



Intercepted in Transit: Successful Surgical Embolectomy of Acute Pulmonary Embolism with Extensive Clot Burden and Mobile Right Atrial Clot

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INTRODUCTION

Clot in transit (CIT) is a rare but critical manifestation of pulmonary embolism (PE) yet presents a challenge for risk stratification, particularly in the stable patient^{1,2}. We present a case of successful surgical embolectomy in a stable patient with acute PE with extensive clot burden and mobile right atrial thrombus.

DISCUSSION

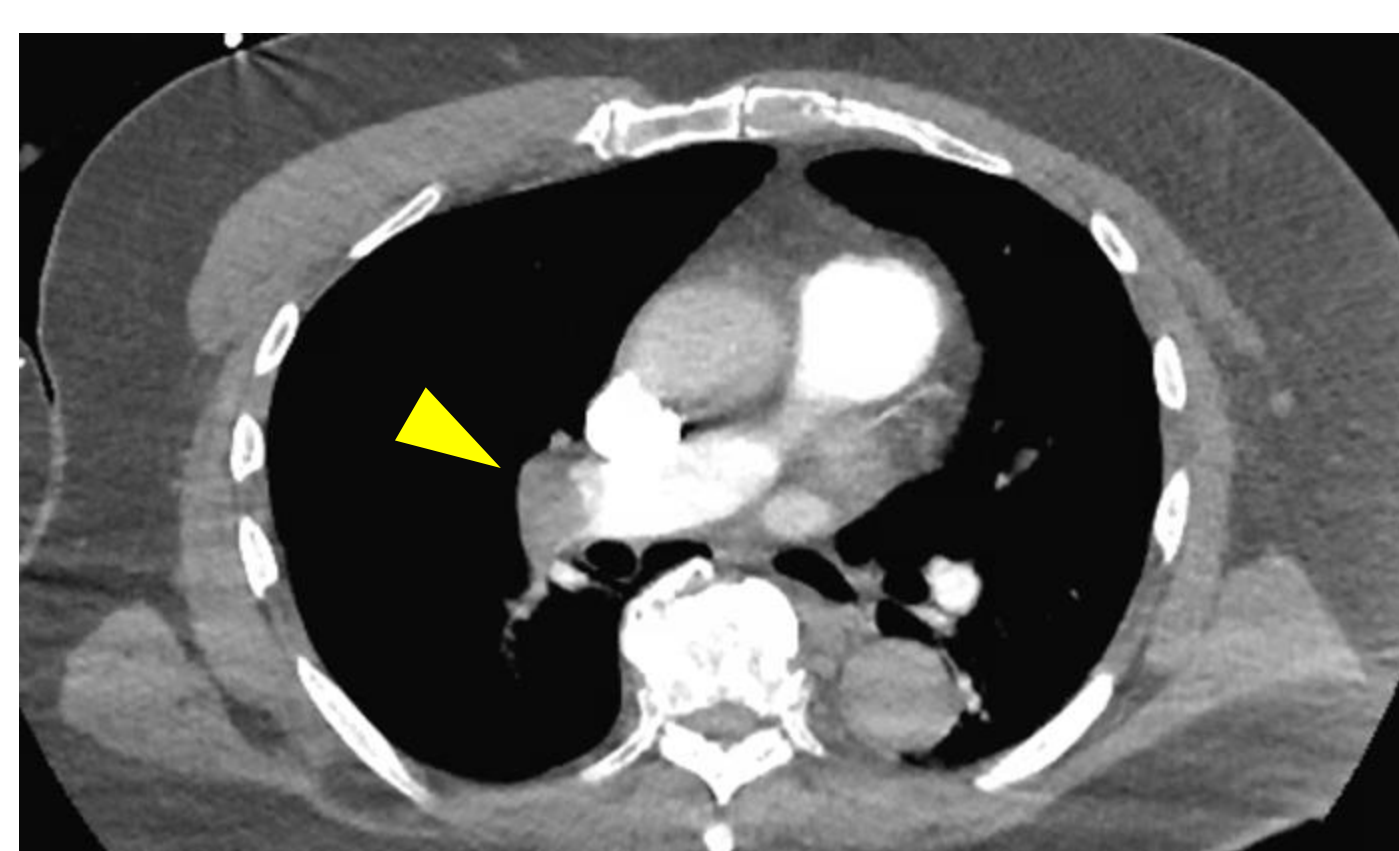
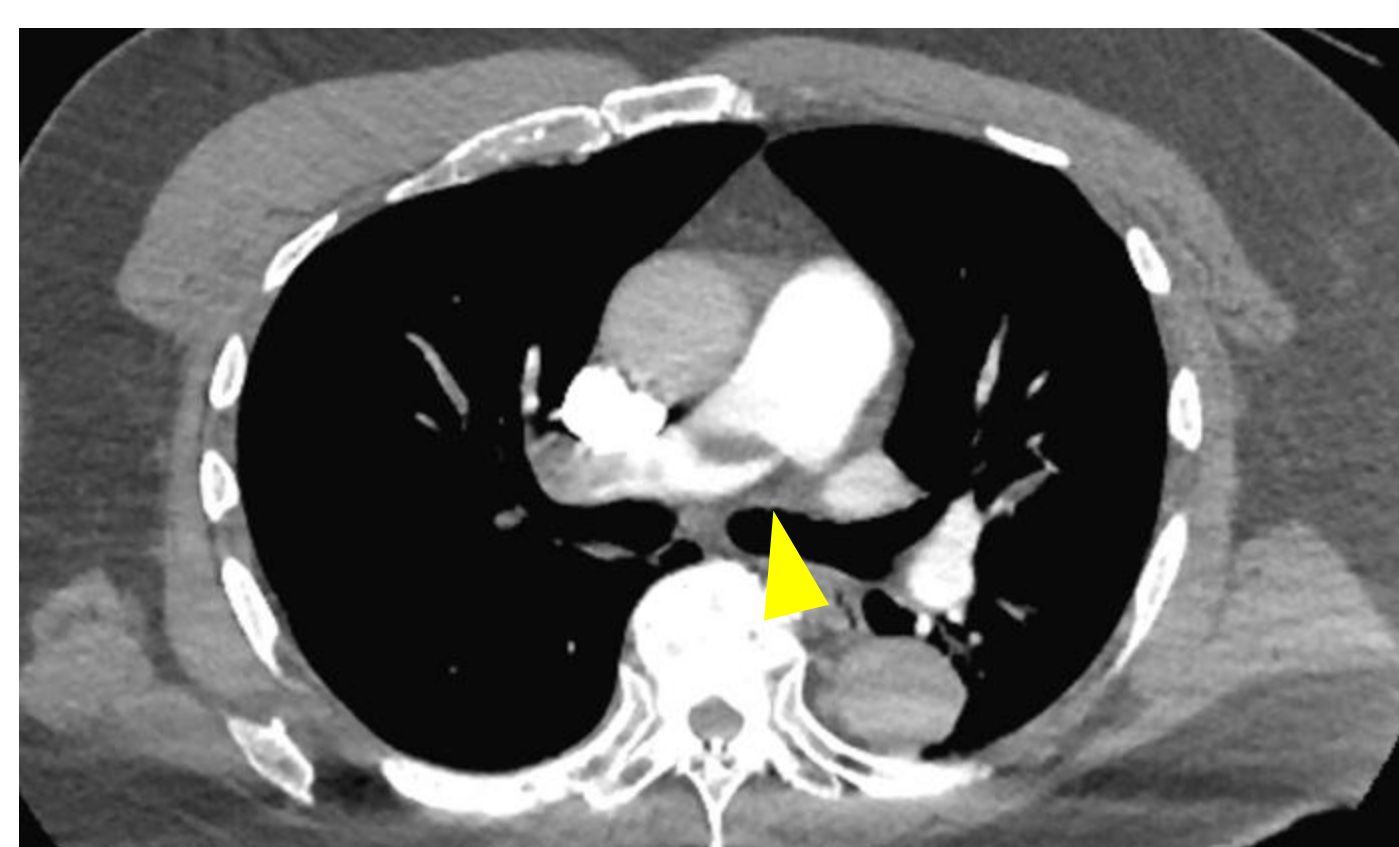
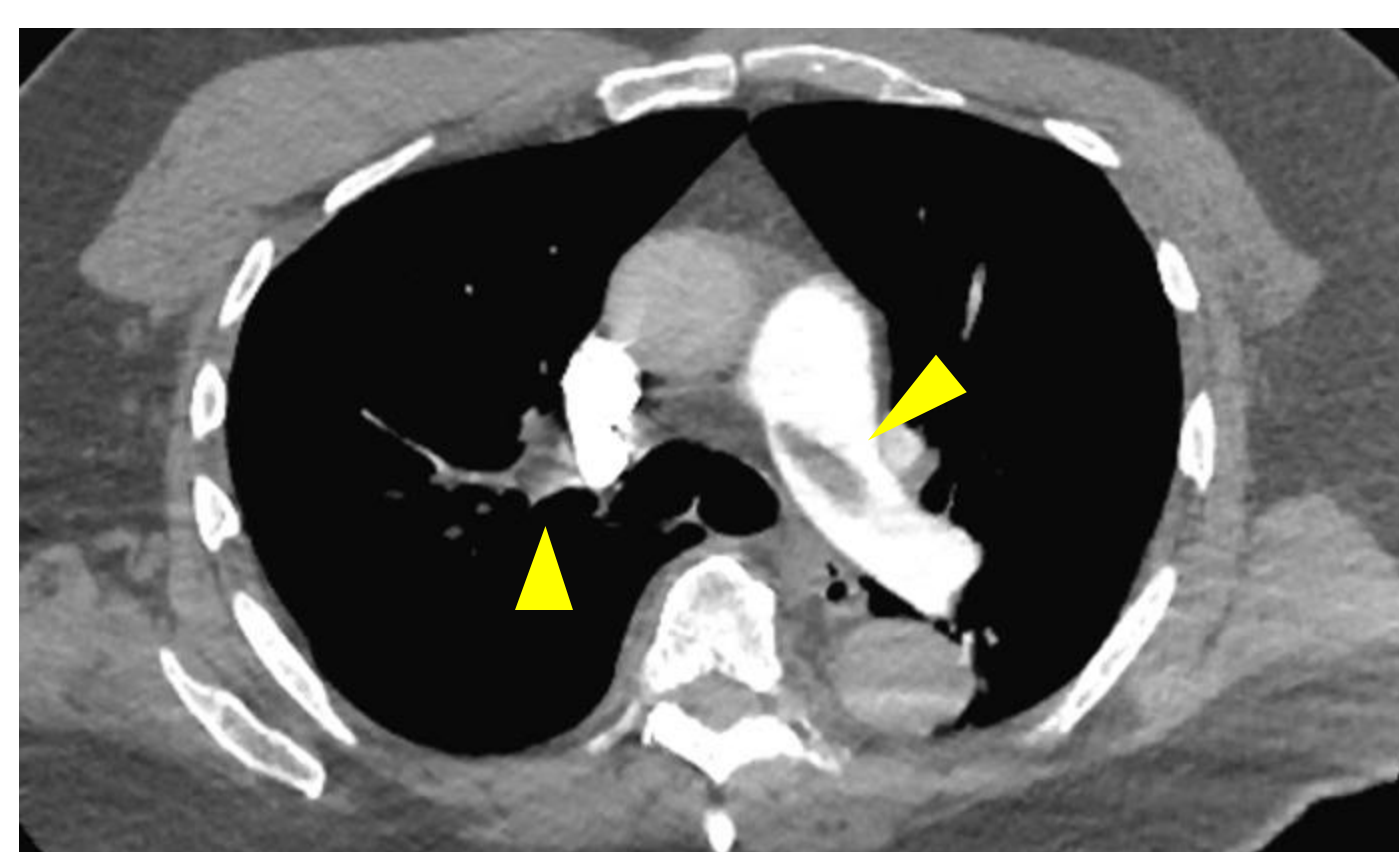
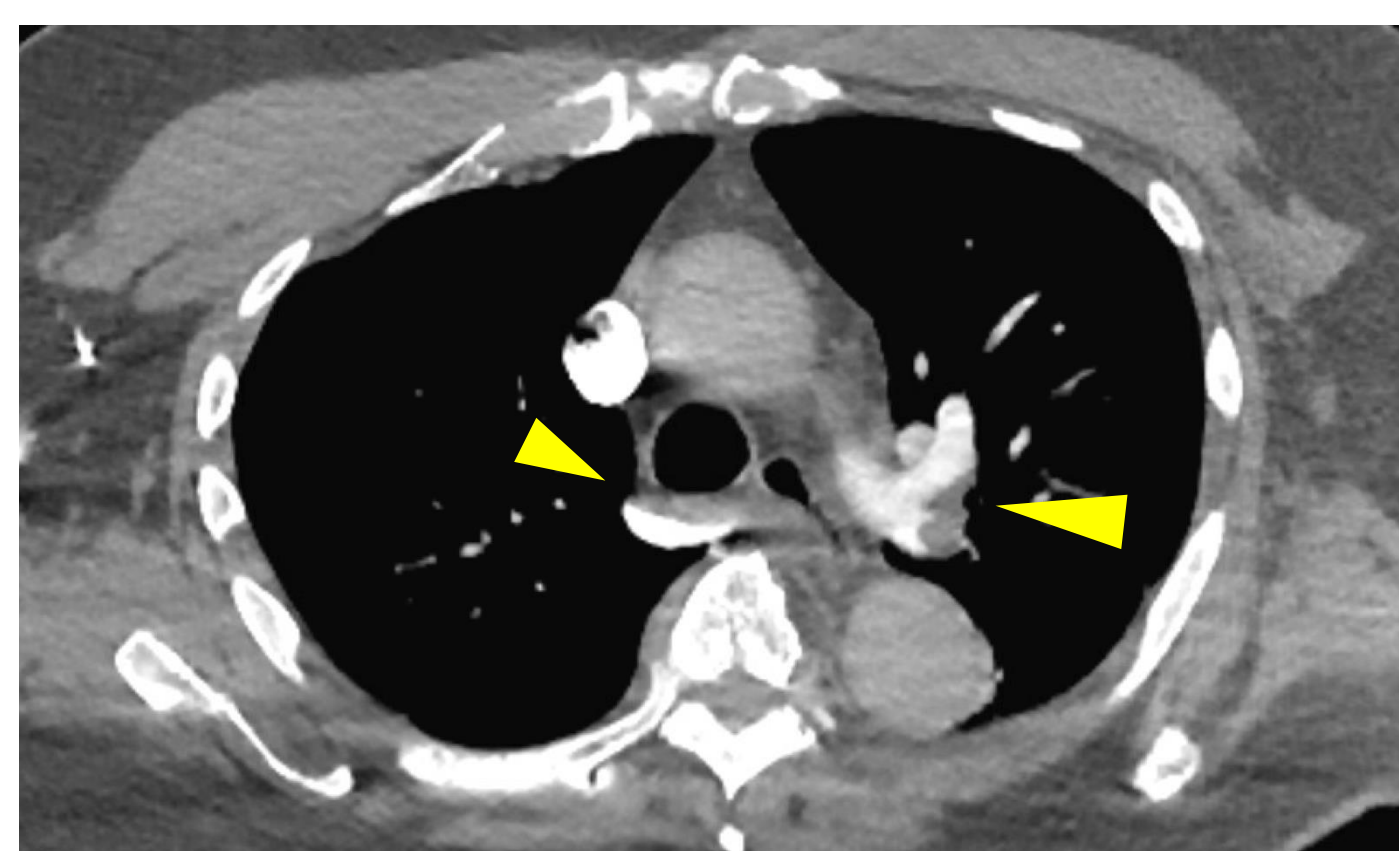
- While systemic anticoagulation remains the backbone of treatment for PE, the optimal treatment for CIT remains unclear.
- The European Society of Cardiology 2019 guidelines for PE do not provide specific recommendations for the treatment of CIT, and outcomes data remains conflicting³.
- Patients with CIT represent a challenging cohort of PE patients to risk stratify as they often demonstrate an unpredictable clinical course with sudden decompensation, even despite initial hemodynamic stability, and thus do not fit well into existing stratification paradigms⁴.
- Our case demonstrates that early interdisciplinary consult and aggressive surgical intervention despite hemodynamic stability can positively benefit patients with CIT and extensive clot burden.

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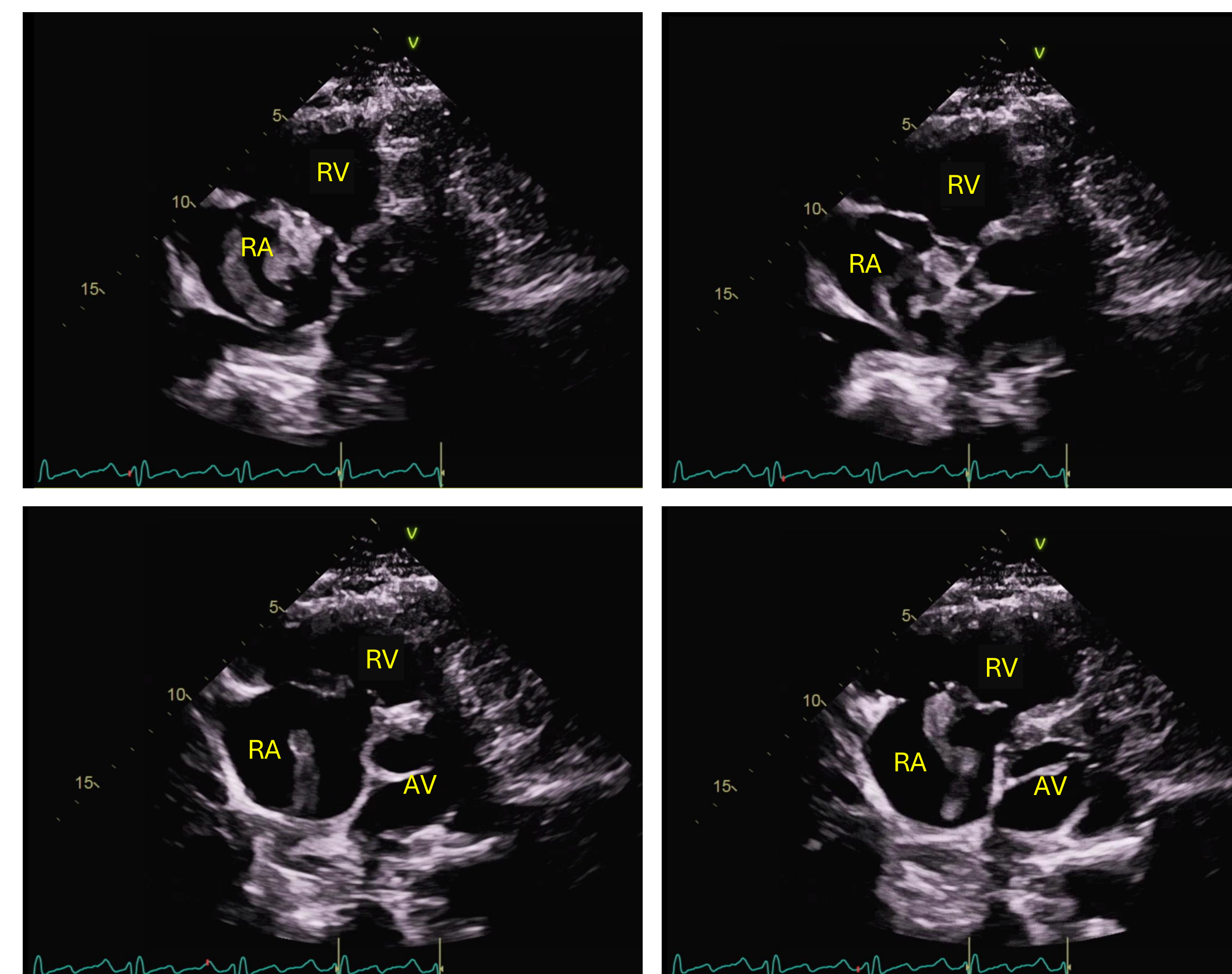
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CASE PRESENTATION

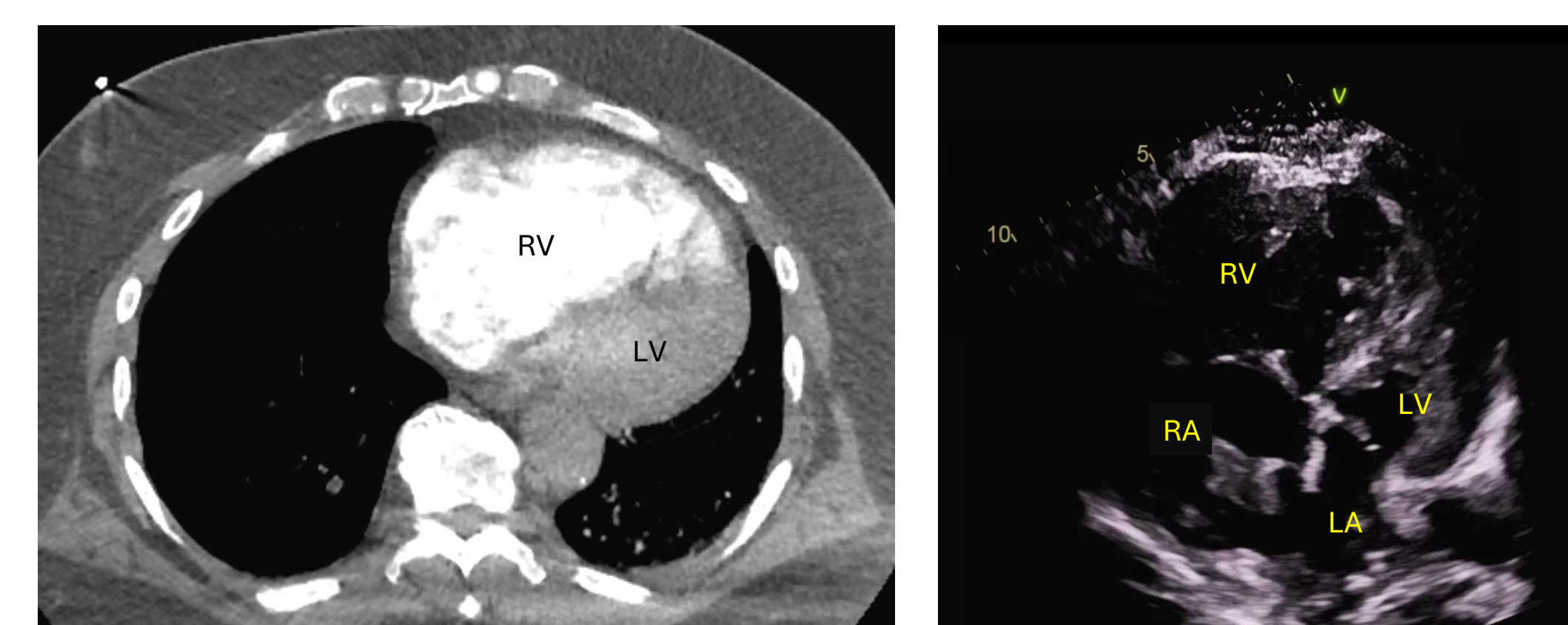
A 72-year-old man presented to an outside hospital from acute rehab for weakness and dyspnea. He was hemodynamically stable requiring four liters of oxygen by nasal cannula. A CT angiogram of the chest demonstrated a large saddle PE. A transthoracic echocardiogram showed a severely dilated right atrium (RA) and right ventricle (RV) and a large in-transit clot in the RA. Heparin was initiated, and he was transferred to our tertiary center for PERT evaluation. The interdisciplinary team determined surgical embolectomy was indicated given the extensive clot burden and risk for sudden decompensation.



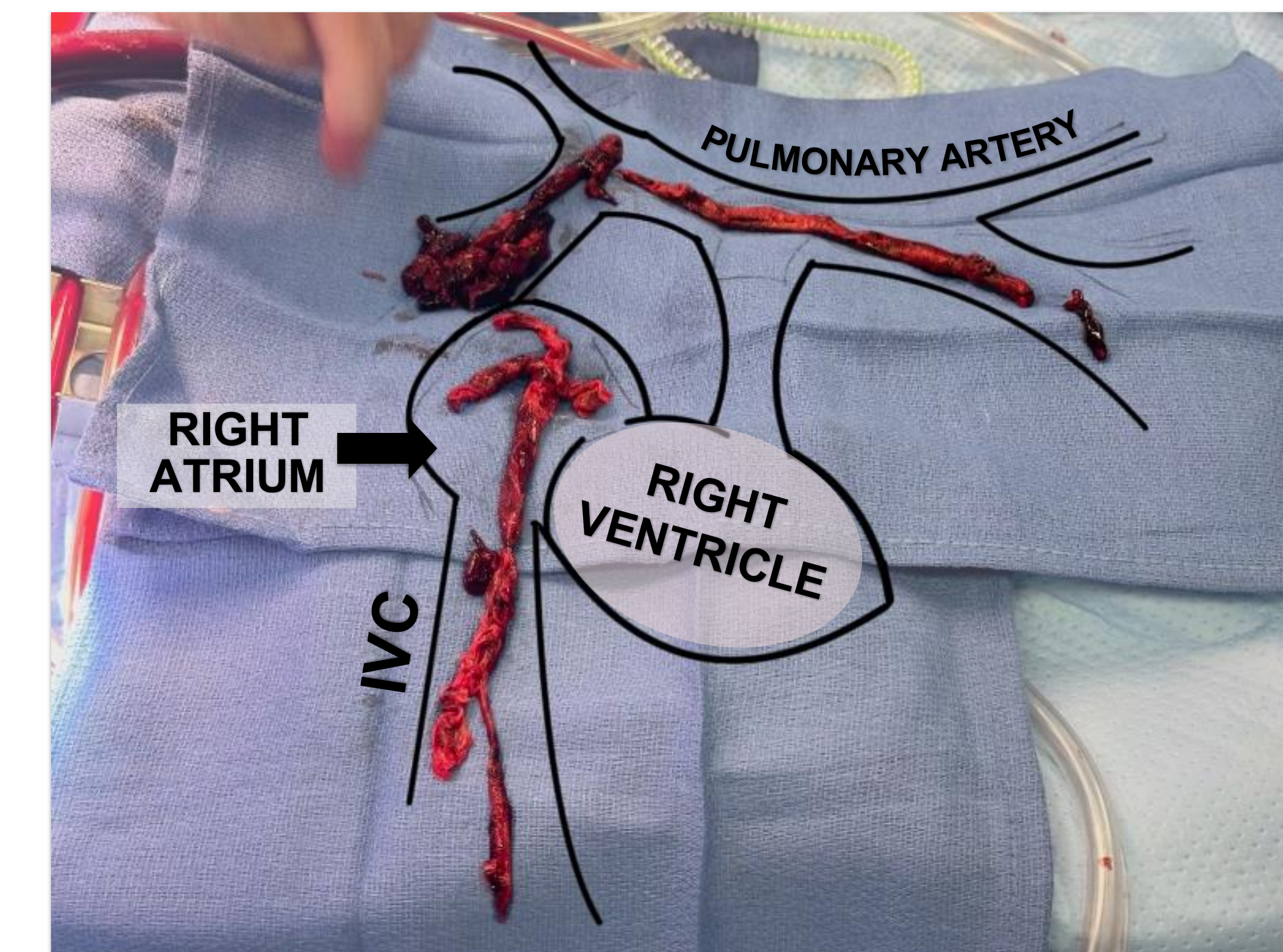
Above: CT angiogram of the chest on admission revealed saddle pulmonary embolism with extensive thromboembolism involving the right and left lobar, segmental, and subsegmental branches with evidence of right heart strain with reflux of contrast into hepatic veins.



Above: Mobile thrombus was visualized in the right atrium on echocardiogram completed prior to surgery. **Below:** CT angiogram and echocardiogram both demonstrated right ventricular dilation and strain.



Scan QR code to the **left** to view axial chest CTA. Scan QR code to the **right** to view echocardiogram video clips.



Above: Gross specimens obtained during open thrombectomy, which reveal extensive clot burden in the inferior vena cava, right atrium, and pulmonary vasculature.

During surgery, patient was placed onto bypass. The right atrium was large and distended; the left main pulmonary artery was heavily occluded. Thrombus was evacuated from the right pulmonary artery. A large amount of thrombus was removed from the right atrium. Post-thrombectomy transesophageal echocardiogram revealed improved contractility of the RV. Patient initially required vasopressor support but ultimately recovered and was discharged to skilled rehab two weeks after presentation.