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STUDIUM PRZYPADKU / *CLINICAL VIGNETTE*

A next-generation self-expandable valve implantation in a patient with failed aortic bioprosthesis

Przezskórna implantacja samorozprężalnej zastawki nowej generacji u pacjenta ze zdegenerowaną bioprotezą aortalną

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A 72-year-old woman with a history of aortic valve replacement with a 21 mm Sorin Pericarbon More bioprosthetic valve (Sorin, Sallugia, Italy) associated with coronary artery bypass grafting (left internal mammary artery-left anterior descending artery [LIMA-LAD], aorta-right coronary artery [Ao-RCA]) in 2007 was admitted to our hospital on account of recurrent symptoms of congestive heart failure NYHA class III. Her medical history was significant for arterial hypertension, diabetes and renal insufficiency with an estimated glomerular filtration rate of 40 mL/min. Echocardiography revealed a degenerated aortic bioprosthesis with maximal and mean pressure gradients of 133 and 73 mm Hg, respectively and a calculated aortic valve area of 0.5 cm^2 with a depressed left ventricular ejection fraction of 40% (Fig. 1A). Coronary angiography revealed significant stenosis of LAD and RCA; the LIMA and Ao-RCA grafts were patent. Peripheral angiography demonstrated wide iliac and common femoral arteries (CFA) suitable for transcatheter aortic valve replacement (TAVI). Risk scores were calculated: Euroscore II was 14% and STS mortality score was 22%. Taking into account the high surgical risk, the Heart Team decided to perform a valve-in-valve TAVI. The procedure was performed on 4 November 2014 under general anaesthesia. The right CFA was surgically exposed. After placing a pigtail catheter in the ascending aorta via the left CFA artery, the right CFA was punctured and 12-F sheath was initially used to insert a stiff guidewire into the left ventricle through the degenerated bioprosthesis. We decided to use a new generation Corevalve Evolut R prosthesis (Medtronic, Minneapolis, MN, USA) which has a lower delivery profile equivalent to a 14 Fr system and offers the option to recapture and reposition during the deployment phase, if needed. The Corevalve Evolut R 23 mm was inserted and positioned at aortic bioprosthesis level (Fig. 1B). The fluoroscopically visible bioprosthetic ring facilitated the identification of the best radiographic projection. During the first attempt, the prosthesis was positioned too high (Fig. 1C). The valve was easily recaptured in the ascending aorta and implanted once again in the optimal position with excellent angiographic and echocardiographic results (Fig. 1D–G). Further in-hospital course was uneventful, and the patient was discharged on the seventh day after TAVI.

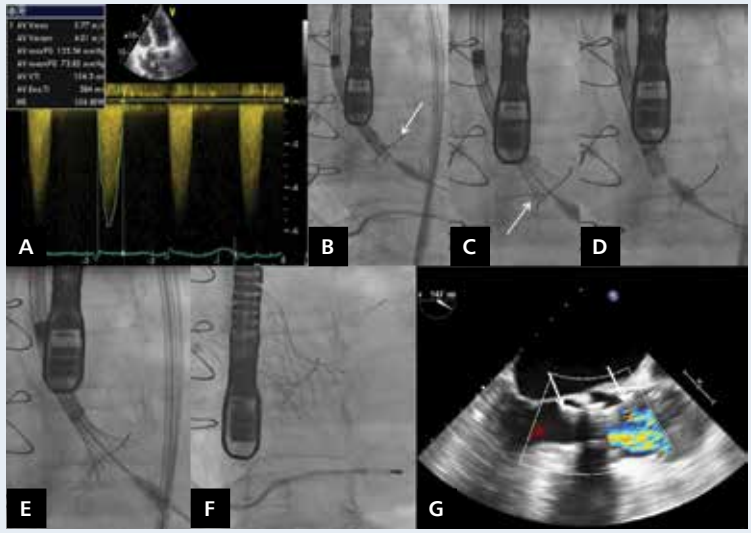

Figure 1. Fluoroscopy and echocardiography; **A**. Severe aortic bioprosthesis stenosis; **B**. Corevalve positioned at bioprosthesis level. Visible bioprosthetic ring (white arrow); **C**. Partially released Corevalve prosthesis (white arrow). Inappropriate position over bioprosthetic ring; **D**. Recaptured Corevalve prosthesis; **E**. Early phase of second deployment; **F**. Corevalve completely released; **G**. Visible Corevalve prosthesis in left ventricular outflow track and ascending aorta (white arrows)

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