Tunnel-like ventricular septal defect

Tünel şeklinde ventriküler septal defekt

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A 21-year-old male was admitted to our hospital with complaints of dyspnea on exertion and palpitation. Physical examination was remarkable with holosystolic murmur at the left mesocardiac area. No sign of heart failure or pulmonary hypertension was observed. Transthoracic echocardiography yielded a large ventricular septal defect (VSD) located at the mid-portion of the muscular septum (Fig. 1, 2). The VSD revealed a tunnel-like defect through the septum. There was a membrane at the right ventricular end of the defect. There was a systolic bulging of the membrane and right-to-left shunting during ventricular systole. Slight enlargement of the right heart chambers was noted as well as increased pulmonary flow (Qp/Qs ratio - 2.0). Systolic pressure of pulmonary artery calculated from tricuspid insufficiency was 30 mmHg. The patient underwent surgical repair.

Muscular type VSD constitutes 5-20% of all VSDs and may be located at apical, central or outlet portions of the muscular septum (1). Clinically, the severity of symptoms depends on the defect size, the amount of left-to-right shunting, pulmonary hypertension, and the coexistence of other cardiac diseases like pulmonary stenosis or aortic insufficiency. In adults, dyspnea, cyanosis, heart failure findings, and syncope are the most frequent signs and symptoms. The amount of left-to-right shunt was found to be moderate in the present case. In the absence of pulmonary hypertension, the size of the defect suggests a larger shunt ratio. We think that the presence of the membrane is responsible for relatively smaller shunting, and thus, benign clinical findings. In membranous VSDs, the septal leaflet of the tricuspid valve also plays a similar role. However, in our case, all the leaflets of the tricuspid valve were intact.

References

1. Ammash NM, Warnes CA. Ventricular septal defects in adults. Ann Intern Med 2001; 135: 812-24.

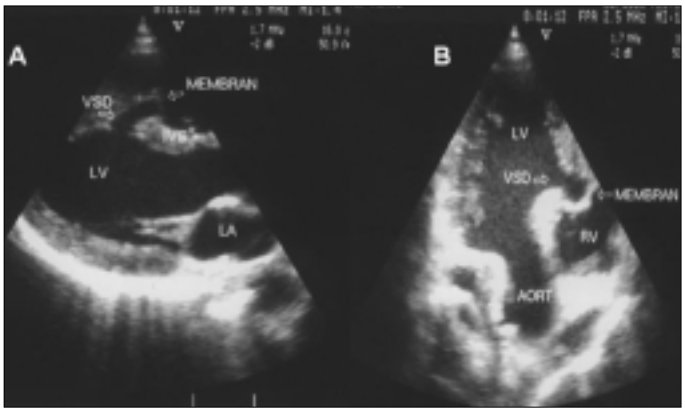

Figure 1. Parasternal long axis (A) and apical (B) echocardiographic views depicting the ventricular septal defect and the membrane

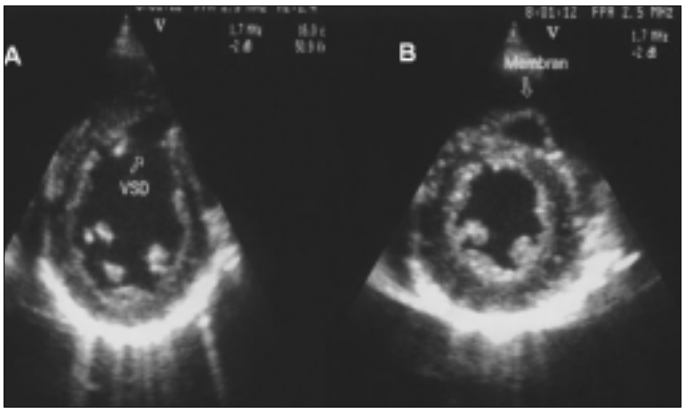

Figure 2. Parasternal short axis echocardiographic views (A and B) depicting the ventricular septal defect and the membrane

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