Emergent TAVR for Aortic Valve Entrapment Following Branched TEVAR in Complex Aortic Disease

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Disclosure of Relevant Financial Relationships

I, Hunter Launer, DO NOT have any financial relationships to disclose.

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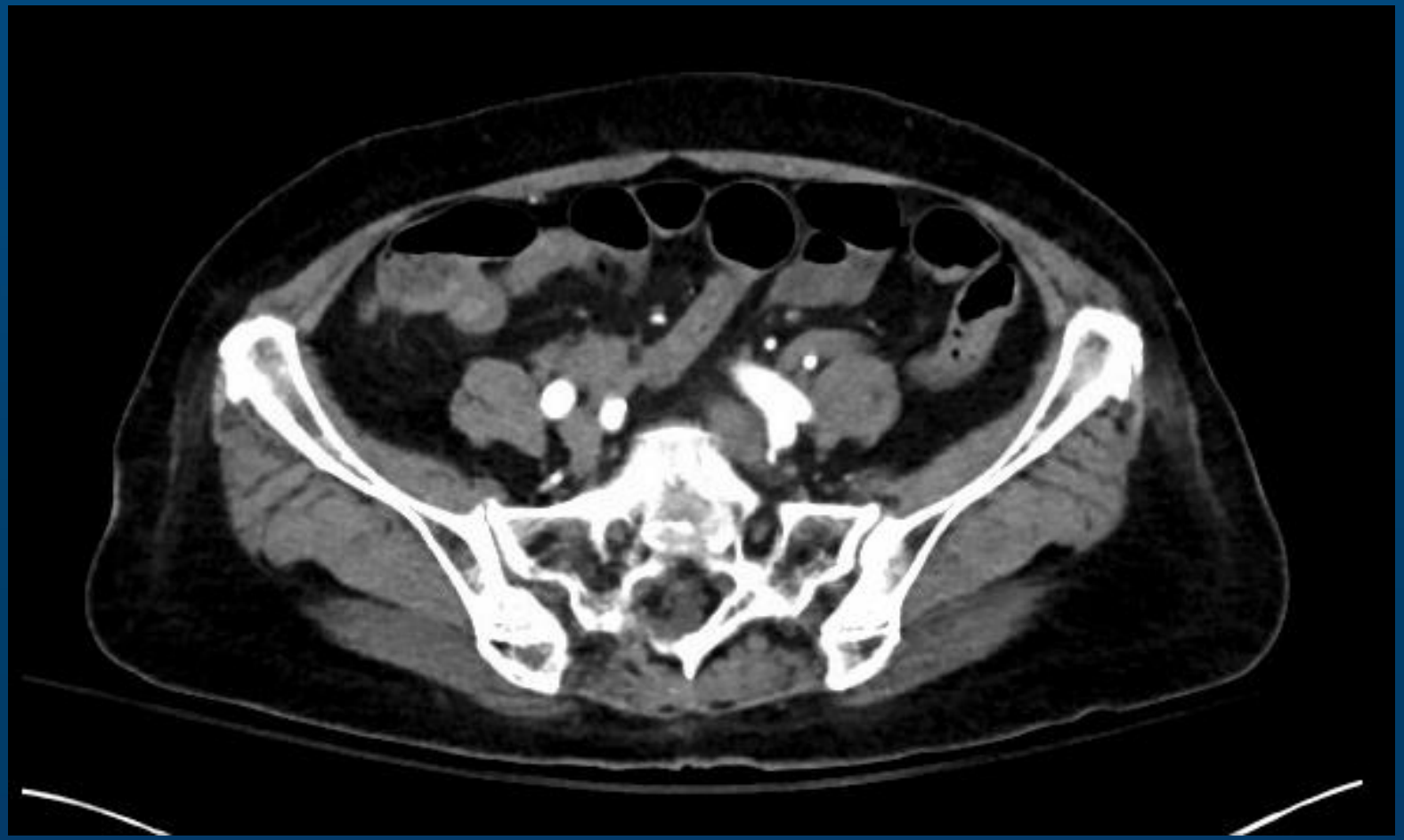
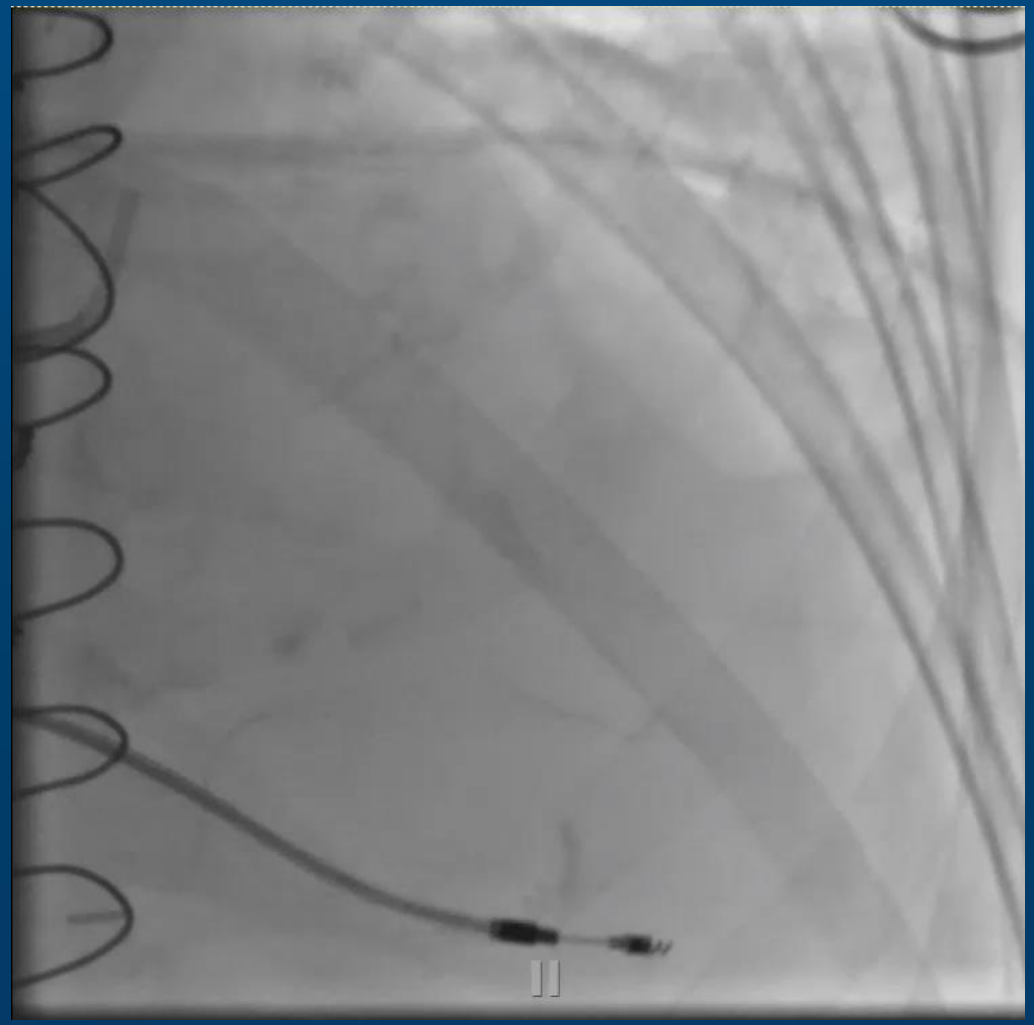
Case Presentation

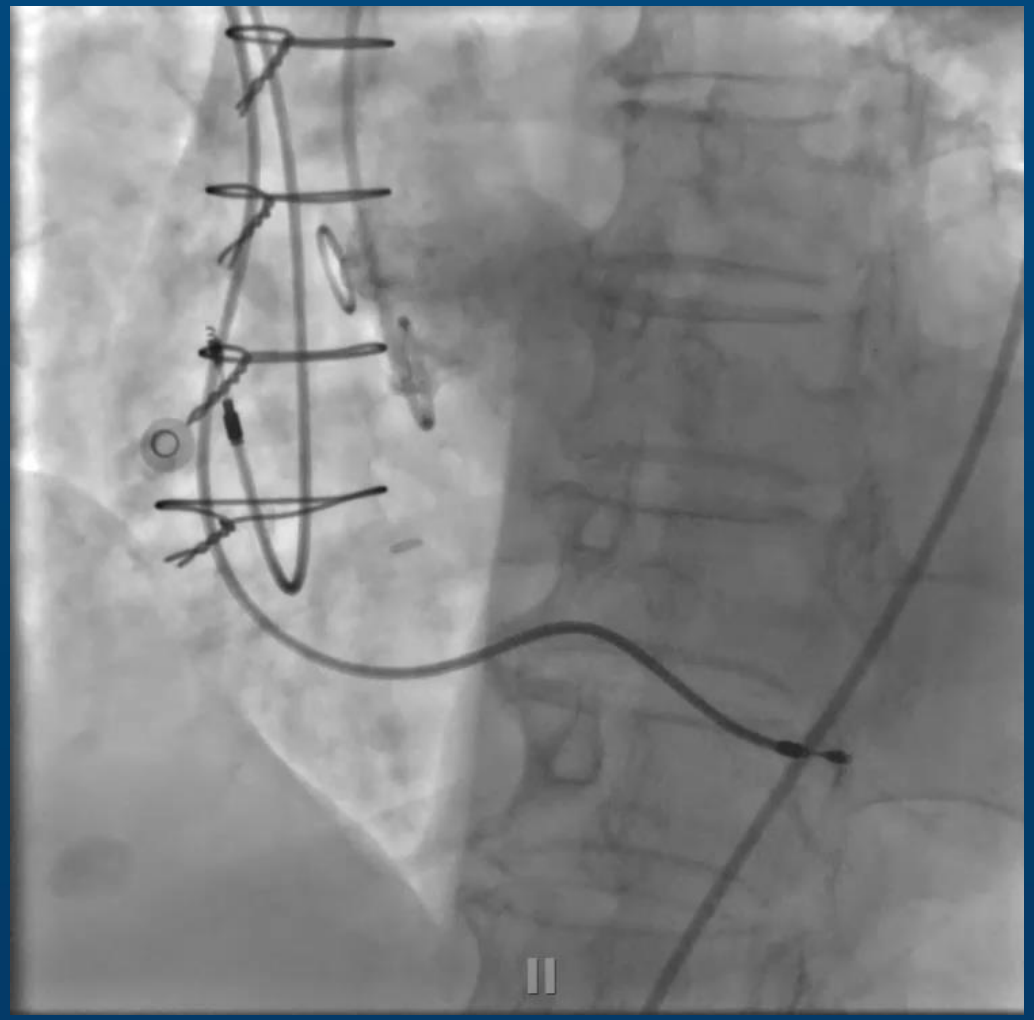
73-year-old woman with history of type A aortic dissection and CAD with prior ascending aortic graft and SVG to the RCA in 2019, history of paroxysmal Afib who presented with back pain radiating to the chest.

Patient found to have Stanford type B dissection extending from the descending aorta down to the bifurcation



Diagnostics

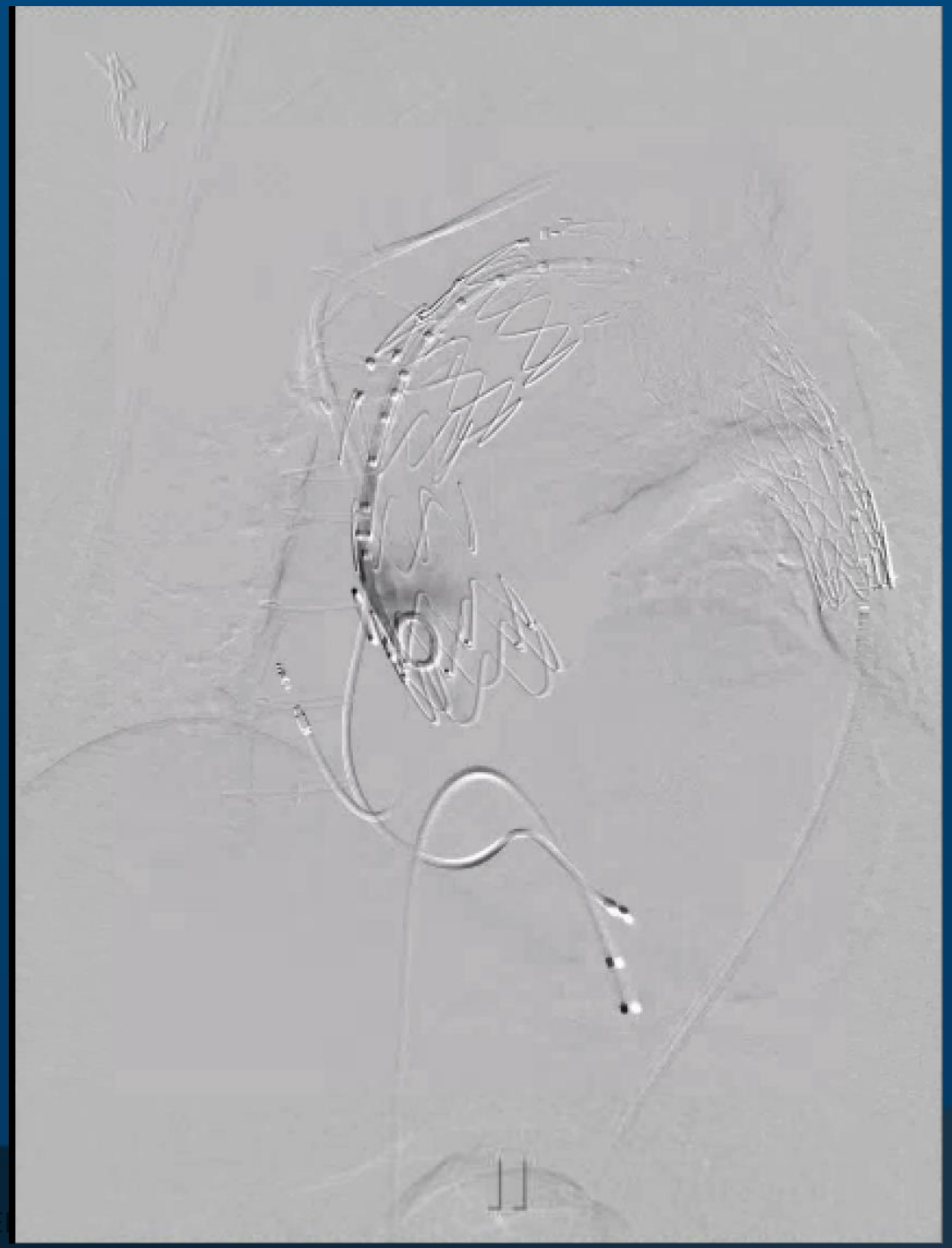




Procedure

She underwent thoracic endovascular aortic repair (TEVAR) with a custom-modified triple inner branch graft. *Immediately following deployment, she experienced cardiovascular collapse.*

- **Aortography revealed entrapment of the aortic leaflet with wide-open aortic regurgitation.**

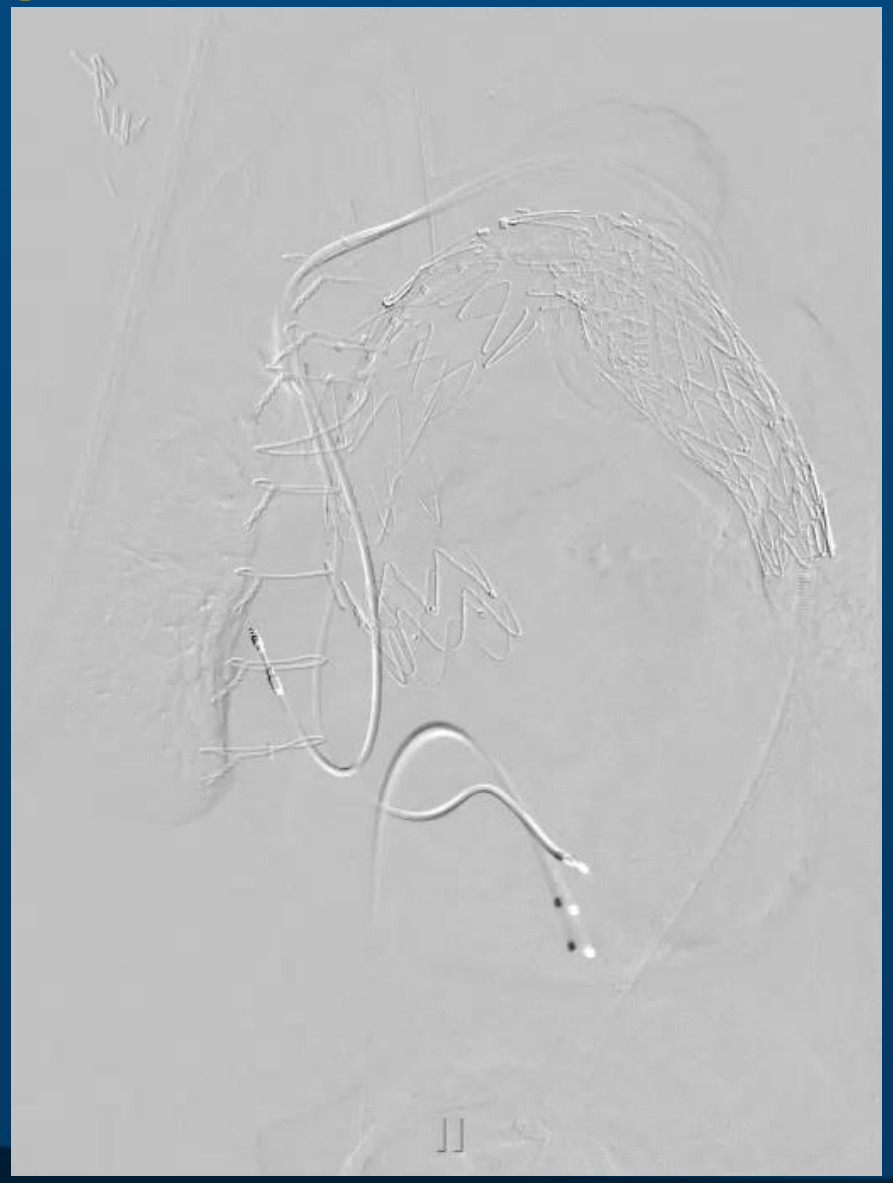


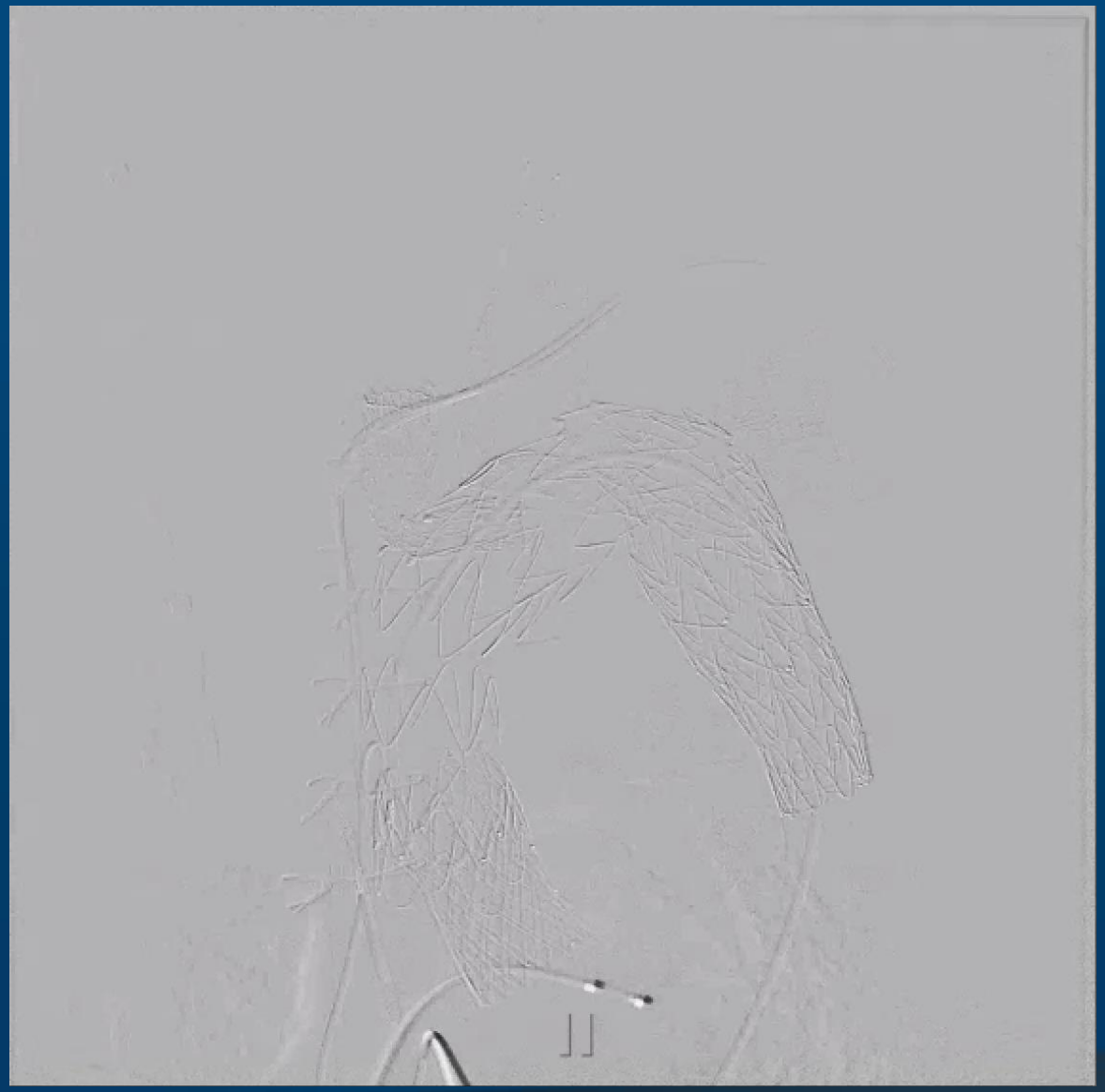
Procedure

Advanced cardiac life support (ACLS) was initiated, and *VA-ECMO* was placed.

Interventional cardiology consulted for emergent transaortic valve implant (TAVR). *Aortic annulus sizing from a prior non-gated CT enabled emergent TAVR with a 34mm Evolut valve*.

Aortography



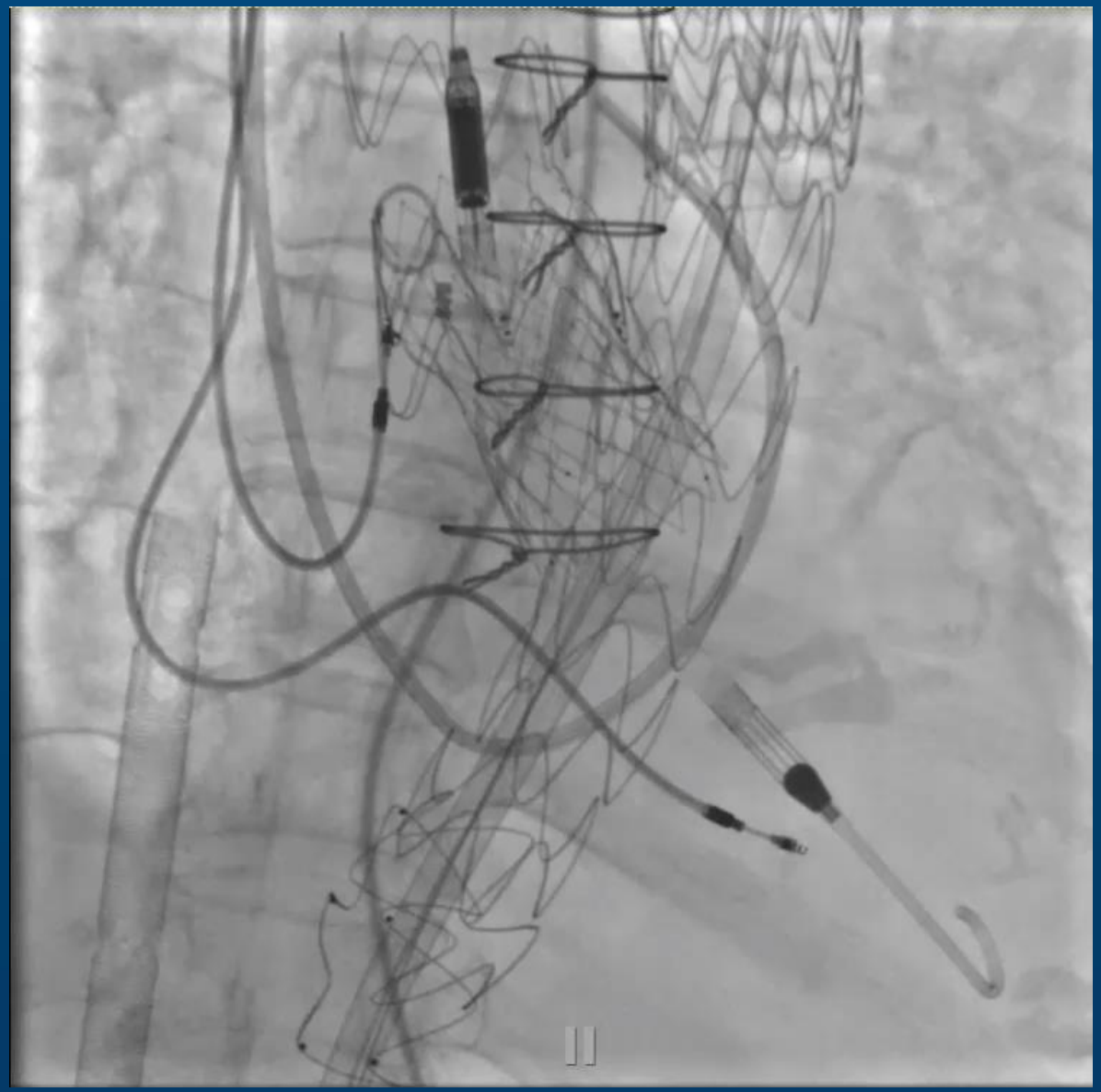


Pre-TAVR: Severe AI

Post-TAVR: Resolution of AI

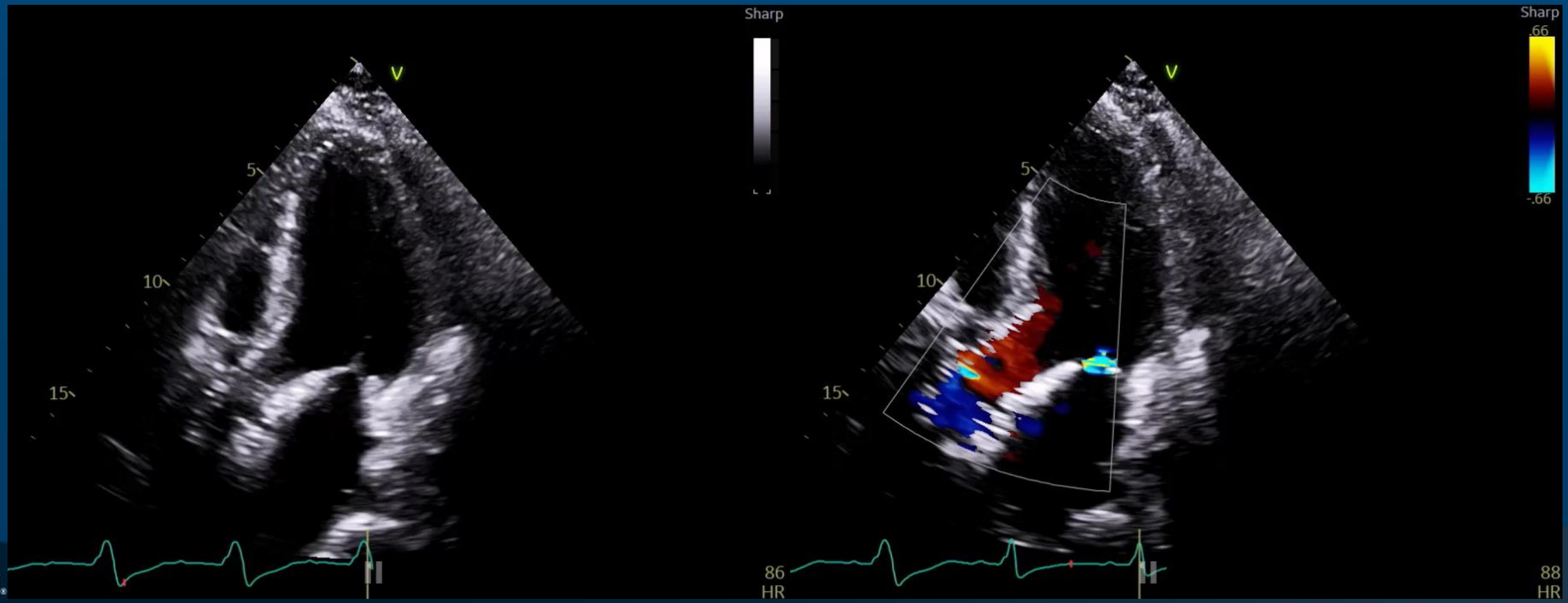
Clinical Course

Patient was transferred to the ICU on ECMO. Post-operative TTE showed an ejection fraction of 10%. On post-operative day 4 (POD) the patient was decannulated in the operating room and her TEVAR was extended. An impella CP was placed through the new TEVAR. The impella was removed 3 days later.



Conclusion

Hospital course complicated by subarachnoid hemorrhage secondary to systemic anticoagulation from mechanical support. The patient remained in the hospital for 1 month before being discharged to an acute rehabilitation facility. *At post-hospital follow-up patient is improving, doing well, neurologically recovered, and echo shows ejection fraction of 45% with mean aortic gradient of 4mmHg*.



Conclusion

- Aortic valve entrapment is a rare but catastrophic complication of TEVAR
- Emergent TAVR can be life-saving in this setting
- Rapid multidisciplinary decision-making is critical
- VA-ECMO, though typically contraindicated in severe AR, can serve as a bridge to definitive therapy