



CENTER FOR HEALTH SCIENCES

AN UNUSUAL CASE OF LEFT MAIN CORONARY ARTERY THROMBUS TREATED WITH GUIDE CATHETER ASPIRATION

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Introduction

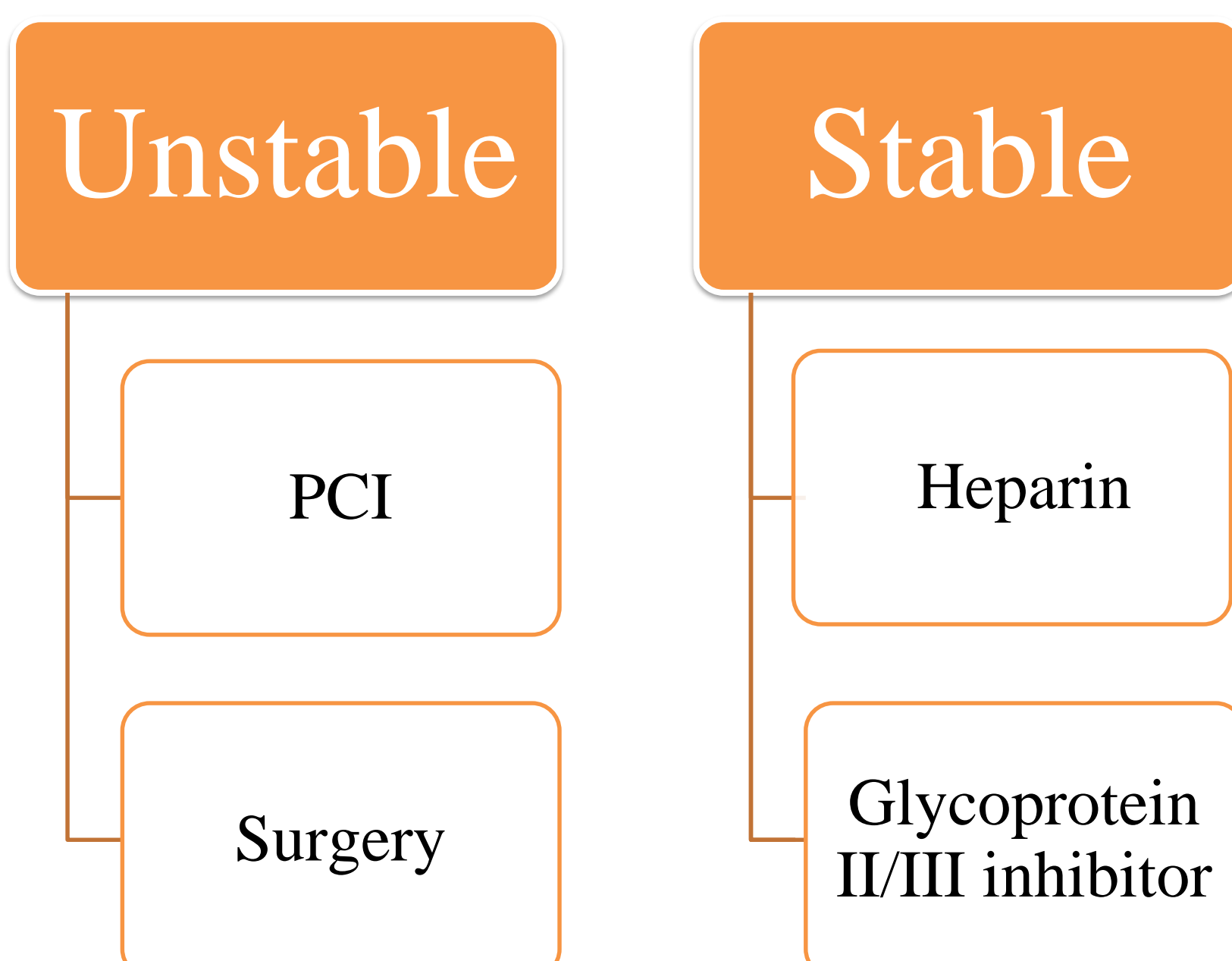
- ❖ Left main coronary artery (LMCA) thrombosis during acute myocardial infraction is rare and carries high mortality. The etiology and clinical presentation are variable. Our current understanding of LMCA thrombus largely comes from case reports.

Etiology

- Acute Plaque Rupture
- Embolization
- Dissection
- Extrinsic compression

- ❖ Optimal evidence-based therapy for LMCA thrombosis is unclear based on current literature.

Therapy Described by Previous Literature



Case

Presentation

- ❖ **HPI:** A 53-year-old male presented to the ED with intermittent substernal chest pain for the previous two days. On admission, his pain became continuous, more intense and similar to the pain he had with a previous MI five years previous. His pain did not resolve with medical therapy so invasive evaluation was recommended.

- ❖ **PMH:** CAD with previous MI (2014) treated with 2.5 x 28 DES LCx, Ischemic cardiomyopathy, HLD.

- ❖ **FHx:** The patient was adopted.

- ❖ **SHx:** Daily tobacco use, ½ ppd for 40 years, occasional alcohol use, no drug use.

- ❖ **Vitals on presentation:** BP 134/79; HR 69; RR 18; Temp 36.7C; 99% on RA; BMI 20.9

- ❖ **Cardiovascular Exam:**
 - ❖ Normal S1 and S2,
 - ❖ Regular rate and rhythm.
 - ❖ No murmurs, rubs, or gallops appreciated.
 - ❖ Distal pulses are intact bilaterally.

- ❖ **Labs:**
 - ❖ Troponin: 15
 - ❖ Potassium: 3.9, Creatinine 0.74

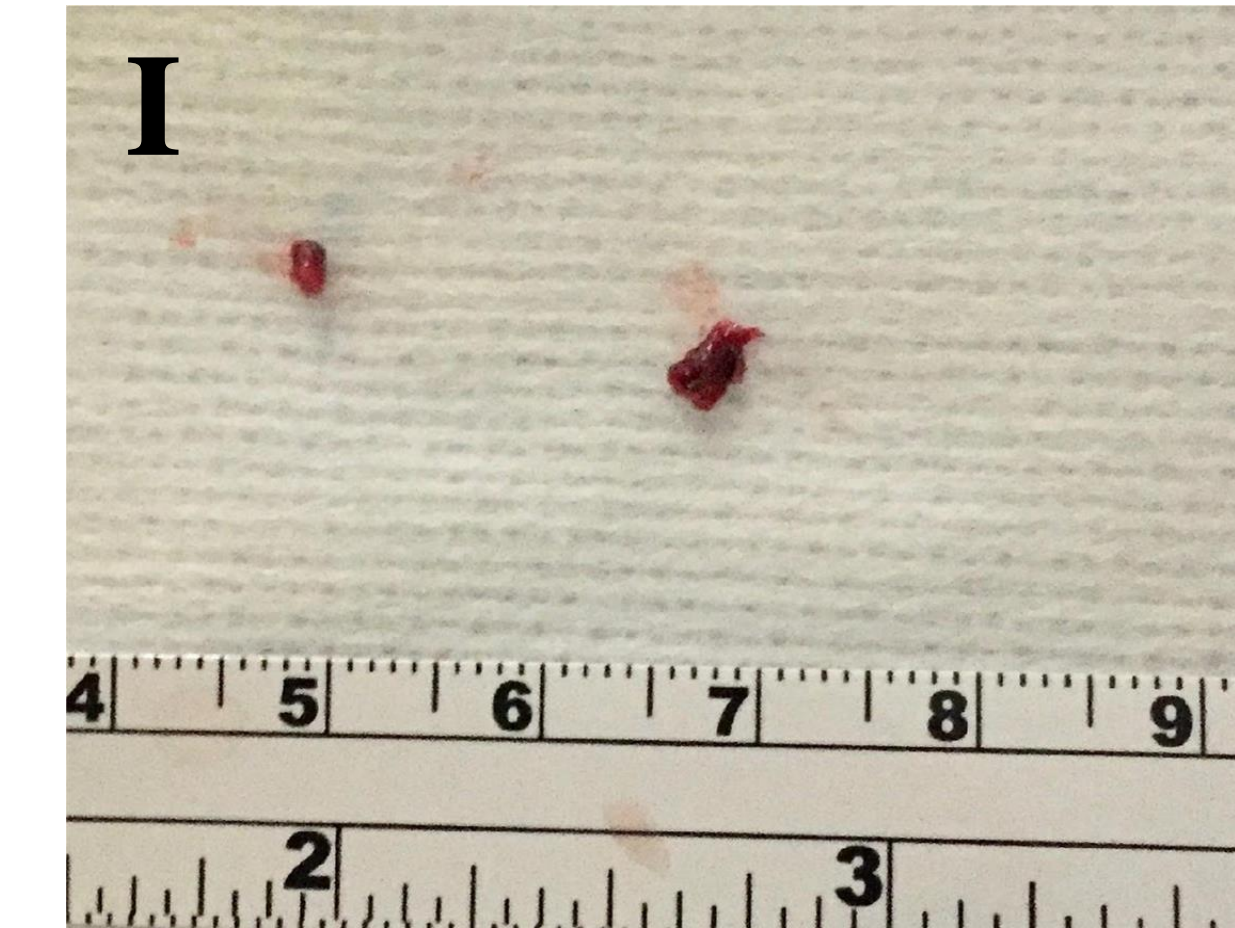
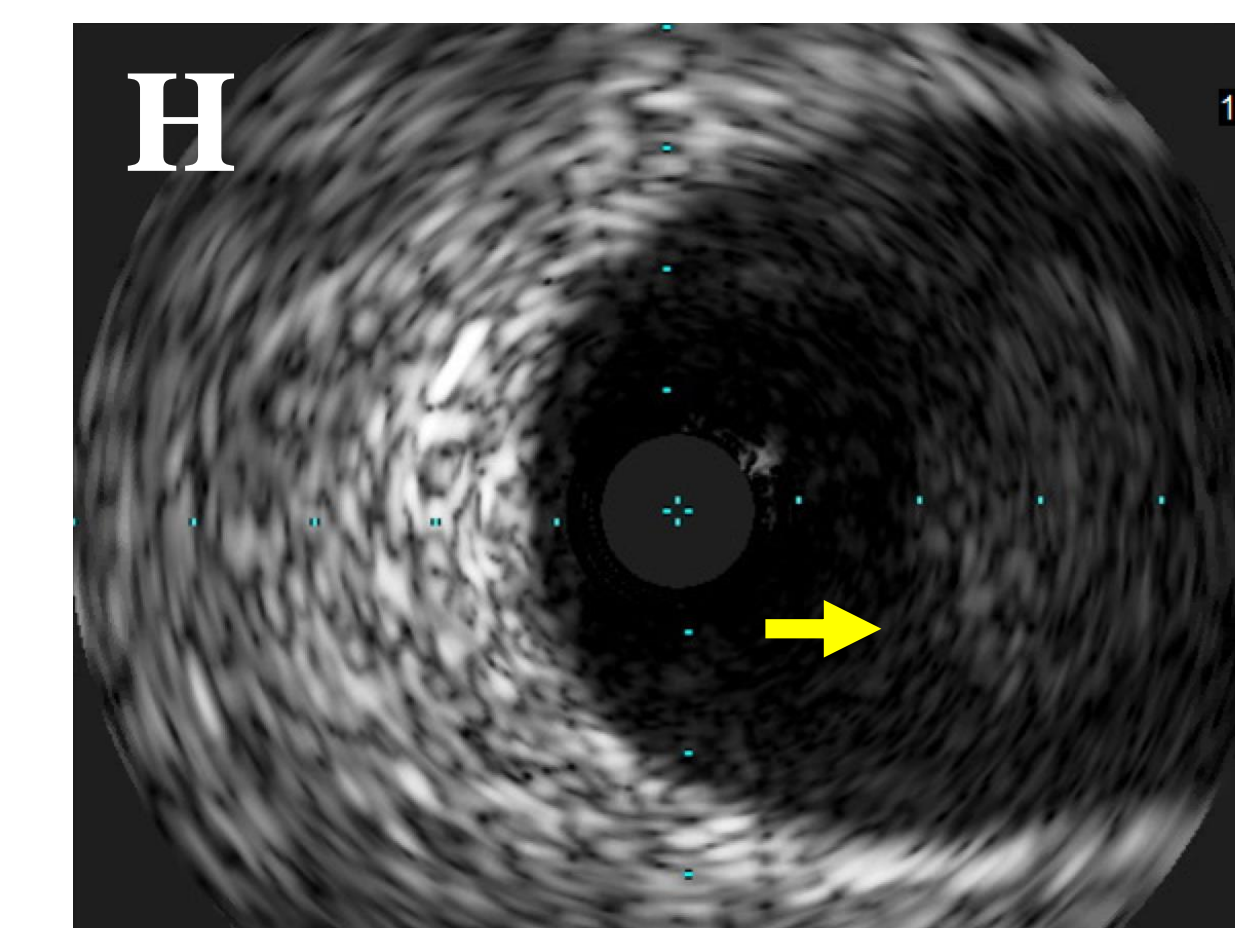
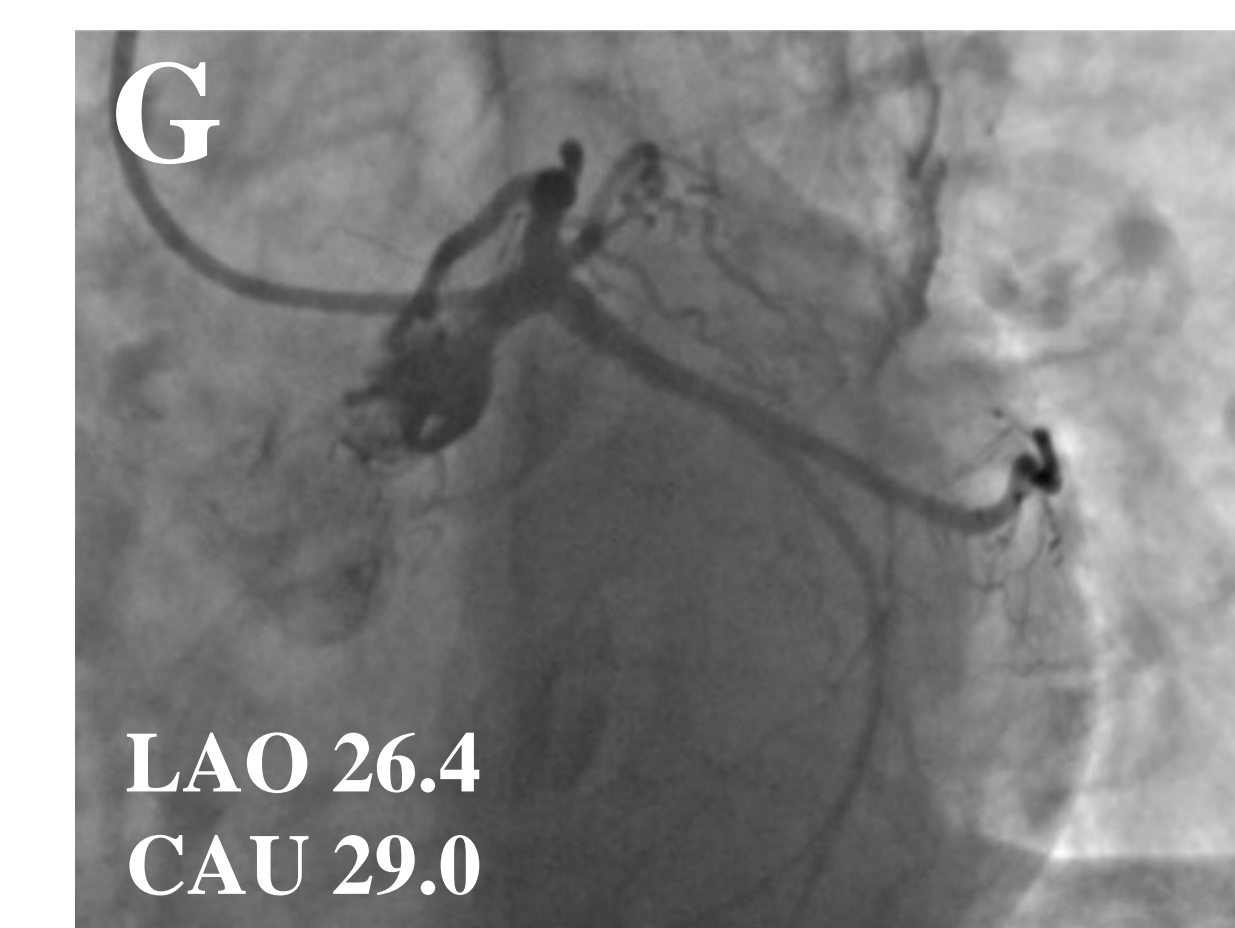
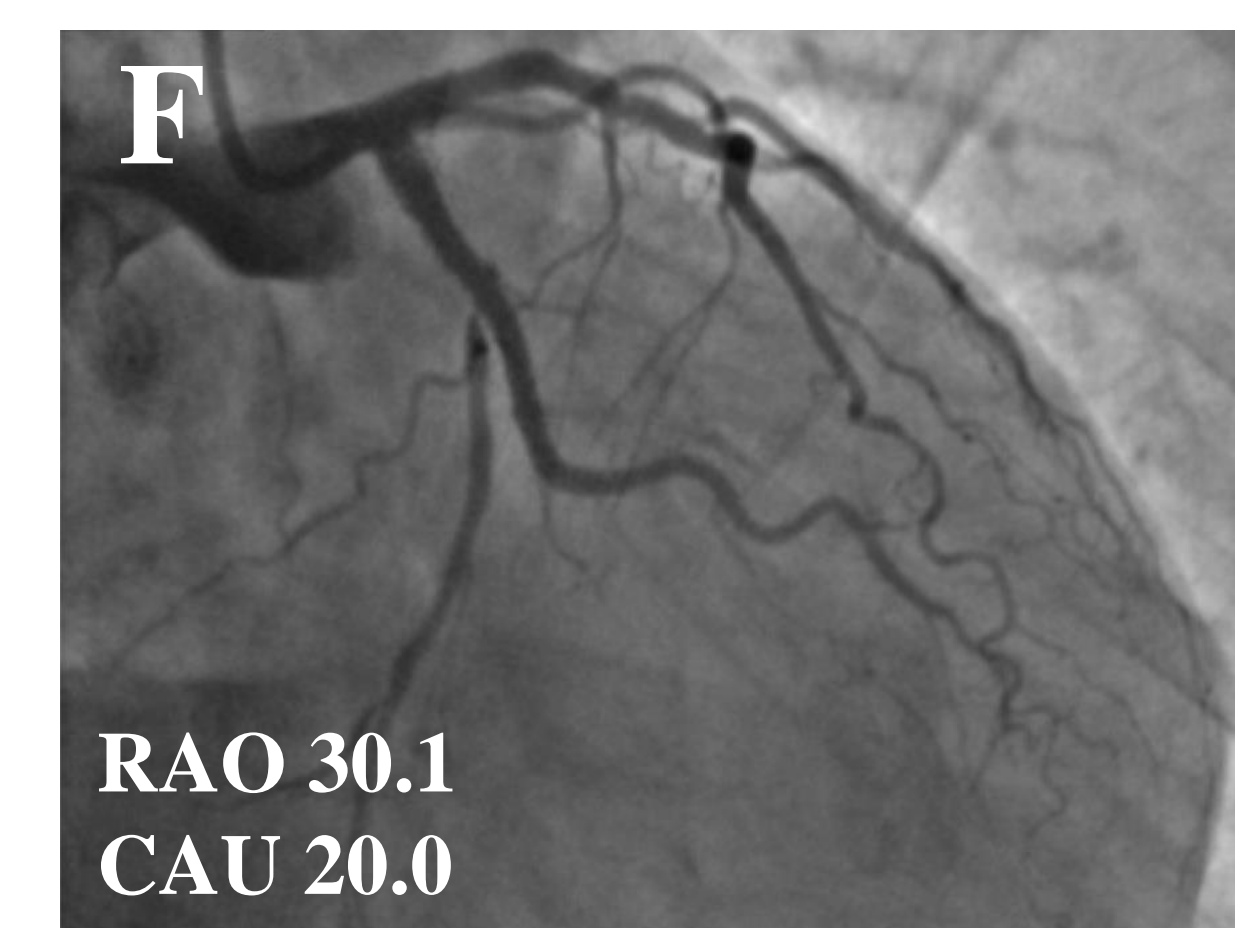
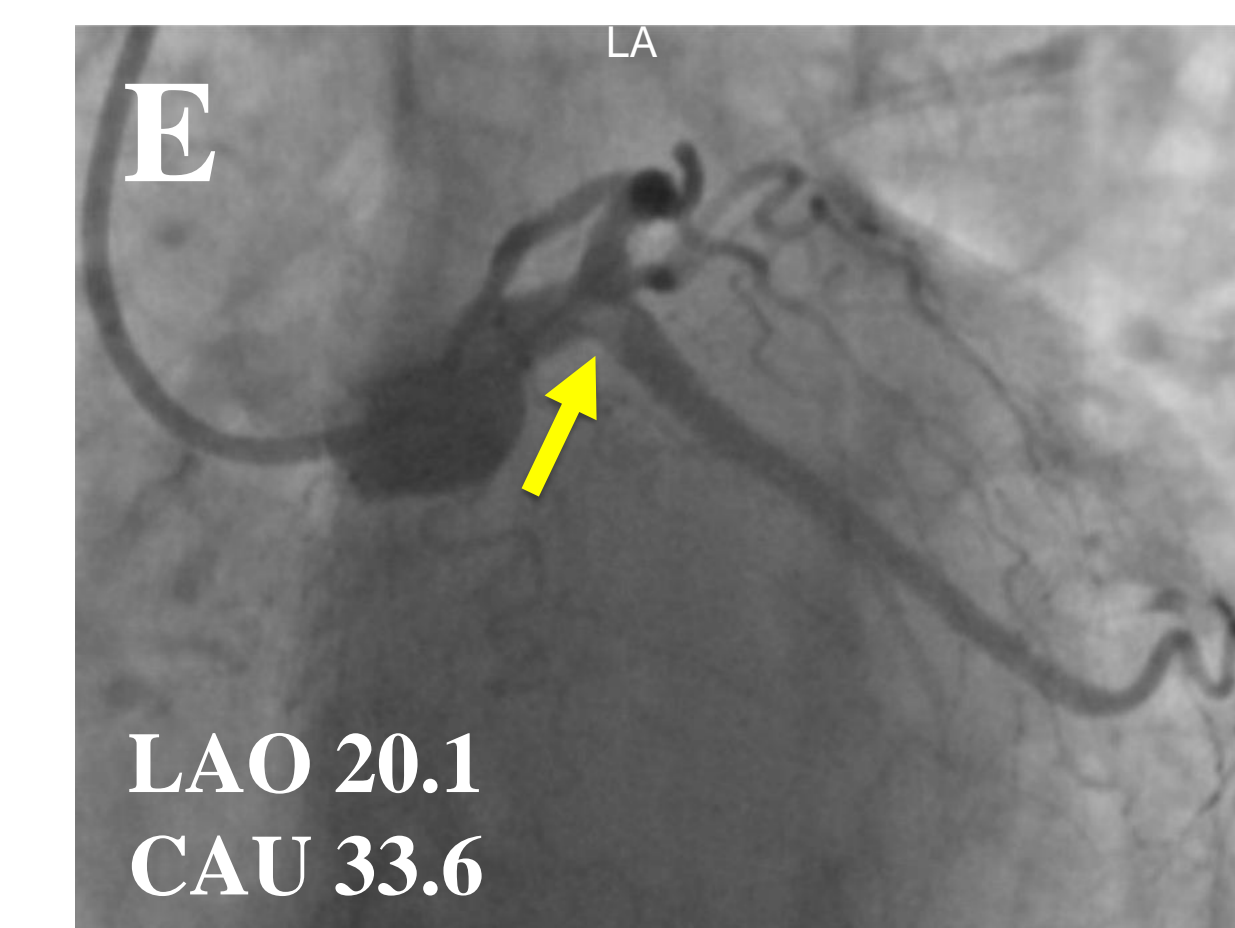
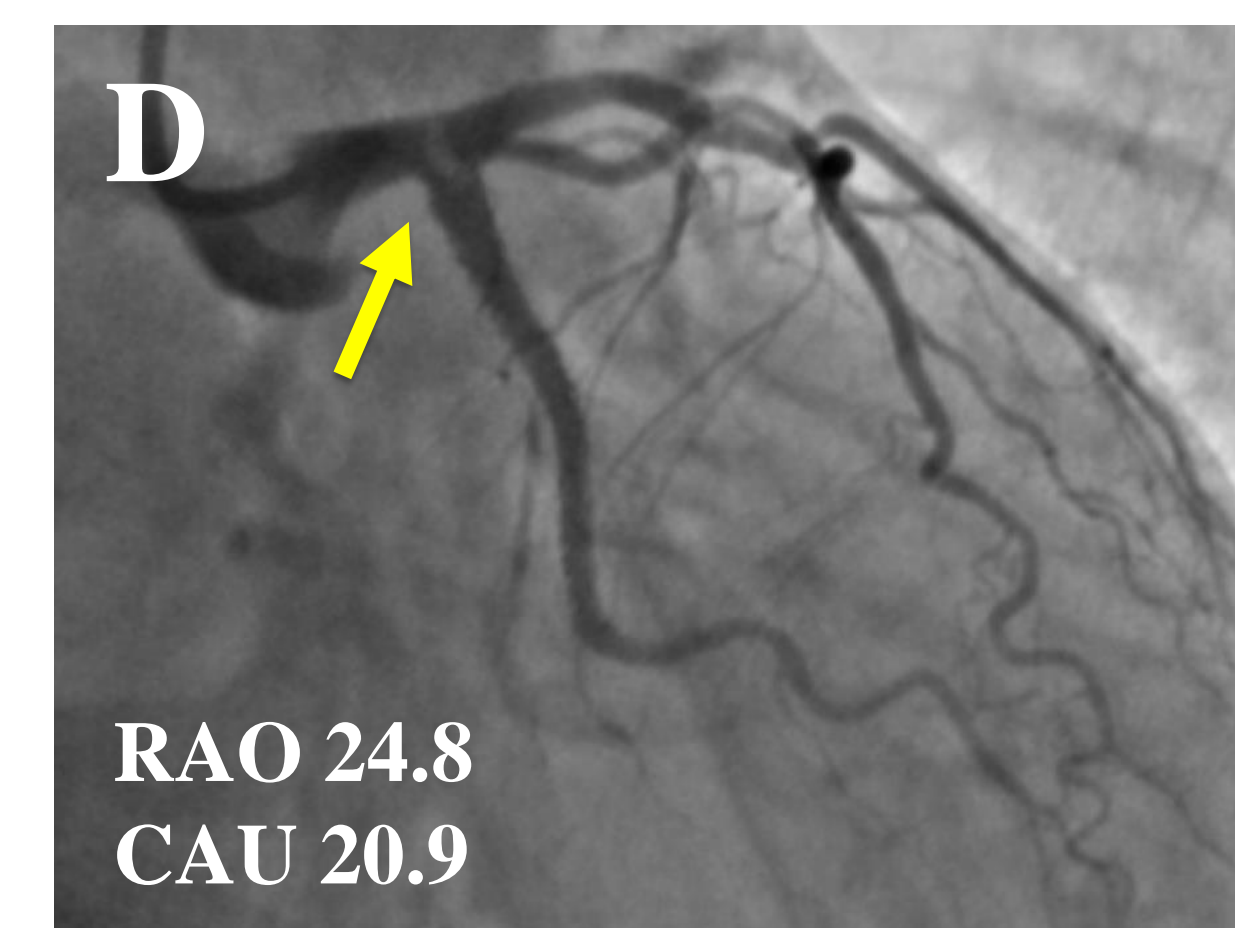
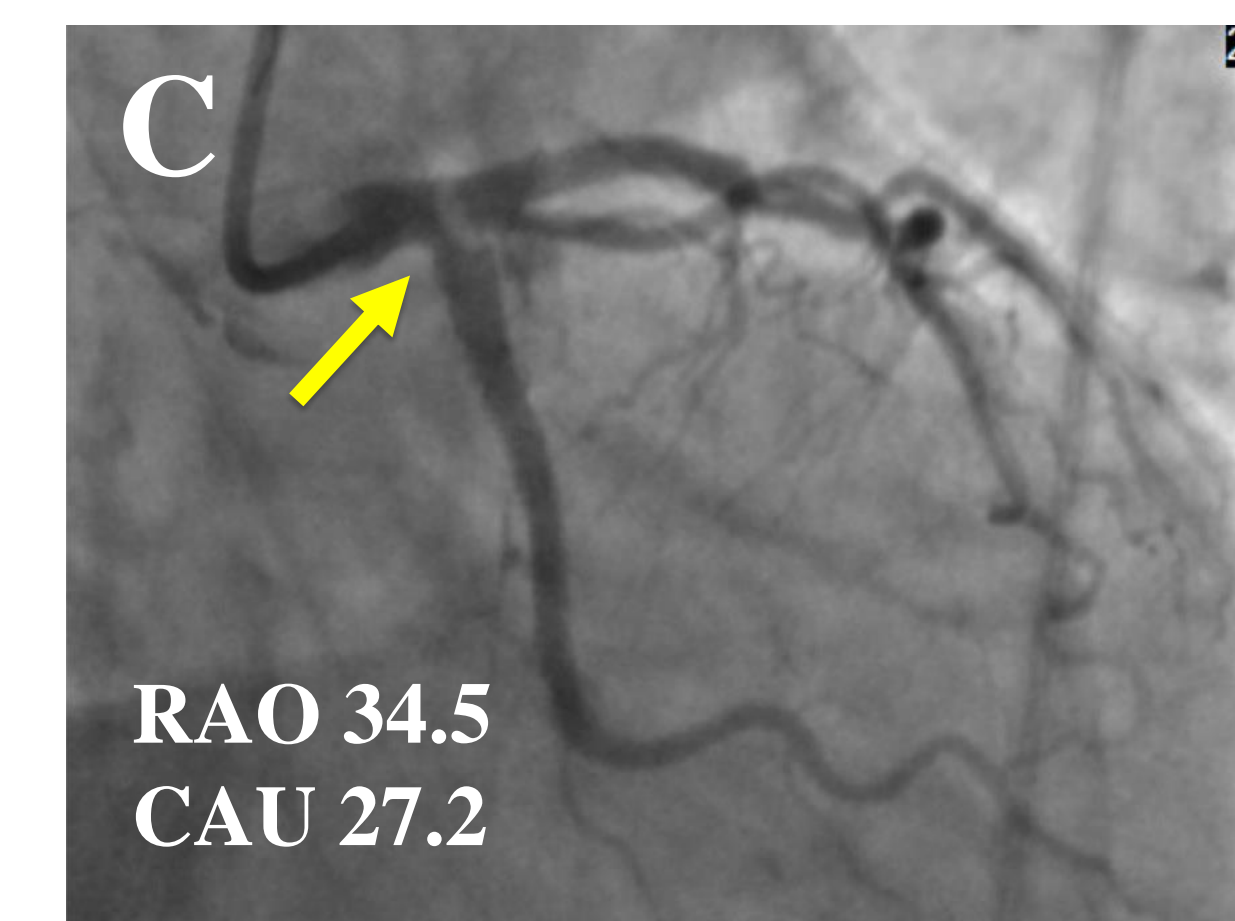
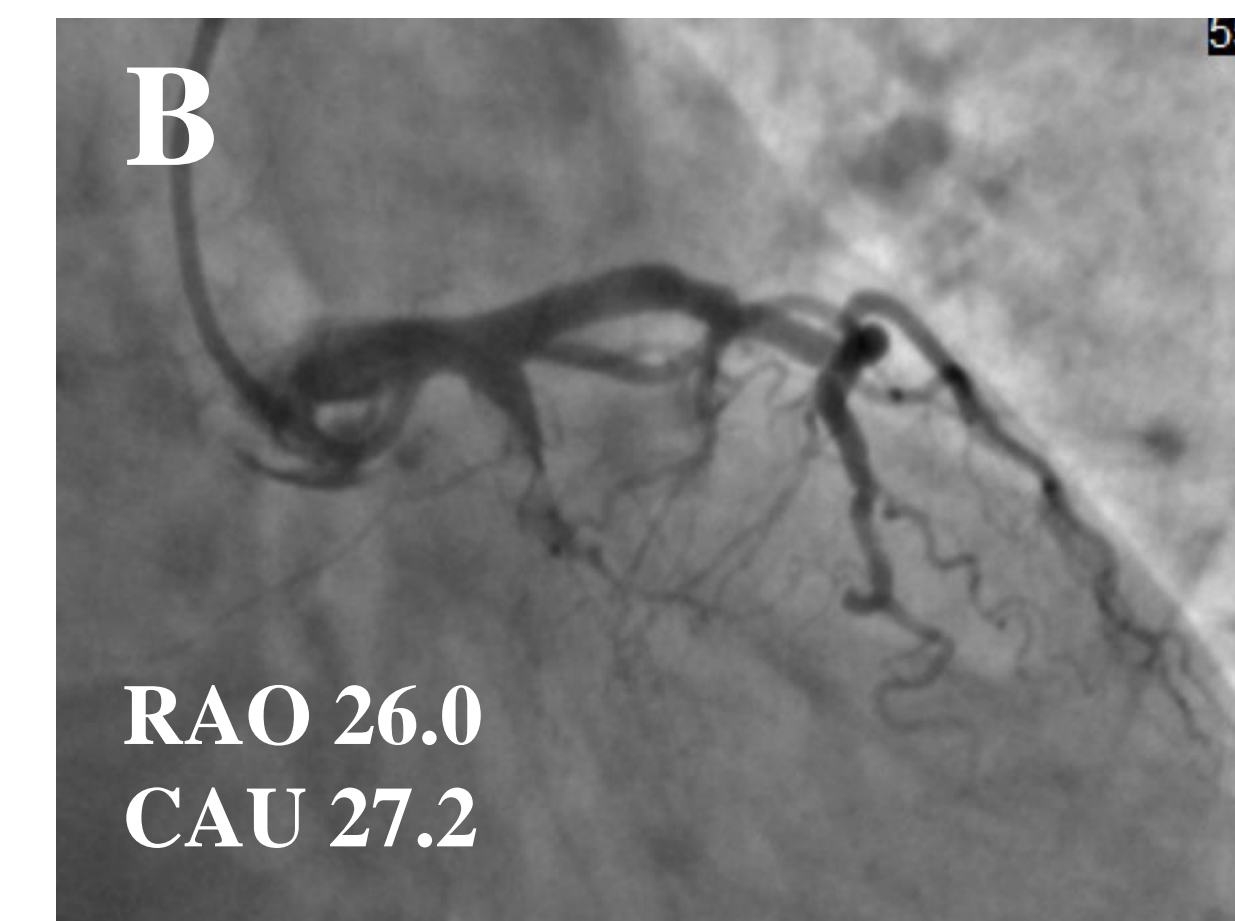
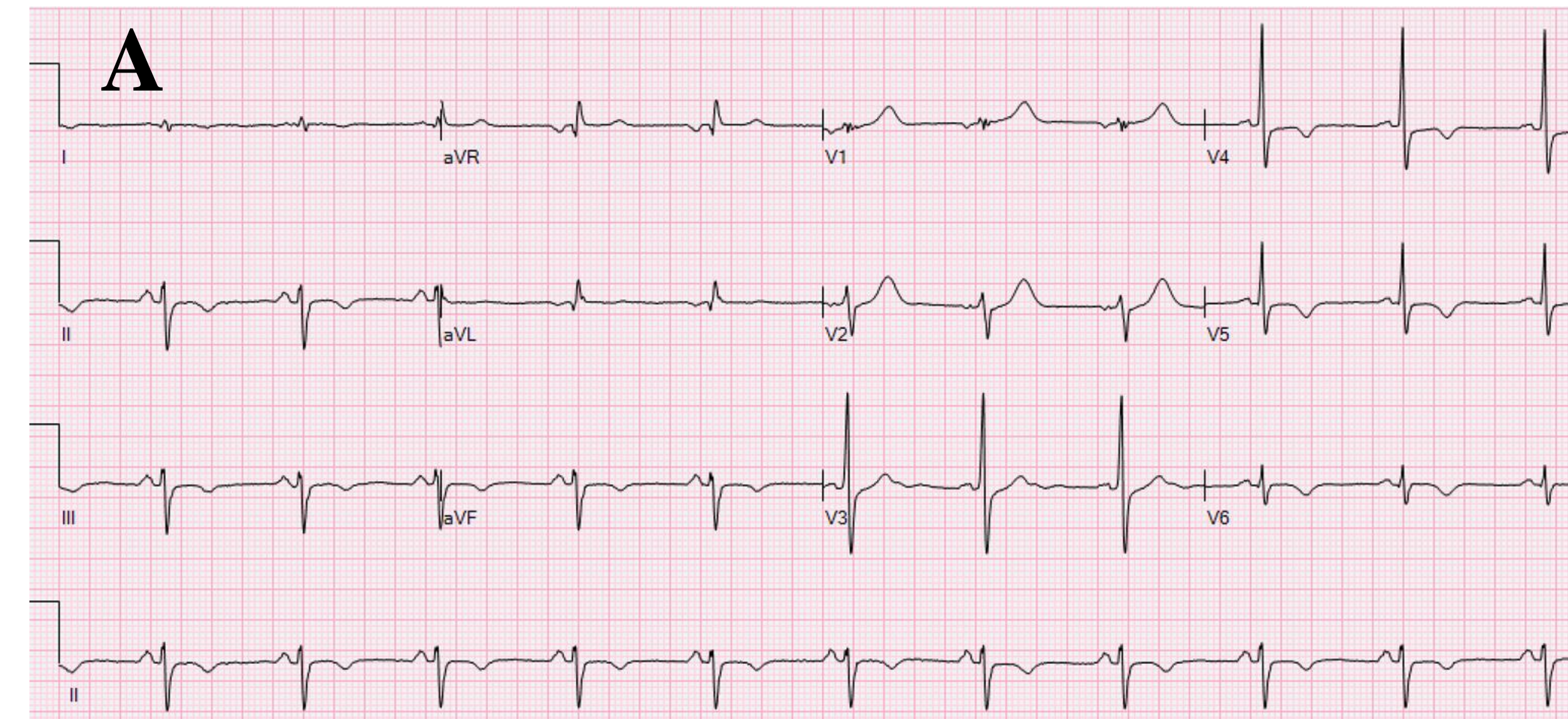
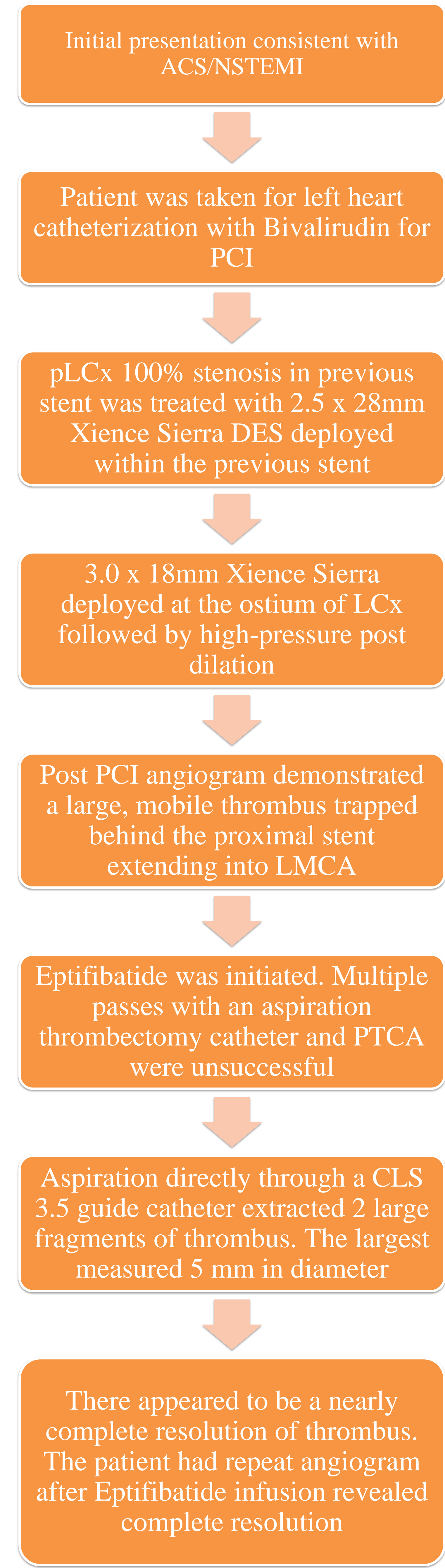


Figure 1. 12 lead EKG demonstrating lateral ST-depression with T waves inversion (A). Initial angiogram demonstrating 100% pLCx stenosis (B). Angiogram after stent deployment revealed trapped thrombus extending into LMCA. (C). Angiography after multiple passes with the Pronto thrombectomy catheter demonstrating persistent thrombus (D&E). Angiography after aspiration through a CLS 3.5 guide catheter demonstrating successful removal of the thrombus (F&G). Intravascular ultrasound (IVUS) demonstrating the thrombus in the LMCA (H). Two fragments of aspirated thrombus. The largest measured 5 mm in diameter (I).

Clinical Course



Discussion

- ❖ LMCA thrombosis is rare and carries a high mortality. Our case demonstrated an unusual cause of thrombus extending from a stented vessel into the LMCA.
- ❖ In the setting of AMI, we pursued several options that were described in the literature without immediate success.
- ❖ During runs with the aspiration catheter, we observed that the tip of the guide catheter was in close proximity to the mobile thrombus in the LCx and LMCA. This prompted an attempt at a novel technique of aspiration thrombectomy via the guide catheter that demonstrated immediate success.
- ❖ Our patient experienced no immediate or perioperative complications.
- ❖ Aspiration of thrombus through a guide catheter may be an effective alternative technique in treating LMCA thrombus.

Reference

- ❖ Si, Daoyuan et al. "A new technique to salvage myocardium following the failure of thrombus aspiration in acute myocardial infarction: a case report." BMC cardiovascular disorders vol. 18,1 228. 10 Dec. 2018, doi:10.1186/s12872-018-0951-9
- ❖ Kapadia, Samir R., et al. "Successful Percutaneous Management of Left Main Trunk Occlusion during Percutaneous Aortic Valve Replacement." Catheterization and Cardiovascular Interventions, vol. 73, no. 7, 2009, pp. 966–972., doi:10.1002/ccd.21867.
- ❖ Patel, Nish, et al. "Stent-Based Mechanical Thrombectomy in Left Main Coronary Artery Thrombus Presenting as ST-Segment Elevation Myocardial Infarction." JACC: Cardiovascular Interventions, vol. 10, no. 3, 2017, pp. 302–303., doi:10.1016/j.jcin.2016.10.038.