

IMAGING VIGNETTE

ADVANCED

CLINICAL VIGNETTE

Bicaval Transcatheter Prosthesis Implantation for Treatment of Tricuspid Regurgitation



First Report of Thrombosis

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ABSTRACT

The transcatheter bicaval valve system is an emerging therapeutic option for tricuspid regurgitation, consisting of 2 biological valves to prevent caval reflux. The experience with this device is still scarce, and to the best of our knowledge, this is the first case of thrombosis ever reported. **(Level of Difficulty: Advanced.)**

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A woman in her 80s presented with fever and dyspnea. She had previous history of heart failure with preserved ejection fraction, diabetes mellitus, atrial fibrillation, and end-stage renal disease with chronic hemodialysis. She had torrential tricuspid valve regurgitation and had a TricValve device (P+F Products + Features GmbH) implanted. This is an emerging transcatheter therapeutic option for patients with severe and symptomatic tricuspid valve regurgitation, who are considered to have high surgical risk. It consists in a bicaval system of 2 self-expanding biological valves to prevent caval reflux.^{1,2}

The patient was admitted with a blood pressure of 110/60 mm Hg, heart rate of 110 beats/min, and evidence of fluid overload.

Blood tests showed a C-reactive protein level of 180 mg/L and a high leukocyte count.

Echocardiography revealed a large mass in the inferior vena cava device (30 × 30 mm) (**Figure 1, Video 1**).

Blood and urinary culture results were positive for *Enterococcus faecalis*, and antibiotics were started along with parenteral anticoagulation, assuming device endocarditis and/or thrombus.

Positron emission tomography showed no metabolic activity in the device site.

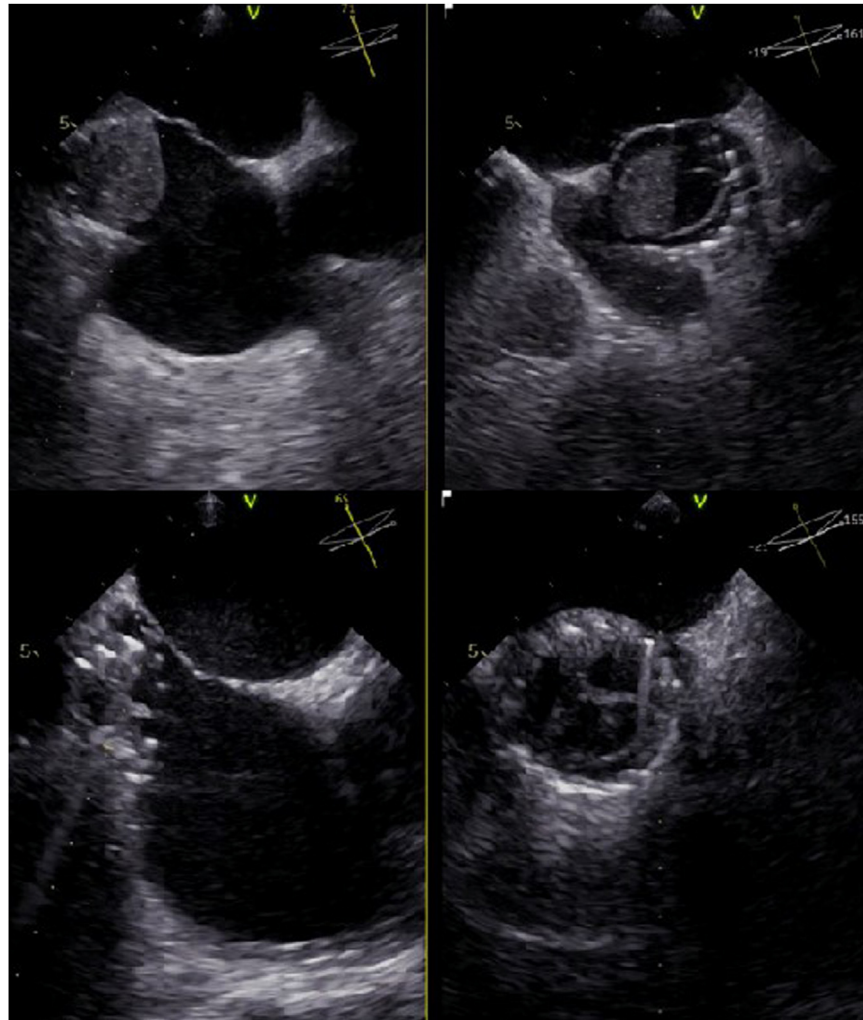
Antibiotics were stopped after 1 week, with subsequent clinical and echocardiographic improvement. The patient was discharged 10 days after admission, anticoagulated with vitamin K antagonist.

A follow-up echocardiogram was done 2 months after the initial episode, with near resolution of the thrombus (**Video 2**).

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The authors attest they are in compliance with human studies committees and animal welfare regulations of the authors' institutions and Food and Drug Administration guidelines, including patient consent where appropriate. For more information, visit the [Author Center](#).

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FIGURE 1 Initial Thrombus, With Subsequent Improvement After 2 Months of Anticoagulant Therapy

A mass in the inferior vena cava valve at admission (**top**), with near resolution after 2 months of anticoagulation (**bottom**).

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KEY WORDS thrombosis, tricuspid regurgitation, tricuspid valve

APPENDIX For supplemental videos, please see the online version of this paper.