

Acute Mitral Regurgitation in patients with cardiogenic shock supported by Impella 5.0: a new potential complication and the impact of percutaneous Mitraclip Implant.

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Argomento: Caso clinico

Background Mitral regurgitation (MR) is a potential complication found in patients with cardiogenic shock (CS) supported by impella device, due to chordal rupture resulting from Impella displacement. The impella P5.0 is an intravascular microaxial blood pump that delivers up to 5 litres of blood per minute from the left ventricle into the aorta.

Case Report A 62 yo male on day 0 post robotic prostatectomy suffered of acute myocardial infarction. Patient medical history: diabetes, previous angioplasty plus stent on the left anterior descending (LAD) and the circumflex arteries.

The patient in CS was urgently transferred to the cathlab. The transthoracic-echocardiography (TTE) showed a severe left-ventricular dysfunction (ejection fraction 30%) with akinesis of interventricular septum and mid-apical anterior, lateral and inferior segments, and a mild mitral regurgitation. The coronary angiography revealed an intrastent thrombosis of the LAD, treated with thrombus suction and balloon angioplasty. The patient needed a progressive increase of circulatory support from intraortic balloon pump (IABP) to implantation of trans-axillary impella P5.0 4 lpm. Impella positioning was guided by fluoroscopy and transesophageal echocardiography (TEE).

On day 10th the patient was safely extubated but a new TTE revealed a severe mitral regurgitation, although the recovery of cardiac function. A TEE confirmed a flail prolapse of posterior mitral valve leaflet, due to several primary cords rupture. As the anatomy of the mitral valve was considered suitable for percutaneous repair, the MitraClip system was used. The patient was then safely weaned from mechanical support.

Conclusion Impella P5.0 is commonly used for CS although known to be associated with complications. Only few anecdotal cases of mitral valve cords rupture have been reported as experienced in our centre. We believe that a percutaneous MitraClip implant is a solution to be considered before explanting the impella device to safely cope with eventually the afterload mismatch.