Cryptogenic stroke with right-to-left shunt and no patent foramen ovale

Accident vasculaire cérébral cryptogénique avec shunt droit-gauche en l’absence de foramen ovale perméable

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A 59-year-old healthy woman had a cryptogenic stroke that, based on visualization of a significant shunt on transoesophageal echocardiography with contrast bubbles appearing in the left atrium at three beats after filling of the right atrium, was attributed to PFO. However, percutaneous closure of the PFO under local anaesthesia and fluoroscopic guidance failed because no intra-atrial communication was found. Subsequently, cardiac magnetic resonance imaging with angiographic sequences (Fig. 1) showed a single AVM of 4.5 mm in diameter at the level of the right inferior pulmonary artery. By the right femoral vein, using an 8-French multipurpose guiding catheter, we successfully deployed a 6/6 mm Vascular Plug II (AGA, St Jude Medical, Minneapolis, MN, USA) in the AVM. After 15 minutes, no more flow could be seen through the device (Fig. 2). The patient was discharged on aspirin for 6 months with the recommendation for endocarditis prophylaxis for 6 months. At 6-month follow-up, there was no more shunt on transthoracic echocardiography.

Right-to-left shunts may precipitate paradoxical cerebrovascular accidents. PFO is by far the most common pathway for paradoxical embolization, accounting for 95% of right-to-left shunts. The remainder are mainly pulmonary AVM (4%) or atrial septal defects (1%). Pulmonary AVM should be actively excluded in patients who

Abbreviations: AVM, Arteriovenous malformation; PFO, Patent foramen ovale.
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have had a cryptogenic stroke without PFO, when right-to-left shunt appears late by contrast bubble assessment or when there is persistent shunt despite successful PFO closure on transoesophageal echocardiography.

**Disclosure of interest**

The authors declare that they have no conflicts of interest concerning this article.