A 51-year-old patient presented with a second episode of transient loss of vision. A persistently patent foramen ovale (PFO) was diagnosed with a transesophageal echocardiogram, and percutaneous closure with an implantable device (PfoStar, Cardia, Inc) was done. The PfoStar is a catheter implantable device consisting of 2 polyvinyl sheets spread by 2 crossed nitinol wires. The axis of the left and the right nitinol strut are shifted by 45 degrees (Figure 1). After successful implantation of a 30/3 mm device, cine MRI was performed. Quantitative flow measurements, as well as right and left ventricular voltmetry, revealed no evidence of a postprocedural shunt. The 4-chamber view (Figure 2) and a short-axis section through the atria (Figure 3) show the occluding device in situ. Only a minimal gap between the atrial septum and the device was observed. Imaging was performed on a 1.5T whole-body scanner (Intera CV, Philips Medical Systems) using single-breathhold, steady-state free precession sequences with cardiac gating. This technique allows a high spatial and temporal resolution (1.6 mm² in-plane resolution; 23 phases per heart cycle).

Percutaneous closure of a PFO has recently become an established method to reduce the risk of thromboembolic events. In clinical routine, follow-up is performed by transesophageal echocardiography. MRI seems to be a useful, noninvasive, diagnostic tool to evaluate patients after interventional closure of a PFO.

Reference
Figure 2. Four-chamber MRI showing the left atrial sheet of the PFO occluder (arrow).

Figure 3. Short-axis MRI through the atrial septum perpendicular to Figure 2 shows both leaflets of the PFO occluder (arrows). LA indicates left atrium; RA, right atrium; PA, pulmonary artery; and Ao, ascending aorta.
Magnetic Resonance Imaging After Percutaneous Closure of a Patent Foramen Ovale
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