

# Free-Floating Thrombus in the Right Coronary Artery Complicating Unstable Angina

## Background

- Acute coronary syndrome (ACS) is typically caused by rupture of an atheromatous coronary plaque. Other causes include thrombus formation and vasospasm.
- Few cases of ACS due to free floating thrombus have been previously reported and the etiology remains unclear.

## Case Presentation

- A 68-year-old Caucasian male with a significant past medical history of hypertension, morbid obesity, hyperlipidemia, non-insulin dependent type 2 diabetes mellitus, and tobacco use presented to the clinic for surgical clearance for chronic back pain with severe immobility.
- **Cardiac stress test:** inferior septal reversible defect
- **Coronary computed tomography angiography:**
  - Coronary disease in the proximal left anterior descending artery (LAD)
  - Results were inconclusive in the right coronary artery (RCA)
- **Interval history:** Three weeks later, the patient presented to the emergency department with new-onset severe retrosternal chest pressure with radiation to his left arm
- **Electrocardiogram:** sinus rhythm with a chronic right bundle branch block
- **Laboratory findings:** within normal limits including troponin negative x2, aside from a mild leukocytosis
- **Cardiac catheterization** was performed due to concern for unstable angina
  - Filling defect: intravascular ultrasound (IVUS) revealed 70% stenosis from a de novo floating thrombus in the right coronary artery (RCA), treated with **thrombectomy**
  - **Percutaneous stenting** was performed at the first and second lesion of the RCA with residual 5% stenosis and TIMI Grade 3 flow
  - Patient's symptoms improved and he was discharged home with guideline directed management

## Investigation

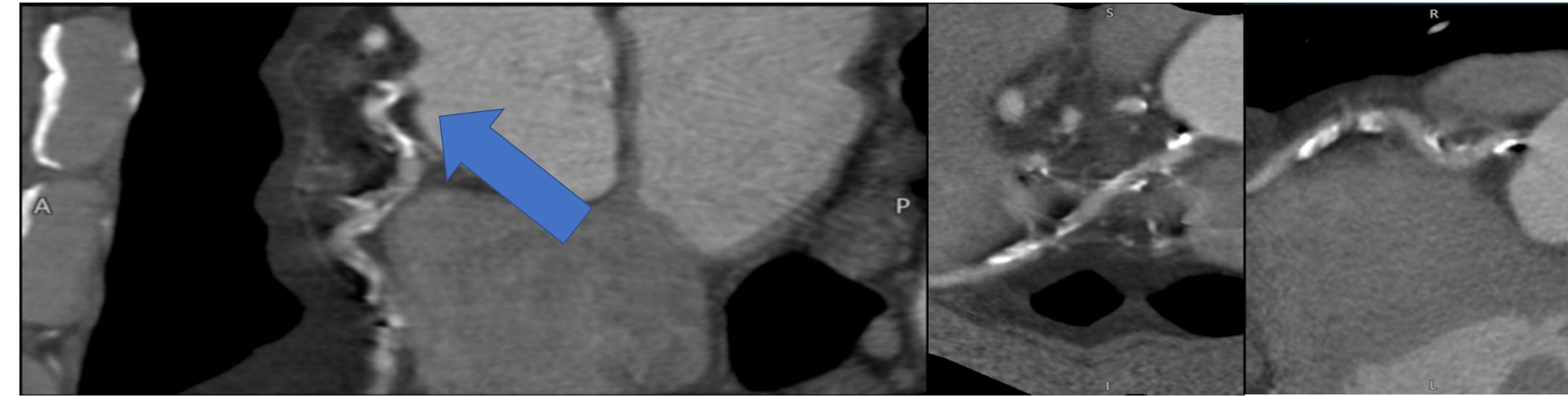


Figure 1. Coronary computed tomography angiography was inconclusive in the right coronary (blue arrow)

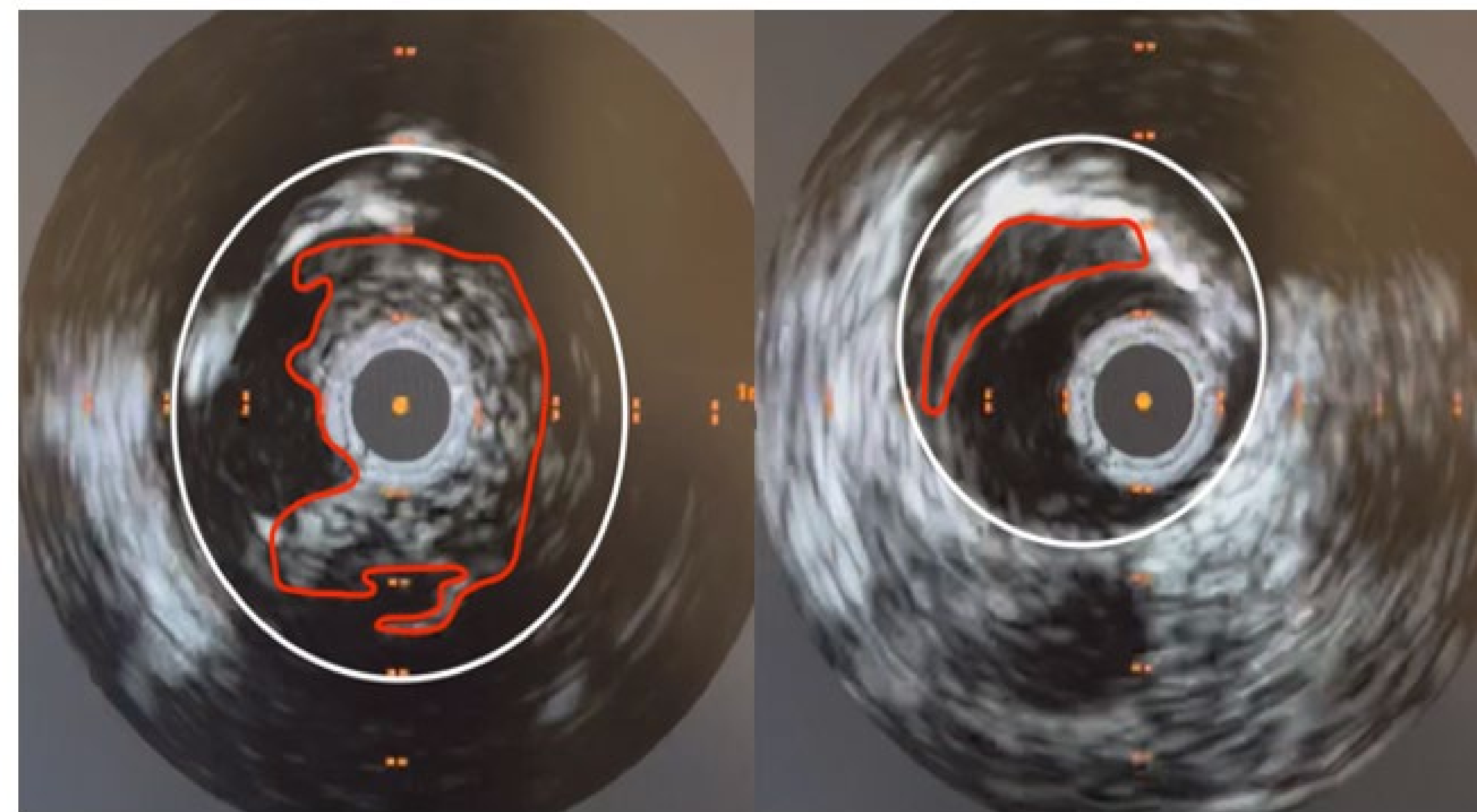


Figure 2. Intravascular ultrasound revealing a floating thrombus (red) in the RCA (white)



Figure 3. Coronary angiogram revealing stent placement in the RCA

## Discussion

- Our case presents an instance of de-novo floating thrombus found in the RCA.
- Few cases of floating thrombus have been reported in the peer-reviewed literature, with differing managements utilized.
- The pathophysiology of thrombus formation in the setting of unexplainable coronary atherosclerosis is not well described.
  - It has been proposed that the presence of age-related atherosclerosis and prothrombotic cardiac risk factors led to the formation of thrombus, which may be the case for our patient.
- IVUS may be useful to confirm the diagnosis during cardiac catheterization in the case of diagnostic uncertainty.
- While rare, it is important to consider a floating coronary thrombus as a potential cause of ACS.

## References

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