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Clinical Image

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# Severe Homograft Tricuspid Valve Stenosis

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## Abstract

A gravida 3, para 2, 26-year-old pregnant female with history of prior tricuspid valve replacement, was found to have severe stenosis of the homograft tricuspid valve on diagnostic transthoracic echocardiogram during routine cardiac testing.

## Keywords

Tricuspid valve stenosis, Transthoracic Echocardiography

## Clinical Image

A gravida 3, para 2, 26-year-old female at 24 weeks gestation presented to the cardiology clinic at the request of her obstetrician for cardiac evaluation. In 2014, the patient was diagnosed with tricuspid valve (TV) endocarditis from intravenous heroin abuse and underwent tricuspid valve replacement (TVR) with a homograft valve. Review of records revealed a prior transthoracic echocardiogram (TTE) done in 2015 showing a gradient of 9 mmHg across the TV valve but repeat TTE in 2018 showed a normally functioning prosthetic TV with physiologic regurgitation. The patient went for repeat TTE a few days later, which demonstrated a severely dilated right atrium (RA), trivial TV regurgitation and moderate TV stenosis, with peak gradient 16 mmHg (Figure 1A and 1B). In the next clinic visit, the patient reported mild dyspnea with exertion on strenuous activities, but no other complaints. Limited TTE was performed a month later, with unchanged severely dilated RA, now severe TV stenosis, with peak gradient 33 mmHg (mean gradient 19 mmHg) (Figure 1C and 1D).

Severe TV stenosis is defined as a mean gradient > 7 mmHg at heart ate 70 beats per minute. 2014 ACC/AHA Valvular Heart Disease guidelines recommend TV surgery for patients with bioprosthetic valve stenosis, as a class I recommendation, irrespective of symptoms [1]. Percutaneous transcatheter tricuspid balloon valvuloplasty (PTTBV) has been performed as an alternative, especially in high-risk patients, usually in native TS without significant TR, with mixed results in prosthetic valves due to insufficient long-term evidence [1, 2]. Additionally, an approach using an aortic or pulmonary valve prosthesis for a TV valve-in-valve implantation (TVIV) has shown encouraging outcomes in certain patient populations [3]. Even though TV stenosis is a rare condition, having a multitude of management options allows for a treatment strategy individually tailored the needs of a patient. Ultimately, the patient opted for surgical revision with a second homograft valve, as she did not wish to take lifelong anticoagulation.

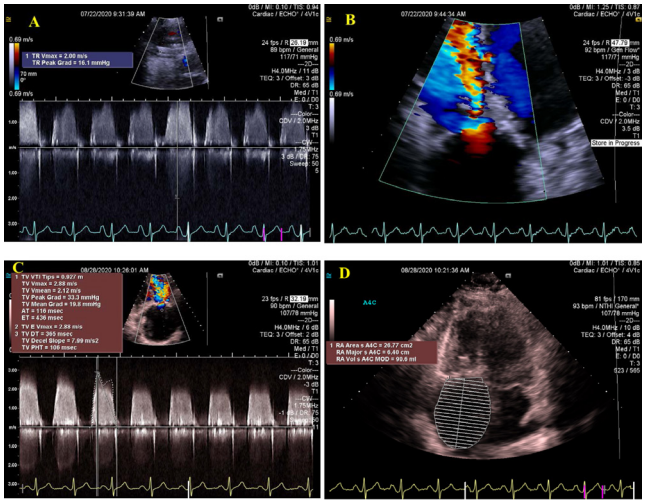

**Figure 1:** TTE. **A.** TS with peak gradient 16.1 mmHg. TV E Vmax was found to be 1.83 m/s (normal < 1 m/s), indicating functionally significant stenosis. **B.** Four-chamber view showing stenotic TS jet. **C.** Repeat TTE with increased TV peak gradient and TV mean gradient 19.8 mmHg. **D.** Severely dilated RA measured at 27.77 $cm^2$ (normal <18 $cm^2$), consistent with TS.

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