Coexistence of accessory mitral papillary muscle and ventricular septal defect

Aksesuvar mitral papiller kas ve ventriküler septal defekt birlikteliği

A 21-year-old female patient presented with a complaint of exertional dyspnea. On cardiac examination, a grade 3/6 pansystolic murmur was heard over the mesocardiac region. ECG revealed sinus rhythm and left ventricular hypertrophy with left axis deviation evident in lateral chest derivations. Transthoracic echocardiography (TTE) demonstrated a left ventricular ejection fraction of 65% and a perimembraneous ventricular septal defect (VSD) jet with a 120 mmHg maximal gradient obtained by the continuous wave Doppler. Right ventricular chamber size was normal and the calculated Qp/Qs ratio was 1.6. Apical four chamber and apical short axis views showed an accessory mitral papillary muscle with its chordae located parallel to the interventricular septum extending to the anterior mitral leaflet. There was no mitral regurgitation or stenosis, nor an evident stenosis of the left ventricular outflow tract (LVOT) (Fig. 1-3 and Video 1, 2. See corresponding video/movie images at www.anakarder.com). A subsequent real-time three-dimensional transesophageal echocardiography (TEE) revealed the presence of an accessory mitral papillary muscle and an associated chordae extending from the anterolateral papillary muscle parallel to the interventricular septum to the edge of the anterior mitral leaflet in the LVOT and a perimembraneous VSD (Fig. 4, 5 and Video 3, 4. See corresponding video/movie images at www.anakarder.com). For comprehensive evaluation of the anatomy, a cardiac magnetic resonance imaging was also performed. Vertical long and short-axis images confirmed the diagnosis of the accessory papillary muscle originating from anterolateral papillary muscle and perimembraneous VSD (Fig. 6, Video 5. See corresponding video/movie images at www.anakarder.com). The patient was scheduled to an elective surgical operation.

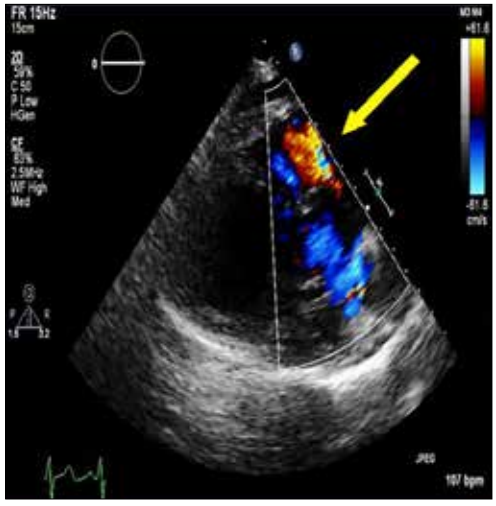

Figure 1. TTE in the parasternal long- axis and apical four- chamber views. Color Doppler imaging demonstrating the perimembraneous VSD, and two-dimensional echocardiogram showing the accessory papillary muscle across the LVOT

LVOT - left ventricular outflow tract, TTE - transthoracic echocardiography, VSD - ventricular septal defect

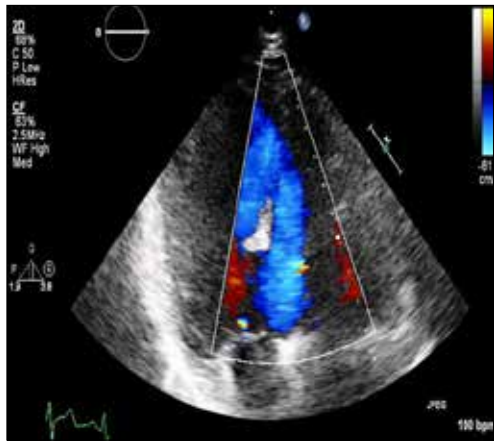

Figure 2. TTE in the parasternal long- axis and apical four- chamber views. Color Doppler imaging demonstrating the perimembraneous VSD, and two-dimensional echocardiogram showing the accessory papillary muscle across the LVOT

LVOT - left ventricular outflow tract, TTE - transthoracic echocardiography, VSD - ventricular septal defect

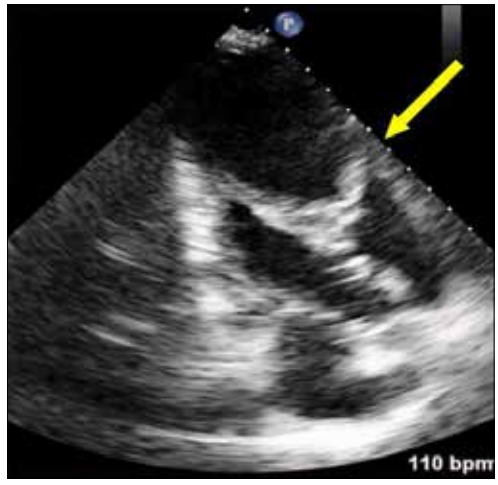

Figure 3. TTE in the modified two-chamber view. The accessory papillary muscle originating from the anterolateral papillary muscle is seen

TTE - transthoracic echocardiography

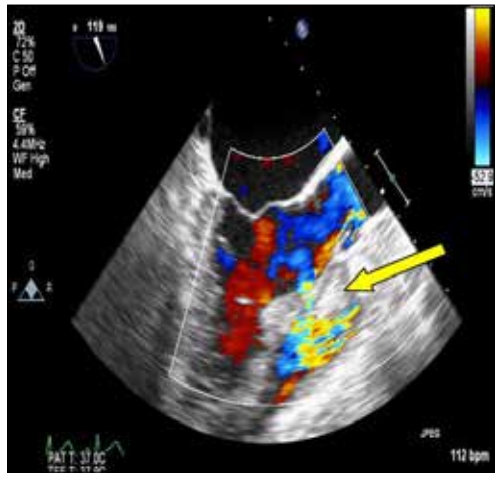

Figure 4. TEE demonstrating the perimembraneous VSD

TEE - transesophageal echocardiography, VSD - ventricular septal defect

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Figure 5. Real-time three-dimensional TEE demonstrating the accessory papillary muscle extending from the interventricular septum to the LVOT

LVOT - left ventricular outflow tract, TEE - transesophageal echocardiography

Figure 6. Cardiac MRI in the vertical axis showing the accessory papillary muscle

MRI - magnetic resonance imaging

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Video 1. TTE in the parasternal long-axis color-Doppler imaging demonstrating shows the perimembraneous VSD

LVOT - left ventricular outflow tract, TTE - transthoracic echocardiography, VSD - ventricular septal defect

Video 2. TTE in apical four-chamber color-Doppler imaging demonstrating shows the accessory papillary muscle across the LVOT

LVOT - left ventricular outflow tract, TTE - transthoracic echocardiography

Video 3. TEE shows demonstrating the perimembraneous VSD

TEE - transesophageal echocardiography, VSD - ventricular septal defect

Video 4. Real-time three dimension TEE demonstrating the accessory papillary muscle extending from the interventricular septum to the LVOT

LVOT - left ventricular outflow tract, TEE - transesophageal echocardiography

Video 5. Cardiac MRI in the vertical axis showing the accessory papillary muscle

MRI - magnetic resonance imaging

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All-in-one case: constrictive pericarditis, secundum atrial septal defect, persistent left superior vena cava and anomalous drainage of hemiazygos vein to coronary sinus

Hepsi bir vakada: Konstrüktif perikardit, sekundum atriyal septal defekt, persistan sol süperiyor vena kava ve hemiazigos venin koroner sinüse açılması

We present a 31-year-old female with history of constrictive pericarditis operation due to childhood tuberculosis who complained of breathlessness and swelling (Fig. 1A). We diagnosed secundum atrial septal defect (ASD) and dilated coronary sinus (CS) in her control echocardiography (Fig. 1B). Contrast echocardiography via left brachial venous injection revealed persistent left superior vena cava (PLSVC). To evaluate the heart and the pericardium, contrast enhanced multislice computerized tomography was performed via left brachial venous injection. Volume rendered images showed PLSVC and hemiazygos vein anomalous drainage to CS were diagnosed (Fig. 2A, B). There were no abnormal shunts from PLSVC and hemiazygos vein to other cardiac areas. Vena cava inferior (VCI) was right- sided and draining to

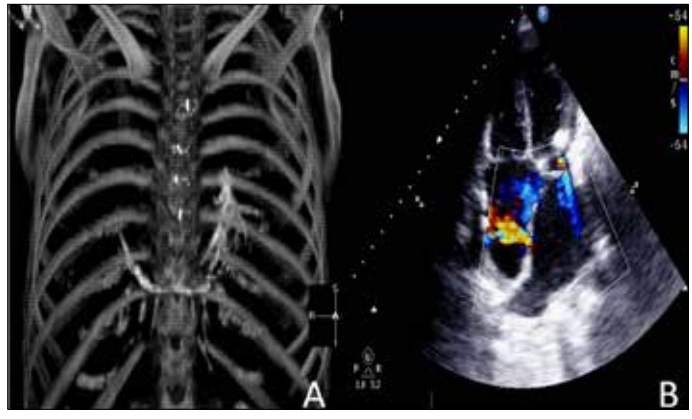

Figure 1. A) Multislice CT angiogram, three-dimensional bone-window image of pericardial calcification, B) Color Doppler echocardiography showing secundum atrial septal defect

CT - computerized tomography