

C5. Overlooked: Right Ventricular Dysfunction In Left-sided Heart Valve Disease

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OBJECTIVES: Tricuspid regurgitation (TR) in left-sided valve disease is a risk factor for death after surgery. Simply regarded as a passive consequence of right ventricular (RV) and tricuspid anular dilatation induced by left-sided events, its significance as an indicator of RV dysfunction has been overlooked. We hypothesized that TR is a sign of RV dysfunction and thus measured preoperative RV function, its correlation with TR, and its clinical associations.

METHODS: From 2001 to 2007, 1,833 patients with degenerative mitral valve disease and structurally normal tricuspid valves underwent mitral valve surgery. Tricuspid Anular Plane Systolic Excursion (TAPSE) and Myocardial Performance Index (MPI), echo measures of RV function, were assessed in 393: 100 randomly selected from TR grades 0, 1+ and 2+ and all 93 with 3+/4+. Multivariable regression was used to evaluate association of TAPSE and MPI with TR and clinical and right heart failure variables.

RESULTS: Worsening RV function correlated with increasing TR and was markedly abnormal in TR 3+/4+ (figure); severe TR was rare without RV dysfunction. TAPSE and MPI were also associated with worse pulmonary regurgitation, higher New York Heart Association class, older age, larger left atrial volume, lower creatinine clearance and cholesterol, atrial fibrillation and higher MELD score.

CONCLUSIONS: Often overlooked, RV dysfunction is not well understood and is rarely quantitatively assessed before operation. Our study demonstrates, with easily obtained measures, that RV dysfunction causes severe TR. It may be the underlying risk factor for disappointing results of surgery for left-sided valve disease accompanied by TR.

