Transcatheter Aortic Valve Implantation (core valve) prosthesis complicated by mitral stenosis

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A 90 year-old male patient, known to have severe aortic stenosis (AS), was admitted with chest pain, shortness of breath and swelling of both lower limbs. He had history of ischemic heart disease and percutaneous coronary intervention (PCI) of left anterior descending artery (LAD) in 2002. He also had long standing hypertension, primary hypothyroidism and hypercalcemia. He had a permanent pacemaker, chronic gastritis, gastrointestinal bleeding and bilateral knee osteoarthritis in 2007. Patient was treated medically for his heart failure symptoms. Transthoracic echocardiogram (TTE) showed normal ejection fraction >55% and severe aortic stenosis, aortic valve area 0.58 cm², mean G 64 mmHg and peak gradient of 118 mm Hg. In November 2010 the patient was evaluated for the transcatheter aortic valve implantation (TAVI) program after a multidisciplinary evaluation. His predicted Euro Score was 28% and both risk and benefits were explained to the family. A 29 mm core valve prosthesis was deployed. The TTE 4 days later showed mitral valve (MV) area = 2.04 cm² and MG across MV = 6 mm Hg. Impingement of anterior mitral valve leaflet (AMVL) by the inflow portion of core valve prosthesis led to mild mitral stenosis (MS). TEE is a helpful tool to diagnose this phenomenon.

Discussion

Degenerative aortic stenosis (AS) is common in elderly patients. Due to significant comorbidities, they are often at high operative risk; therefore, transcatheter aortic valve implantation (TAVI) is becoming an alternative treatment. TAVI procedures are associated with major vascular complications (11.5%), life-threatening bleeding (8.5%), and acute kidney injury (6.2%). However, new left bundle branch block (20.0%) or permanent pacemaker implantation (34.7%) were more frequent in patients treated with a medtronic core valve prosthesis [1]. TAVI is associated with a high rate of silent cerebral ischemic lesions as evaluated by DW-MRI, with no difference between the transfemoral (TF) and transapical (TA) approaches [2]. Consequently, the European Association of Echocardiography in partnership with the American Society of Echocardiography has developed recommendations for the use of echocardiography in new transcatheter interventions for valvular heart disease [3]. Mitral stenosis has not been reported as a post-TAVI complication (Figs. 1–4).
References

