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Non-atherosclerotic CAD

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Professor of Medicine

Torino, 2017

Disclosures

- None

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Outline: Non-atherosclerotic ACS

- Four different etiologies – case based

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Case #1: 32 yr old female

- Chest pain on exertion and at rest beginning aged 28
- Mild dyslipidemia, Father died of MI
- Four ER visits with troponin +ve chest pain
- Normal echo

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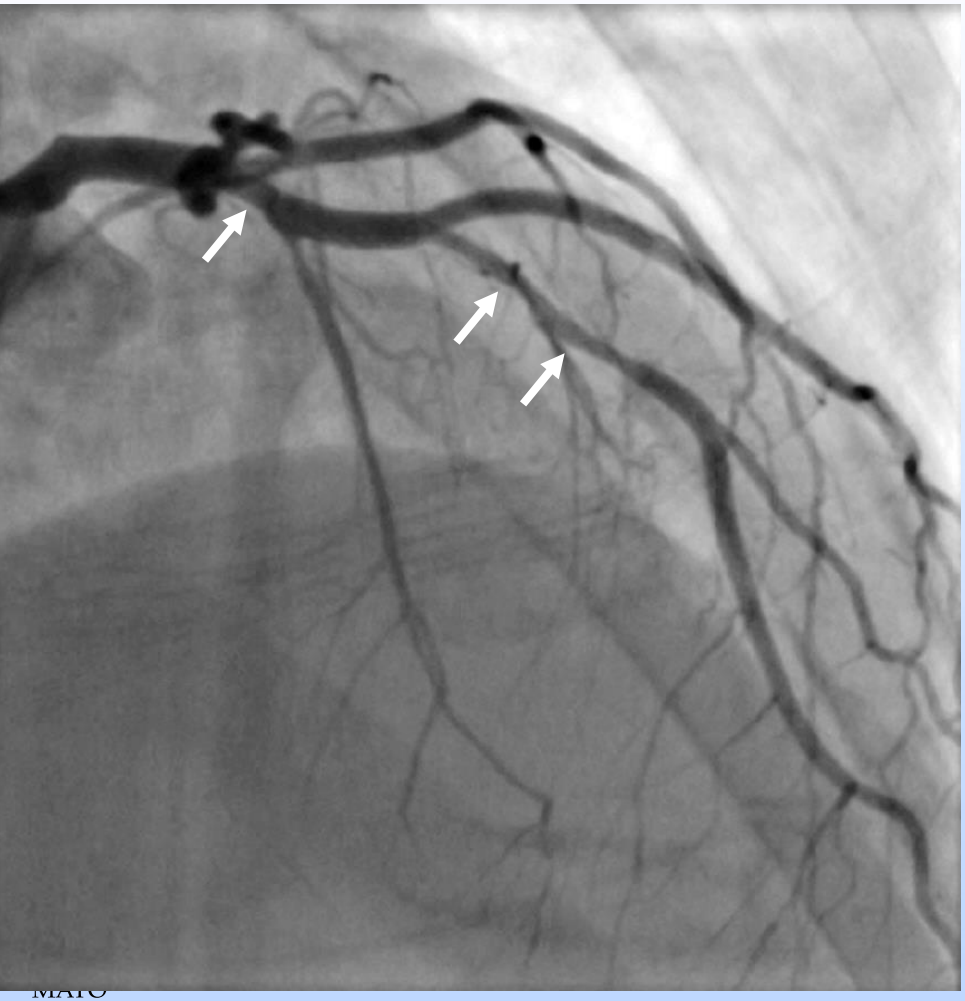
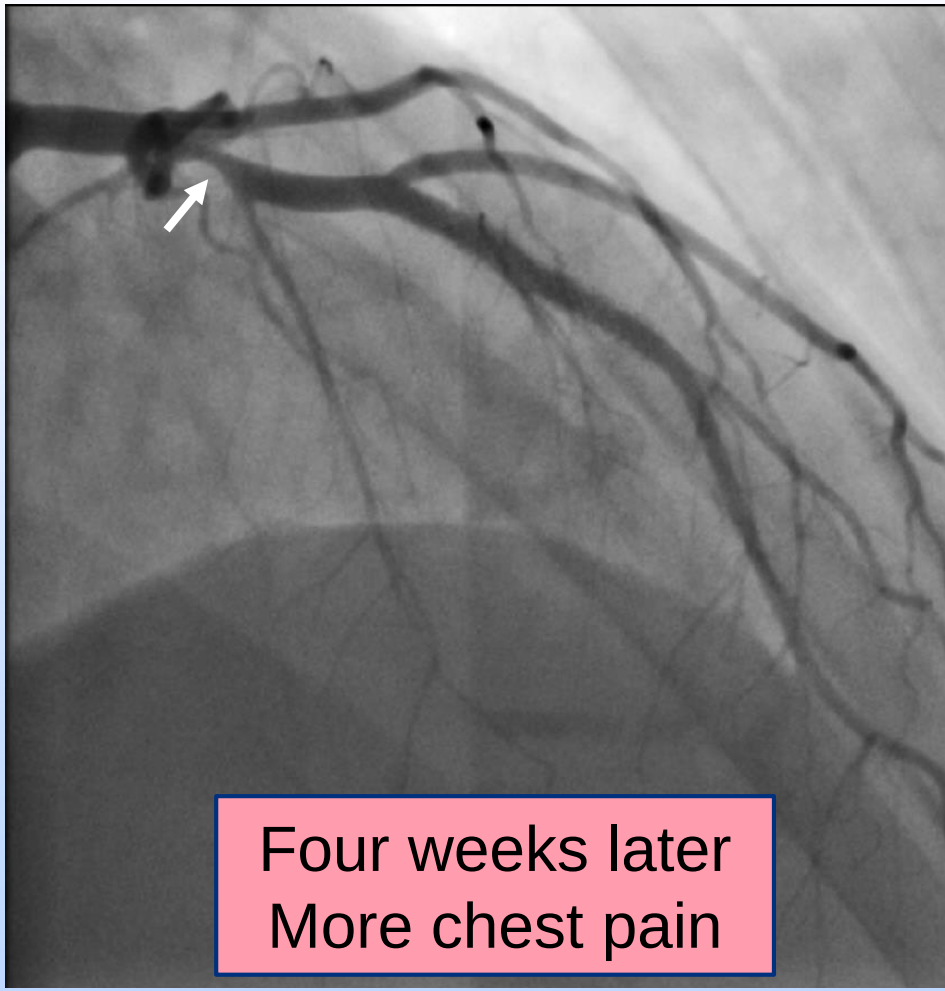
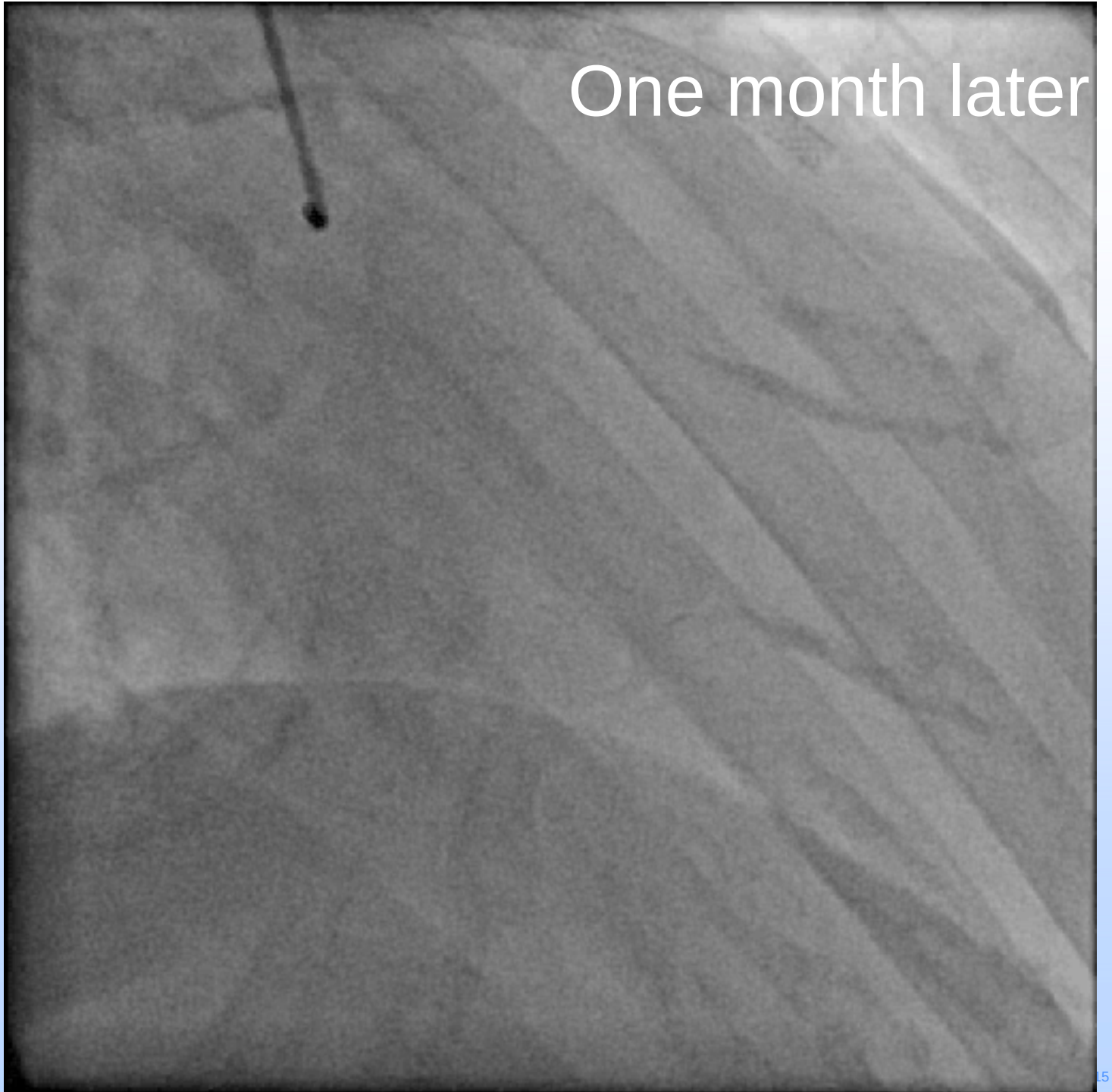
Case: 32 yr old female







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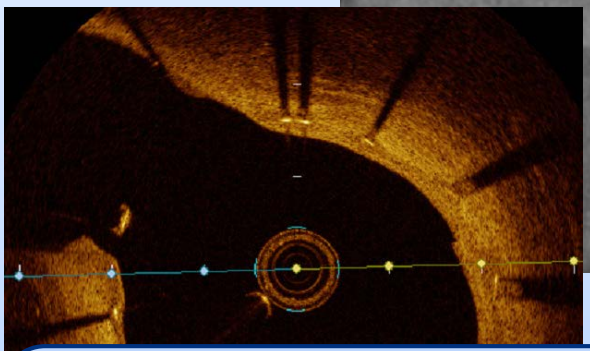
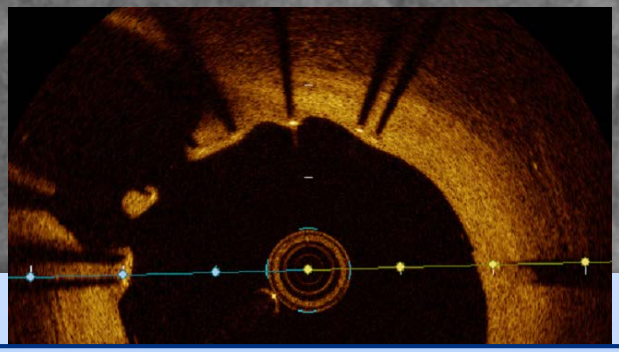
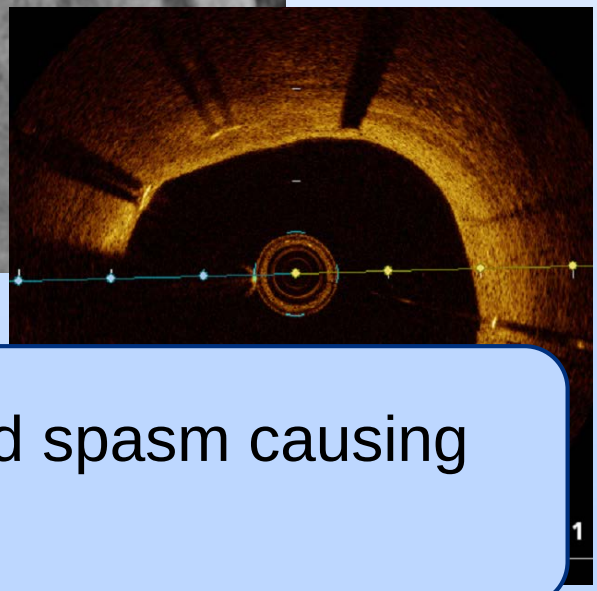
After ic nitrates and verapamil

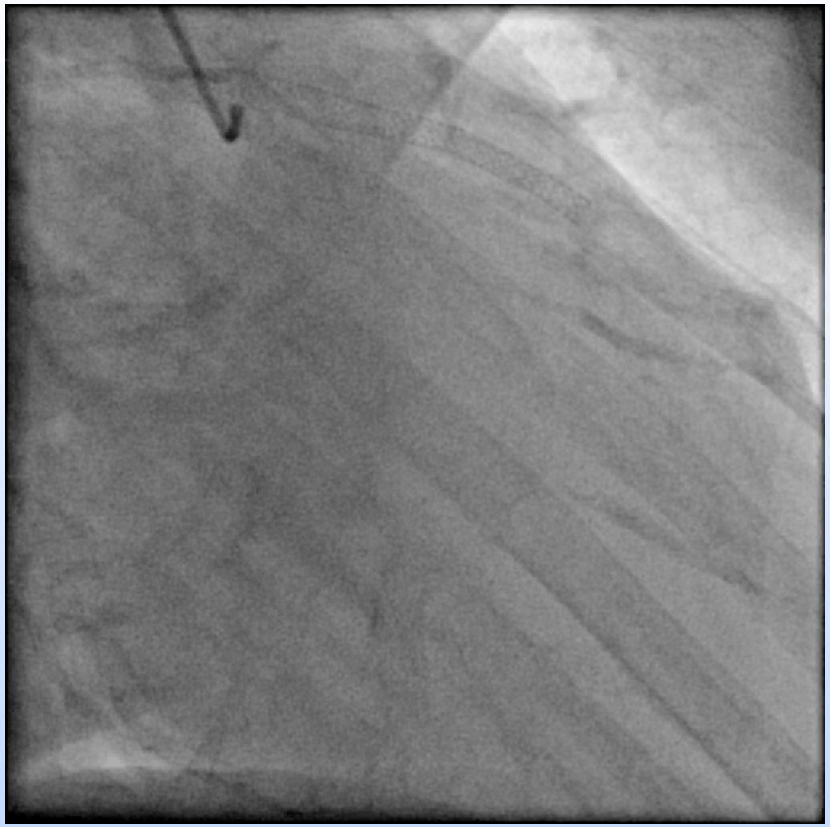






Diagnosis: Mild atherosclerosis, profound spasm causing myocardial necrosis

Case #1



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Coronary spasm – underdiagnosed in cath lab, overdiagnosed elsewhere

- Endothelial dysfunction +/- atherosclerosis
- Males and females
- Proximal mid and distal coronary arteries
- Focal and diffuse
- Value of intracoronary vasodilators
- Role for provocative testing in some

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Case # 2: 65 yrs female farmer

- CABG 1998 for chest pain and left main stenosis
- 2003-2016 refractory chest pains
  - 21 stress tests
  - 9 angiograms
  - 4 institutions
  - GI, Pulmonology, Psychiatry
  - Narcotics, anxiolytics, antidepressants
- Referred back with worsening chest pains at rest and on exertion, mild +ve dobutamine echo (inferior)

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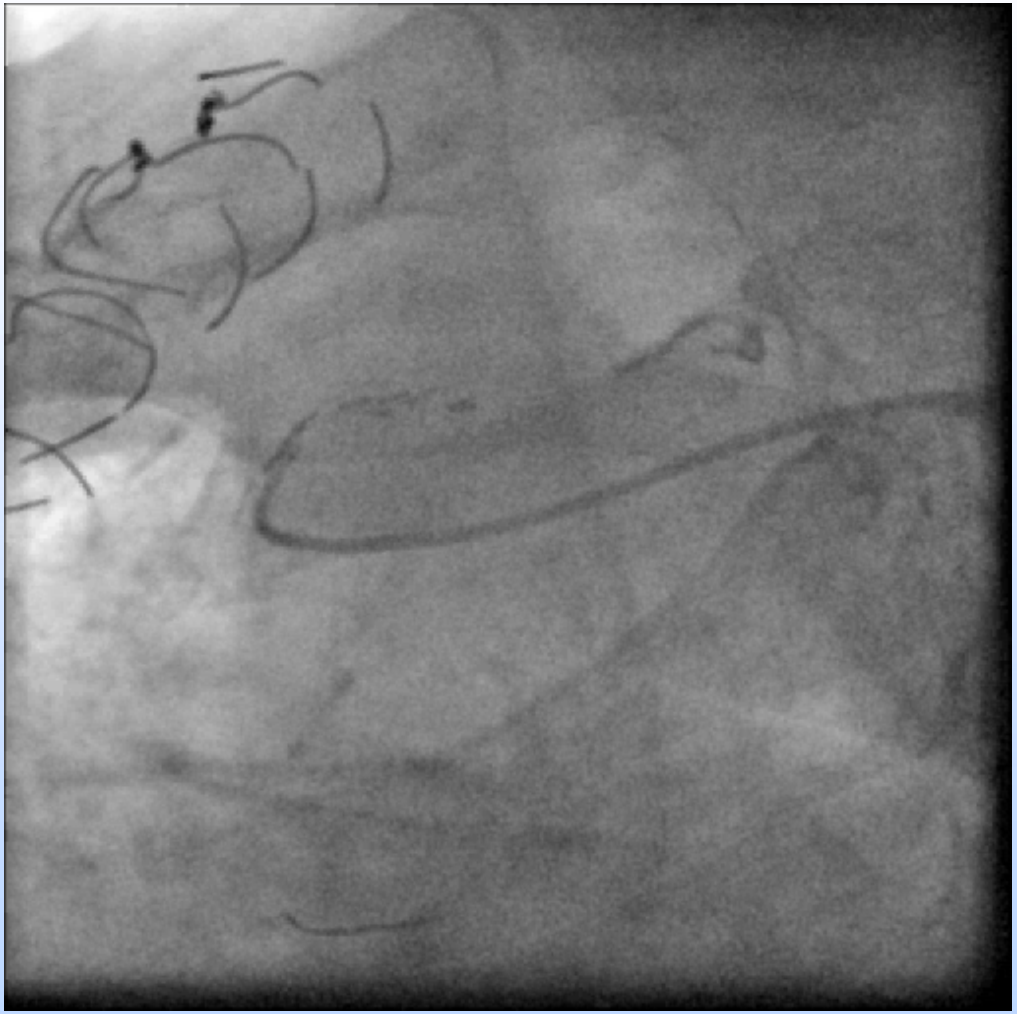

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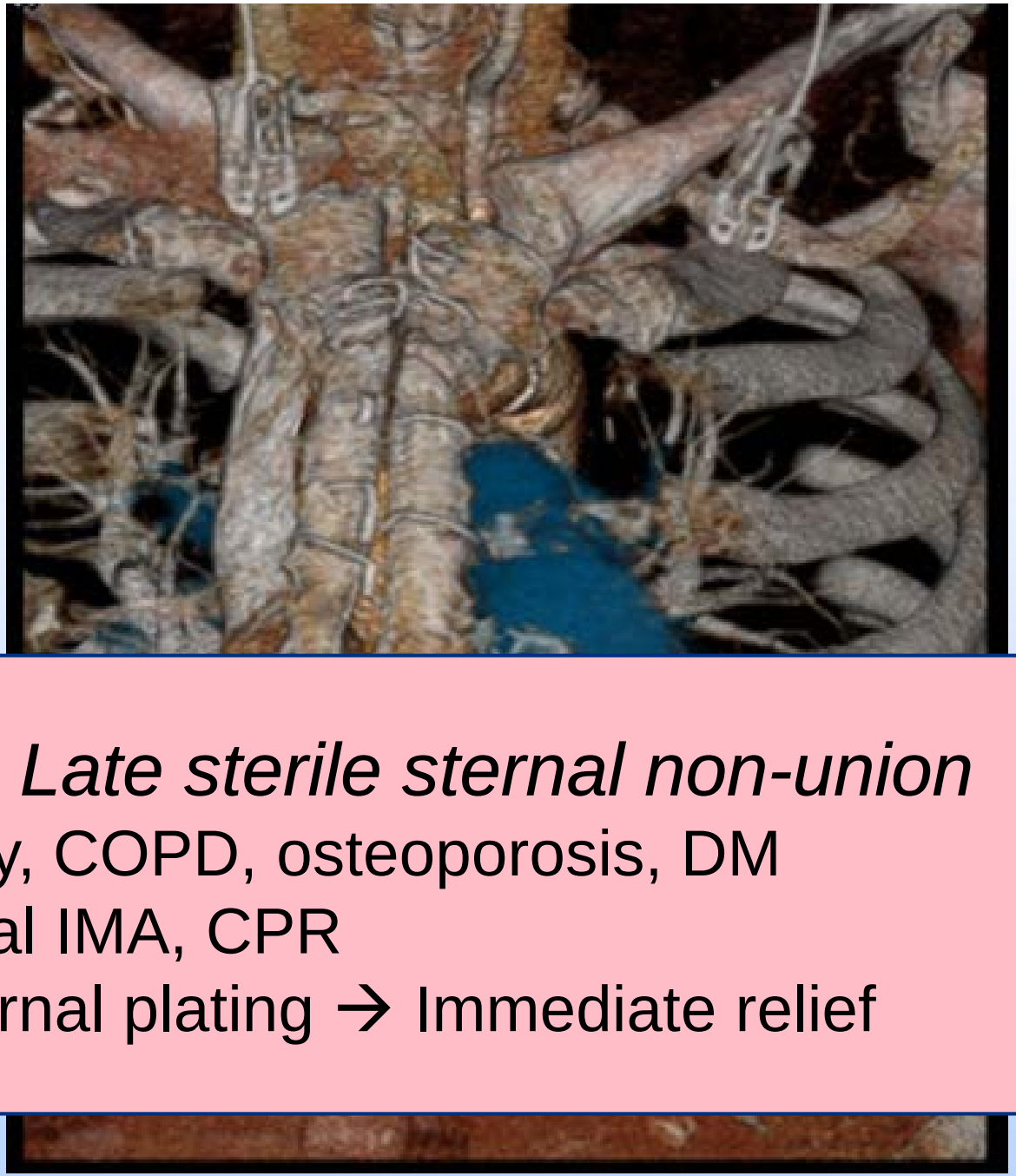
2001

2016



Late sterile sternal non-union

- Obesity, COPD, osteoporosis, DM
- Bilateral IMA, CPR
- Rx Sternal plating → Immediate relief

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Case #3

- 64 year old male
- HTN only risk factor
- History of occasional palpitations 2 yrs
- Acute Inferior STEMI

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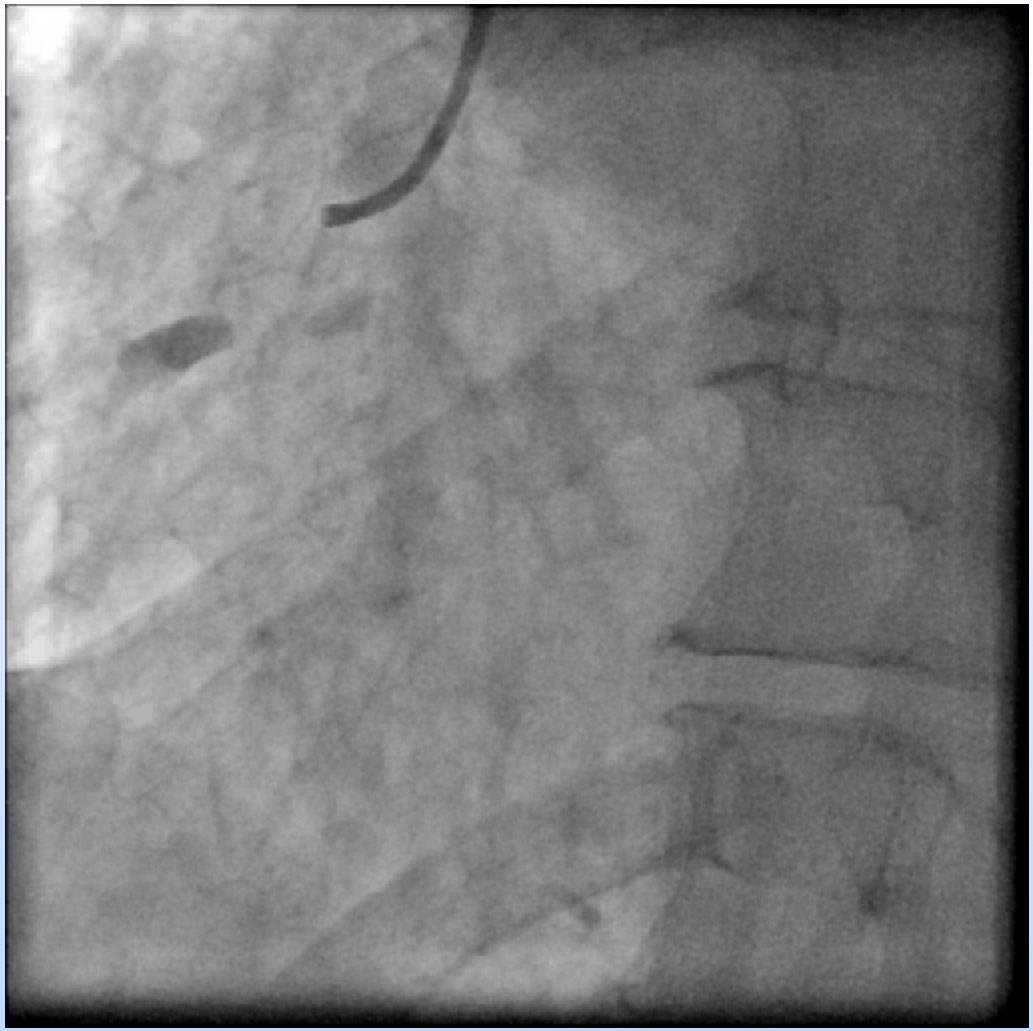

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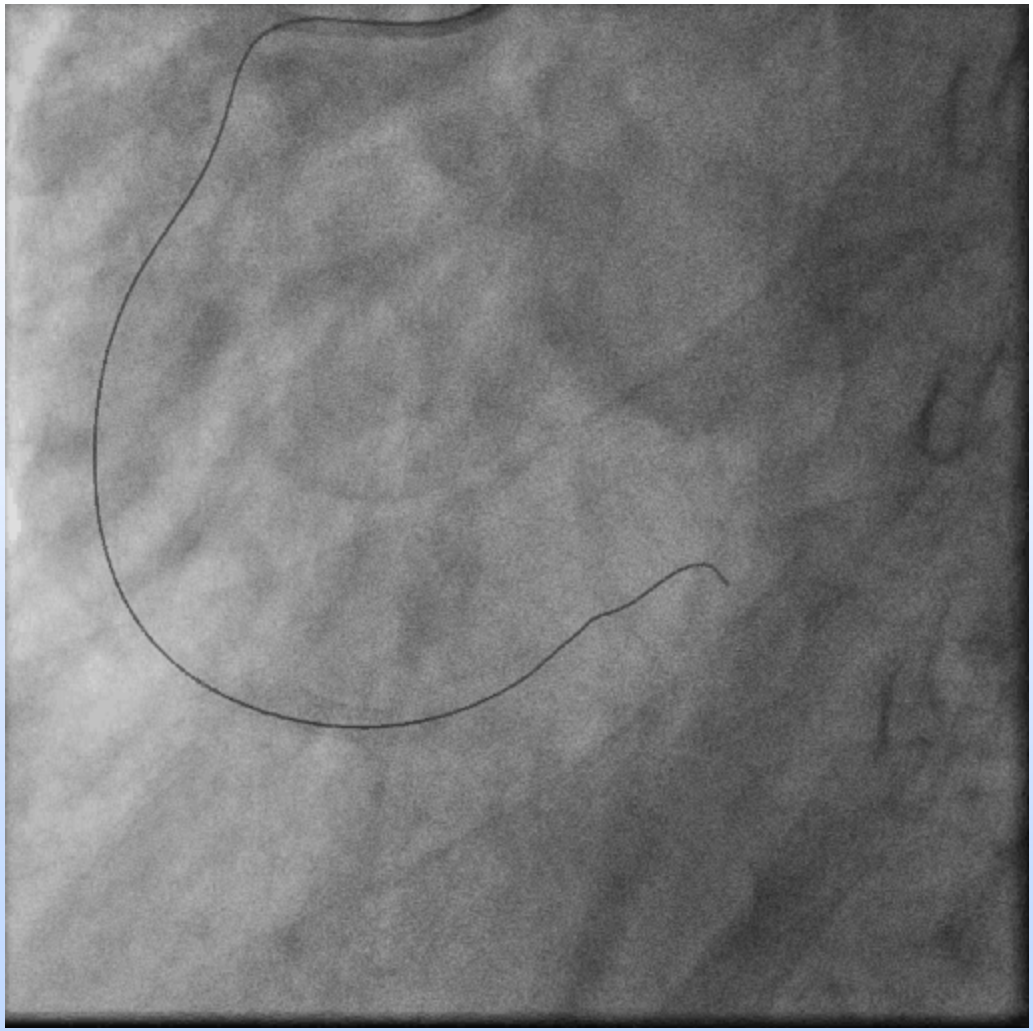

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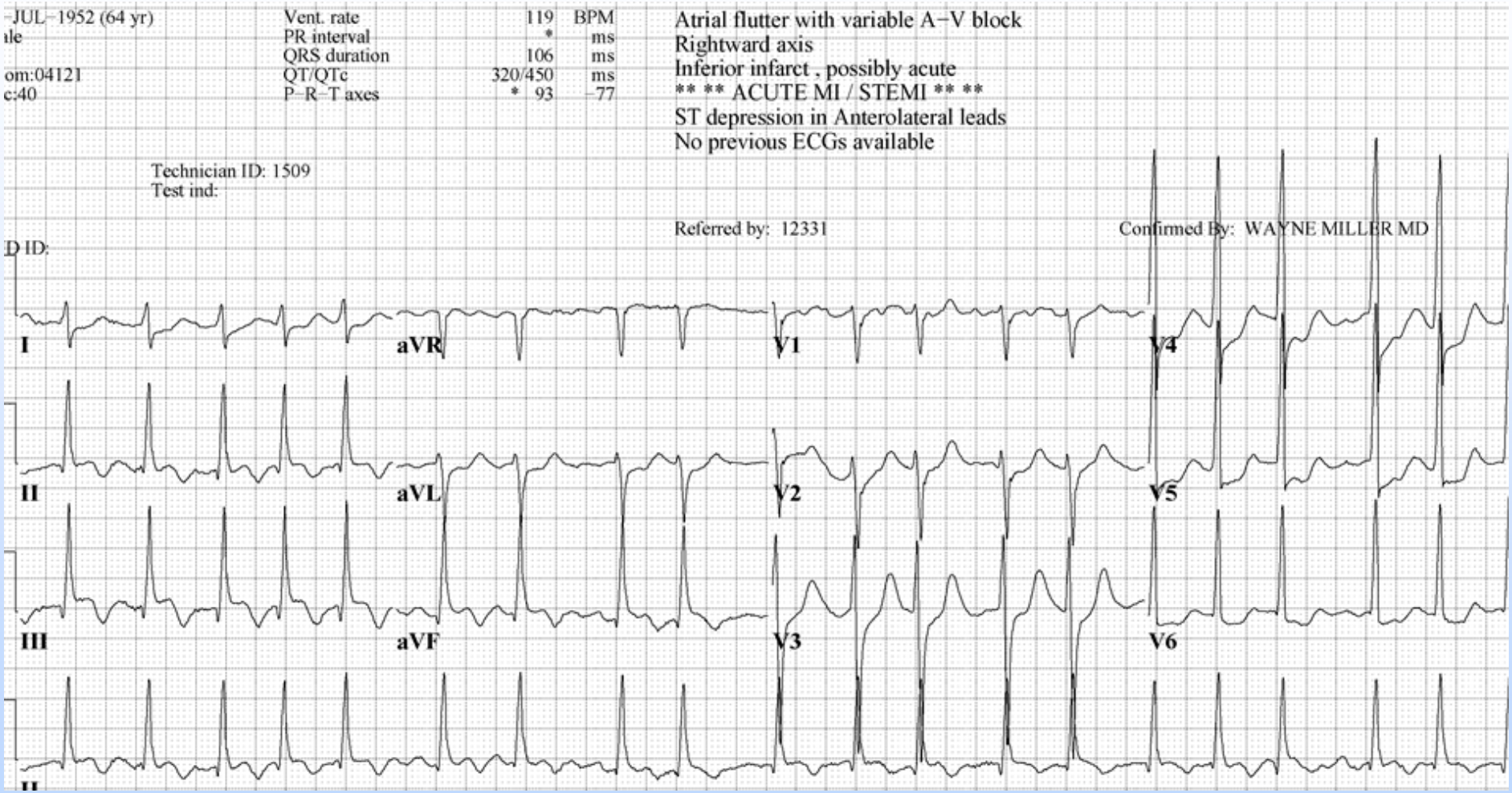
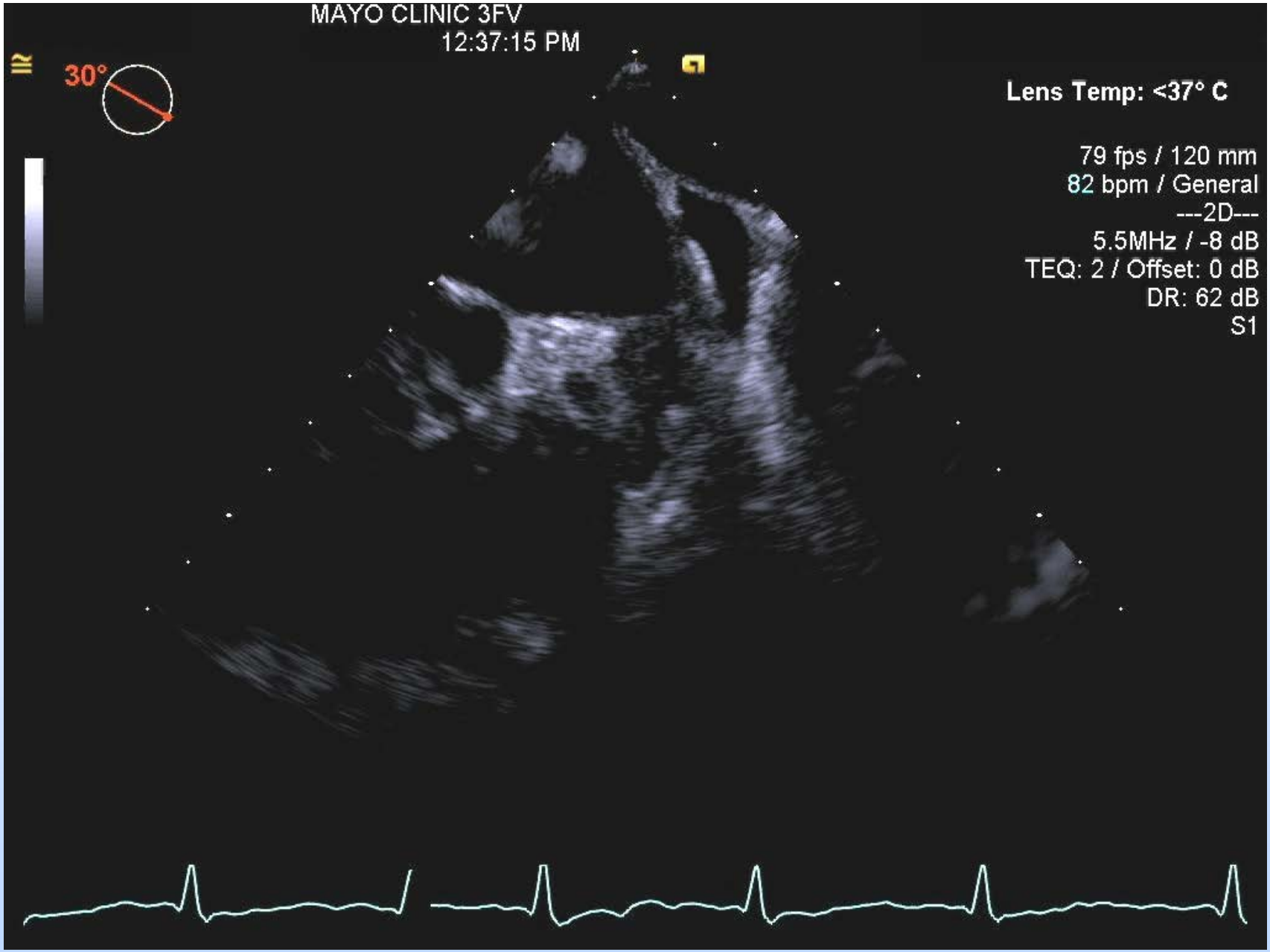
Next day, BP 90 systolic, EF 20%





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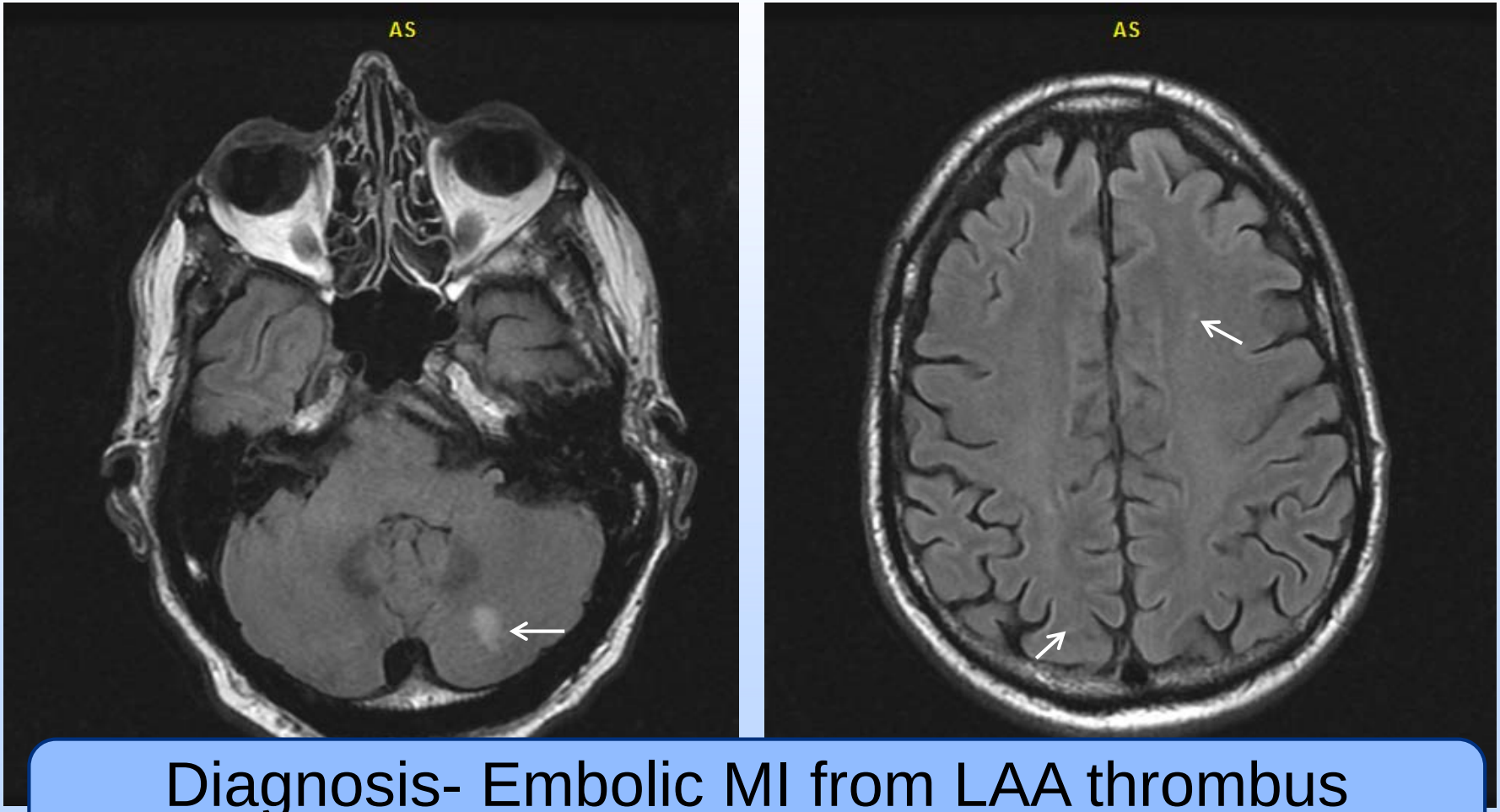
MRI brain – multiple small infarctions



Diagnosis- Embolic MI from LAA thrombus
Rx warfarin, clopidogrel long-term

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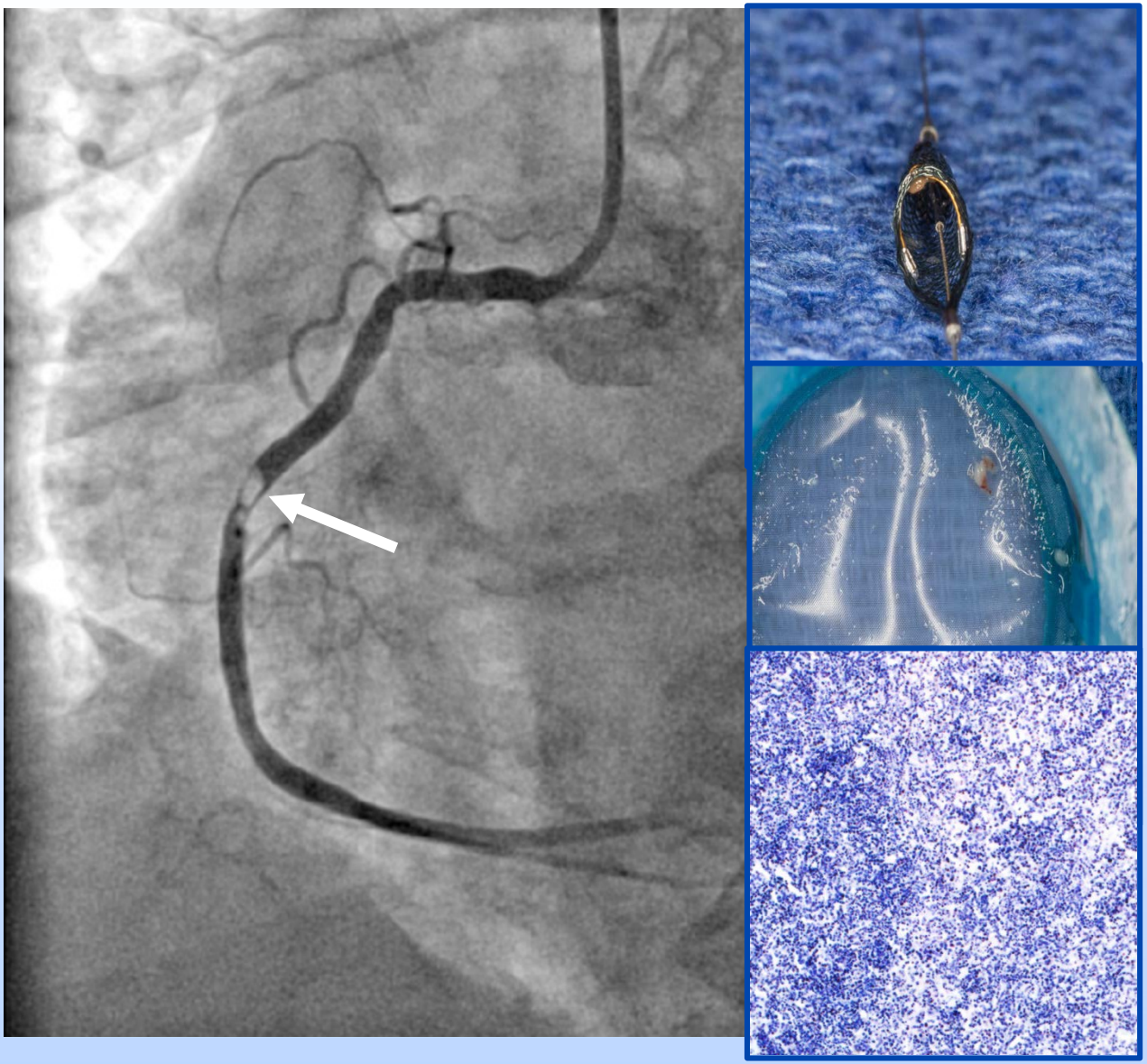
68F with fevers, chills, then MI



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MI due to coronary embolus – usually thrombus

- Japanese Cerebral & CV Center AMI database
- N=53 cases vs 1724 controls, 2001- 2013
- Embolic source visualized in 31%, most LAA
- A Fib History 73% vs 7%
  - But 60% $CHADS_2$ score only 0-1
- 10% recurrence over 5 years, all had A Fib
- Life-long anticoagulation recommended

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Shibata et al, Circulation 2015

Final case of non-atherosclerotic ACS

41F with inferior STEMI

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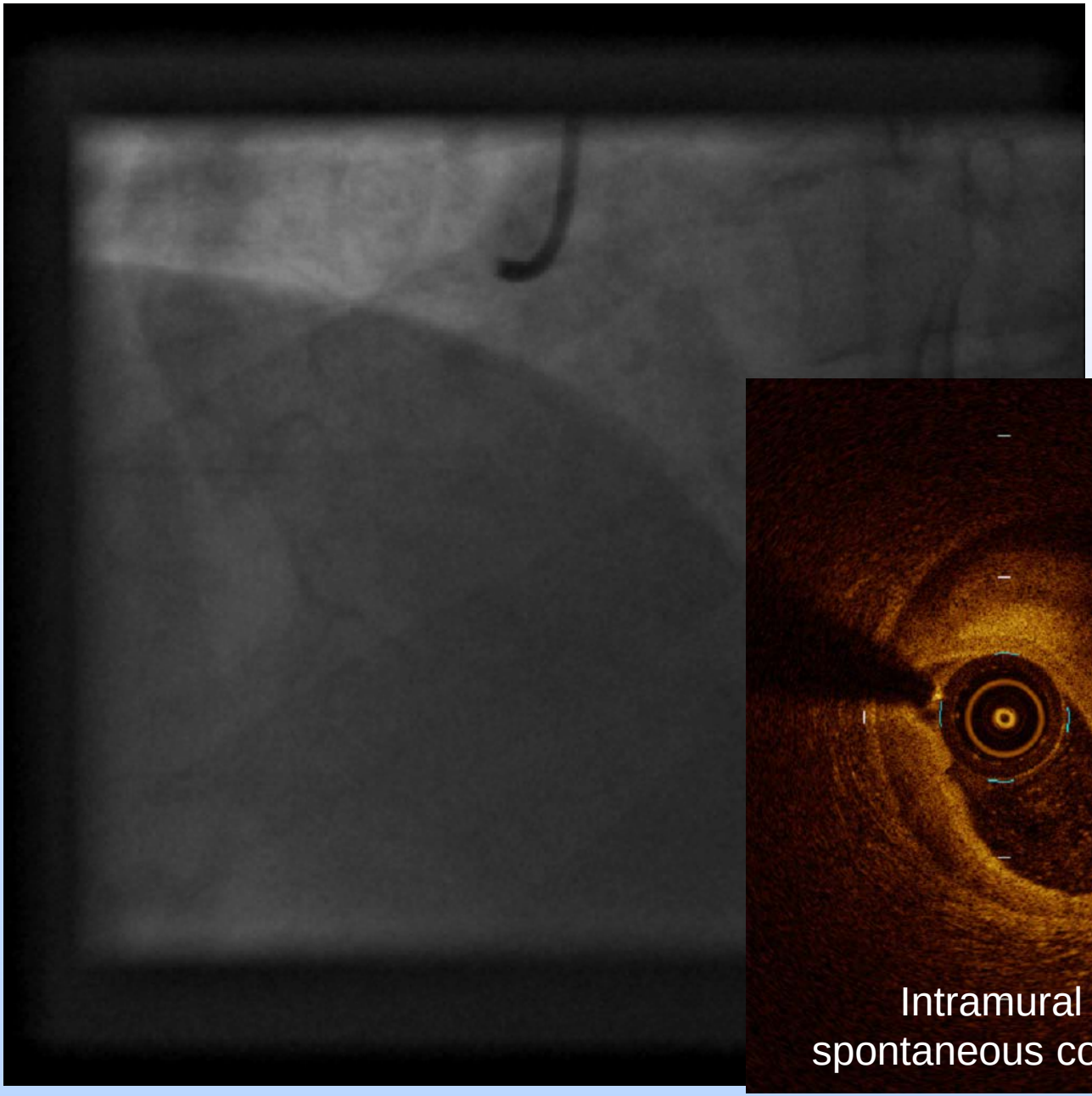

Intramural hematoma/
spontaneous coronary disection

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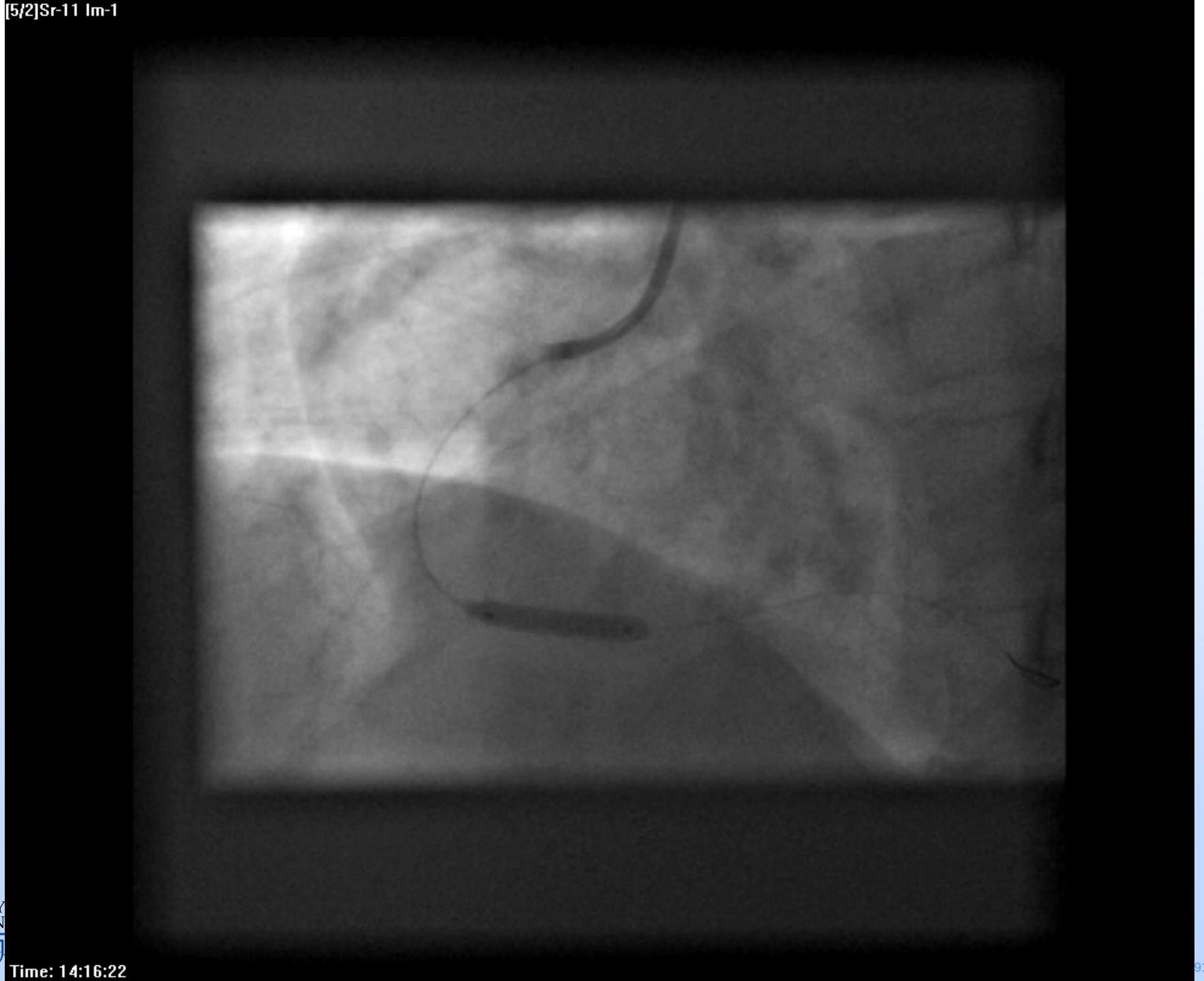
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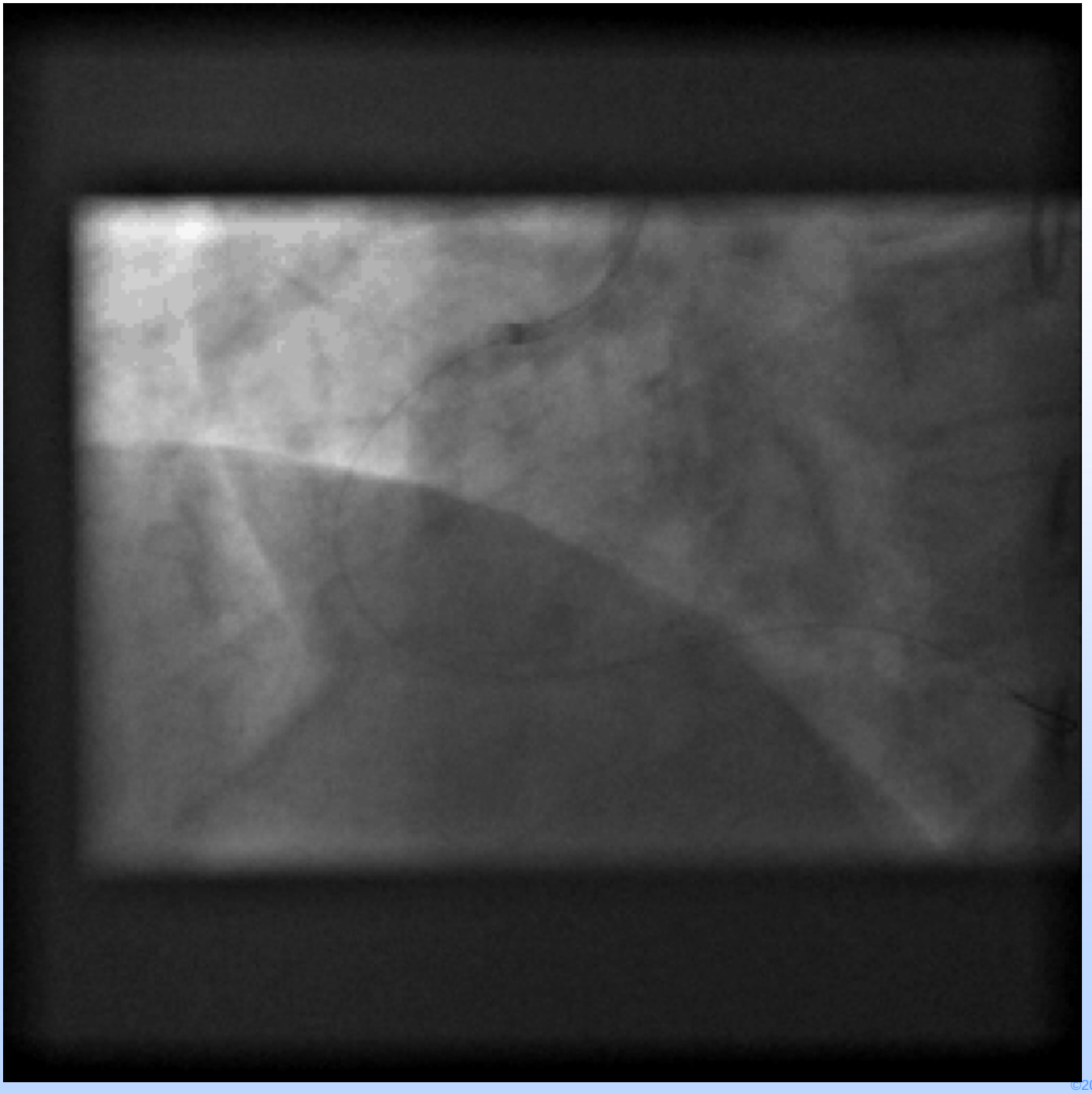

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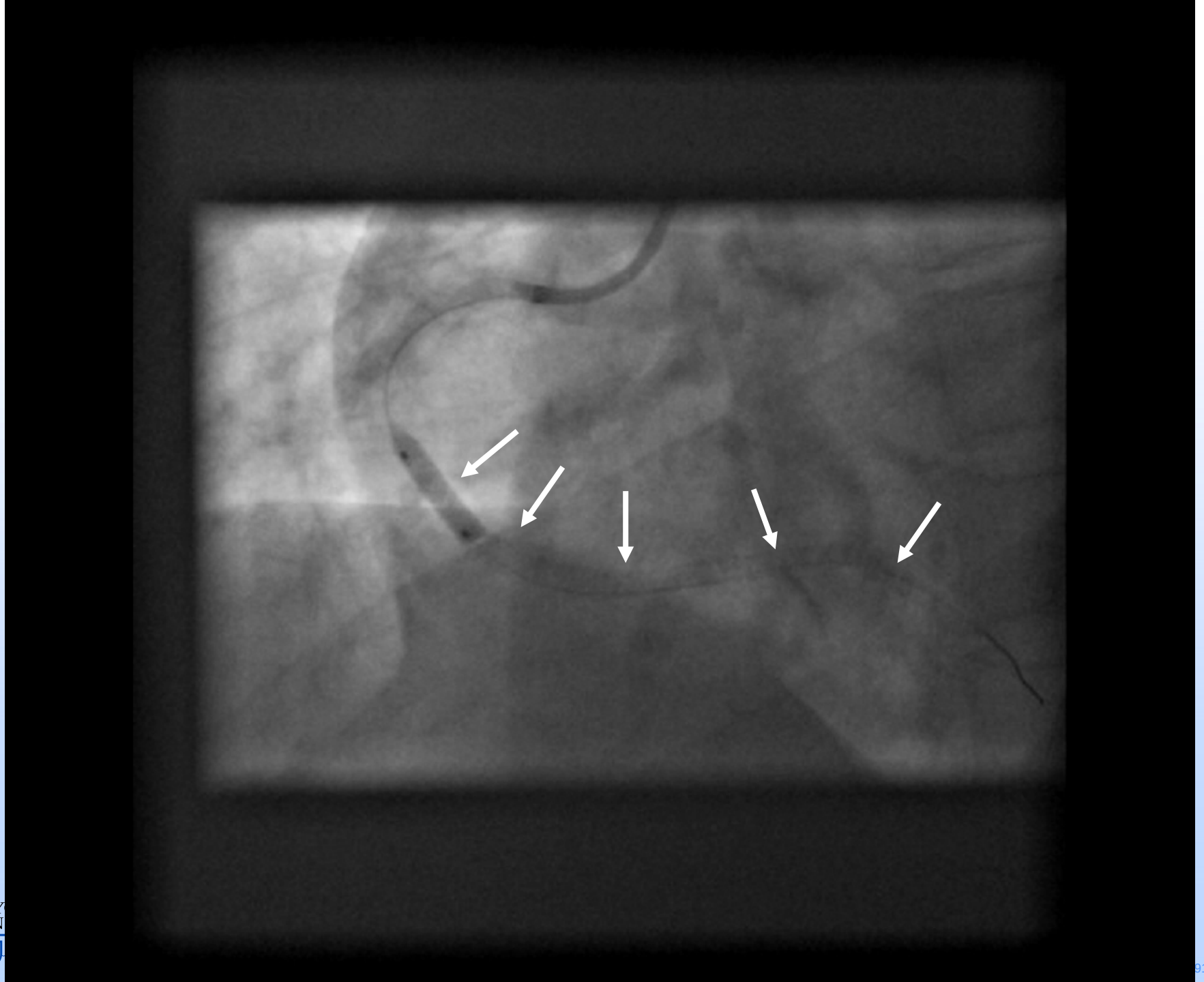

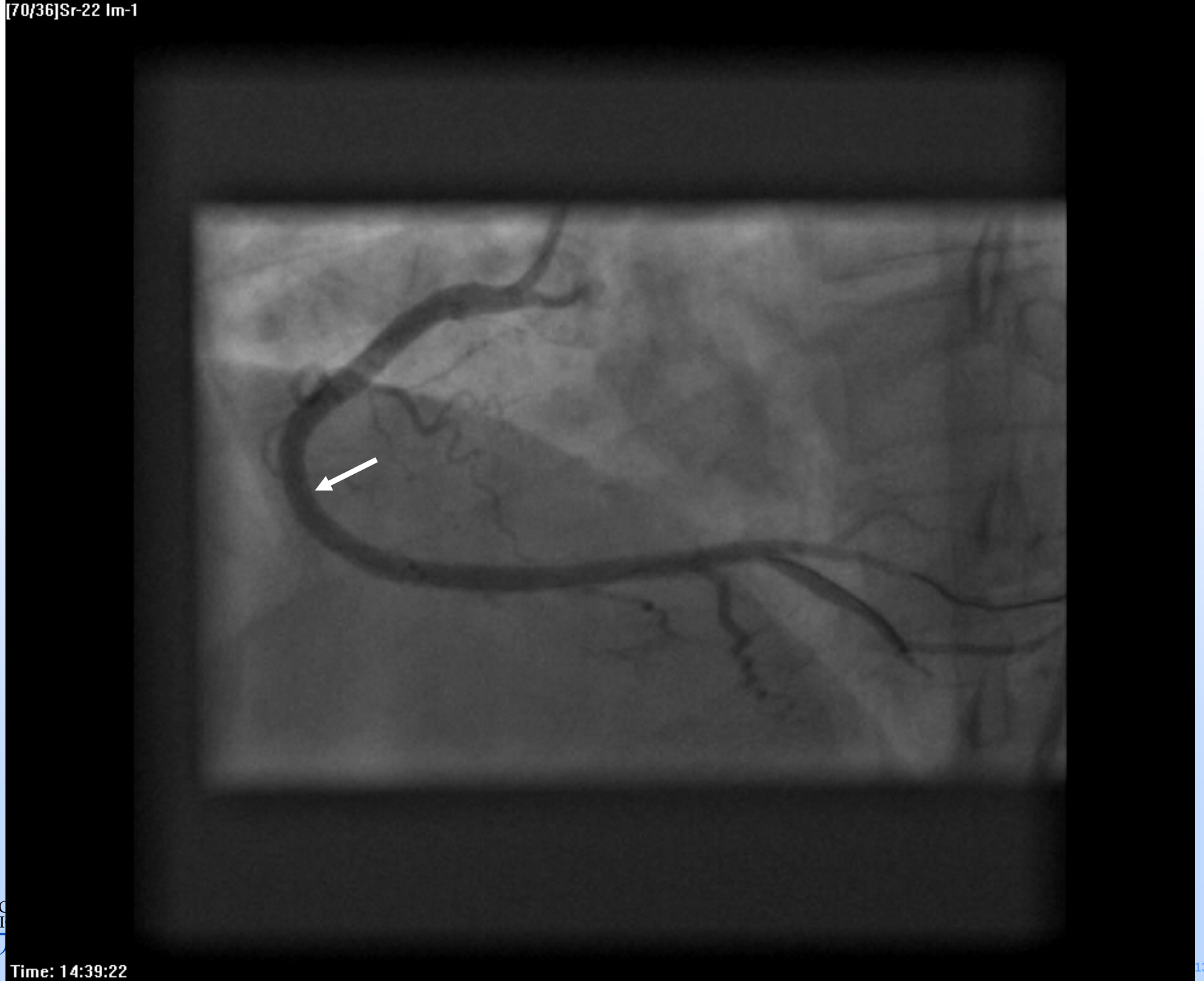
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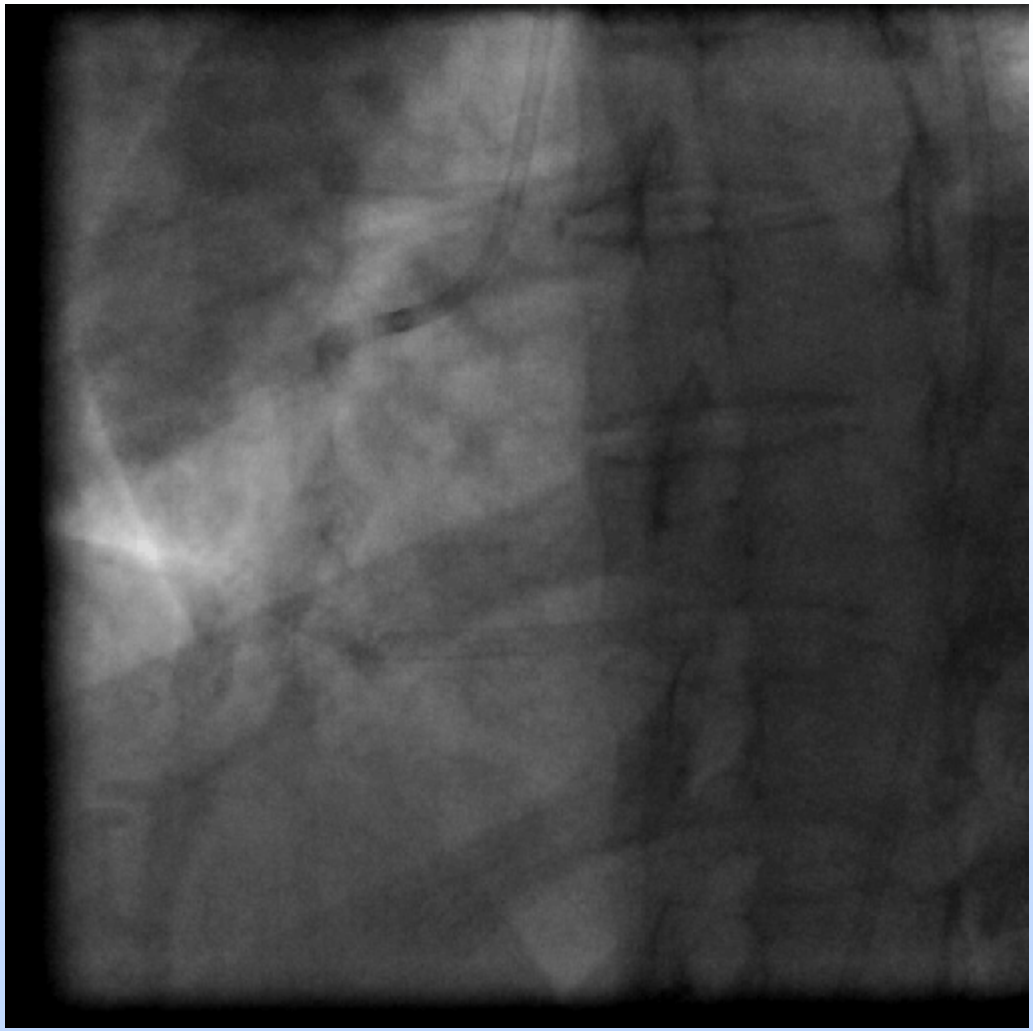

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Spontaneous Coronary Artery Dissection

- Under-recognized cause of MI in females
- Vascular FMD in 60%+
- Coronary tortuosity in 60%+
- High risk of PCI complications
- Manage conservatively if possible?

Tweet MS et al; Eleid MF et al
Circulation 2012, Circ Interv 2014, Circ Interv 2015, CAD 2016, JACC Img 2016, EHJ-ACVC 2017

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Spontaneous Coronary Artery Dissection

Another case

34 year old female

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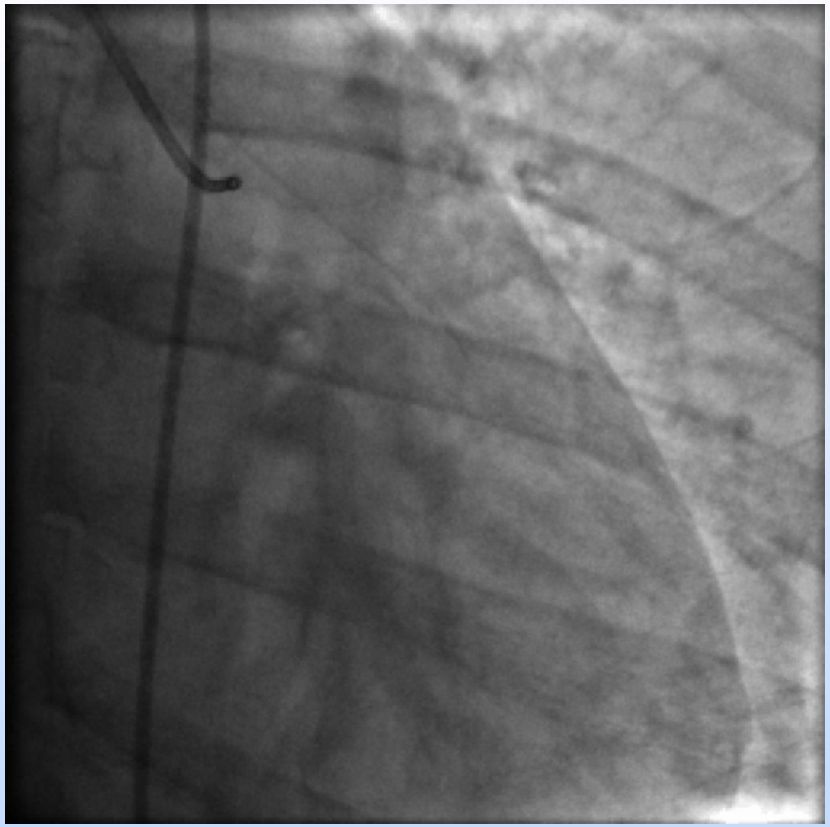

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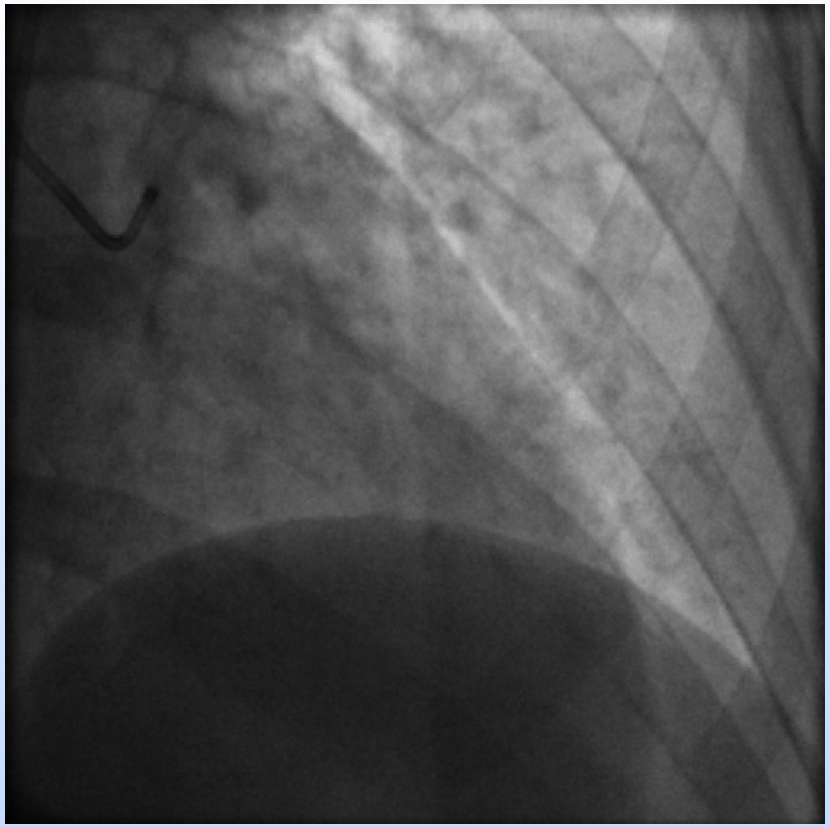

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Spontaneous Coronary Artery Dissection

Managed conservatively

9 days later…

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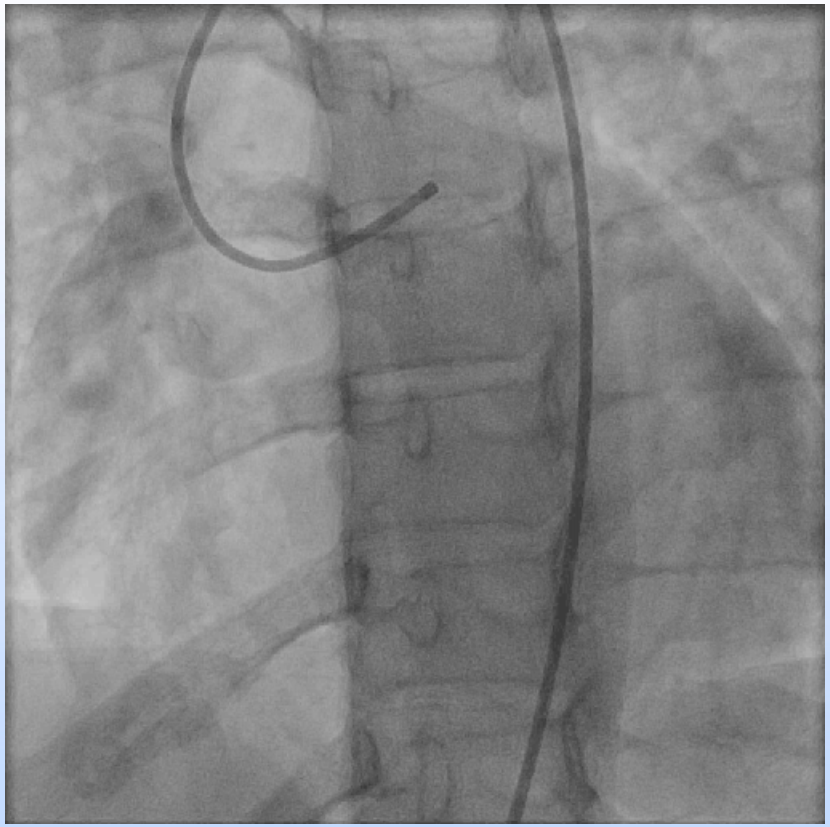

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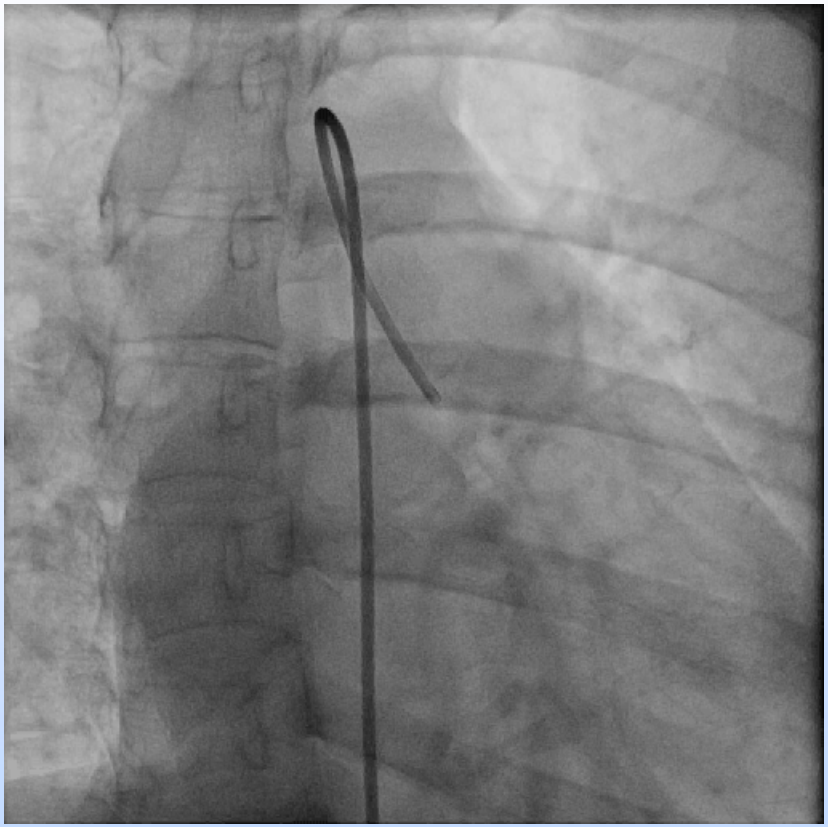

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Spontaneous Coronary Artery Dissection

- Critical to consider in women wi
  atherosclerotic risk factors
- Non-interventional a phasized,
  but conservativ

New data forthcoming!

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Cath-lab cases
Non-atherosclerotic CAD

- Spasm
- Embolus
- Bone disease
- Spontaneous Coronary Artery Dissection

Diagnosed with OCT, echo and plain X-ray, not contrast!

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Thank you for your time

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