





A heart on the edge: aortic dilatation, severe combined aortic and mitral regurgitation with reduced ejection fraction dilated cardiomyopathy

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Introduction: The coexistence of aortic and mitral regurgitation represents a relatively common but insufficiently explored form of multivalvular heart disease. Combined severe aortic and mitral regurgitation is the most poorly tolerated combination and, in its severe form, is rare in clinical practice¹. These patients are more prone to early left ventricular dysfunction due to increased preload from both lesions, with higher risk of postoperative left ventricular dysfunction compared to isolated regurgitation².

Case report: 70-year-old male patient with a history of arterial hypertension and hyperlipidemia was hospitalized for further diagnostic evaluation of an abnormal outpatient echocardiographic finding. Transthoracic echocardiogram (TTE) demonstrated dilated aortic bulbus and ascending aorta, significant dilation of the left atrium and left ventricle with spheric remodeling pattern, reduced global systolic function (EF of 35%), and severe aortic and mitral regurgitation. Transesophageal echocardiography confirmed tricuspid aortic valve with type I severe aortic regurgitation and severe mitral regurgitation based on significant annular dilatation and coaptation defect. MSCT aortography demonstrated maximal aortic diameter of 5.5 cm at the Valsalva sinuses and fusiform ascending aorta dilation up to 4.7 cm. Coronary angiography revealed short significant proximal left anterior descending (LAD) artery stenosis. Considering the aforementioned pathology the patient was discussed by the Heart Team and accepted for surgical treatment. The patient underwent successful replacement of the ascending aorta, aortic and mitral valve replacement with bioprosthesis and LAD bypass surgery. The patient is expected for follow-up to assess eventual echocardiographic improvement of left ventricular systolic function with standard heart failure therapy after surgical treatment.

Conclusion: Combined aortic and mitral regurgitation often causes left ventricular dysfunction, so early surgery is advised when symptoms or dysfunction appear. Since the potential for recovery of left ventricular function is questionable in a patient with two preexisting severe valvular lesions², the postoperative outcome for our patient might not be satisfactory.

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LITERATURE

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