Obstructive Sleep Apnea and Patent Foramen Ovale

To the Editor:

We read with great interest the Clinician Update by Wolk et al.1 particularly the paragraph regarding obstructive sleep apnea (OSA). Among the linked-OSA diseases mentioned (hypertension, ischemic heart disease, heart failure, stroke, pulmonary hypertension, cardiac arrhythmias), right-to-left shunting through a patent foramen ovale (PFO) was omitted.

In patients with OSA, PFO prevalence is about ~69% when assessed by means of contrast transesophageal echocardiography.2 This high prevalence might further increase if evaluation of right-to-left shunting were made by contrast transcranial Doppler.

The number of microembolic signals detected during periods of nocturnal apnea is positively correlated with the number detected during provocative Valsalva maneuver in wakefulness,3 contributing to significant systemic hypoxemia and progression of disease in approximately one third of these patients.4 In fact, repeated transient episodes of systemic arterial hypoxemia are well known to induce further pulmonary vasoconstriction and more severe pulmonary hypertension.

Even though OSA and PFO are more common than were previously thought, their association often remains undiagnosed in primary care practice, and both cardiologists and pulmonologists need to be more familiar with this clinical comorbidity. The way to find these patients is to be aware of the increased prevalence of clinically significant OSA in patients with asymptomatic PFO. Nocturnal polysomnography is the gold standard for diagnosing OSA, whereas contrast transcranial Doppler is a less invasive method for detecting PFO. By combining both these techniques while the patient is asleep in a laboratory, the magnitude of the right-to-left shunting5 may be semiquantitatively measured during apneic events (documented on chest wall movement), by detecting the number of high-intensity transient signals through sonication of the middle cerebral arteries.

Besides behavioral and lifestyle modification, the treatment of choice in OSA is continuous positive airway pressure, but patient noncompliance is a problem.

The availability of new user-friendly devices for percutaneous PFO closure might result in substantial relief of repeated transient episodes of systemic arterial hypoxemia in patients with both OSA and large right-to-left shunting, although the evidence of the benefit still remains to be proved.

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