

Missed Signals: SCAD and the Diagnostic Blind Spot in Postpartum Women

Grace McKeehan, OMS-IV,¹ Ruth Zachariah, OMS-III,¹ Dr. Hasnan Ijaz, MD,² Dr. Thomas Alexander, MD,² Dr. Mohamed Mubder, MD,² Dr. Heriberto Cantu MD,² Dr. Ahmed Mahmood, MD²

¹Texas College of Osteopathic Medicine, UNT Health Science Center, Fort Worth, TX; ²Corpus Christi Medical Center, Corpus Christi, TX

INTRODUCTION

- Cardiovascular disease is the leading cause of maternal mortality in the United States, including pulmonary embolism, aortic syndromes, and SCAD.
- Spontaneous coronary artery dissection (SCAD) is a rare cause of acute coronary syndrome (ACS), primarily affecting young and middle-aged women.
- SCAD is estimated to account for between 1.7 to 4% of ACS cases, however it is often underdiagnosed in the face of competing diagnoses such as preeclampsia.

PURPOSE

To expose a gap in the standard ACS risk-stratification framework which may underestimate ACS risk in young postpartum women and lead to diagnostic uncertainty delayed definitive evaluation in suspected SCAD.

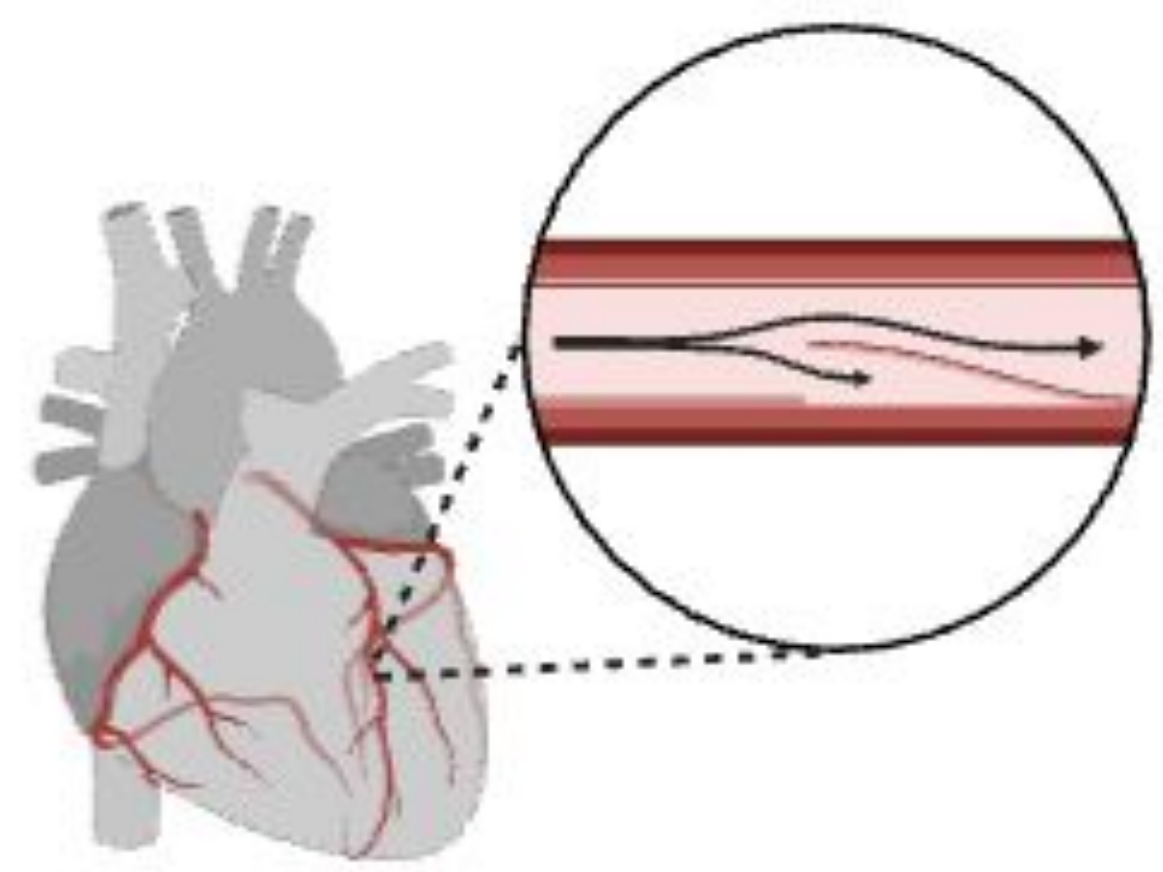


Fig. 1 Diagram of Coronary Artery Dissection

CASE PRESENTATION

- 31-year-old G2P2 female with PMH of asthma and gestational diabetes.
 - Worsening cough x3 days and **chest tightness/heaviness x3 hours**.
 - Denied any palpitations, shortness of breath, orthopnea, lower extremity swelling, fever, chills, or nasal congestion.
 - Denied any history of preeclampsia, connective tissue disease, OTC/prescription medications, substance use, or family history of heart disease.
- Exam
 - Hypertensive at **170/80**, but afebrile, 98% SpO2 on room air and HR 68.
 - In no acute distress, physical exam unremarkable with normal breath sounds.

WORKUP

- Labs/Imaging:
 - UA: **protein/creatinine ratio of 0.9** (reference < 0.2 mg/mg).
 - Creatinine: 0.73 mg/dL (reference < 1.1 mg/dL).
 - B-type natriuretic peptide: 373 pg/mL (reference 0–299 pg/mL).
 - High-sensitivity troponin: **14.9 ng/L** (reference <34 ng/L).
 - ECG: **ST elevations in inferior leads (II, III, avF) and reciprocal changes in aVL and V2**.
 - CXR: no acute cardiopulmonary findings.

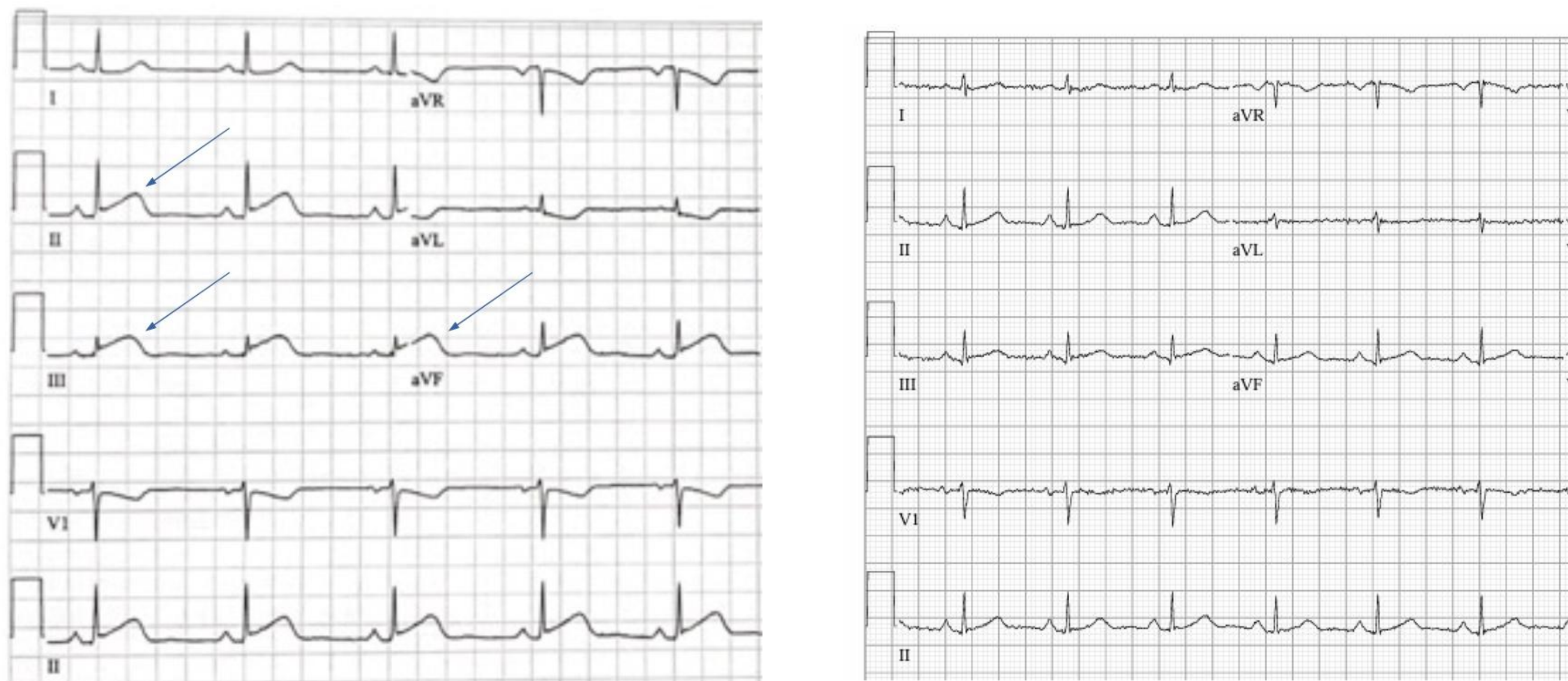


Fig. 2 and 3 Initial ECG with ST-elevation in inferior leads (left) and subsequent ECG at accepting facility with resolution of ST changes (right)

HOSPITAL COURSE

- ACS protocol initiated by cardiology.
- Cath lab unavailable at the presenting hospital; transferred to nearby facility.
- Negative CTA Chest and **conventional troponin 1.62 ng/mL** (critical > 0.290 ng/mL).
- Diagnostic gap: resolution of symptoms and ST changes on ECG leading to heparin discontinuation without documented plan for catheterization.**
- Diagnosed with NSTEMI and transferred back to the original presenting hospital to be under the supervision of her obstetric team.
- Repeat ECG showed ST depressions, and serial troponin peaked at 15,786 ng/L.**
- ACS protocol reinitiated.
- Angiogram deferred until hospital day 3 due to resolution of symptoms and ST changes, with low clinical suspicion for ongoing myocardial infarction.
- Coronary angiography with **Type 1 SCAD** in large obtuse marginal 1.
- Heparin and clopidogrel discontinued. She recovered with conservative management.

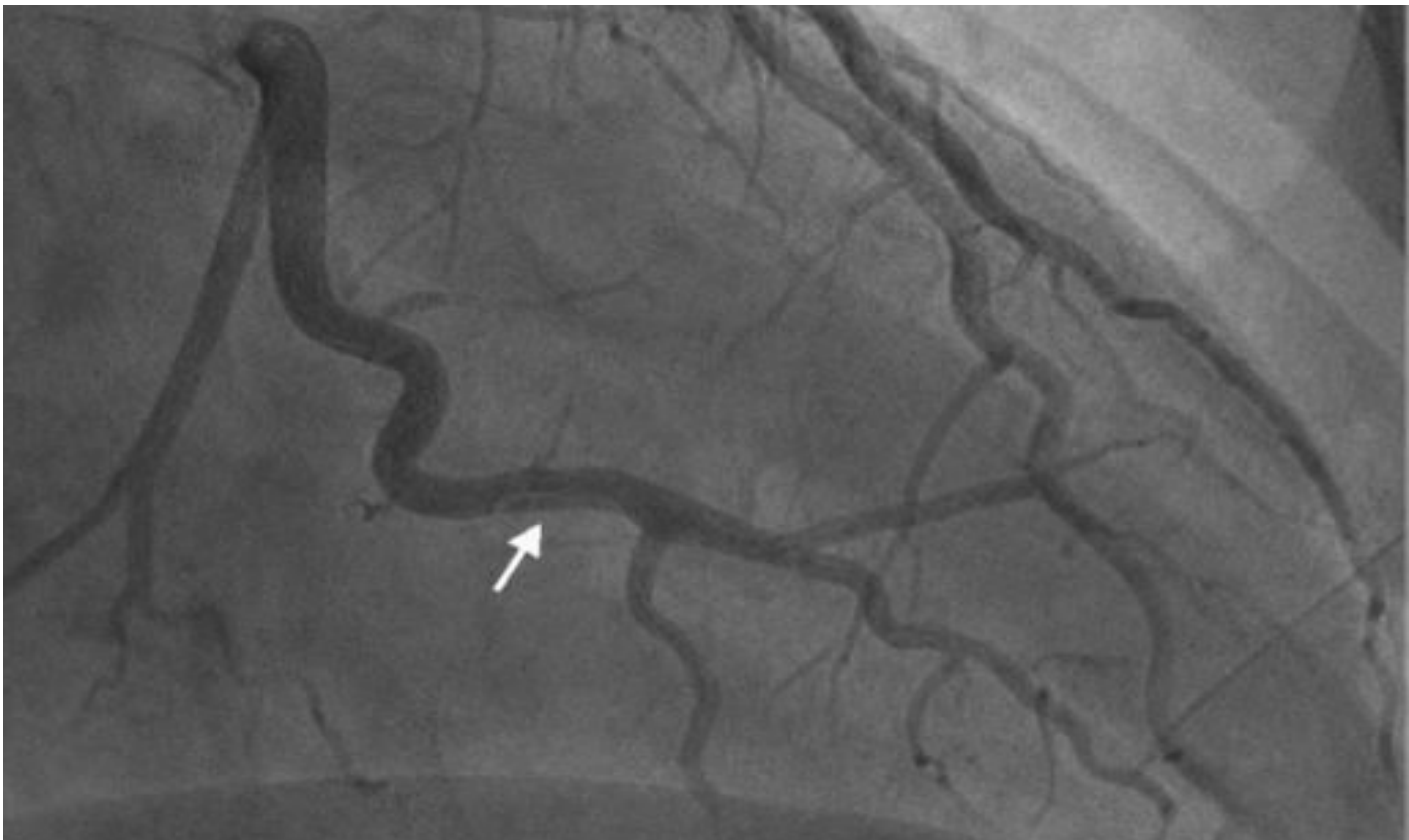


Fig. 4 Coronary angiography with Type 1 SCAD at the midpoint of OM1 with distal TIMI III flow (arrow)

DISCUSSION

- An initially negative troponin, transient ST changes, and a reassuring clinical picture may all lead to premature rule-out of ACS.
- The GRACE Score used for ACS risk stratification was developed in an older, male population and has not been validated in SCAD.
- This patient had an initially low risk GRACE score despite transient ST changes and subsequent dynamic rise in troponin.
- Although these findings would support an early invasive strategy under traditional ACS stratification, current ACS/SCAD guidelines provide limited guidance on the timing of angiography in young women with suspected SCAD.
- Diagnosis is important as fibrinolytics and heparin used in traditional ACS may worsen the intramural hematoma that underlies the pathophysiology in SCAD.

- Young female
- Transient ST elevations
- Negative initial troponin

Low risk GRACE Score

- Recurrent ST changes
- Dynamic troponin rise

High risk features

Clinical Gap: Conventional ACS risk stratification may underestimate risk in young women, creating uncertainty in timing of angiography in suspected SCAD.

KEY LESSONS

- Postpartum period is a high-risk window for maternal death from cardiopulmonary pathology and obstetric providers play a central role in recognizing warning signs.
- A negative initial troponin and resolution of ST changes does not rule out ACS or SCAD.
- Traditional ACS risk stratification may underestimate the risk of acute coronary syndrome, including SCAD, in young women.
- Although mortality in SCAD is relatively low, counseling is essential given a 10-18% risk of SCAD recurrence in future pregnancies and further cardiac injury.
- Clinical gap: sex- and SCAD-specific guidelines are needed to guide angiography timing and appropriate management.**

REFERENCES

- ACOG Practice Bulletin 222: Gestational Hypertension and Preeclampsia. *Obstet Gynecol.* 2020;135(6):e237-e260.
- Fox KAA, et al. Updated GRACE risk score. *BMJ Open.* 2014;4(2):e004425.
- Hayes SN, et al. Spontaneous Coronary Artery Dissection: JACC State-of-the-Art Review. *J Am Coll Cardiol.* 2020;76(8):961-984.
- Kim ESH. Spontaneous Coronary-Artery Dissection. *N Engl J Med.* 2020;383(24):2358-2370.
- Kovacic JC, et al. Acute Coronary Syndromes in Premenopausal Women. *Circulation.* 2026;153(7):e89-e108.
- Mehta LS, et al. Call to Action: Maternal Health and Saving Mothers. *Circulation.* 2021;144(15):e251-e269.
- Rao SV, et al. 2025 ACC/AHA/ACEP/NAEMSP/SCAI Guideline for the Management of Patients With Acute Coronary Syndromes. *J Am Coll Cardiol.* 2025;85(22):2135-2237.
- Ravichandran J, Woon S, Quek Y. High-Sensitivity Cardiac Troponin I Levels in Normal and Hypertensive Pregnancy. *Am J Med.* 2018;132:362-366.
- Wenzl FA, et al. Sex-specific evaluation of the GRACE score. *Lancet.* 2022;400(10354):744-756.
- Yip A, Saw J. Spontaneous coronary artery dissection—A review. *Cardiovasc Diagn Ther.* 2015;5(1):37-48.