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Rare cause of biventricular thrombi

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Abstract

A rare case of biventricular thrombi being diagnosed in a patient with alcoholic cardiomyopathy by CT-scan, and was not detected by transthoracic echocardiogram.

Keywords

Biventricular thrombi; alcoholic cardiomyopathy; idiopathic cardiomyopathy.

Abbreviations

DCM: Dilated cardiomyopathy; LV: Left ventricle; RV: Right ventricle.

Background

Chronic alcohol use is a major leading cause of non-ischemic Dilated Cardiomyopathy (DCM) and may be implicated as a risk factor in 3-40% of cases of idiopathic DCM [1]. DCM is reported in patients with cirrhosis and is masked by splanchnic vasodilation seen in cirrhosis [2]. In DCM, incidence of left ventricular thrombus due to severe systolic dysfunction is well known, however the incidence of biventricular thrombi is extremely rare and a limited number of cases have been documented and is a risk for simultaneous pulmonary and systemic embolization. This case report describesa case of ethanol related DCM with biventricular clot.

Case Presentation

A 44 year old Indian male, chronic consumer of alcohol, presented to our center for complaints of jaundice for the past 2 months which was associated with breathlessness. Swelling of feet was noticed recently in the last two weeks. On examination, he was icteric with bilateral pitting pedal edema and vitals were normal. Systemic examination was unremarkable. Relevant blood investigations was suggestive of

hepatocellular jaundice with transaminitis. He was provisionally diagnosed with alcoholic liver disease. Contrast enhanced CT-scan was done and was suggestive of hepatomegaly with dilated hepatic veins and IVC. Furthermore, biventricular thrombi were noted with cardiomegaly (Figures 1 & 2). Cardiac workup was done. ECG showed sinus tachycardia and transthoracic 2D-echocardiogram revealed severe biventricular dysfunction (left ventricular ejection fraction of 25%) and mild pulmonary arterial hypertension. There was no evidence of a clot in either of the ventricles. He was diagnosed with alcoholic DCM related cardiac failure with biventricular thrombi and congestive hepatitis.

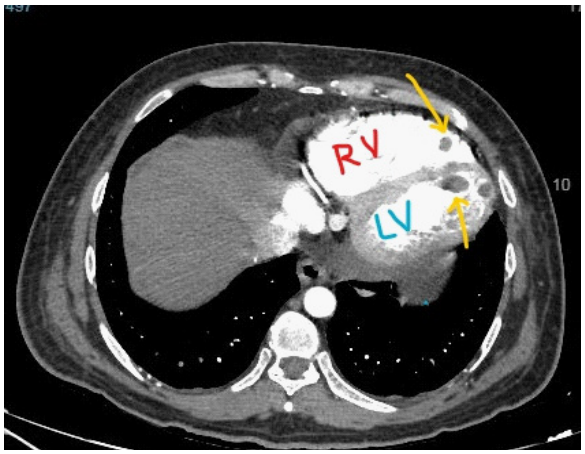

Figure 1: CT scan (axial view) showing bilateral ventricular thrombi shown by the yellow arrow.

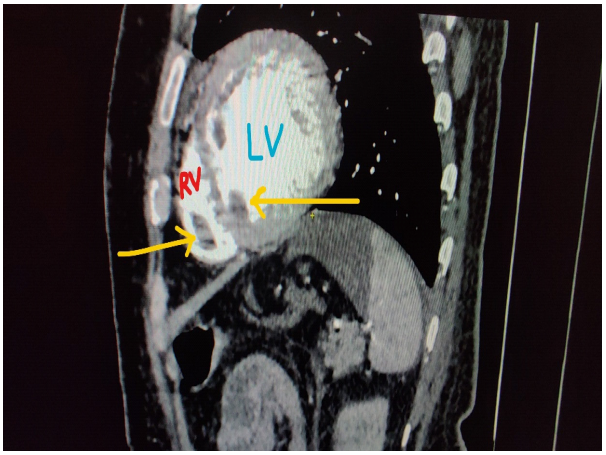

Figure 2: CT scan (sagittal view) demonstrating the same findings with the yellow arrow.

Discussion

Left ventricular thrombus is commonly found in DCM [3]. On the other hand, the incidence of biventricular thrombi is extremely rare [4] and there are case reports with peripartum cardiomyopathy, HIV induced DCM, ischemic DCM and idiopathic DCM [5,6]. The exact cause for biventricular thrombi formation is not singular but multi-factorial. The setting of global hypokinesia coupled with a pro-coagulant state is a widely accepted hypothesis for the formation of thrombi in bilateral ventricles. Procoagulant states such as thromphilias, anti-phospholipid syndrome, heparin induced thrombocytopenia, hyper eosinophilia, infections, pregnancy and chronic inflammatory syndromes are the reported conditions [7,10].

It is noted that the pathophysiology of thrombus formation is different in ischemic DCM with compared to idiopathic DCM. The endocardial abnormalities inducesthrombi formation by stagnant blood pooling in the cardiac apex is not seen in idiopathic DCM [8].

Ventricular clots can be missed on two dimensional transthoracic echocardiogram as evidenced in our case report and hence, supplementation with CT/MRI cardiac imaging may also be required for suspected cases [9].

After establishing the diagnosis, anti-coagulation regiments with warfarin or heparin has been used to resolve the thrombi in a number of patients [5,8].

Conclusion

Alcoholic DCM can present a clinical picture similar to alcohol liver disease and diagnosis must be kept in mind during evaluation. The presence of biventricular thrombi is rare in alcoholic DCM, however, it must be screened in order to avoid a potential thromboembolic event.

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