Complication cases of Calcified Lesion with Rotablation

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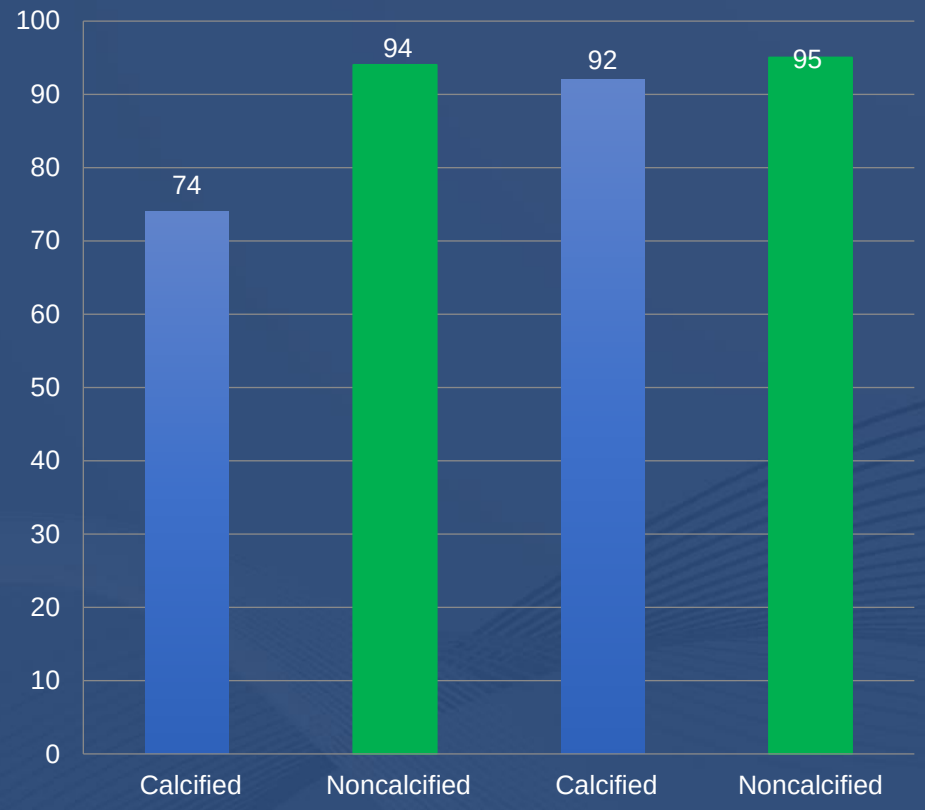
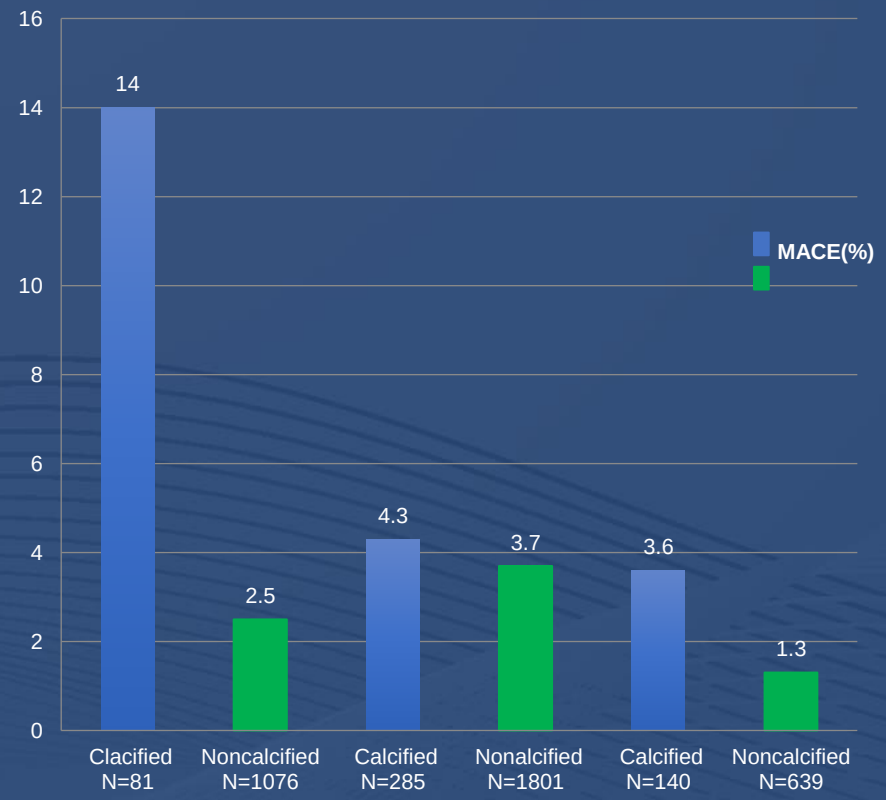
Impact of Calcium on procedural Outcomes

Procedure success

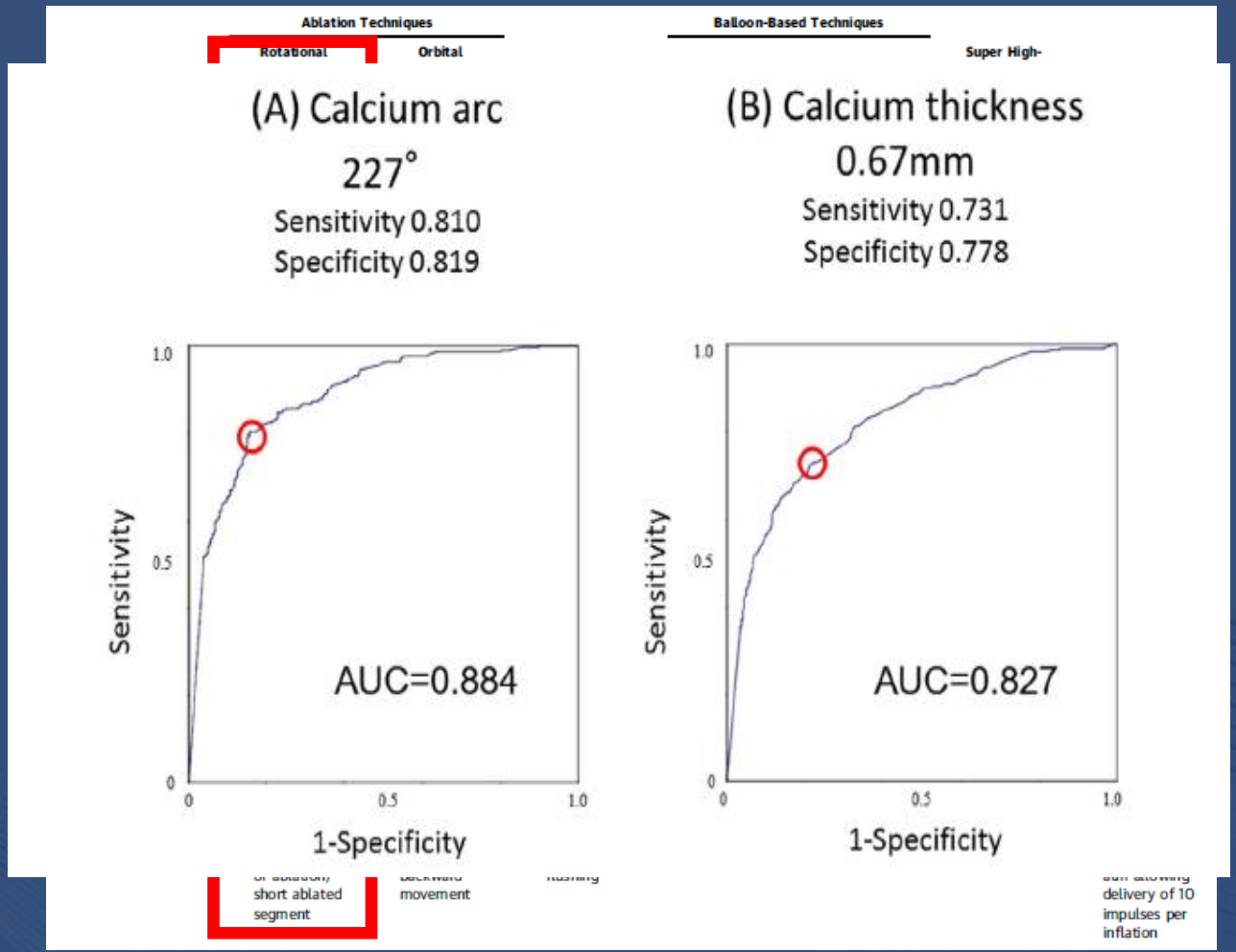


MACE



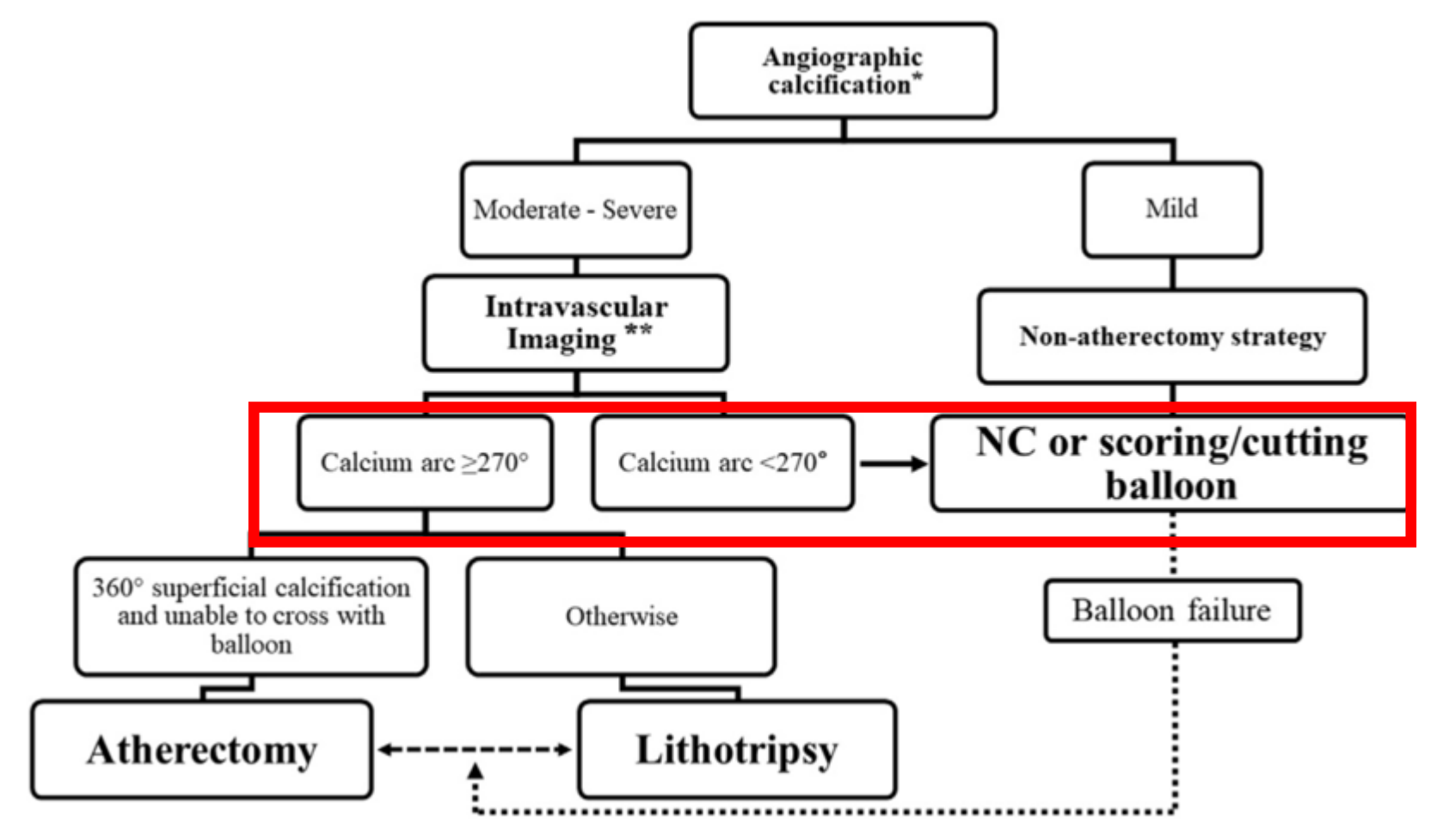
Abbreviations : MACE = in-hospital major adverse cardiac events (death, MI, PTCA, CABG); * Acute closure

Intervention tools



JACC Cardiovasc Interv. 2019; 12(15) : 1465-78

Intervention tools



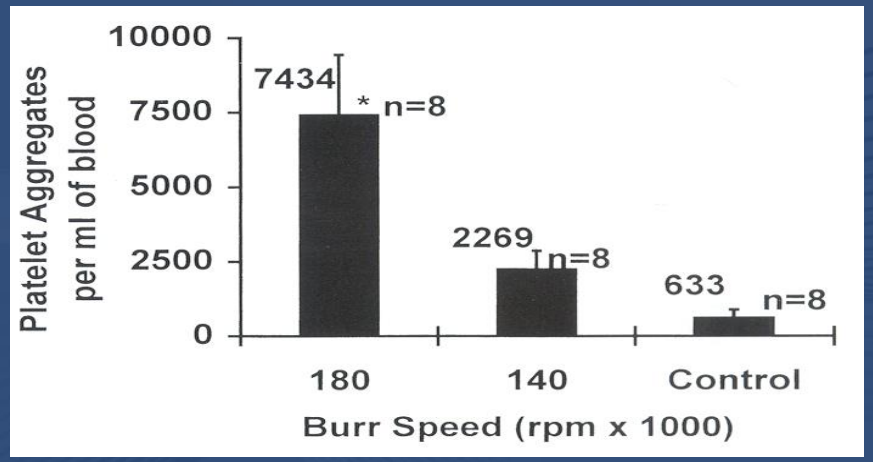
Kassimis G et al. How Should We Treat Heavily Calcified Coronary Artery Disease in Contemporary Practice? From Atherectomy to Intravascular Lithotripsy. Cardiovasc Revasc Med. 2019 Dec;20(12):1172-1183. doi: 10.1016/j.carrev.2019.01.010. Epub 2019 Jan 10. PMID: 30711477.

Pre-procedural Recommand

- Burr-to-artery ratio: up to 0.5
- One-burr vs. two-burr approach
- Burr speed

  Large burr (2.0 mm) : 150,000 rpm

  Small burr (1.75 mm) : 180,000 rpm



Quick Reference Burr Guide

Burr Diameter		Recommended Guide Catheter	Minimum ID Required
mm	Inches	(French)*	(Inches)
1.25	0.049	6.0	0.060**
1.50	0.059	6.0	0.063
1.75	0.069	7.0	0.073
2.00	0.079	8.0	0.083
2.15	0.085	8.0	0.089
2.25	0.089	9.0	0.093
2.38	0.094	9.0	0.098
2.50	0.098	9.0	0.102

Circulation. Vol. 104.2001.pp.2754

Current Indications of Rotablator

- Indication: lesion modification
  - Undilatable lesion or severely calcified lesion
  - Difficult to cross balloon or stent
  - Stent ablation
- Relative contraindication
  - Severe angulation
  - Extremely eccentric lesion
  - Vessel size is too small
  - Pre-existing severe dissection or vasospasm
  - High risk of no-reflow: thrombotic lesion, SVG

Circulation. Vol. 104.2001.pp.2754

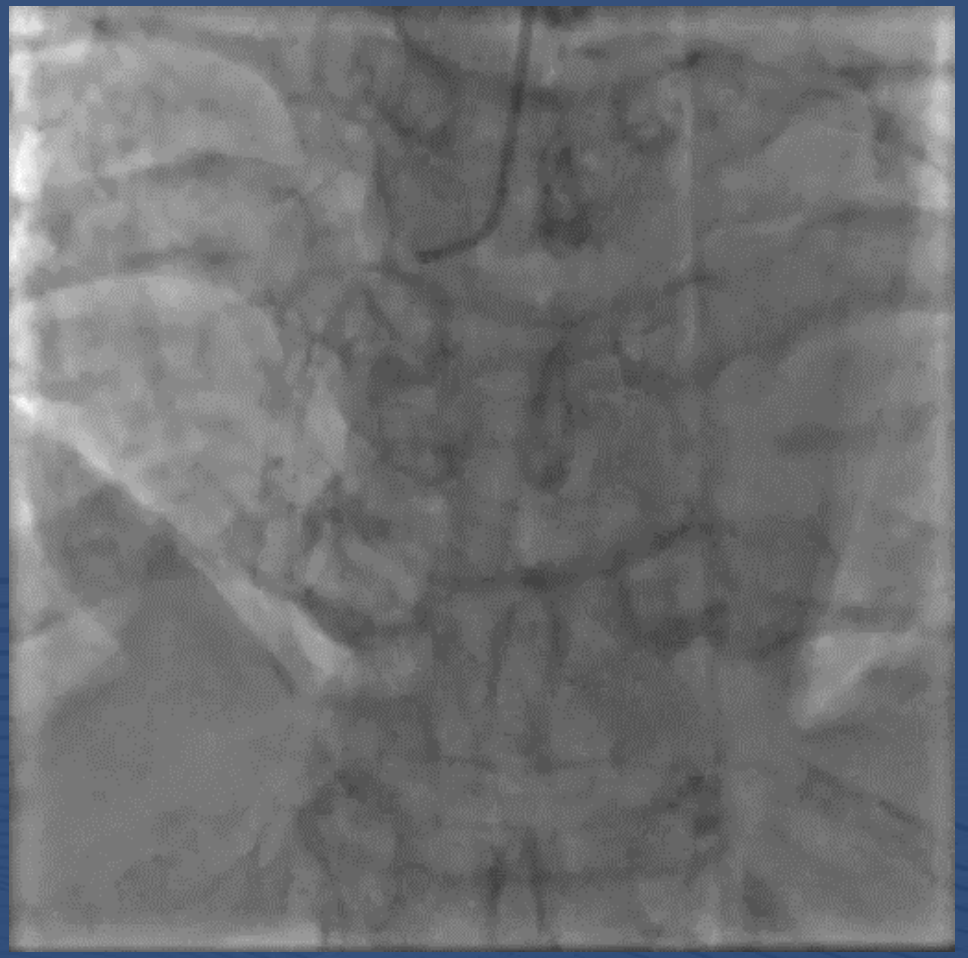
CASE1

History

- 65-year-old female
- Risk factors
  - Hypertension
  - DM
- Chief complaint : Chest pain, Dyspnea
- Echo :
  - EF=42%,
  - Akinesia of mid anteroseptal LV wall, Hypokinesia of other LV walls

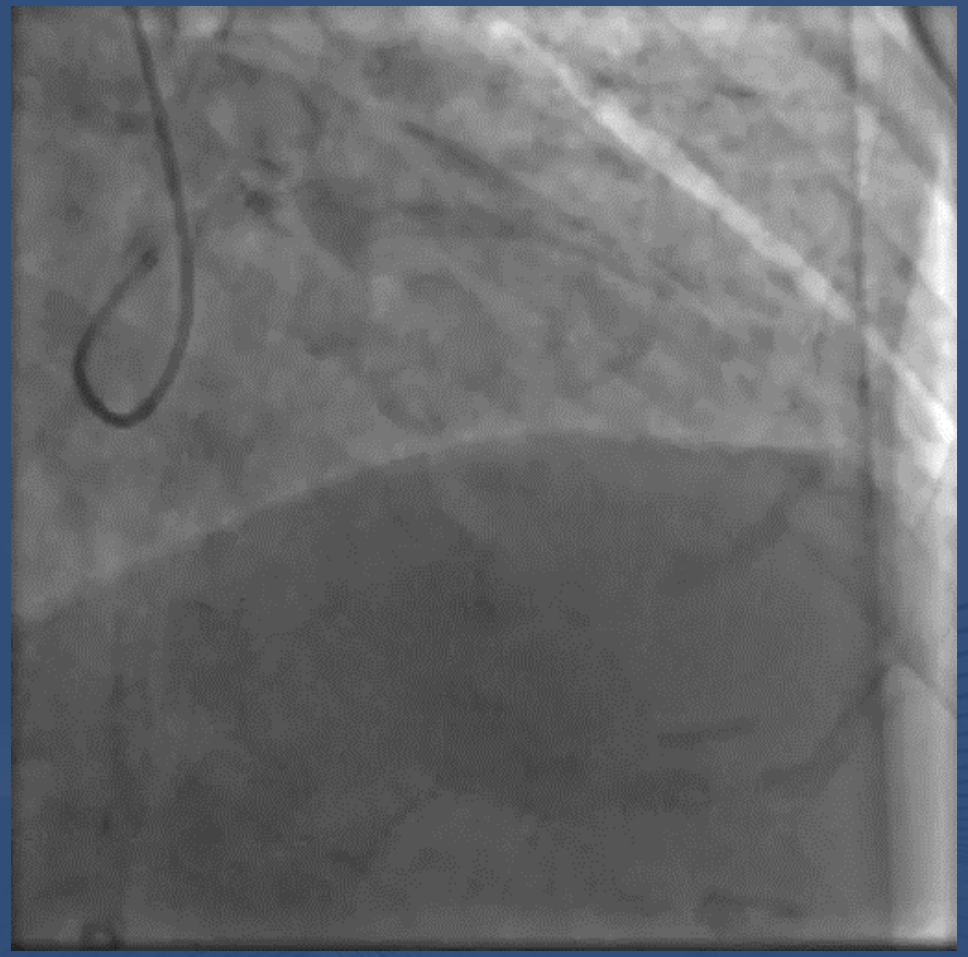
Coronary Angiography

- Pre RCA

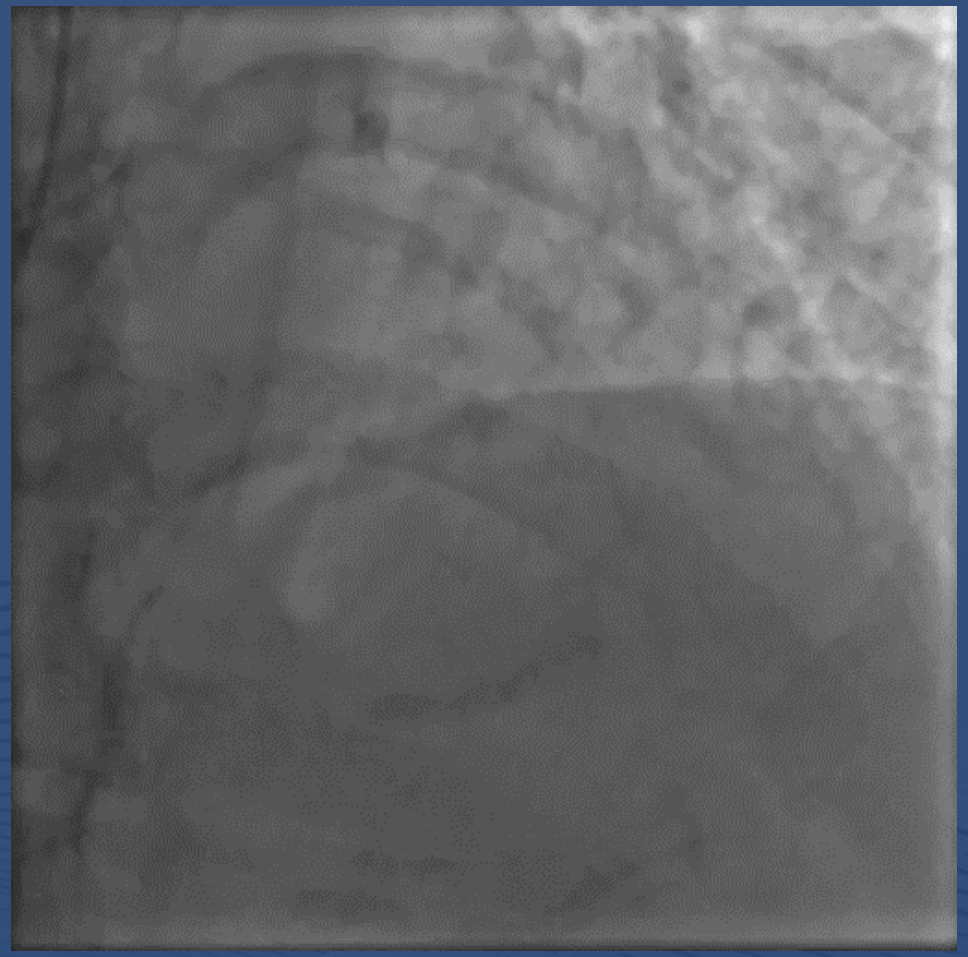


- Pre RCA

Coronary Angiography



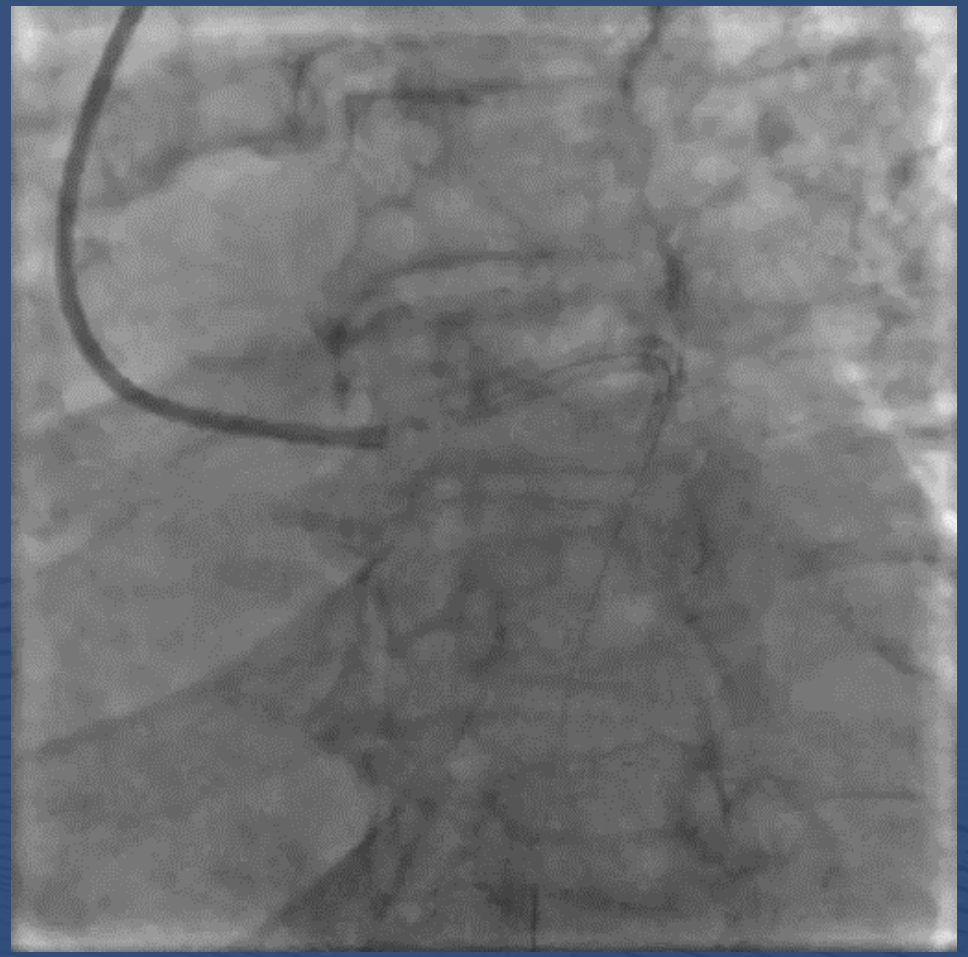
- Pre LCA



- Pre LCA

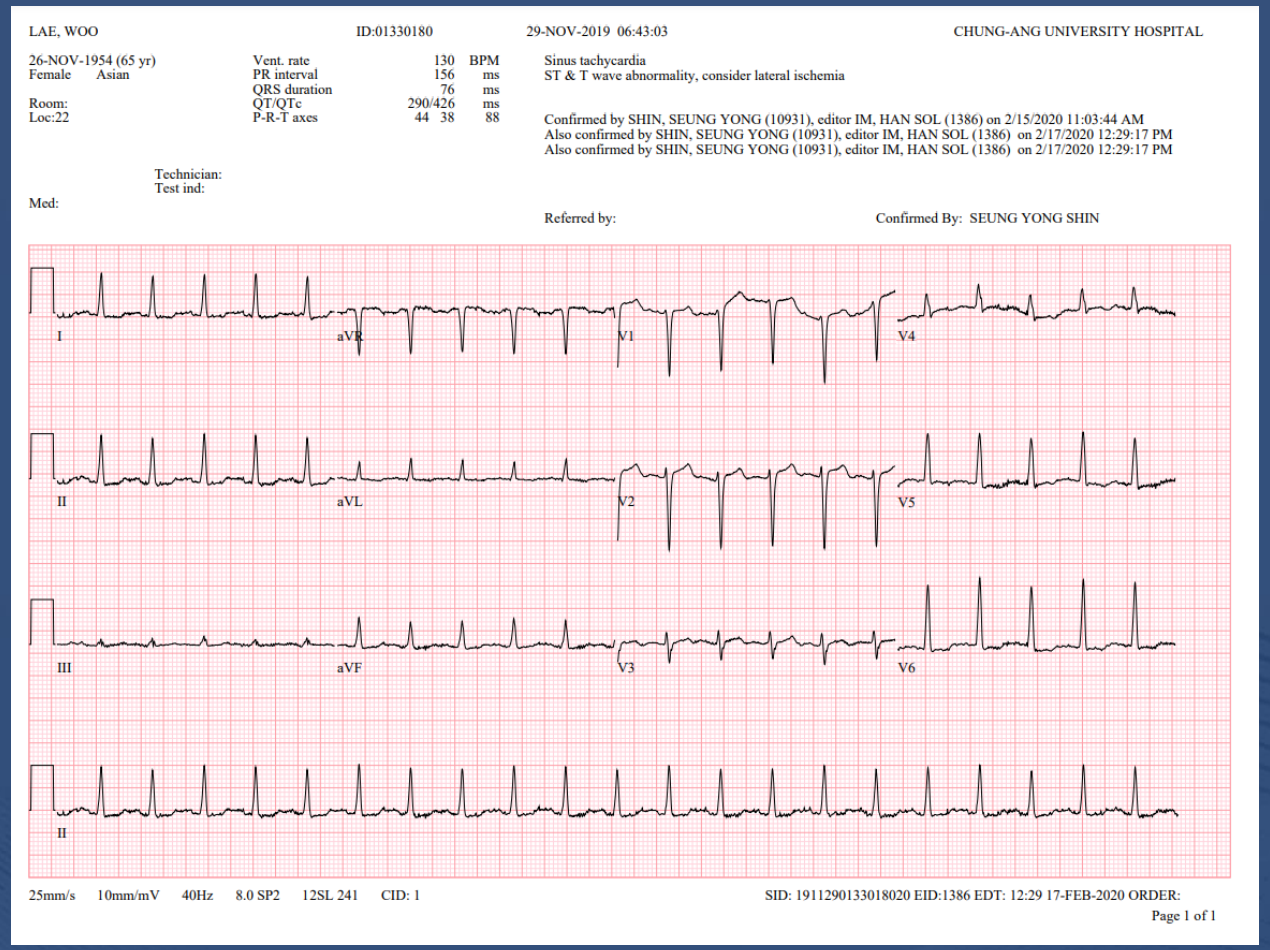
Coronary Angiography

- Pre LCA



- Pre LCA

2days later ER EKG



LAE, WOO ID:01330180 29-NOV-2019 06:43:03 CHUNG-ANG UNIVERSITY HOSPITAL

26-NOV-1954 (65 yr)
Female Asian

Room:
Loc:22

Vent. rate	130	BPM
PR interval	156	ms
QRS duration	76	ms
QT/QTc	290/426	ms
P-R-T axes	44 38	88

Sinus tachycardia
ST & T wave abnormality, consider lateral ischemia

Confirmed by SHIN, SEUNG YONG (10931), editor IM, HAN SOL (1386) on 2/15/2020 11:03:44 AM
Also confirmed by SHIN, SEUNG YONG (10931), editor IM, HAN SOL (1386) on 2/17/2020 12:29:17 PM
Also confirmed by SHIN, SEUNG YONG (10931), editor IM, HAN SOL (1386) on 2/17/2020 12:29:17 PM

Technician:
Test ind:

Med:

Referred by: Confirmed By: SEUNG YONG SHIN

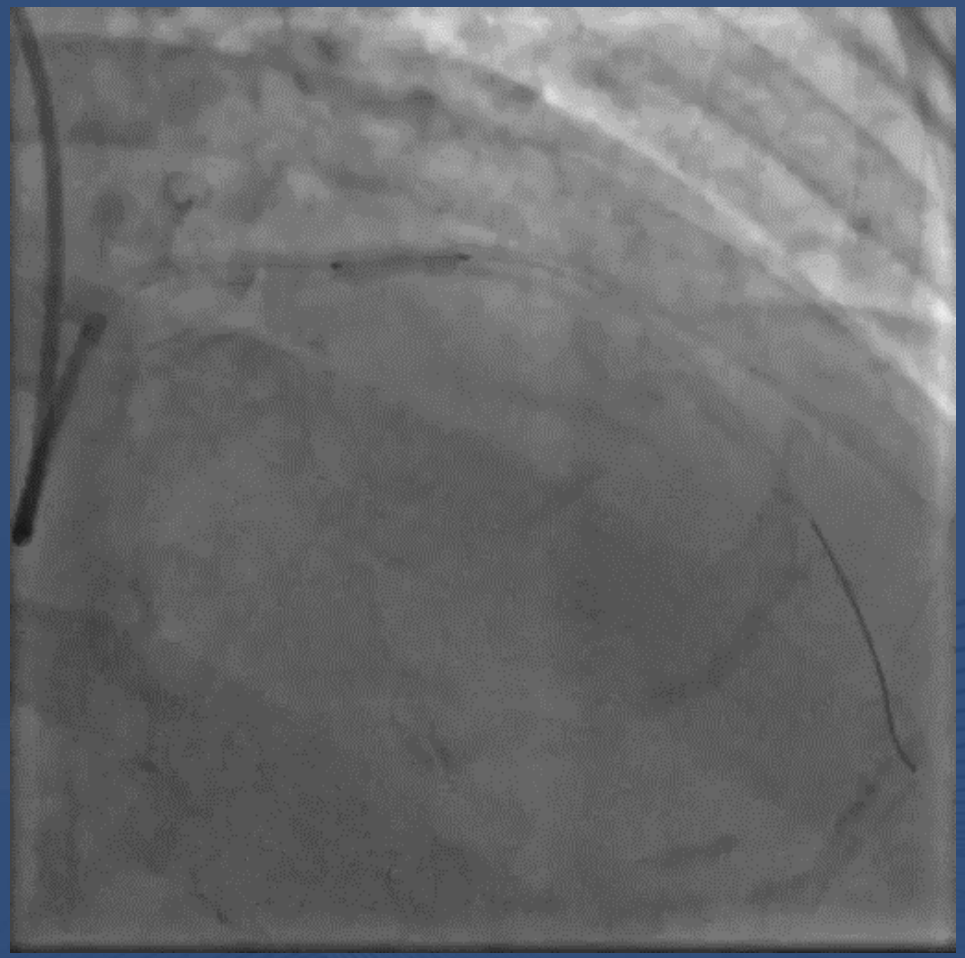
I aVR V1 V4
II aVL V2 V5
III aVF V3 V6
II

25mm/s 10mm/mV 40Hz 8.0 SP2 12SL 241 CID: 1

SID: 1911290133018020 EID:1386 EDT: 12:29 17-FEB-2020 ORDER:

Page 1 of 1

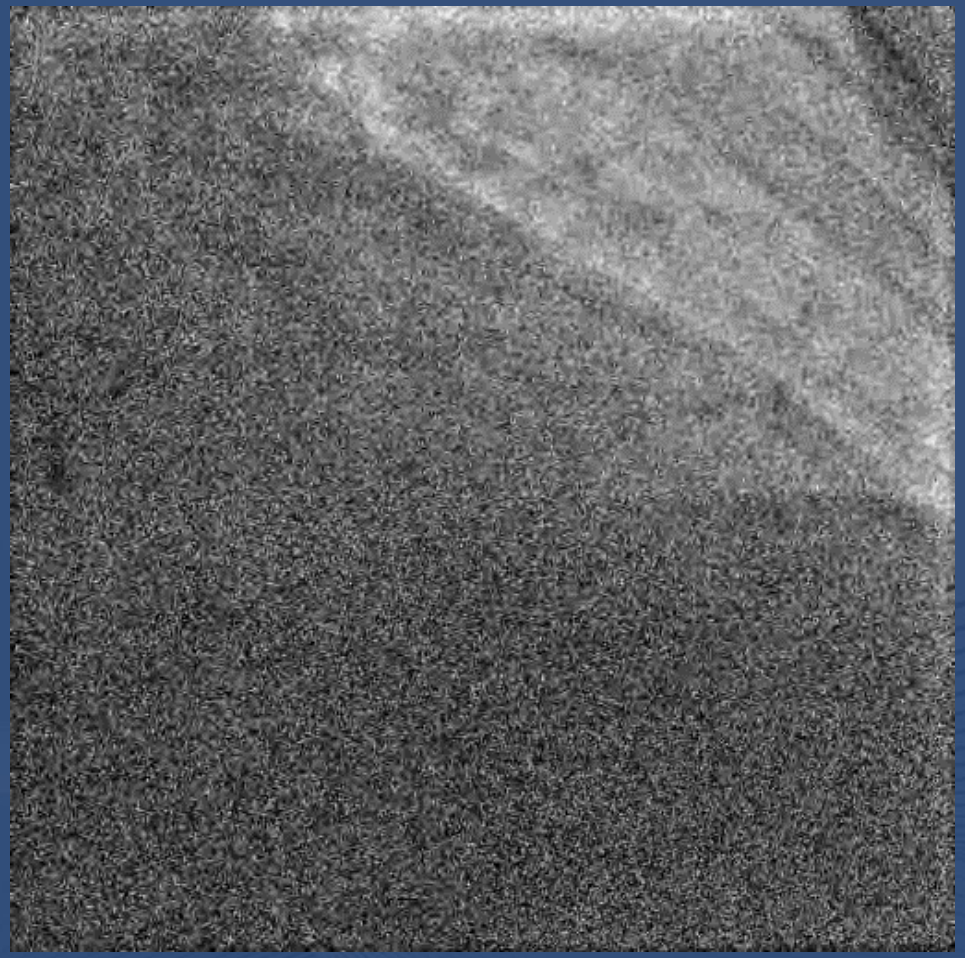
Coronary Angiography



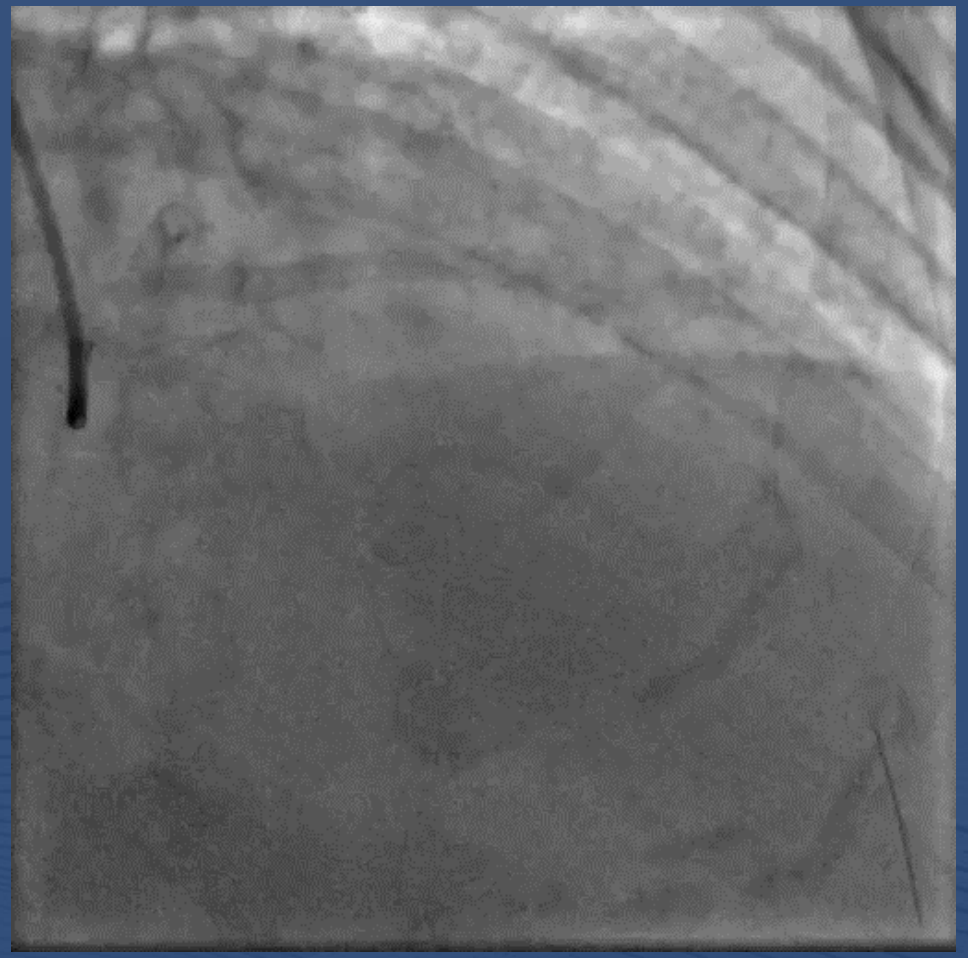
- Ikazuki zero 2.0*15

- Angiosculpt scoring 2.0*10

Coronary Angiography

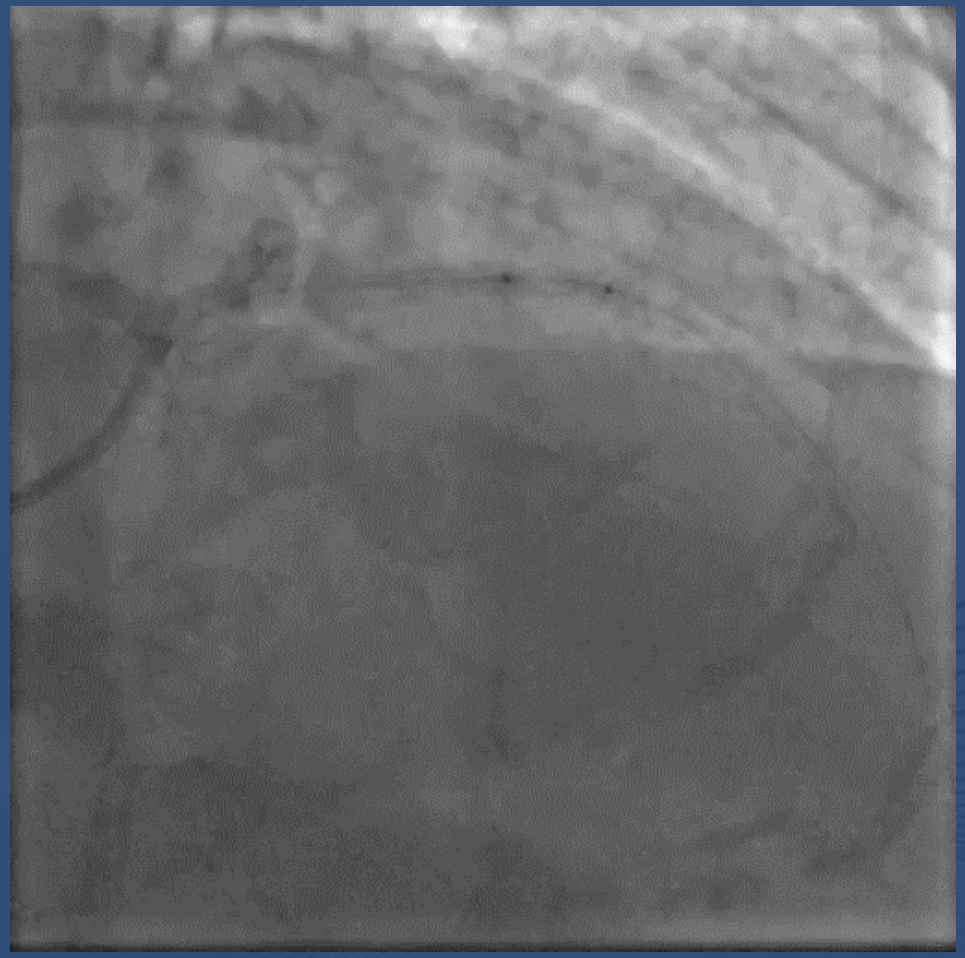


- ROTA 1.5 burr



- After ROTA

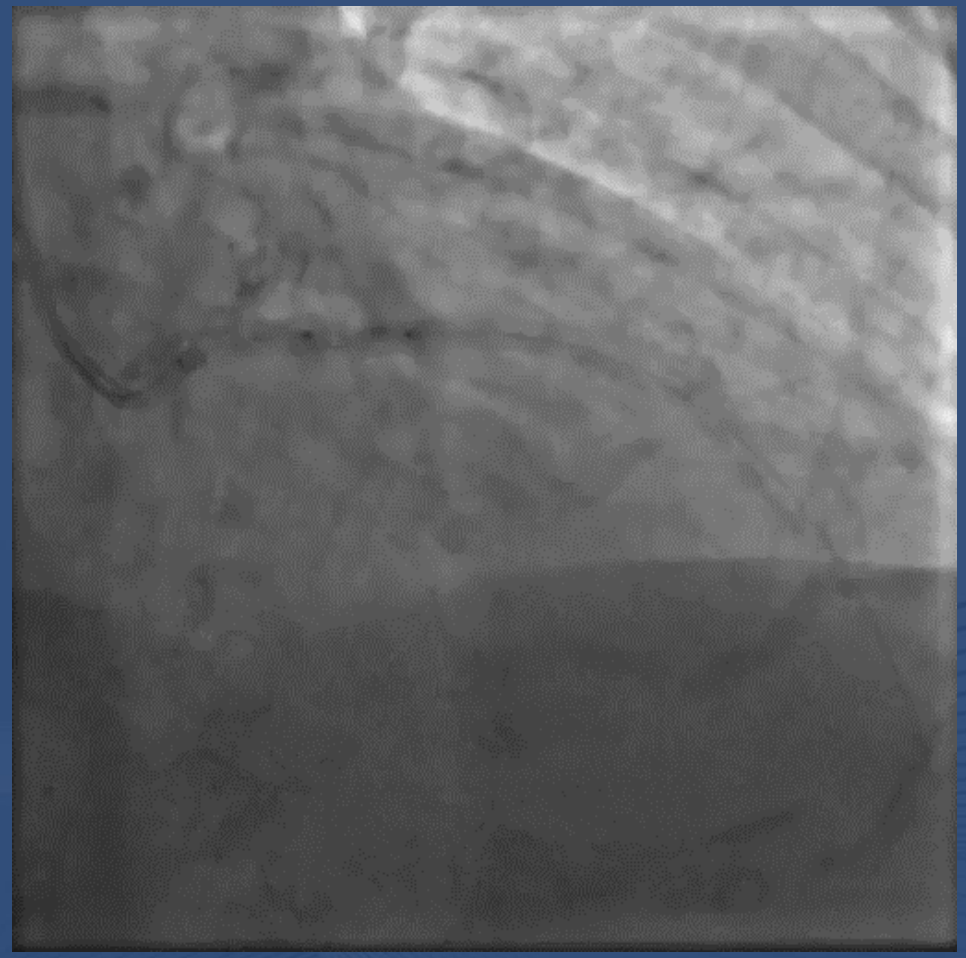
Coronary Angiography



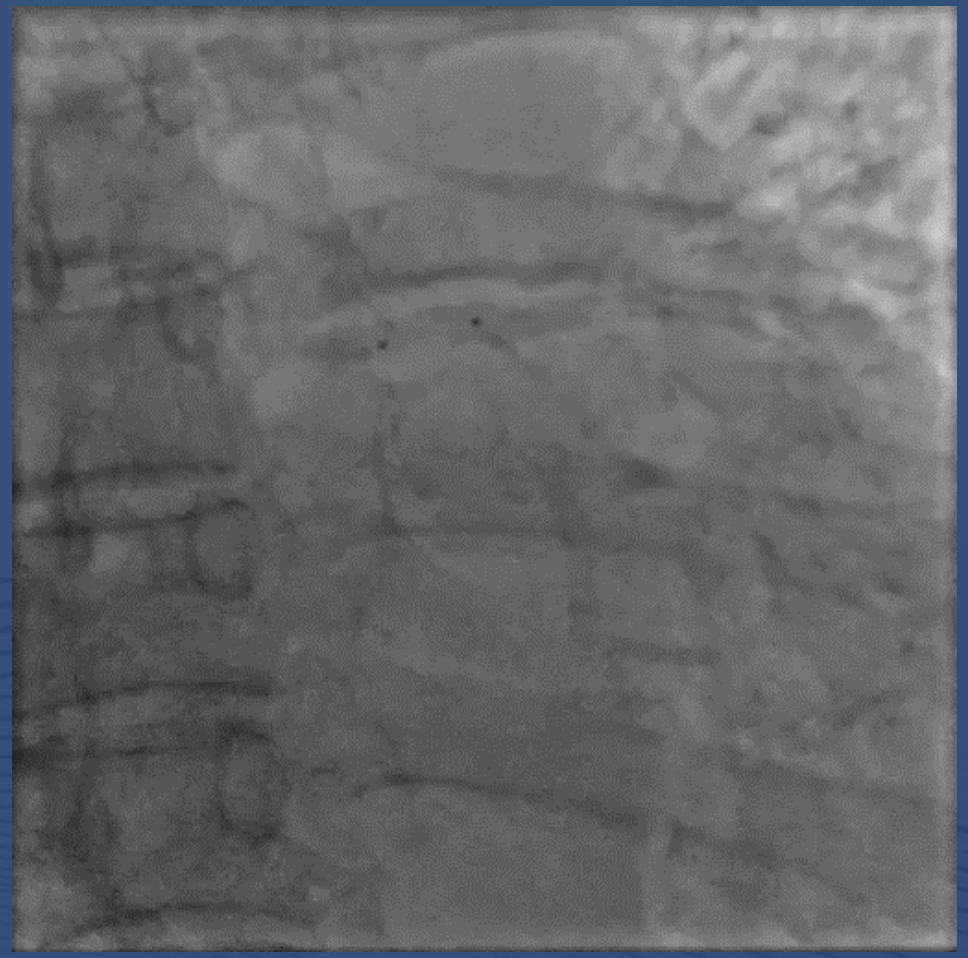
- Angio sculpt scoring 2.0*10

- Angio sculpt scoring 2.0*10

Coronary Angiography

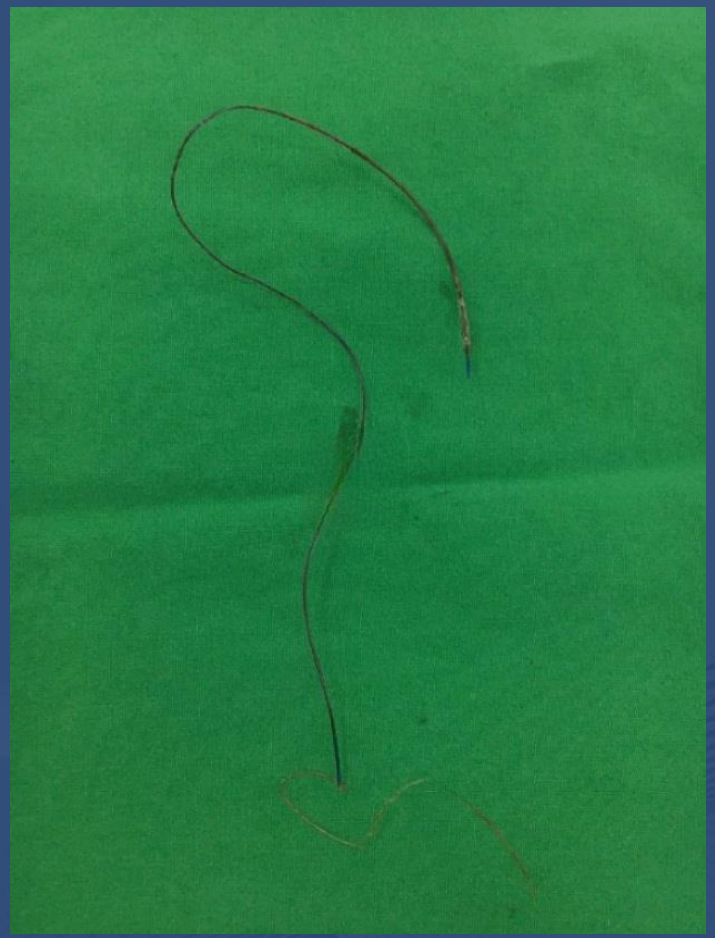


- Scoring balloon 끼임

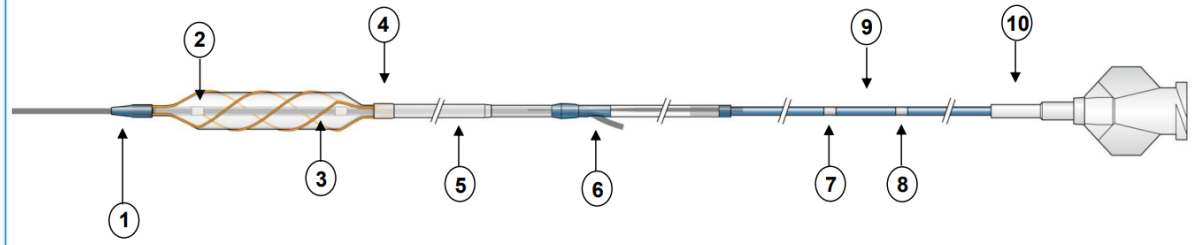


- Final

Coronary Angiography



RX Taper Tip Components & Materials



1. Tip (Pebax)
2. Marker Band (Platinum Iridium)
3. Scoring Element (Nitinol)
4. Intermediate Bond
5. Transition Tube (Pebax)
6. Guidewire Exit Port (a.k.a. Proximal Guidewire Exit Port)
7. Brachial Marker
8. Femoral Marker
9. PTFE-coated Hypotube (Stainless Steel)
10. Strain Relief (Pebax)

Spectranetics
Always Reaching Farther

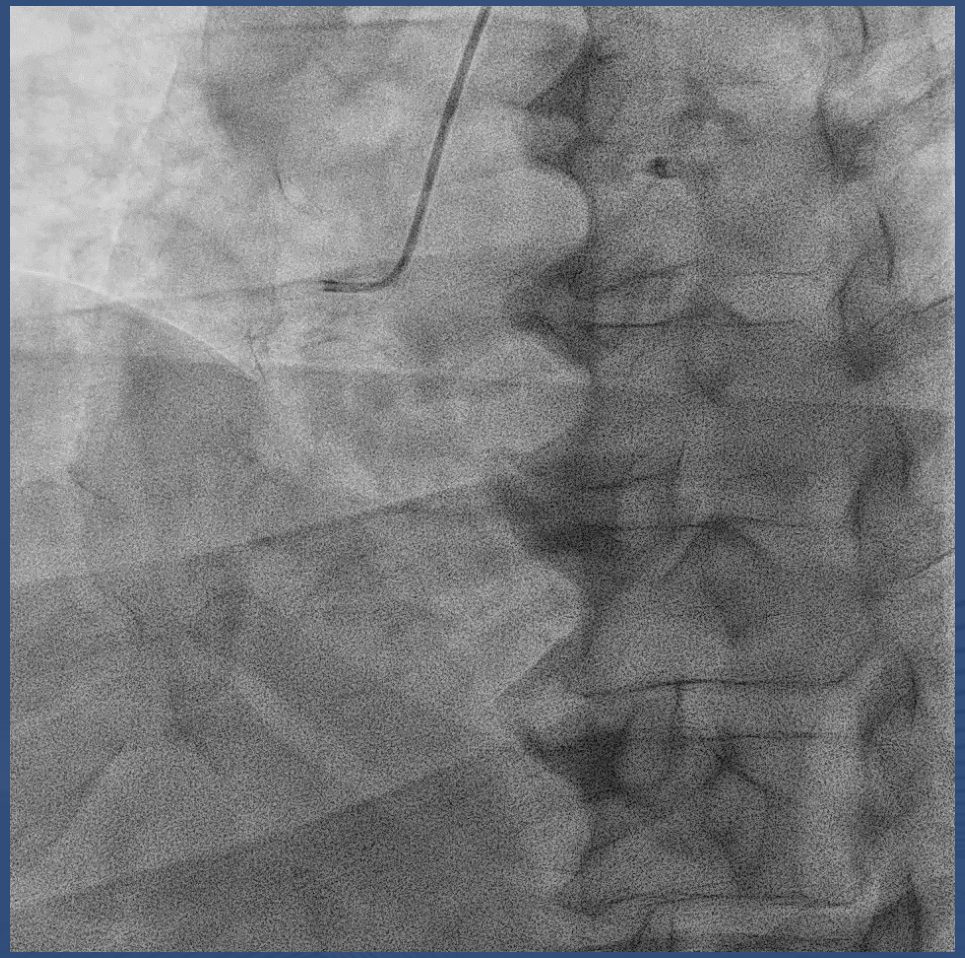
Sources: DM-2200, PN-2200-XXYY, PN2223.A

CASE2

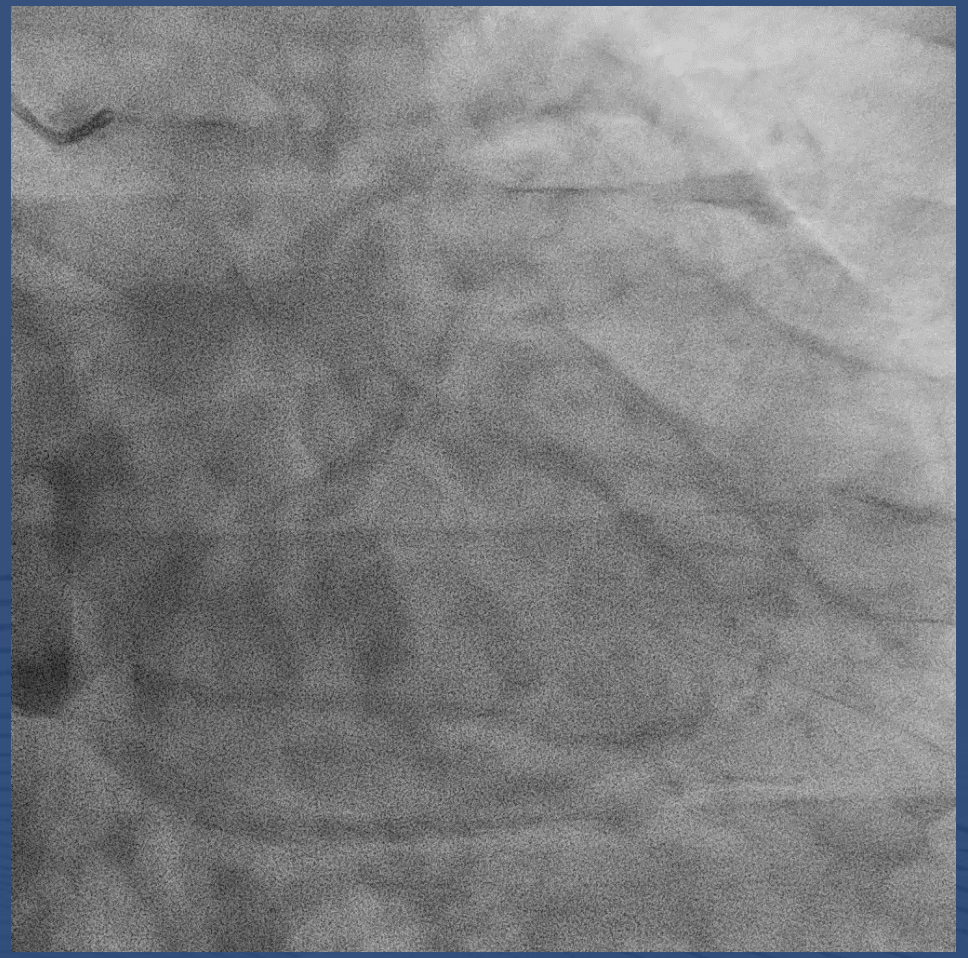
History

- 60-year-old male
- Risk factors
  - Hypertension
  - DM
- Chief complaint : Chest pain
- Echo :
  - EF=63%,
  - NO RWMA
- Coronary CT: 3VD

Coronary Angiography

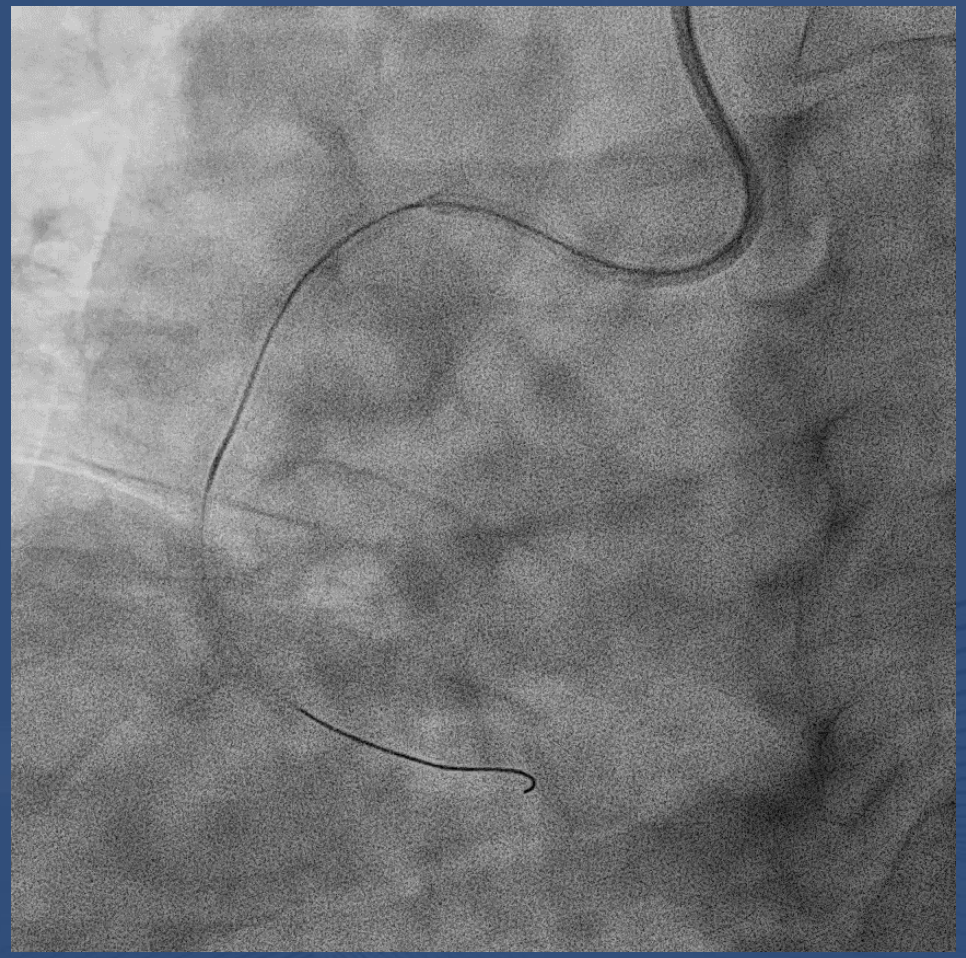


- Pre RCA CTO



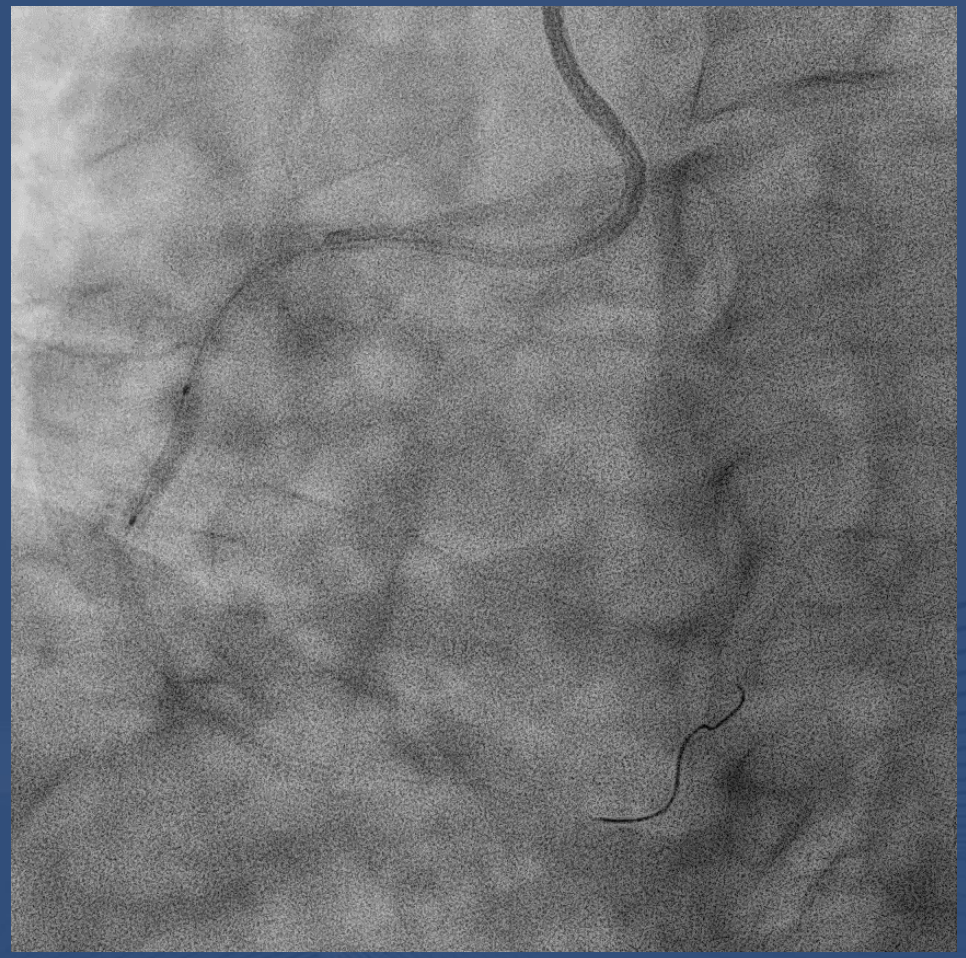
- Pre LCA

Coronary Angiography

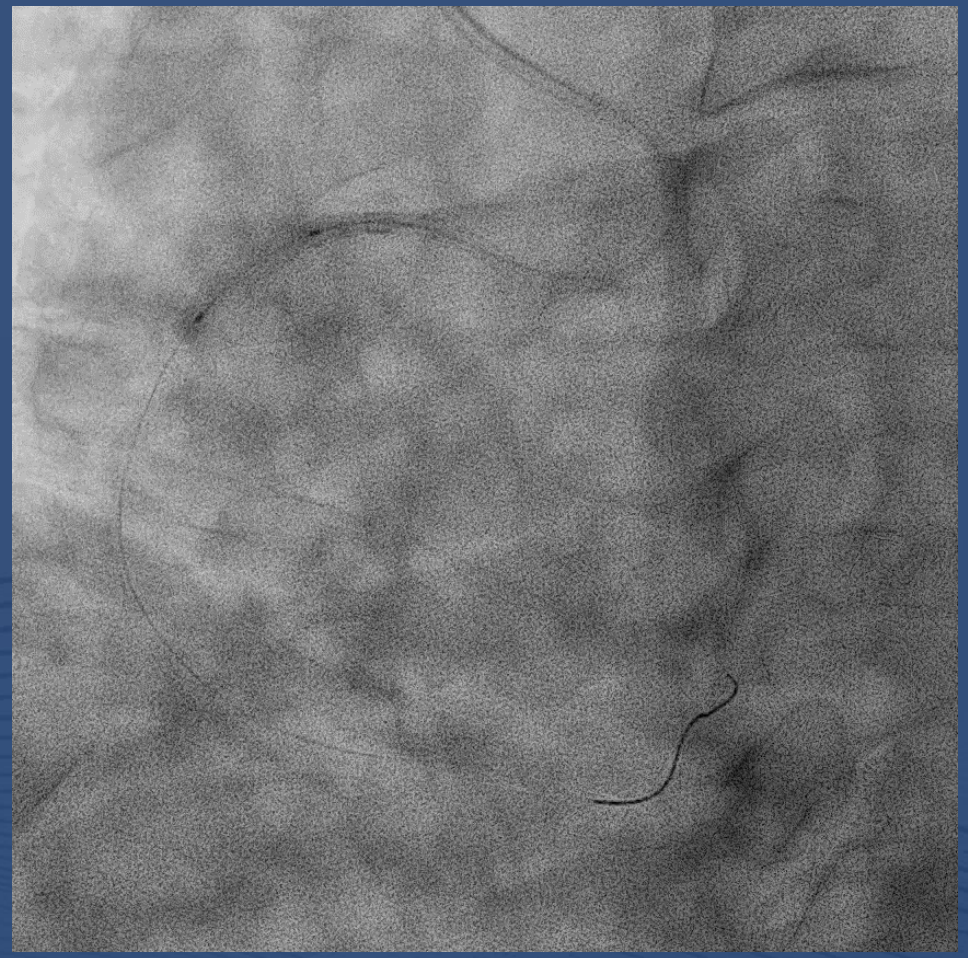


- Micro catheter: Finecross
- Guide wire:
  - Runthrough-Fielder XT-A-Gaia 2nd
- Anterograde approach success

Coronary Angiography

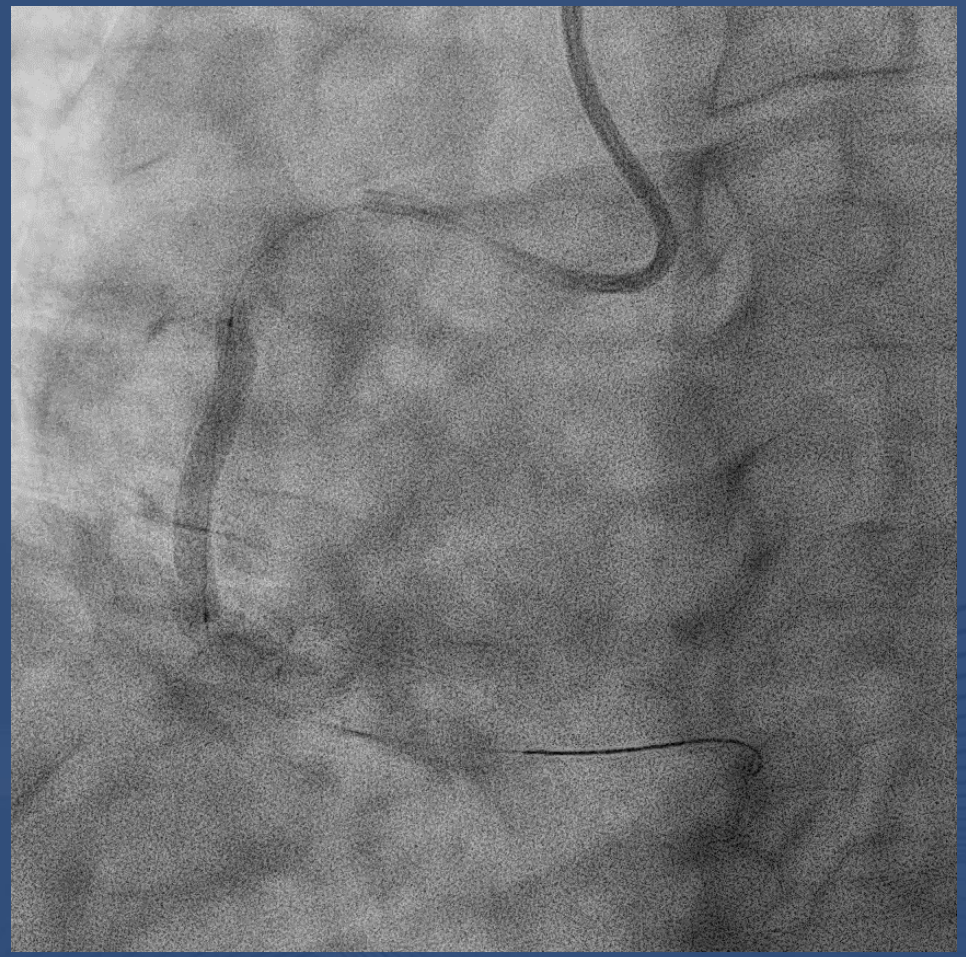


- Ikazuki zero 2.0*20

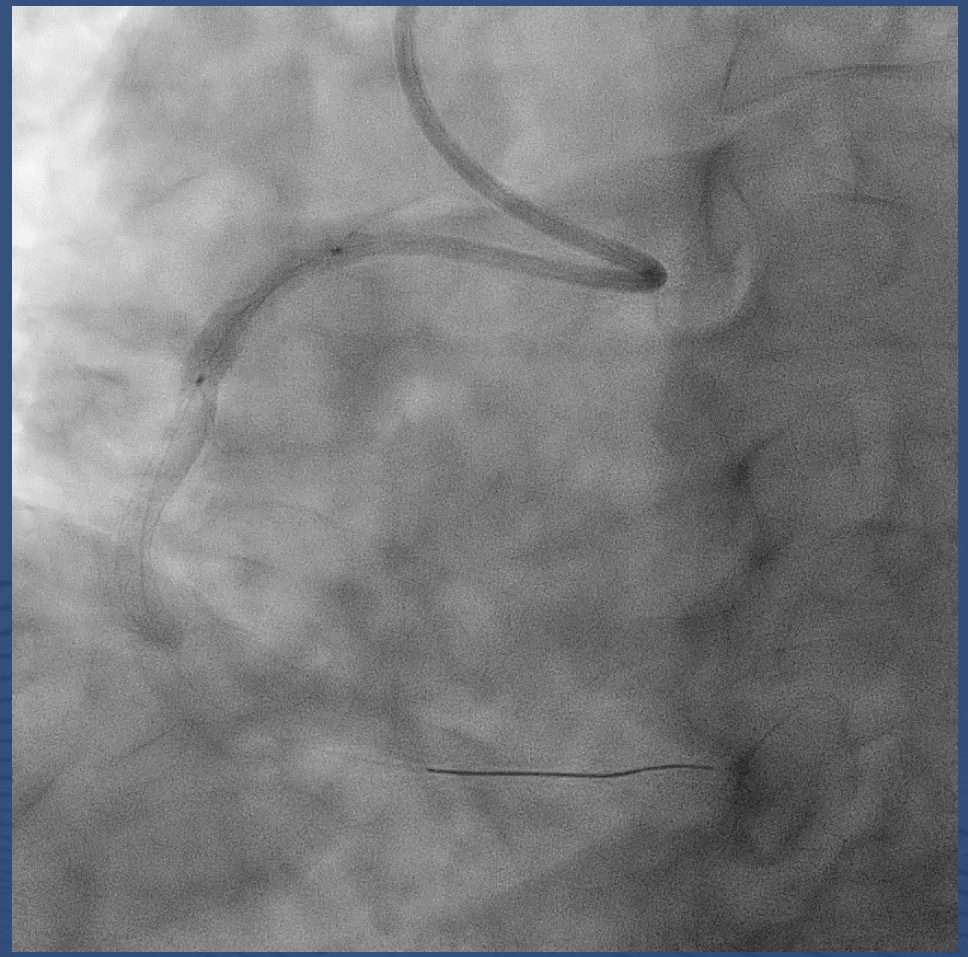


- Ikazuki zero 3.0*15

Coronary Angiography

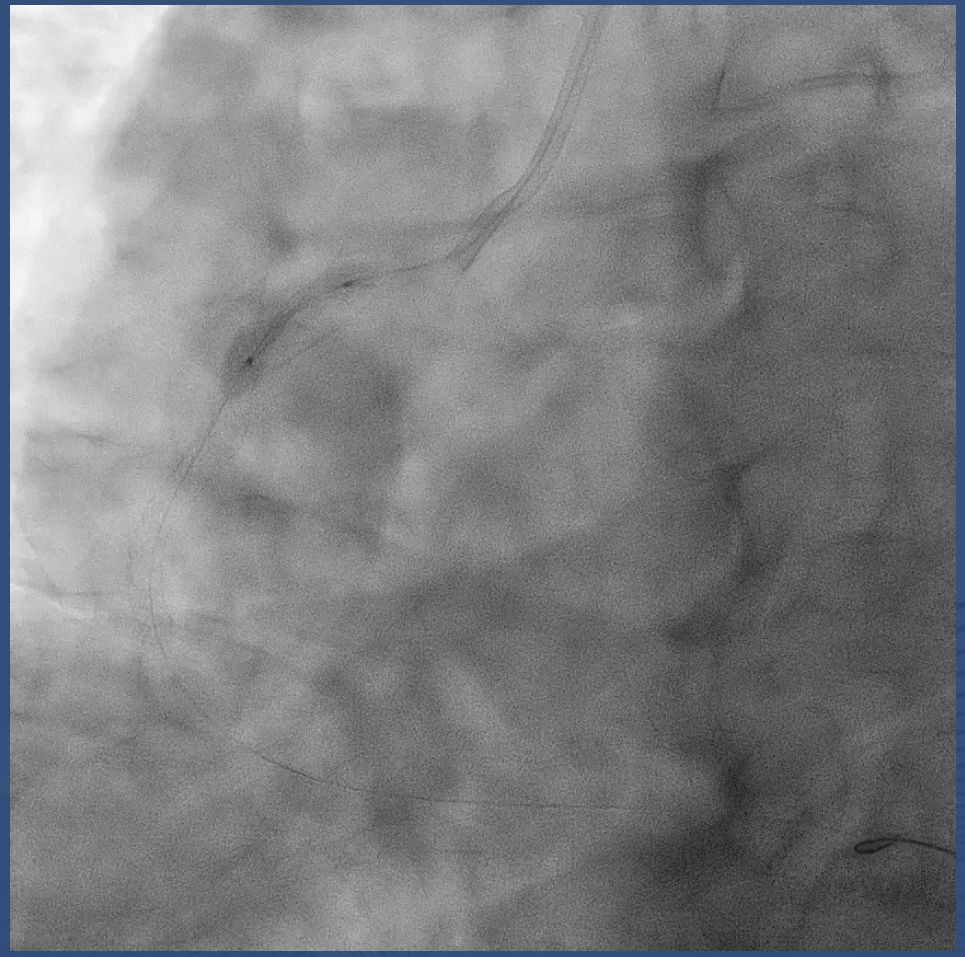


- Onyx stent 4.0*30

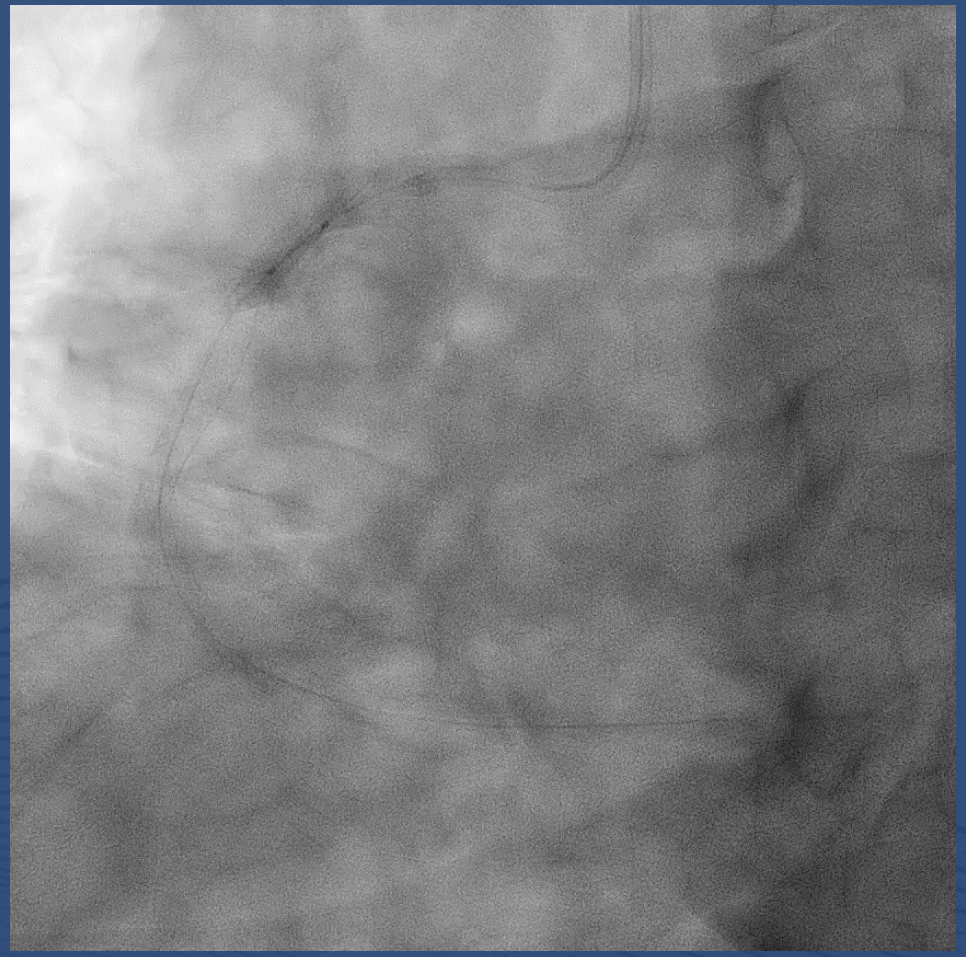


- Onyx stent 4.0*18

Coronary Angiography

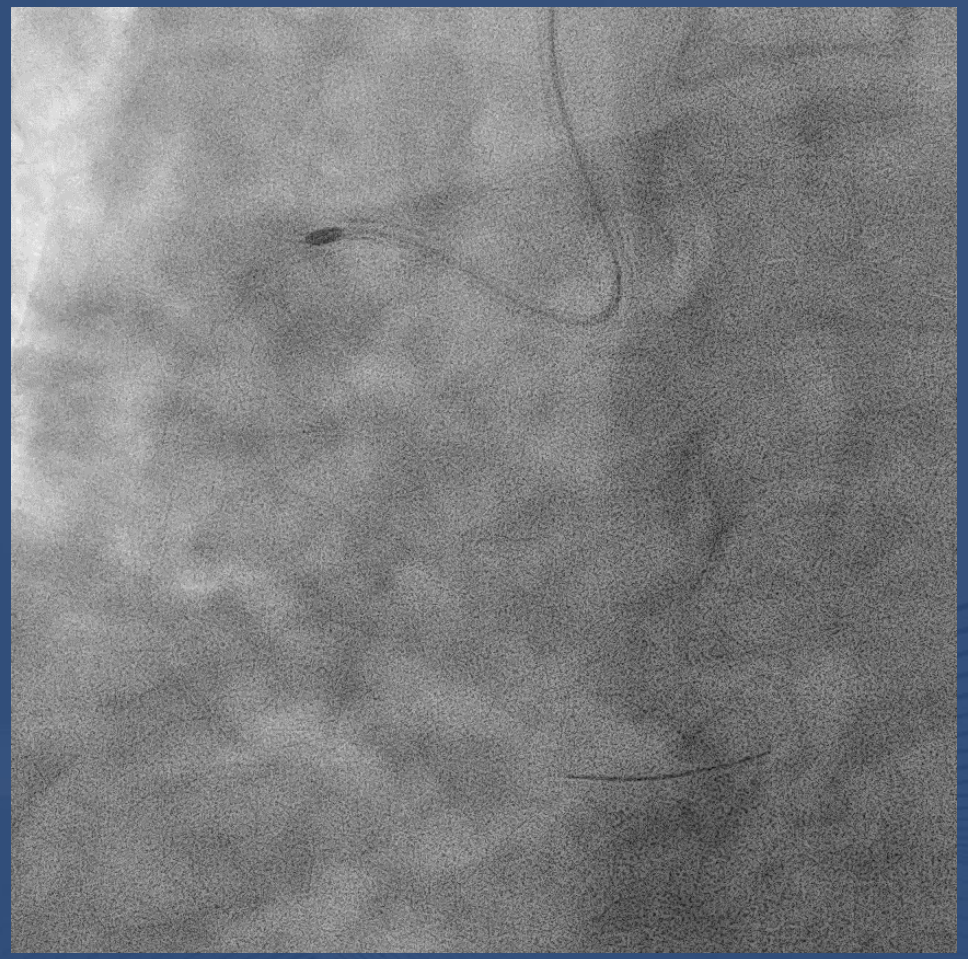


- NC Emerge 4.0*15

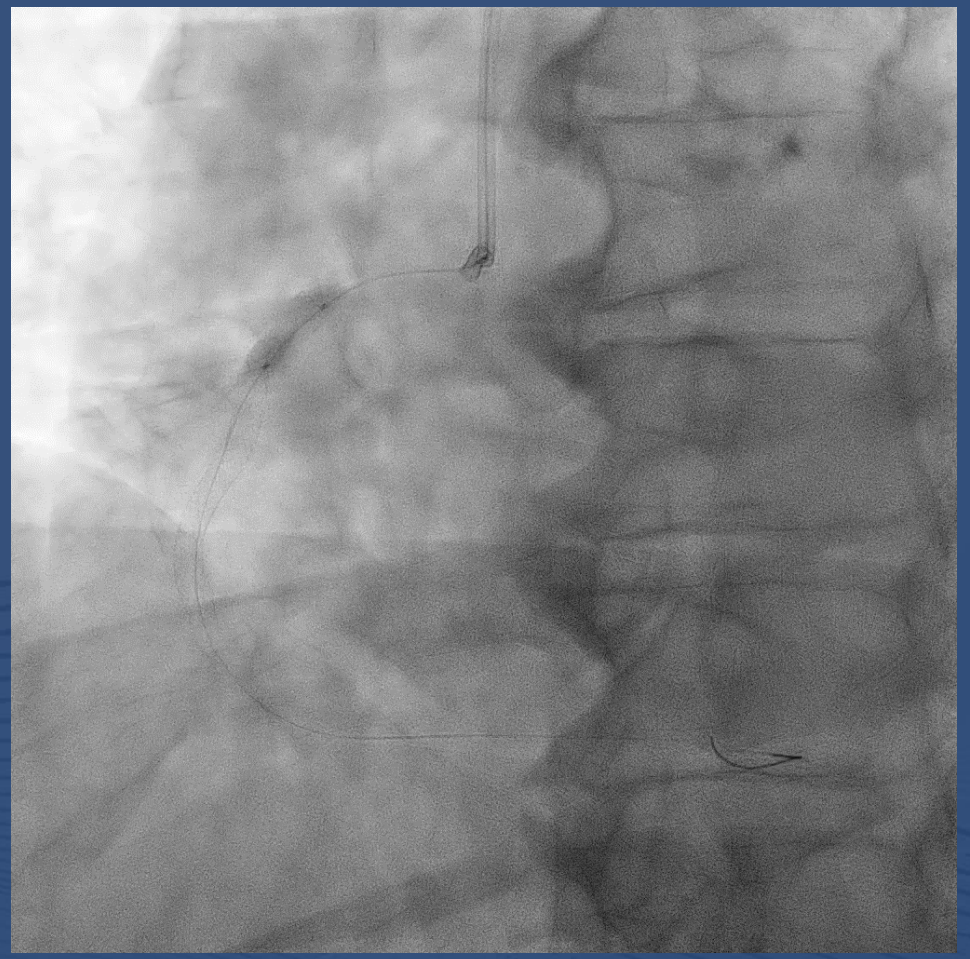


- NC Emerge 4.0*8

Coronary Angiography

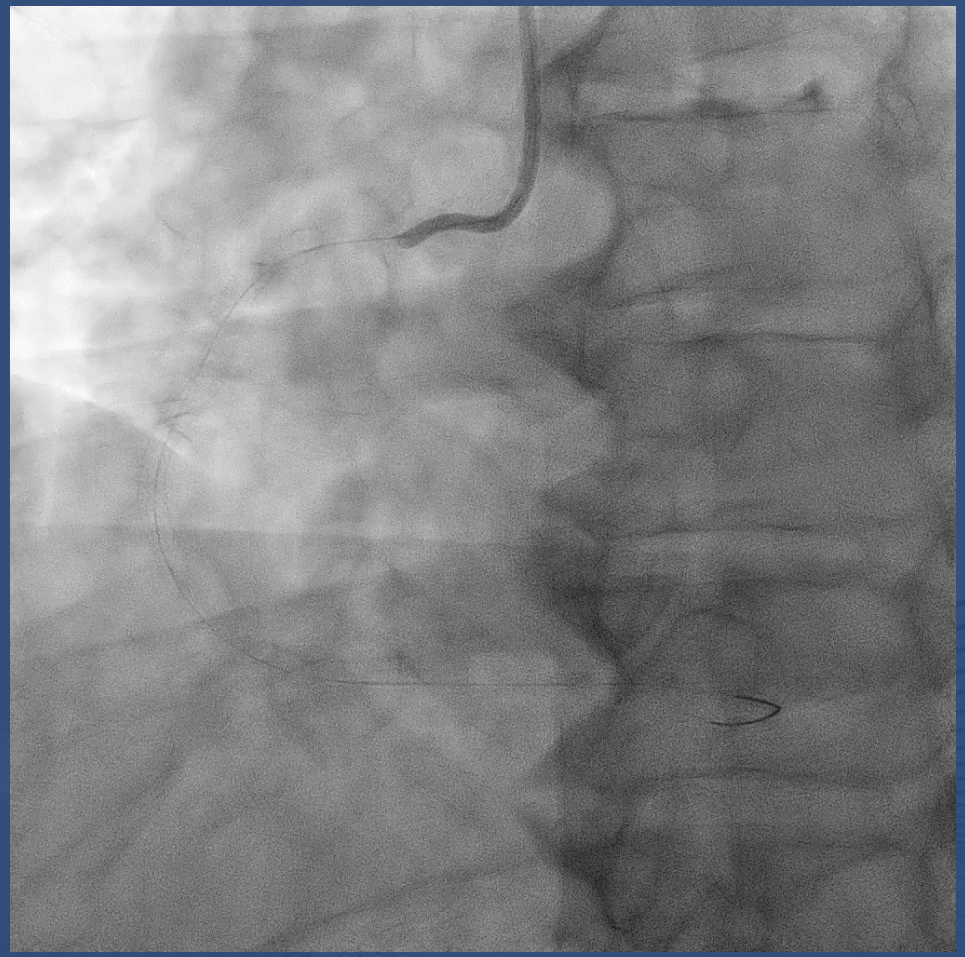


- ROTA 1.75 burr

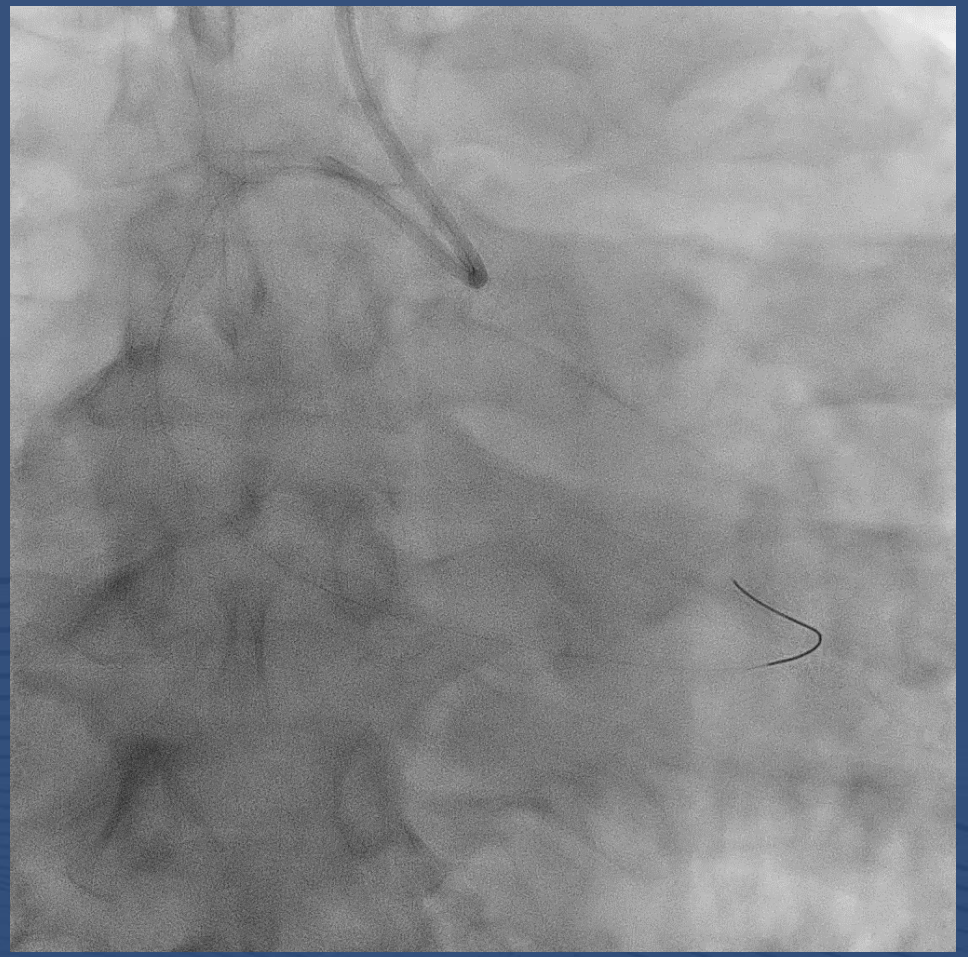


- NC Emerge 4.0*8

Coronary Angiography

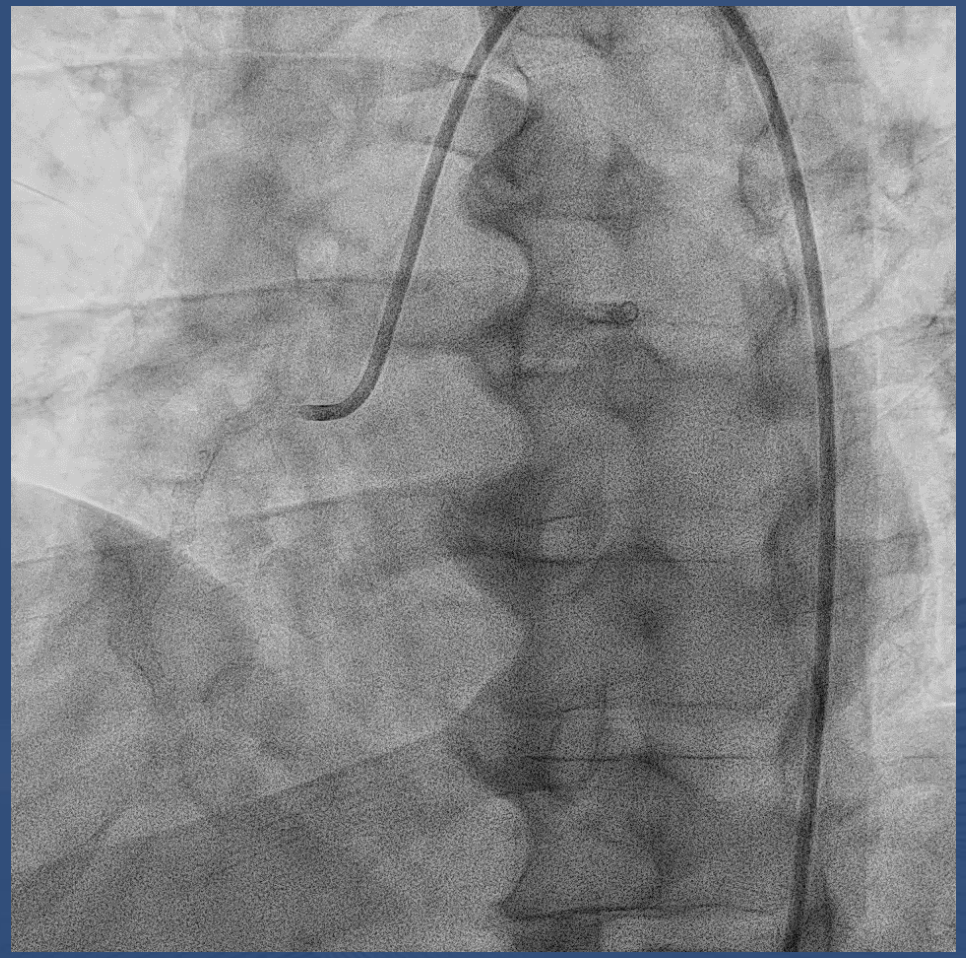


- 1st Day Final

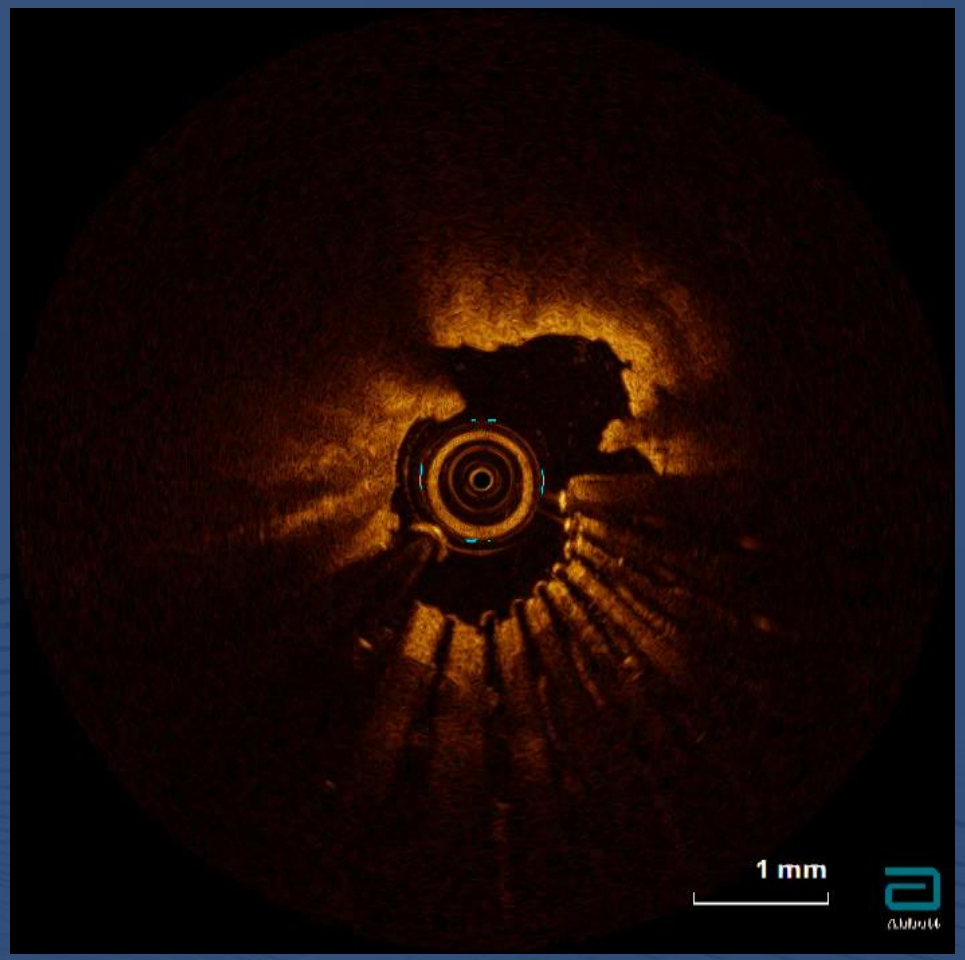


- 1st Day Final

Coronary Angiography

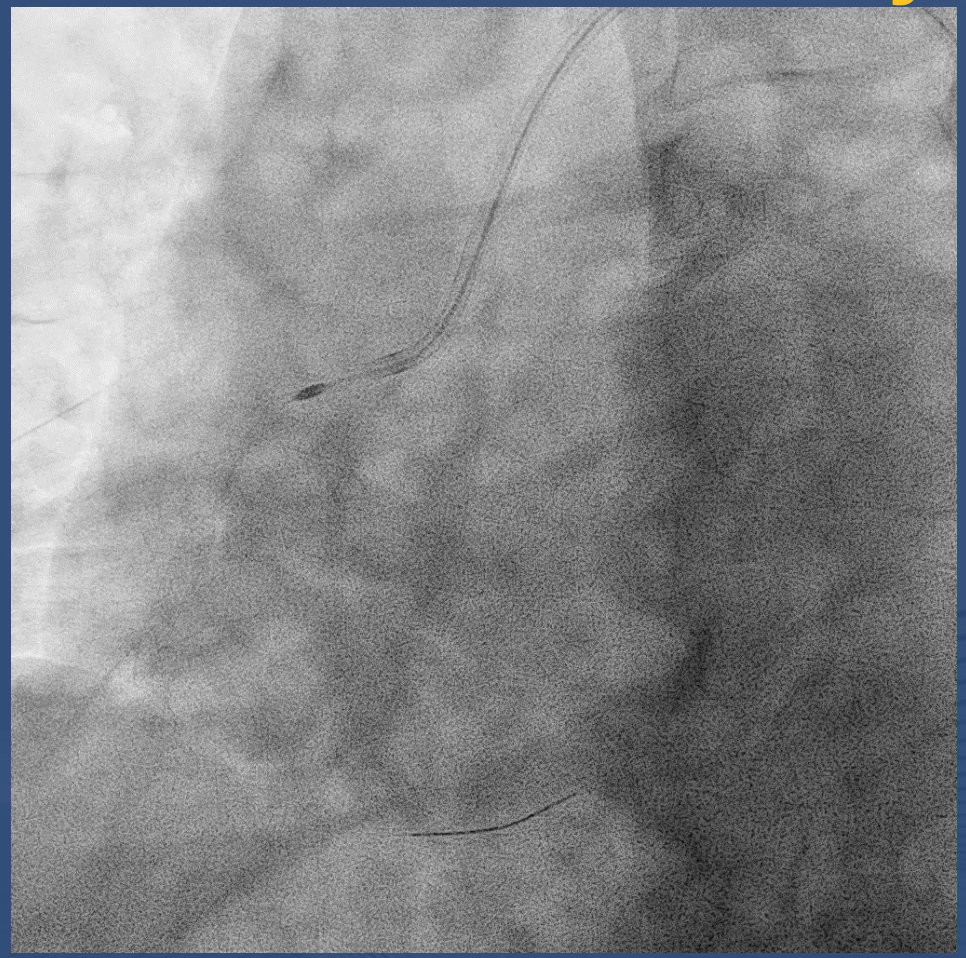


- 2nd Day Pre RCA

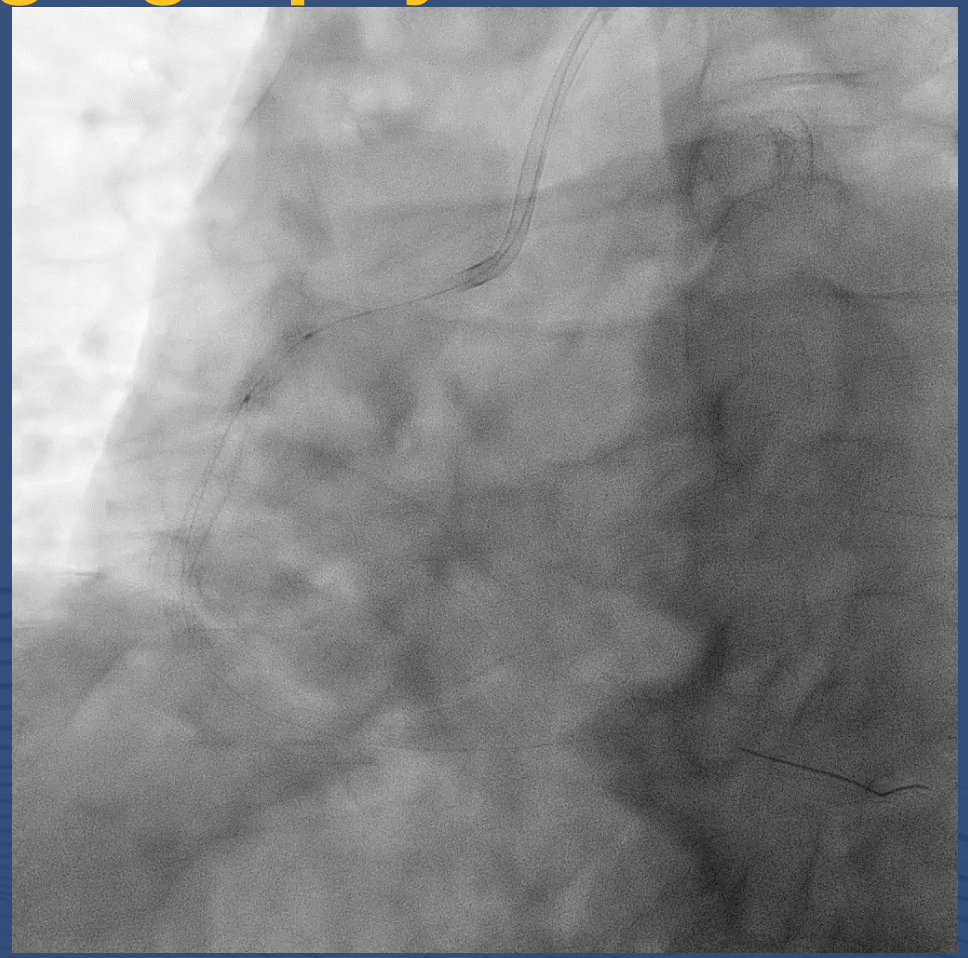


- 2nd Day Pre OCT

Coronary Angiography

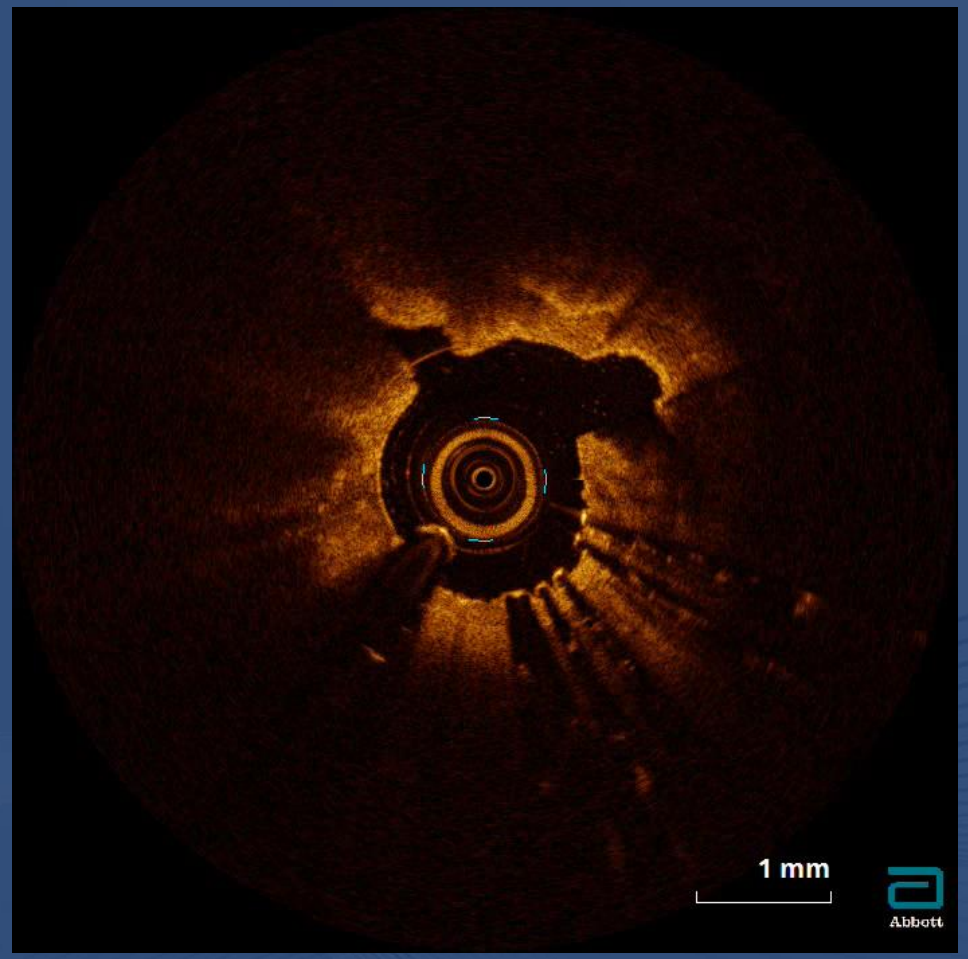


- ROTA 1.25 burr > 1.5burr

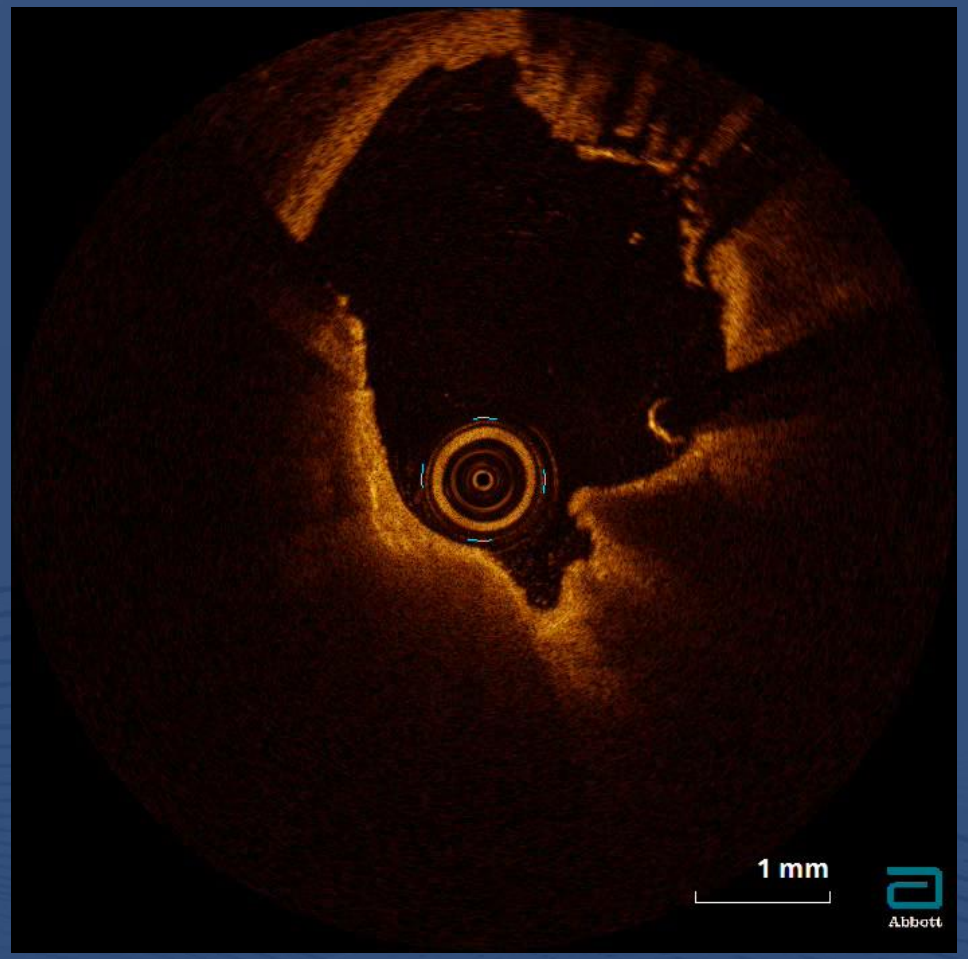


- NC Emerge 4.0*12

Coronary Angiography

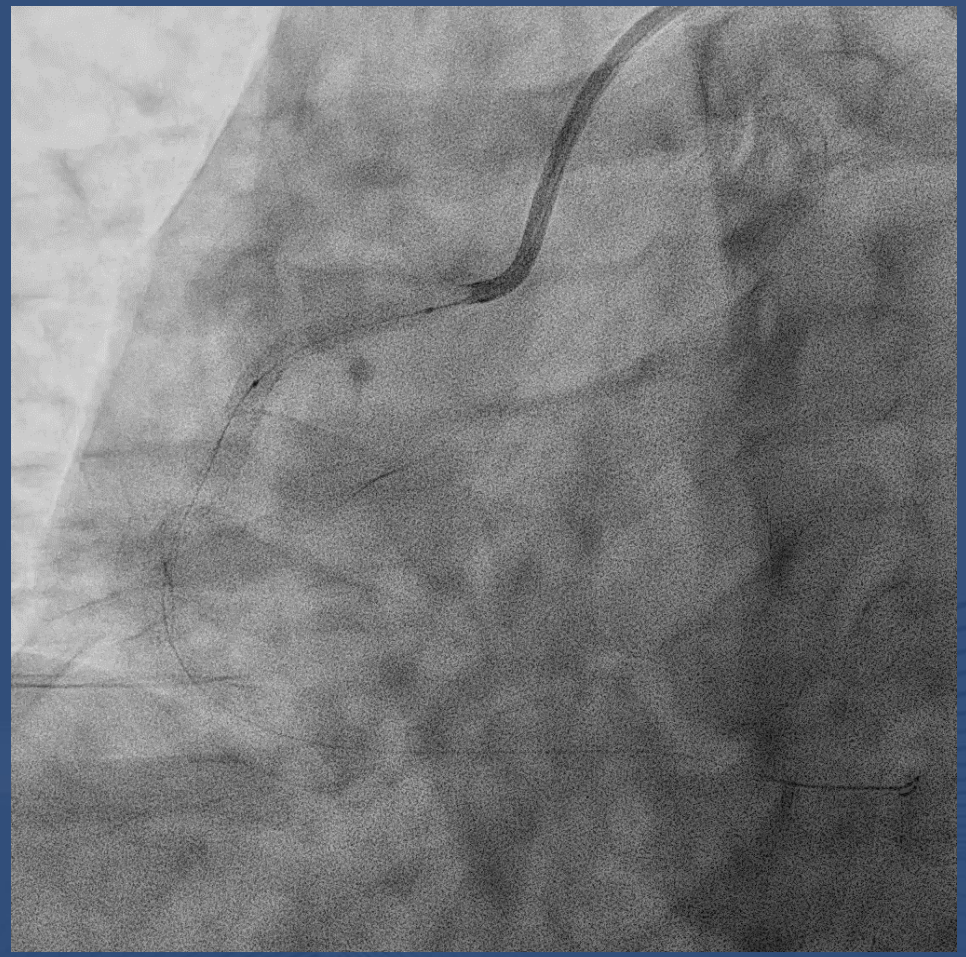


- Pre OCT

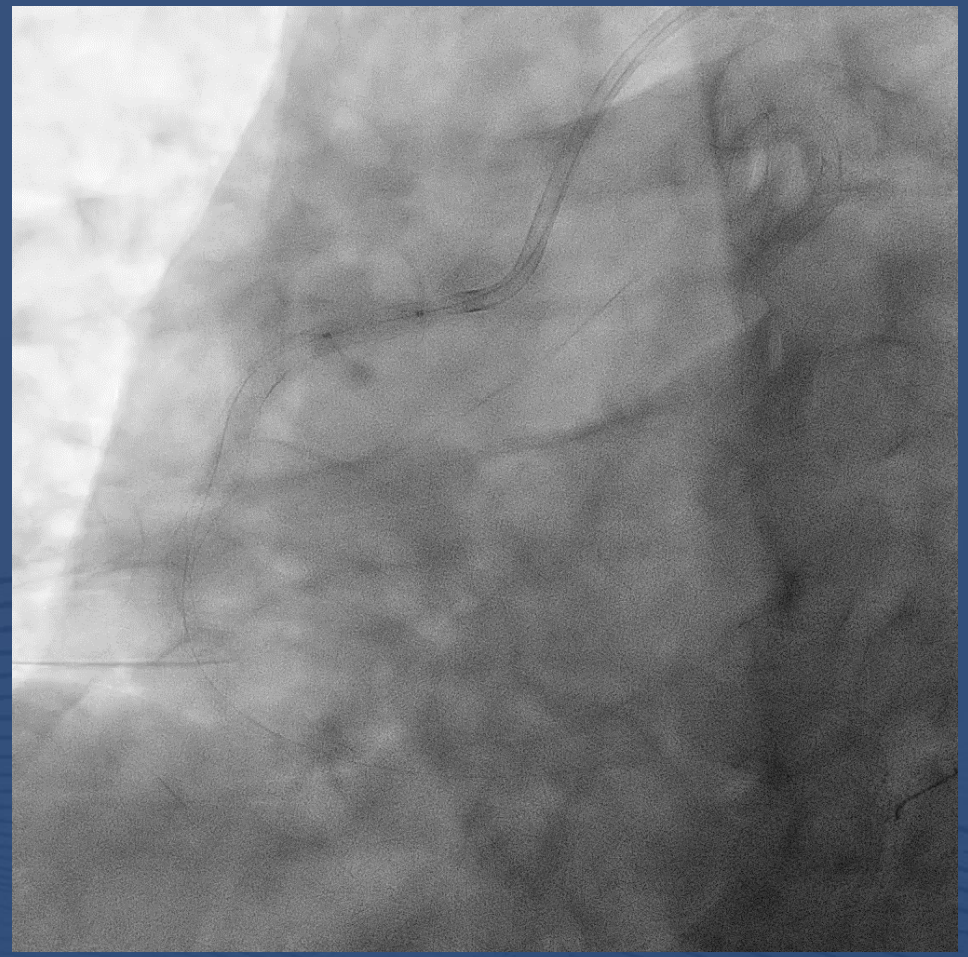


- Post Ablation OCT

Coronary Angiography

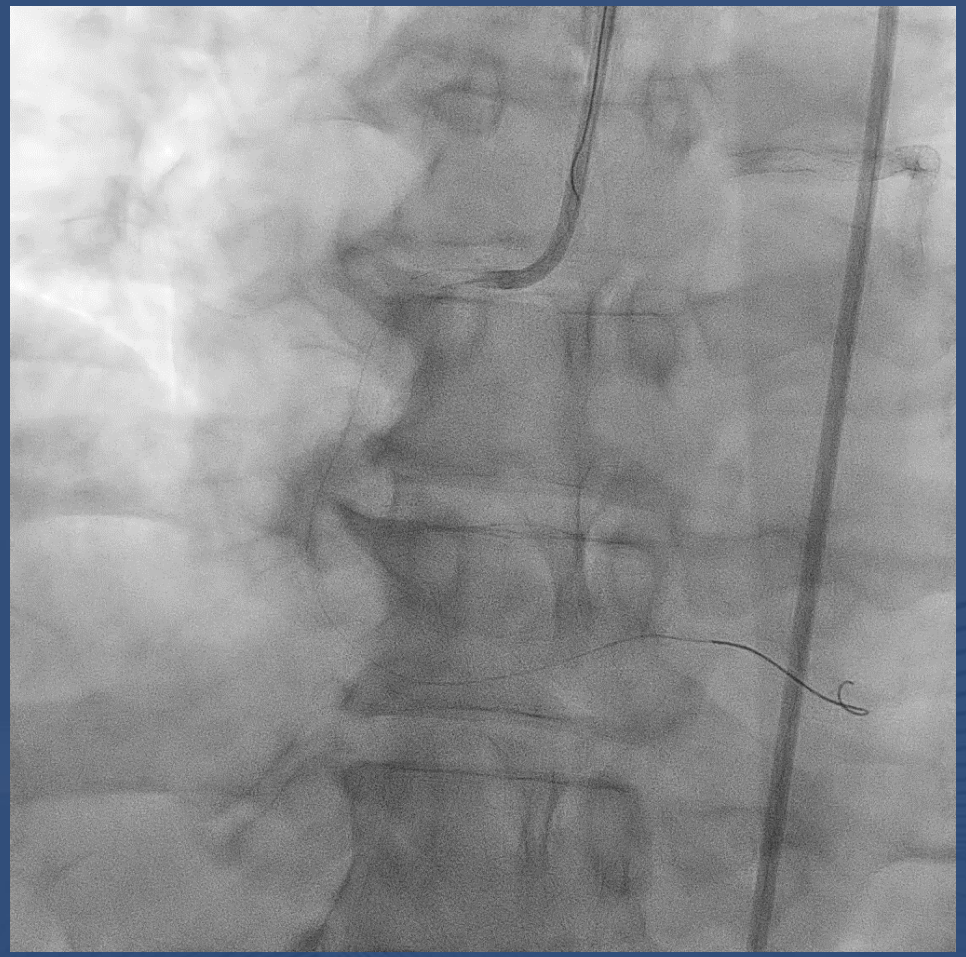


- Osiro 4.0*22

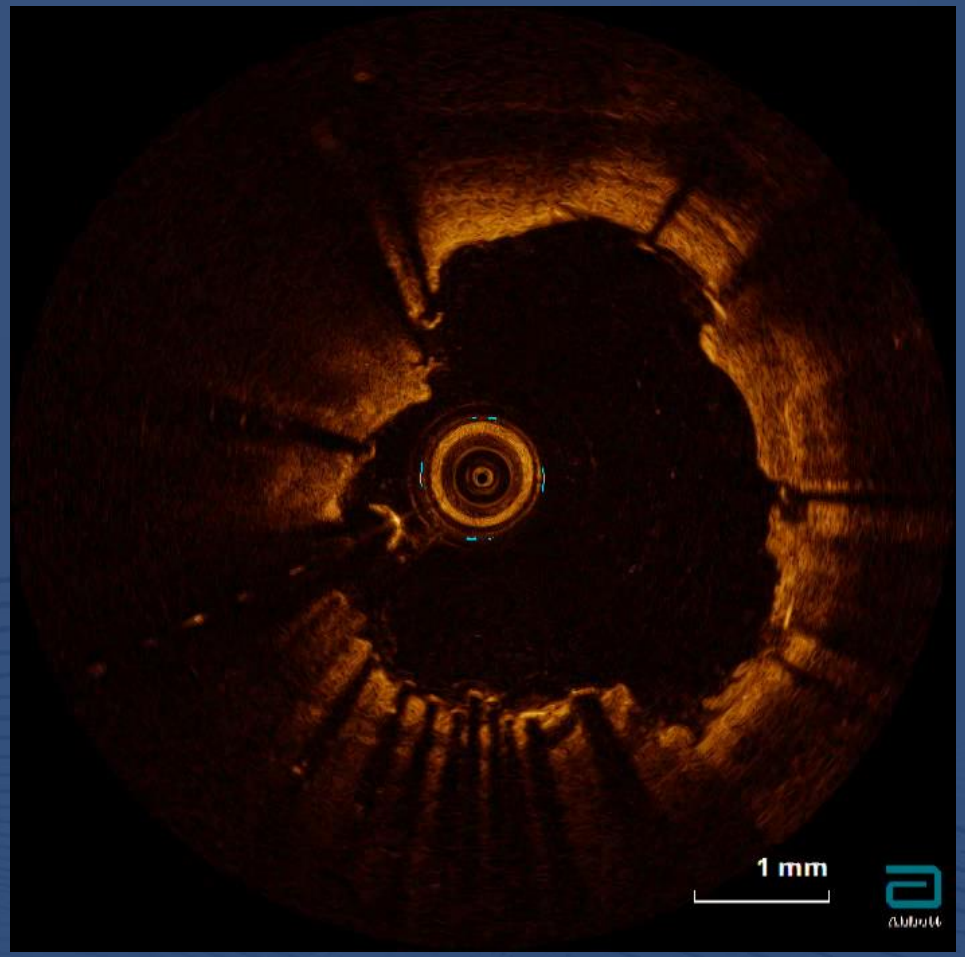


- NC Emerge 4.0*12

Coronary Angiography



- Final RCA



- Final OCT

Conclusion

- Case 1:
  - After rotablation, I used scoring balloon instead of NC balloon, but it cut off.

- Case2:
  - stent was deployed before making a calcium crack.

Conclusion

- Coronary calcium makes procedure complexed.
- Evaluation of lesions using these modalities (IVUS, OCT) must be accurate.
- Choosing the appropriate instrument during the procedure is very important.
- Sufficient expansion must be confirmed before stent deployment.