

Hybrid approach for acute limb ischaemia after transcatheter aortic valve implantation

Hybrydowe leczenie ostrego niedokrwienia kończyny dolnej po przezskórnej implantacji zastawki aortalnej

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A 79-year-old woman with a history of aortic valve replacement with a 21-mm Sorin Pericarbon More bioprosthetic valve (Sorin, Sallugia, Italy) was admitted to our hospital because of recurrent symptoms of congestive heart failure New York Heart Association class III–IV. Echocardiography revealed degenerated aortic bioprosthesis with maximal and mean pressure gradient of 74 mm Hg and 37 mm Hg, respectively, and calculated aortic valve area of 0.6 cm² with good ejection fraction. The pre-procedural logistic EuroScore I was 18% and the Society of Thoracic Surgeons score 18.2%. Taking into account the high surgical risk, the Heart Team decided to perform valve-in-valve transcatheter aortic valve implantation (TAVI). The procedure was performed under general anaesthesia. After placing a pigtail catheter via the left common femoral artery (CFA), the right CFA was punctured under fluoroscopic guidance and a Prostar XL closure device (Abbott Vascular, Santa Clara, CA, USA) was introduced in a standard manner. A Corevalve 23-mm (Medtronic, Minneapolis, MN, USA) prosthesis was positioned and implanted at aortic bioprosthesis level with an excellent result (Fig. 1A). The access site was closed with a Prostar XL; however, control peripheral angiography revealed moderate contrast leakage at the puncture site (Fig. 1B). The access site was manually compressed for 10 min. Anticoagulation was also reversed. Control contrast injection showed thrombotic occlusion of the right external iliac artery (EIA) (Fig. 1C). From the left CFA, using cross-over technique, a long 6 F sheath was advanced into the right EIA and the occlusion was crossed with a standard 0.35 J guide wire. Angioplasty of EIA was not performed because control contrast injection revealed patent EIA, but there was still no pulse in the patient's right foot. Peripheral angiography confirmed continuous severe contrast leakage at the puncture site and complete embolic blockage of the popliteal artery (Fig. 1D, E). The CFA and the damaged distal part of the EIA were exposed using a surgical approach. The EIA was repaired and after CFA cut-down, popliteal embolectomy with a 5-mm Fogarty catheter was performed. The popliteal artery was opened with good flow towards the anterior tibial artery; however, the tibioperoneal trunk was still occluded (Fig. 1F). Attempts to reopen the tibioperoneal trunk with smaller Fogarty embolectomy catheters were unsuccessful, which triggered insertion of 6 F sheath via the CFA in an antegrade direction. The tibioperoneal trunk was crossed with a coronary wire, and thrombectomy of the tibioperoneal trunk using multipurpose catheter was done, leading to restoration of distal blood flow (Fig. 1G). Further in-hospital course was uneventful and the patient was discharged on the 8th day after TAVI.

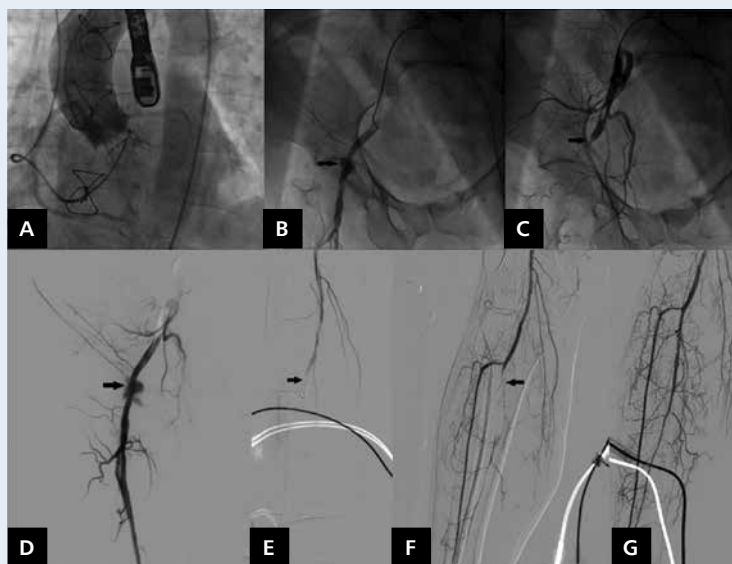


Figure 1. Aortogram and peripheral angiography; **A.** Optimal Corevalve position; **B.** Moderate contrast leakage at puncture site (arrow); **C.** Thrombotic occlusion of the right external iliac artery (arrow); **D.** External iliac artery reopened with wire, severe contrast extravasation (arrow); **E.** Embolic occlusion of popliteal artery (arrow); **F.** Patent popliteal and anterior tibial artery. Tibioperoneal trunk still occluded (arrow); **G.** Final result after tibioperoneal trunk thrombectomy

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