- 4 **Joner M**, Finn AV, Farb A, et al. Pathology of drug-eluting stents in humans: delayed healing and late thrombotic risk. *J Am Coll Cardiol* 2006;**48**:193–202.
- 5 **Finn AV**, Joner M, Nakazawa G, et al. Pathological correlates of late drug-eluting stent thrombosis: strut coverage as a marker of endothelialization. *Circulation* 2007;**115**:2435–41.
- 6 **Takano M**, Ohba T, Inami S, et al. Angioscopic differences in neointimal coverage and in persistence of thrombus between sirolimus-eluting stents and bare metal stents after a 6-month implantation. *Eur Heart J* 2006;**27**:2189–95.
- 7 **Okamatsu K**, Takano M, Sakai S, et al. Elevated troponin T levels and lesion characteristics in non-ST-elevation acute coronary syndromes. *Circulation* 2004;**109**:465–70.
- 8 **MacNeill BD**, Lowe HC, Takano M, et al. Intravascular modalities for detection of vulnerable plaque: current status. *Arterioscler Thromb Vasc Biol* 2003;**23**:1333–1342.
- 9 **Wenaweser P**, Dorffler-Melly J, Imboden K, et al. Stent thrombosis is associated with an impaired response to antiplatelet therapy. *J Am Coll Cardiol* 2005;**45**:1748–1552.

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Incidental patent foramen ovale detected by 64-detector row CT before radiofrequency ablation therapy

This patient attended for pre-radio frequency ablation planning for drug refractory atrial fibrillation. The only abnormality demonstrated by transoesophageal echocardiography was a moderately dilated right atrium (RA). In our institution, 64-detector row computed tomography (CT) is now used as part of the pre-radio frequency ablation procedure. CT confirmed the transoesophageal echocardiography findings—normal pulmonary venous anatomy and a previously undiagnosed small patent foramen ovale (PFO).

Panel A in axial section demonstrates a subtle flush of contrast in the RA at the interatrial septum; coronal and oblique reformations confirm a small jet of contrast from the left atrium (LA) to the RA (panels B and C, respectively) through a small PFO flap valve (black arrowhead); panel D helps to illustrate the PFO (white arrowhead) using the “Cardiac Transparency” tool (GE Healthcare Technologies, Waukesha, USA). This is of clinical significance in this patient since a septal puncture during the procedure can be avoided.

During breath-hold CT with a contrast bolus tracking technique, saline bolus chaser and appropriate scan timing, a marked differentiation in contrast enhancement between the right and left chambers may be produced, enabling even small left to right shunts to be appreciated. With high spatial and temporal resolution, fine interatrial septal detail may also be delineated. It must be

remembered that “swirls” of contrast may be seen in the RA of a structurally normal heart during CT coronary angiography owing to the mixing effect of non-contrast-enhanced blood from the inferior vena cava, the saline bolus and

residual contrast in the right heart; thus careful use of isotropic multiplanar reformation is required.

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