

A thrombus migrating from the left femoral-popliteal deep vein through the right atrium leading to a massive pulmonary embolism

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A 99-year-old male, without relevant past medical history presented to the emergency department for syncope. On arrival he was in shock with hypotension, tachycardia and cold extremities. 36% FIO₂ were necessary to reach normal oxygen saturation. Arterial blood gas revealed a lactic acidosis with pH 7.1. Electrocardiogram showed sinus tachycardia and right bundle branch block. A focused cardiac ultrasound was performed revealing a voluminous and highly mobile thrombus in the right atrium moving through the tricuspid valve during diastole (Fig. 1, **Suppl. Video 1**). The right ventricle was dilated and presented systolic dysfunction with free wall hypokinesia. Anticoagulation by bolus of intravenous heparine and intravascular volume were administered immediately. Focused cardiac ultrasound was repeated a few minutes later due to clinical worsening. The thrombus was absent and the exam highlighted a more severely dilated and

dysfunctional right ventricle with a systolodiastolic flattening of the interventricular septum, suggesting a massive pulmonary embolism due to thrombus migration. Intravenous thrombolysis with a half dose alteplase due to his advanced age was performed.

The patient was admitted to intermediate care with a rapid resolution of shock and improvement of hypoxemia. An echo-Doppler of inferior limbs showed a left femoral-popliteal deep venous thrombosis, revealing the most likely origin of the thrombus. Pulmonary embolism was confirmed by computed tomography angiography, performed due to a worsening thoracic pain.

The patient celebrated his 100th birthday in hospital and was transferred a few days later to a clinic for convalescence.

This case highlights the value of focused cardiac ultrasound for clinical decision making in hemodynamic unstable patients.

Conflict of interest: None declared

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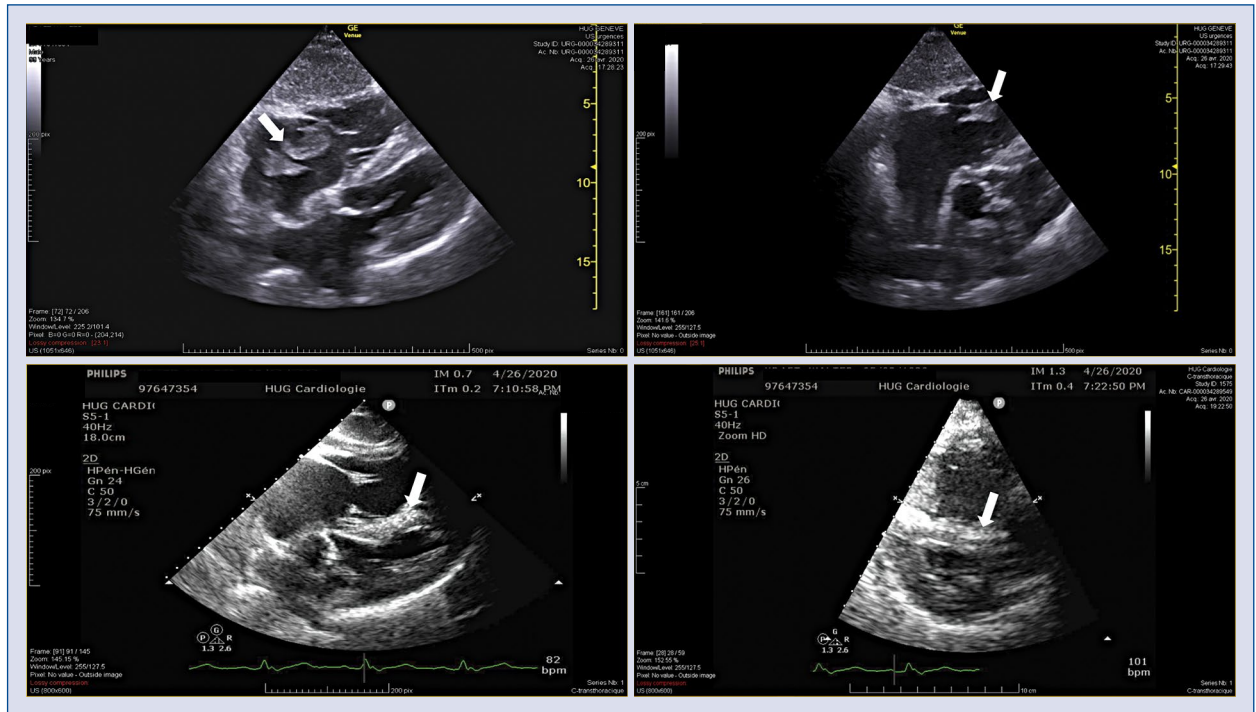


Figure 1. First (upper panels) and second (lower panels) focused cardiac ultrasound. **Upper panels:** First focused cardiac ultrasound revealing the thrombus in the right atrium (white arrow) moving in the right ventricle through the tricuspid valve (right upper panel). **Lower panels:** Second focused cardiac ultrasound showing the absence of the thrombus with a clear systodiastolic flattening of the interventricular septum (white arrow) in subcostal four-chamber view (left lower panel) and parasternal short-axis view (right lower panel).