

Adjunctive Modalities in the Cath Lab Make My Life Easier

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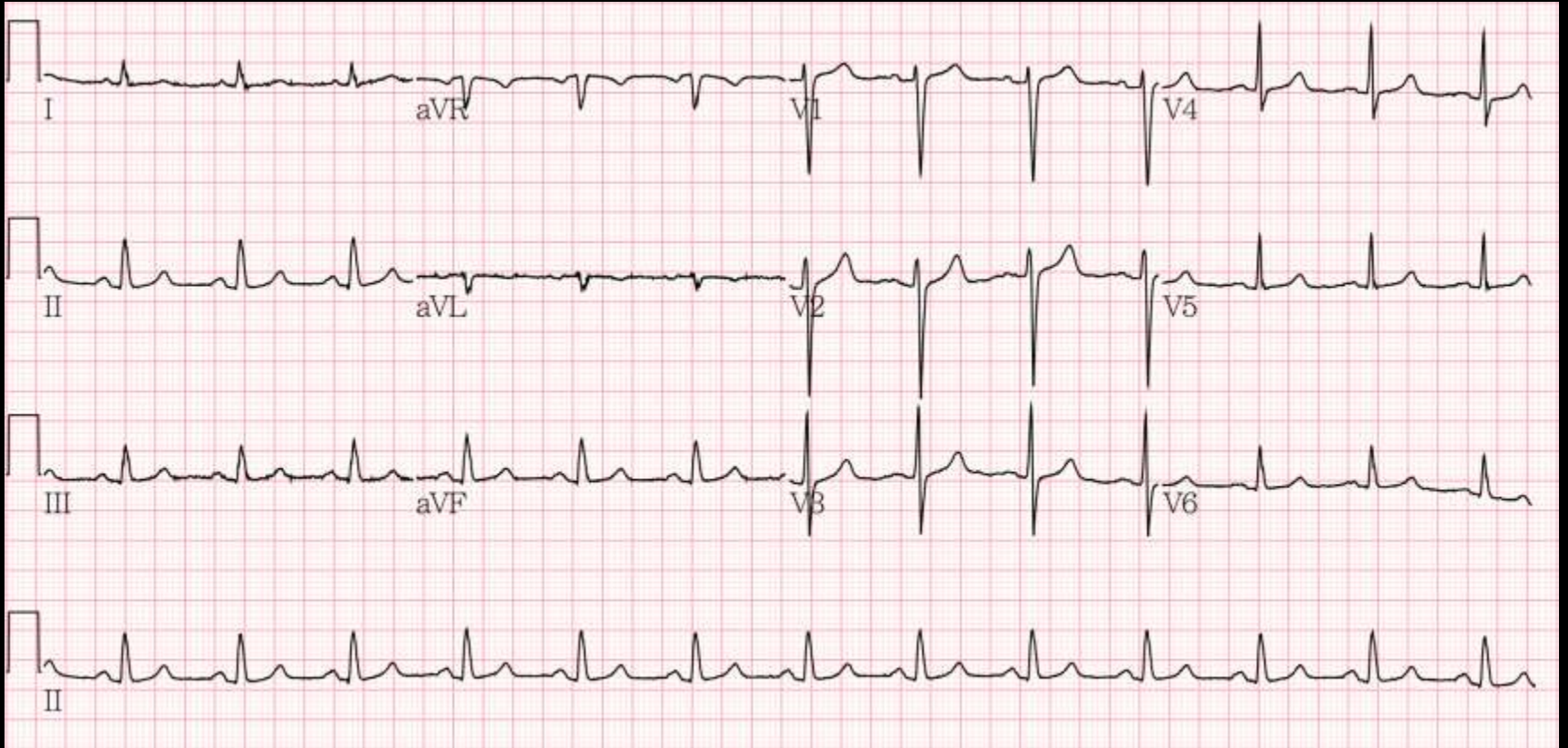
National Taiwan University Hospital, Taipei, Taiwan

2016/04/26

Case Summary

- **61-year-old lady.**
- **Progressive effort angina for 1 year**
- **Underlying diseases: DM, hypertension, CKD stage 5 (Cre 6.5 mg/dL) .**
- **Referred from my nephrologist colleague for suspected CAD in 2014/09.**

ECG

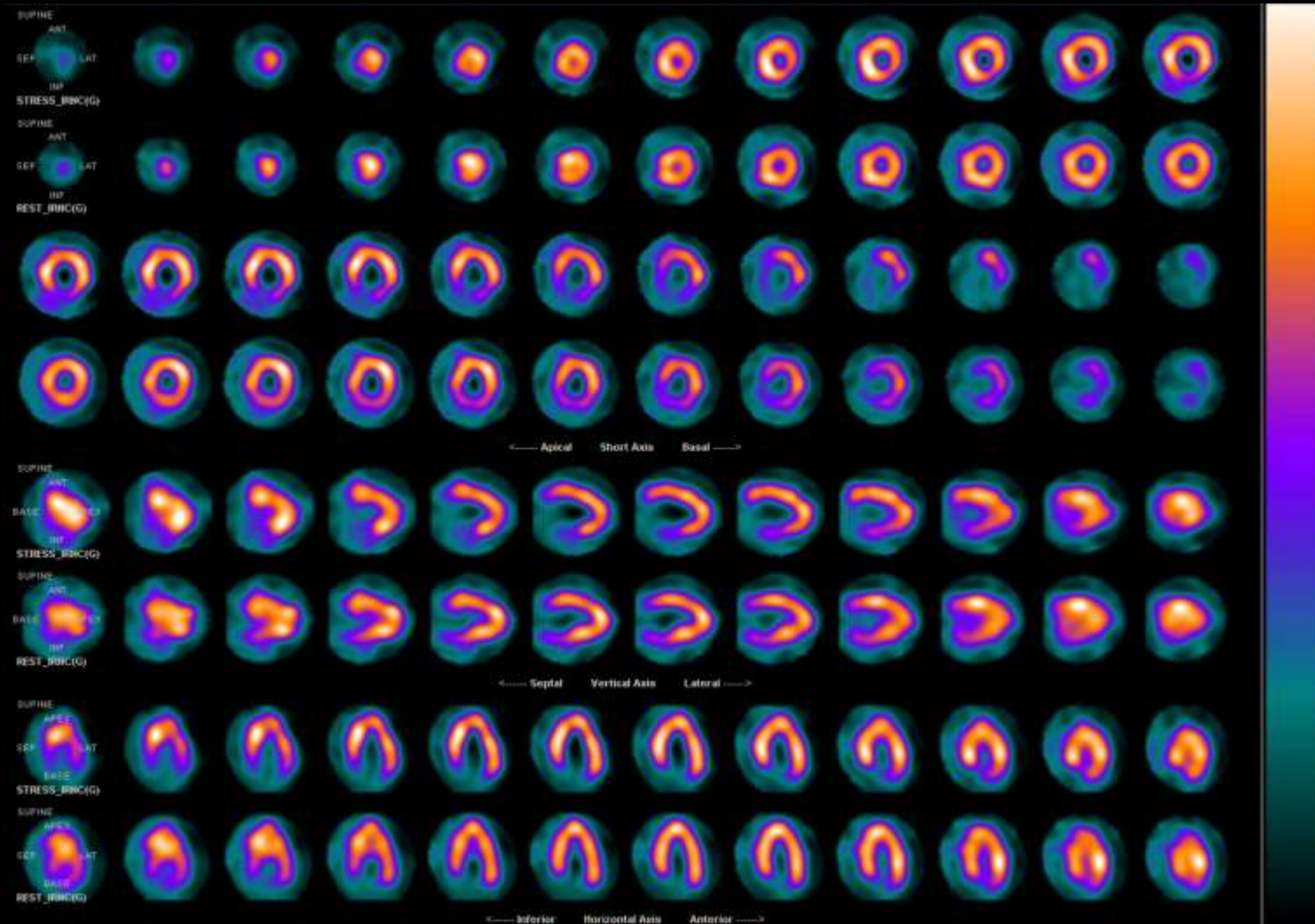


CXR

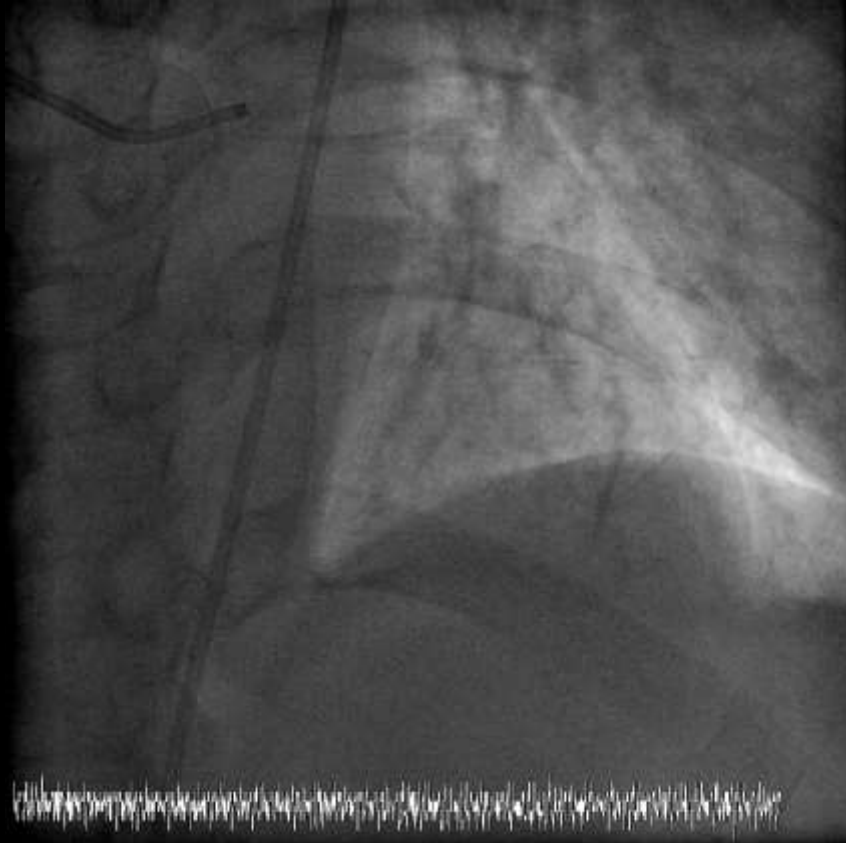
R16



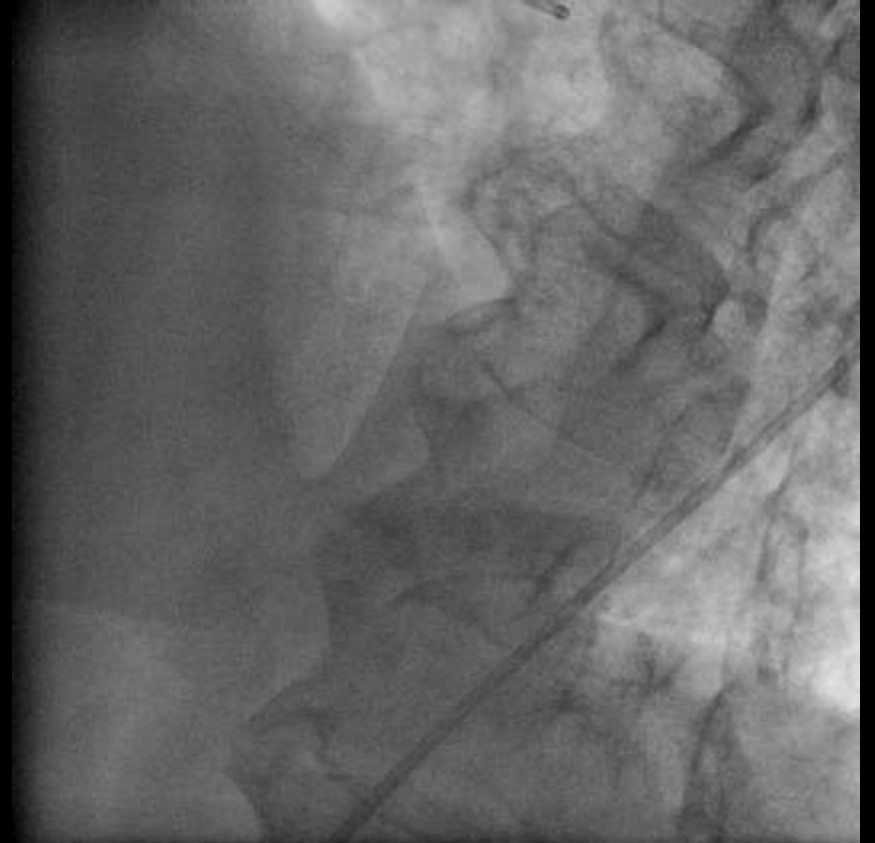
Thallium MPI (dipyridamole/resting)



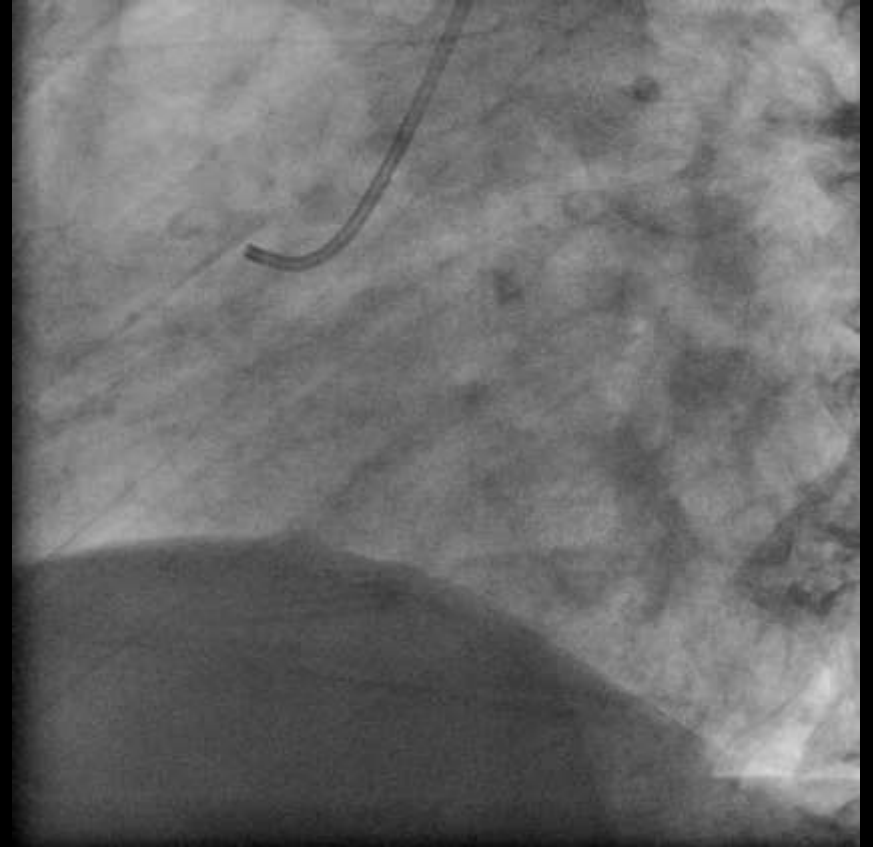
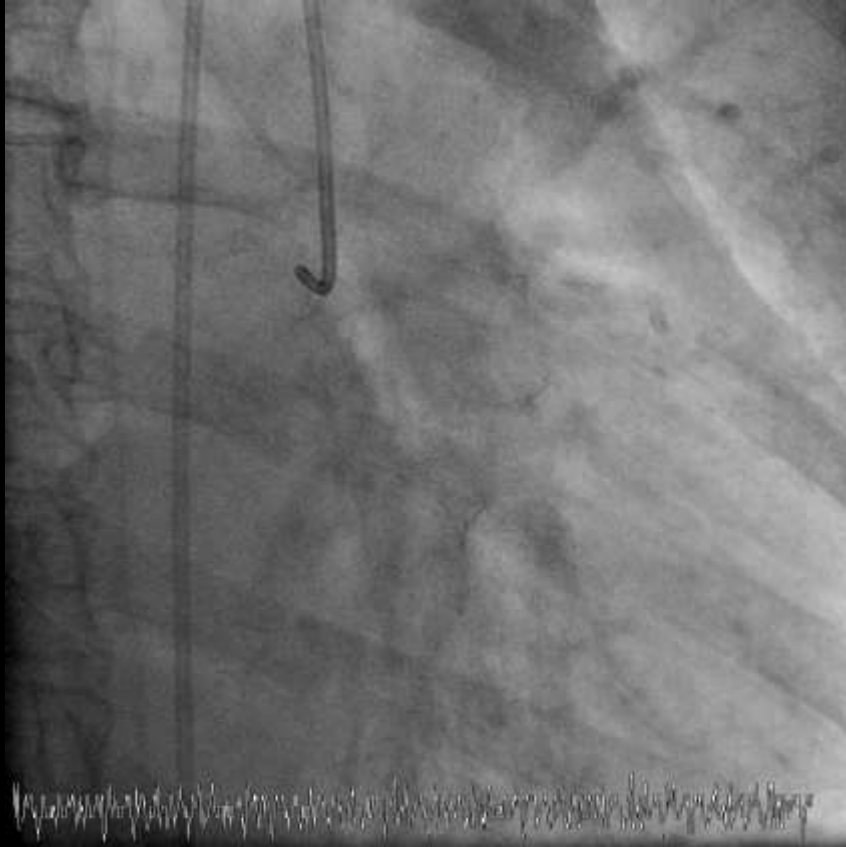
LCA



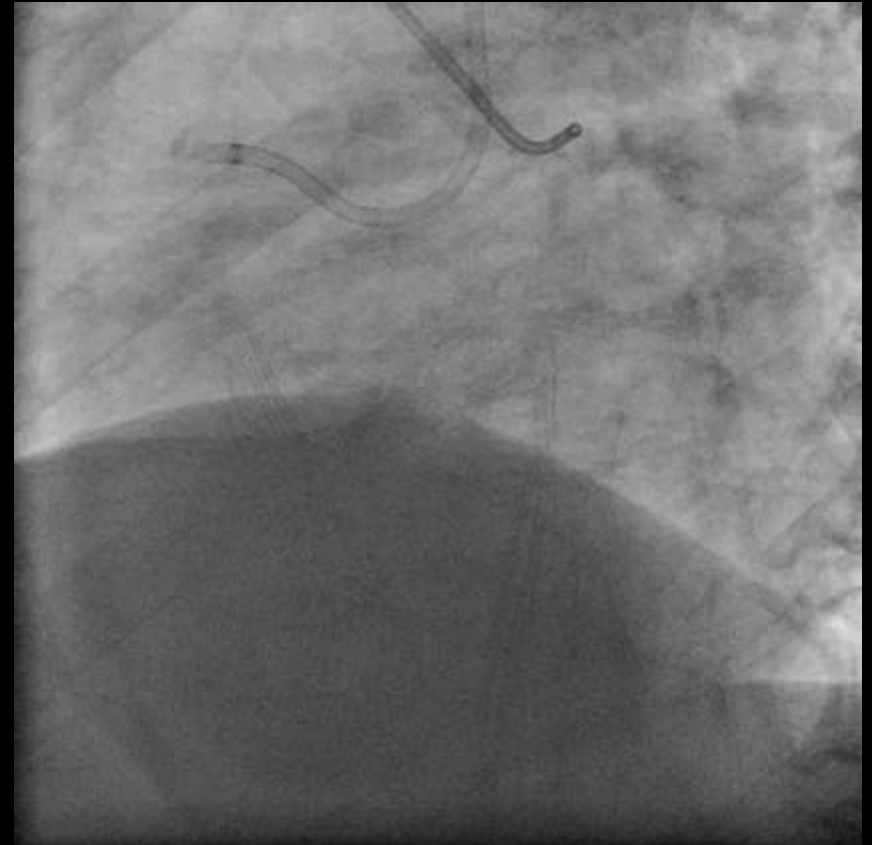
LCA



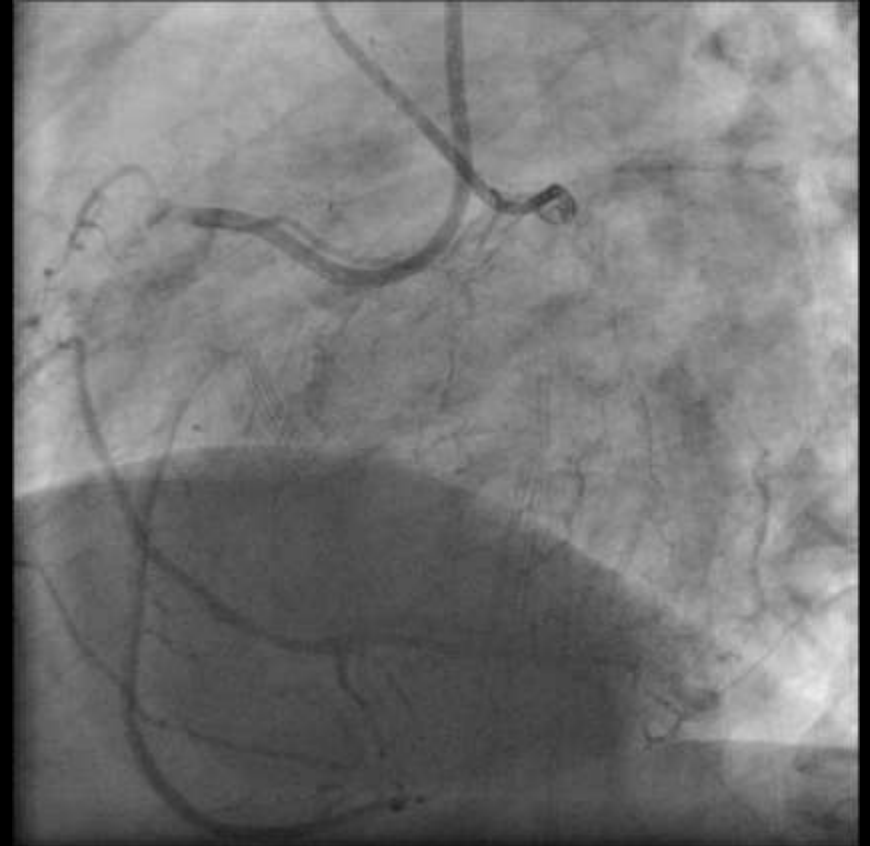
RCA



Dual Injection




Dual Injection



J-CTO Score

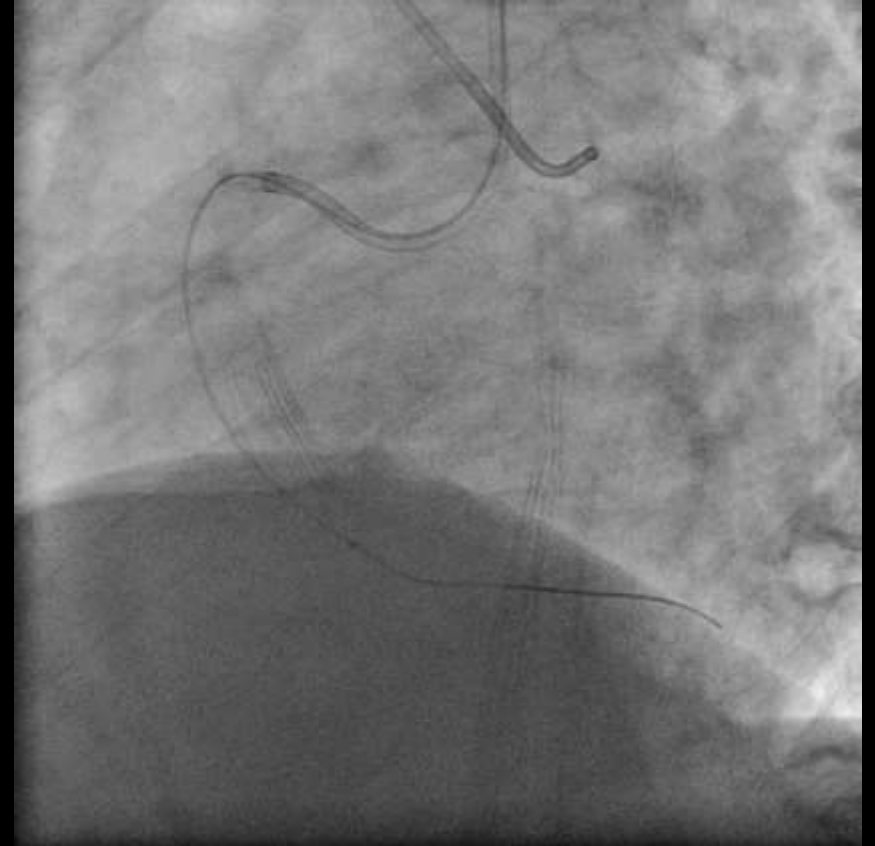
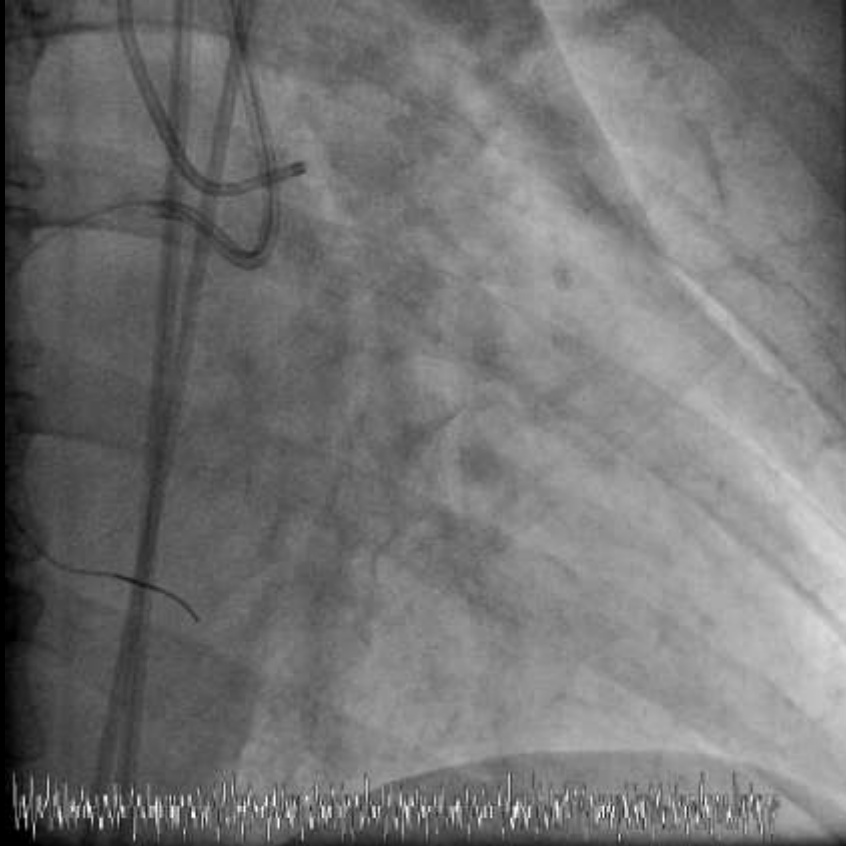
- Tapered stump: 0
- Calcification: 1
- Bending > 45 degrees: 1?
- Occlusion length >20 mm: 0
- Re-try lesion: 0

J-CTO SCORE SHEET		Version 1.0
Variables and definitions		
Tapered	Blunt	
	Entry with any tapered tip or dimple indicating direction of true lumen is categorized as "tapered".	Entry shape <input type="checkbox"/> Tapered (0) <input type="checkbox"/> Blunt (1) point
Calcification	Regardless of severity, 1 point is assigned if any evident calcification is detected within the CTO segment.	Calcification <input type="checkbox"/> Absence (0) <input type="checkbox"/> Presence (1) point
Bending >45degrees	One point is assigned if bending > 45 degrees is detected within the CTO segment. Any tortuosity separated from the CTO segment is excluded from this assessment.	Bending >45" <input type="checkbox"/> Absence (0) <input type="checkbox"/> Presence (1) point
Occlusion length	Using good collateral images, try to measure "true" distance of occlusion, which tends to be shorter than the first impression.	Occl.Length <input type="checkbox"/> <20mm (0) <input type="checkbox"/> ≥20mm (1) point
Re-try lesion	Is this Re-try (2 nd attempt) lesion ? (previously attempted but failed)	Re-try lesion <input type="checkbox"/> No (0) <input type="checkbox"/> Yes (1) point
Category of difficulty (total point) <input type="checkbox"/> easy (0) <input type="checkbox"/> Intermediate (1) <input type="checkbox"/> difficult (2) <input type="checkbox"/> very difficult (≥3)		Total <input type="checkbox"/> points

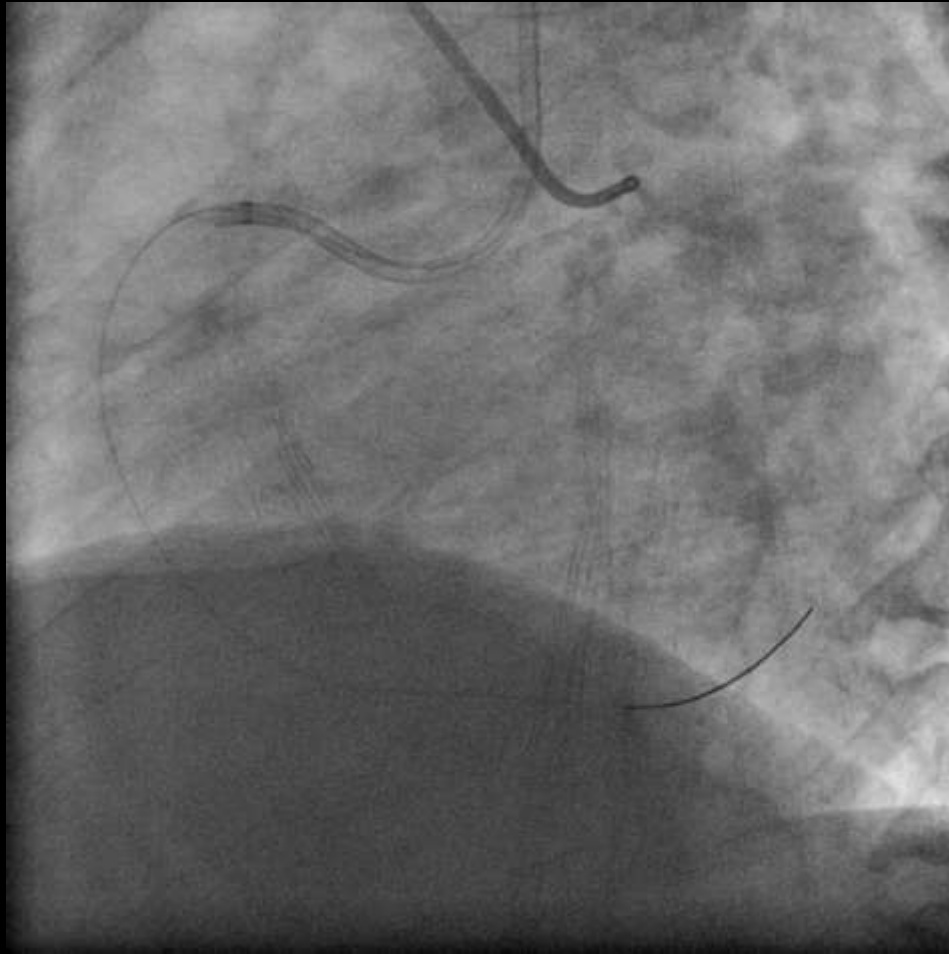
Strategy

- **Antegrade approach first**
- **Bilateral femoral approach**
- **GC: Medtronic 7F AL1 (SH)**
- **GW: Asahi Fielder FC**
- **MC: BSC Excelsior**

Confirm Wire Position (within minutes)



After Successful Wiring

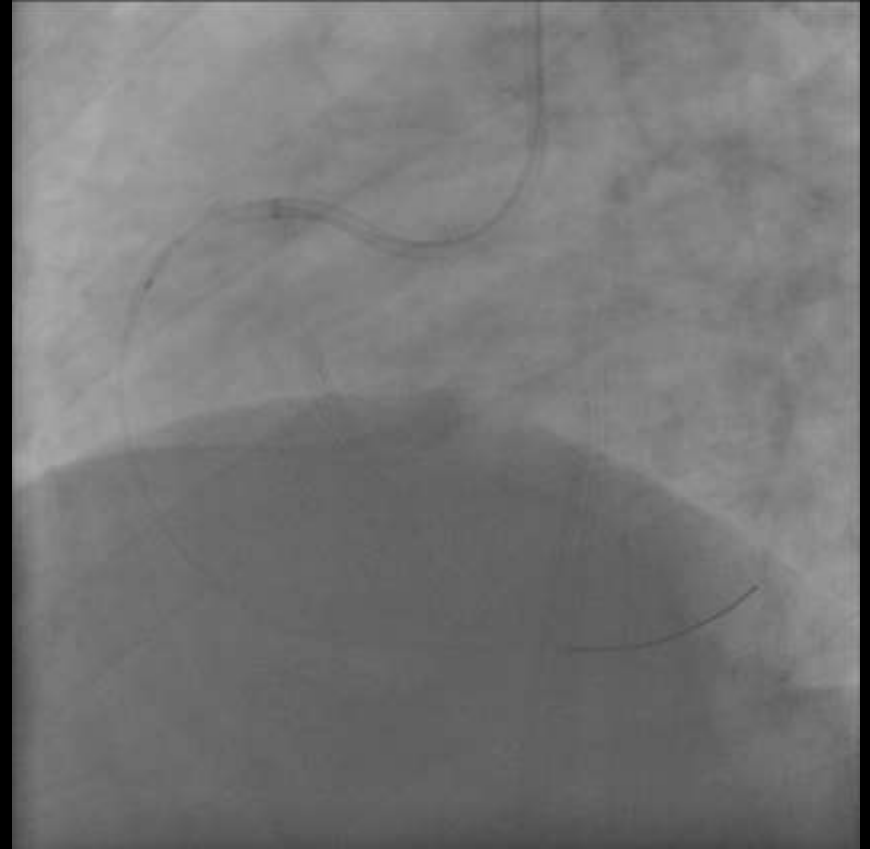
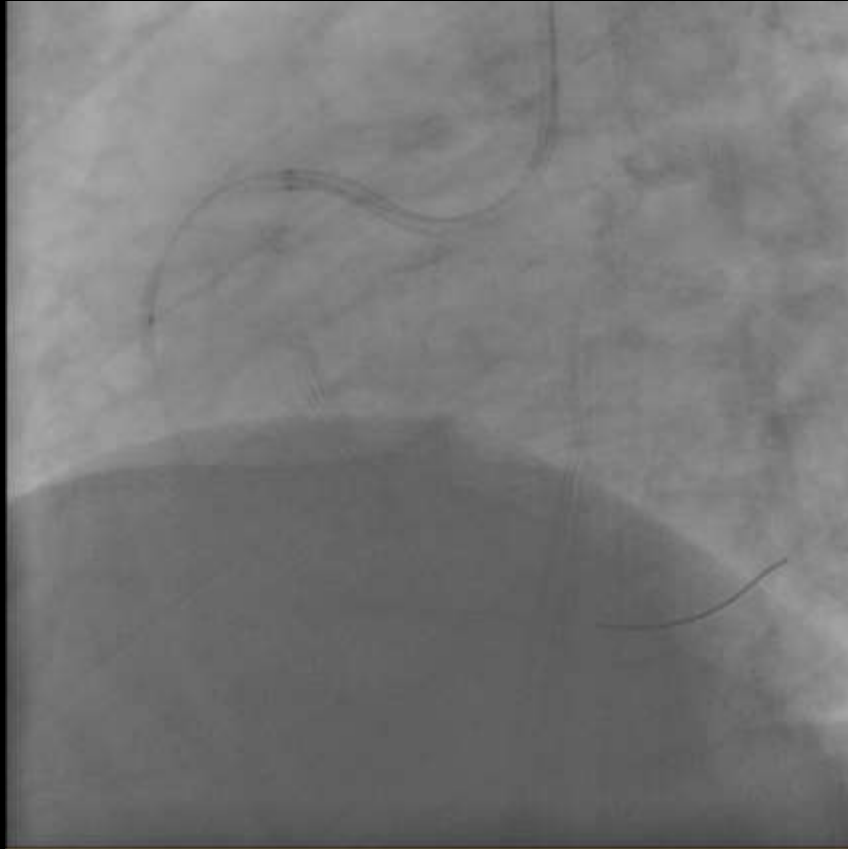


Questions

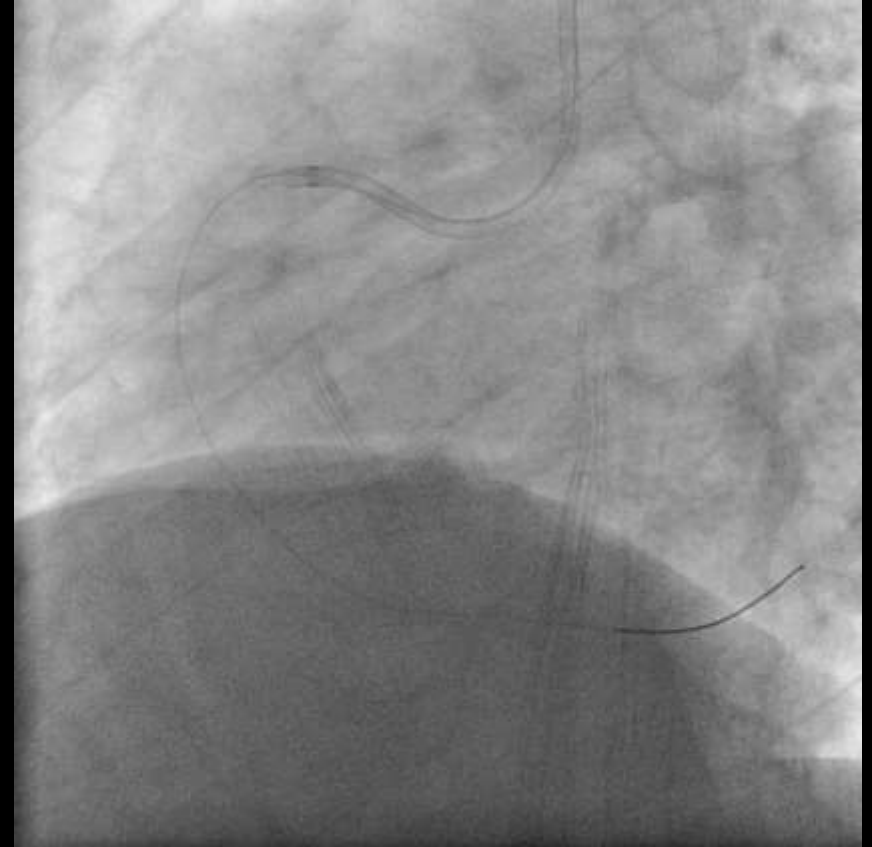
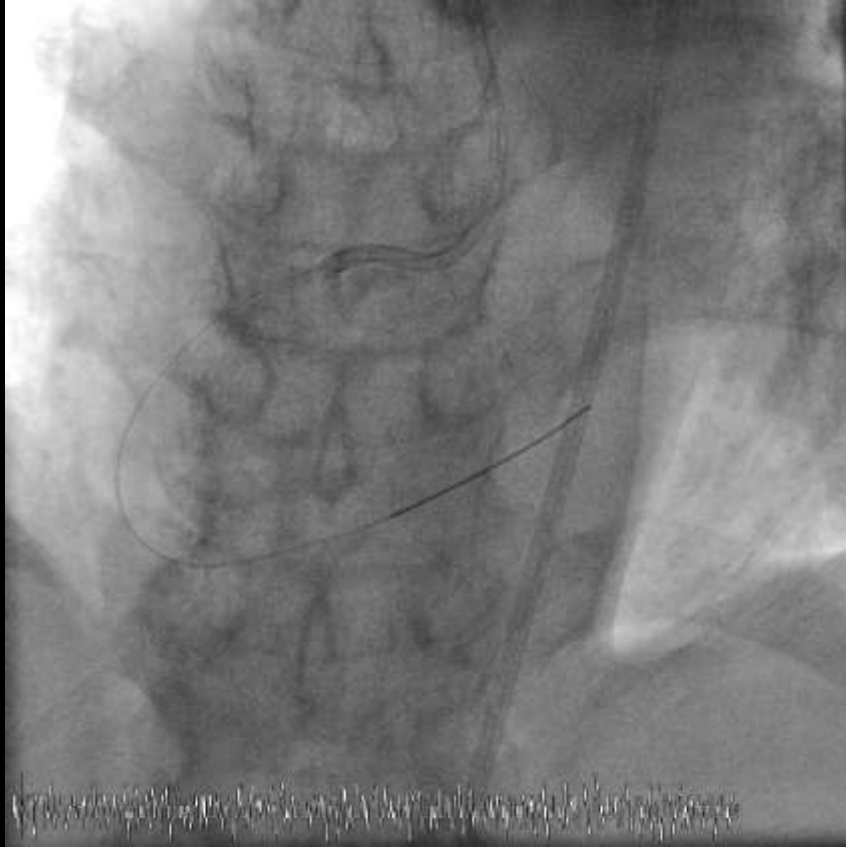
- **How to treat?**
 - **Vessel size?**
 - **Lesion length?**
 - **Debaking?**

Intravascular imaging study!

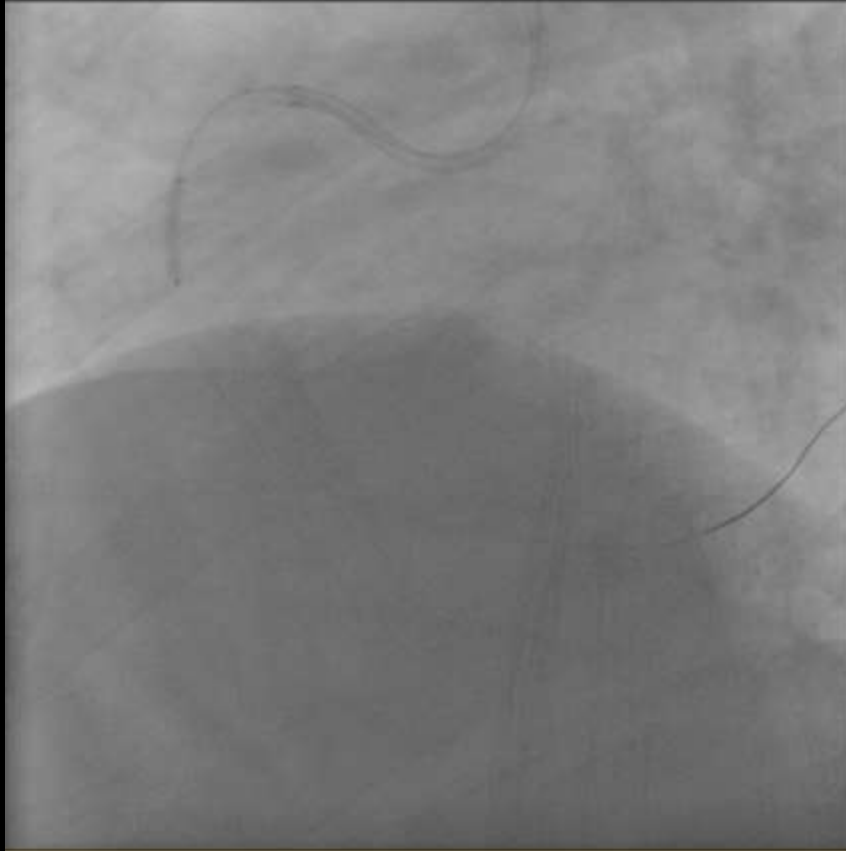
Pre-dilation 1.5mm



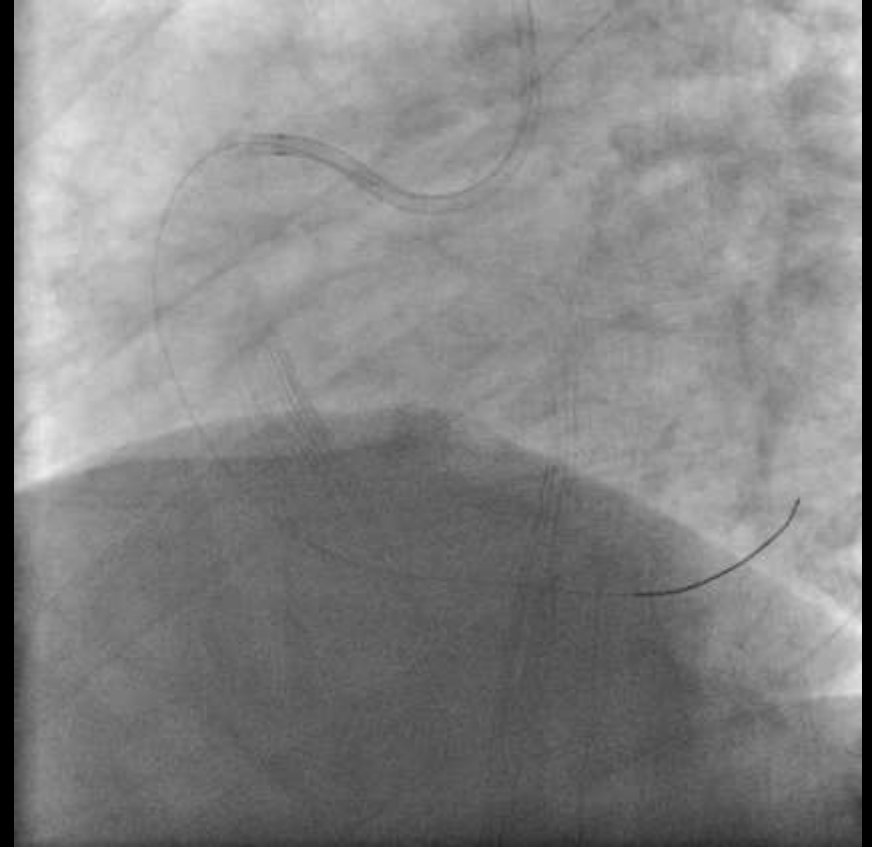
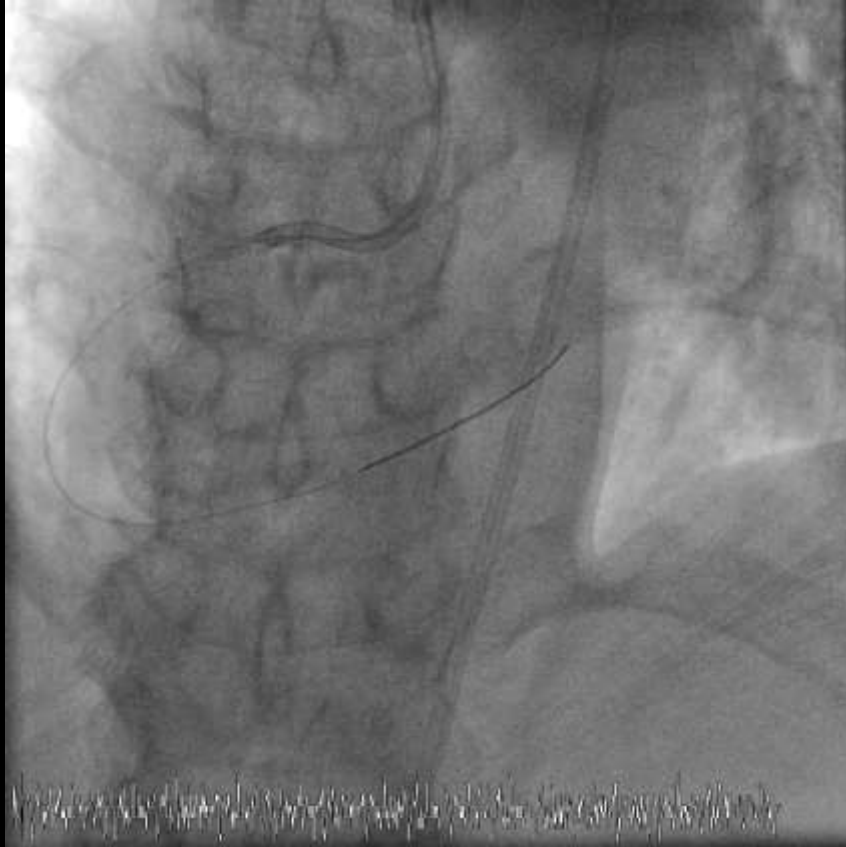
After 1.5mm Pre-dilation

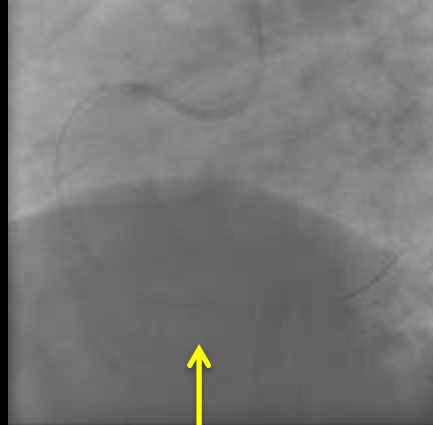
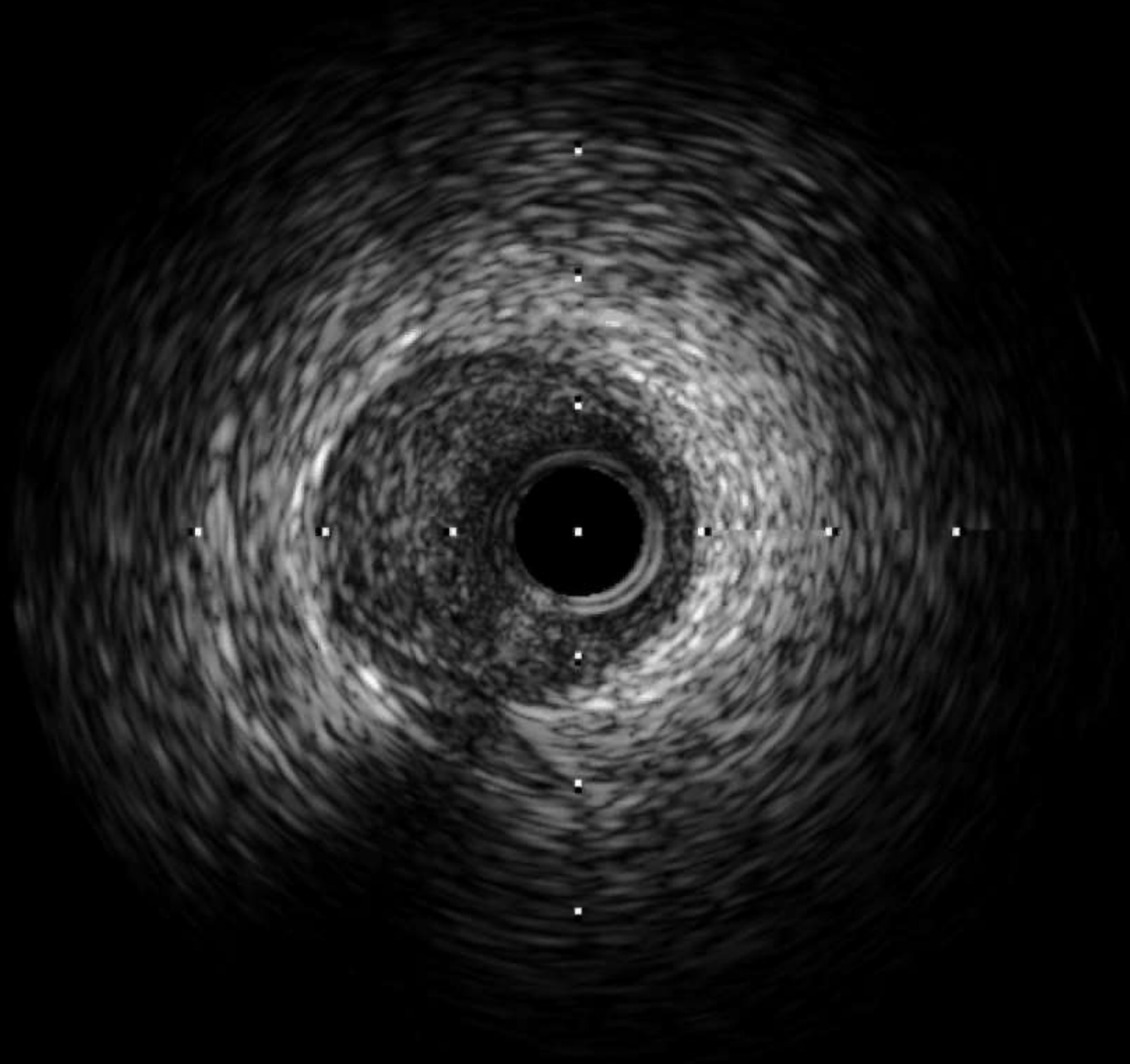


Pre-dilation 2.0mm

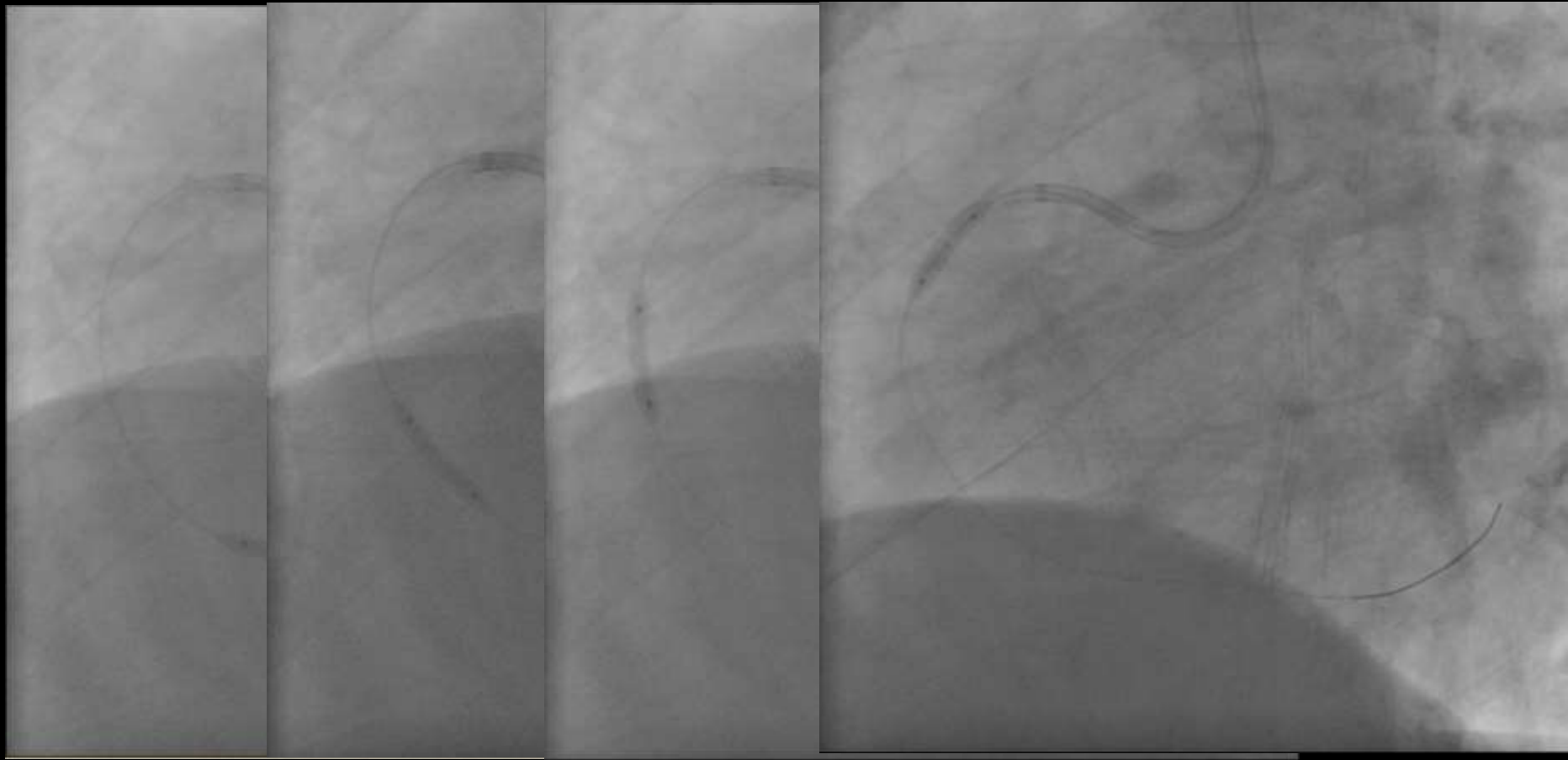


After 2.0mm Pre-dilation





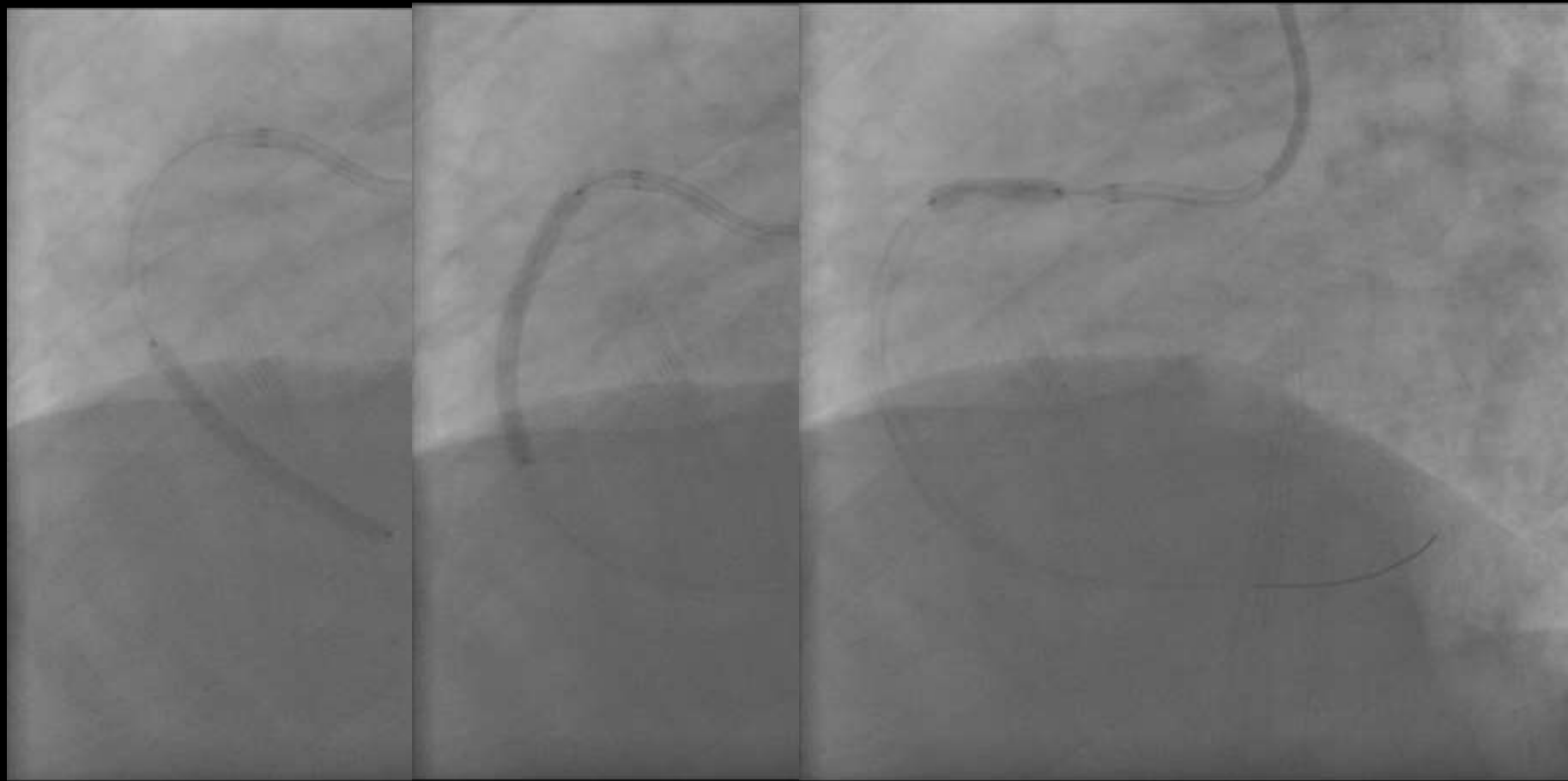
Pre-dilation 3.0mm NC Balloon



Post Pre-dilatation



Stenting

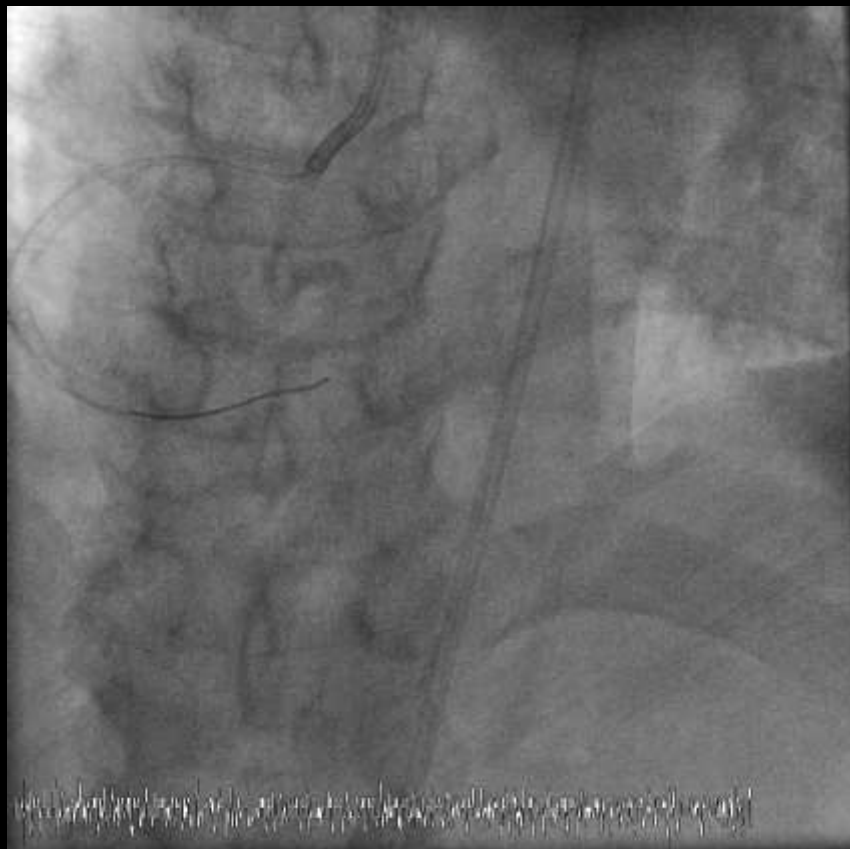


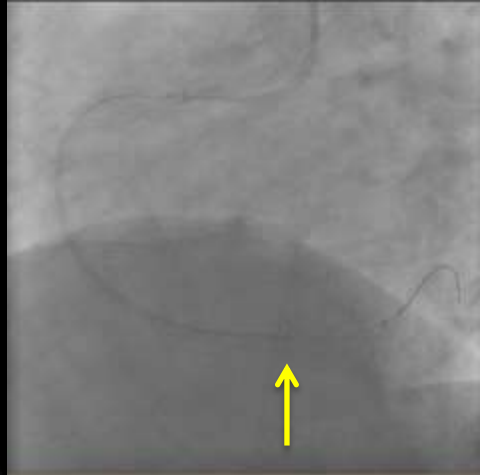
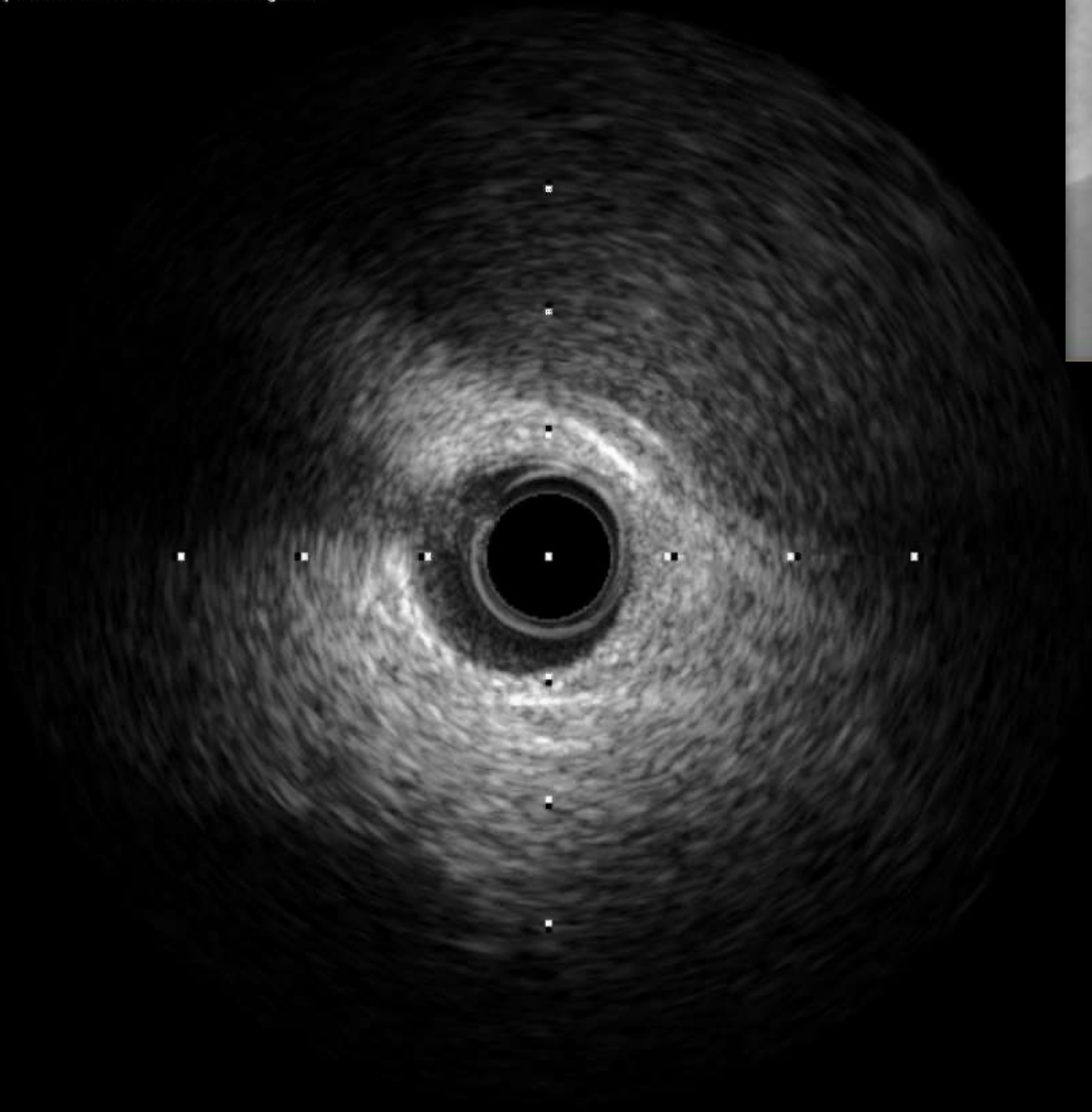
DES 3.0*38mm

DES 3.0*38mm

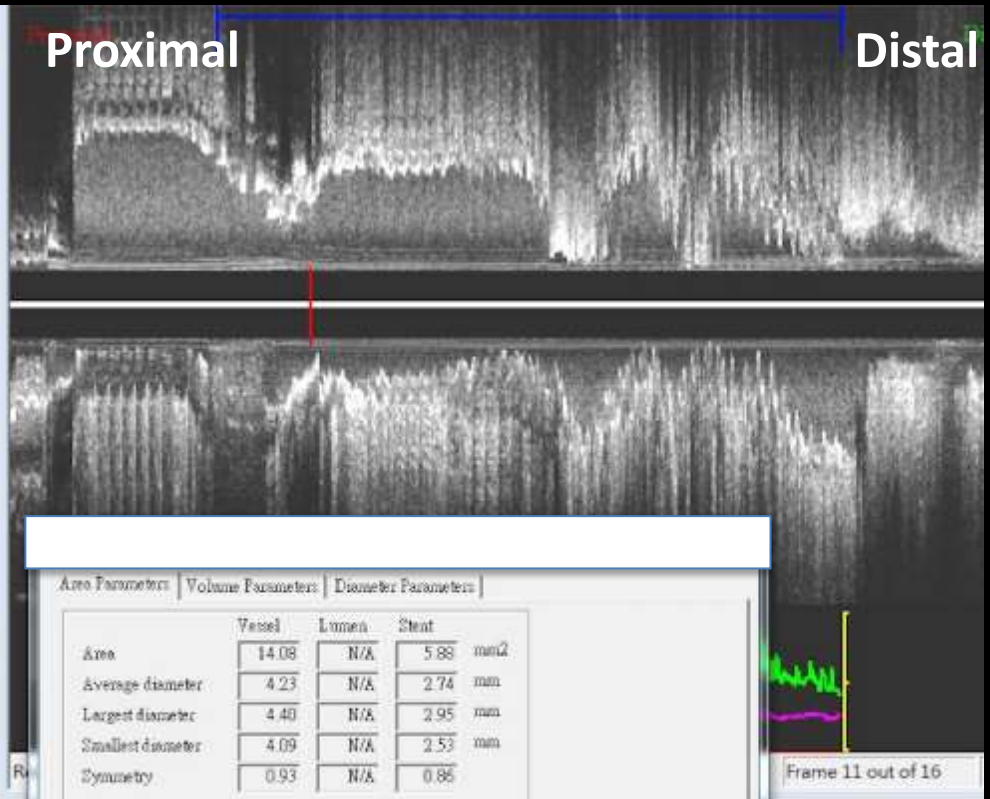
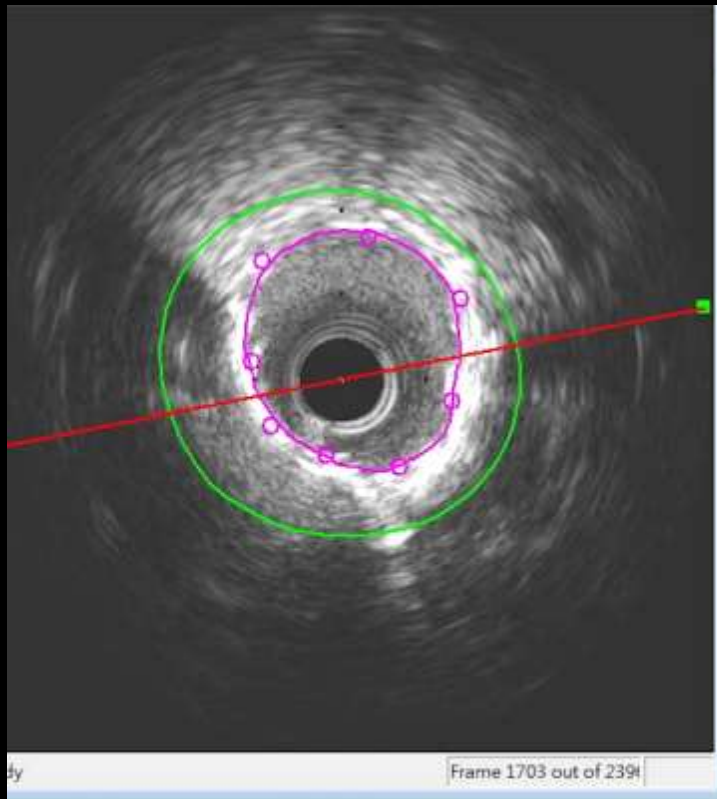
DES 3.0*18mm

After Post-dilation with 3.0mm NC



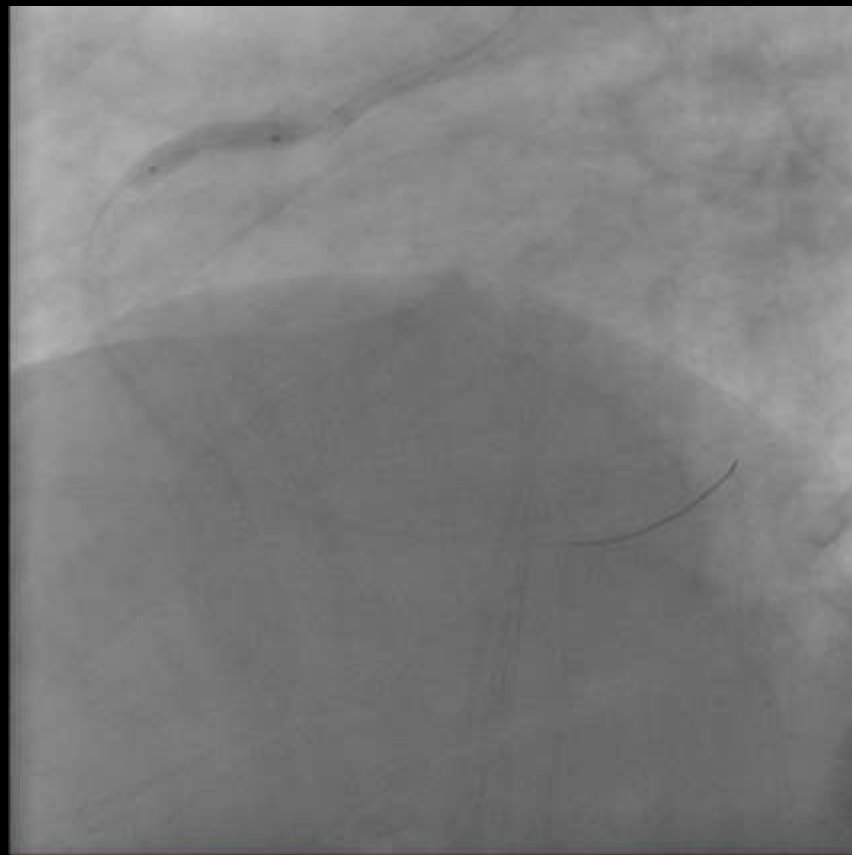
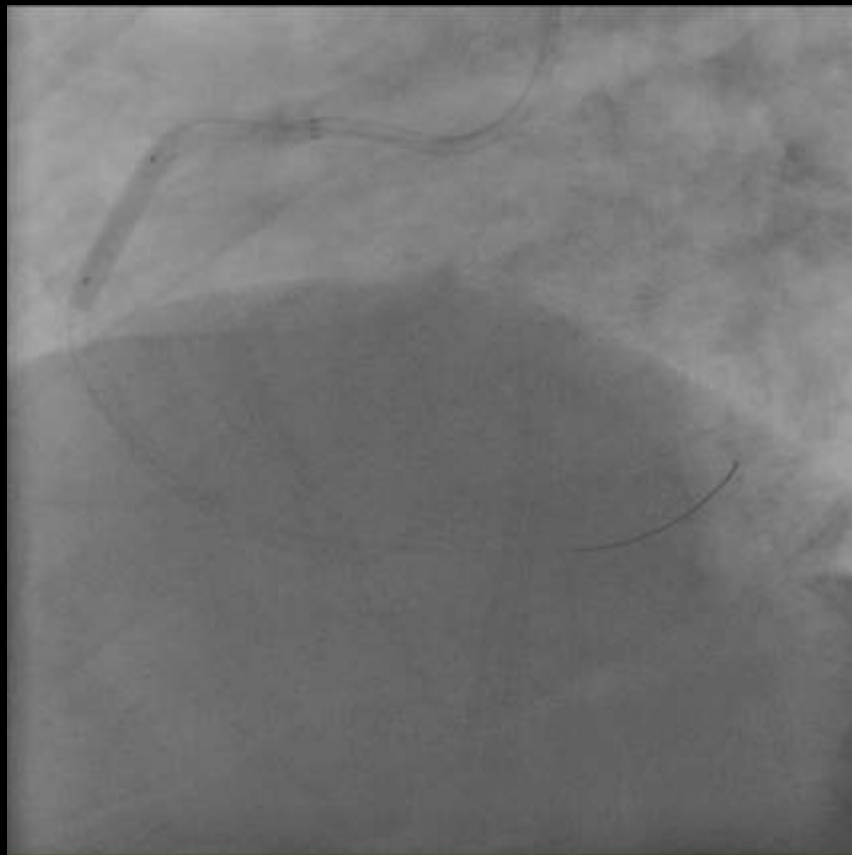


MSA = 5.88mm²

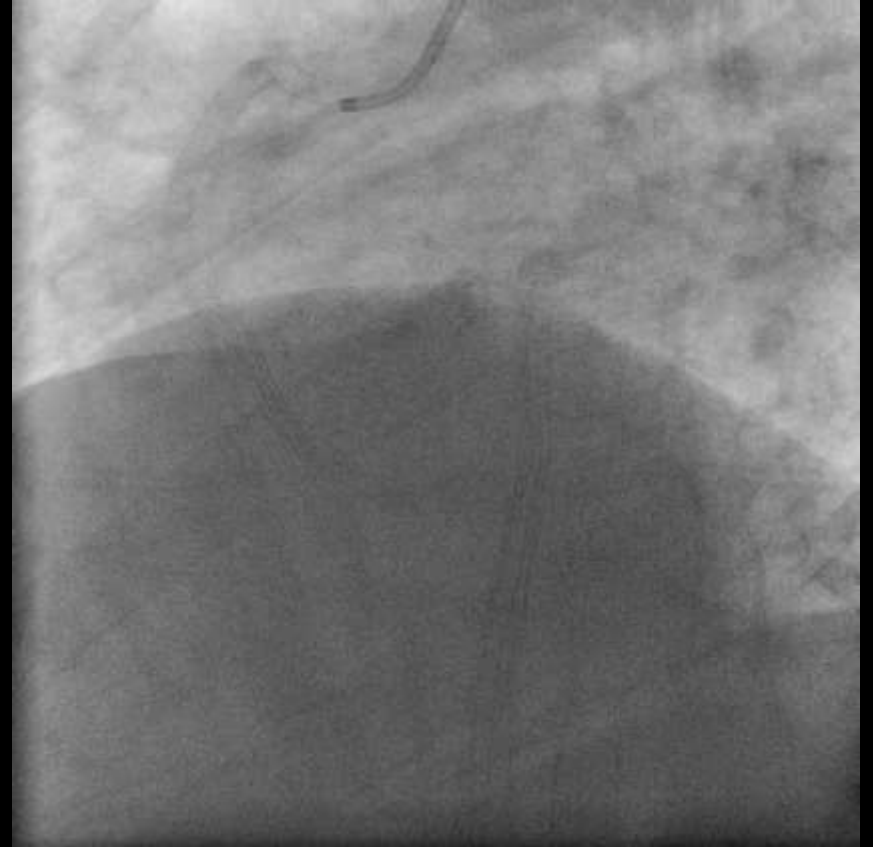
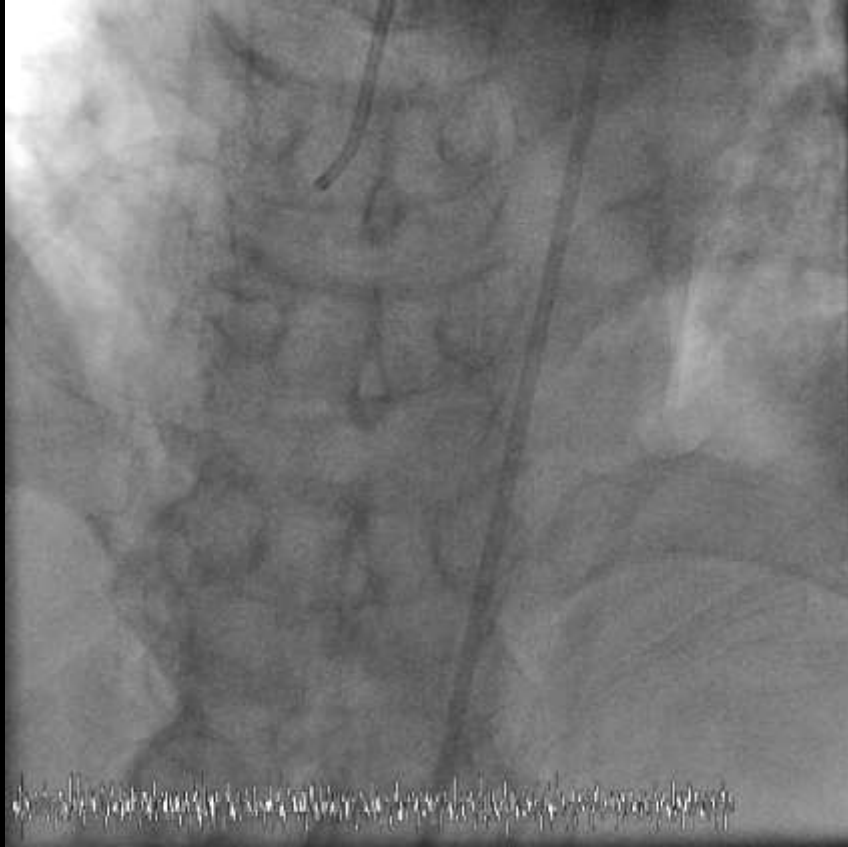


	Area Parameters	Volume Parameters	Diameter Parameters
Area	14.08	N/A	5.88 mm ²
Average diameter	4.23	N/A	2.74 mm
Largest diameter	4.40	N/A	2.95 mm
Smallest diameter	4.09	N/A	2.53 mm
Symmetry	0.93	N/A	0.86
Show diameter lines	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Plaque burden	<input type="checkbox"/> N/A	<input type="checkbox"/> mm ²	
Per. plaque burden	<input type="checkbox"/> N/A	<input type="checkbox"/> %	
In-stent restenosis	<input type="checkbox"/> N/A	<input type="checkbox"/> mm ²	

Post-dilation w/ 3.5mm NC Balloon



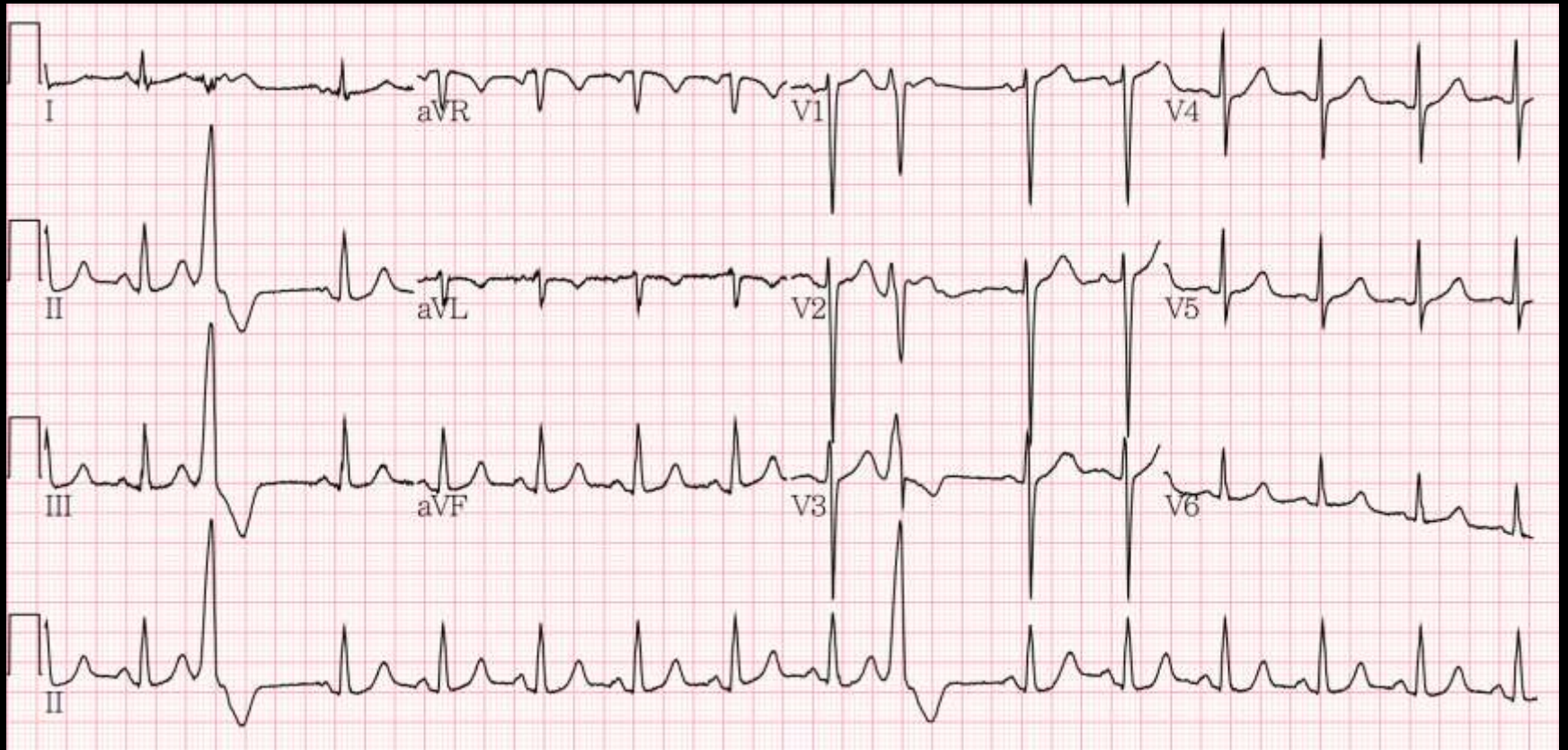
Final



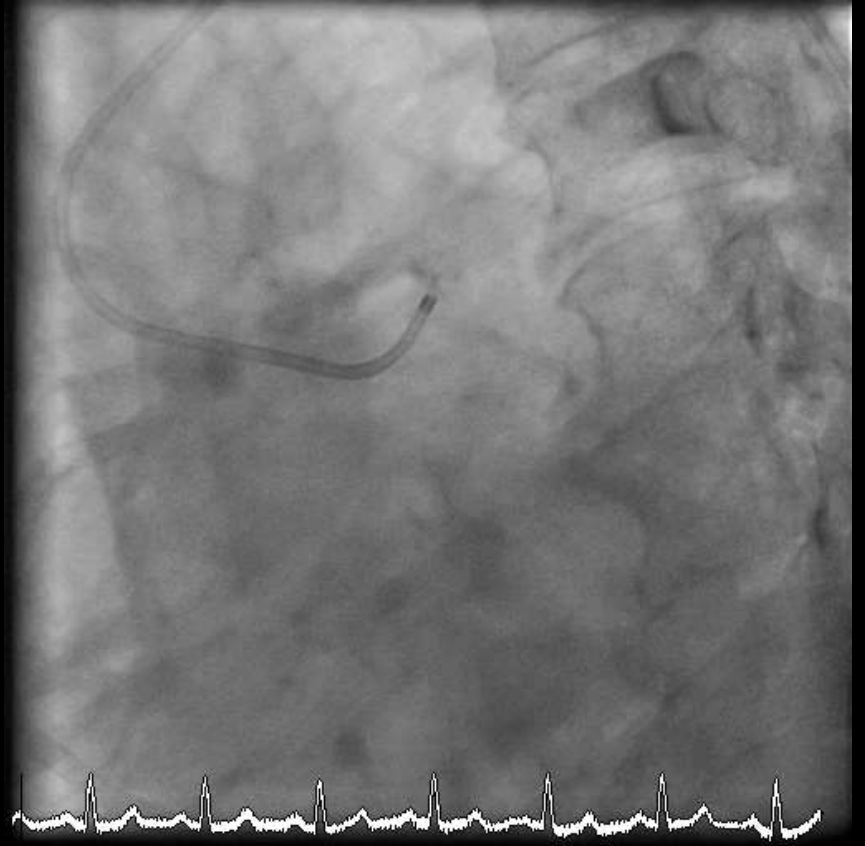
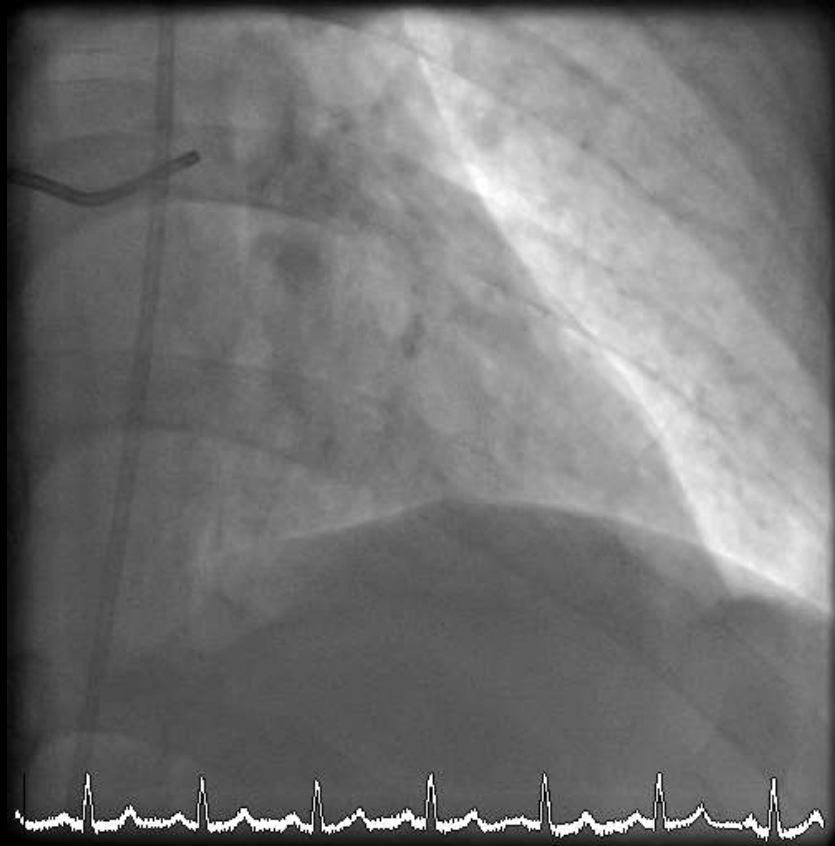
Clinical Course

- **Angina free after RCA PCI**
- **LCA PCI was deferred because of impending ESRD**
- **Renal function deteriorated gradually, though.**
- **Maintenance HD started since 2015/09**
- **Recurrent angina noted since 2015/11.**

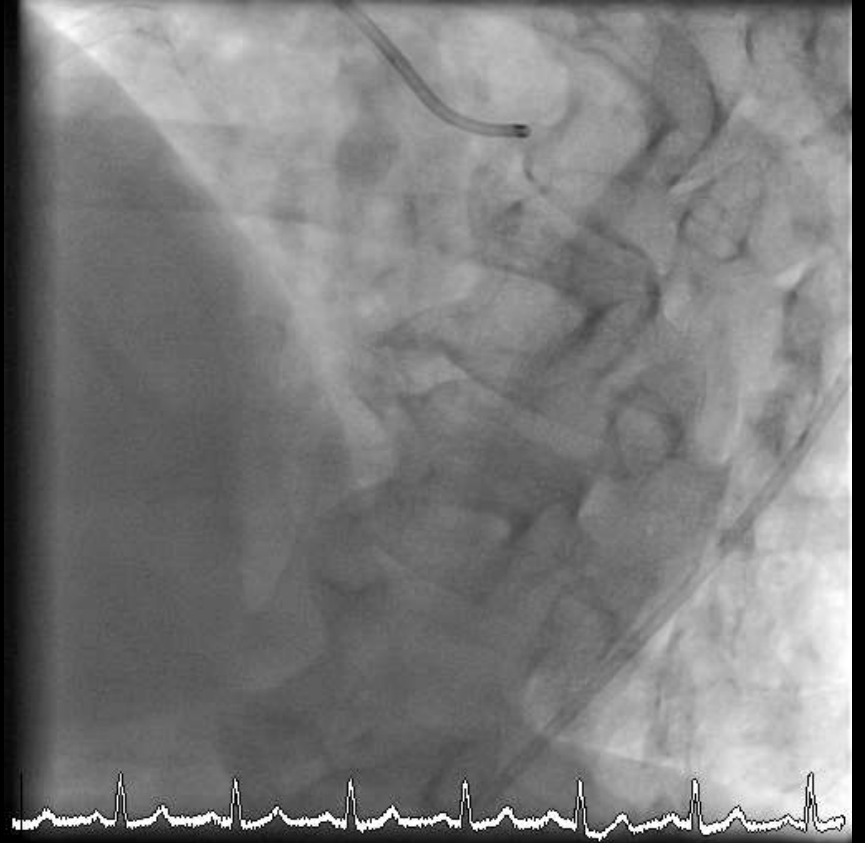
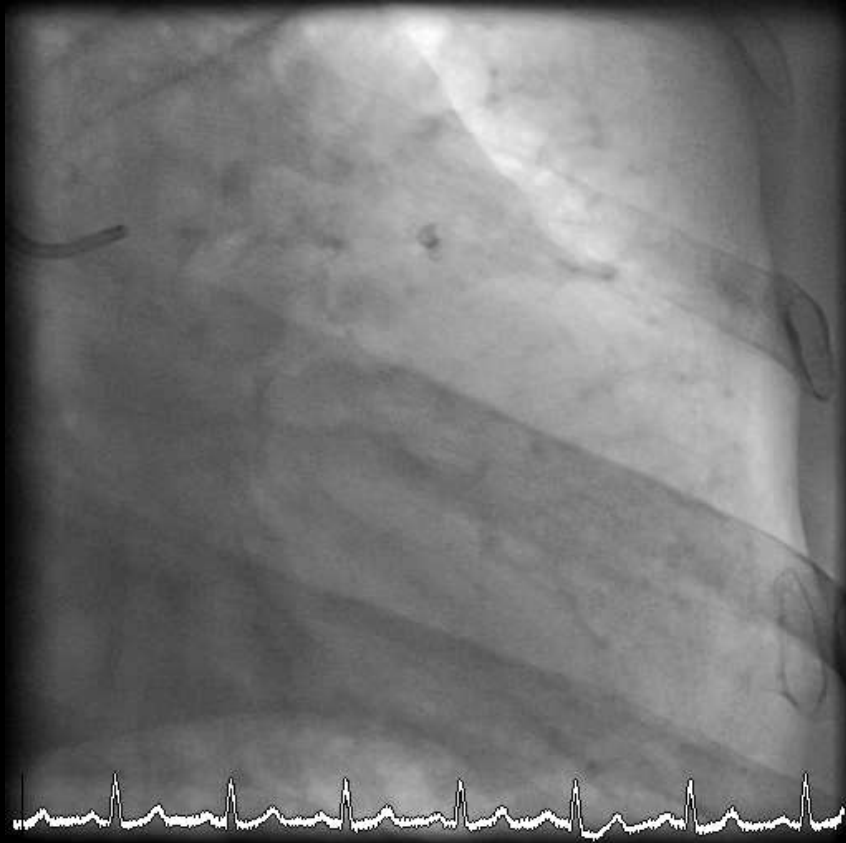
ECG



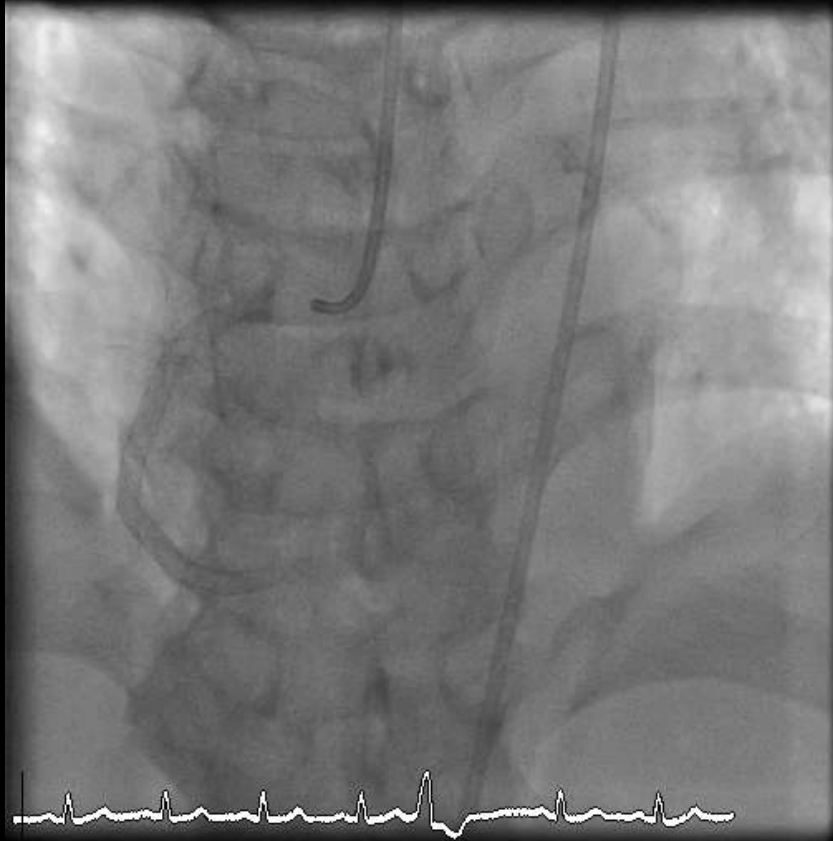
LCA



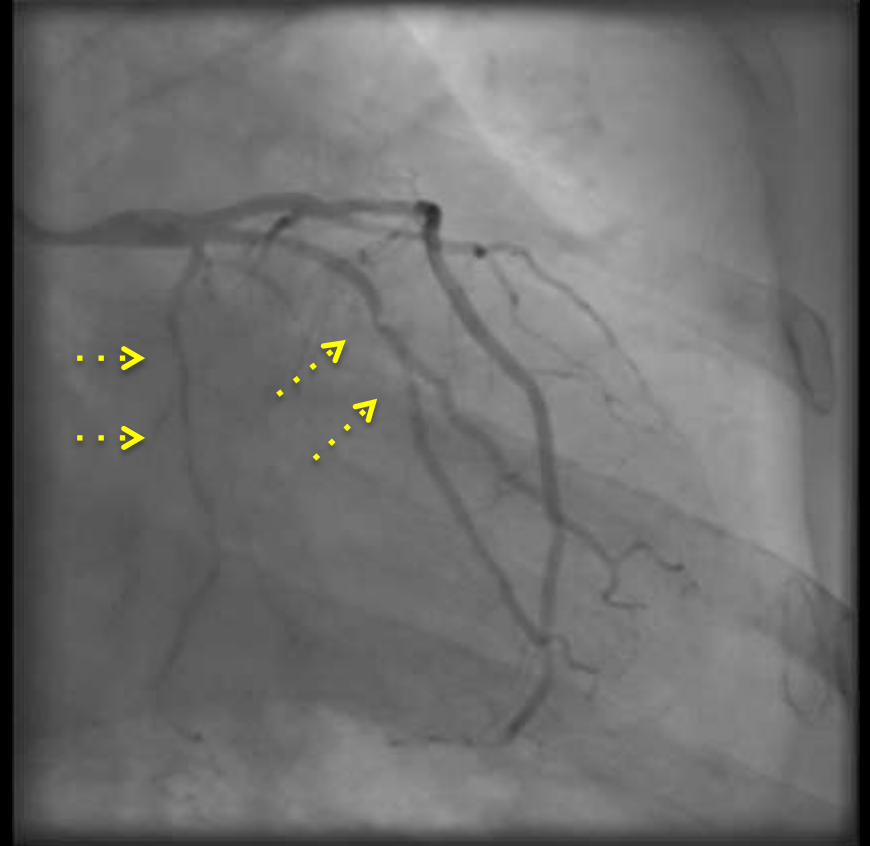
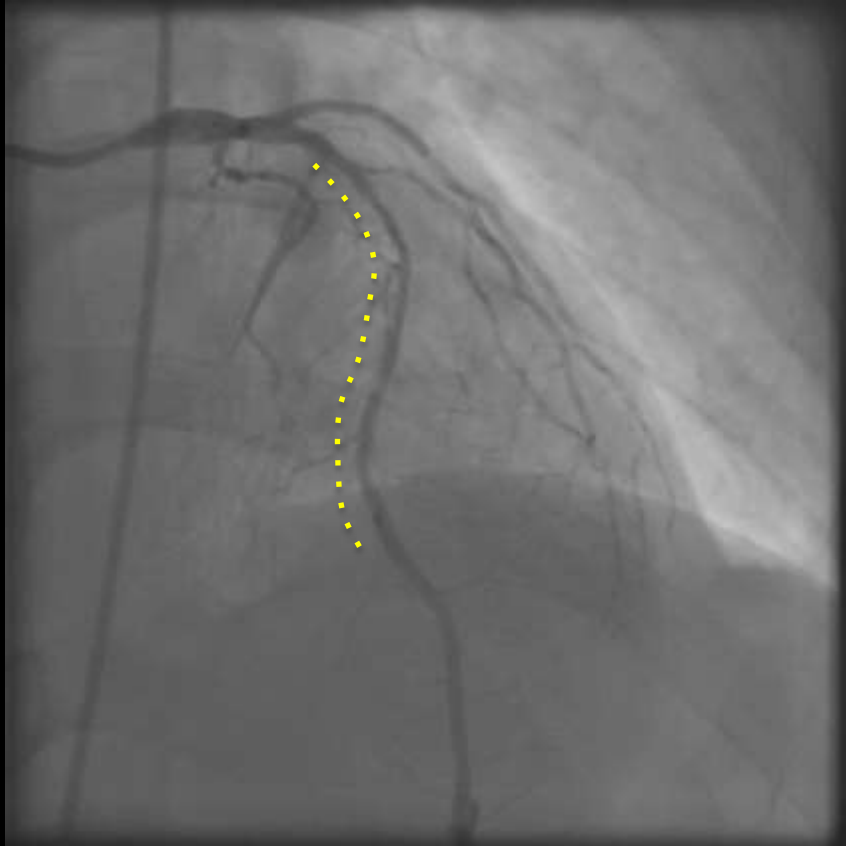
LCA



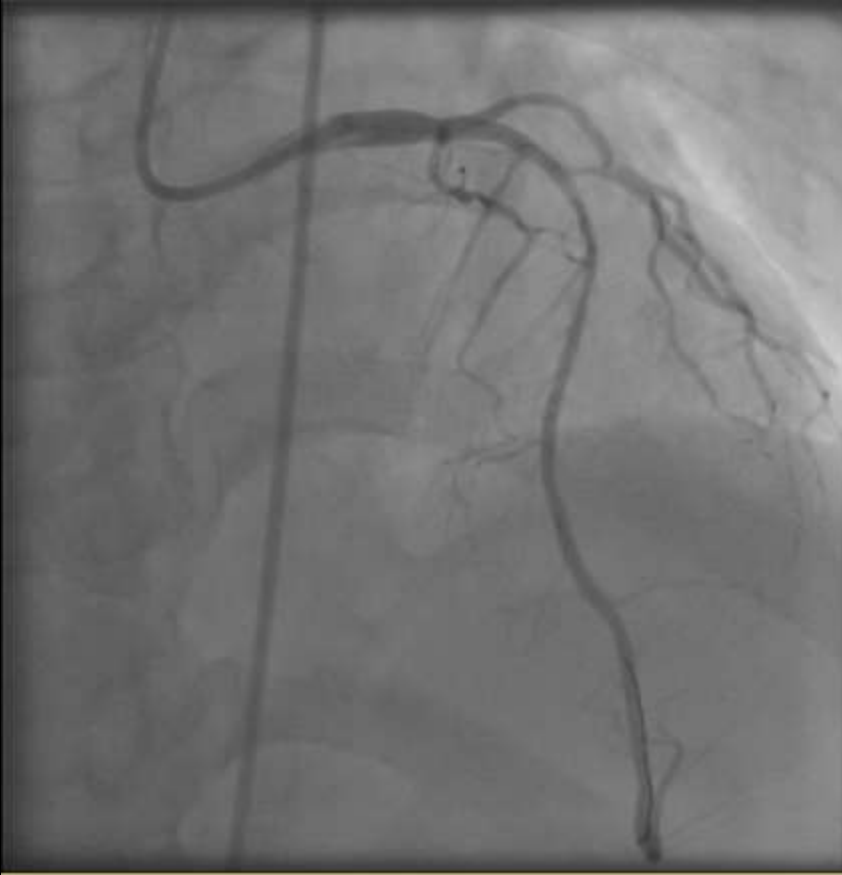
RCA



Where to Treat?



FFR

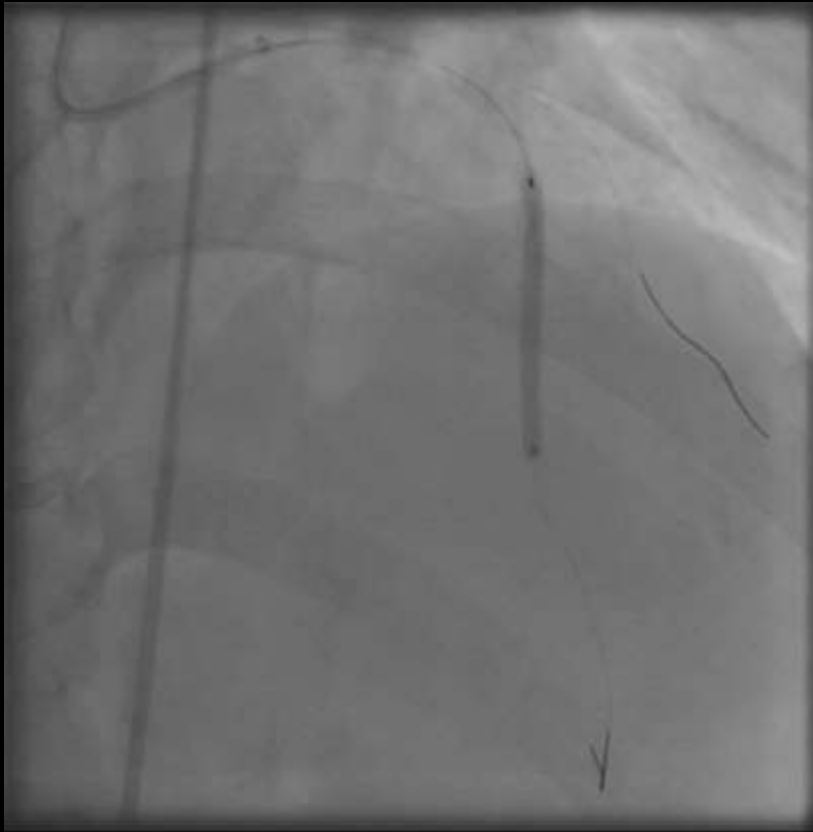


- IC NTG 200mcg
- IC adenosine 200mcg

FFR = 0.76!

LAD PCI

BMS 2.75*38mm



BMS 3.0*38mm

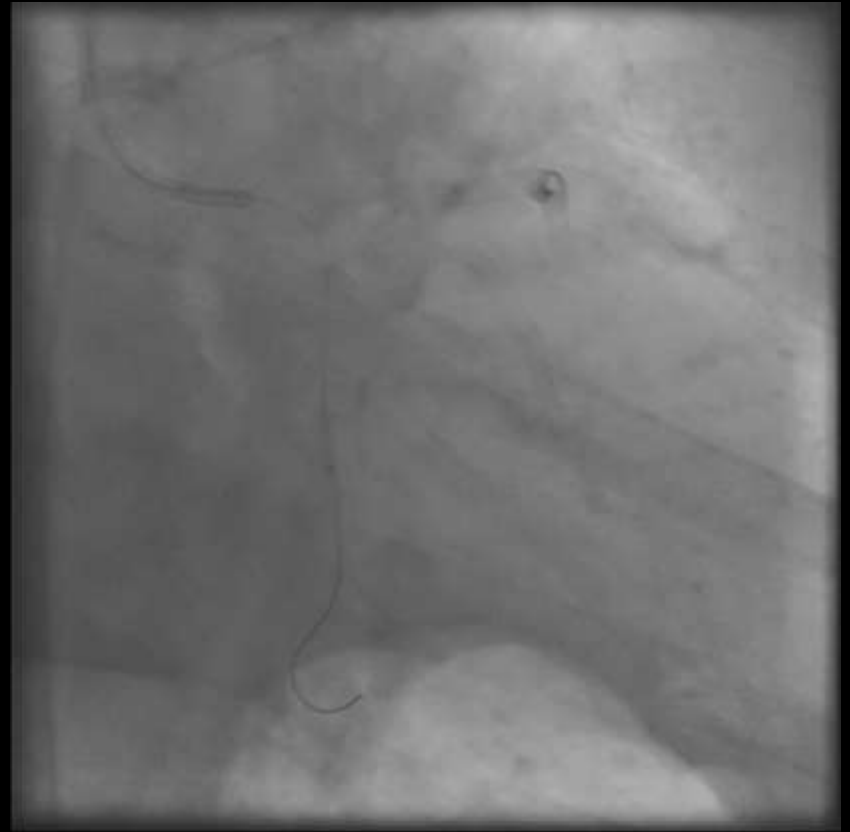


RI & LCx PCI

BMS 2.5*24mm



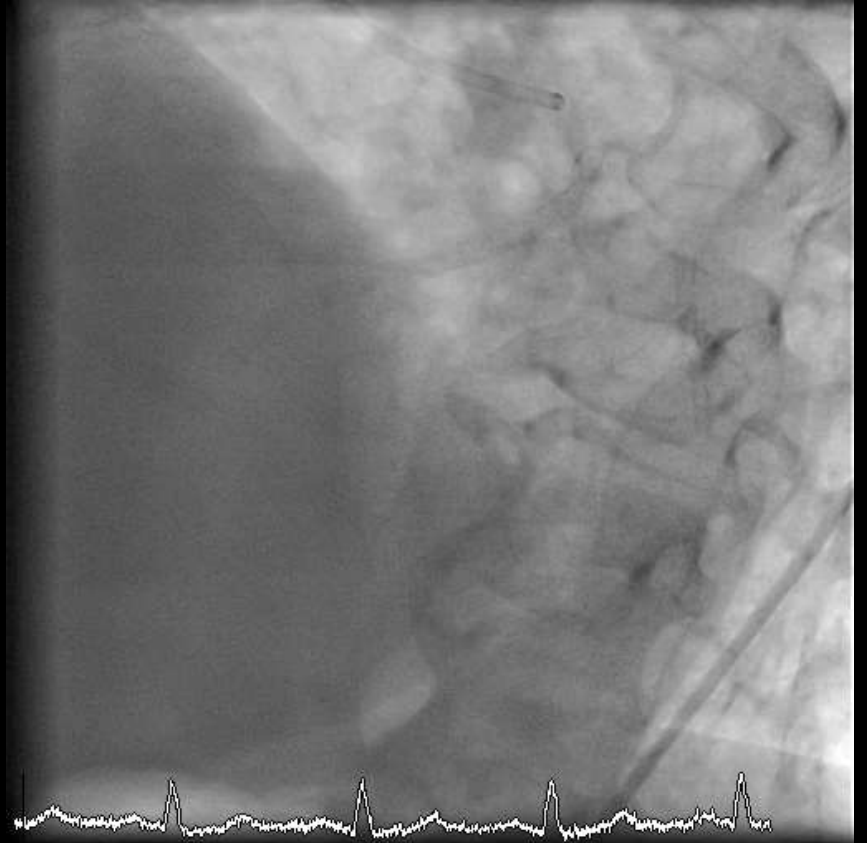
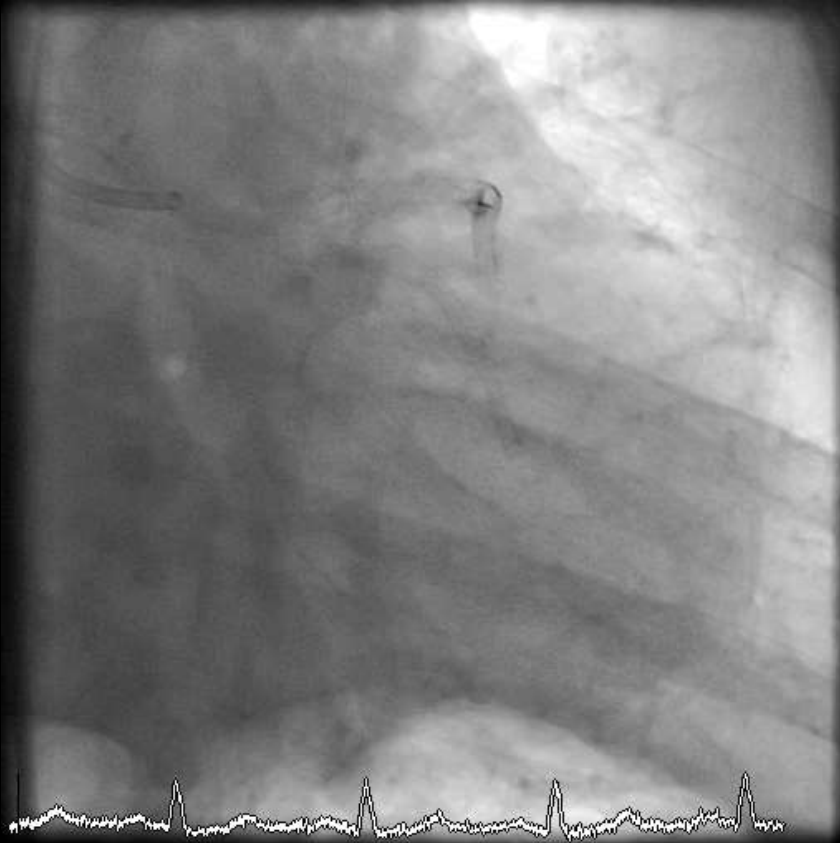
1.5*15mm balloon



Final



Final



Take Home Message

- **In a diffusely diseased vessel, intravascular imaging is useful to**
 - **Guide device sizing**
 - **Optimize stent result**
- **In a long yet intermediate lesion, FFR is useful to justify PCI.**