Thrombotic cardiac tamponade after transseptal puncture

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An 84-year-old woman was admitted for catheter ablation of Euroclinic, Athens, Greece, and
tion (AF).

and different pulmonary vein (PV) isolation (ie, linear ablation around the PV antra with subsequent verification of PV isolation) and repeat ablation of a macroreentrant atrial tachycardia around the left superior PV. She had remained in sinus rhythm for 2 months postablation, and paroxysmal AF was detected after cessation of amiodarone therapy. On admission, clinical examination was unremarkable. She was in sinus rhythm, her blood pressure was 130/90 mm Hg, and echocardiography revealed normal left ventricular ejection fraction (65%), left atrial diameter of 32 mm, and grade I mitral and tricuspid regurgitation. She had no signs of myocardial hypertrophy or pericardial thickening. Her medications consisted of irbesartan/hydrochlorothiazide, bisoprolol, and low-dose aspirin. Her warfarin had been replaced with subcutaneous enoxaparin 3 days ago, and her international normalized ratio was 1.1.

She was taken to the electrophysiology laboratory for circumferential PV isolation of all PVs and ganglionated plexi ablation, according to our standard protocol. Transseptal puncture was performed at a high atrial septum site, and difficulty was encountered in crossing the septum, which had become fibrosed after the previous 2 procedures. Immediately afterward and before heparin was given, the patient felt unwell. She became relatively hypotensive (80/50 mm Hg), and clinical signs of tamponade were obvious. Echocardiography demonstrated an echolucent space around the PV antra with subsequent veri-
Pericardial thrombus is an extremely rare possibility, but it may occur and, if accompanied by tamponade physiology, would require surgical evacuation.

Female gender and older age confer increased complication risk.

Repeat transseptal punctures are associated with a higher risk for cardiac tamponade because of scarring of the previously perforated septum.

Furthermore, on occasion a higher puncture position or a larger-curve Brockenbrough needle may be needed. In the presence of a dilated left atrium, a technique used in mitral valvuloplasty may be of help. The issue of uninterrupted anticoagulation with either a vitamin K antagonist or Xa inhibitor, which appears to be safer than bridging to heparin, or no anticoagulation 2–3 days before ablation also may be raised. However, the limited experience of just 1 case does not allow any definitive conclusions in this respect.

References