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IMAGE FOCUS

Transcatheter edge-to-edge mitral valve repair as a bridge to optimal guideline-directed medical therapy

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Transcatheter edge-to-edge mitral valve repair (TMVR) improves symptoms and outcomes in selected patients with severe chronic secondary mitral regurgitation (MR) while on guideline-directed medical therapy (GDMT) for heart failure [1,2]. However, optimal GDMT can be difficult to reach due to poor tolerance [3].

A 47-year-old patient presented with myocardial infarction resulting from left anterior descending coronary artery spontaneous dissection and severe heart failure, not amenable to revascularisation. The patient was in New York Heart Association (NYHA) functional class III and presented initially with a 35% left ventricular ejection fraction (EF), 2300 ng/L NTproBNP level and severe secondary MR, with a mitral effective regurgitant orifice (ERO) and a regurgitant volume (RV) of 47 mm^2 and 51 mL, respectively (Figure 1(A,B)). During the following 10 months, several attempts to introduce and optimise GDMT were aborted by symptomatic hypotension (maximal tolerated dose: sacubitril/valsartan 49/51 mg b.i.d., bisoprolol 1.25 mg o.d.). Two MitraClip XTR were implanted as a bridge to possible subsequent heart transplantation. This resulted in a dramatic reduction in MR severity (Figure 1(C,D)) and symptoms (NYHA I), decreased left ventricular volumes and pulmonary arterial pressure (Figure 2), and lowered NT-proBNP level (608 ng/L). Uptitration of heart failure medications was subsequently well tolerated (final dosage sacubitril/valsartan 97/103 b.i.d., bisoprolol 10 mg o.d.).

TMVR is currently recommended on top of GDMT. This case underlines that TMVR may allow achieving optimal GDMT, thereby contributing to improve prognosis. Whether patients in whom target doses are difficult to reach could benefit from early TMVR remains to be demonstrated.

Disclosure statement

The authors report no conflicts of interest.

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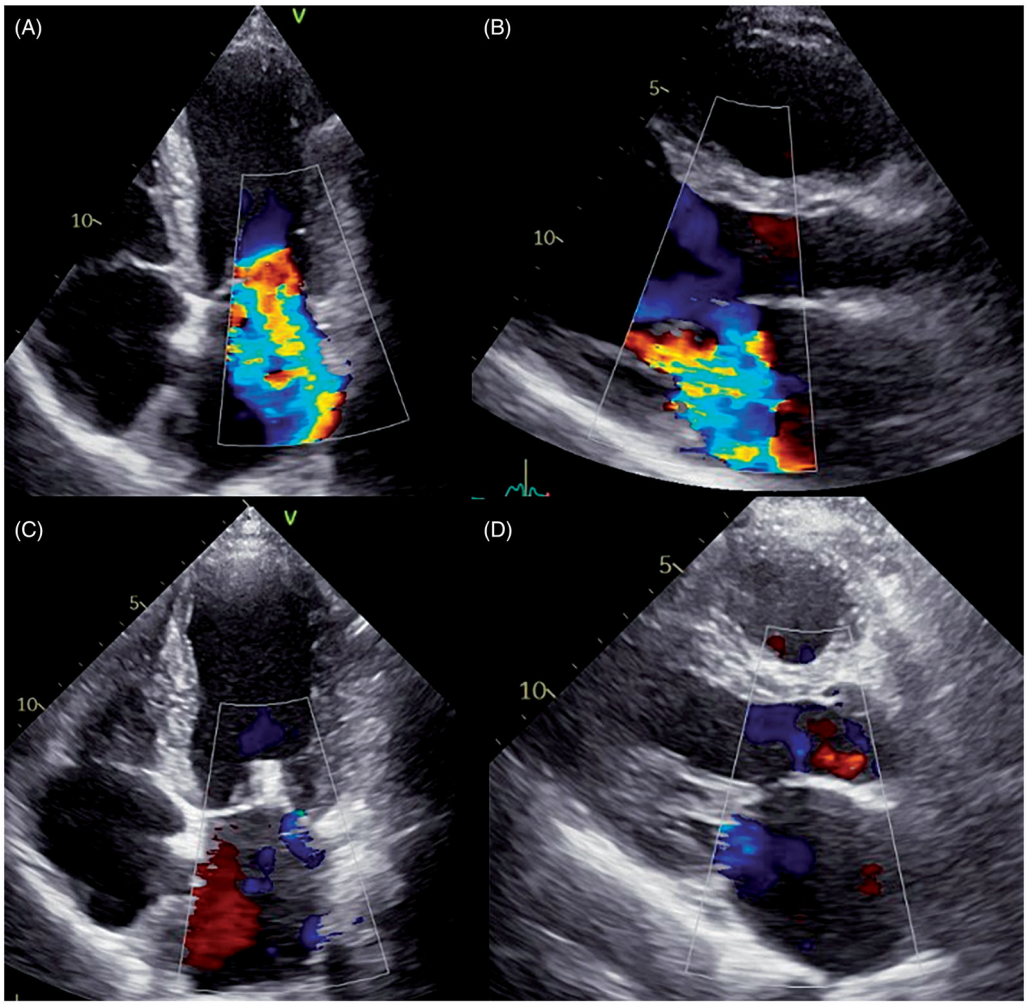

Figure 1. Apical four-chamber view (A) and parasternal long-axis view (B) showing severe mitral regurgitation. A marked improvement is observed after transcatheter edge-to-edge mitral valve repair (C,D).

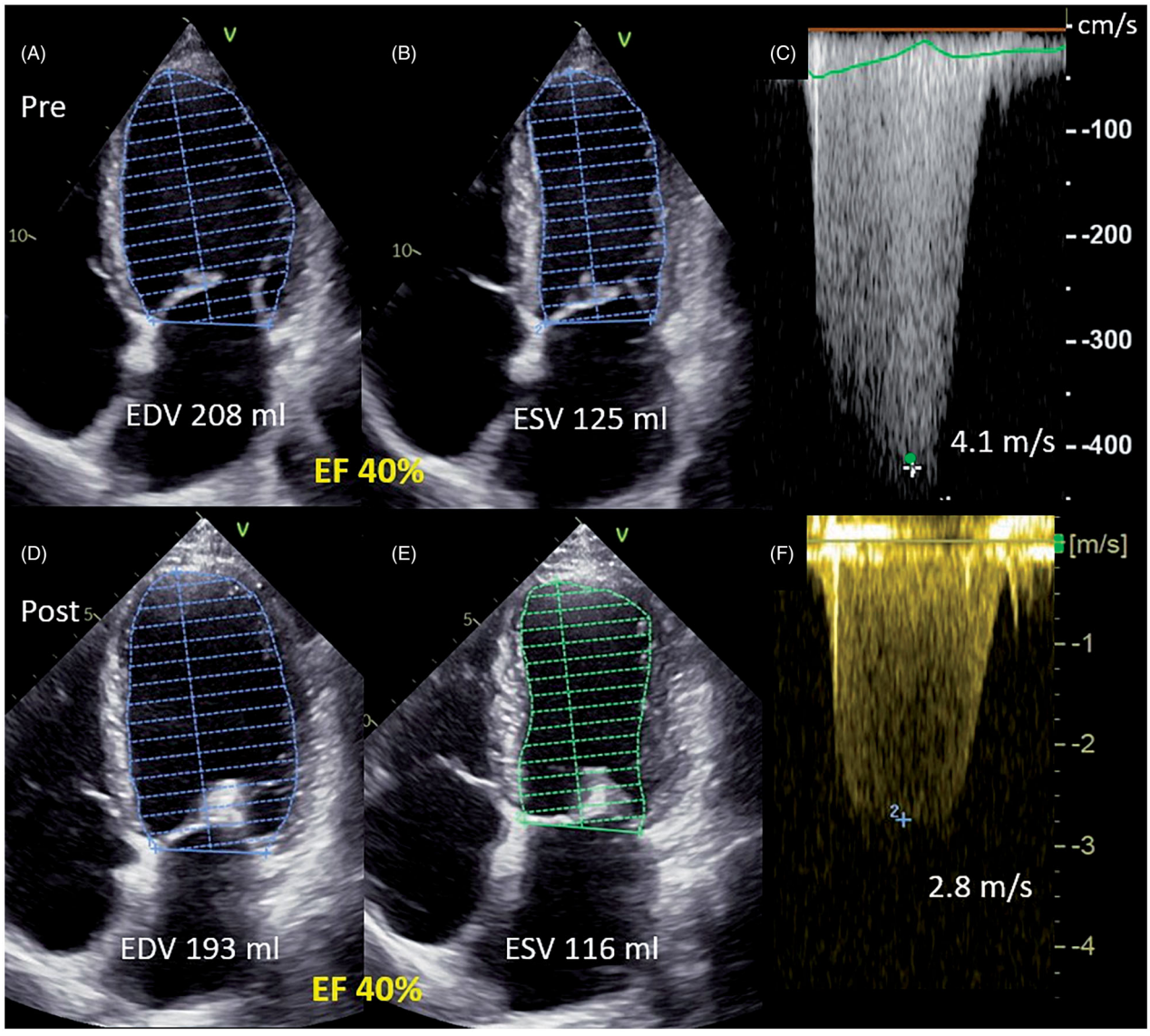

Figure 2. End-diastolic volume (EDV), end-systolic volume (ESV), and tricuspid regurgitant jet velocity before (A, B, and C, respectively) and after (D, E, and F, respectively) transcatheter edge-to-edge mitral valve repair. There is no change in left ventricular ejection fraction (EF), but reduced left ventricular volumes and tricuspid regurgitant jet velocity are observed after the procedure.