

When a patent foramen ovale device is no more in place: silent patent foramen ovale occluder device migration to the aortic arch

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Case description

A 59-year-old asymptomatic man, with a history of previous transient ischaemic attack and patent foramen ovale (PFO) closure with an Amplatzer 24-mm atrial septal defect occluder device (Abbott Vascular; Abbott Park, IL, USA), performed in another centre 15 months before, was admitted to our hospital for a routine echocardiographic follow-up. Transthoracic echocardiogram showed the absence of the occluder device in the interatrial septum and a huge septal

aneurysm with moderate right-to-left shunt detected after saline injection during Valsalva manoeuvre (Figure 1, Supplementary material online, Videos S1 and S2). Subsequently, the patient underwent computed tomography angiography of the thoracoabdominal aorta, which confirmed the migration of the device in the aortic arch (Figure 2). Considering the high risk of complications due to percutaneous management, the patient was scheduled for a surgical retrieval of the device.

Patent foramen ovale closure device embolization is rare and typically occurs early after deployment. Common sites of migration are

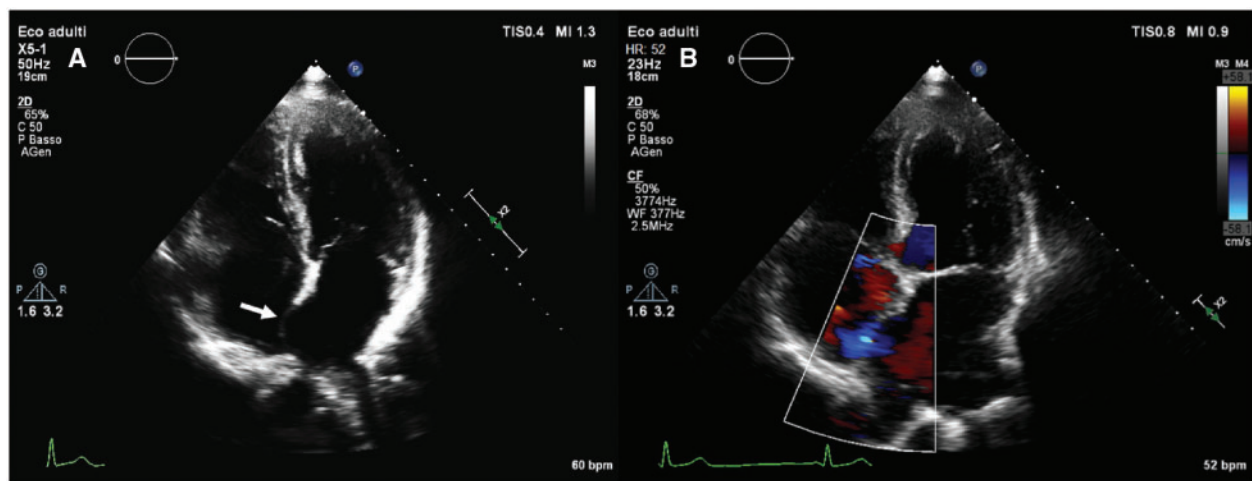


Figure 1 Transthoracic echocardiogram showing the absence of the Amplatzer occluder device and the atrial septal aneurysm bulging to the right atrium (A, four-chamber view, arrow). Colour-Doppler imaging showing a left-to-right interatrial jet with a patent foramen ovale (B).

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Figure 2 Computed tomography angiography showing the migrated Amplatzer occluder device at the origin of the left common carotid artery in a bovine aortic arch (A, MIP oblique reconstruction, arrow). It was embedded into the aortic wall (B, dotted arrow), with a filling defect at the waist level (B, asterisk). AoArch, aortic arch; AsAo, ascending thoracic aorta; BCA, brachiocephalic artery; DesAo, descending thoracic aorta; LCCA, left common carotid artery; LSCA, left subclavian artery.

cardiac chambers, pulmonary artery, aortic arch, descending and abdominal aorta. Reported anatomical predisposing factors are an atrial septal aneurysm, a thick septum secundum (>10 mm) or a long tunnel.¹ In our case, we believe that an undersized device together with the large atrial septal aneurysm was the possible mechanism for the failure of the PFO repair. Larger devices are usually indicated in cases of atrial septal aneurysm in order to cover the entire redundant septum. We can suppose the embolization occurred early, but we don't have any previous echocardiographic images available for comparison. A successfully placed PFO closure device straddles the thick muscular septum secundum with its two disks and is subsequently covered up and stabilized by endothelial tissue, so the long-term dislodgement is uncommon.² Given the inability of these devices to retract and compress, as they would when initially implanted,³ to allow the passage into a vascular sheath, often an open-heart surgical approach is recommended.

Supplementary material

Supplementary material is available at *European Heart Journal - Case Reports* online.

Consent: The author/s confirm that written consent for submission and publication of this case report including image(s) and associated text has been obtained from the patient in line with COPE guidance.

Conflict of interest: none declared.

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