Case Report

Idiopathic Dilatation of Inferior Vena Cava

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Abstract

A case of isolated dilation of inferior vena cava with diminished inspiratory collapse is reported. There was no other abnormality. Diameter and collapsibility of IVC should be interpreted in collaboration with other clinical and echocardiographic parameters before drawing any definitive conclusion.

Introduction

Maximum diameter of IVC and degree if it’s inspiratory collapse are considered to correlate with mean RA pressure. We had a patient who had increased diameter of IVC with diminished inspiratory collapse without any other abnormality.

Case Report

A 33 years old asymptomatic male was referred for echocardiography. Clinical examination, ECG and skiagram of chest were normal. Echocardiography revealed dilated inferior vena cava (IVC) with diminished inspiratory collapse (Expiration-24.6mm, Inspiration-20.5mm) (Figures 1 a,b). Spontaneous contrast was present. There was no obstruction to flow up to its entry in right atrium. Hepatic vein was mildly dilated (13.9mm) but flow was normal (Systolic-0.5m/sec, Diastolic-0.4m/sec, atrial reversal-0.24m/sec) (Figure 2a). Rest of the echocardiographic examination was normal. PA flow peak velocity-1.01m/sec, acceleration time-156ms (Figure 2b), no pulmonary regurgitation. Tricuspid flow- E-0.82m/sec, A-0.26m/sec, minimal tricuspid regurgitation- peak velocity-2.4m/sec (Figure 2c). Superior vena cava flow- systolic-0.5m/sec, diastolic-0.3m/sec, atrial reversal-0.15m/sec (Figure 2d). Right atrium and right ventricle were normal in size and RV contractility was normal (Figure 3 a,b). There was no regional wall motion abnormality. On transesophageal echocardiography IVC, SVC, interatrial septum, RA and RV were normal.

Discussion

Echocardiographic estimation of right atrial pressure is based on size and inspiratory collapse of IVC.1 Maximum diameter <12mm and collapse>50% suggests normal RA pressure (around 5-7mmHg). Maximum diameter up to 20mm and collapse>50% suggests RA pressure around 10mmHg. Maximum diameter up to 20mm but collapse<50% suggests RA pressure around 15mmHg. Maximum diameter>20mm without inspiratory collapse suggest RA pressure of>15mmHg. Spontaneous swirling smoke like echoes moving slowly in IVC suggest increased RA pressure with slow flow in IVC. It should be differentiated from “Particulate matter” which are relatively more dense, discrete and move rapidly towards RA. Particulate matter in IVC can
also be seen in subjects with increased hematocrit, increased fibrinogen levels and renal failure. Our patient did not have any other clinical, electrocardiographic, or echocardiographic evidence of increased RA pressure. Ethical committee of hospital and patient did not agree for invasive evaluation. We feel that diameter and collapsibility of IVC should be interpreted in collaboration with other parameters before making any definite conclusion.

References

