CARDIOVASCULAR FLASHLIGHT

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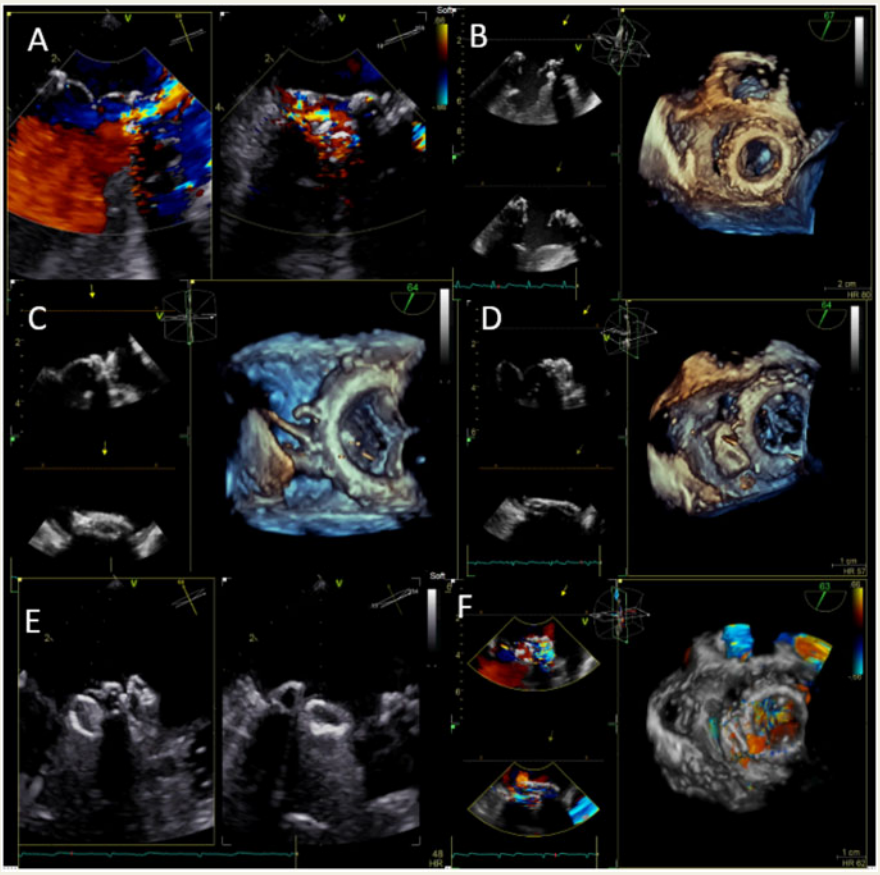
Three-dimensional echo guidance of percutaneous mitral paravalvular leak closure

Alessandra Quercioli[1]*, Anna Clizia Capettini[1], Riccardo Gherli [2], and Gioel Gabrio Secco[1]

[1]Cardiology Unit, Department of Internal Medicine, SS Antonio e Biagio e Cesare Arrigo Hospital, Via Venezia 16, 15121 Alessandria, AL, Italy; and [2]Cardiac Surgery Unit, Department of Cardiovascular and Thoracic Surgery, SS Antonio e Biagio e Cesare Arrigo Hospital, Via Venezia 16, 15121 Alessandria, AL, Italy

*Corresponding author. Tel: 0039 3496902189, Email: alessandra.quercioli@libero.it



We present an 82-year-old woman admitted for severe haemolytic anaemia due to periprosthetic paravalvular mitral leak. The patient was successfully treated using an Occlutech PLD occluder under three-dimensional (3D) transoesophageal (TOE) echocardiography by a trans-apical approach.

A hypertensive 82-year-old woman with a recent previous history of both aortic and mitral replacement with bioprosthesis was admitted to our hospital for severe haemolysis requiring blood transfusion. Admission transthoracic echocardiography showed a limited dehiscence between the native valve annulus and the sewing ring of the prosthetic valve causing a significant paravalvular leak (PVL) (*Panel A*, see Supplementary material online, *Videos S1*). Due to the relatively poor results of medical management and the high surgical morbidity of PVL management, the patient underwent to a percutaneous attempt of PVL closure. She was proposed for a percutaneous closure of the leak by trans-apical access considering a redo surgical procedure with a too high risk and a too low success chance.

The procedure was performed under general anaesthesia. Under 3D TOE and angiographic guidance, the leak was crossed using a hydrophilic wire (*Panel B*, see Supplementary material online, *Video S2*). The hydrophilic wire was exchanged with a stiff guidewire used to insert a 55 cm long sheath (Flexor, Cook Medical, Bloomington, NJ, USA) through the apical sheath followed by the Occlutech PLD occluder (Occlutech GmbH, Germany) (*Panels C* and *D*, see Supplementary material online, *Videos S3 and S4*). After the position of the device, valve function and residual leaks were assessed prior and after the release of the Occlutech PLD occluder (*Panels E* and *F*, see Supplementary material online, *Videos S5 and S6*). Finally, the sheath was removed and the apical strings tied for the correct haemostasis of the apical site. Patient was discharged at Day 4 in stable haemodynamic conditions.

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