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EDITORIAL COMMENT

Keeping the eyes on the ball: Giving the patient the best chance at recovery

Não perder o foco do essencial: dar ao paciente a melhor probabilidade de recuperação

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Acute mitral regurgitation (MR) is a serious and potentially life-threatening complication that can occur in up to 3% of acute myocardial infarction (AMI) patients.[1] Even though percutaneous coronary revascularization addresses the *primum movens* of the ensuing papillary muscle dysfunction and leaflet tethering, sometimes, either due to late or insufficient reperfusion, hemodynamic instability – including cardiogenic shock (CS) – is not reversible.

In this setting, medical treatment is seldom a viable and sustained solution, and surgical correction is rapidly rejected as it is associated with high mortality. Time to recall Einstein: ''If you keep doing the same things, do not expect different results''.

The MitraClip device has been extensively compared with surgery for the treatment of non-acute MR and, while not as effective as surgery, its safety is probably its most consistent advantage.

In a case report on a rescuing MitraClip procedure in a patient in CS following a late and not completely successful (final TIMI 2 grade) coronary angioplasty,[2] Cláudio Guerreiro et al. gave the patient the best chance of survival. The medical therapy for refractory pulmonary edema did not work and a heart team excluded the surgical option.

The MITRA-SHOCK Study[3] and IREMMI Registry,[4] both published in 2021, report immediate procedural success in the highs 80s and low 90s percent range. In the IREMMI Registry, which addressed only acute MR after AMI, the only variable independently associated with the combined end-point of mortality and rehospitalization due to heart failure was immediate procedural success. This stresses the relevance of a high level of implantation expertise, which Cláudio Guerreiro's team clearly has.

The IREMMI results did not differ between CS and non-CS patients. This is linked to the main driver for clinical deterioration in CS is the MR itself and not pump failure. In that sense, fixing the MR is keeping the eyes on the ball. Of note, in this registry, in the group of patients with CS, the time between the MI and the MitraClip procedure was longer (24±22 days) than in the case described by Cláudio Guerreiro et al. (seven days). It is only fitting that in doing so they were complying with one of the main suggestions of the authors of that registry, which advocated an early MR correction irrespective of lower left ventricular ejection fraction and development of CS. Two single center case series found a shorter time from diagnosis to MitraClip implantation among patients who survived past 30 days,[5] and as the center builds up their experience in this setting (from 89 to nine days).[6]

In this particular case, a late and partially successful revascularization, with a large MI (left dominant occluded circumflex) and severe left ventricular dysfunction, meant it was not foreseeable that a significant improvement with medical therapy alone would occur in a timely fashion, before exhaustion or before the cascade of complications of long ICU stays would begin (e.g., infections, renal insufficiency, etc.). Without randomized trials, all these series, registries, studies are merely ''hypothesis-generating''. But by treating this patient with a MitraClip – a device known

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for its great safety record – on day seven after the MI Cláudio Guerreiro et al. kept their eyes on the ball and gave the patient the best chance at recovery and survival. The fact that this 85-year-old is a class II New Yorks Heart Association patient with mild MR after one year only reinforces the appropriateness of their decision.

Conflicts of interest

The author has no conflicts of interest to declare.

References

1. Mentias A, Raza MQ, Barakat AF, et al. Prognostic significante of ischemic mitral regurgitation on outcomes in acute ST-elevation myocardial infarction managed by primary percutaneous coronary intervention. Am J Cardiol. 2017;119:20–6.
2. Guerreiro C, Melica B, Barbosa AR, et al. Rescue Percutaneous repair of ischaemic acute severe mitral regurgitation. Rev Port Cardiol. 2022;41:349.
3. Falasconi G, Melillo F, Pannone L, et al. Use of edge-to-edge percutaneous mitral valve repair for severe mitral regurgitation in cardiogenic shock: a multicenter observational experience (MITRA-SHOCK study). Catheter Cardiovsac Interv. 2021;98:E163–70.
4. Estévez-Loureiro R, Shuvy M, Taramasso M, et al. Use of MitraClip for mitral valve repair in patients with acute mitral regurgitation following acute myocardial infarction: effect of cardiogenic shock on outcomes (IREMMI Registry). Catheter Cardiovasc Interv. 2021;97:1259–67.
5. Flint K, Brieke A, Wiktor D, et al. Percutaneous edge-to-edge mitral valve repair may rescue select patients in cardiogenic shock: findings from a single center case series. Catheter Cardiovasc Interv. 2019;94:E82–7.
6. Adamo M, Curello S, Chiari E, et al. Percutaneous edge-to-edge mitral valve repair for the treatment of acute mitral regurgitation complicating myocardial infarction: a single centre experience. Int J Cardiol. 2017;234:53–7.