Full Metal Atrium

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A 79-year-old female was admitted to our institution due to progressive shortness of breath. Her previous medical background revealed a hemorrhagic stroke with residual dysphasia and permanent atrial fibrillation. Due to the previous stroke, anticoagulation was strongly discouraged. Transthoracic echocardiogram showed a normal left ventricular cavity size and function (left ventricular ejection fraction, 59%). Severe mitral regurgitation (MR) was noted due to posterior mitral leaflet prolapse with chordal rupture and flail. The effective regurgitant orifice (ERO) was 0.5 cm² and regurgitant volume (RV) was 59.2 mL. Estimated systolic pulmonary pressure was 55 mm Hg. After discussion in a multidisciplinary team meeting, the patient was deemed at high risk for standard surgery due to frailty (CSHA clinical frailty scale 4: although not frankly dependent, these people commonly complain of being “slowed up” or have disease symptoms); mortality logistic EuroSCORE of 28.7%; mortality Society of Thoracic Surgeons (STS) score of 4%; and mortality-morbidity STS score of 27%. Therefore, she was scheduled for percutaneous edge-to-edge mitral valve repair and left atrial appendage (LAA) closure to diminish the embolic risk in a patient without the possibility of oral anticoagulation.

Edge-to-edge mitral valve repair was performed under general anesthesia and live three-dimensional transesophageal echocardiographic (TEE) monitoring with the MitraClip system (Abbott Vascular). Two clips were deployed subsequently with reduction of MR from severe to nil (Figure 1). Thereafter, the MitraClip sheath was exchanged by the Watchman device delivery system (Atritech, Inc). After TEE measurements of the LAA and after proving that the anatomy was suitable for closure, a 24 mm Watchman device was deployed successfully (Figure 2). In TEE controls, an image resembling thrombotic tissue was observed in the atrial septum close to the zone of insertion of the Watchman sheath. To avoid a...
possible embolic complication in the case of sudden right-to-left shunt development, a 10 mm Amplatzer atrial septal defect (ASD) closure device (AGA Medical Corporation) was used to close the ASD and to seal the thrombus-like image (Figure 3). The final result with all three devices is shown in Figure 4.

Percutaneous intervention for structural heart disease has experienced significant progress in recent years. MitraClip and Watchman devices have proven their clinical safety and efficacy in randomized control trials.1,2 Nowadays, in centers with experienced operators, implantation of both systems in the same procedure is safe and feasible. However, given the large size of delivery sheaths, septal complications may occur. If this happens, the prompt placement of a closure device can be easily performed and may avoid further complications. Notwithstanding, although percutaneous treatment is feasible, it must be stressed that the decision to use a multidevice approach should be dictated by the judicious consensus of physicians, above all due to limited long-term data on some of the devices.

References


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