

MitraClip Implantation to Treat Early Recurrence of Mitral Regurgitation After Percutaneous Direct Annuloplasty With Cardioband



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An 80-year-old man presented with severe dyspnea (New York Heart Association functional class III/IV) due to severe left ventricular dysfunction (ejection fraction 35%) and severe functional mitral regurgitation (FMR). His medical history included chronic obstructive pulmonary disease, chronic renal failure, previous transient cerebral ischemic attack, coronary artery bypass surgery, and recent percutaneous coronary revascularization. His surgical risk was very high (Society of Thoracic Surgeons Predicted Risk of Mortality score 27.7%).

The prevalent mechanism of FMR was annular dilatation with relative anatomic contraindications to MitraClip (cleft between P1 and P2). We performed direct mitral annuloplasty with the Cardioband system (Edwards Lifesciences, Irvine, California) with implantation of 17 anchors and a reduction after cinching of the septolateral annular diameter from 44 to 27 mm with mild residual mitral regurgitation. Thereafter, the patient developed complete atrioventricular block and underwent biventricular defibrillator implantation.

Seven months later, the patient was readmitted for severe dyspnea, with evidence of recurrent severe FMR. Transesophageal echocardiography showed no detachment of the Cardioband anchors, but there was a large leaflet coaptation defect due to significant

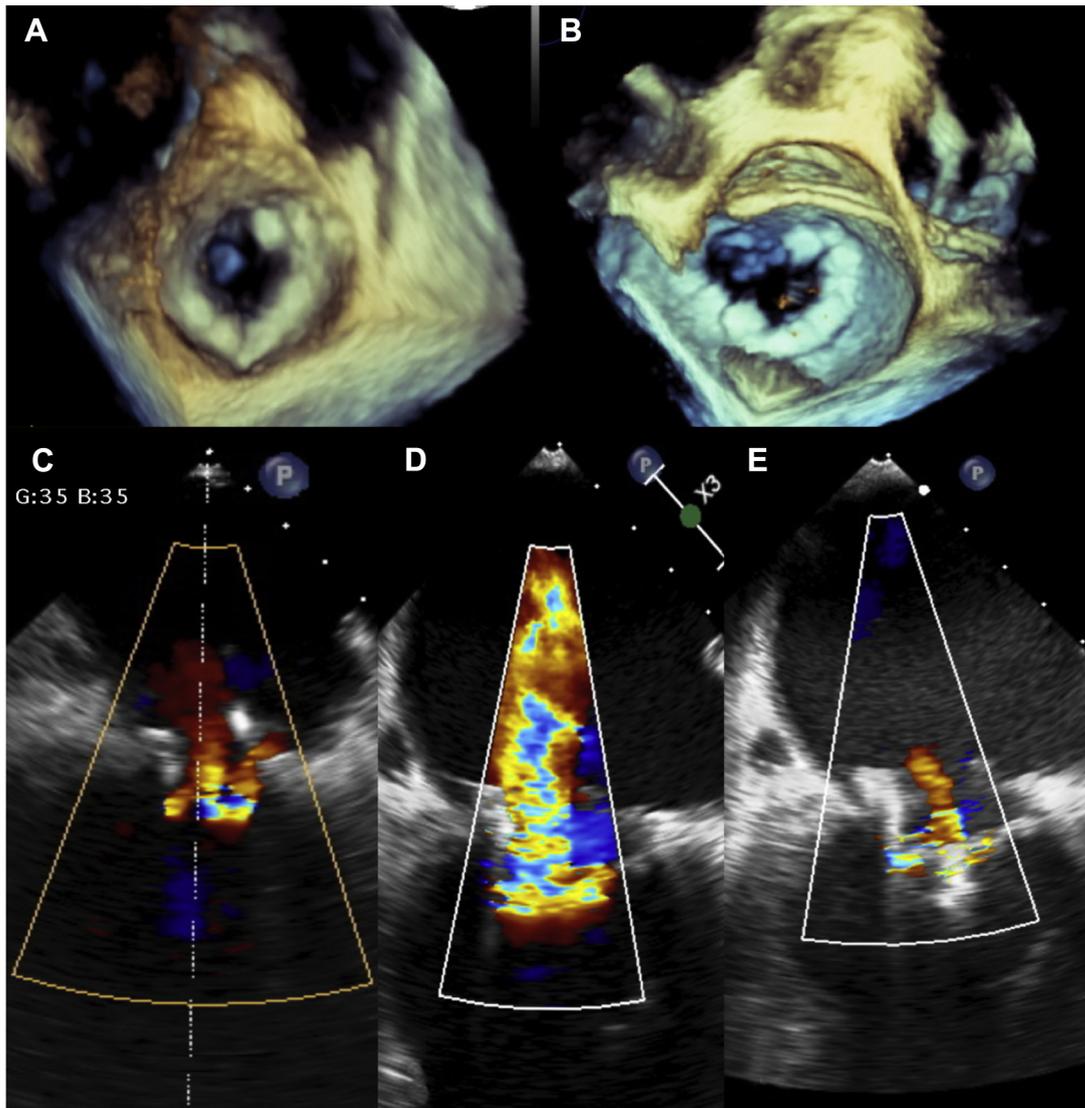
annular dilatation. The patient was successfully treated with implantation of 2 MitraClip NT devices (Abbott Vascular, Santa Clara, California) between A2 and P2, with a decrease in regurgitation to mild to moderate (Figure 1).

FMR recurrence was caused by dilatation of the anterior annulus, a segment in continuity with the aorta not suitable for implantation of the Cardioband anchors.

Two cases of Cardioband implantation following MitraClip placement were previously published (1,2). The present report demonstrates that MitraClip implantation after Cardioband implantation is feasible. In this case it was required because of late Cardioband failure, but it can be also an elective strategy when 1 of the 2 devices appears unlikely to achieve a fully percutaneous mitral valve repair. Cardioband implantation does not affect mitral valve leaflets, allowing subsequent interventions, including MitraClip or mitral valve implantation, and determines a reduction in annular dimensions that can facilitate leaflet grasping.

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FIGURE 1 Transesophageal Echocardiographic Imaging of Mitral Regurgitation Recurrence After Cardioband and Subsequent MitraClip Treatment



Three-dimensional reconstruction of the atrial aspect of the mitral annulus at the end of Cardioband procedure (A) and at the time of recurrence of mitral regurgitation (B). There is marked dilatation in the anterior segment of the annulus, without evidence of Cardioband anchor detachment. Transesophageal echocardiography showing mitral regurgitation at the end of Cardioband procedure (C), at the time of admission for heart failure recurrence (D) and after implantation of 2 MitraClip NT devices (E).

REFERENCES

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KEY WORDS Cardioband, MitraClip, percutaneous direct mitral annuloplasty, transcatheter mitral valve repair