

Right atrial appendage thrombus in a heart failure patient with sinus rhythm

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SUMMARY

A right atrial appendage thrombus is almost always associated with atrial fibrillation. We tried to emphasize in this case report that such a thrombus may develop in heart failure patients even in the presence of sinus rhythm.

Key words: Heart failure, right atrial appendage, sinus rhythm, thrombus

ÖZET

Sinüs ritminde kalp yetersizliği olan bir hastada sağ atriyal apendiks içinde trombus

Sağ atriyal apendiks içinde trombus hemen her zaman atriyal fibrilasyon ile ilişkilidir. Bu olgu sunumunda, böyle bir trombusün sinüs ritmi varlığında bile kalp yetersizliği hastalarında oluşabileceğini vurgulamaya çalıştık.

Anahtar kelimeler: Kalp yetersizliği, sağ atriyal apendiks, sinüs ritmi, thrombus

Introduction

Intracardiac masses are often incidentally detected during imaging studies. A tumor, thrombus, or vegetation may be seen as an intracardiac mass (1). Thrombus can be located within atrial cavities, ventricular cavities or both. Within the atria, thrombus can be found in appendages, body of the atrium or in a combination of these areas (2). We, herein, report a 21-year-old male patient with a right atrial appendage (RAA) thrombus.

Case Report

A 21-year-old male was admitted to our clinic with exertional dyspnea and fatigue. His previous cardiac history was unremarkable. We detected faint heart sounds and grade 2/6 apical systolic murmur during physical examination. The admission electrocardiography (ECG) and holter monitoring demonstrated sinus rhythm (Figure 1). Cardiothoracic index was found to be increased on chest X-ray. Transthoracic echocardiography revealed biventricular failure (Left ventricular EF: 10%, Right ventricular TAPSE 11 mm), mild mitral insufficiency, mild to moderate tricuspid insufficiency and suspicious mass in the right atrium. Further imaging study with transesophageal echocardiography (TEE) revealed prominent spontaneous echo contrast (SEC) within the right atrium and a fresh thrombus reaching 20x25 mm diameter located at the right atrial appendage (Figure 2). Left atrial appendage was free of thrombus. All biochemical test results including homocysteine levels were within normal limits. Prothrombin time, activated partial thromboplastin time, lupus anticoagulant, anti-cardiolipin antibody, fibrinogen levels and hereditary conditions that increase the tendency to thrombus formation including factor V leiden, protrombin gene mutation and methylenetetrahydrofolate reductase gene mutation were found normal. Doppler ultrasonography was performed and deep vein thrombosis was excluded. Coronary

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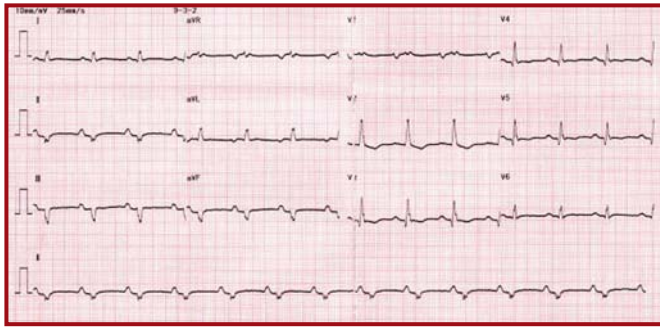


Figure 1. Electrocardiography showing sinus rhythm

angiography was normal. We decided that the patient had idiopathic dilated cardiomyopathy and appropriate therapy was given including warfarin. Second TEE examination at the third month revealed a decrease in thrombus size and we decided to continue the therapy.

Discussion

Intracardiac thrombus may develop as a consequence of multiple underlying cardiac disorders. Atrial fibrillation is a major underlying predisposing factor in patients with a right atrial appendage thrombus (2,3). However, our patient was in sinus rhythm which makes the presence of right atrial appendage thrombus an unusual finding. We can speculate that right ventricular dysfunction may cause right atrial appendage thrombus because of low flow state. Dilated cardiomyopathy is associated with poor atrial emptying and blood stasis resulting in intracardiac thrombus. The most frequent location of the thrombus in patients with dilated cardiomyopathy is the left ventricle (2). Our patient also had SEC in the right heart chambers. We thought that the presence of SEC was the predisposing factor for thrombus development (4). Indeed, de Divitiis et al. reported SEC as the only independent predictive factor for RAA thrombus (3).

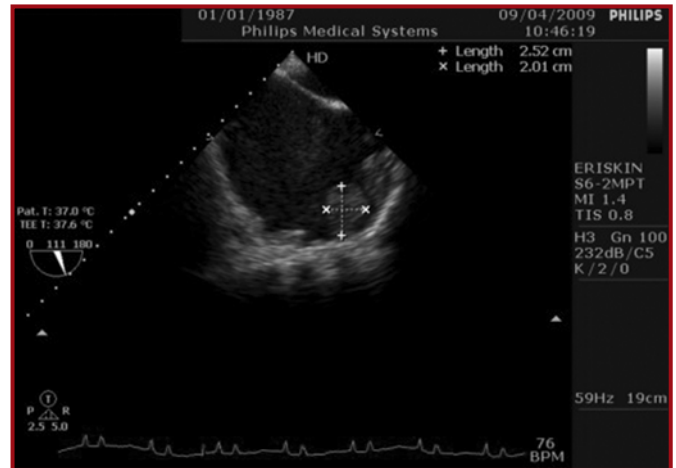


Figure 2. Transesophageal echocardiography showing a fresh thrombus located at the right atrial appendage

In conclusion, a right atrial appendage thrombus may develop in right heart failure patients without atrial fibrillation and TEE has superior diagnostic utility in such cases.

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