

22. Remppis A, Scheffold T, Greten J, Haass M, Greten T, Kubler W, Katus HA. Intracellular compartmentation of troponin T: release kinetics after global ischemia and calcium paradox in the isolated perfused rat heart. *J Mol Cell Cardiol* 1995; **27**:793–803.
23. Vikenes K, Westby J, Matre K, Kuiper KK, Farstad M, Nordrehaug JE. Release of cardiac troponin I after temporally graded acute coronary ischaemia with electrocardiographic ST depression. *Int J Cardiol* 2002; **85**:243–251.
24. Suleiman MS, Lucchetti V, Caputo M, Angelini GD. Short periods of regional ischaemia and reperfusion provoke release of troponin I from the human hearts. *Clin Chim Acta Int J Clin Chem* 1999; **284**:25–30.
25. Blumgart HL, Gilligan DR, Schlesinger MJ. Experimental studies of the effect of temporary occlusion of coronary arteries. *Am Heart J* 1941; **22**:374–389.
26. Wallace TW, Abdullah SM, Drazner MH, Das SR, Khera A, McGuire DK, Wians F, Sabatine MS, Morrow DA, de Lemos JA. Prevalence and determinants of troponin T elevation in the general population. *Circulation* 2006; **113**:1958–1965.
27. Latini R, Masson S, Anand IS, Missov E, Carlson M, Vago T, Angelici L, Barlera S, Parrinello G, Maggioni AP, Tognoni G, Cohn JN. Prognostic value of very low plasma concentrations of troponin T in patients with stable chronic heart failure. *Circulation* 2007; **116**:1242–1249.
28. Apple FS, Wu AH, Jaffe AS. European Society of Cardiology and American College of Cardiology guidelines for redefinition of myocardial infarction: how to use existing assays clinically and for clinical trials. *Am Heart J* 2002; **144**:981–986.

CARDIOVASCULAR FLASHLIGHTS

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Percutaneous closure of a paravalvular leak 4 years after mitral valve replacement

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An 89-year-old man presented with global cardiac insufficiency 4 years after mitral valve replacement by a 29 mm St Jude mechanical valve for severe mitral insufficiency. In the immediate post-operative period, a mild paravalvular leak had been noted and increased progressively from 0.13 to 0.38 cm² actually (Panel A).

Because of the very active status of the patient, a percutaneous closure of the paravalvular leak was considered. A right femoral vein approach was chosen under fluoroscopic and three-dimensional real-time transeophageal echocardiographic (RT3DTEE) guidance in a patient intubated and sedated. RT3DTEE provided unequalized imaging of the prosthetic valve in real-time with perfect delineation of the localization and size of the paravalvular leak (Panel B).

A guide wire was advanced through the orifice after transeptal puncture and an 8 × 10 mm Amplatzer PDA occluder was positioned in the paravalvular channel through a dedicated delivery sheet (Panel C). No residual leak was detectable by transeophageal and transthoracic echocardiography (Panel D). Mean transprosthetic gradient went down from 7 to 3.5 mmHg and pressure gradient of the tricuspid regurgitant jet from 40 to 22 mmHg.

After a short in-hospital rehabilitation, the patient was able to resume his physical activities without symptoms.

Panel A. Parasternal long-axis view of the left heart, systolic frame, showing the paravalvular leak, just posterior to the aorta.

Panel B. RT3DTEE visualization of the paravalvular regurgitant orifice (black arrow), on the medial portion of the prosthetic valve annulus, just posterior to the aorta.

Panel C. RT3DTEE appearance of the left atrial side of the Amplatzer PDA occluder (black arrow) after positioning through the paravalvular orifice.

Panel D. Parasternal long-axis view, systolic frame identical to Panel A, showing the Amplatzer occluder in place (white arrow) with the absence of residual leak.

