

Antegrade approach

Tips, Tricks, and Trouble shooting in CTO PCI

Toyohashi Heart Center

Maoto Habara, M.D.

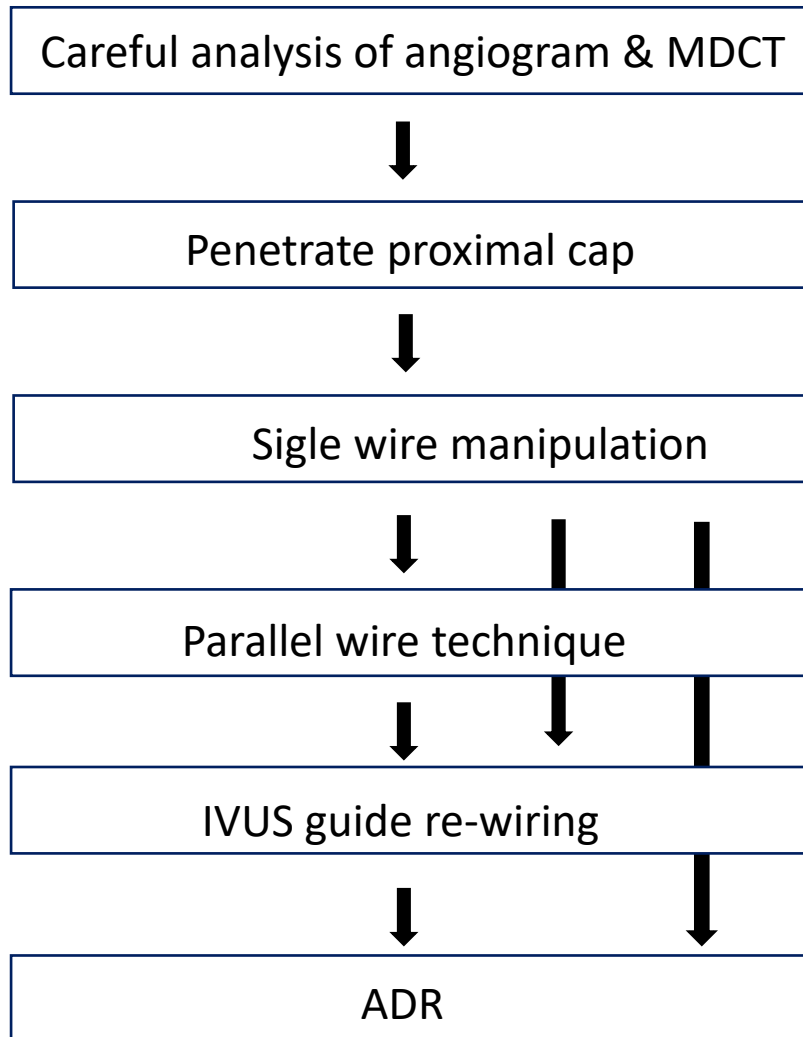
TCTAP2023

COI Disclosure

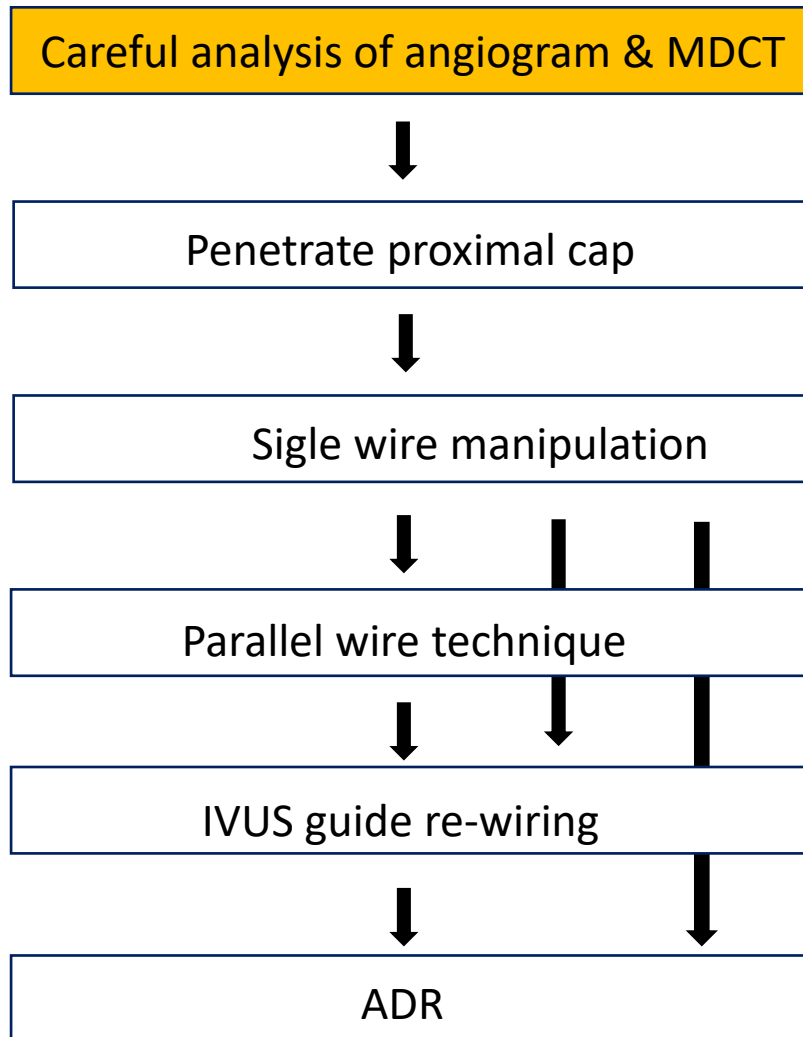
Name of Presenter: Maoto Habara

The presenter has no financial conflicts of interest to disclose concerning the presentation.

The usual strategy in Antegrade procedure

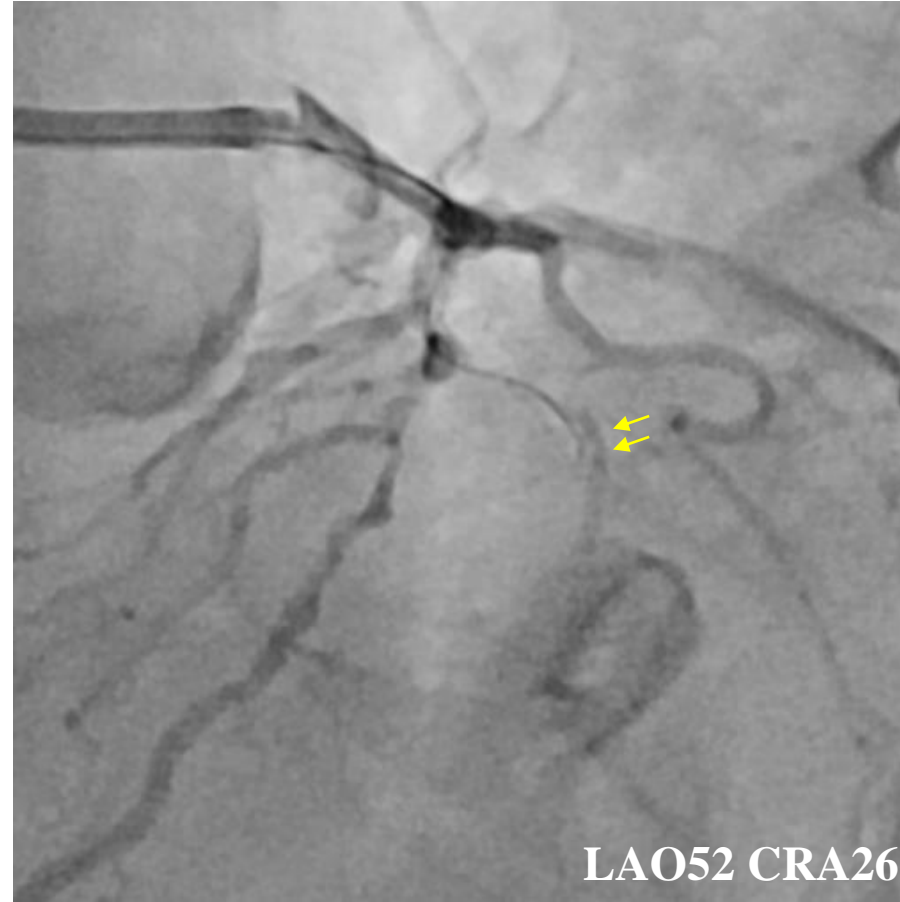
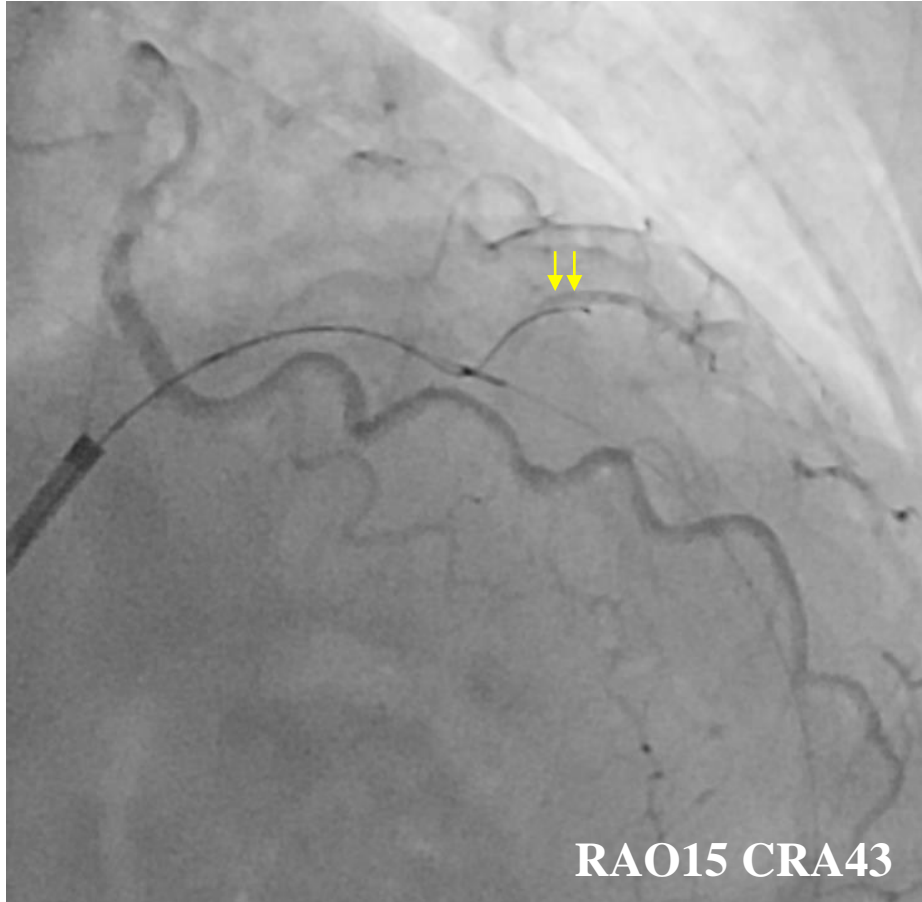


The usual strategy in Antegrade procedure



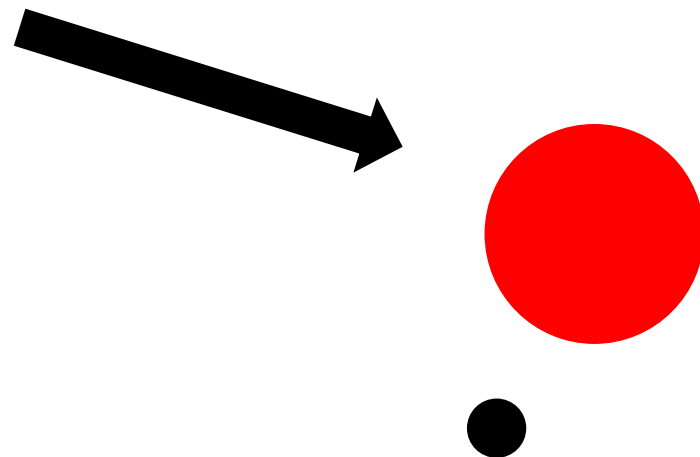
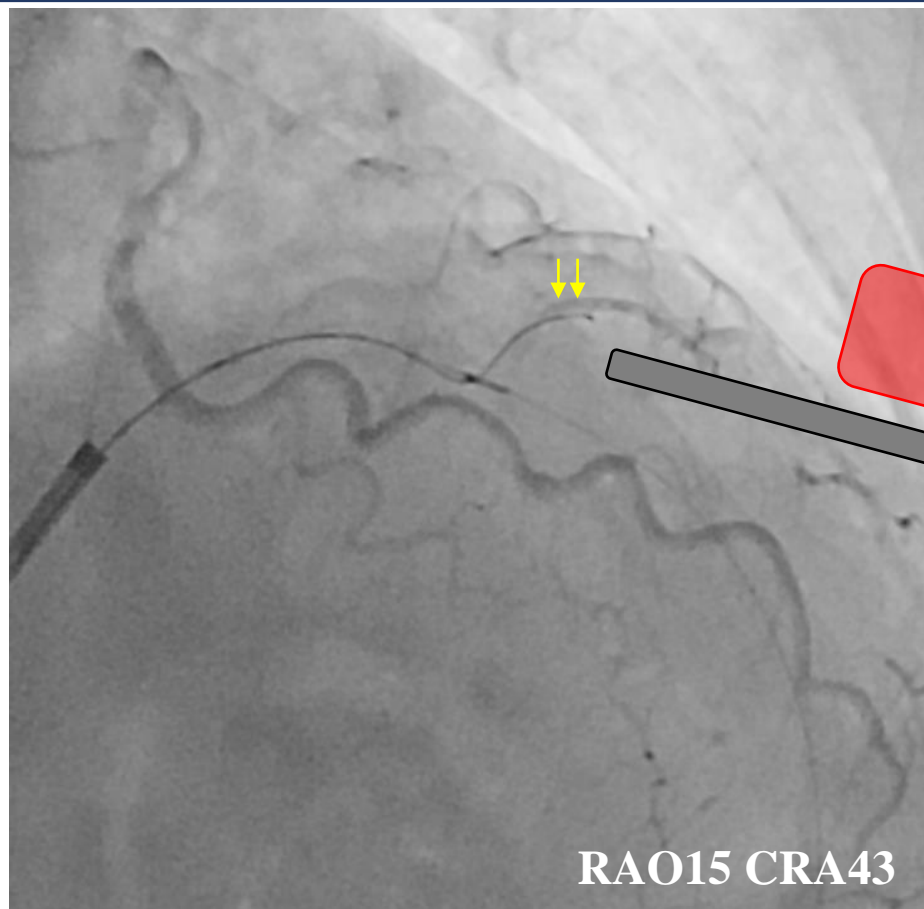
**Can we set perpendicular projections
for CTO lesions in daily practice?**

Is bilateral angiography effective?



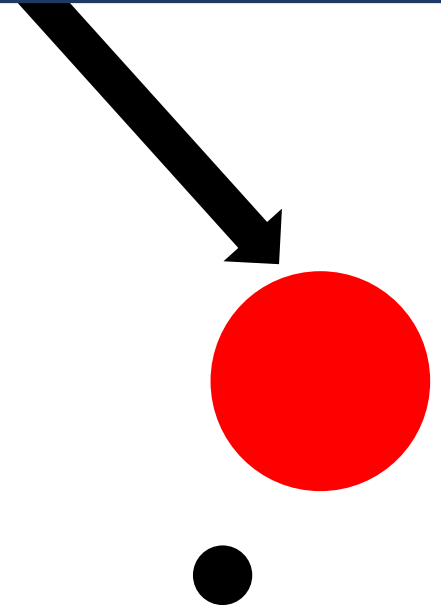
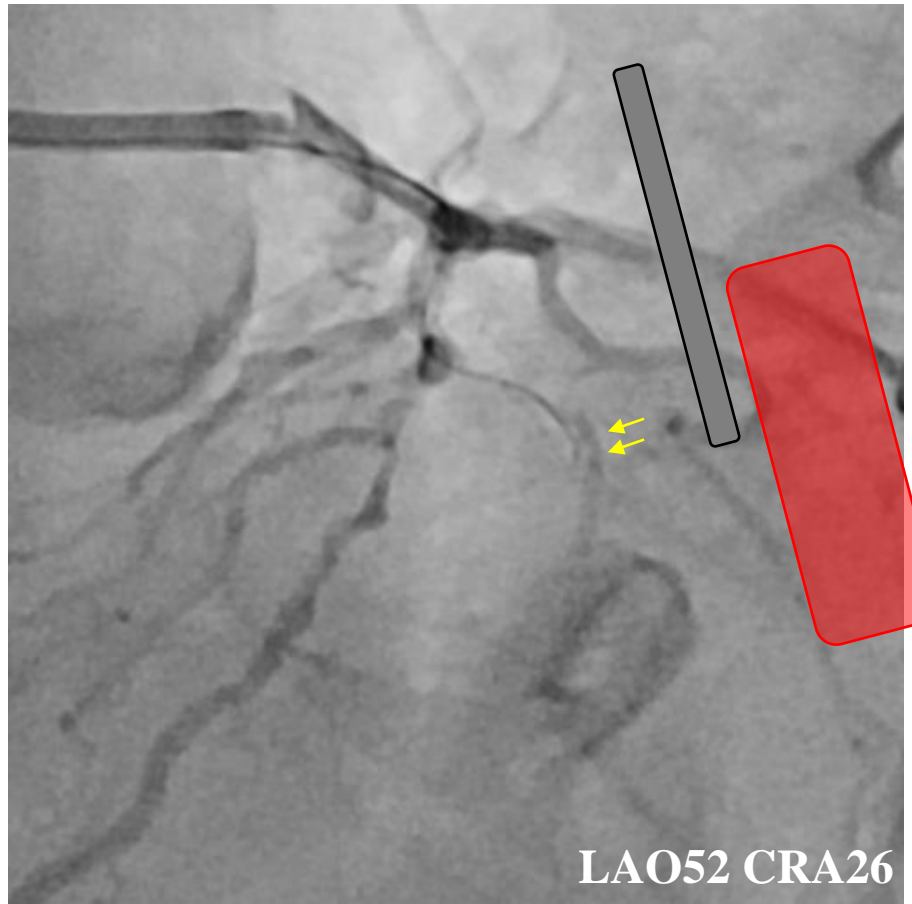
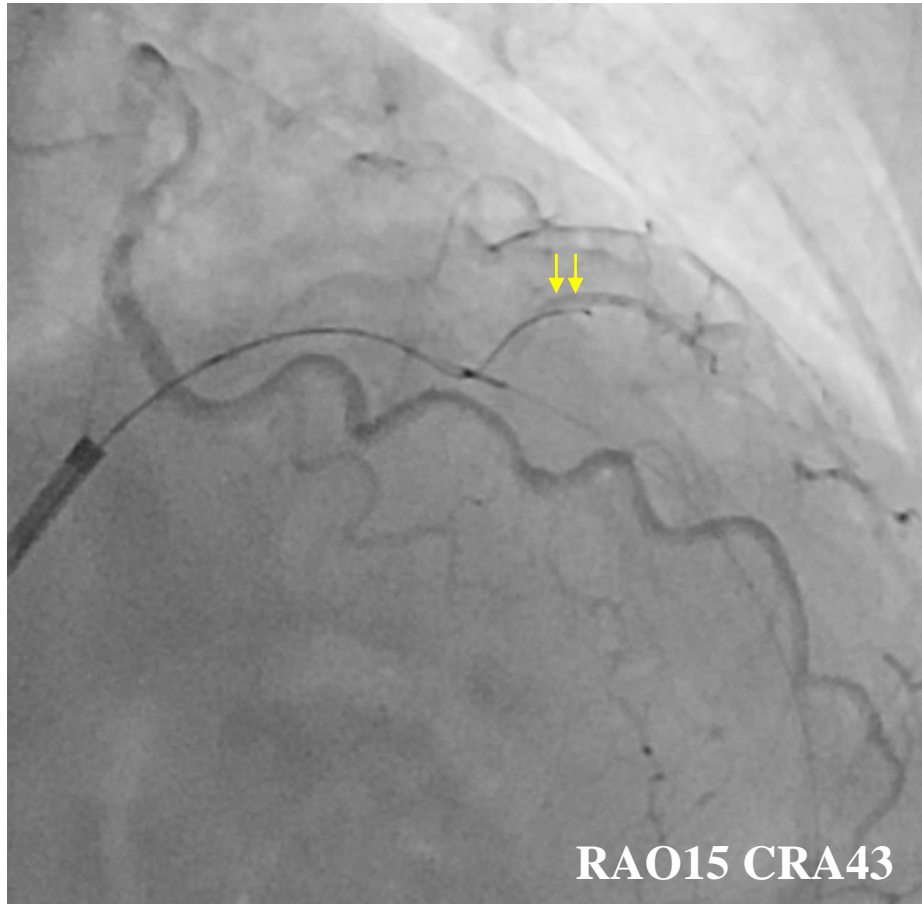
- Even in bilateral angiography, appropriate wire direction to get distal true lumen is often unidentified in daily practice.

Is bilateral angiography effective?



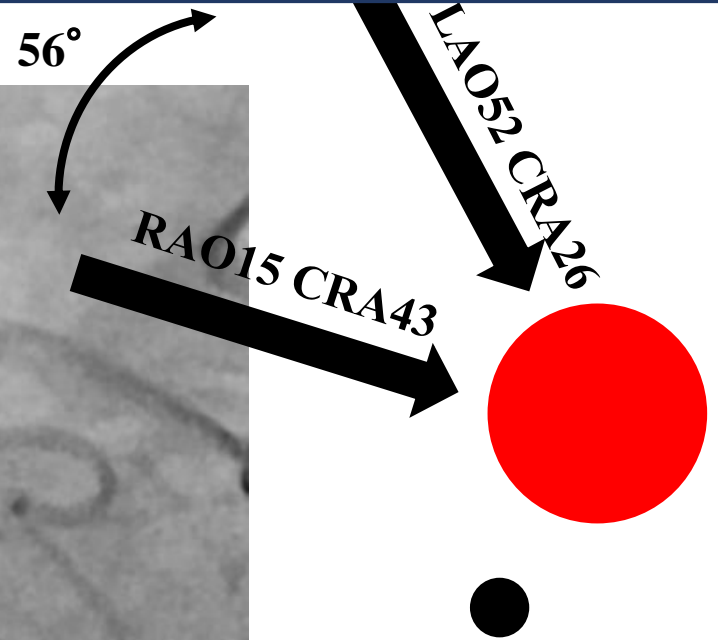
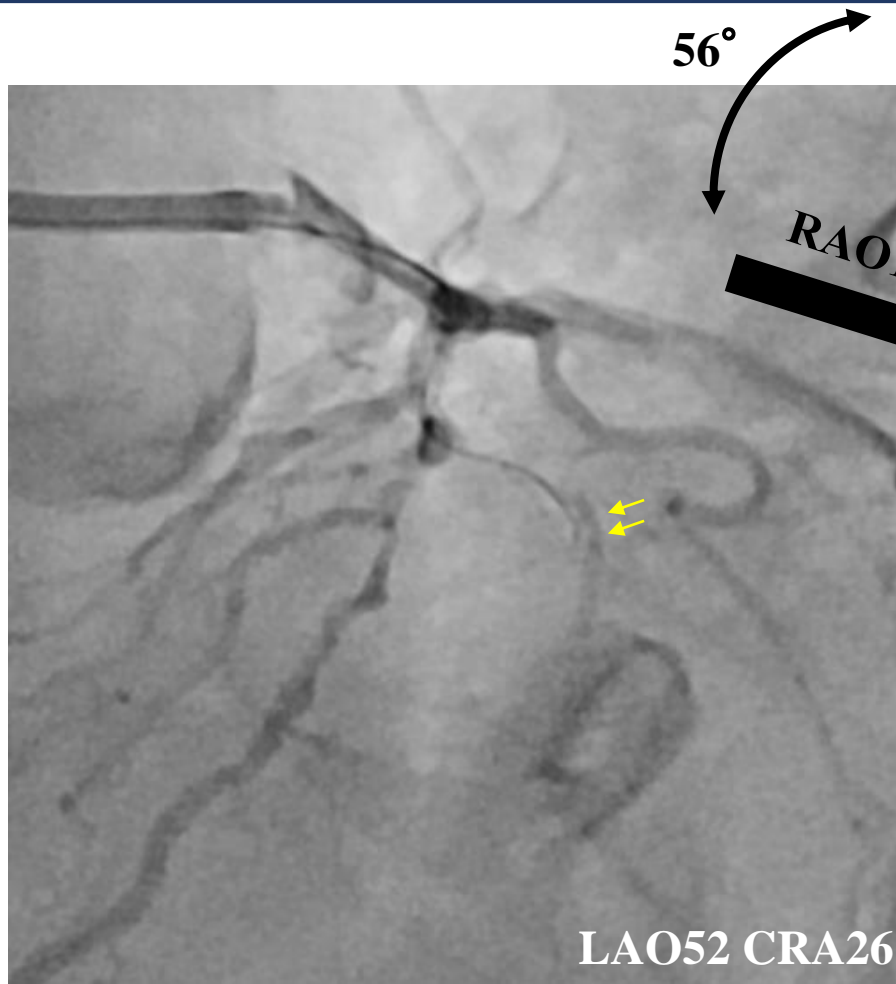
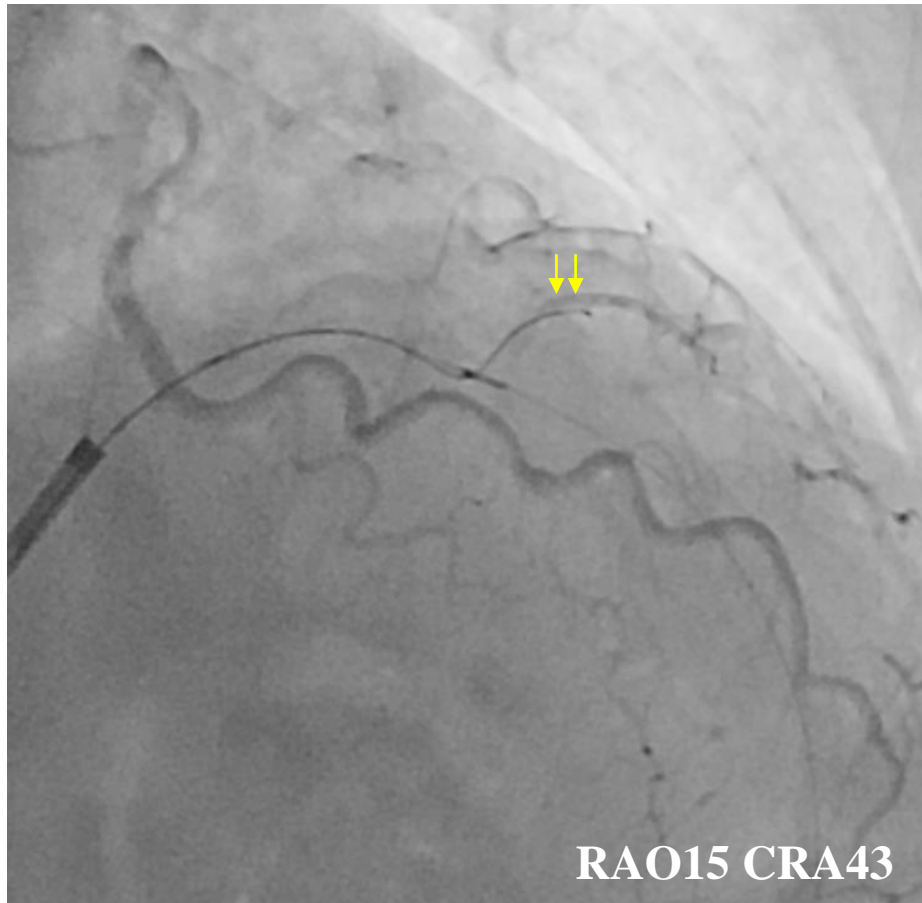
- Calculated perpendicular projection of RAO15/CRA43 is RAO29/CAU18

Is bilateral angiography effective?



- Calculated perpendicular projection of LAO52/CRA26 is RAO43/CAU43

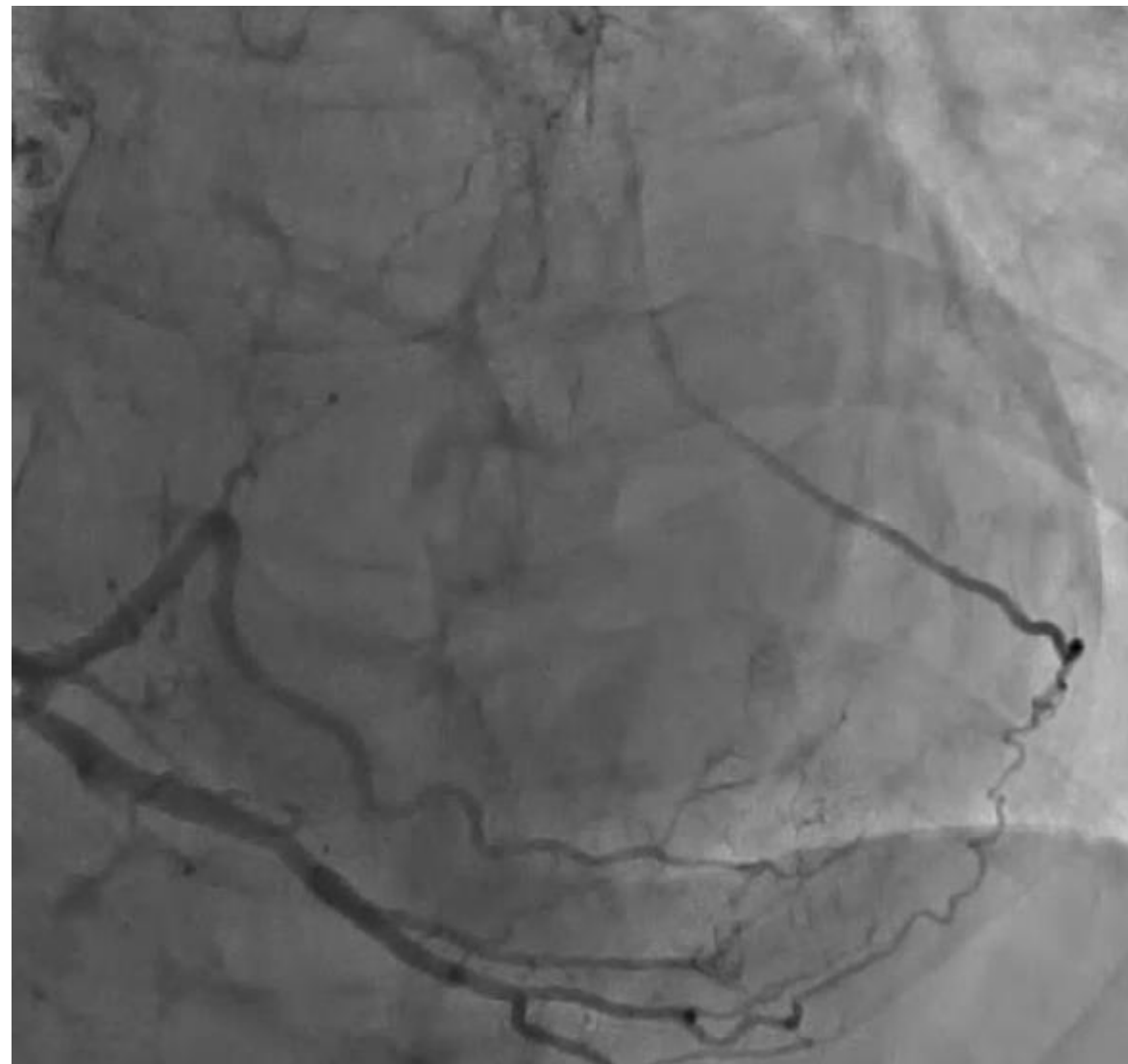
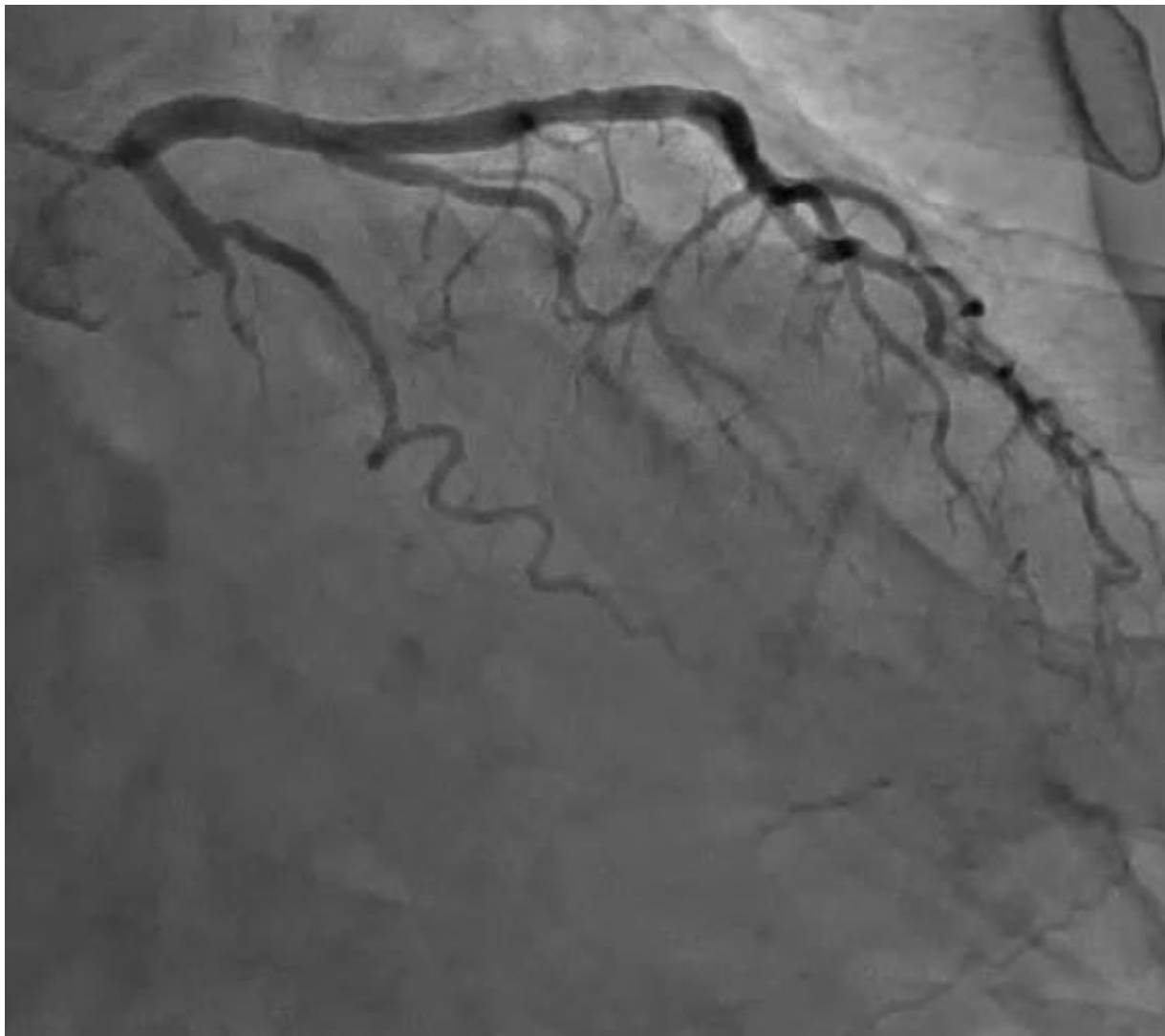
Is bilateral angiography effective?



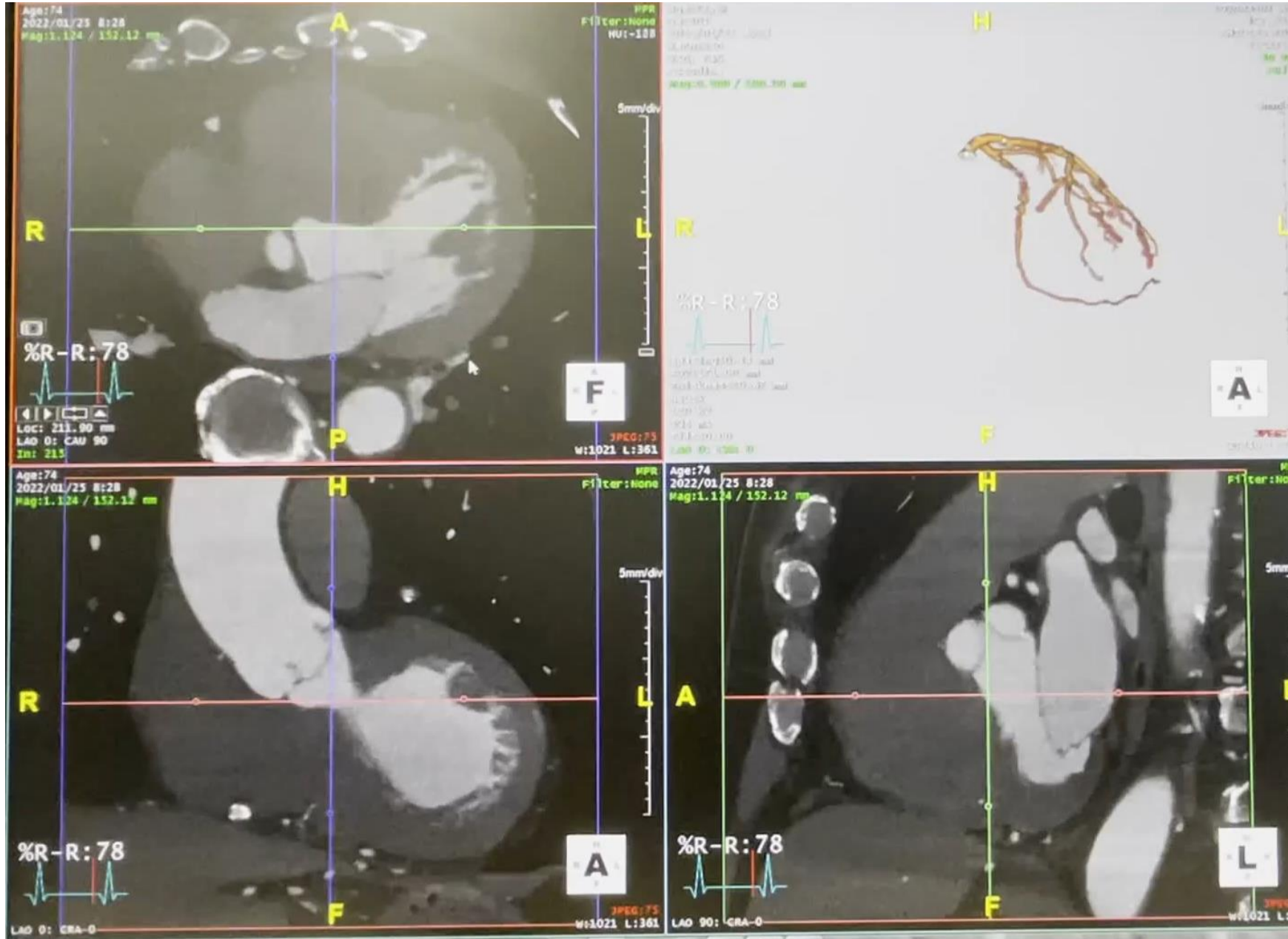
- In this case, both bilateral angiography viewed from a similar direction of the distal true lumen.

How to detect optimal perpendicular view?

Case: LCX CTO



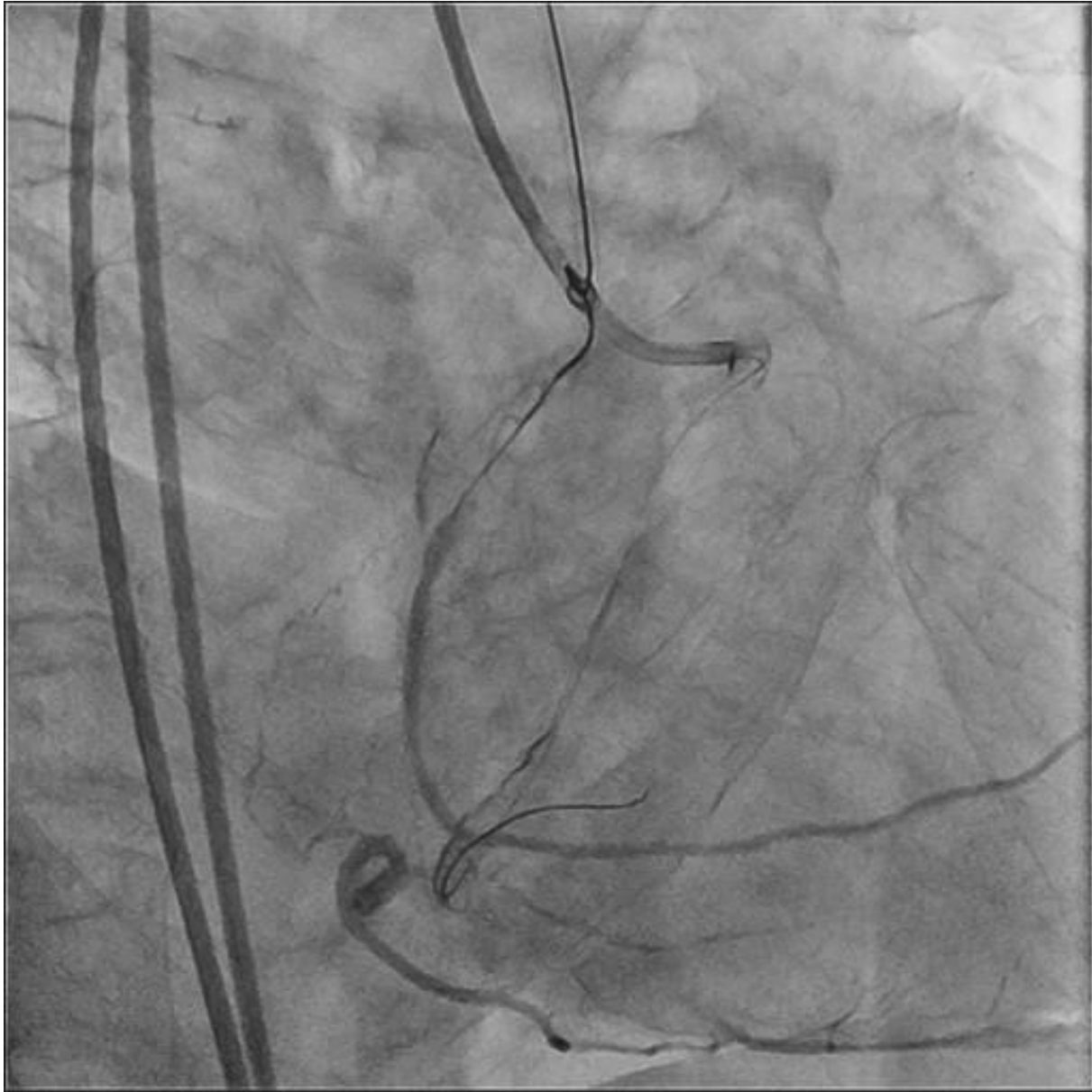
CT Analyze



LAO 31 CAU39

RAO65 CRA10

RAO65 CRA10



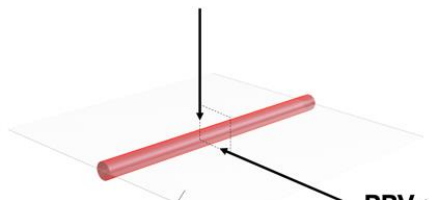
LAO 31 CAU39



These will appear in the CTO PCI area in the near future

Penetration Plane method

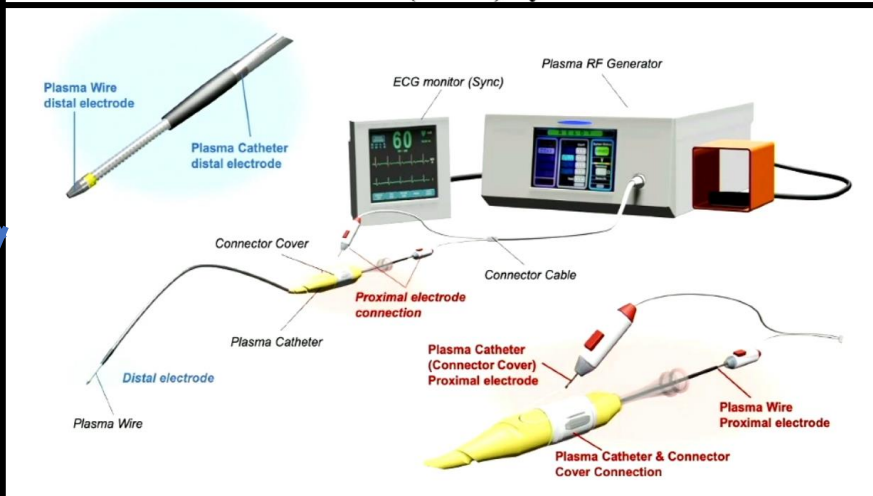
OPV (objective perpendicular view)
= Vertical view of the PP



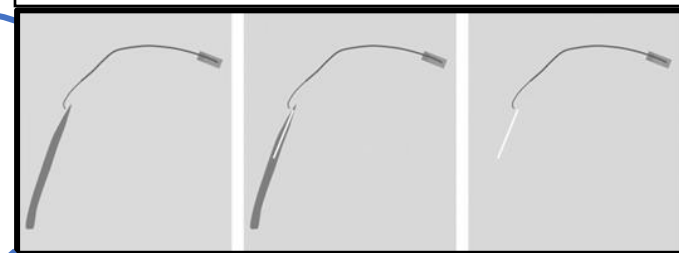
PPV (penetration plane view)
= Horizontal view of the PP

Penetration plane (PP)

Plasma mediated ablation (PMA) system

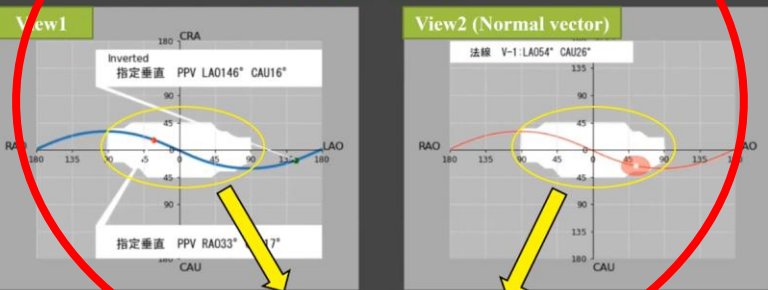


Distal true lumen mapping



Axis-vector analysis software

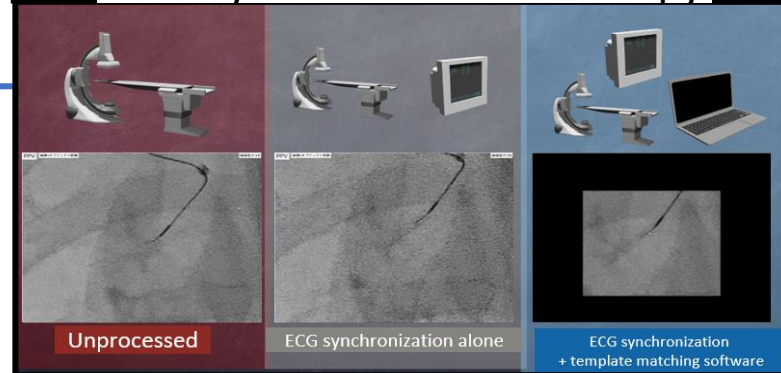
Ve: RAO 92 CAU 59



Movable range of C-arm

All systems are linked and needed

ECG-synchronized fluoroscopy



❑ Proximal Cap Ambiguity

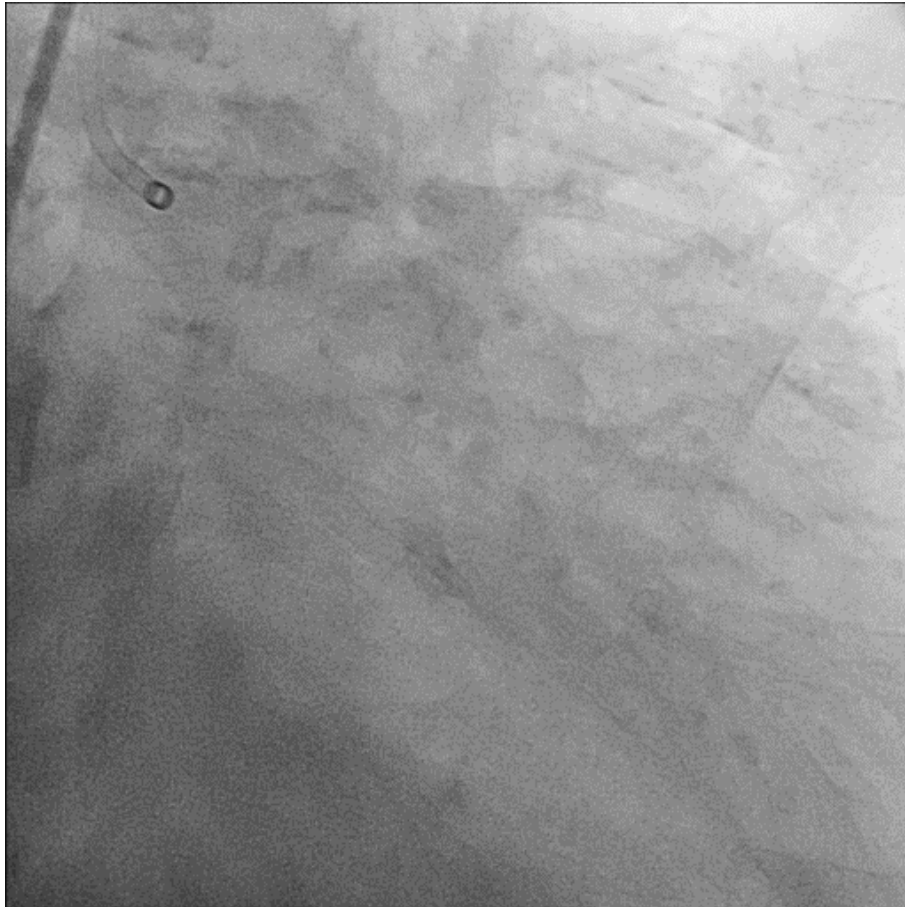
- ✓ Repeat Angiography with multiple, tightly coned, and magnified projections
- ✓ IVUS guided puncture
- ✓ Coronary CT angiography to clarify the proximal cap and vessel anatomy

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Repeat Angiography with multiple, tightly coned and magnified projection

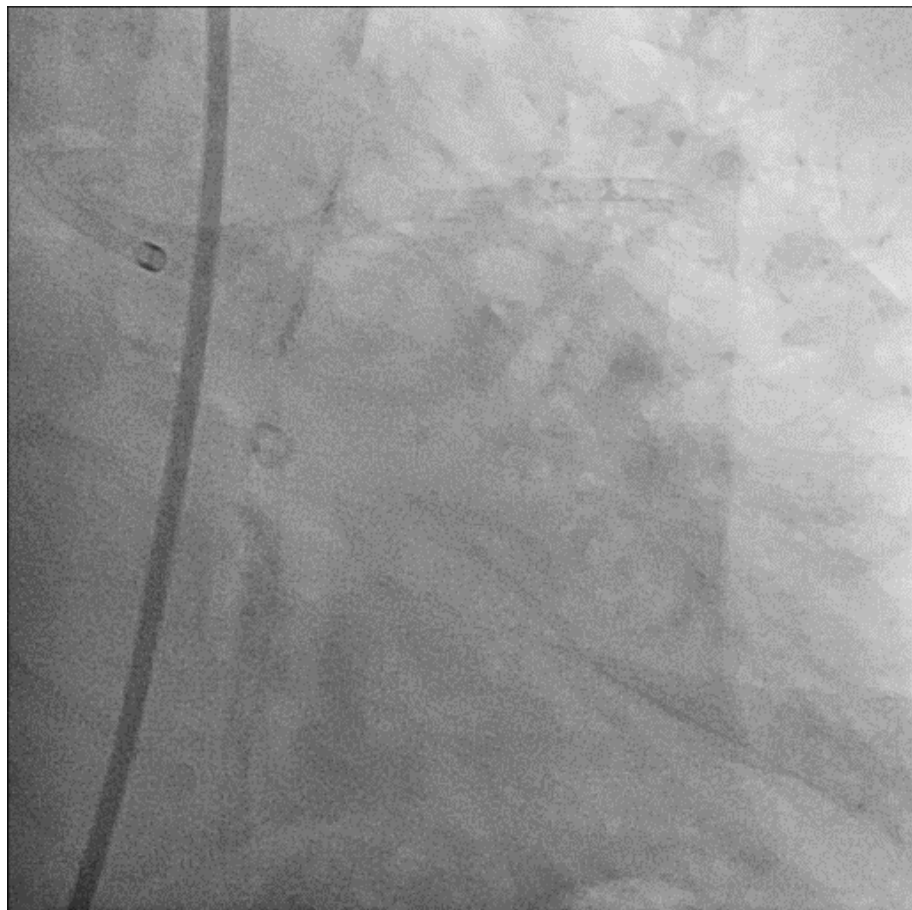
RAO CAU 30/30



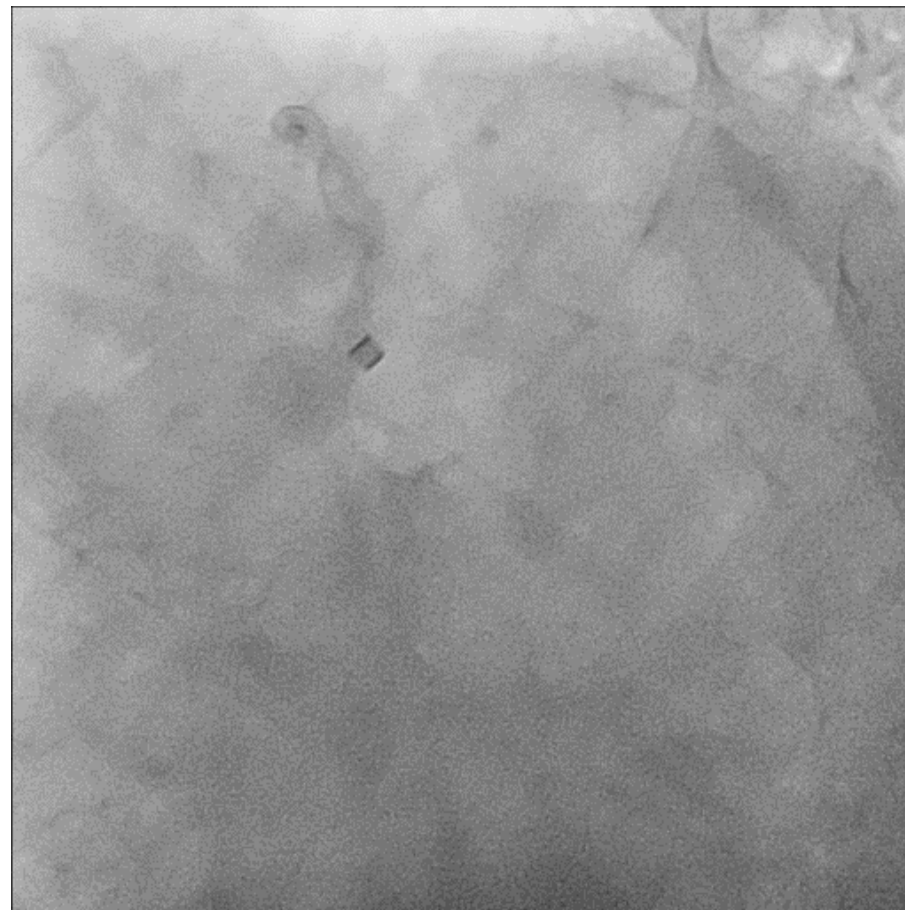
LAO CRA 60/30

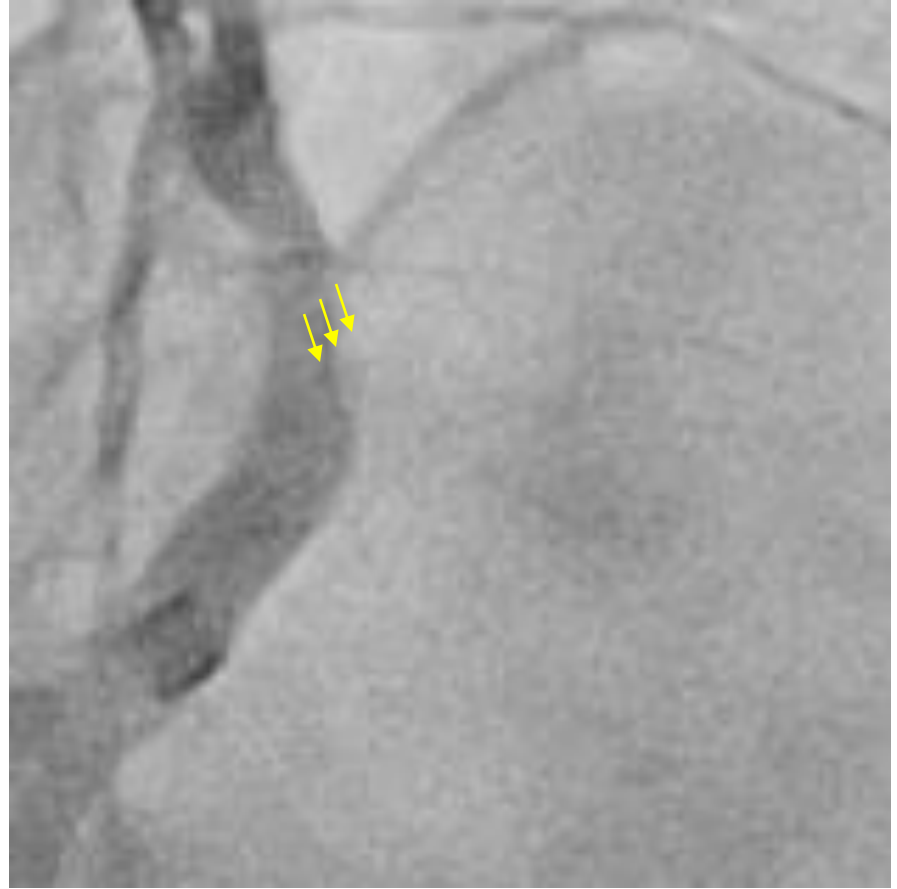
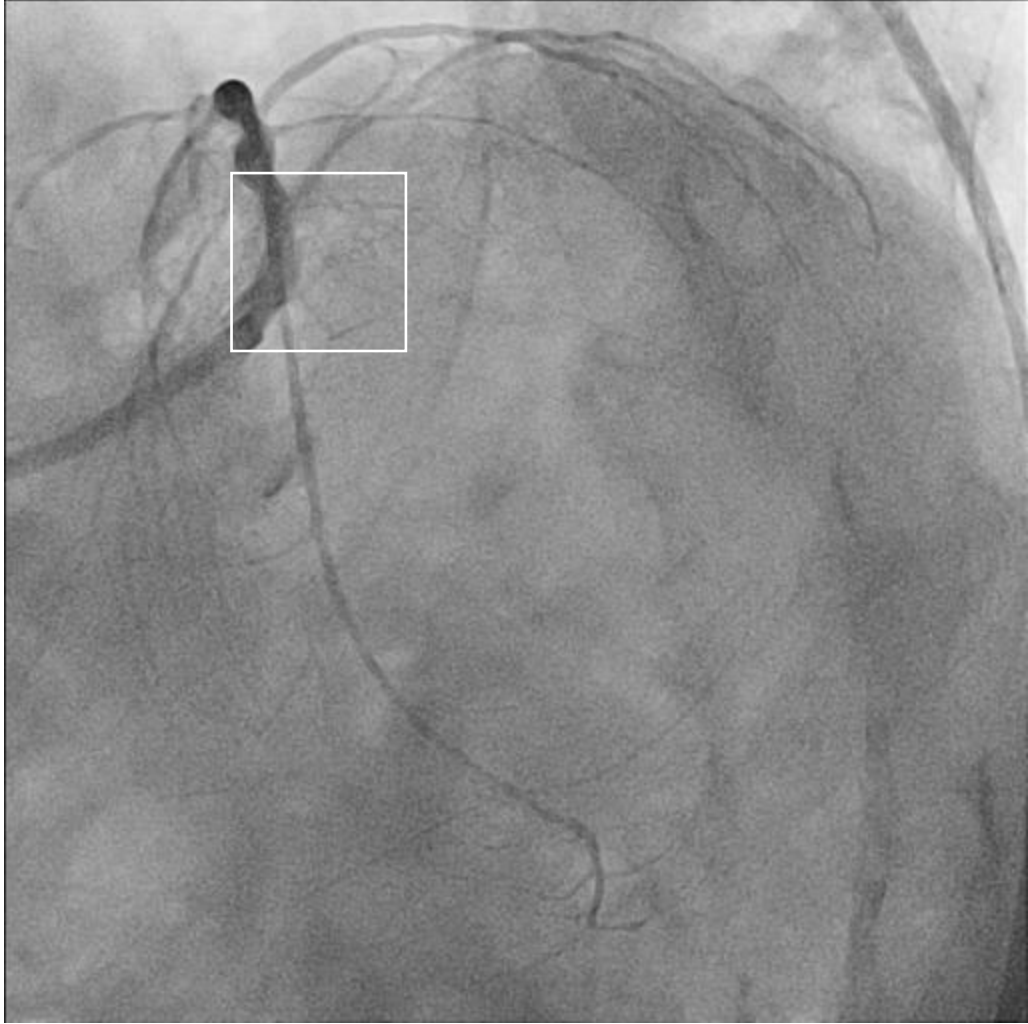


AP CAU 0 /30



LAO CAU 60 /30

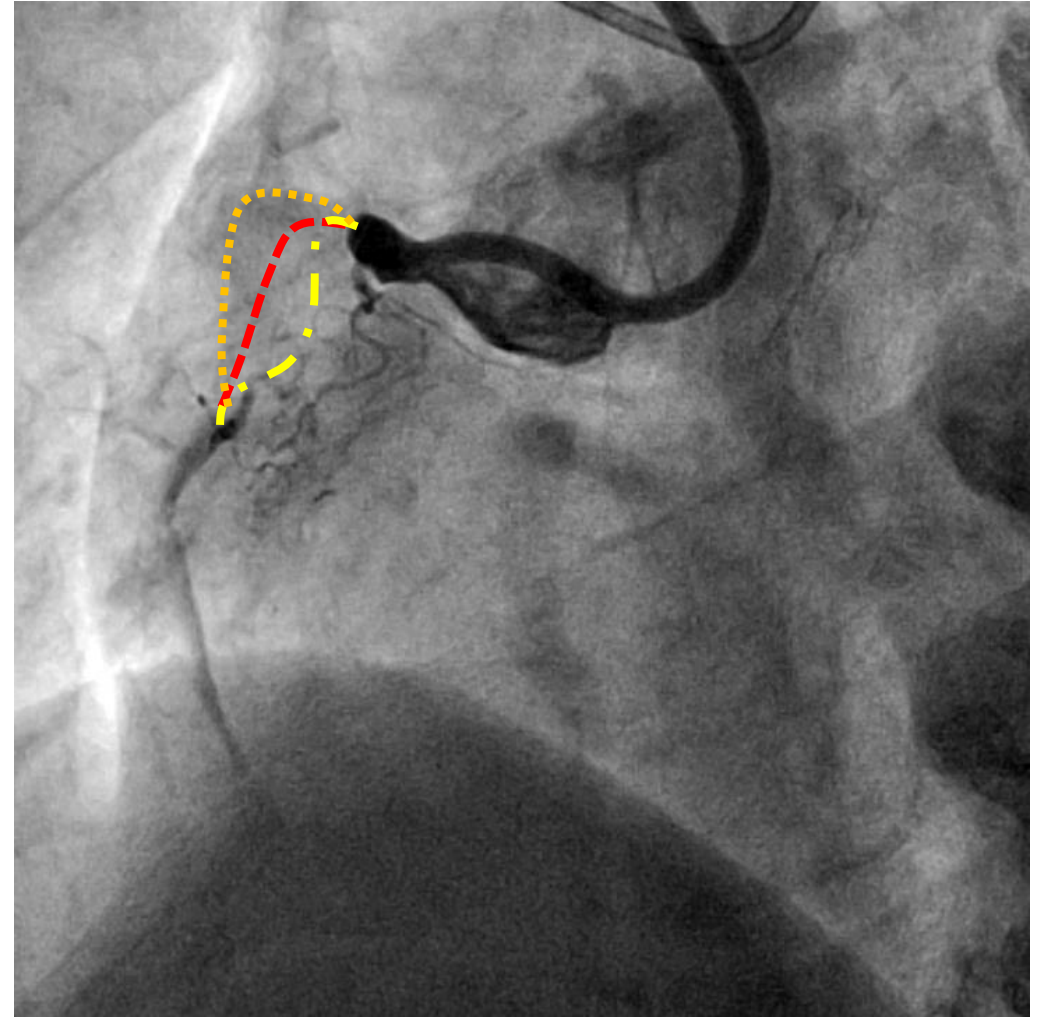
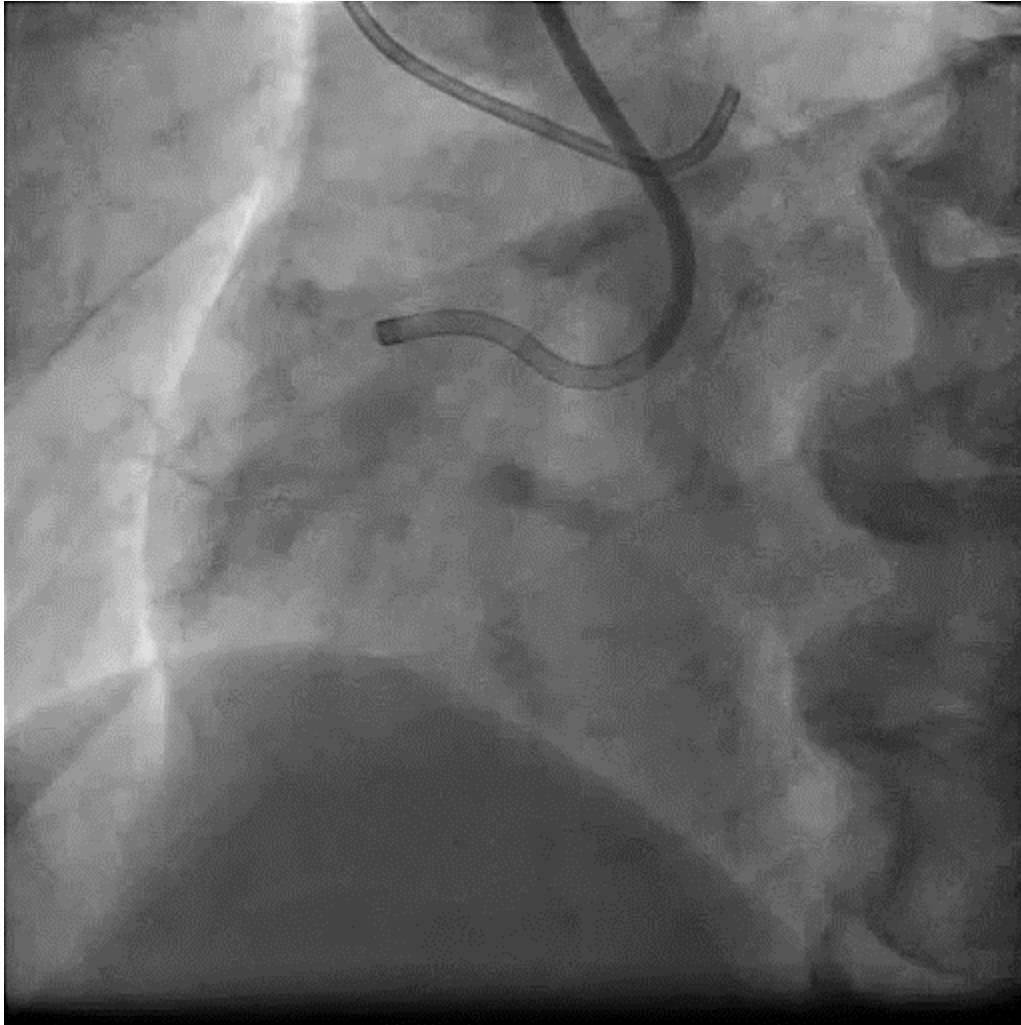




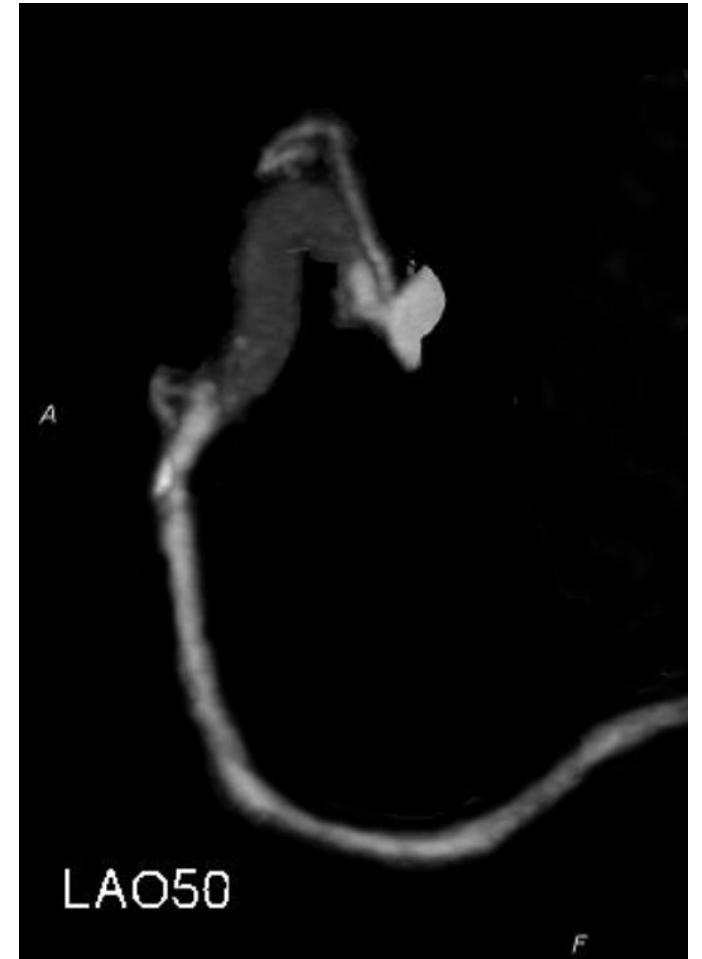
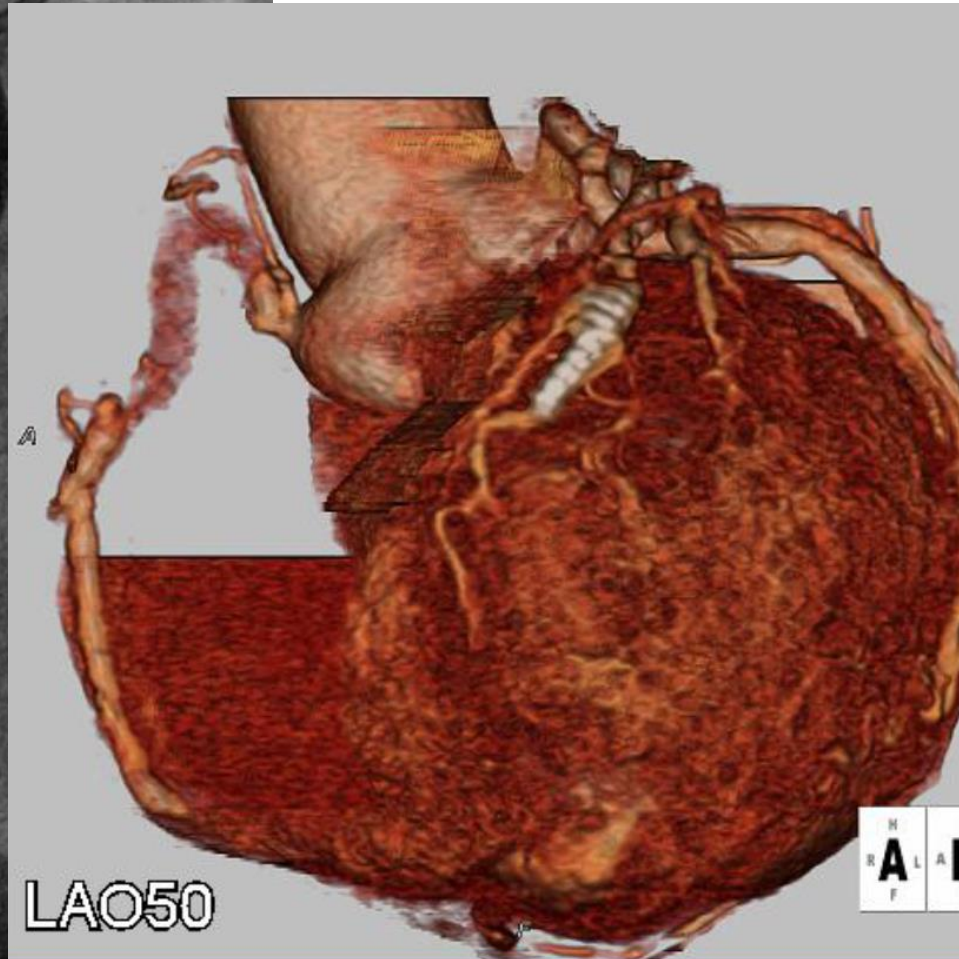
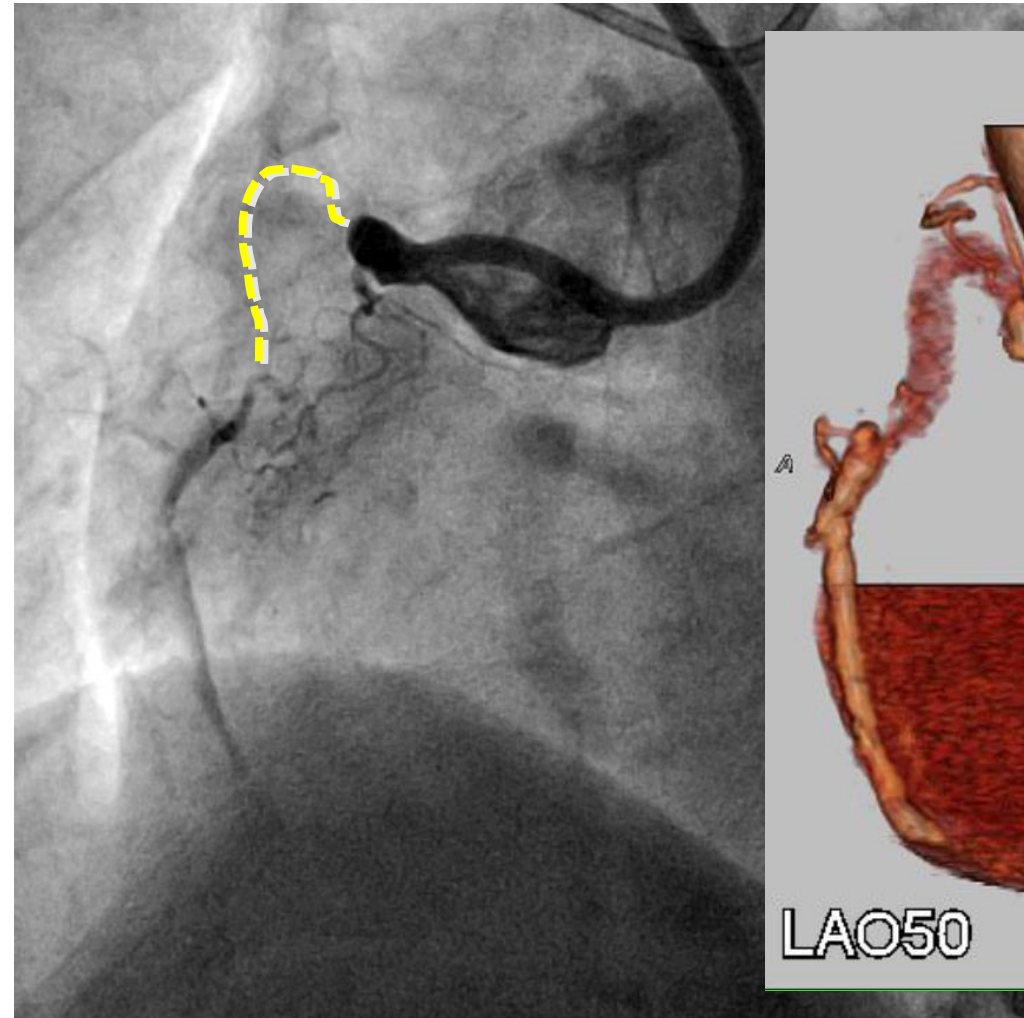
❑ Proximal Cap Ambiguity

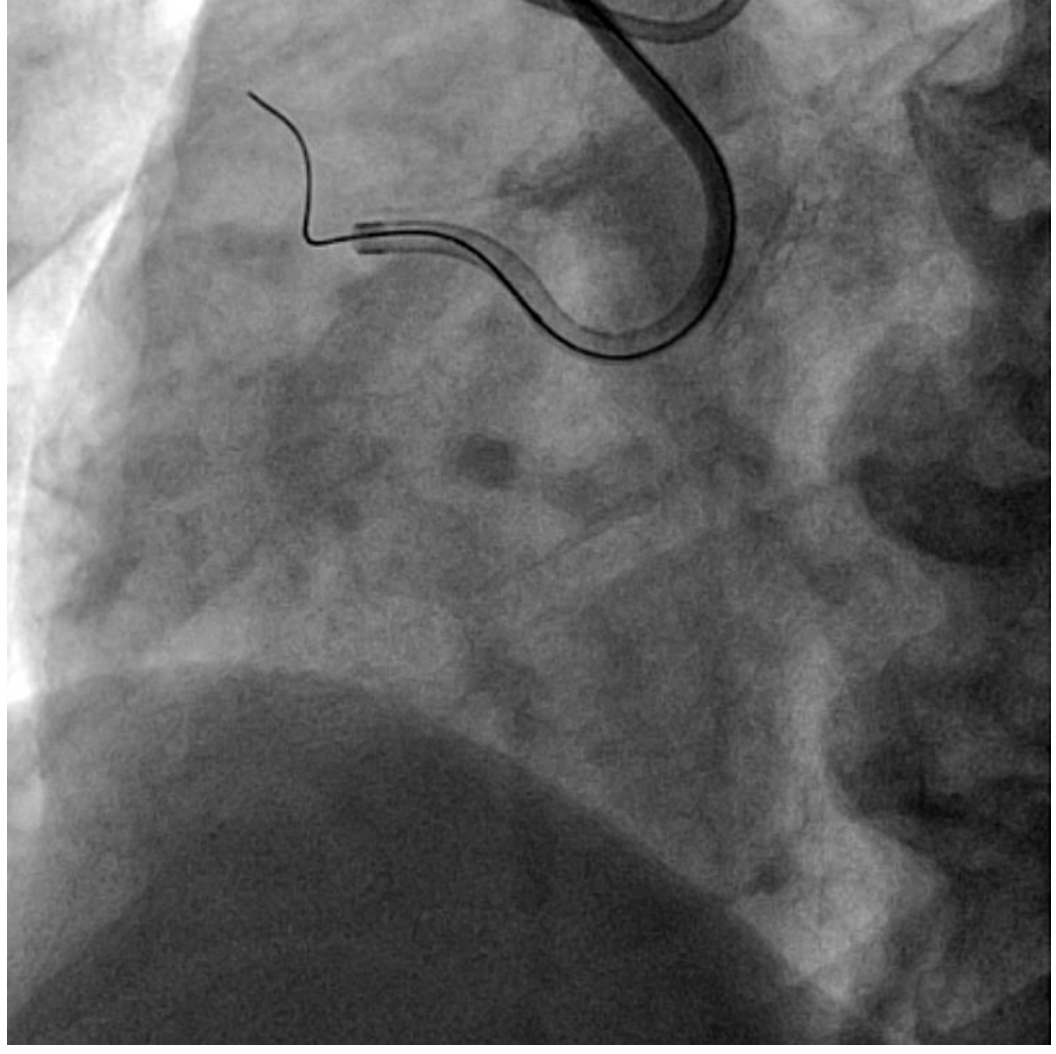
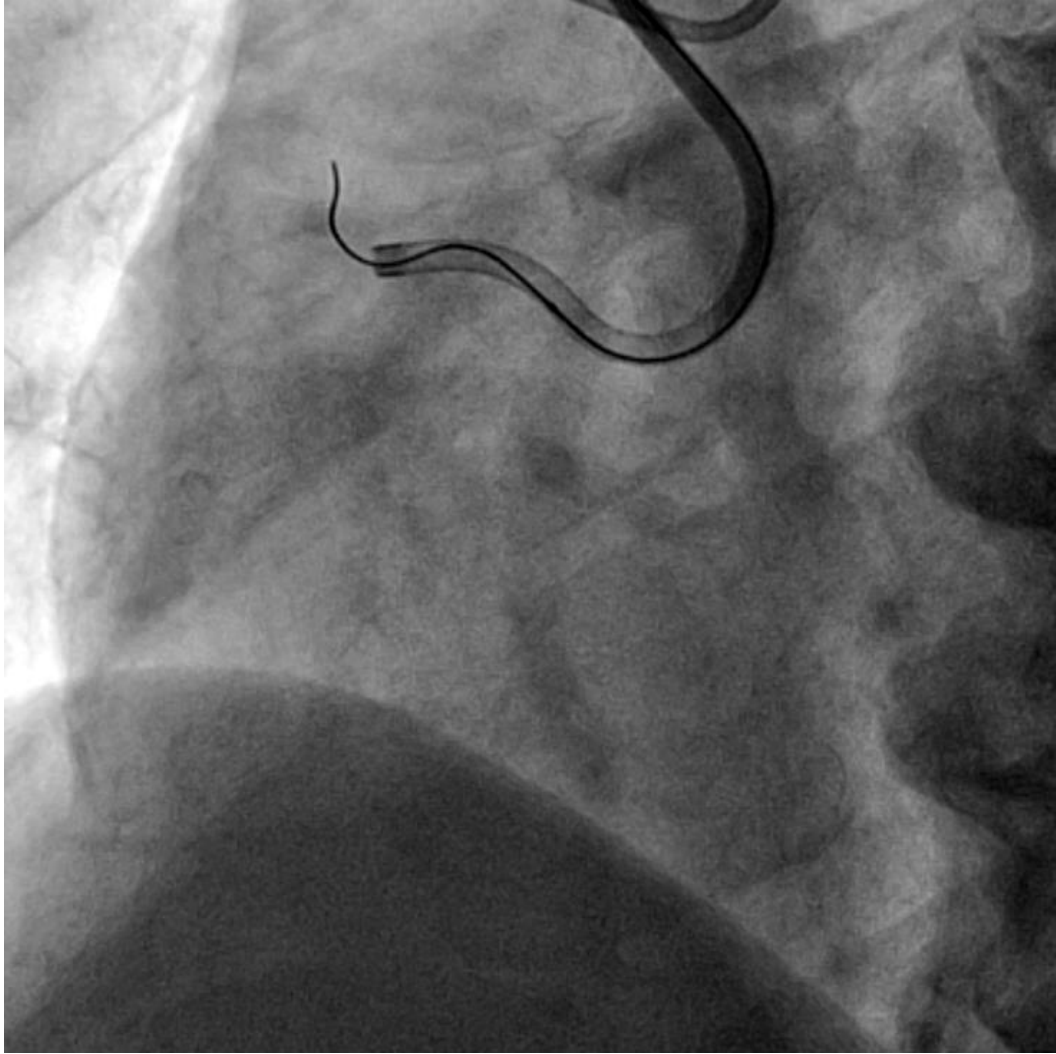
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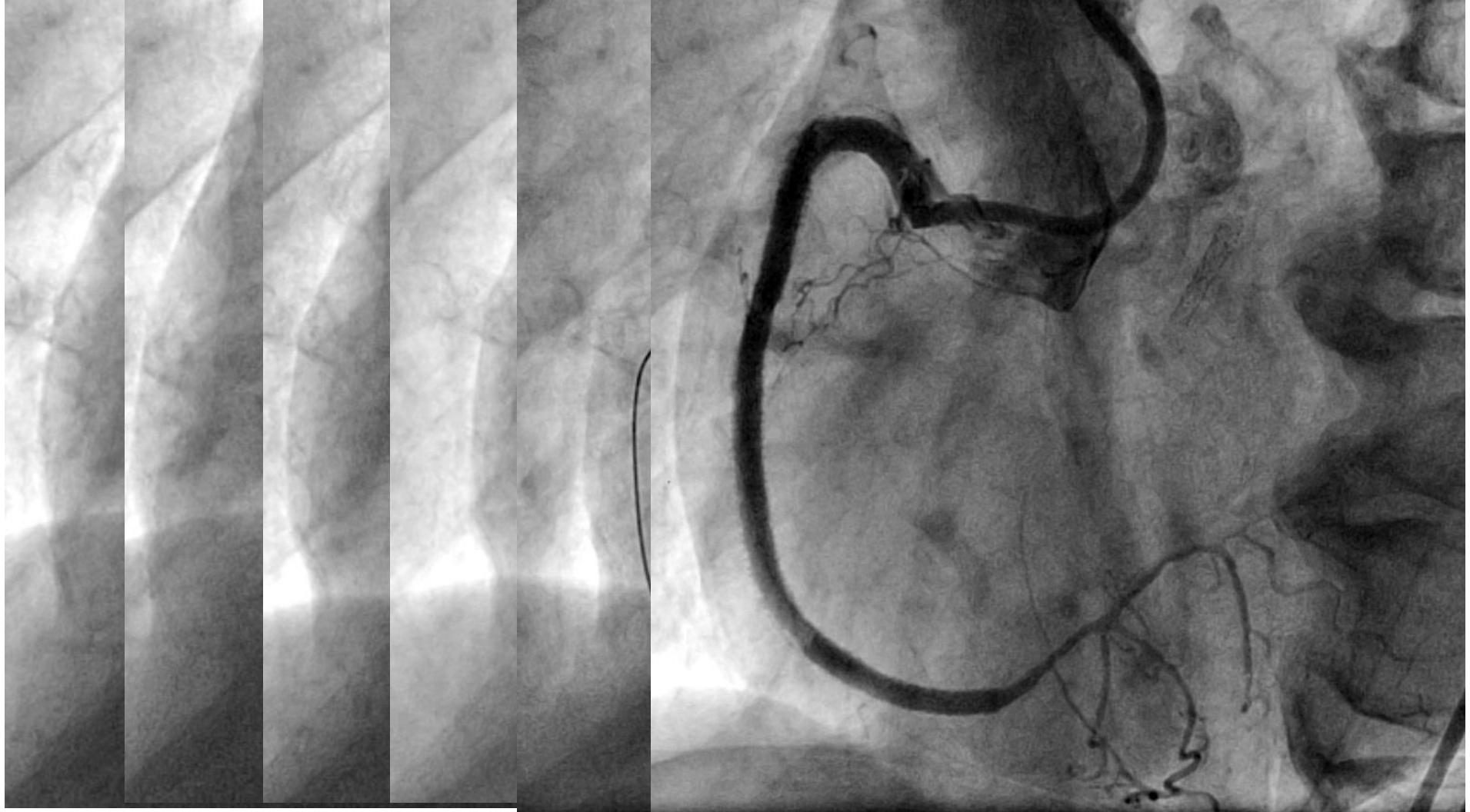
Coronary CT angiography to clarify the proximal cap and vessel anatomy



Coronary CT

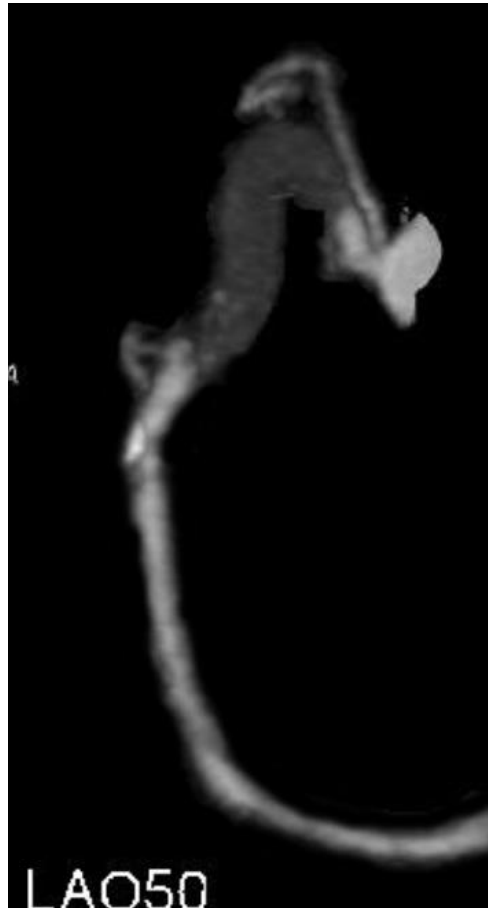




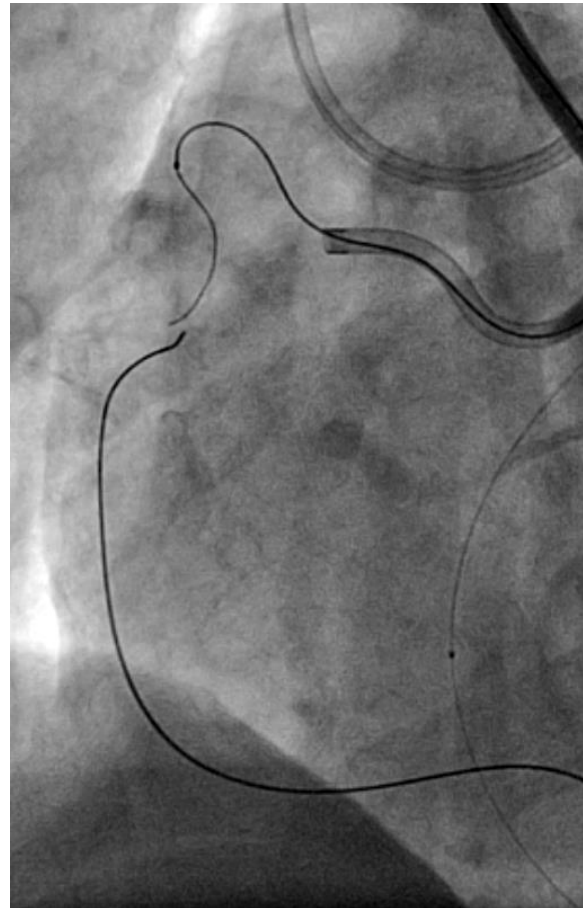




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Summary

- ❑ For Antegrade wiring, a perpendicular view is important. Finding out about it before the procedure can lead to a successful procedure.
- ❑ At present, it is useful to examine them using cardiac CT, but in the future software will be available to examine them using angiography.
- ❑ In addition to the perpendicular view, a careful analysis of angiography and cardiac CT prior to the CTO-PCI procedure will assist the antegrade procedure in various situations, ex when the entrance of CTO is unknown.

Take Home Message

Antegrade PCI is the basis of CTO-PCI and is safer than the Retrograde procedure.

Preparation is important to increase its success rate, and not only angiogram but also cardiac CT should be used.