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43. Powell RJ, Simons M, Mendelsohn FO, Daniel G, Henry TD, Koga M, Morishita R, Annex BH. Results of a double-blind, placebo-controlled study to assess the safety of intramuscular injection of hepatocyte growth factor plasmid to improve limb perfusion in patients with critical limb ischemia. *Circulation* 2008; **118**:58–65.
44. Ogilvy S, Metcalf D, Gibson L, Bath ML, Harris AW, Adams JM. Promoter elements of vav drive transgene expression *in vivo* throughout the hematopoietic compartment. *Blood* 1999; **94**:1855–1863.
45. Madonna R, Rokosh G, De Caterina R, Bolli R. Hepatocyte growth factor/Met gene transfer in cardiac stem cells-potential for cardiac repair. *Basic Res Cardiol* 2010; **105**:443–452.
46. Linke A, Muller P, Nurzynska D, Casarsa C, Torella D, Nascimbene A, Castaldo C, Cascapera S, Bohm M, Quaini F, Urbanek K, Leri A, Hintze TH, Kajstura J, Anversa P. Stem cells in the dog heart are self-renewing, clonogenic, and multipotent and regenerate infarcted myocardium, improving cardiac function. *Proc Natl Acad Sci USA* 2005; **102**:8966–8971.

CARDIOVASCULAR FLASHLIGHT

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Percutaneous double valve intervention

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An 81-year-old woman was referred for NSTEMI complicated by cardiogenic shock. Urgent invasive assessment revealed a subtotal left anterior descending artery (LAD) stenosis, severe aortic stenosis (mean gradient 60 mmHg, aortic valve area 0.5 cm²), decreased left ventricular (LV) function [left ventricular ejection fraction (LVEF) 49%], grade 3+ mitral regurgitation (MR), and severe pulmonary hypertension. In view of her critical situation, acute LAD-percutaneous coronary intervention and aortic valvuloplasty were performed with subsequent marked clinical improvement. Yet, she remained in NYHA class III. Given her critical condition, the likelihood of double valve operation and high predicted 30-day mortality (log EuroSCORE 74%, STS 30%), there was interdisciplinary consensus for catheter-based strategy, primarily treating the aortic stenosis possibly improving functional MR. Three weeks after the acute event, she underwent trans-femoral aortic valve implantation. However, despite an excellent technical result, LVEF and MR did not improve and she required 3 weeks ICU with intravenous catecholamines and diuretics administration. As severe MR and severe pulmonary hypertension persisted, we opted for percutaneous mitral valve repair (*Figure*). One MitraClip® was successfully implanted between segment A2 and P2 with an MR reduction to grade 1+ and a drop in mean left atrial pressure from 31 to 19 mmHg.

One week after percutaneous MR repair, she was discharged in stable conditions. Eight months after, the patient has remained in NYHA class I, whereas LV function remained stable (LVEF 55%).

At the best of our knowledge, this is the first report of a double cardiac valve intervention, performed solely by trans-femoral access. The presented case confirms improvement in trans-catheter valve interventions enabling the treatment of high-risk patients not suitable for open-heart surgery.

Figure. Echocardiography during MitraClip implantation. *Panel A*: open clip in mitral position (red arrow). Edwards 23 mm prosthesis in aortic position (yellow arrows). *Panel B*: closed MitraClip after implantation in definitive mitral position. The middle panels show the Color duplex examination of the mitral valve before (*Panel C*) and after (*Panel D*) successful implantation of one MitraClip. The bottom panels show the haemodynamic curves in the left atrium before (*Panel E*) and after MitraClip implantation (*Panel F*).

Supplementary material

Supplementary material is available at *European Heart Journal* online.

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