



Letter to the Editor

The importance of being “not transplantable”

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MitraClip therapy for mitral regurgitation (MR) in advanced-end stage heart failure (HF), could open a final bridge to improve symptoms and quality of life in “not transplantable” patients.^[1,2] Functional MR is a complicating pathophysiological cofactor of dilated cardiomyopathy (DCM), associated with poor HF survival.^[2]

We describe the clinical case of a 33-years-old homeless patient with New York Heart Association (NYHA) functional class III HF and severe MR not eligible to heart transplantation for poor socio-economic status, treated with MitraClip system.

His past medical history was relevant for myocarditis progressed to DCM, subsequent biventricular pacemaker implantation and advanced HF.

In the last six months, because of HF symptoms worsening (NYHA class III-IV), the patient underwent recurring hospital admissions. When he came to our observation severe systemic hypotension, a gallop rhythm, severe MR and a 3/6 L holosystolic punctal murmur irradiated to armpit area were detected. He was supported with intra-aortic balloon pump (IABP) implantation and nitroprusside.^[3,4]

The patient was considered not suitable for conventional mitral valve repair because of high surgical risk related to advanced HF and comorbidities (The Society of Thoracic Surgeons risk score mortality + morbidity score = 76%; EuroScore II = 9.7%).^[5,6,7]

Transesophageal ecocardiography (TEE) detected left ventricular (LV) remodeling [end-diastolic volume (EDV) = 200 mL], severe systolic dysfunction [left ventricular ejection fraction (LVEF) = 15%], diastolic dysfunction (restrictive LV filling pattern, E wave/A wave fraction > 2), severe right ventricle dysfunction [tricuspid annular plane systolic excursion (TAPSE) = 11 mm], moderate tricuspid regurgi-

tation and post-capillary pulmonary hypertension [pulmonary artery systolic pressure (PAPs) = 45 mmHg].

Severe MR was confirmed at TEE preoperative evaluation of patient (effective regurgitant orifice = 0.37 cm²; regurgitant volume = 38 mL; vena contracta = 0.45 cm) (Figure 1).

Our Interventional Cardiologists implanted two MitraClips, by means of transeptal puncture, under general anesthesia and conventional fluoroscopy, with continuous invasive hemodynamic monitoring and two-three dimensional TEE.

After implantation, TEE documented effective device position in relation to the detected main regurgitant jet, a MR grade reduction to 2+ with uneventful recovery (Figure 2).

A gradual hemodynamic and global improvement was observed at three-month follow-up echocardiography: PAPs = 33 mmHg, LVEF = 20%, HF symptoms reduction in NYHA functional class I-II.^[6,8]

This clinical case suggests that MitraClip could be a feasible bridge for not transplantable critical patients^[1,2] with severe MR. MitraClip reduces pulmonary hypertension, severe to mild-moderate MR in endstage HF. Multinational [ACCESS-Europe, A Two-Phase Observational Study of the MitraClip System in Europe (ACCESS-EU), Endovascular Valve Edge-to-Edge REpair STudy-High Risk (EVEREST-High Risk)] and national registries [Transcatheter Mitral Valve Interventions german register (TRAMI), SWISS MitraClip Registry (SWISS), and now the newborning Italian GIse registry Of Transcatheter treatment of mitral valve regurgitaTiOn (GIOTTO)] have shown safety and efficacy of MitraClip in the current real-world experience.^[2,9] Percutaneous approach minimizes the procedural risk and post-procedural events, although heart transplantation is the most effective treatment for end-stage HF selected patients.^[2]

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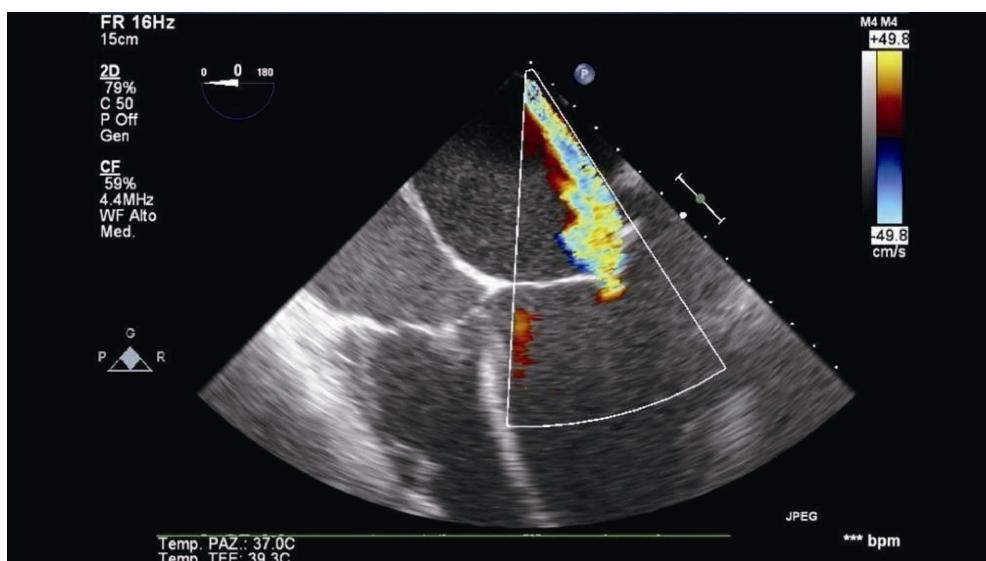


Figure 1. Before MitraClip: TEE showing incomplete systolic leaflet coaptation, leaflet tethering with severe (4+) eccentric MR jet [jet area on mitral leaflet scallops (A2-P2), two jets (P1-A2), (P3-A2)]. MR: Mitral Regurgitation; TEE: transesophageal ecocardiography.



Figure 2. After MitraClip: mild-moderate residual MR. MR: Mitral regurgitation.

Management of functional MR in end-stage HF is a hard challenge, in addition to the limited patient group feasibility and long-waiting list of heart transplantation.^[2] Despite there are no available data about MitraClip safety in advanced HF because of the exclusion of these significant-surgical risk patients from the landmark EVEREST II randomized trial,^[6,7,9,10] currently almost all severe MR patients treated with MitraClip system are high-risk, elderly, with comorbidities and mainly affected by functional MR (FMR).^[9] In the setting of this difficult management,^[11] percutaneous technique was able to improve general conditions, quality of life and survival of our referred patient.

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