

Preoperative multi-modality imaging of tricuspid regurgitation

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KEYWORDS: multi-modality imaging, echocardiography, tricuspid regurgitation.

CITATION: *Cardiol Croat.* 2023;18(5-6):172. | <https://doi.org/10.15836/ccar2023.172>

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Introduction: Assessing the severity of tricuspid regurgitation (TR) remains a challenging task, and although echocardiography is the test of choice, significant limitations of the current recommendations exist¹. Recently updated guidelines from the American Society of Echocardiography suggest cardiac magnetic resonance imaging and computed tomography angiography may play a significant role.² Even more challenging is the quantification of TR following surgical or transcatheter repair devices.

Case report: 52-year-old man was hospitalized in our institution, previously in a regional hospital a 24-hours Holter ECG and echocardiography were performed. At admission he complains of feeling fainting. He was treated for hypertension. At exam feeling well, eupneic, rhythmic heart action, clear tones, no noise. On repeated Holter ECG: atrial flutter with an average frequency of 56/min. Transthoracic echocardiography in our institution described: left ventricular with normal dimensions and ejection fraction. The right atrium markedly enlarged (RA area 45.7 cm²), the interatrial septum is directed to the left, the right ventricle also enlarged, with normal wall thickness. Tricuspid annulus dilated with severe tricuspid regurgitation (TR 4+, jet fills 2/3 of RA surface, TR ERO 1.3 cm², TR RV 108 ml). The pulmonary artery normal. Cardiac magnetic resonance confirmed severe tricuspid insufficiency with no fat infiltration, and no fibrosis at late gadolinium enhancement sequences. Arrhythmogenic cardiomyopathy was excluded. Right heart catheterization was performed, right atrium 15/5/10 mmHg, right ventricle 35/7/15 mmHg, pulmonary artery 31/15/20 mmHg, mean pulmonary capillary wedge 11 mmHg, transpulmonary gradient 9 mmHg. On coronary angiography, coronary artery without narrowing, slow flow through the left anterior descending and right coronary artery. At proposal of pulmonologist, computed tomography of the chest and ventilation perfusion lung scintigraphy were performed. All findings were presented to the cardiologist-cardiosurgical council, which indicated tricuspid valve surgery.

Conclusion: Transthoracic echocardiography remains the first-line imaging modality in the guidelines as well as in clinical practice. Greater use of advanced imaging technology and techniques may improve the ability to accurately and reproducibly quantify this disease.

RECEIVED:
March 26 2023

ACCEPTED:
March 29, 2023



LITERATURE

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