

Interpretation of Coronary Angiography for CTO-PCI

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1. Taking appropriate CAG
before PCI !!



Case 1

Inappropriate Angiogram





Appropriate Angiogram





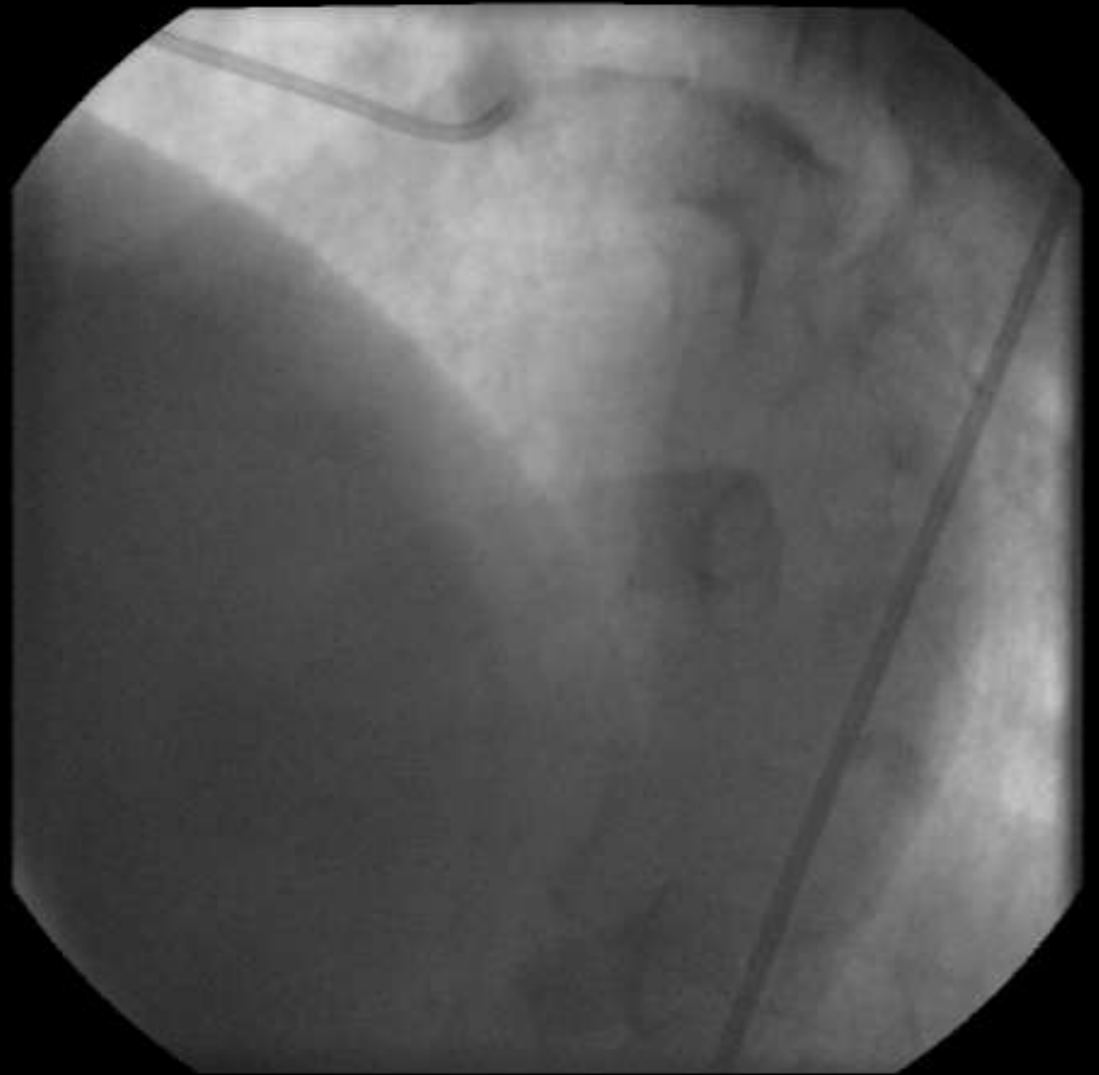
Case 2





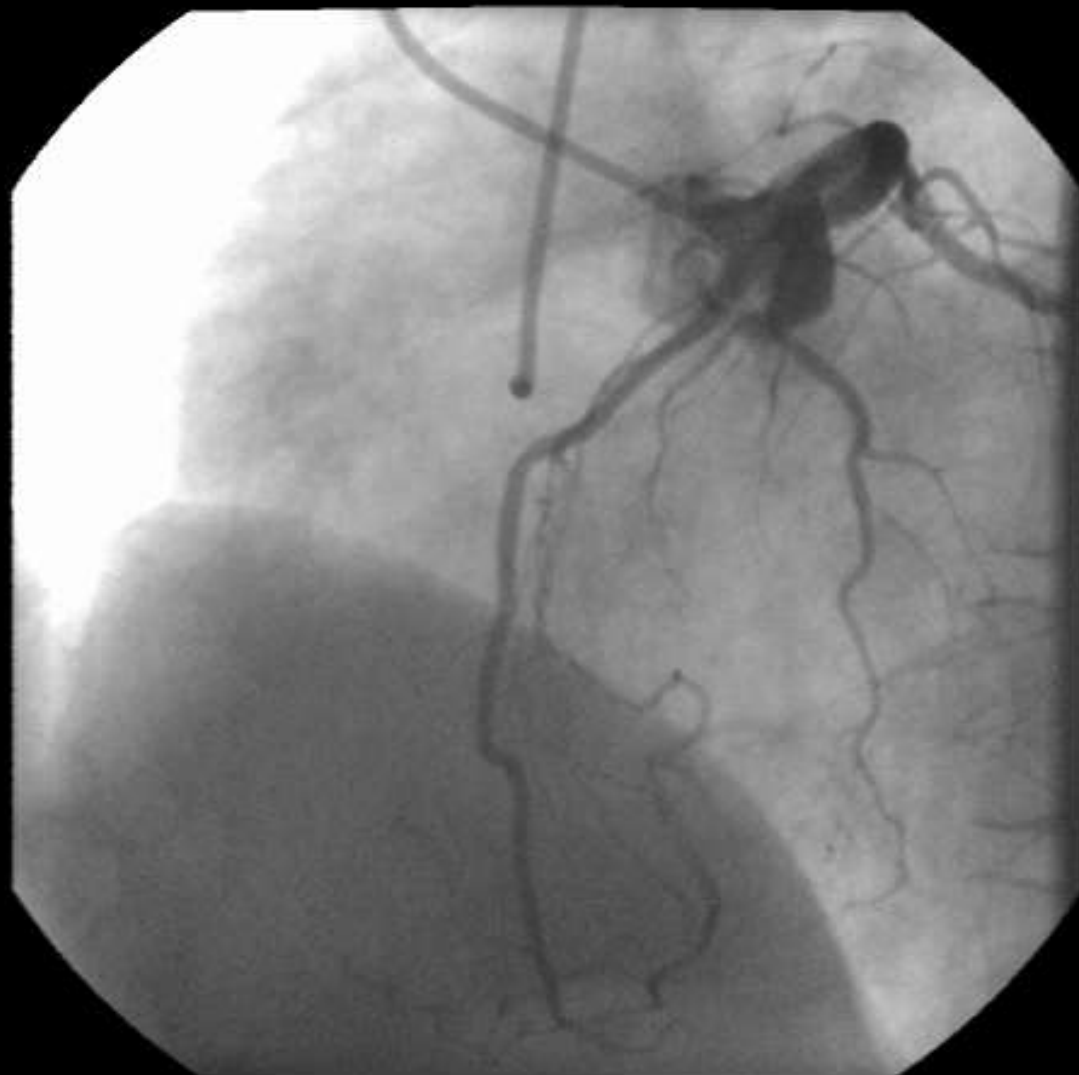
LCA

**Inappropriate
Angiogram**



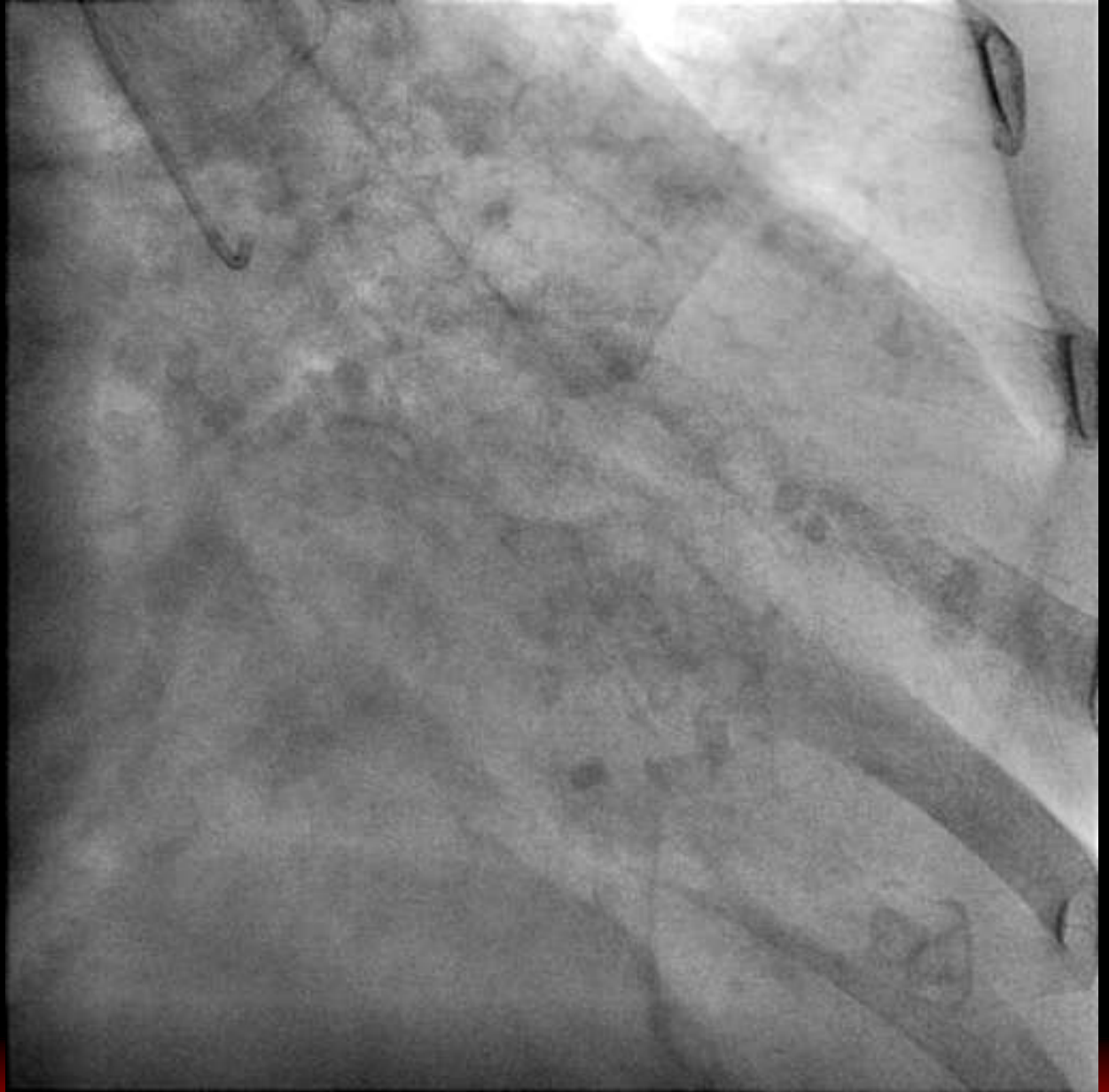


Appropriate Angiogram





Case 3



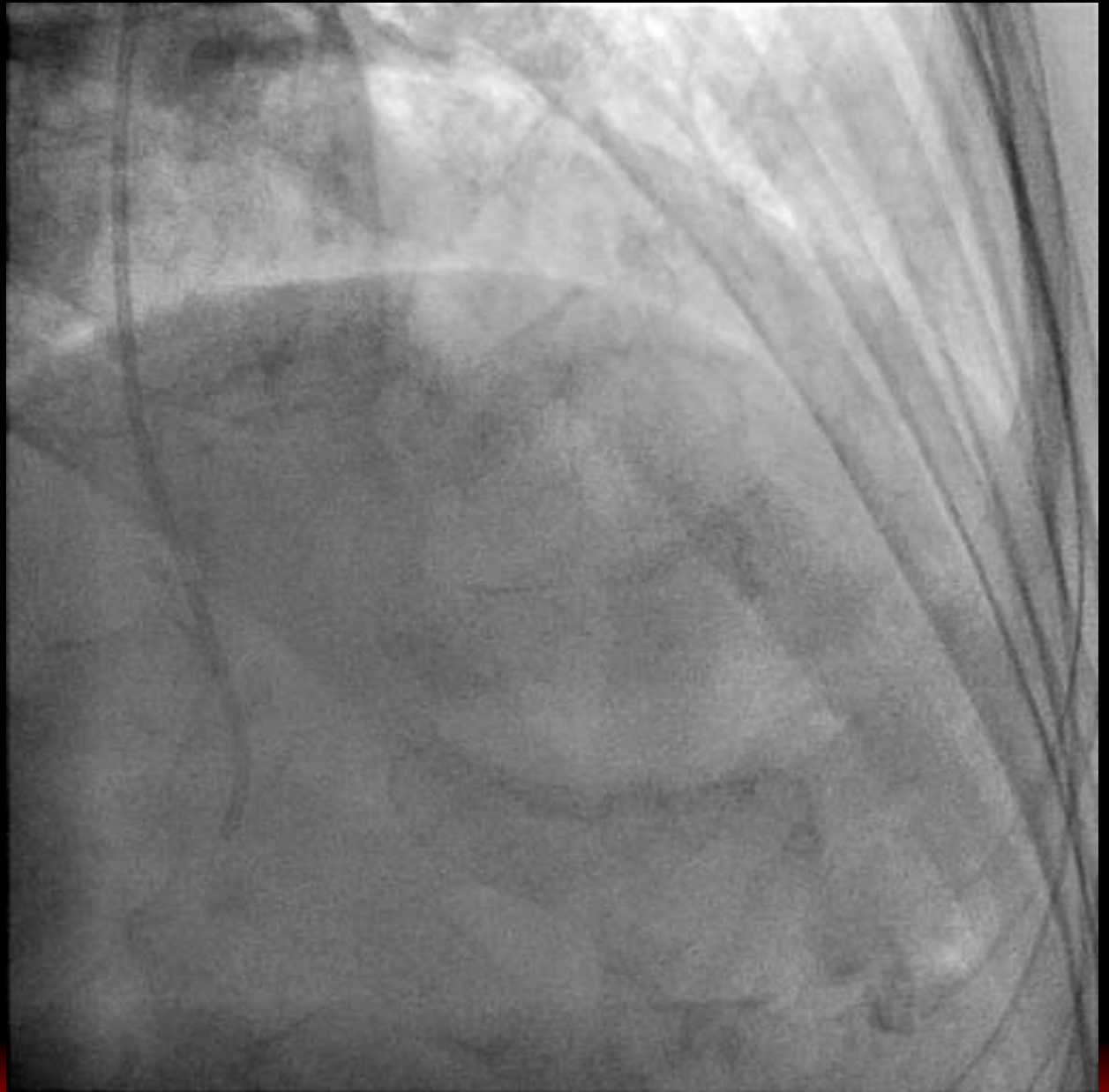


RAO 10
Cranial 45





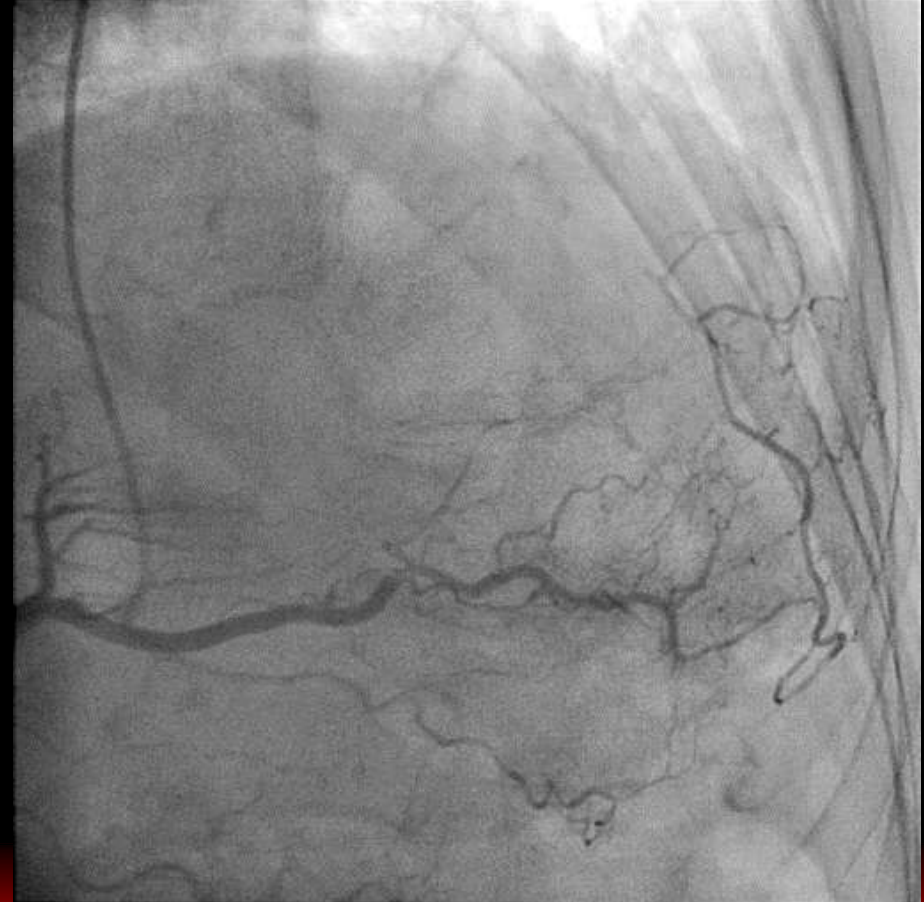
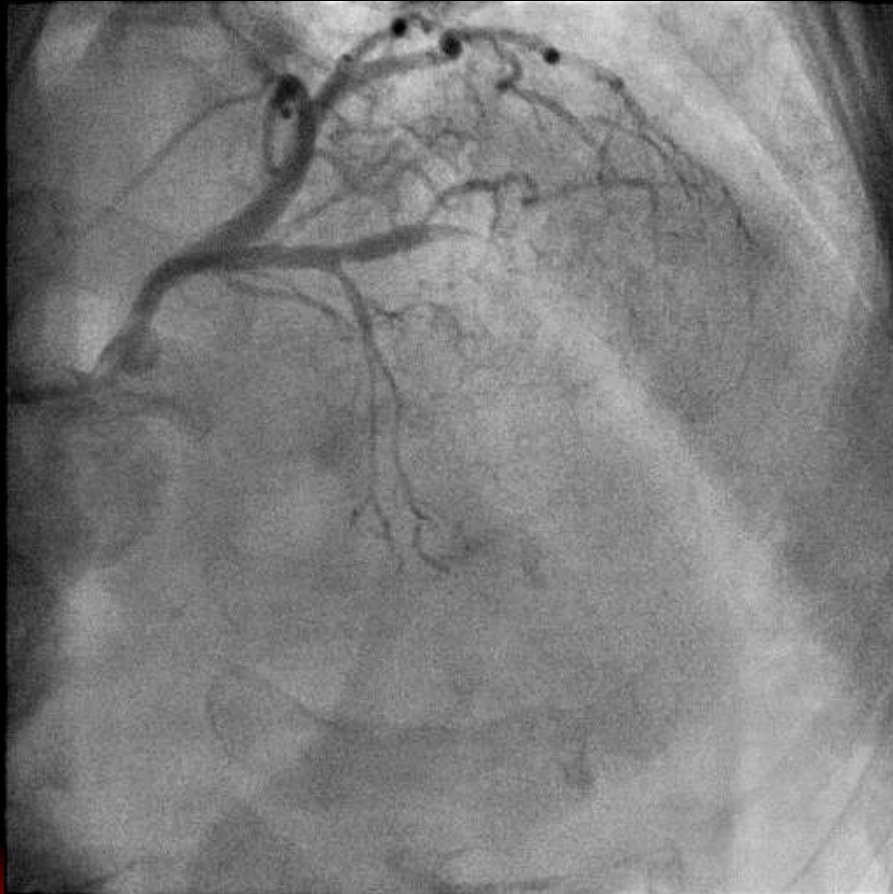
RAO 20
Cranial 35





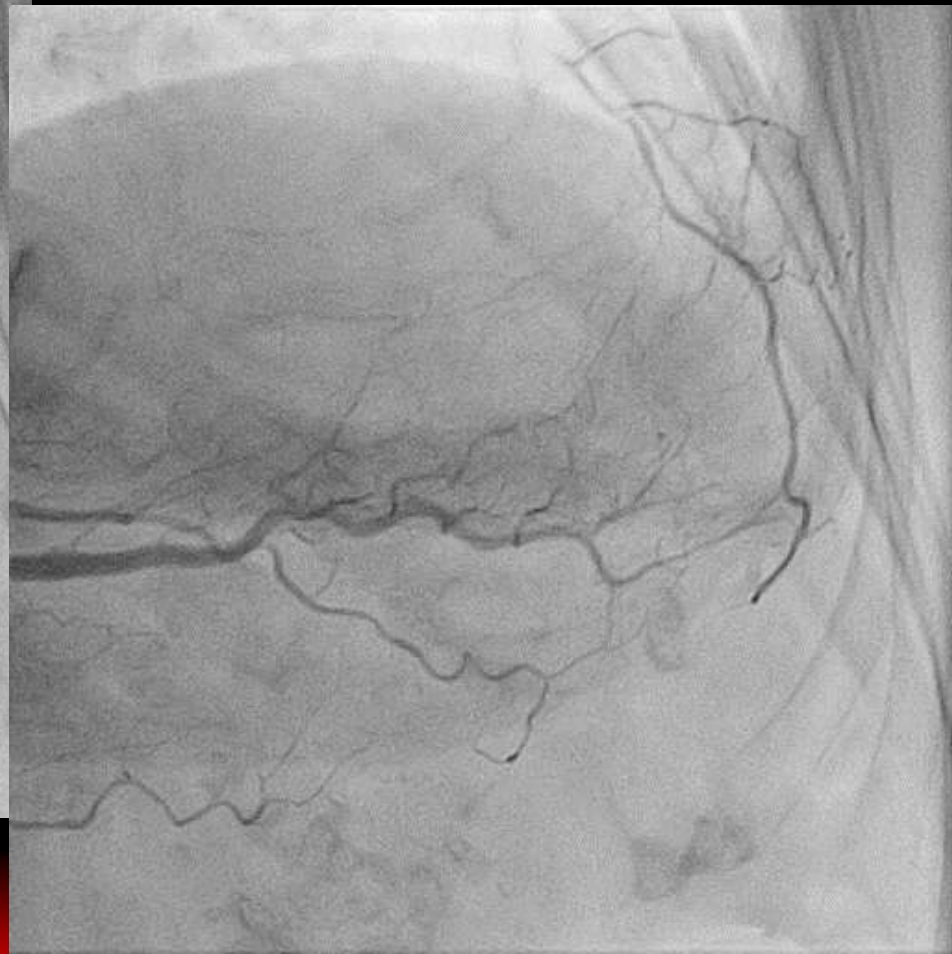
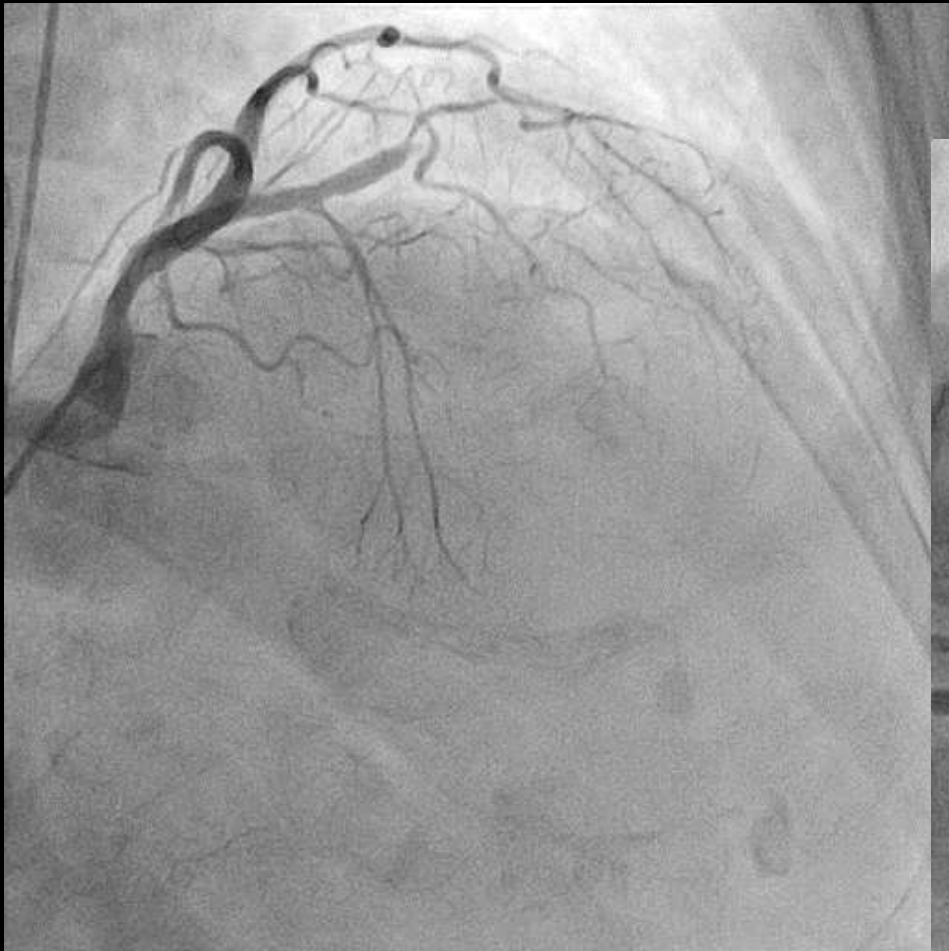
**RAO 10
Cranial 45**

**RAO 20
Cranial 35**



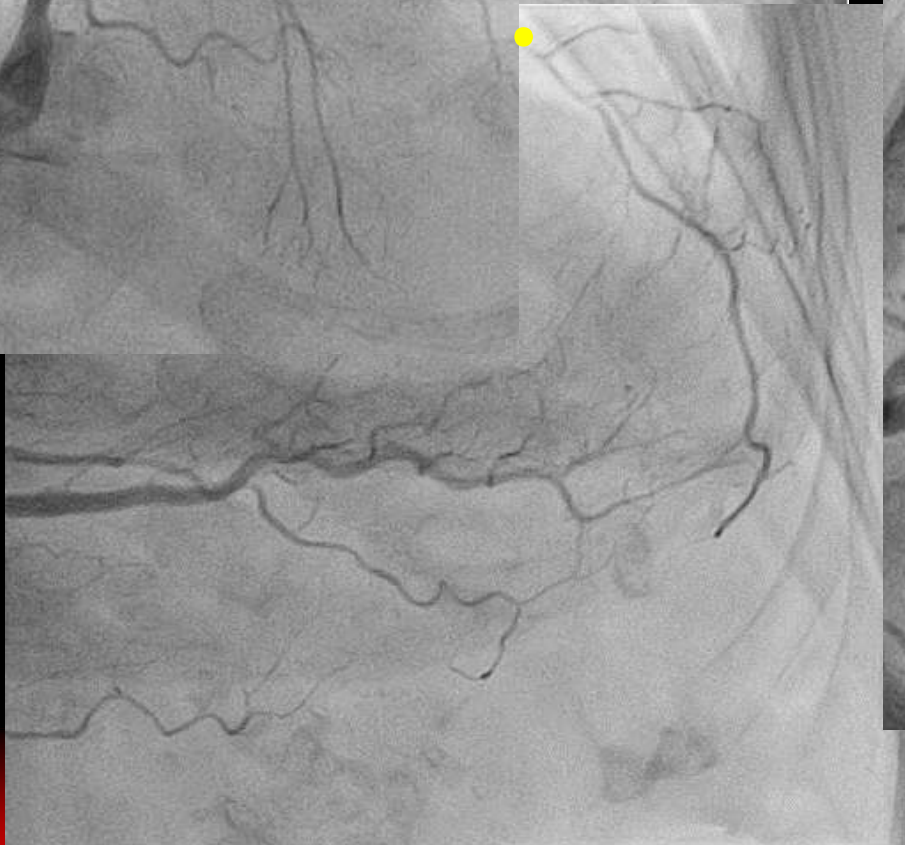
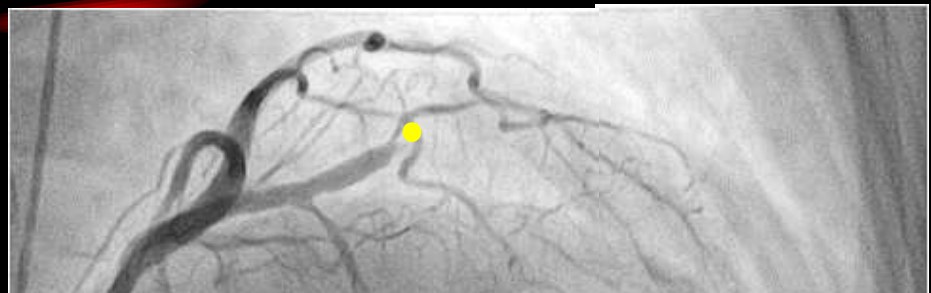


RAO 20 Cranial 30





RAO 20 Cranial 30





Tips of CAG

- ✓ **Duration of CAG**
- ✓ **Timing of Dye Injection**
- ✓ **No Panning**
- ✓ **No Magnification**
- ✓ **Projection Angle**



2. Reading CAG completely
before PCI !!



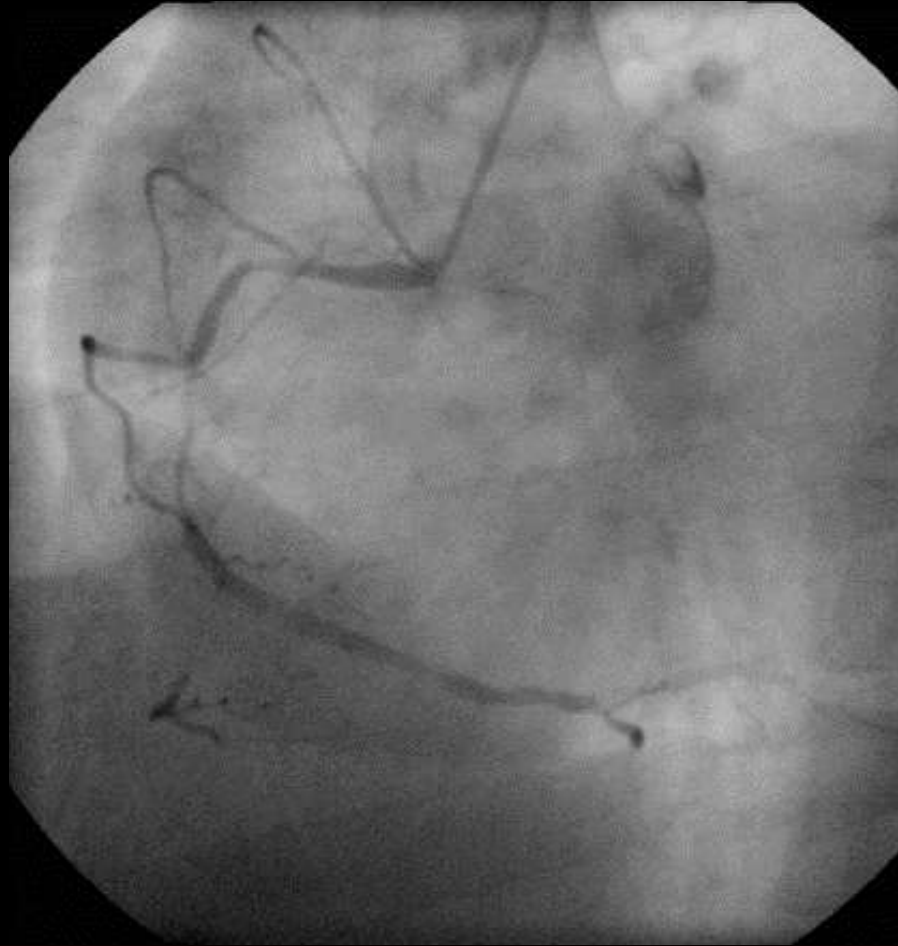
Hints & Pit-Falls

- ✓ **Principles of Coronary Trees**
- ✓ **Calcium**
- ✓ **Bridging Collateral**
- ✓ **Sandbar**
- ✓ **Branch**
- ✓ **Special Collateral Sources**



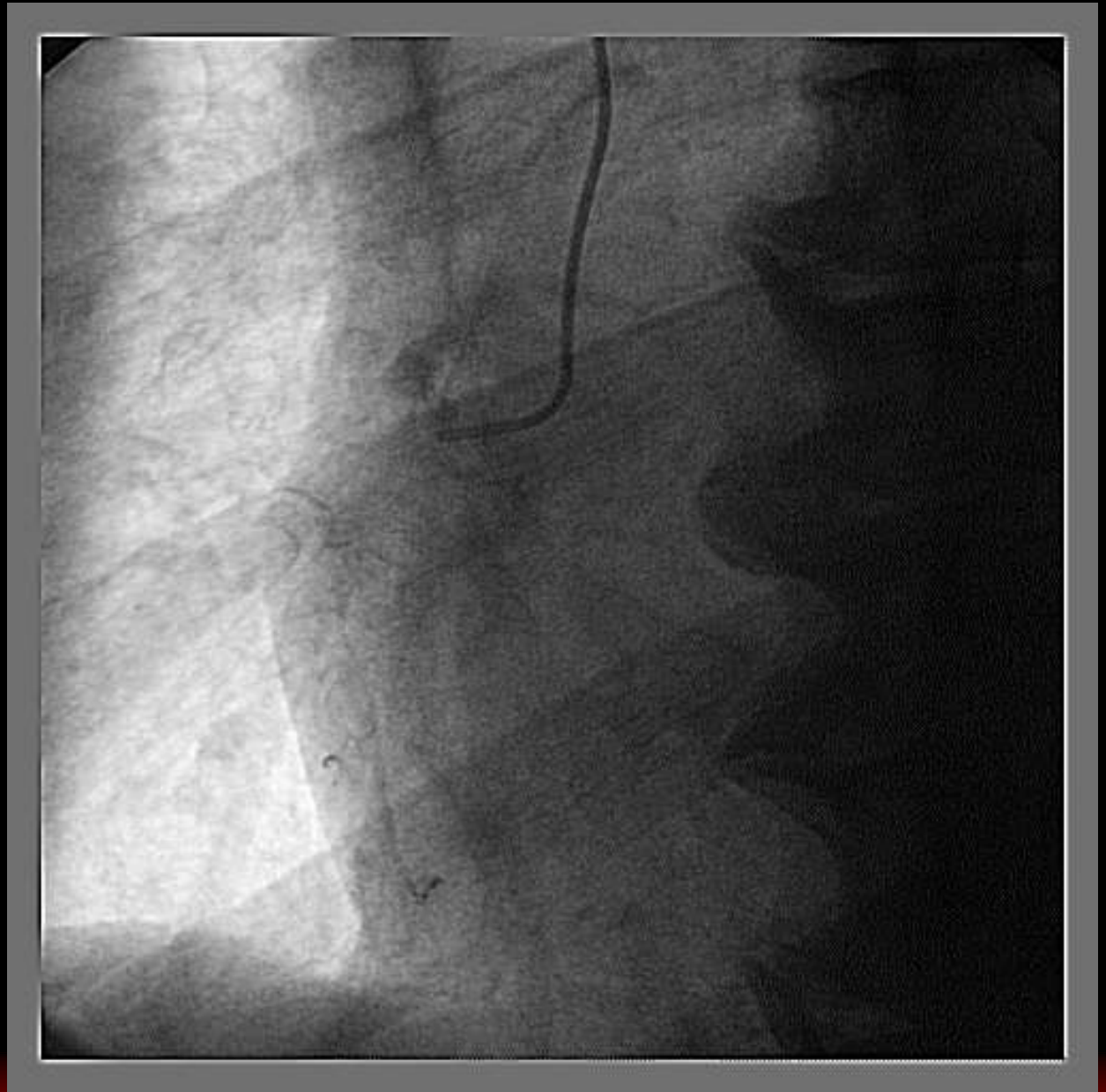
Case 4

Principles of Coronary Trees



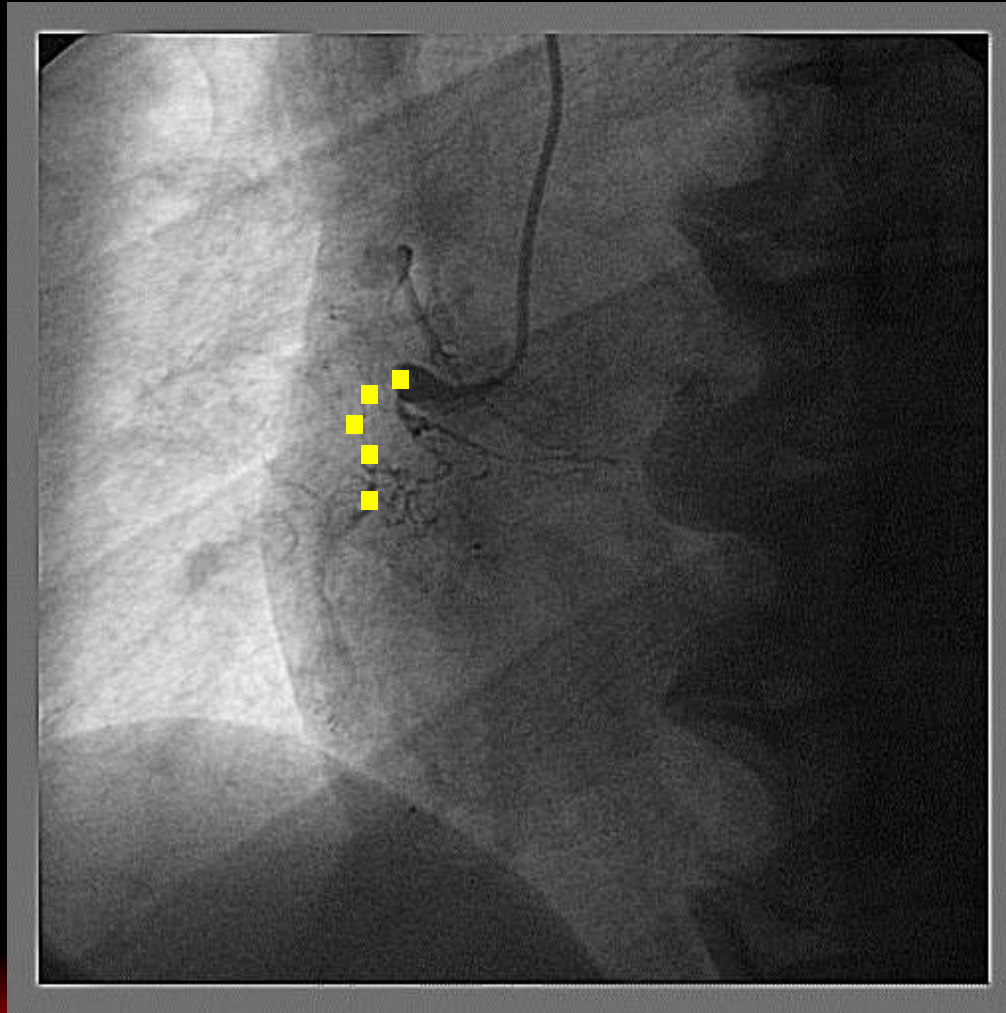


Case 5



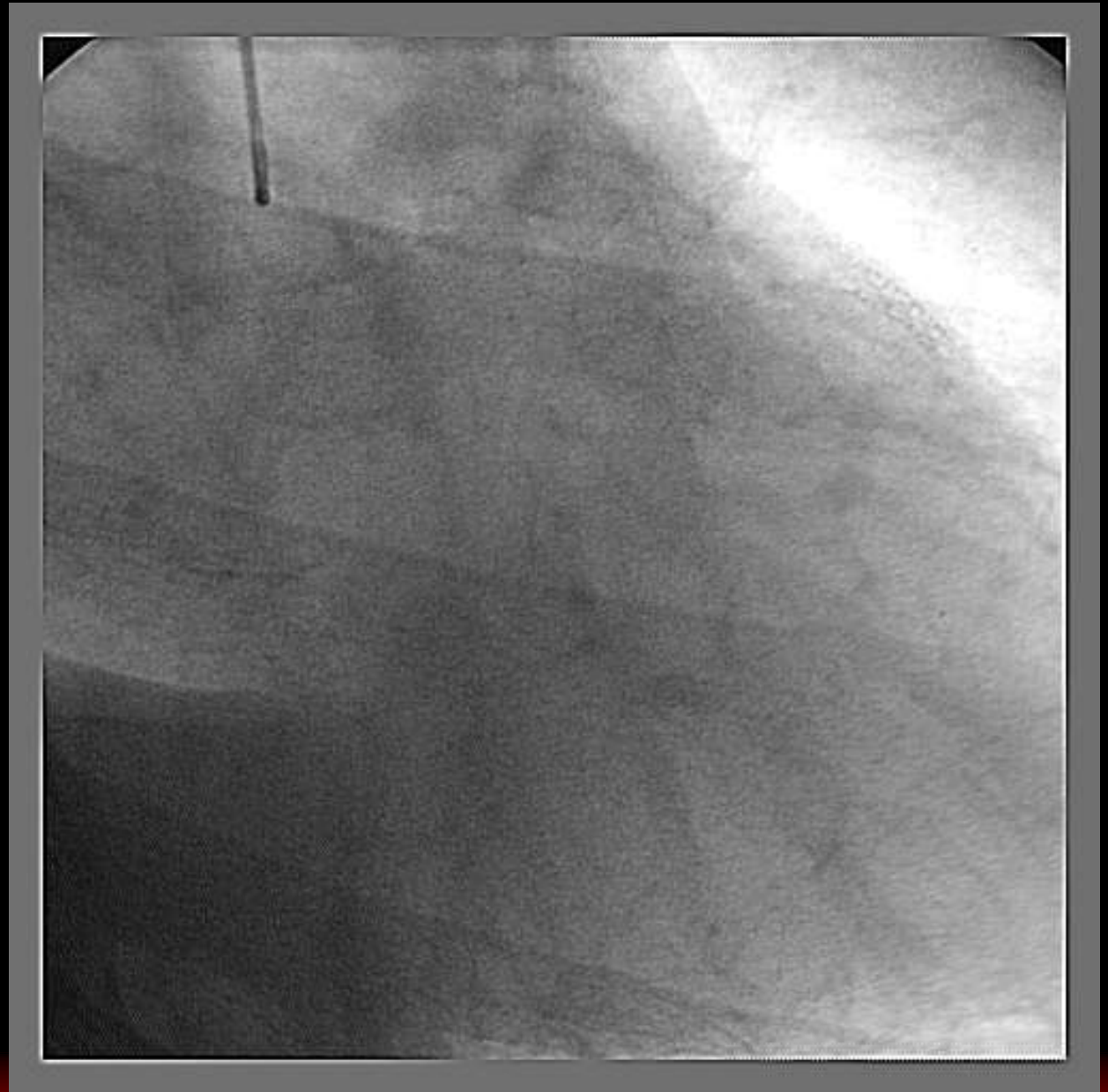


Where dose the RCA run?





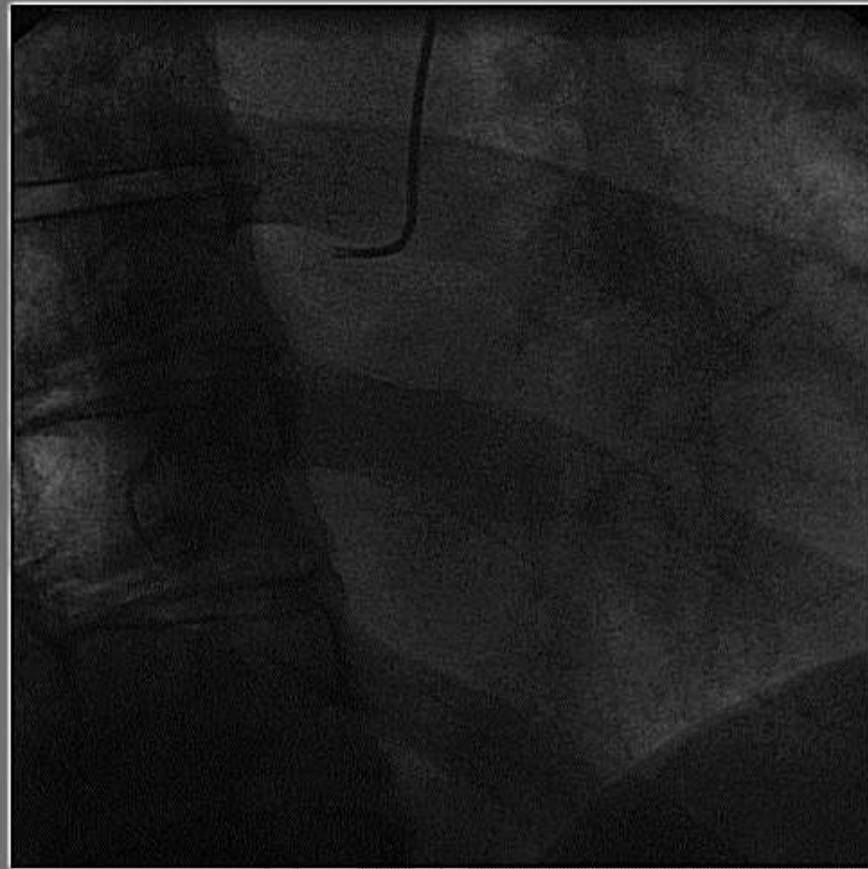
**RAO
Caudal
view**





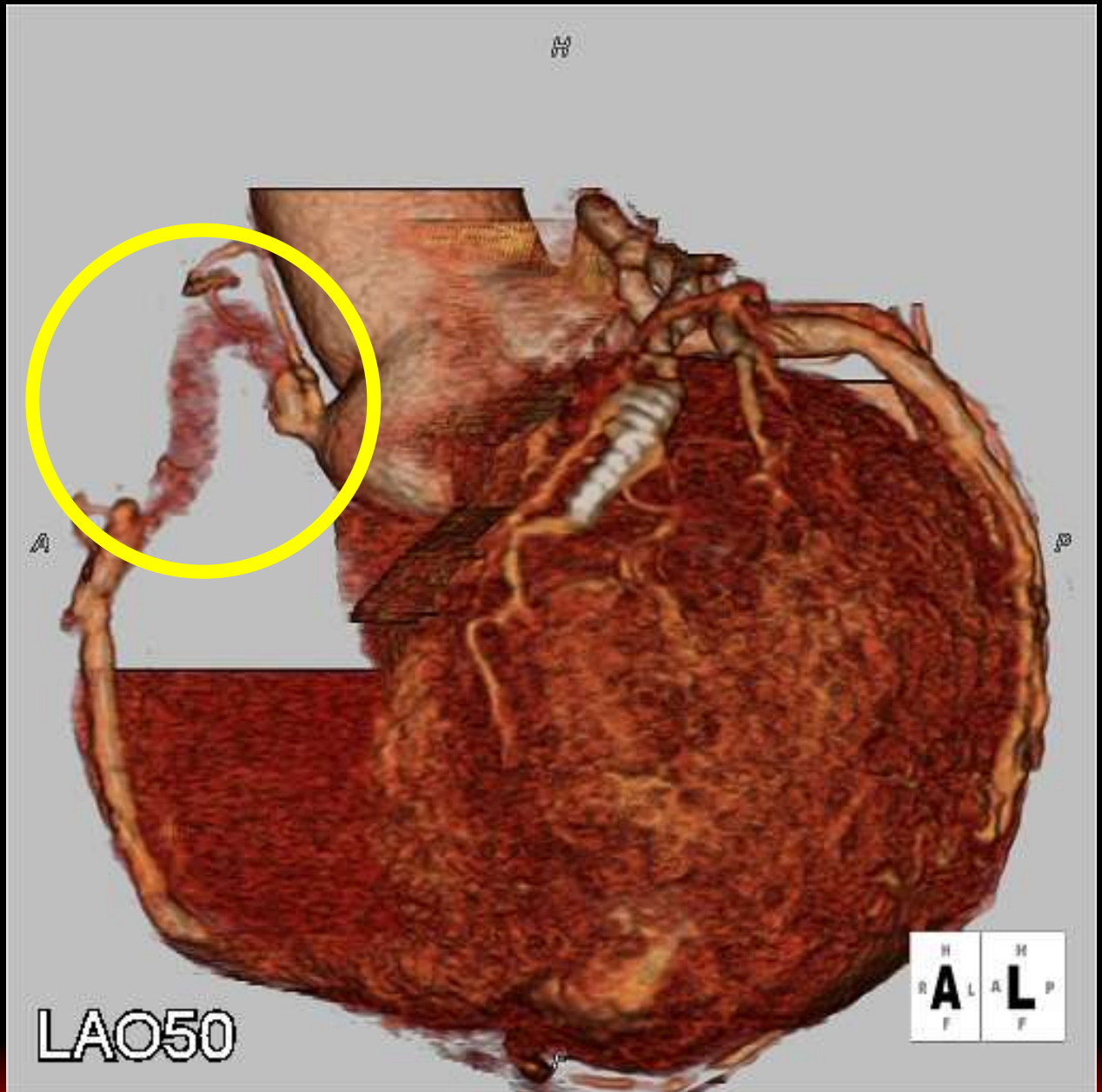
LCA
RAO Caudal

RCA
RAO



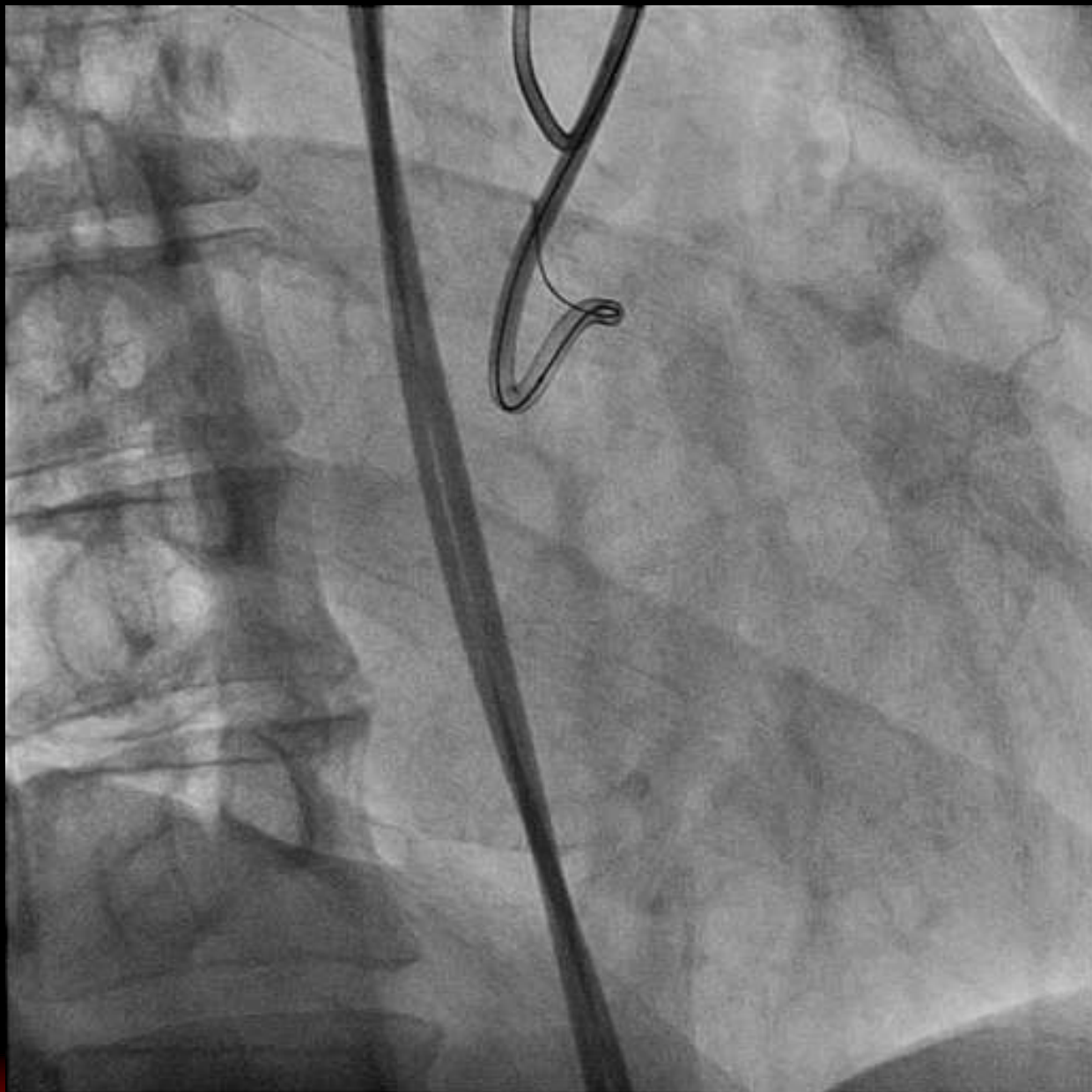


MSCT



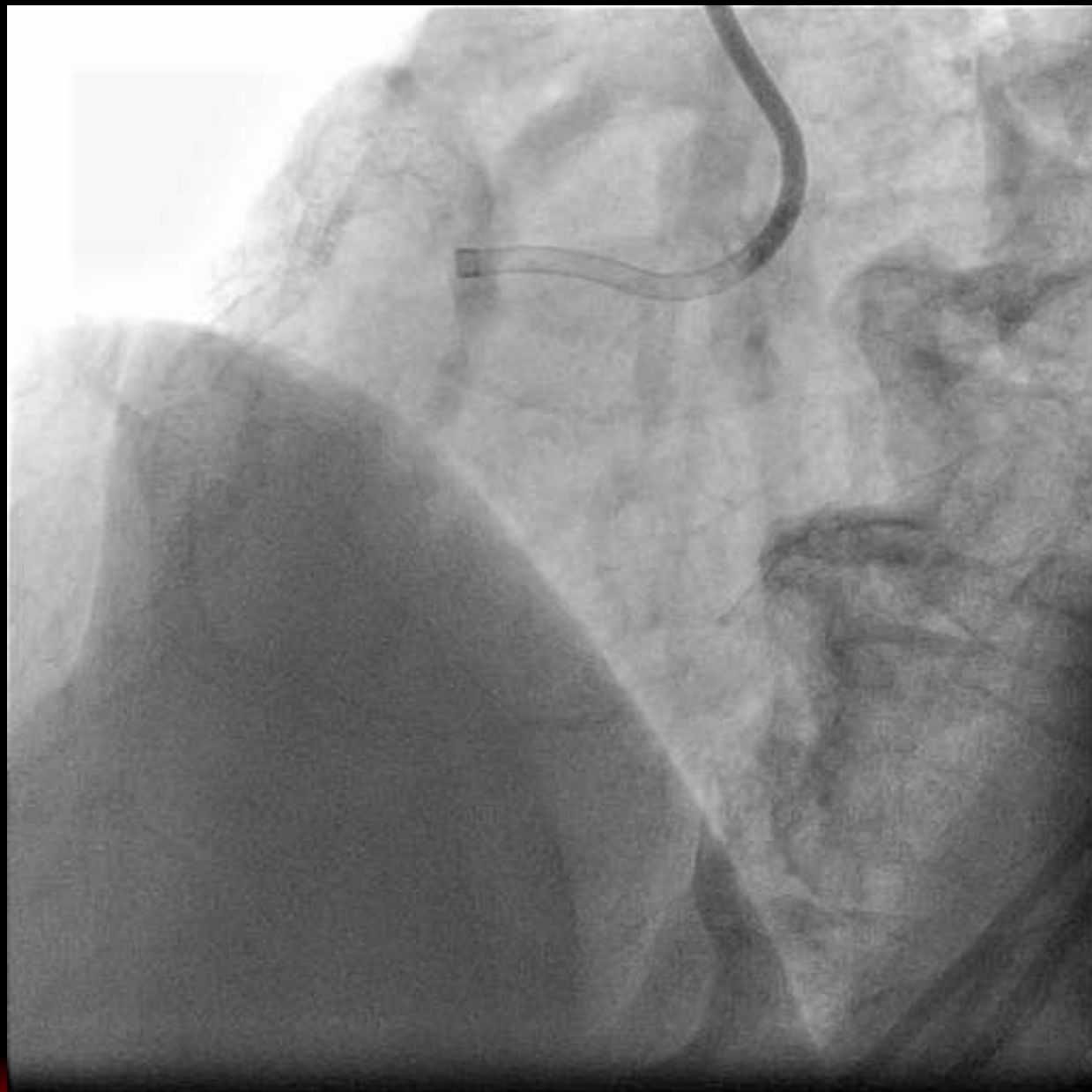


PCI





Final Result



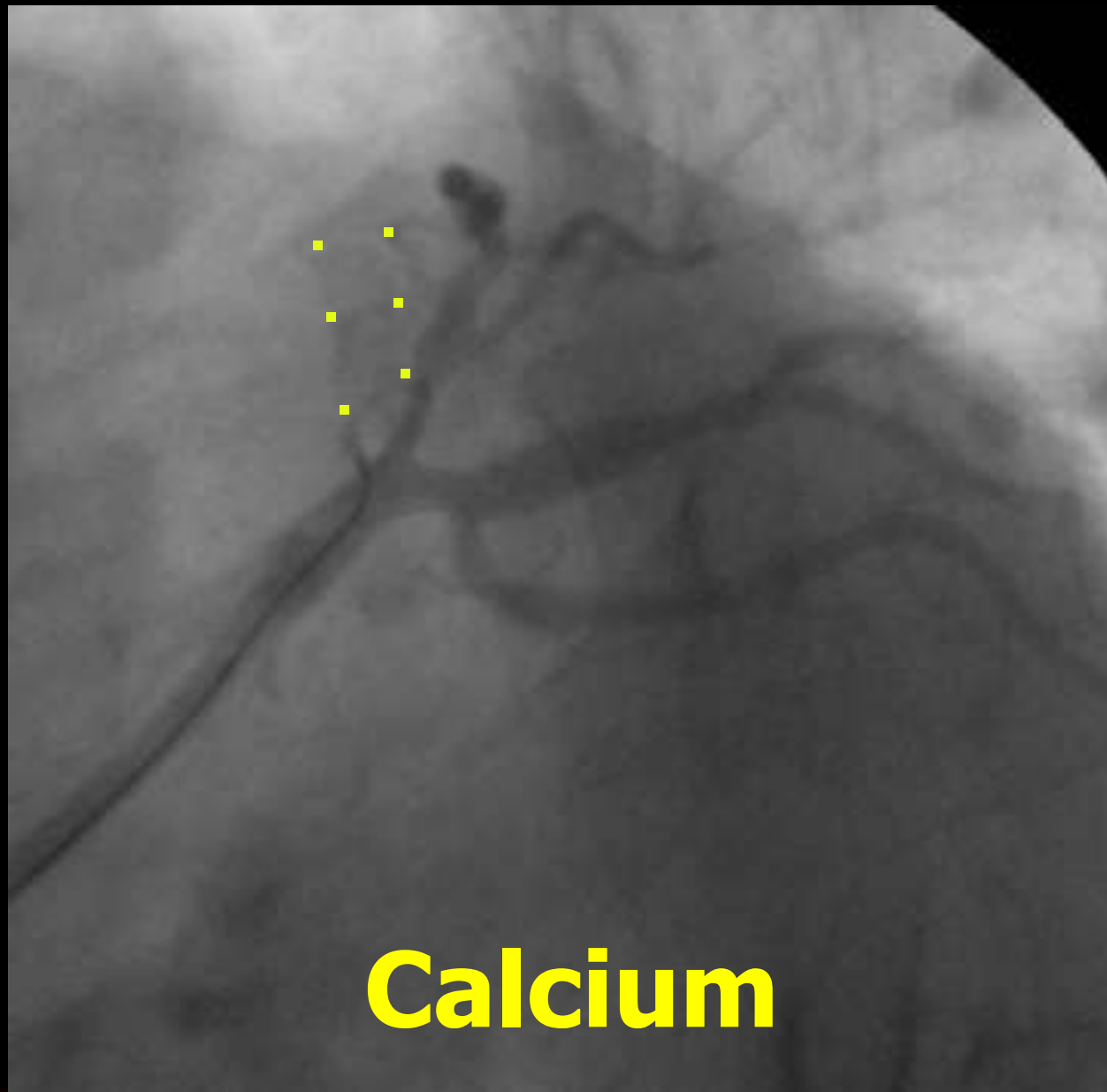


Hints & Pit-Falls

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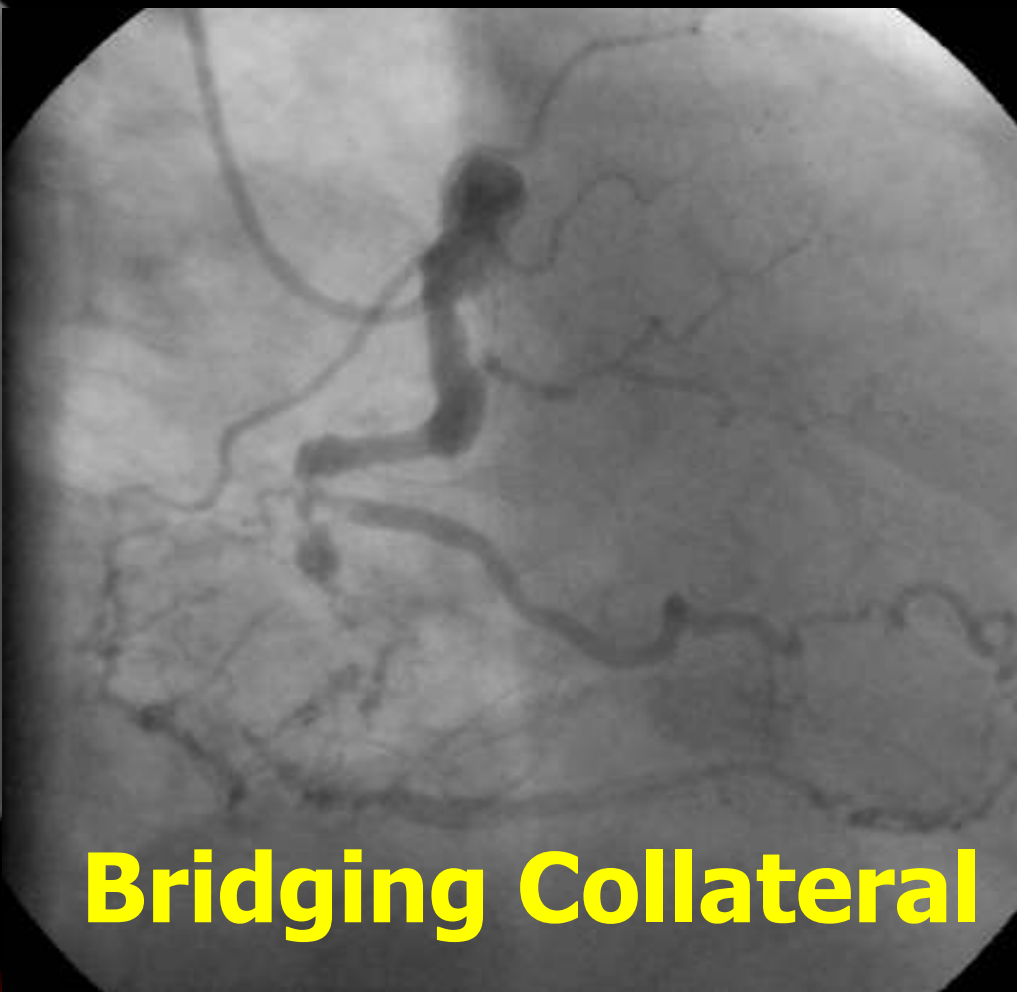
Case 6





Hints & Pit-Falls

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- ✓ **Bridging Collateral**
- ✓ Sandbar
- ✓ Branch
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Bridging Collateral



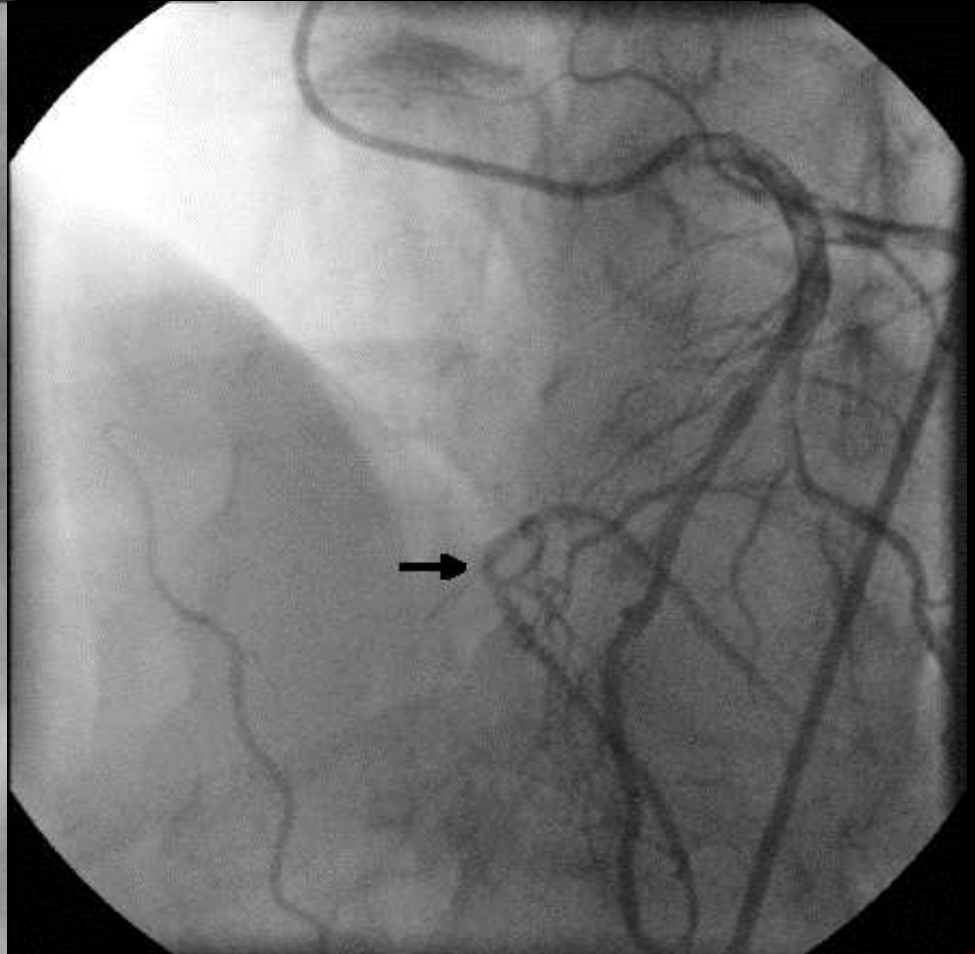
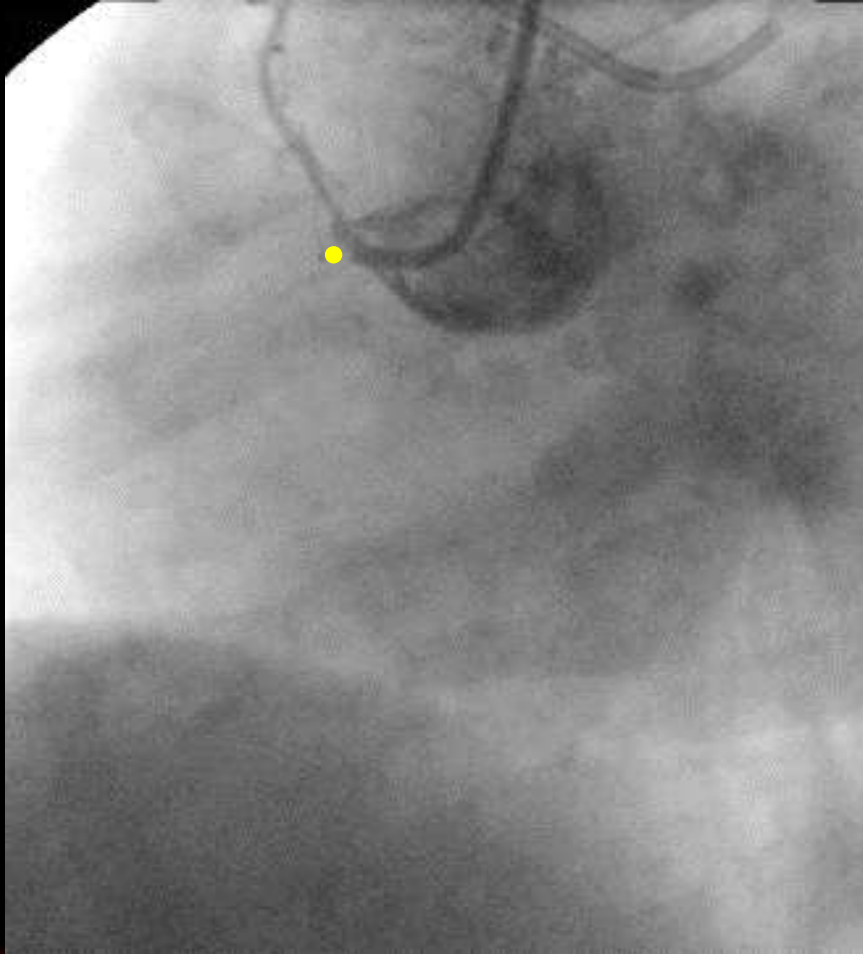
Hints & Pit-Falls

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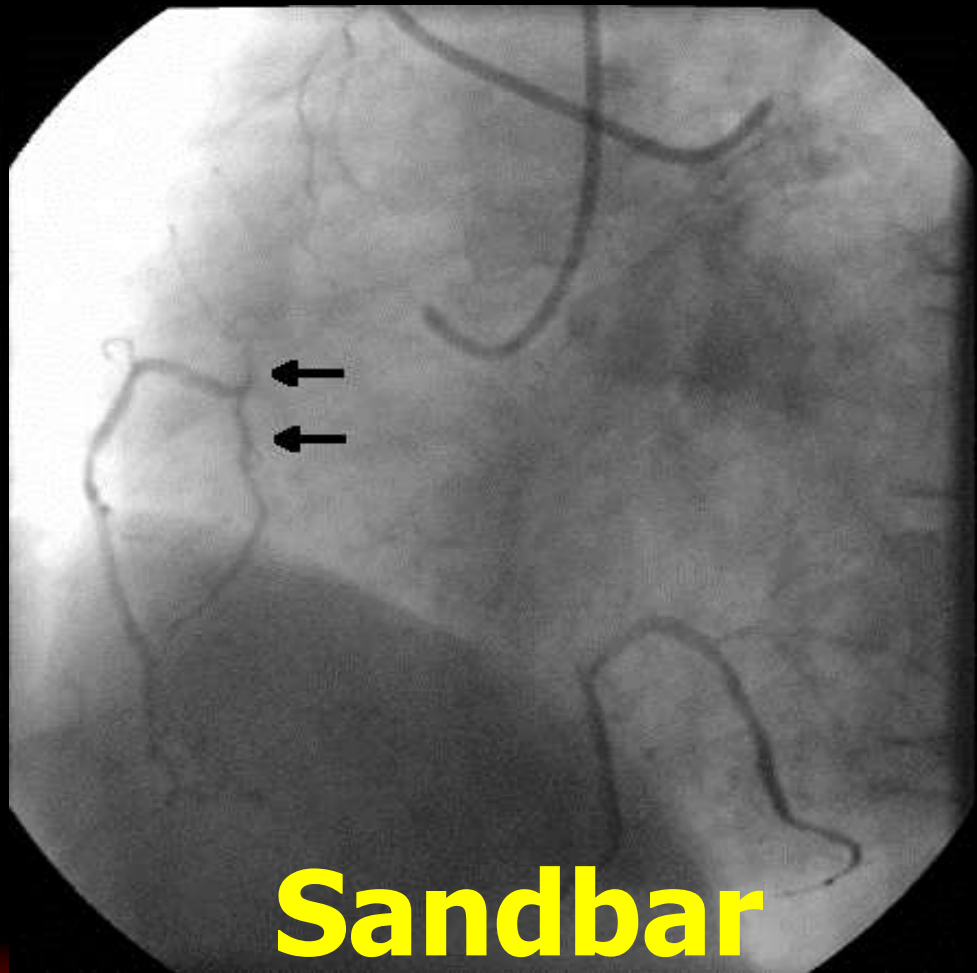
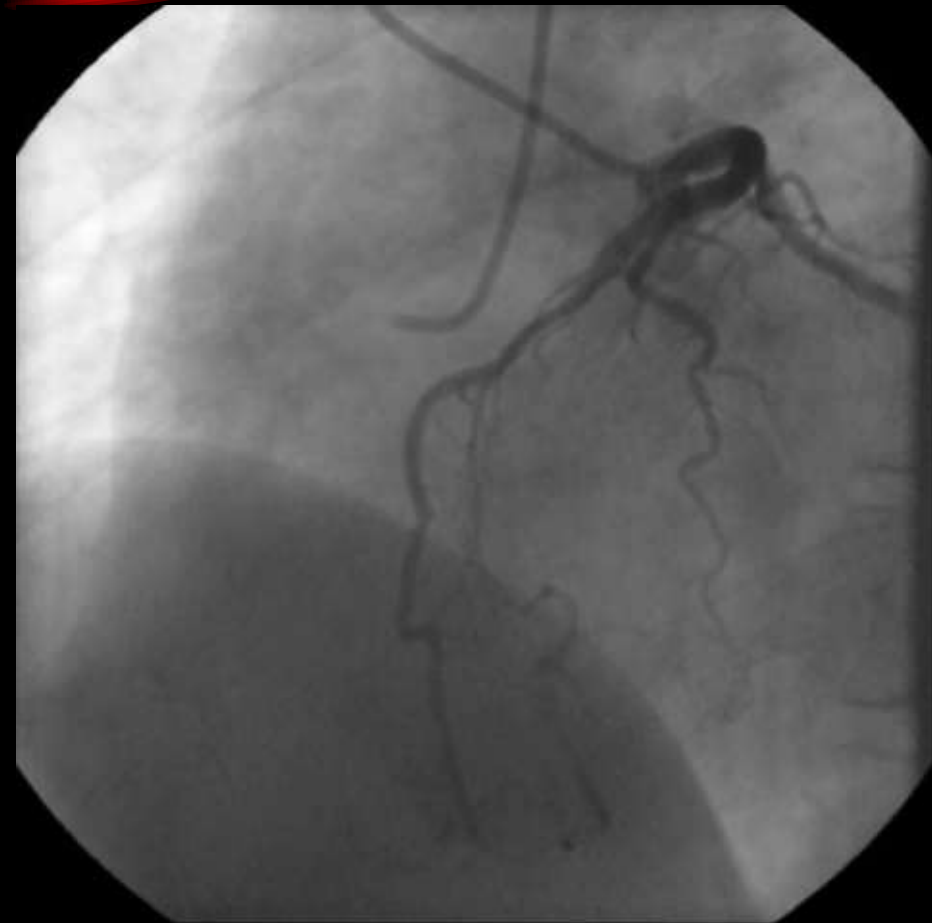
Case 2

RCA CTO



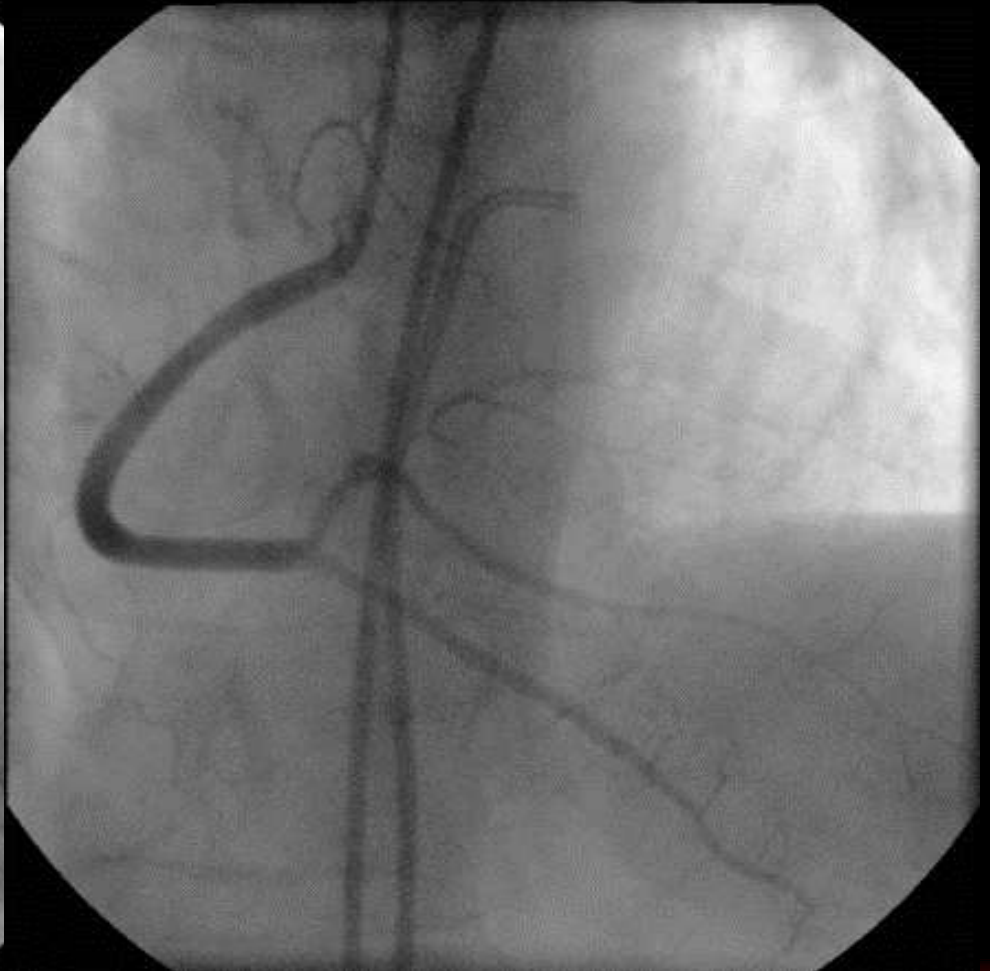
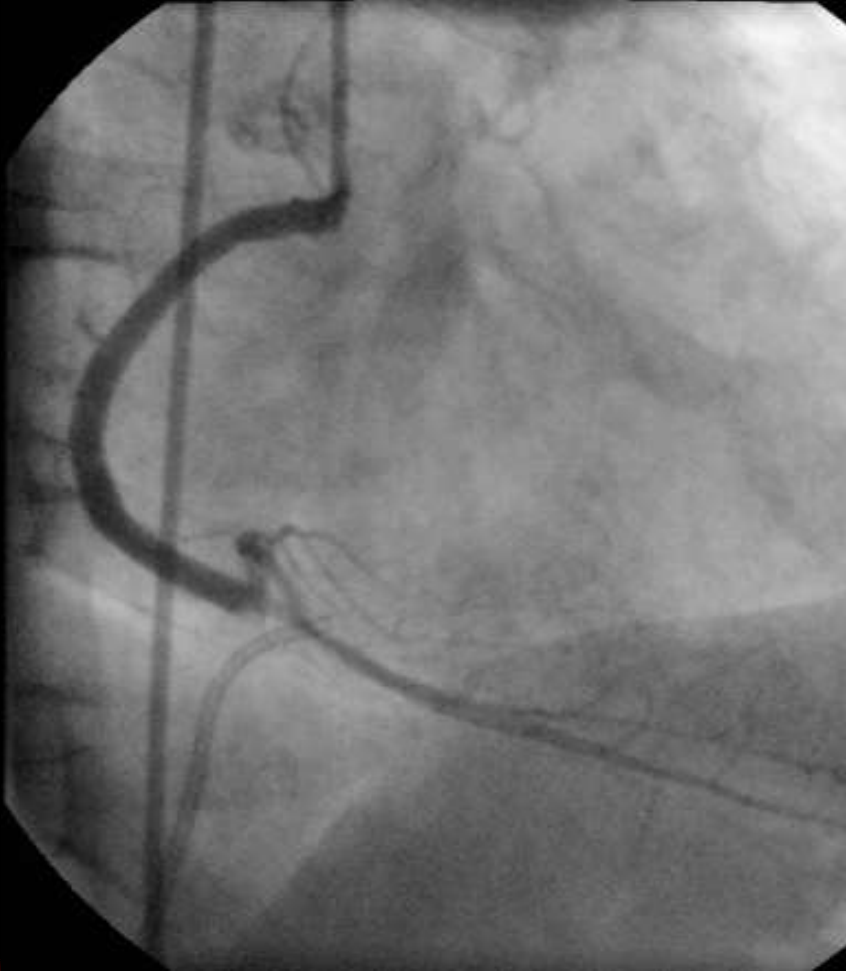


RCA CTO





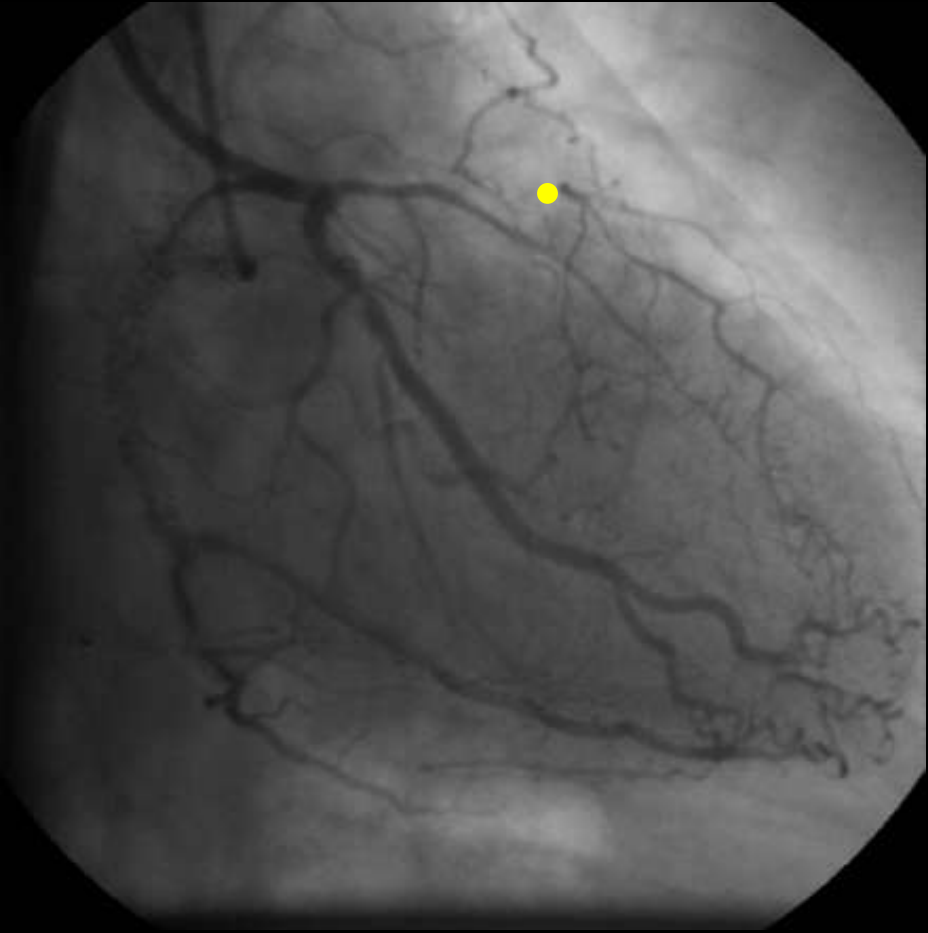
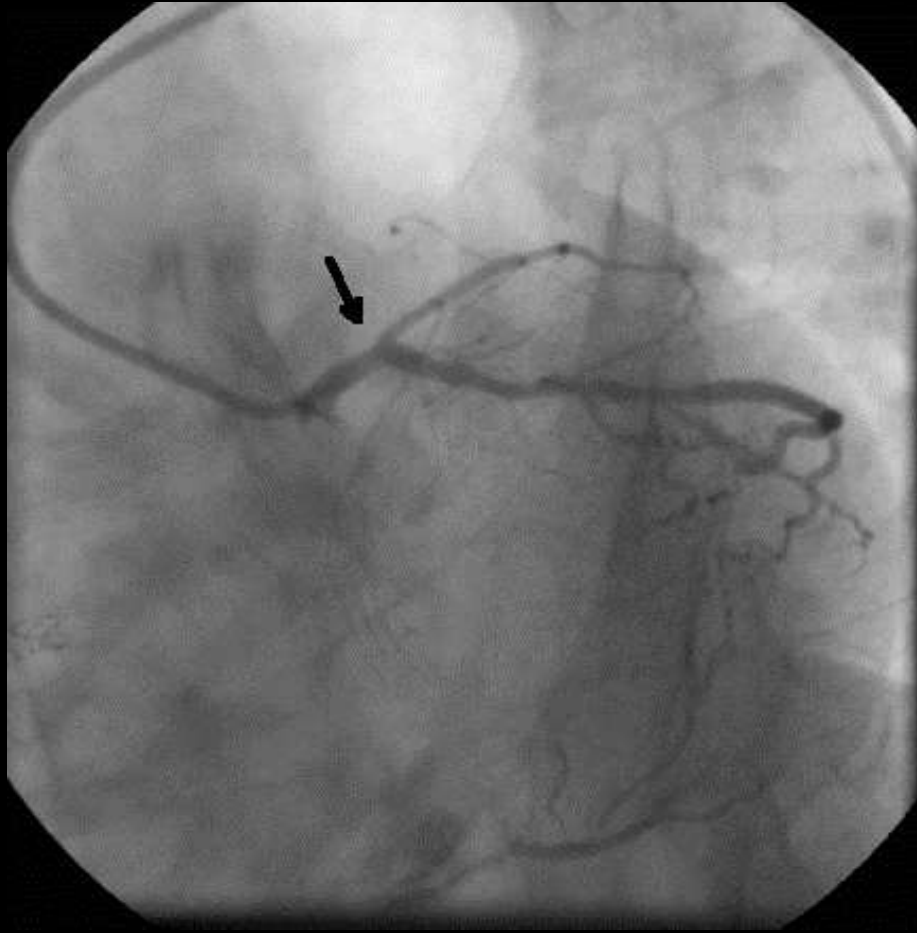
Final





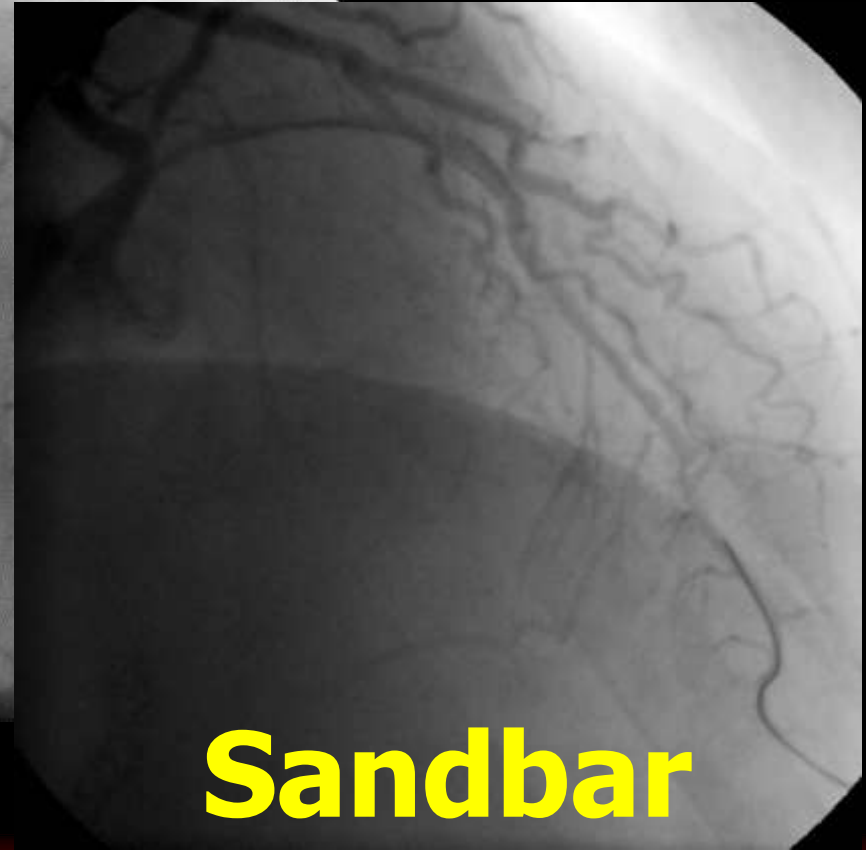
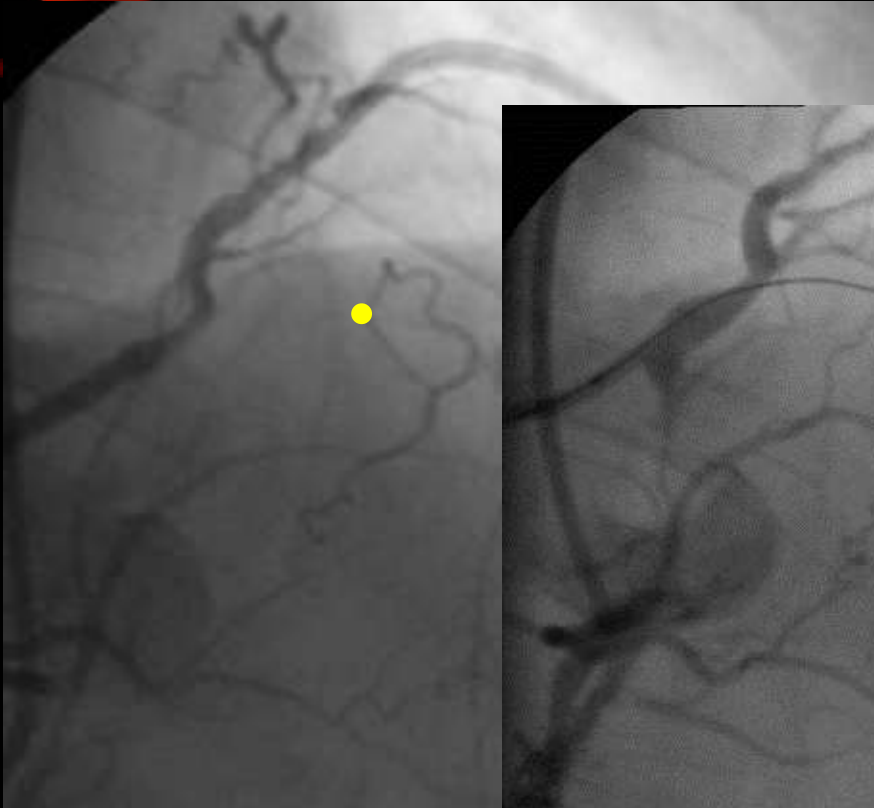
Case 8

LAD CTO





LAD CTO



Sandbar

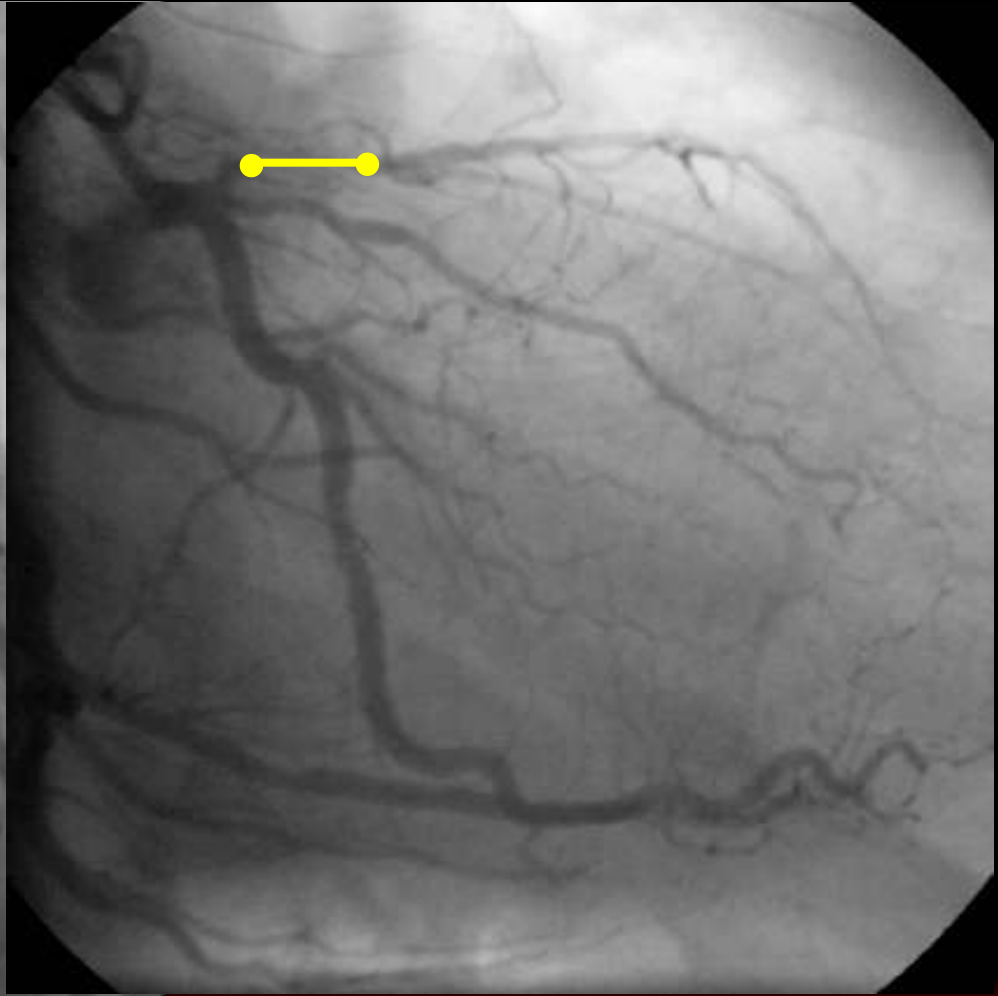
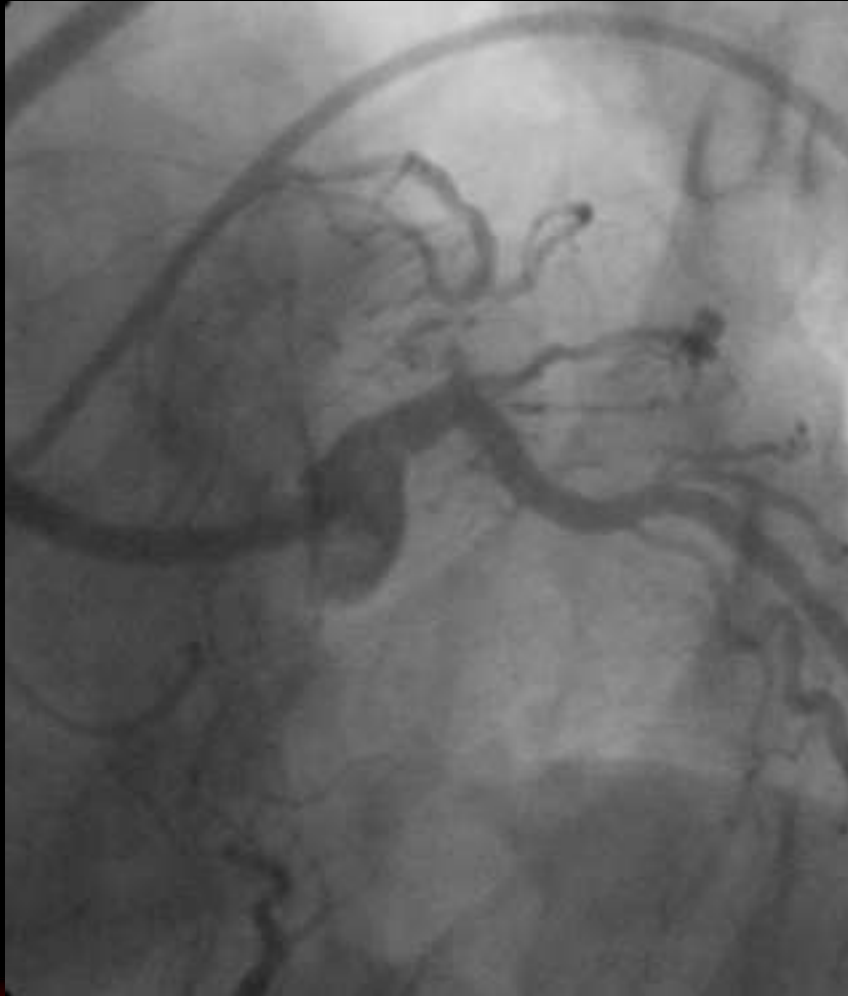


Hints & Pit-Falls

- ✓ Principles of Coronary Trees
- ✓ Calcium
- ✓ Bridging Collateral
- ✓ Sandbar
- ✓ **Branch**
- ✓ Special Collateral Sources

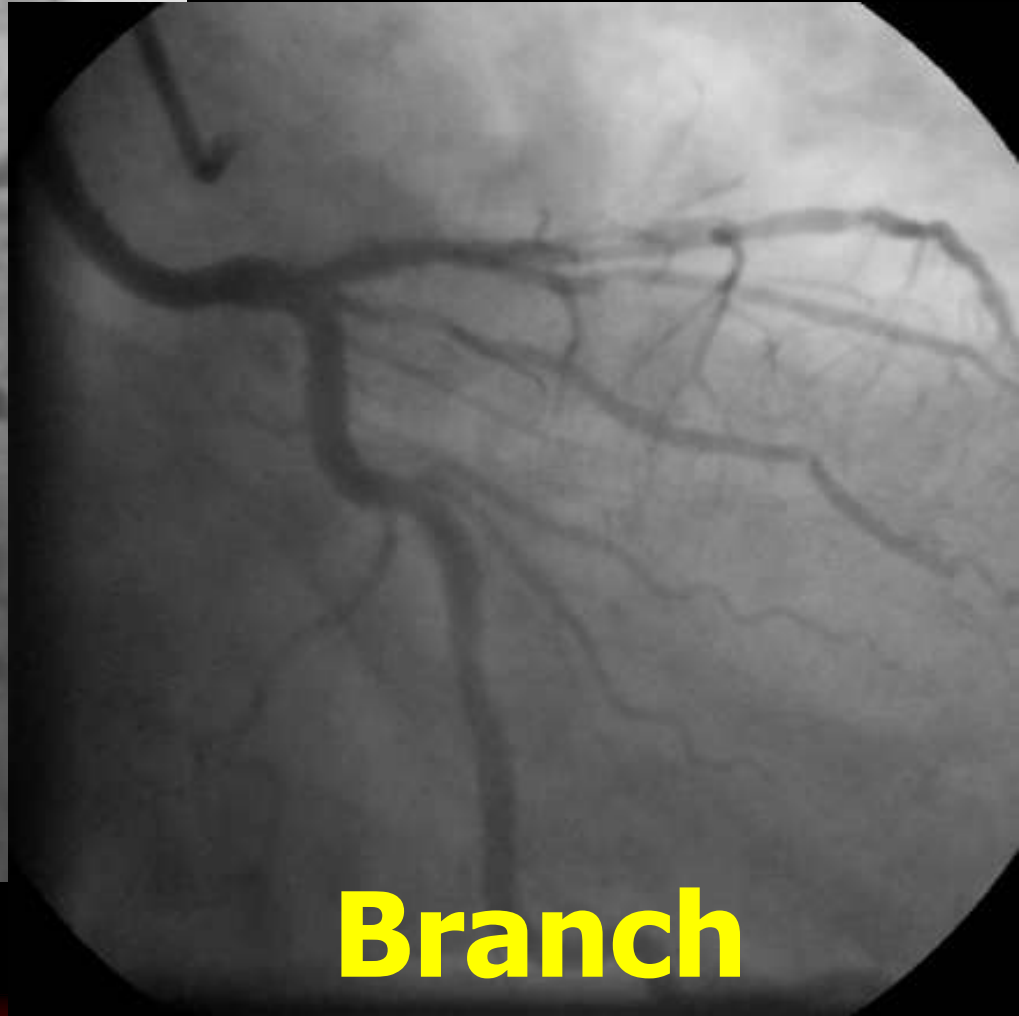
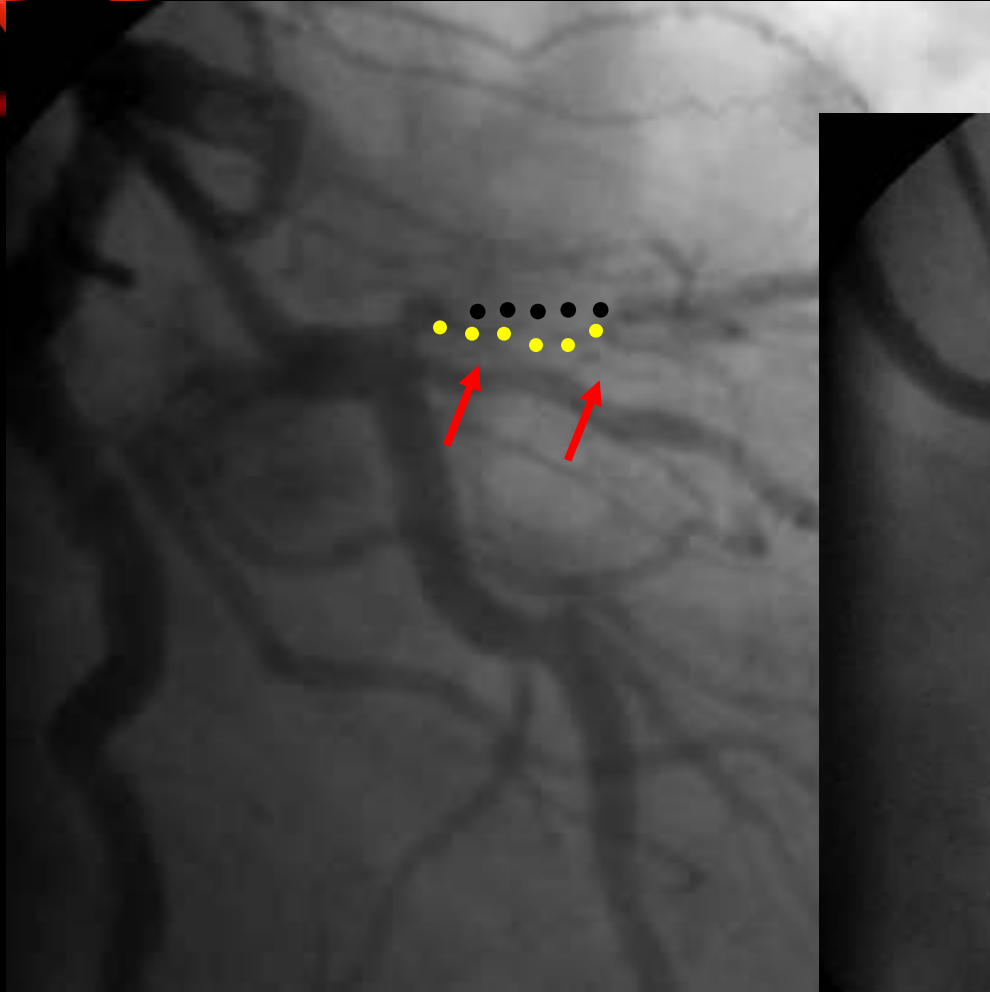


LAD CTO





LAD CTO





Hints & Pit-Falls

- ✓ Principles of Coronary Trees
- ✓ Calcium
- ✓ Bridging Collateral
- ✓ Island
- ✓ Branch
- ✓ Special Collateral Sources

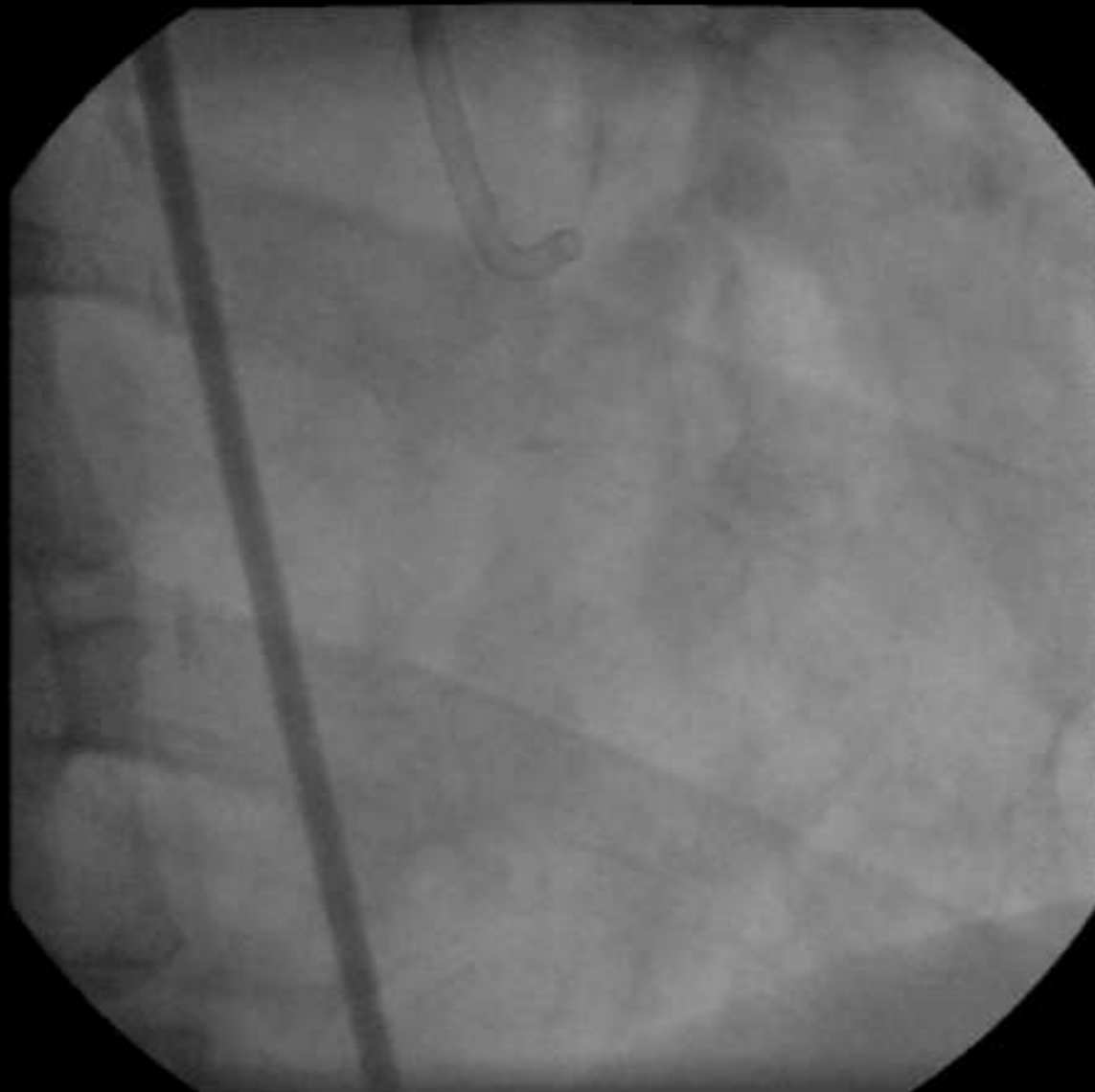


Case 10





RAO



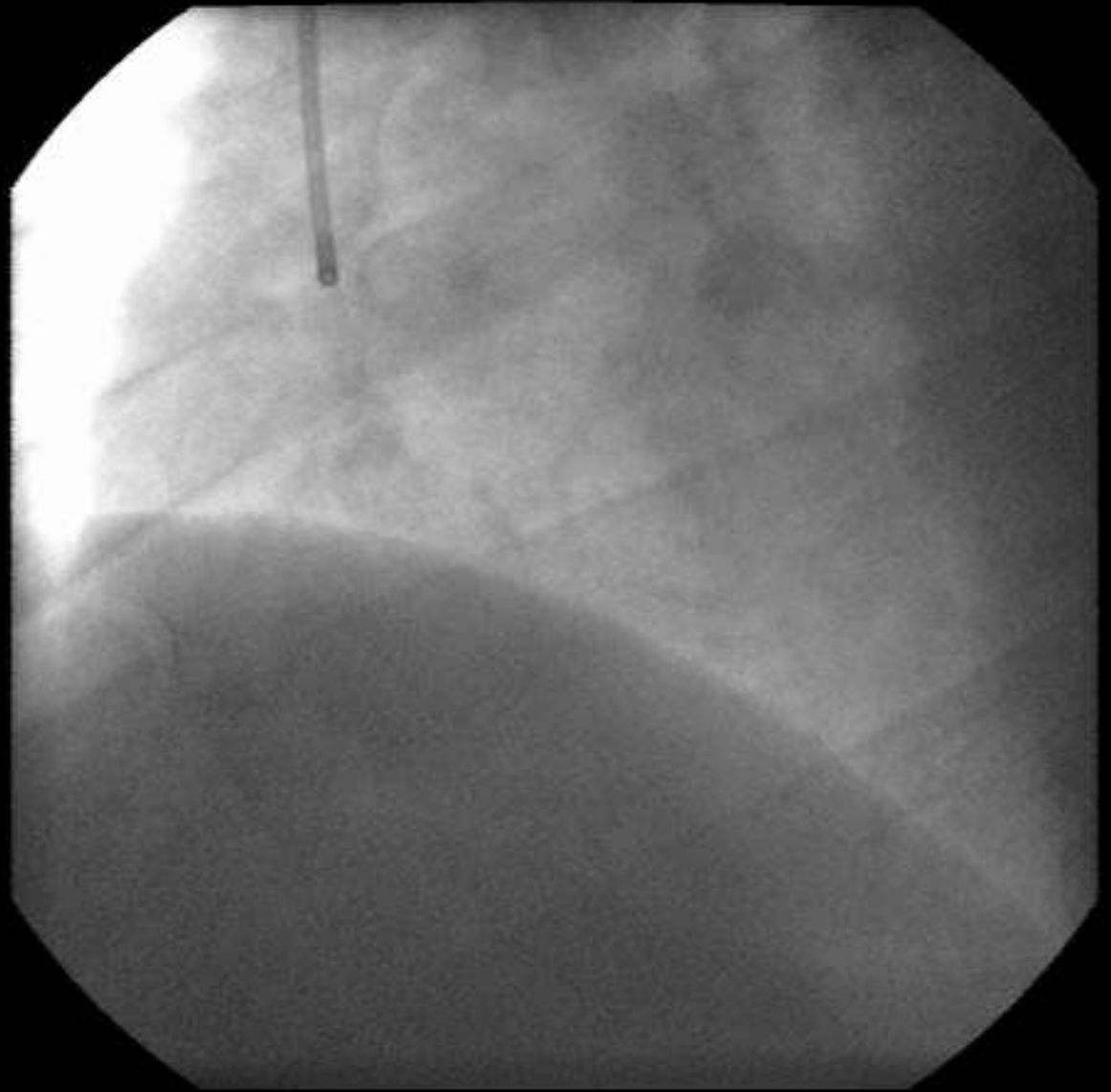


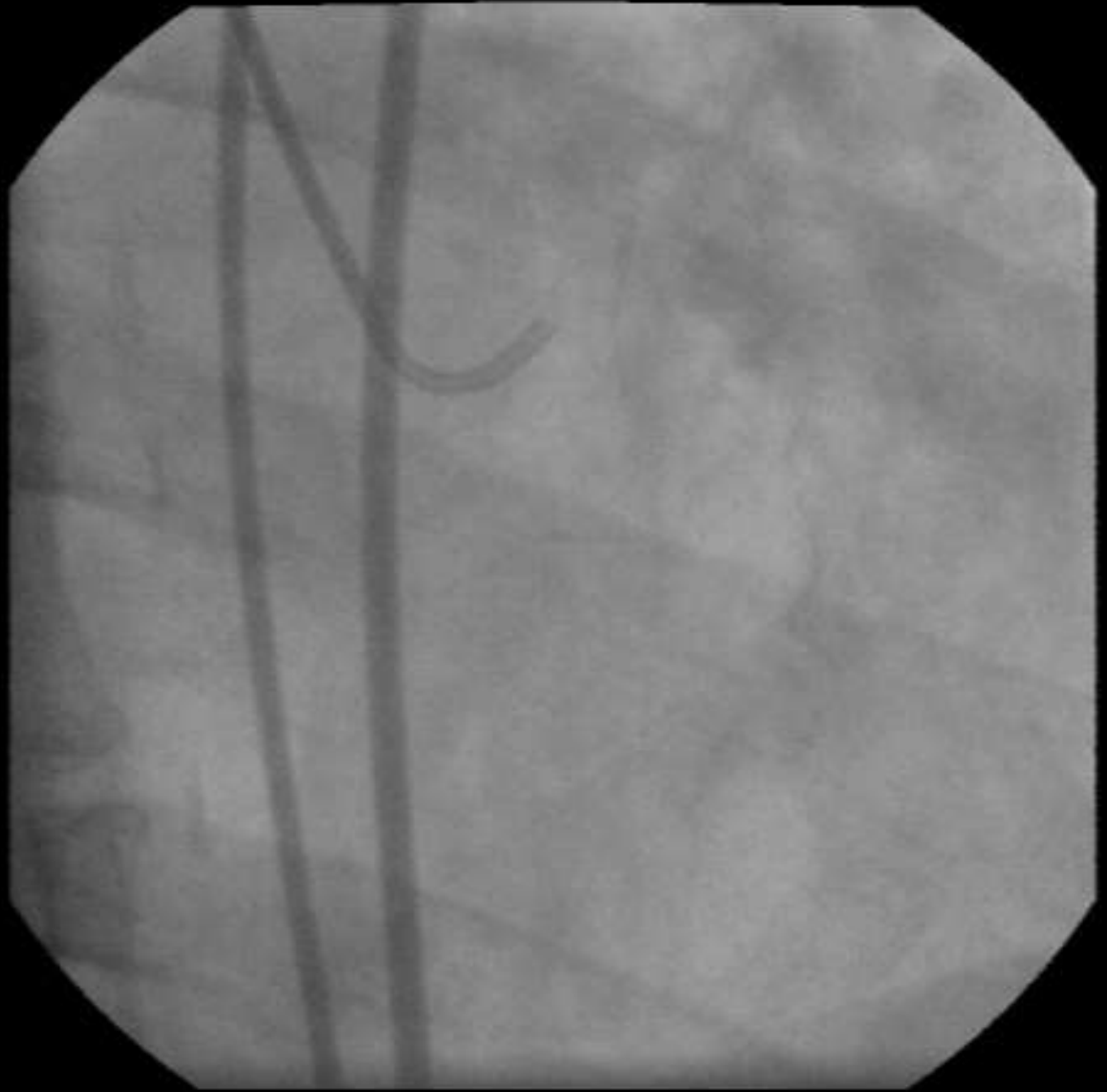
LCA





Atrial Branch





Atrial Branch

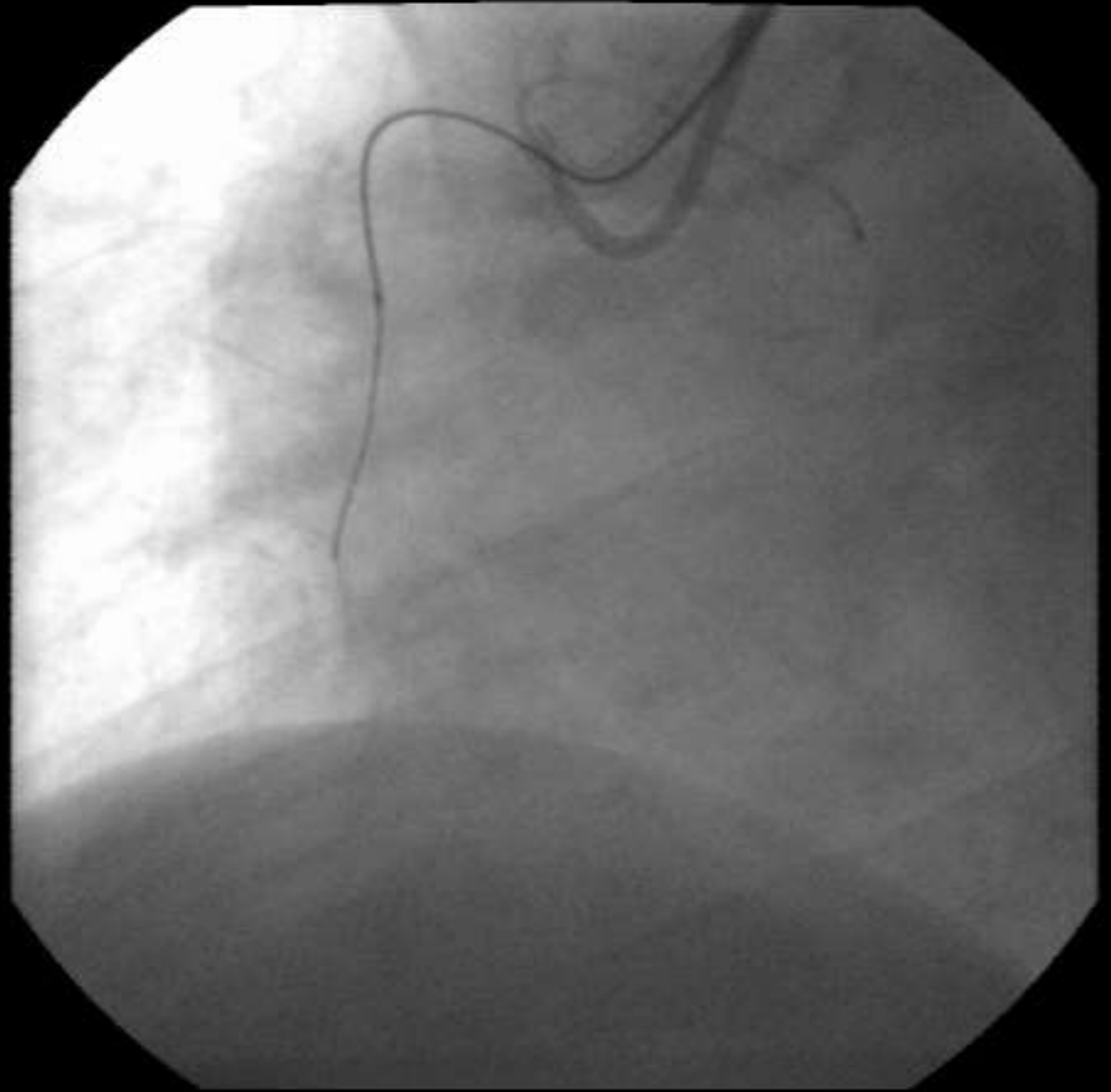


Selective Angio



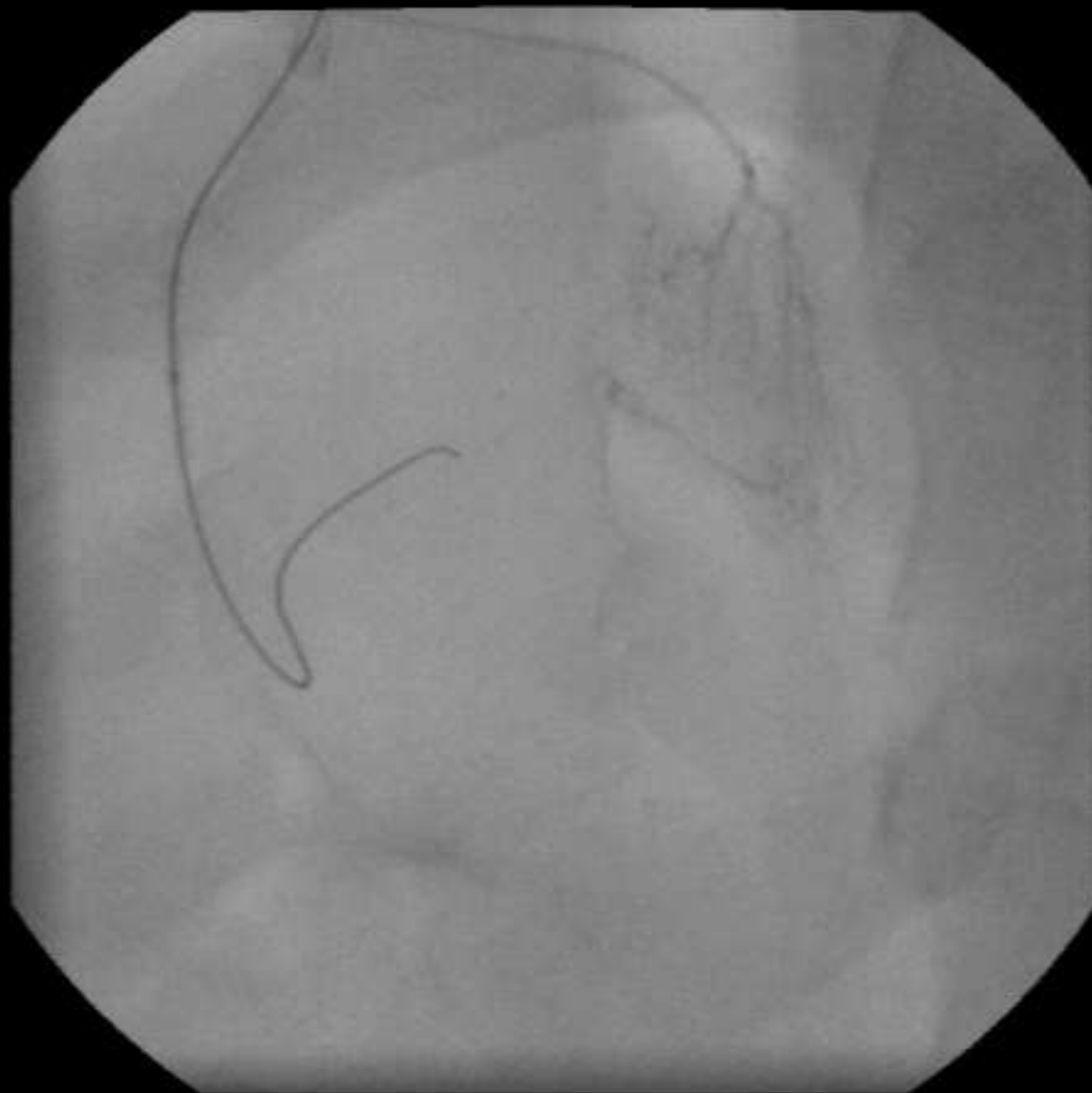


GW Manipulation



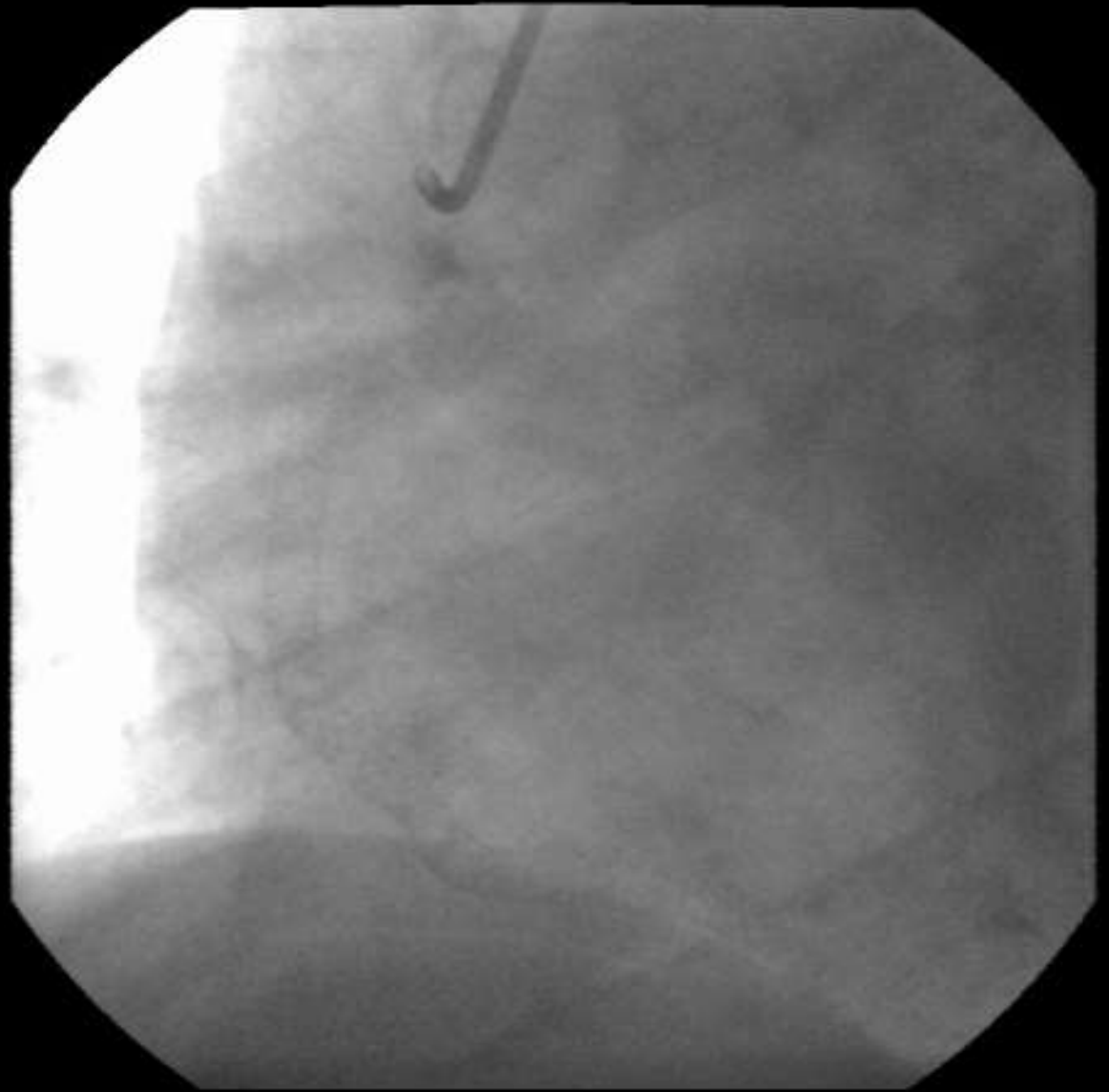


Successful Wiring



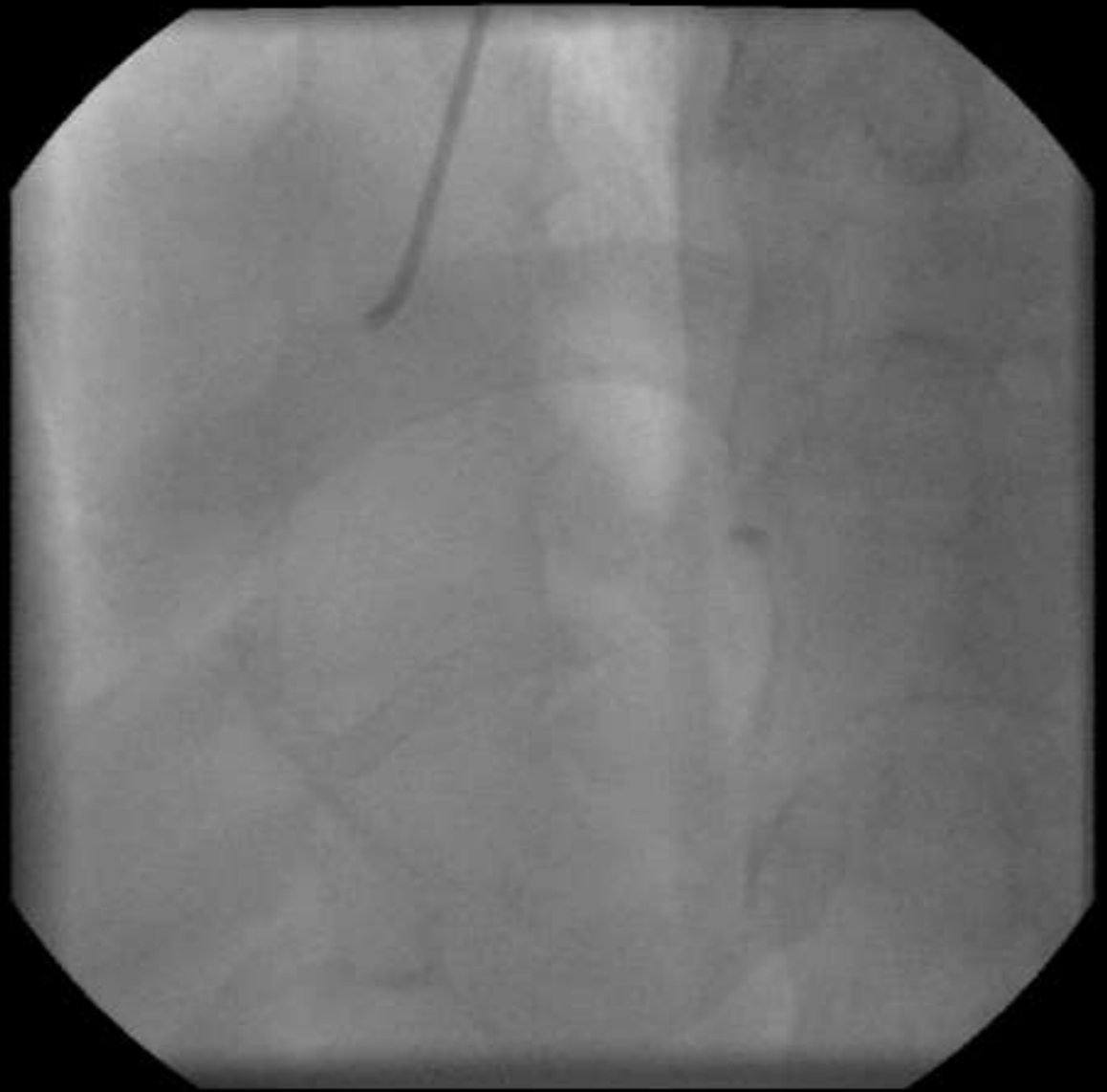


Final Result





Final Result





Treasure Hunting

- ✓ Principles of Coronary Trees
- ✓ Calcium
- ✓ Bridging Collateral
- ✓ Island
- ✓ Branch
- ✓ Special Collateral Sources



My Recommendations

- ✓ **We should completely understand where is the entry and exit point of CTO, and where a wire should advance between them.**
- ✓ **I strongly recommend you that you watch all of the still frames in angiogram.**
- ✓ **I always watch angiogram during 30 minutes ~ 1 hour before CTO PCI.**



Frame by Frame



Let's Take a Look at Cine during 1 hour!!