The Role of Angiovac System for Debulking Vegetation Burden for a Large, Tricuspid Valve Vegetation in Infective Endocarditis

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American Society of Echocardiography
ASE2022 HYBRID
SOUND WAVES IN SEATTLE: CONNECTING THE WORLD
June 10-13, 2022
Seattle, WA
33rd Annual Scientific Sessions · Seattle Convention Center · #ASE2022 · ASEScientificSessions.org

Clinical Presentation

A 66-year-old man with a history of heart failure with recovered ejection fraction, status-post cardiac resynchronization therapy-defibrillator implantation (CRT-D), end-stage renal disease on hemodialysis, and coronary artery disease presented with fevers and generalized malaise. Blood cultures grew Enterococcus fecaelis. Initial trans-thoracic echocardiogram (TTE) showed a large mobile echodensity on the tricuspid valve (TV) concerning for infective endocarditis (IE). A transesophageal echocardiogram (TEE) revealed multiple, hypermobile, supravalvular vegetations on the TV. Given the severity of disease, a percutaneous approach for vegetation debulking using the AngioVac System was successfully performed with vegetation removal (Figure 1) and vast improvement in patient condition.

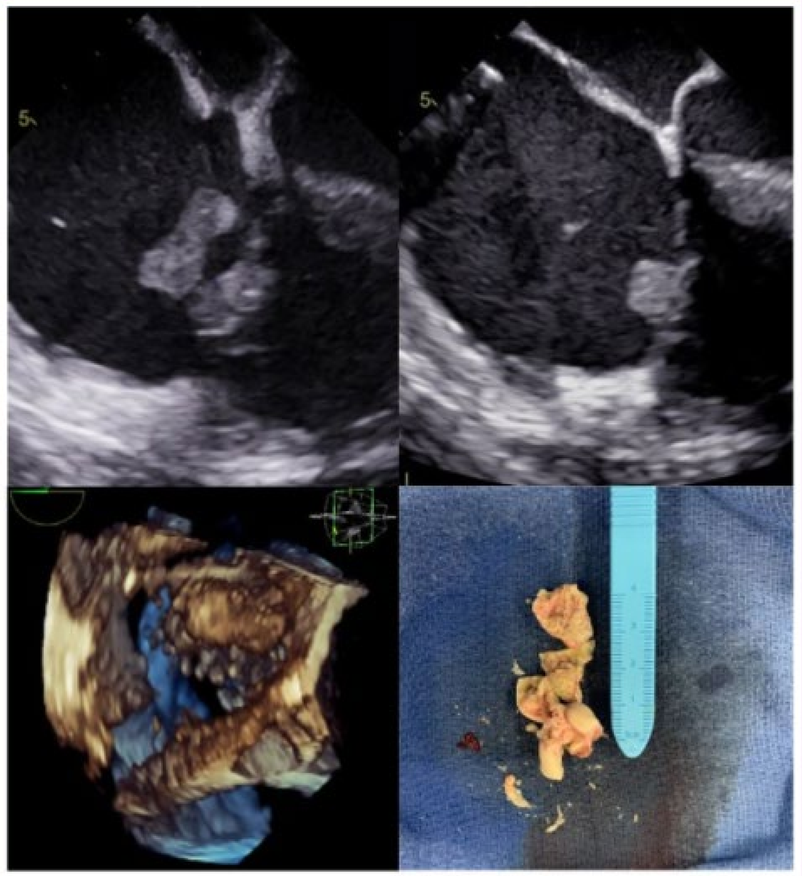

Figure 1: Transesophageal echocardiographic images (TEE) for visualization of the tricuspid valve with large vegetation present on the atrial aspect of the anterior and/or posterior leaflets and post-operative gross pathology. A) Pre-extraction TEE in the mid-esophageal view showing a large, 3-centimeter by 2.1-centimeter mobile, hyperechoic lesion at the level of the tricuspid valve. **B)** Post-extraction TEE in the mid-esophageal view showing a 1.2-centimeter by 1.1-centimeter mobile, hyperechoic lesion at the level of the tricuspid valve with marked reduction in size following debulking. **C)** 3D reconstruction of TEE images in cross-section of intra-atrial septum showing tricuspid valve vegetation. **D)** Gross pathology of large valvular vegetation after debulking of tricuspid valve using AngioVac system.

Role of Imaging in Patient Care

TTE showed a large, mobile echodensity measuring 2.8 cm by 1.2 cm and moderate TV regurgitation with a valve velocity of 2.48 m/s. TEE revealed a dilated right atrium with a mobile echodensity on the atrial aspect of the anterior and posterior leaflets of the TV measuring 3.0 cm x 2.1 cm. Post-procedural TEE showed a remaining 1.2 cm x 1.1 cm mobile echodensity following debulking.

Discussion

Typically an indolent infection initially, IE can be life-threatening even with prompt treatment. Though non-native valves confer a higher risk, native valves do not preclude risk for infection. Implantable intracardiac devices, indwelling catheters, and frequent venipuncture all increase the risk for bacteremia and seeding of valves. A high index of suspicion, prompt recognition, and potentially source control is necessary for adequate treatment. Our case presents the use of AngioVac as a minimally invasive means for vegetation debulking to expedite treatment.

Imaging Findings

TTE showed a large, mobile echodensity measuring 2.8 cm by 1.2 cm and moderate TV regurgitation with a valve velocity of 2.48 m/s. TEE revealed a dilated right atrium with a mobile echodensity predominantly on the atrial aspect of the anterior and posterior leaflets of the TV measuring 3.0 cm x 2.1 cm. Post-procedural TEE showed a residual 1.2 cm x 1.1 cm mobile echodensity following debulking.

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***Disclosures**: All authors have no disclosures.*

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