

Right atrial mass—a venous thrombosis in transit

Jonathan W Hinton, John Lainchbury, Ian Crozier

Abstract

Right heart thrombi are unusual complications of pulmonary embolism that are associated with a high early mortality. We present a case and transoesophageal echocardiography of a 65-year-old man who presented with pulmonary embolism, following routine knee replacement and was found to have a type A right heart thrombus. Despite the increased risk associated with this presentation, treatment with heparin alone was successful.

Case report

A 65-year-old man was admitted with an acute pulmonary embolism. He had undergone a routine knee replacement 2 days prior and then presented with syncope and hypoxia. He had no other significant history.

On examination he was unwell, tachycardic and had a swollen left leg. His electrocardiogram showed atrial fibrillation with a ventricular rate of 107 beats per minute.

Computerised tomography pulmonary angiogram showed extensive bilateral pulmonary emboli with borderline right heart strain. He was treated with intravenous heparin and loaded with warfarin (he was not thrombolysed due to his recent surgery).

Transthoracic echocardiography showed a flattened septum with abnormal motion secondary to right ventricular pressure overload and a moderately dilated right ventricle with moderate to severe right ventricular systolic impairment. In addition there was a mobile structure in the right atrium. Subsequent transoesophageal echo showed a large mobile linear mass within the right atrium, which was curled around the Eustachian valve (Figure 1).

A repeat transthoracic echo prior to discharge showed no sign of the thrombus that was previously seen. He recovered well and was discharged a week later.

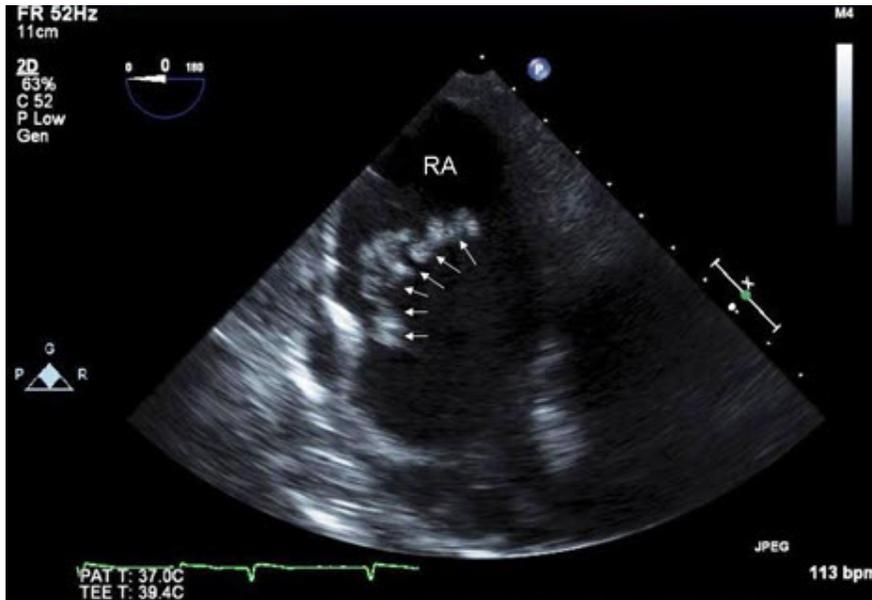
Discussion

Right atrial thrombi in association with pulmonary embolism have been well reported.¹⁻⁴ This complication occurs in less than 4% of unselected patients with pulmonary embolism but is found in 7–18% of patients requiring admission to intensive care with pulmonary embolism.⁵

There are two forms of right heart thrombi: type A (as in our patient) which are long, thin, highly mobile and are associated with a high incidence of deep vein thrombosis; type B resemble left heart thrombi, are immobile and are associated with thrombogenic cardiac abnormalities.⁴

Whilst this is an unusual complication of pulmonary embolism, type A thrombi are important because they are associated with a high early mortality (45% within the first 8 days).⁴ Treatment is controversial owing to the low number of cases and the lack of randomised controlled trials.⁵ Thrombolysis and surgical intervention seem to have preferable outcomes compared with anticoagulation alone.⁵

Figure 1. Right atrial thrombus (RA – right atrium)



We postulate that the right atrial mass seen on transthoracic echocardiography in this patient was a type A right heart thrombus in transit from the peripheral venous system. Subsequently, this may have either embolised into the pulmonary bed (without clinical sequelae) or dissolved.

Whilst thrombus passing through the right atrium has been previously reported these images show an unusual and clear example of a venous thrombus that became entrapped in the right atrium periodically. This was managed conservatively with anticoagulation and did not go on to cause a further significant embolism.

This case highlights that right atrial thrombi should be considered in patients presenting with pulmonary embolism who are found to have a right atrial mass on echocardiography and the ability of transoesophageal echo to clarify the nature of the mass. Despite increased risk indicated by the clinical presentation and echocardiographic appearances treatment with heparin alone was successful.

Author information: Jonathan W Hinton, Cardiology Registrar; John Lainchbury, Cardiology Consultant; Ian Crozier, Cardiology Consultant; Canterbury District Health Board, Christchurch

Correspondence: Jonathan Hinton. Email: jwh204@hotmail.co.uk

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