An 84-year-old male patient with a history of coronary artery disease and right coronary artery (RCA) stenting was admitted to our university hospital in February 2012 because of progressive dyspnoea and recurring syncopes.
Cardiological work-up revealed a grade III severe symptomatic aortic stenosis.
Due to relevant comorbidities (logistic EuroSCORE of 19 points) and severe femoral arteriopathy, he was scheduled for trans-subclavian TAVI.
After successful implantation of a CoreValve prosthesis (Medtronic) [Medtronic World Headquarters Medtronic Parkway Minneapolis, Minnesota, USA] (diameter 31 mm) and initial discharge, he was referred back to the hospital because of dyspnoea due to bilateral pleural effusions.
Transoesophageal echocardiography (TEE) showed a severe mitral regurgitation (MR), which was subsequently treated by interventional mitral valve repair using the MitraClip (Abbott Vascular, Abbott Laboratories, Abbott Park, Illinois, U.S.A.) and procedurally dependent atrial septal defect (ASD) closure AMPLATZER™ PFO Occluder (St. Jude Medical GmbH, Helfmann-Park 7, Eschborn, Germany).
Two weeks after secondary discharge, the patient developed progressive heart failure in combination with acute renal failure.
Immediate echocardiography revealed a moderate-to-severe aortic regurgitation and recurrent severe MR.
Valvular defects resulted from a slight but significant aortic valve prosthesis migration towards the left ventricular outflow tract, which had caused aortic paravalvular leakage and partial posterior mitral leaflet detachment (Fig.1).
As a consequence of these findings, the patient was transferred to our cardiac surgery department.
Preoperative coronary angiography revealed a progression of the coronary artery disease.
Consequently the patient was scheduled for conventional aortic and mitral valve replacement, as well as coronary artery bypass surgery.
The operation was performed via median sternotomy.
On initialization of cardiopulmonary bypass, the ascending aorta was opened for exploration of the aortic valve (Fig.2A).
After careful removal of the CoreValve prosthesis, an Edwards Perimount aortic valve prosthesis (diameter 25 mm) was implanted.
After vein-grafting of the circumflex coronary artery, the mitral valve was explored via the left atrium and excised with the attached clip.
Thereafter, an Edwards Perimount mitral valve prosthesis (diameter 31 mm) was implanted.
More recently, the atrial septal occluder was removed prior to direct closure of the resulting septal defect with a single-suture line (Fig.2B).
Intraoperative echocardiography revealed adequate function of both prostheses and the operation was completed in the usual manner.
During the postoperative phase, the patient recovered well from surgery although hospitalization was prolonged by transient renal failure and recurring pleural effusions.
After a month of postoperative care, the patient was discharged from hospital to rehabilitation in a good condition, without signs for heart failure.
At follow-up three months after surgery, the patient was still in a cardiopulmonary stable condition, undergoing additional physiotherapy.