Percutaneous closure of paraprosthetic aortic leak: an option to avoid re-do surgery

Elena Biagini¹, Barbara Bordoni², Antonio Marzocchi³, Graziana Labanti², Stefano Urbinati²
¹Istituto di Cardiologia, Università di Bologna, Bologna
²U.O. di Cardiologia, Ospedale Bellaria, Bologna

Paravalvular or paraprosthetic leak (PVL) is a common complication associated with implantation of a prosthetic (either bioprosthetic or mechanical) aortic valve no matter of traditional (surgical) or transcatheter (TAVI) approach. Literature reported incidence of PVL, including small jets, about 20%: in up to 1-5% of patients closure of PVL is needed because of recurrence of signs and symptoms of heart failure.

A 51 years-old man underwent to no complicated surgical aortic valve replacement (AVR) for severe aortic stenosis due to bicuspid calcified valve in May 2013 at our Cardiothoracic Centre (S.Orsola Hospital, Bologna). At 6-months clinical follow up he reported shortness of breath (NYHA II class). A trans-oesophagus ultrasound examination (TEE) was performed showing an PVL anteriorly extending for a 45° arch which determined an aortic regurgitation moderate to severe. The prosthesis itself showed low gradients (aortic prosthesis area 1.8 cm²; maximum/mean gradient 32/15 mmHg) and left ventricular ejection fraction was normal. No other significant valvulopathies were detected. An heart team discussion generated an indication for a percutaneous closure of the PVL which was performed in April 2014 at Catheterisation Laboratory of Institute of Cardiology, Policlinico S.Orsola, Bologna: an Amplatzer device was positioned under TEE guidance with a substantial reduction of the aortic regurgitation from moderate/severe to moderate. An attempt was done to insert a second device, unsuccessfully. Patient was discharged after 2 days without complications. At 1-month clinical follow up a NYHA I class was reported; the ultrasound examination showed a properly working prosthesis with residual mild aortic regurgitation, confirmed at 1-year echo follow up.

Conclusions: Percutaneous closure of aortic PVL is a feasible and safe procedure when performed in an experienced centre; it can lead to important reduction of aortic regurgitation associated with clinical patient benefit. This procedure can be considered an option instead of a re-do surgery in selected patients.