

PULMONARY ARTERIOVENOUS MALFORMATIONS WITH CONCOMITANT PFO: A RARE CAUSE OF ISCHEMIC STROKE.

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Case Vignette

Introduction: Pulmonary arteriovenous malformations (PAVMs) are congenital or acquired, high flow, low resistance communications between the pulmonary arteries and veins. They are mostly asymptomatic but can lead to paradoxical embolism.

Case Presentation: A 47-year-old female with no significant past medical history presented to the hospital with sudden onset right arm numbness, drooling and slurred speech, lasting a few minutes. CT head was unremarkable. MRI brain showed acute infarct in the left frontoparietal region. MRA of head and neck were unremarkable. A transthoracic echocardiogram showed normal EF and enlarged right ventricle. A transesophageal echocardiogram (TEE) with bubble study was positive for both immediate crossover of bubbles in left atrium (positive for PFO) and delayed bubbles from right lower pulmonary vein suggestive of PAVM which was confirmed by a CTA chest (Figure 1, medium size AVM right lower lobe). After discussion with the patient a percutaneous PFO closure was attempted, with plan for coil embolization of pulmonary AVM. Intraoperative TEE guided bubble study and color Doppler was negative for shunting across interatrial septum. Regardless, under TEE guidance, multiple attempts to cross the interatrial septum were unsuccessful. Pulmonary angiography showed intermediate size pulmonary AVM in the right lower lobe measuring 4.5 mm by quantitative vascular analysis. A 5 mm microvascular plug was deployed. Repeat angiography showed total obliteration of AVM. Repeat bubble study with and without valsalva showed total absence of right to left shunting.



Figure 1

Discussion: PAVMs may be involved in 30% of right-to-left shunting. When the feeding artery diameter is > 3mm, patients are at increased risk for cerebrovascular complications. Our patient had two potential etiologies for stroke. Though initial plan was to close PFO, given there was no shunting in multiple bubble studies, PAVM was coiled with a micro vascular plug with good clinical outcome