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CASE REPORT

Right atrial thrombus: A rare presentation of plasminogen activator inhibitor deficiency☆

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KEYWORDS
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Abstract Free-floating right atrial thrombi are rare but associated with high mortality. Although advances in echocardiography have improved diagnosis, their management is still the subject of debate. A 24-year-old woman with a history of smoking, obesity and oral contraceptive use presented to the emergency department with dyspnea, cough and hemoptysis. Transthoracic echocardiography revealed a large free-floating cardiac mass occupying the right atrial chamber and restricting tricuspid valve opening. In view of recurrent pulmonary embolism, she was referred for cardiac surgery and the cardiac mass was excised. Anatomopathological analysis revealed an organized and calcified thrombus. Genetic study showed her to be homozygous for the 4G/4G allelic variant of plasminogen activator inhibitor-1 and heterozygous for the allelic variant A1298C of 5,10-methylenetetrahydrofolate reductase.

PALAVRAS-CHAVE
Inibidor do plaminogénio;
Trombo aurícula direita;
Tromboembolismo pulmonar

Trombo na aurícula direita: Apresentação rara da deficiência do inibidor do ativador do plaminogénio

Resumo A presença de trombos móveis na aurícula direita são fenómenos raros, mas associados a uma elevada mortalidade. Apesar de a ecocardiorafia ter permitido avanços no seu diagnóstico a sua abordagem continua a ser motivo de debate. Neste artigo apresentamos o caso de uma doente do sexo feminino, de 24 anos com antecedentes de tabagismo, obesidade e sob terapêutica anovulatória que recorre ao serviço de urgência por cansaço fácil e tosse com

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expectoração hemoptóica. O ecocardiograma transtorácico revelou massa, móvel, multilobulada de grandes dimensões na aurícula direita, condicionando abertura da válvula tricúspide. Perante episódios recorrentes de embolia pulmonar foi submetida a cirurgia cardíaca com exérese da massa, sendo o resultado anatomopatológico compatível com trombo organizado com calcificação. O estudo genético revelou homozigotia para a variante alélica PAI-1:-675G >A (4G/4G) do inibidor do activador do plasminogénio e heterozigotia para a variante alélica MTHFR 1298 A/C da 5,10-metilenotetrahidrofolato redutase.

Introduction

Free-floating thrombi in the right cardiac chambers are rare, being found almost exclusively in patients with suspected or confirmed pulmonary thromboembolism.[1] Associated mortality is higher than in isolated pulmonary thromboembolism and can exceed 40%, since they are normally an indication of imminent and potentially fatal pulmonary embolism.[2,3]

Although the latest European Society of Cardiology guidelines on the diagnosis and management of acute pulmonary embolism recommend transthoracic echocardiography in particular circumstances, its routine use could improve diagnosis of right heart thrombi in these patients.[2,4]

Despite advances in diagnosis, treatment of right heart thrombi is still the subject of debate.[1,2]

Case report

A 24-year-old woman, morbidly obese (body mass index 40 kg/m^2), a smoker (1 pack/year since the age of 14) and taking oral contraceptives since the age of 17, was apparently asymptomatic until one month before hospitalization, when she began to suffer progressively worsening fatigue on minimal exertion, together with dyspnea and cough with expectoration, mainly mucous but at times bloody. Physical examination revealed tachypnea (24 cycles/min), tachycardia (105 bpm) and blood pressure of 145/85 mm Hg. No other significant alterations were observed.

Laboratory tests showed no anemia or elevation of inflammatory parameters or markers of myocardial necrosis, but D-dimers were 3.42 μg/ml (reference value: <0.5 μg/ml).

The electrocardiogram (ECG) (Figure 1) showed sinus tachycardia at 110 bpm, tall R waves in V1–V3 and T-wave inversion in V1–V2.

Given the diagnostic hypothesis of pulmonary thromboembolism, and in order to clarify the clinical situation, transthoracic echocardiography was performed, which revealed a large multilobulated mass in the right atrium, protruding through the tricuspid valve into the right

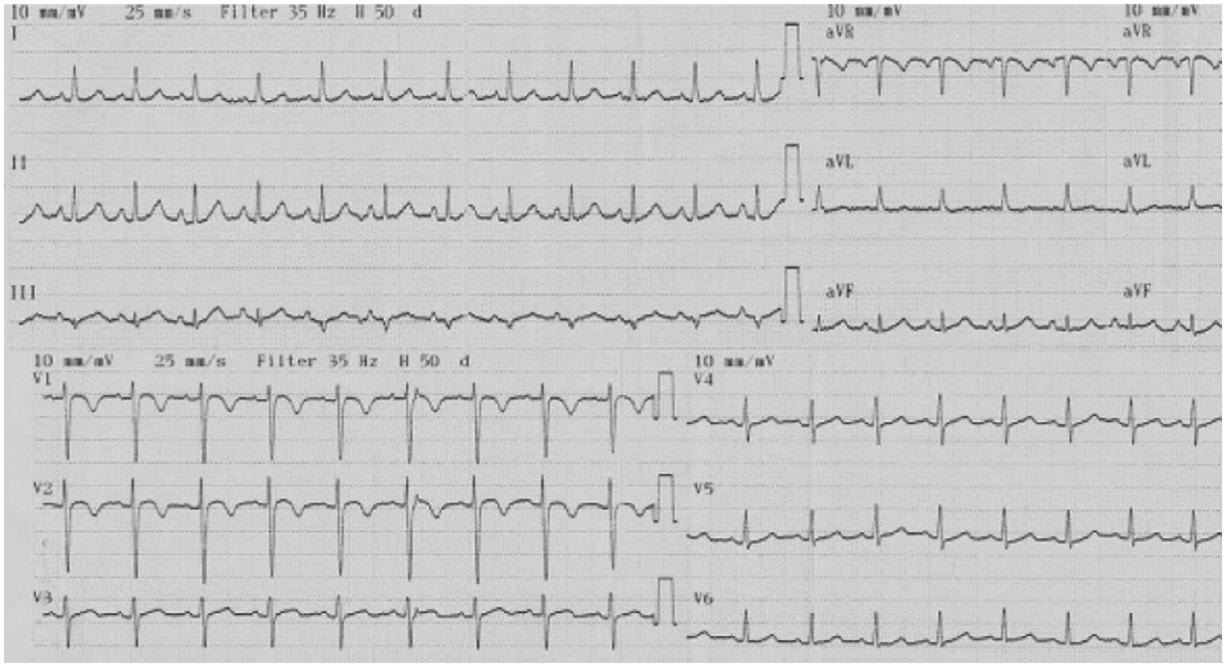

Figure 1 ECG showing sinus tachycardia with tall R waves in V1–V3 and T-wave inversion in V1–V2.