

Role of Point of Care Ultrasound in Diagnosis of Upper GI Bleed Secondary to Aorto-Esophageal Fistula

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Background:

- Aorto-esophageal fistula (AEF) is a rare etiology of upper gastrointestinal bleed (UGIB) with a high mortality rate.
- Suspect AEF in patients with vascular pathologies with large volume hematemesis and Chiari's triad (midthoracic pain, sentinel arterial hemorrhage and exsanguination after symptom-free interval).
- Most cases result from thoracic aortic aneurysms, foreign body ingestion and esophageal cancer. But also post-surgical complication, GERD, traumatic aortic wounds and tuberculosis.
- Diagnostic endoscopy, aortography or thoracic computed tomography angiography (CTA) is diagnostic standard of care that could be delayed in hemodynamically unstable patients.
- This is a case of UGIB where Point-of-Care Ultrasound (POCUS) facilitated prompt diagnosis of AEF.

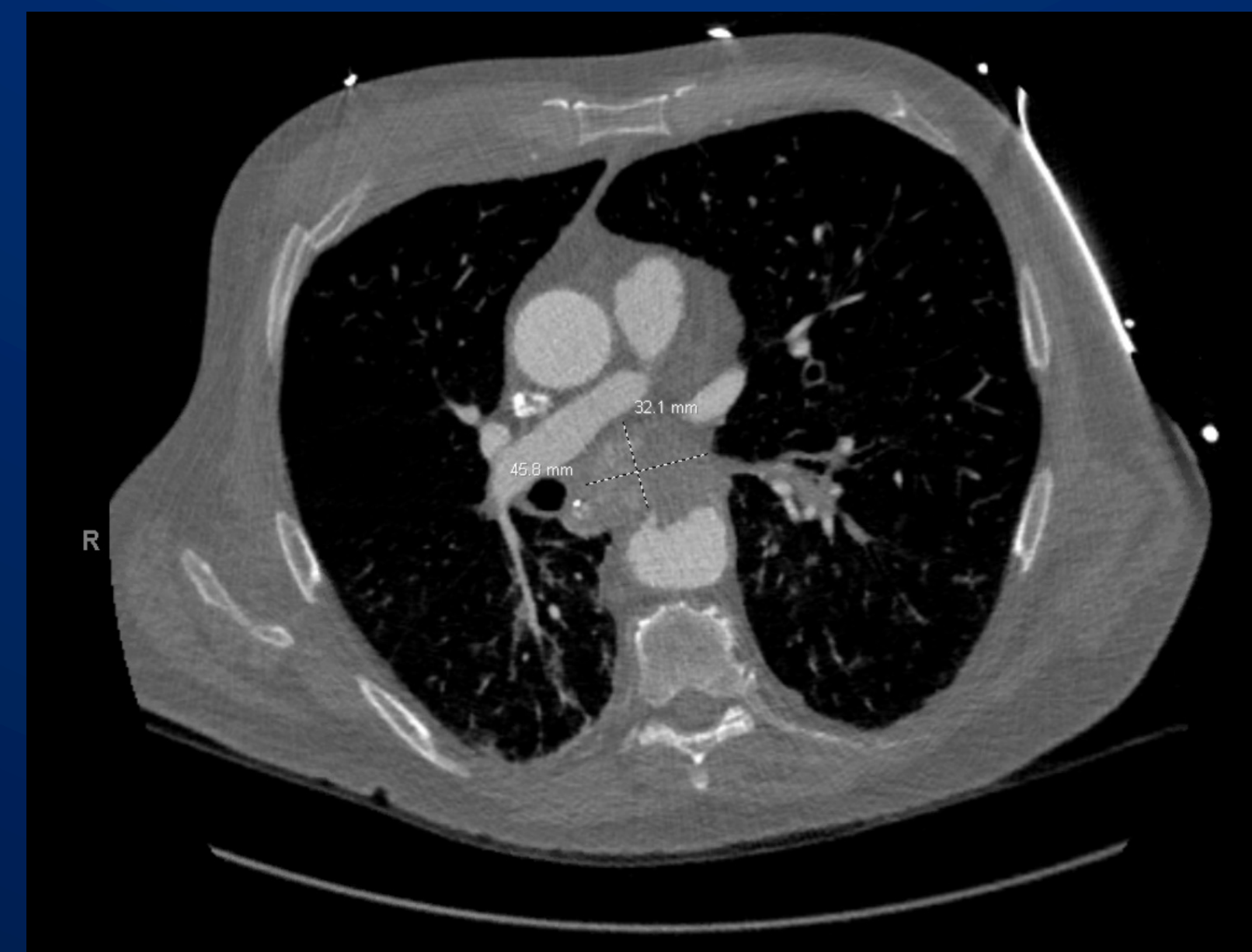
Case Description:

- 75-year-old male with notable history of hypertension, abdominal aortic aneurysm and smoking presented after severe hematemesis resulting in two episodes of PEA arrest with achievement of ROSC after aggressive hemodynamic support.
- Gastroenterology was unable to perform endoscopy due to persistent hemodynamic instability.
- Octreotide and pantoprazole drips were initiated. Blakemore tube placement was attempted.
- POCUS demonstrated descending thoracic aortic intraluminal flap consistent with aortic dissection.

Figure 1: POCUS showing descending aortic intraluminal flap consistent with aortic dissection



Figure 2: CTA showing descending aortic aneurysm with penetrating ulcer resulting in hematoma of the subcarinal mediastinum



Case Description Continued):

- CTA chest was pursued after stabilization that showed descending thoracic aortic aneurysm with penetrating ulcer and active extravasation into the subcarinal mediastinum.
- Vascular surgery was urgently consulted but the patient became increasingly unstable and ultimately expired.

Discussion and Conclusion:

- Emergent surgical intervention is the definitive treatment without which death is inevitable.
- Rapid advancement of POCUS begs the question of its diagnostic role in AEF especially in patients with voluminous hematemesis with known risk factors.
- POCUS may limit unnecessary diagnostic delays and invasive testing in select patients who are unlikely to benefit from endoscopy.
- POCUS allowed prompt diagnosis several hours before the patient was stable enough for CTA.
- Further research is needed to determine the diagnostic role of POCUS in UGIB, but it should be considered in patients with high suspicion for AEF.
- Provider training and skill level, patient characteristics and POCUS equipment availability remain major challenges.

References:

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