



A rare complication of aortic valve replacement surgery- aorta-right ventricular fistula: an evaluation with real-time multiplane echocardiography

Aort kapak replasmanı cerrahisinin nadir bir komplikasyonu - aorta-sağ ventriküler fistül: Gerçek zamanlı "multiplane" ekokardiyografi ile değerlendirilmesi

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A 56-year-old woman was admitted to our department with severe calcific aortic stenosis of 80/41 mmHg peak/mean pressure gradient and left ventricular dysfunction with an ejection fraction (LVEF) of 25%. After appropriate medical therapy, the patient was referred to department of cardiovascular surgery and an aortic valve replacement surgery was applied with a 21 mm St. Jude Medical mechanical prosthetic valve. A permanent pacemaker

was implanted because of complete heart block developed soon after the surgery. After 2 months from surgery, a control echocardiogram demonstrated that left ventricular dysfunction improved markedly (LVEF -55%) and 34/17 mmHg peak/mean pressure gradient of the prosthesis was measured. These results were expected echocardiographic signs. However, with a modified long-axis view of the left ventricular outflow tract, a high-velocity

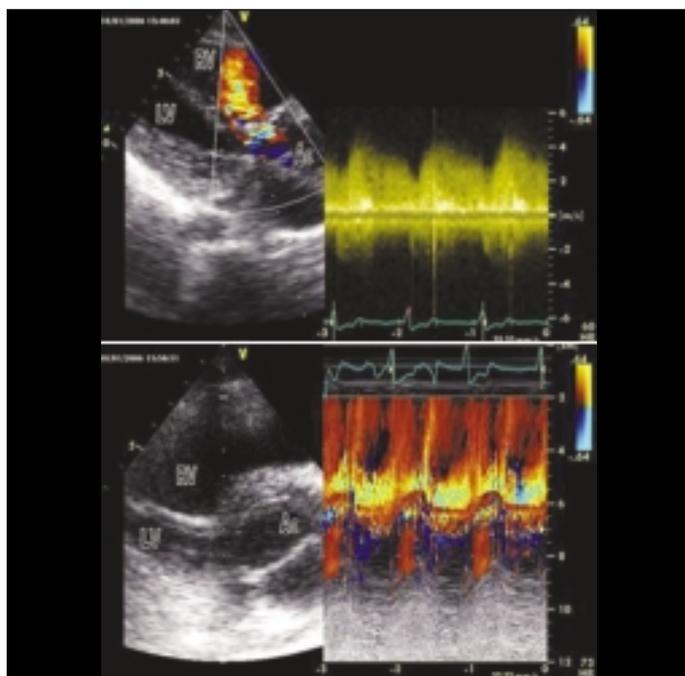


Figure 1. Transthoracic echocardiography with continuous-wave Doppler (top) and color M-mode (bottom) images showing continuous flow pattern in parasternal long-axis view

Ao- Aorta, LV- left ventricle, RV- right ventricle

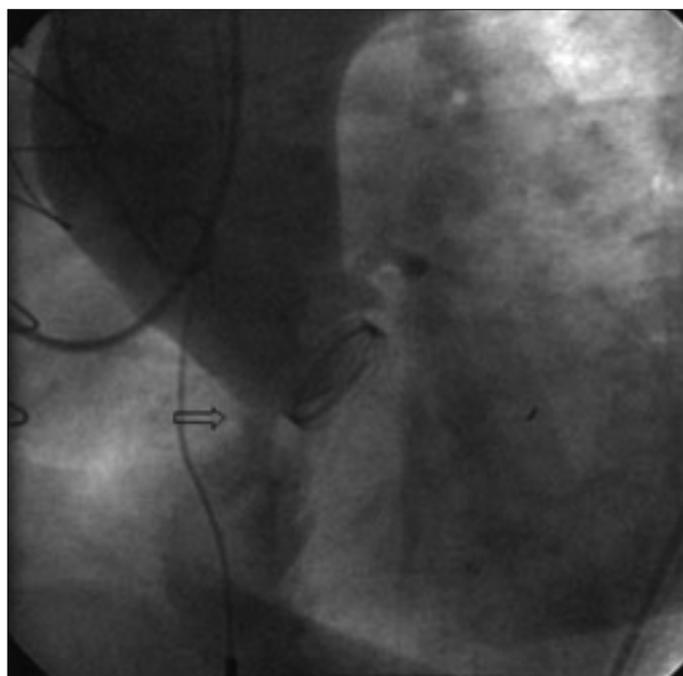


Figure 2. Aortography demonstrating a fistulous connection between aortic root and the right ventricle just above the mechanical prosthesis (arrow)

jet entering the right ventricle from the aortic root through a fistula formation was detected by color Doppler imaging. After that, heart was evaluated by real-time multiplane (tri-plane) color Doppler echocardiography and the high-velocity jet was demonstrated through 3 different tomographic image planes (GE Medical Systems, Vivid 7 Dimension, Horten, Norway) (Video 1. See corresponding video/movie images at www.anakarder.com). In addition, continuous flow pattern was observed by continuous-

wave Doppler and color M-mode echocardiography (Fig. 1). Aortic root angiography revealed a passage between the aorta and the right ventricle (Fig. 2). Although complications such as infection, valve dehiscence, and mechanical dysfunction might be seen with the prosthetic valves; fistula formation between the aorta and the other cardiac chambers is very rare. Some of such fistulous connections might be overlooked if a careful examination is not performed.