Chronic left atrial pseudoaneurysm caused by coronary artery perforation during percutaneous coronary intervention

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Abstract

A chronically persistent left atrial pseudoaneurysm is a rare complication of valvular surgery, trauma, myocardial infarction and endocarditis but this is the first known description of a chronic pseudoaneurysm as a complication of coronary rupture during percutaneous coronary intervention (PCI). We report computed tomography images depicting this in the case of elective PCI in an 81-year-old gentleman for limiting angina.

CLINICAL IMAGE

An 81-year-old gentleman with limiting angina presented to our centre for elective percutaneous coronary intervention (PCI) to a calcified lesion in the native circumflex artery. He had a history of coronary artery bypass grafting 17 years earlier, with diagnostic angiography demonstrating occlusion of the vein graft to the circumflex. The lesion was predilated with a Scoreflex balloon which induced extravasation of contrast. A 2.25 × 28 mm Promus Premier stent was deployed leading to vessel perforation at the distal end of the stent. This was controlled with immediate and prolonged balloon occlusion. He remained haemodynamically stable and the leak settled after 5 minutes; with thrombolysis in myocardial infarction IIb flow in the vessel. A bedside echocardiogram showed no evidence of pericardial effusion.

Twelve hours later the patient developed acute pulmonary oedema and an echocardiogram demonstrated a large loculated pericardial effusion compressing the left atrium. Biventricular function was preserved with no evidence of tamponade. A CT coronary angiogram confirmed a large intra-mural collection (56 mm × 76 mm) compressing the left atrium (Fig. 1A), and almost obstructing the mitral valve. Following review by multidisciplinary team, it was concluded this should be managed conservatively. If pericardial drainage was required, the preferred method would have been surgical drainage as direct visualization is superior in the case of loculated pericardial effusions. His condition improved over 7 days and he was discharged home following a repeat CT demonstrating a stable collection. On review at 16 months, the patient was angina-free with NYHA class I symptoms. He remained on only aspirin and a single anti-anginal agent. An echocardiogram confirmed preserved biventricular systolic function.
A CT at 16 months showed slight reduction in the intra-mural collection size (Fig. 1B). The contrast density of the collection is suggestive of communication with a left-sided heart chamber, with the images suggesting this communicates with the left ventricle, close to the mitral valve annulus. The appearance is, therefore, consistent with a chronically persistent left atrial pseudoaneurysm secondary to disruption of the mitral annulus. This condition is a recognized complication of valvular surgery, cardiac trauma, myocardial infarction and endocarditis [1] but has not been previously reported as a complication of PCI. The only pre-disposing factor to coronary perforation in this patient was the highly calcified nature of the vessel.

CONFLICT OF INTEREST
None of the above authors have any conflicts of interest to declare.

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ETHICAL APPROVAL
Not applicable for retrospective case report. Consent was obtained.

CONSENT
Written consent was obtained from the patient.

REFERENCE