Incidental diagnosis of membranous obstruction of the inferior vena cava using echocardiography in an asymptomatic child

Asemptomatik bir çocukta inferiyor vena kavanın membranöz obstruksiyonunun ekokardiyografi ile rastlantısal tanısı

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A 5-year-old child was referred to our clinic for the evaluation of cardiac murmur by his primary care physician. The peripheral blood analyses, electrocardiogram and chest X-ray were normal. The patient subsequently underwent an echocardiographic study. There was no evidence of intra or extracardiac anomaly. However, occlusion of the inferior vena cava (IVC) at the junction of the right atrium by a membrane was detected by 2-D echocardiography (Fig, 1) and Doppler echocardiography revealed 2-3 mmHg gradient on the narrowed area of the inferior vena cava (See corresponding video movie at www.anakarder.com). Hepatic veins were patent and there were no collaterals from the hepatic venous system to the hemiazygous vein. Cardiac catheterization and angiography confirmed the presence of the membrane at the junction of vena cava and right atrium with no significant gradient (Fig. 2 and 3). Abdominal ultrasonography revealed that there was no evidence of hepatic disease such as Budd-Chiari syndrome, hepatic fibrosis or hepatosplenomegaly. Since the child had no symptoms and hepatic enzymes were within normal limits the patient underwent clinical follow-up and regular echocardiographic study. The patient is doing well at 6 months follow-up with no clinical evidence of hepatic dysfunction.

This pathologic condition is frequently one of the important causes of Budd-Chiari syndrome. Intervention is often necessary, as medical treatment is ineffective. Surgical or interventional techniques such as balloon angioplasty or stenting have previously been suggested for the treatment of symptomatic cases. We have not found a similar case with asymptomatic IVC narrowing in the literature. We believe that asymptomatic case with IVC obstruction is an extremely rare and the diagnosis may be missed. We believe that the echocardiographic investigation is reliable as a noninvasive technique for the diagnosis of these cases.

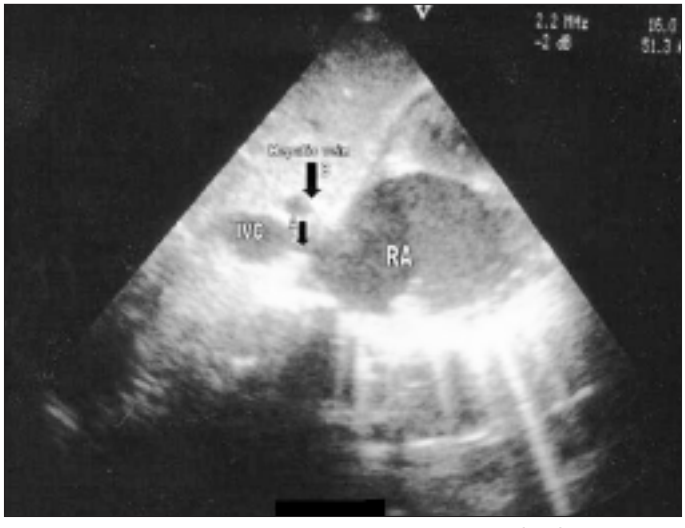

Figure 1. A typical obstruction of the inferior vena cava (IVC) is demonstrated by echocardiography. Arrow points the narrowed area. 2-3 mmHg gradient is recorded from the occluded part of the inferior vena cava

IVC- inferior vena cava, RA- right atrium
Arrow A- demonstrates the membrane narrowing the IVC, Arrow B- hepatic vein

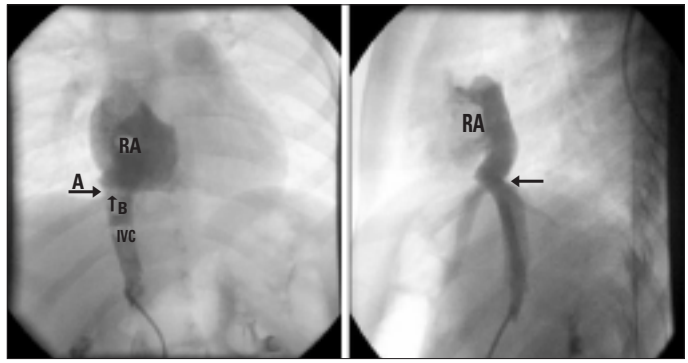

Figure 2 and 3. Antero-posterior (Fig. 2) and lateral (Fig. 3.) angiographic views show and confirm the noncritical inferior vena cava narrowing Arrow A (in Fig. 2) and black arrowhead (in Fig. 3.) show narrowed area at the cavo-atrial junction

Arrow B- inferior vena cava, RA- right atrium

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