast is administered through a cubital vein.5 Because of the orientation of the inferior vena cava blood (which potentially contains an embolus arising from pelvic or deep vein thrombi) to the fossa ovalis, even a large PFO may be missed if contrast agent is administered through a cubital vein because these bubbles may be redirected from the fossa ovalis by this blood flow.6 These flow patterns are aggravated by an Eustachian valve, which directs the blood from the inferior vena cava preferentially to the area of the fossa ovalis and can be studied by contrast administration into a foot vein.6

Using color Doppler TEE with low pulse repetition further improves the sensitivity of TEE in detecting shunting through a PFO. This technique demonstrates shunting across a PFO better than the current contrast bubble technique and is a more physiological approach.4

TEE may be reliable in risk stratifying PFO; however, first we have to understand right atrial flow patterns and PFO characteristics and then apply and adjust the appropriate TEE techniques to these physiological conditions.

The TEE techniques that better and more consistently characterize PFO features are there; we just have to use them appropriately.

Disclosures

None.

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References

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