A dancing thrombus in the right atrium going hand-in-hand with the electrocardiogram

J.M. van Opstal*, S.C. Bekkers, and A.P.M. Gorgels

Department of Cardiology, Academic Hospital Maastricht, P. Debyelaan 25, 6202 AZ Maastricht, The Netherlands

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A 69-year-old male with a large pulmonary embolism is described before and after thrombolytic treatment. The echocardiographic and electrocardiographic hallmarks of right ventricular pressure overload and dilatation are illustrated.

KEYWORDS
Pulmonary embolism; Right atrial thrombus; ECG

A 69-year-old male presented with a collapse, dyspnea and low oxygen saturations.

The electrocardiogram (ECG, Figure 1A) demonstrated low voltage of the QRS complexes in the extremity leads, an undetermined QRS axis, and a right bundle branch block with rsR’ pattern till lead V4. These ECG signs are indicative of acute right ventricular pressure overload and dilatation.1

An echocardiogram (movie 1) showed an enlarged right atrium (RA) and right ventricle (RV), paradoxical septal motion, grade 3 tricuspid incompetence and elevated right ventricular pressures of 50 mmHg. A mobile mass in the RA, probably entrapped in the Chiari network, was moving in and out the RA and into the RV. The working diagnosis of massive pulmonary embolism was made (and later on confirmed by spiral computed tomography angiography). Because of the hemodynamic instability thrombolysis was given instantly (Metalyse® 40 mg IV) whereafter the patient recovered remarkably. The

Figure 1 Electrocardiogram demonstrating (A) right ventricular pressure overload and dilatation and (B) after thrombolysis.

* Corresponding author. Tel: +31 621941644.
E-mail address: jmvanopstal@yahoo.com

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echocardiogram showed the disappearance of the thrombus mass together with a reduction in RA and RV dimensions.

The ECG (Figure 1B) improved accordingly. The rSR' pattern was now present only in lead V1, corresponding with the decreased RV size on the echocardiogram. The initial R (septal activation) in lead V1 and V2 had returned, confirming electrocardiographically the reduction of the RA size (allowing the interventricular septum to return to a more cranial position under lead V1).

The patient fully recovered and was discharged with coumarin.

Entrapment of thrombo-emboli in the Chiari network can be life saving and serve as a congenital inferior vena cava filter.2

Supplementary material

Supplementary data associated with this article can be found in the online version.

References