Quadricuspid aortic valve in a patient with mitral valve prolapse

Mehmet Fatih Özlü MD, Firat Özcan MD, Kumral Çağlı MD, Zehra Gölbaşı MD

A 72-year-old man was admitted to Yüksek İhtisas Hospital, Ankara, Turkey, with dyspnea. His medical history was remarkable only for hypertension. On physical examination, his blood pressure was 120/70 mmHg and his pulse rate was 86 beats/min. Cardiac auscultation revealed a grade 3/6 systolic murmur at the apex, and auscultation of the lungs revealed bilateral rales. A 12-lead electrocardiogram showed a normal sinus rhythm. Transthoracic echocardiography demonstrated anterior mitral valve leaflet prolapse with severe mitral regurgitation and a quadricuspid aortic valve with four equal-sized cusps, causing moderate aortic regurgitation, with an X-shaped commissural aspect in diastole. Transesophageal echocardiography demonstrated a quadricuspid aortic valve (Figures 1A and 1B) with central moderate aortic regurgitation and a flail segment on the anterior mitral valve leaflet with severe mitral regurgitation. The patient underwent elective mitral valve replacement.

Mitral valve prolapse is a common valvular abnormality. Although the overall prognosis of patients with mitral valve prolapse is excellent, it may cause serious complications, including infective endocarditis,

sudden cardiac death, cerebrovascular ischemic events and severe mitral regurgitation (1). The most important complication of mitral valve prolapse is severe mitral regurgitation, which may result from progressive myxomatous degeneration or chordal rupture (1). A quadricuspid aortic valve is a rare congenital malformation of the aortic valve. The main functional abnormality of a quadricuspid aortic valve is insufficiency (2). The structure of a quadricuspid aortic valve varies according to the dimension of each individual valve cusp: four equal cusps, three equal cusps with one minor cusp, or two large cusps with two small cusps (2). In the present case, we presented this rare condition again.

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Figure 1 A Transesophageal echocardiographic view in the aortic valve plane in diastole. The aortic valve demonstrated a characteristic X pattern with equal-sized cusps. B Transesophageal echocardiographic view in the aortic valve plane in systole. The aortic valve showed a squared leaflet aperture

Department of Cardiology, Yüksek İhtisas Hospital, Ankara, Turkey

Correspondence: Dr Firat Özcan, Yüksek İhtisas Hospital, Yargıç sokak 19/6 Cebeci, Ankara, 6420 Turkey. Telephone 90-505-057-7561,

e-mail drfo1979@yahoo.com

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