Tako-tsubo cardiomyopathy: findings on cardiac CT and coronary catheterisation

An elderly subject (age 70s) without previous cardiac history but whose spouse had recently died, presented with acute chest pain. Cardiac CT was performed, which revealed normal coronary arteries (panel A). However, functional analysis showed left ventricular (LV) apical hypokinesis with systolic ballooning (panel B, online video 1) prompting a diagnosis of tako-tsubo cardiomyopathy. Echocardiography 12 h later demonstrated interim formation of a LV apical thrombus. Subsequent left heart catheterisation again showed normal coronary arteries and persistent LV apical hypokinesis with systolic ballooning (panel C, online video 2). On day 3, the patient was clinically stable and discharged under anti-coagulation. Follow-up echocardiography 1 week later showed resolution of the thrombus and normalisation of cardiac function. This case illustrates the classic presentation, imaging findings and clinical course of tako-tsubo cardiomyopathy with new-onset heart failure in the absence of coronary artery disease in the context of emotional stress ("broken heart syndrome") followed by rapid recovery.[1 2]

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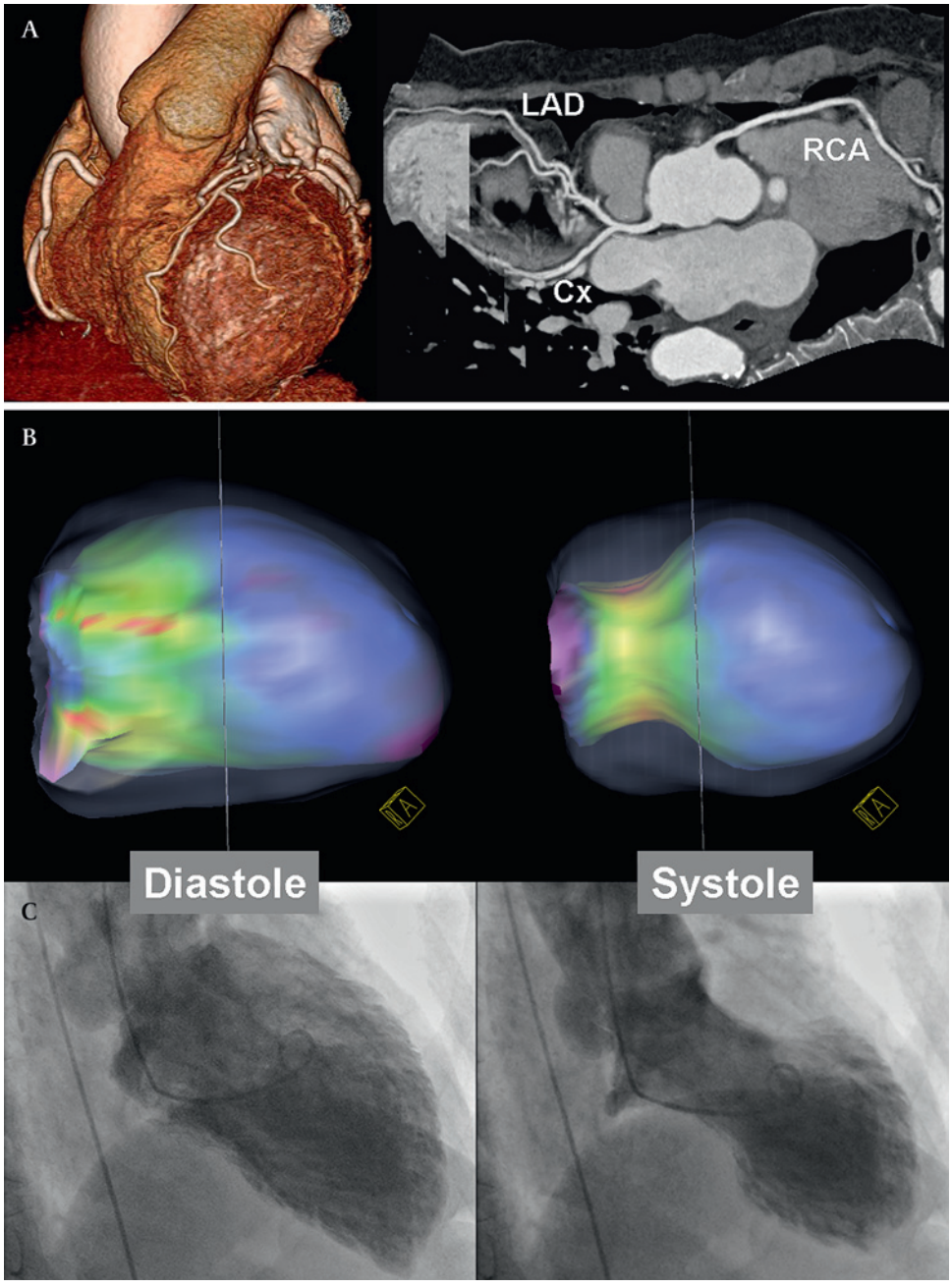

► Supplementary Online Videos 1 and 2 are published online only at http://heart.bmj.com/content/vol96/issue5.

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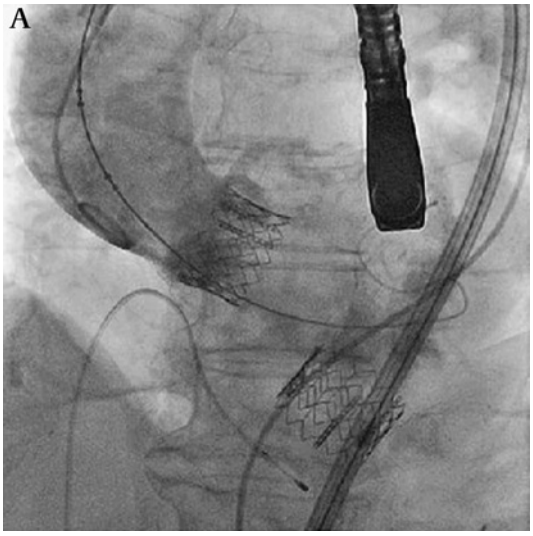
Images in cardiology

Interventional rescue strategy after malpositioning of a percutaneous aortic valve

The presented image stems from an interventional heart valve procedure in a case of severe aortic stenosis. A 76-year-old patient was admitted to our centre with recurring syncope and exertional dyspnoea. Echocardiography revealed severe calcified aortic stenosis with a valve area of 0.7 cm^2 and a transvalvular gradient of 50/30 mm Hg. In a preprocedural CT scan, pronounced intrathoracic adhesions as a sequelae of radiotherapy for left-sided breast cancer as well as severe calcifications of the ascending aorta became apparent. Thus, decision was made for transfemoral aortic valve replacement.

After balloon aortic valvuloplasty, a 26-mm Edwards Sapien heart valve was advanced to the aortic annulus. During a phase of rapid ventricular pacing, valve implantation was attempted but failed because of incomplete retraction of the pusher catheter, resulting in a slanted position of the partially deployed prosthesis with massive paravalvular leakage and impending valve embolisation. As conversion to surgery was deemed highly inadvisable because of the patient's porcelain aorta, a balloon catheter was used to retract the malpositioned valve into the descending thoracic aorta where it was successfully deployed. Subsequently, a second valve was introduced, advanced past the first prosthesis and implanted in the aortic annulus. Angiography and echocardiography revealed perfect seating and function of the second valve (Panel A).

The described strategy enabled the implantation of a functioning valve prosthesis without surgical conversion. This case demonstrates the need for further improvements in interventional valve technology, including the ability to reposition valves after deployment as has been suggested by others.[1]



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