Advocate Lutheran General Hospital

A Floating Threat: Case Report of Clot-in-Transit and Bilateral Pulmonary Embolism Treated with Catheter-Directed Therapy

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Background

- A **clot in transit (CIT)** refers to a mobile thrombus, typically originating from the venous system, that is visualized within the right heart chambers (right atrium or right ventricle) or occasionally traversing a patent foramen ovale.
- **CIT** is associated with a **significantly higher mortality rate**, ranging from **29% to 40%**, and presents a serious clinical challenge due to its potential for sudden deterioration.
- The American Heart Association highlights that **CIT** is a medical emergency, often identified on echocardiography, and **occurs in approximately 4%** of patients with PE

Case Summary

- 52-year-old woman with a history of cardiomyopathy due to myocardial noncompaction -presented to the hospital after experiencing intermittent chest pain for a week.
- Vitals: BP 90/62, HR 134, SpO2 89% on RA
- EKG showed S1Q3T3 pattern without ST elevation
- Troponins were negative and NT-proBNP elevated to 425.
- CTA PE protocol revealed extensive clot burden in bilateral pulmonary arteries and inferior vena cava (IVC), with an RV:LV ratio of 1:1
- Transthoracic echocardiogram revealed: EF 35%, septal systolic flattening, severely dilated RV with reduced TAPSE, and a large, mobile thrombus in the right atrium moving across the tricuspid valve and IVC-RA junction.

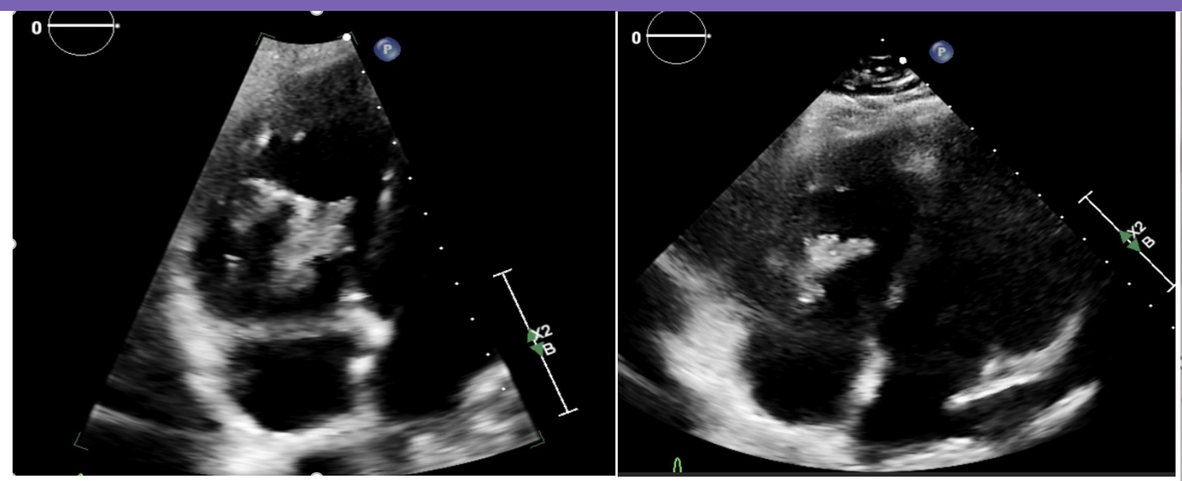

Figure 1: TTE: 4 chambers view showing clot in transient extending across TV

Decision Making

- Heparin drip was started and patient was taken to the cath lab for urgent thrombectomy.
- During the procedure, the IVC clot embolized to the pulmonary artery without causing hemodynamic collapse.

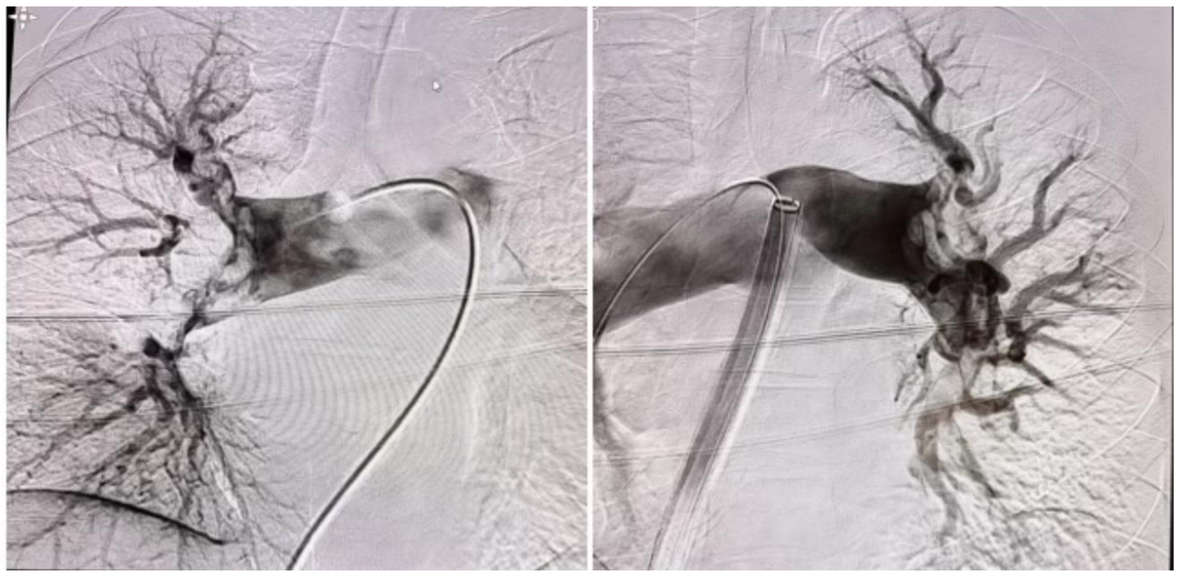

Figure 2. Angiogram showing clot burden in the right and left pulmonary artery

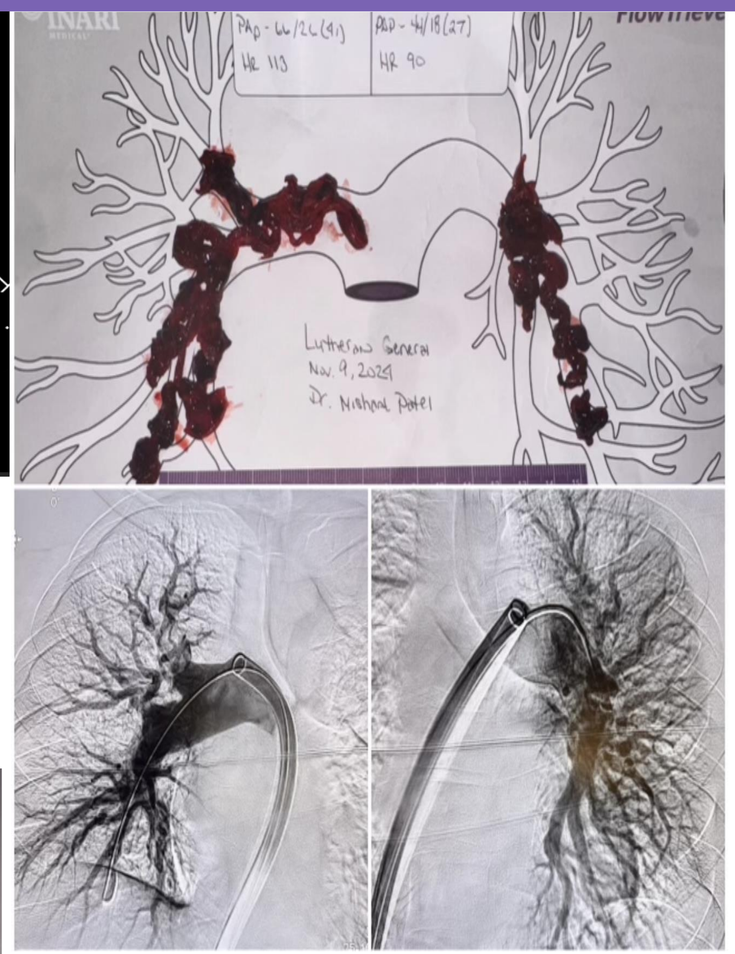

Figure 3: Post thrombectomy with Inari FlowTriever

Conclusion

- Clot in transit is associated with high mortality, fast-acting interventions such as anticoagulation, systemic thrombolysis,thrombectomy and catheter-based therapy, may offer improved outcomes in select patients, especially those who are hemodynamically unstable or at high risk.