

Title: TAKING THE LOAD OFF: DEVICE LEAD-INDUCED SEVERE TRICUSPID REGURGITATION AND RIGHT-SIDED HEART FAILURE TREATED WITH TRANSCATHETER AORTIC VALVE IMPLANTATION (TAVI)

Authors: Nina Shyama Appareddy, Michaela Iglesia, Ayman Khaddam, Henry Kwang, and Eduardo D. Flores

Abstract:

Background:

Interference of device leads with closure of the tricuspid leaflets can cause severe tricuspid regurgitation (TR) and right-sided heart failure, as can heart failure with reduced ejection fraction (HFrEF) and left sided valve disease. We report a case treated with transcatheter aortic valve implantation (TAVI) with improved TR.

Case:

A 78-year-old male with coronary artery disease status post remote myocardial infarction and coronary bypass, HFrEF with left ventricular ejection fraction 35-40%, and inducible ventricular tachycardia status post AICD placement presented with worsening dyspnea on exertion, easy fatigue, lower extremity edema, anasarca and abdominal bloating. Transthoracic echocardiography demonstrated severe aortic stenosis with secondary pulmonary hypertension, a right ventricular (RV) systolic pressure of 50 mmHg, severe bi-atrial enlargement, and severe TR in the region of his device lead. Transesophageal echocardiography confirmed mechanical interference by the lead with closure of the tricuspid septal leaflet.

Symptoms were refractory to diuretics. He was a poor candidate for lead extraction given fibrotic changes. Tricuspid valve (TV) replacement was high risk given prior bypass surgery with patent grafts. TAVI was performed to reduce pulmonary artery pressures, with concomitant guideline directed medical therapy (GDMT) for HFrEF to reduce tricuspid regurgitation from RV pressure overload from left sided heart disease. Repeat echo showed a reduced RV systolic pressure of 42 mmHg, with his TR improved to moderate to severe.

Conclusion:

While diuretics are the mainstay of therapy, medical therapies for management of severe TR are limited. Attention should be focused on the underlying etiology of the TR and classification as primary (abnormal valve leaflets-including device lead induced) or secondary (normal valve leaflets). Our patient had mixed involvement. Management was directed accordingly with TAVI and GDMT for HFrEF, with plans for the higher risk surgical TV repair or replacement should symptoms persist.