

Thrombus in Transit with Diagnosis and Treatment Guided by Bedside Ultrasound — A Case Report

Introduction:

Pulmonary embolism (PE) is always on the differential diagnosis when a patient presents with chest pain or dyspnea. This case report describes a clinical scenario in which bedside ultrasound (US) was instrumental in rapidly establishing the diagnosis of PE and guiding treatment in a situation where the gold-standard diagnostic imaging was relatively contraindicated.

Case Description:

A 77-year-old female with a past medical history of hypertension presented to the emergency department with weakness, dizziness, and shortness of breath for 5 days. She reported multiple recent syncopal episodes and left lower extremity swelling. Her initial evaluation revealed the following vital signs: HR 119, BP 73/64, RR 39, T 37.7 SpO₂ 81%. She was ill-appearing, tachycardic, with decreased breath sounds bilaterally. Bedside US was performed on this patient. The examining physician noted right ventricular dilation with bowing of the interventricular septum into the left ventricle, in addition to a thrombus in transit through the right side of the heart (Figure 1). US of the left lower extremity demonstrated a deep vein thrombosis.

The patient was started on high-flow nasal cannula and intravenous fluids with improvement in her oxygenation and hypotension. Her laboratory values revealed a creatinine of 4.4. The bedside US findings were discussed with a pulmonary intensivist and an interventional radiologist, and a joint decision was made to forego a CT angiogram of the chest in the setting of acute renal failure and commence thrombolysis with tPA, which was then followed by anticoagulation with heparin. The patient was transferred to the intensive care unit. She was discharged on apixaban to acute rehab on hospital day 8 and followed up outpatient with hematology.

Discussion:

Bedside US is a powerful tool to aid the trained emergency physician in rapidly diagnosing PE. This case illustrates a situation in which bedside ultrasonographic and clinical findings consistent with a hemodynamically unstable PE were discussed with consulting physicians to help guide definitive treatment and prevent a potentially nephrotoxic CT angiogram in a patient with concomitant acute renal failure.