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MEDICAL GROUP



FV HOSPITAL

OCT Guidance for PCI Complex Lesion

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FV Hospital



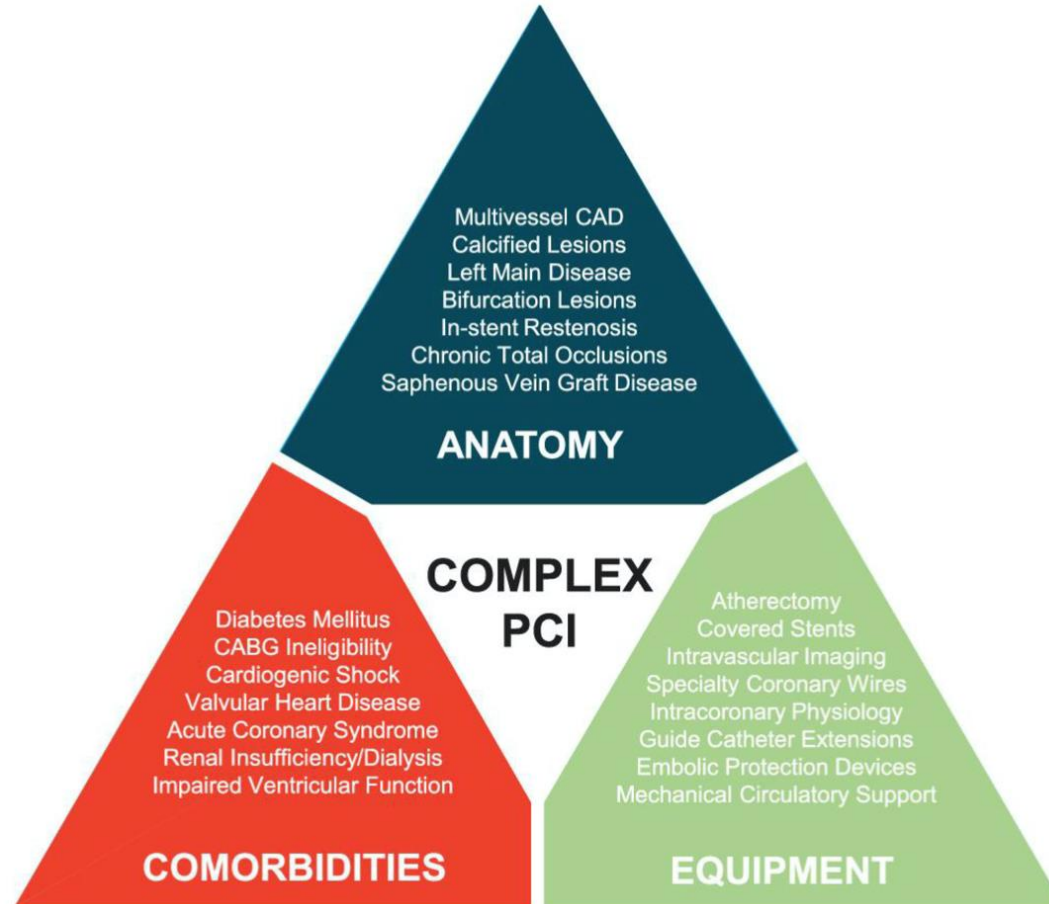
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www.fvhospital.com

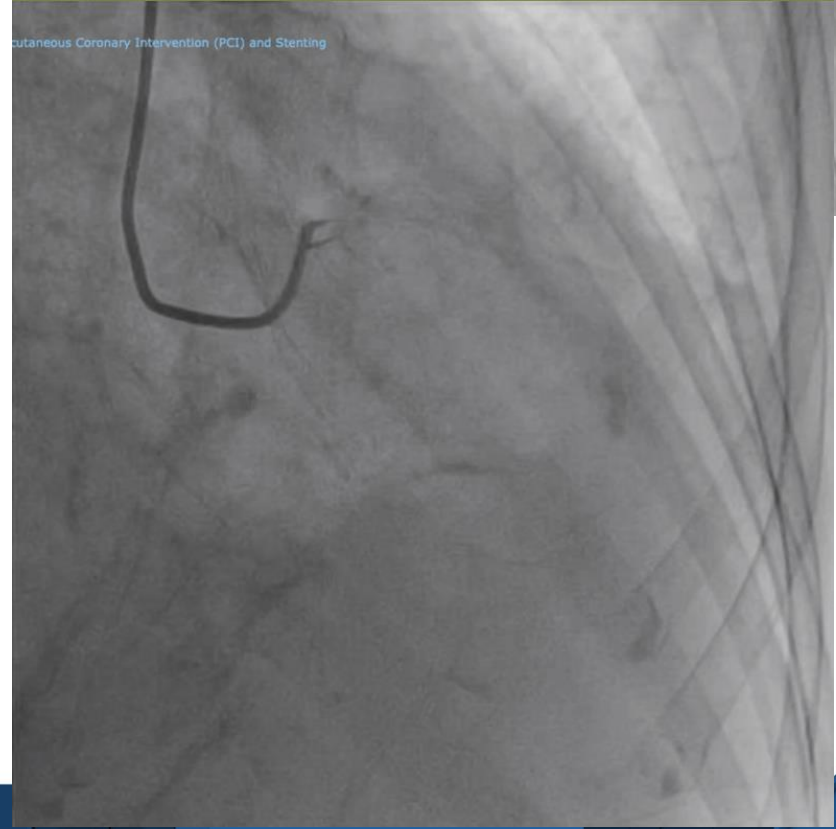
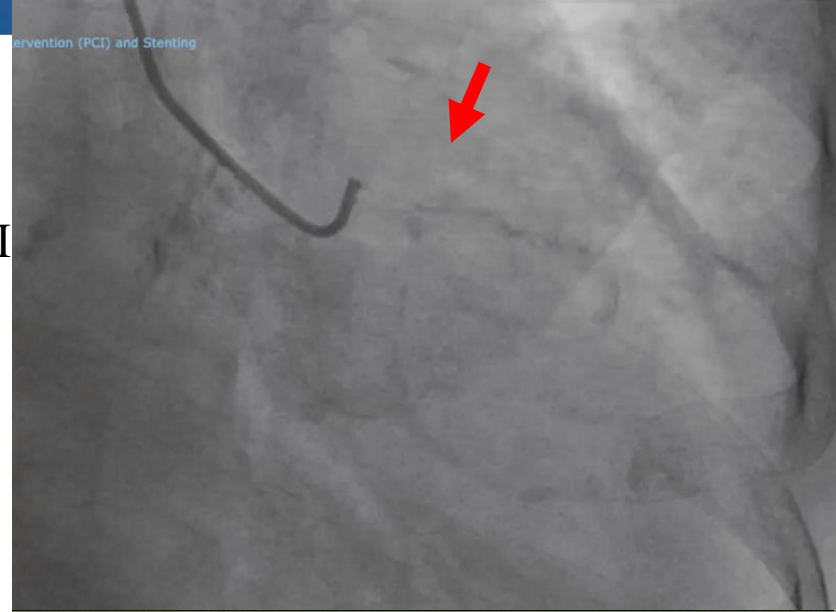
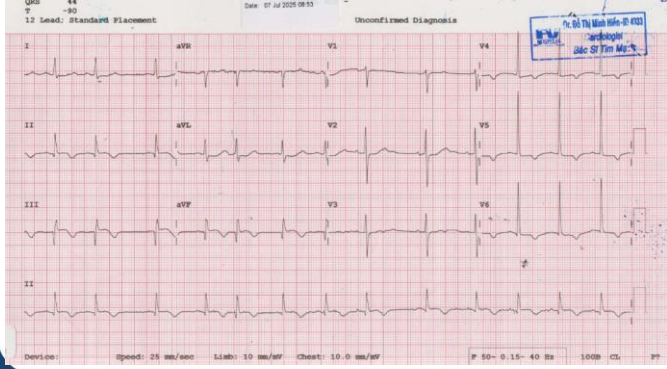


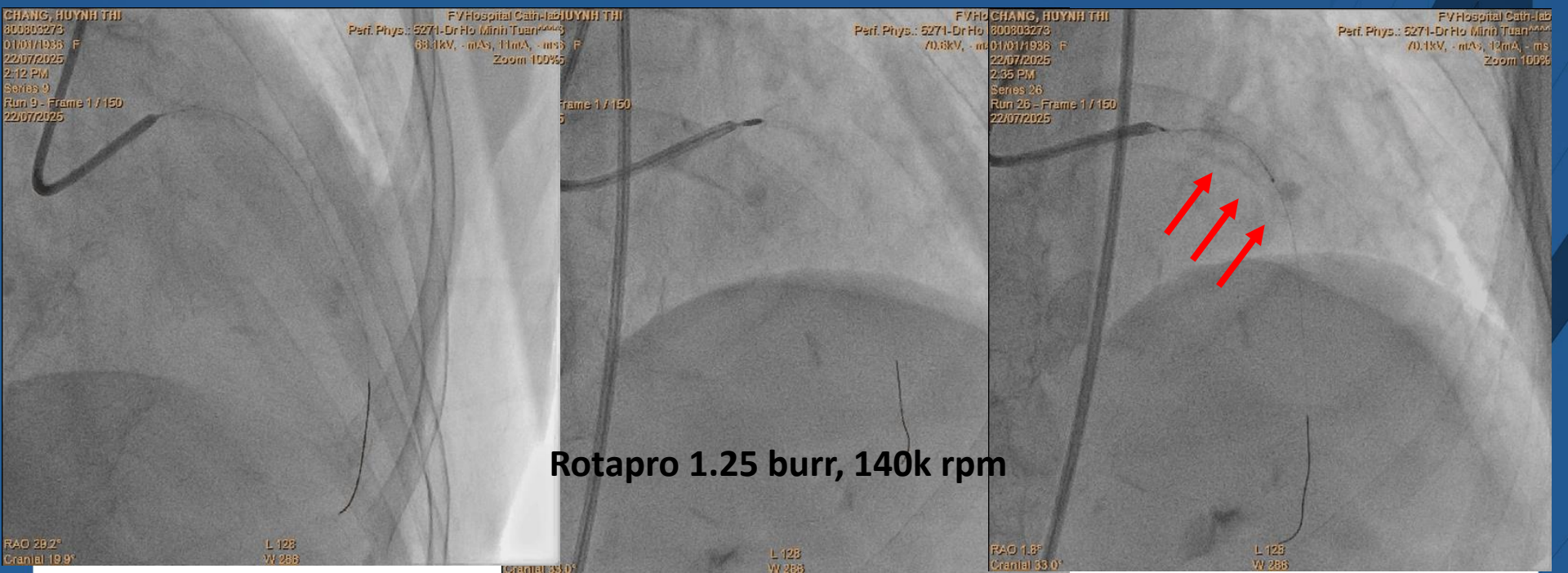
Complex PCI



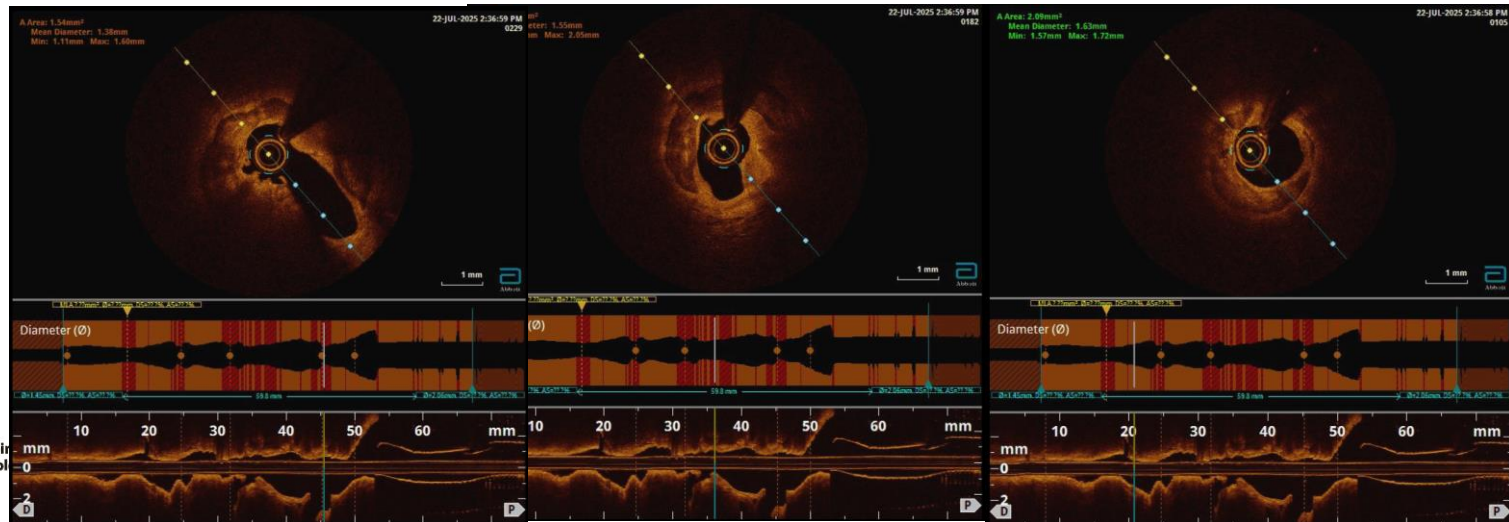
- 89 yrs, Lady, HTN, T2DM
- Referred from other hospital with inferior STEMI
- eGFR: 66.7 ml/min/1.73m2
- LVEF: 44%

07-07-2025 16:54
FV Hospital Cath-lab
Zoom: 154%

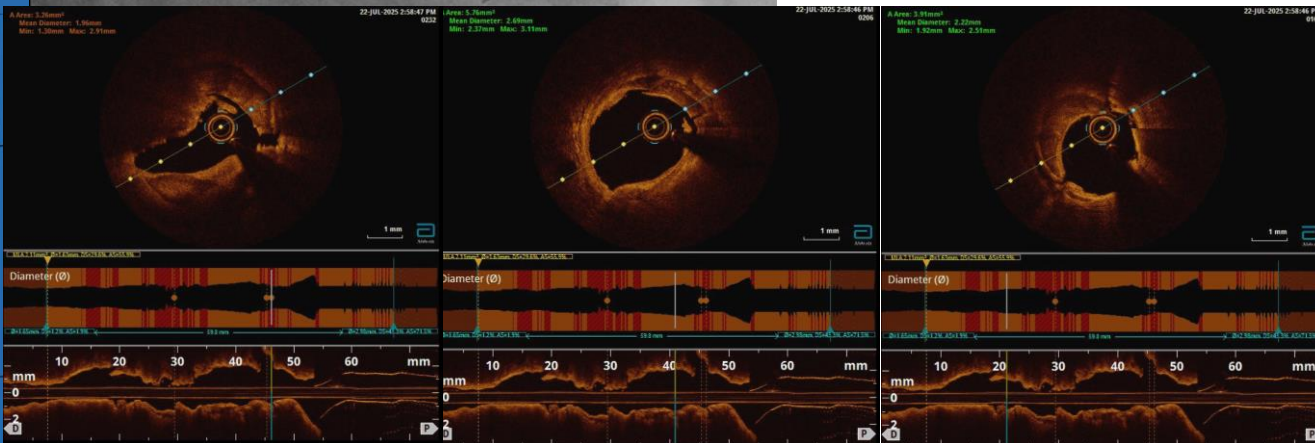
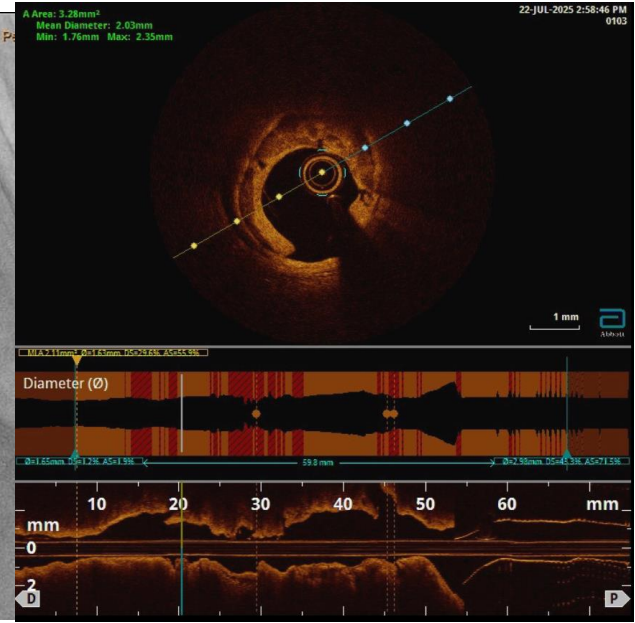
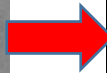
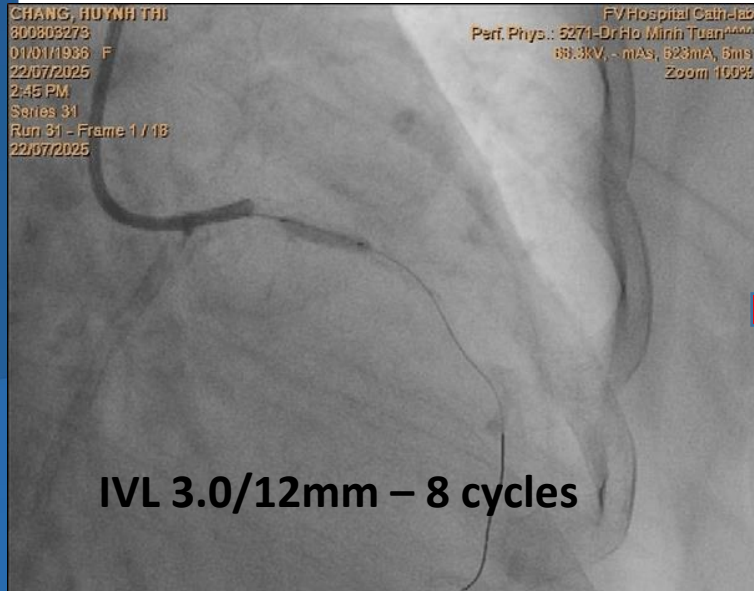




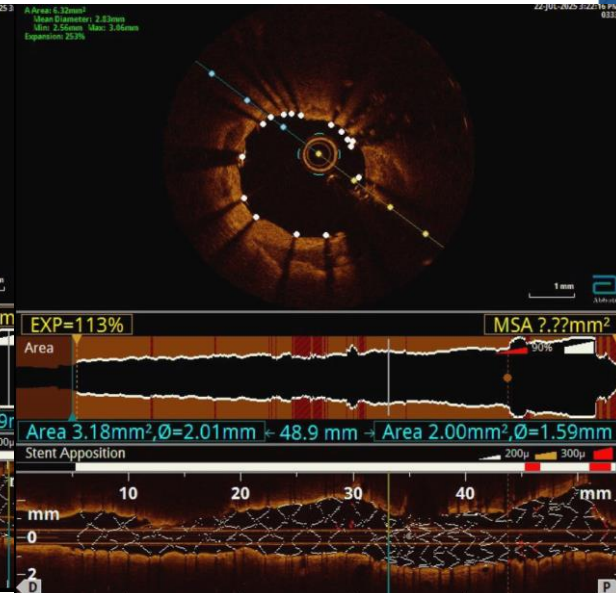
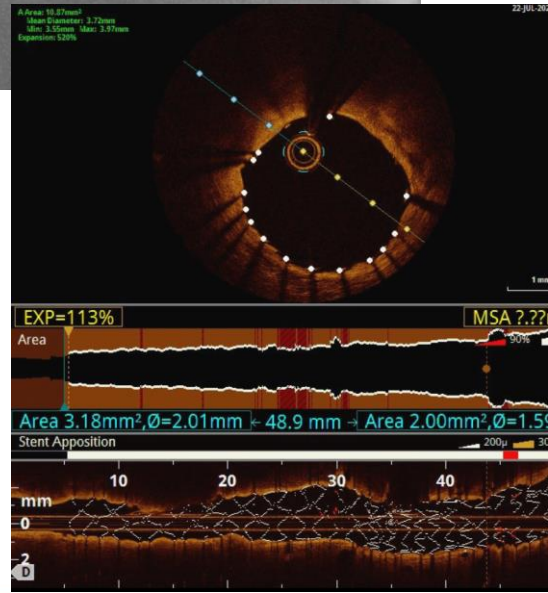
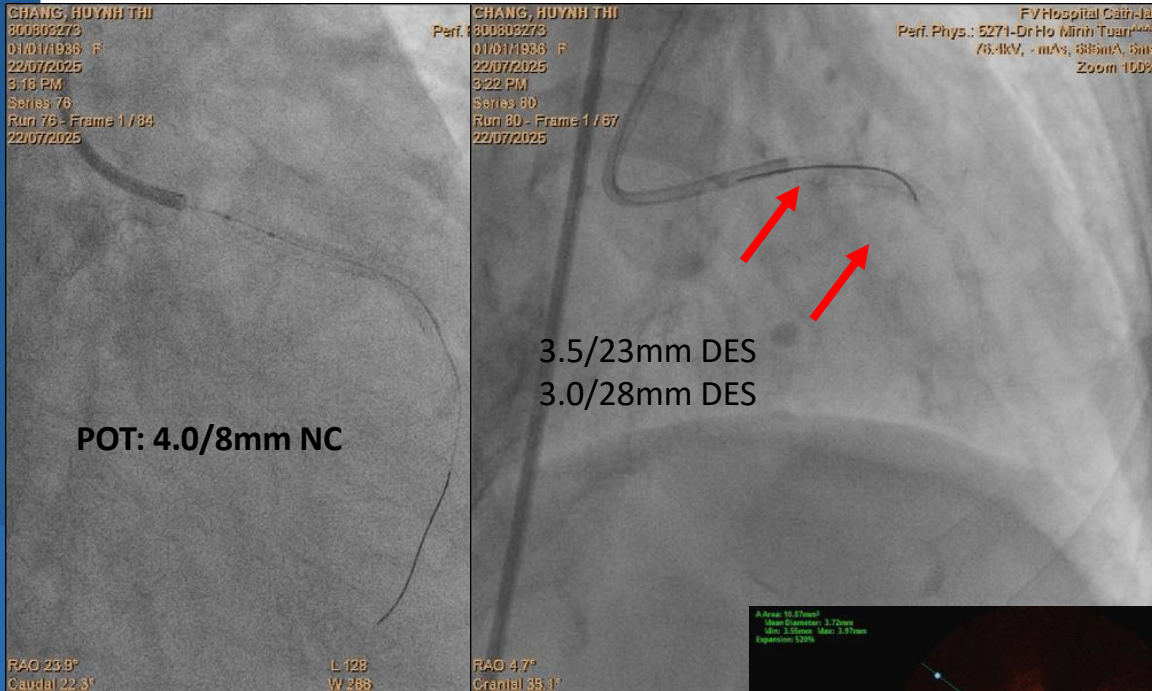
OCT and Calcium—You Cannot Treat What You Cannot See



IVL -> OCT -> Scoreflex -> OCT

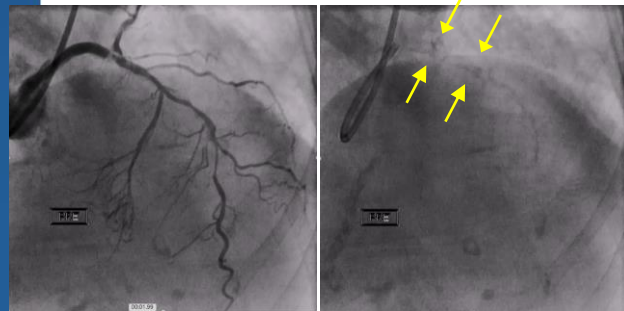


Final LM-LAD

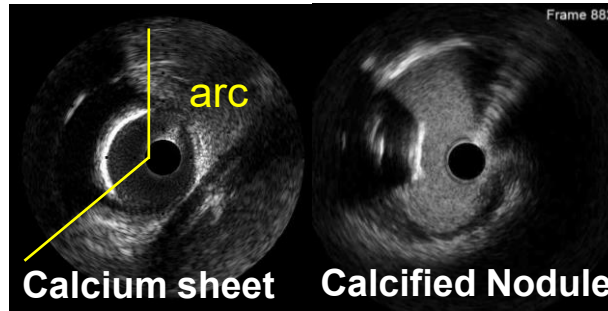


Identification of Coronary Calcification

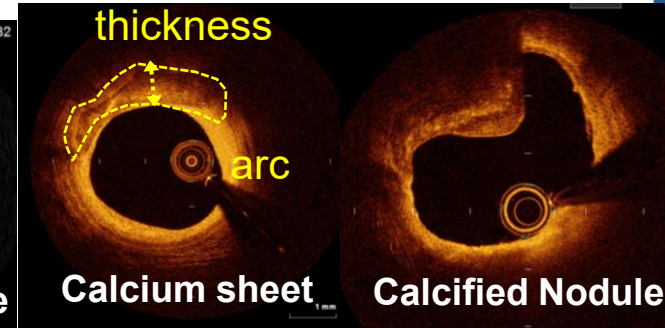
Angiography



IVUS



OCT



- **None/mild:** no/faint radiopacities
- **Moderate:** radiopacities noted only during the cardiac cycle before contrast injection
- **Severe:** radiopacities noted without cardiac motion before contrast injection “tram-track”

Calcium sheet

Highly echogenic
Acoustic shadow behind
 Reverberations

Calcified Nodule (CN)

Convex luminal surface
 Acoustic shadow behind
 Presence of substantive calcium proximal and/or distal to the lesion

Measurable

Arc, length (longitudinal)

Calcium sheet

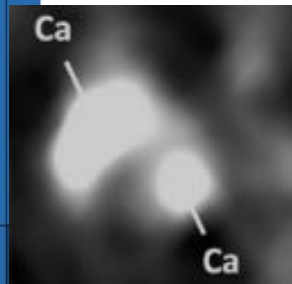
Signal-poor or **heterogeneous** region
Sharply well-delineated border

Calcified Nodule (CN)

Protruding signal poor, and well-delineated region frequently forming sharp angles
Casting a dorsal shadow
Eruptive or **non-eruptive**
 Presence of substantive calcium proximal and/or distal to the lesion

Measurable

Arc, length (longitudinal),
thickness



Patients with coronary artery calcium score (CACS) ≥ 300 are considered to be at moderate to severe risk.

International Journal of Cardiology

Patient selection for RotaPro

The Skeptics

- Device uncrossable lesions:
 - <1.5 mm balloon: pass, > 2mm cannot
- Facilitate the IVL catheter to reach the severely calcified lesions

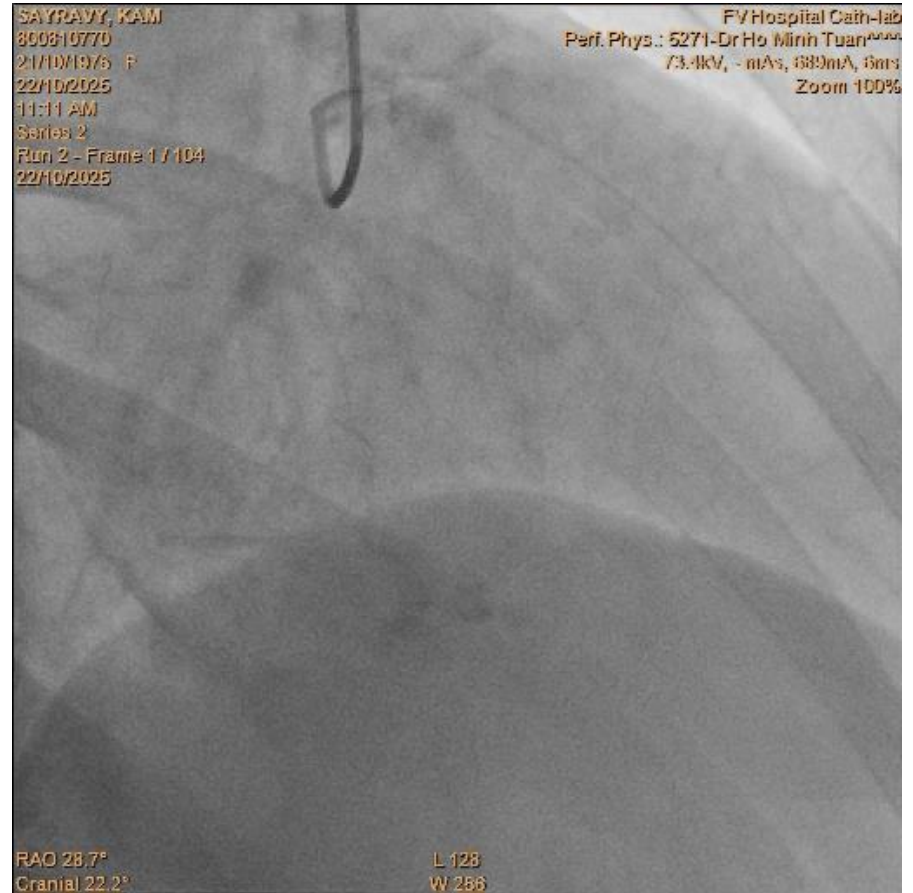
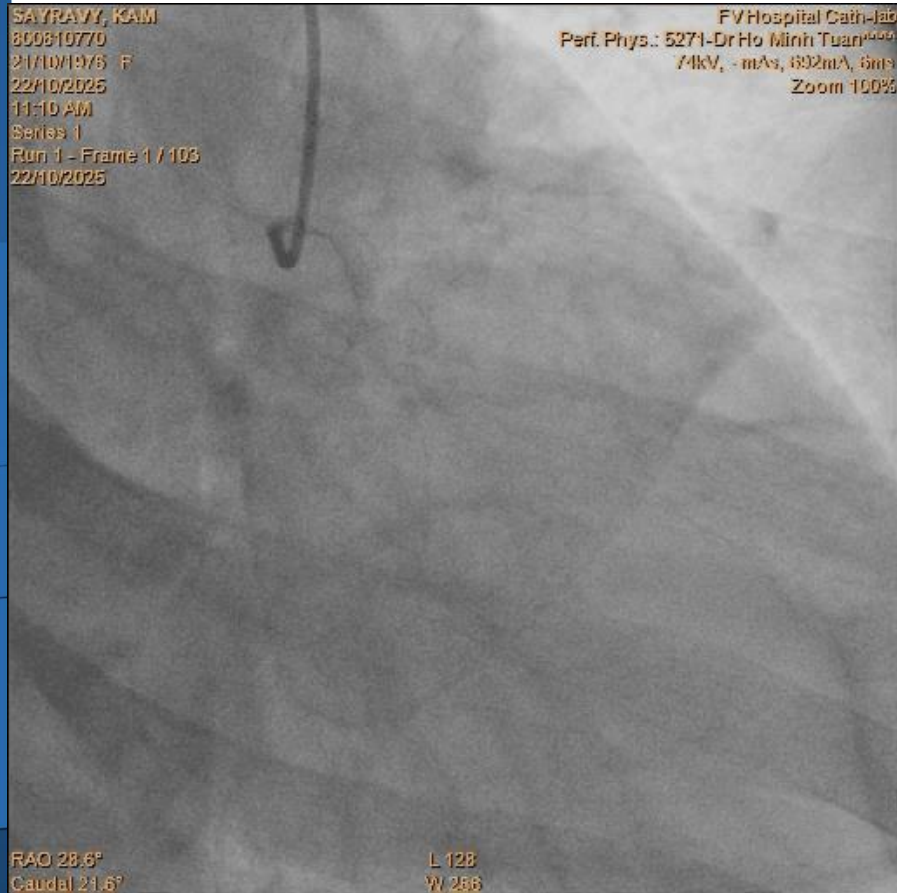
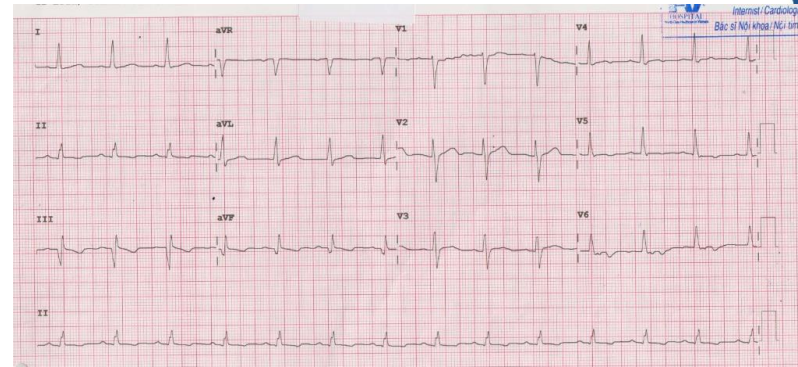
The Enthusiasts

- Device uncrossable lesions:
 - <1.5 mm balloon: pass, > 2mm cannot
 - IVUS/OCT or microcatheters cannot cross the lesion
- Facilitate the IVL catheter to reach the severely calcified lesions
- Calcification showing multi-layers of reverberation in IVUS
- Stent ablation





50 yrs, Lady, T2DM, HTN, FH father MI at 55 yrs
 Angina CCS III, Local hospital CCTA and referred to FV
 eGFR:77.5 ml/min/1.73m2
 LVEF: 45% Simpson



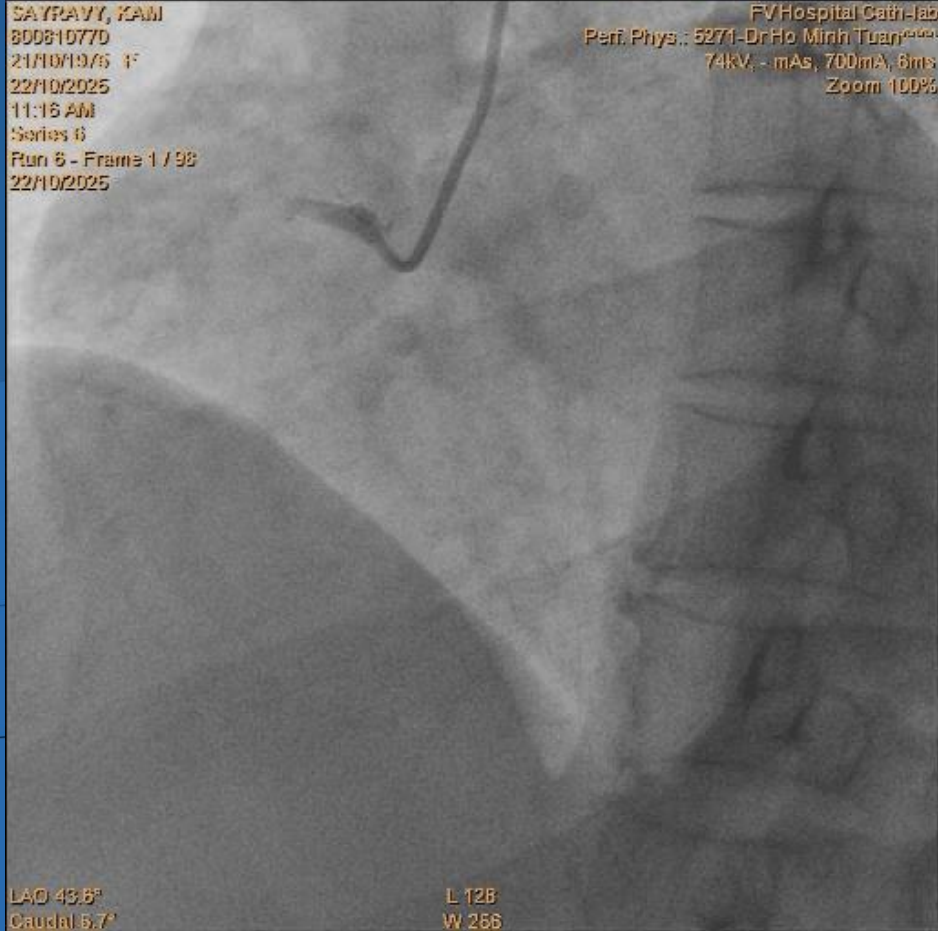


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CTO/RCA

SAYRAPHY, KAM
800810770
21/10/1976 F
22/10/2025
11:16 AM
Series 6
Run 6 - Frame 1 / 98
22/10/2025

FV Hospital Cath-lab
Perf. Phys : 5271-Dr Ho Minh Tuan^{MD, PhD}
74kV, - mAs, 700mA, 6ms
Zoom 100%

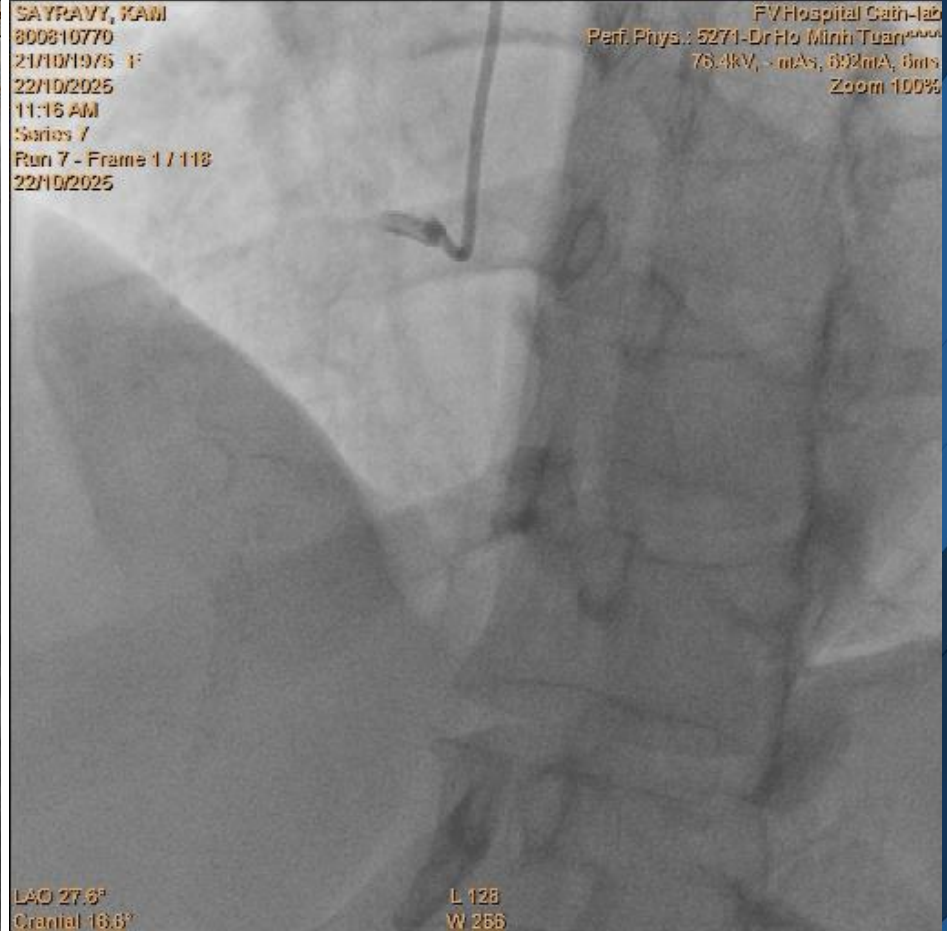


LAO 43.6°
Caudal 5.7°

L 126
W 266

SAYRAPHY, KAM
800810770
21/10/1976 F
22/10/2025
11:16 AM
Series 7
Run 7 - Frame 1 / 118
22/10/2025

FV Hospital Cath-lab
Perf. Phys : 5271-Dr Ho Minh Tuan^{MD, PhD}
76.4kV, - mAs, 800mA, 6ms
Zoom 100%



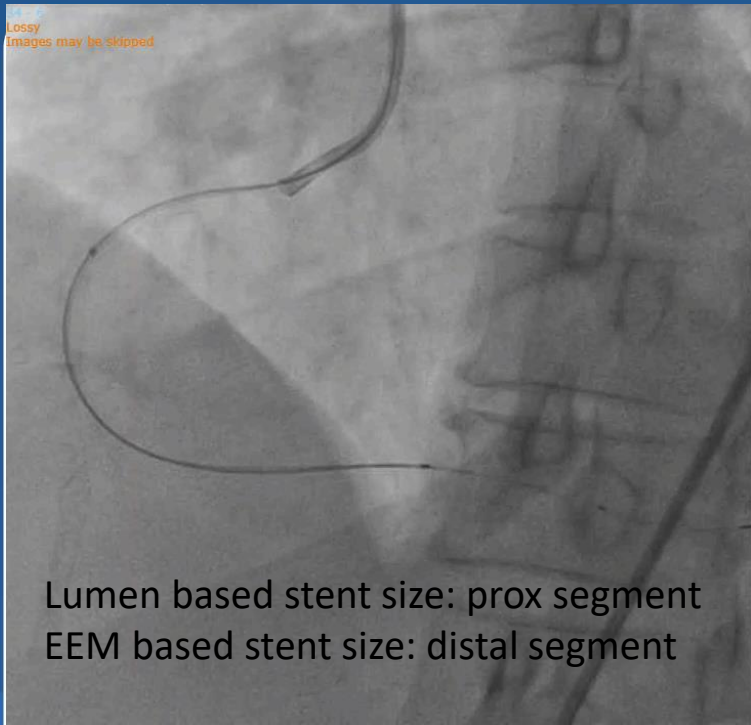
LAO 27.6°
Cranial 16.6°

L 126
W 266

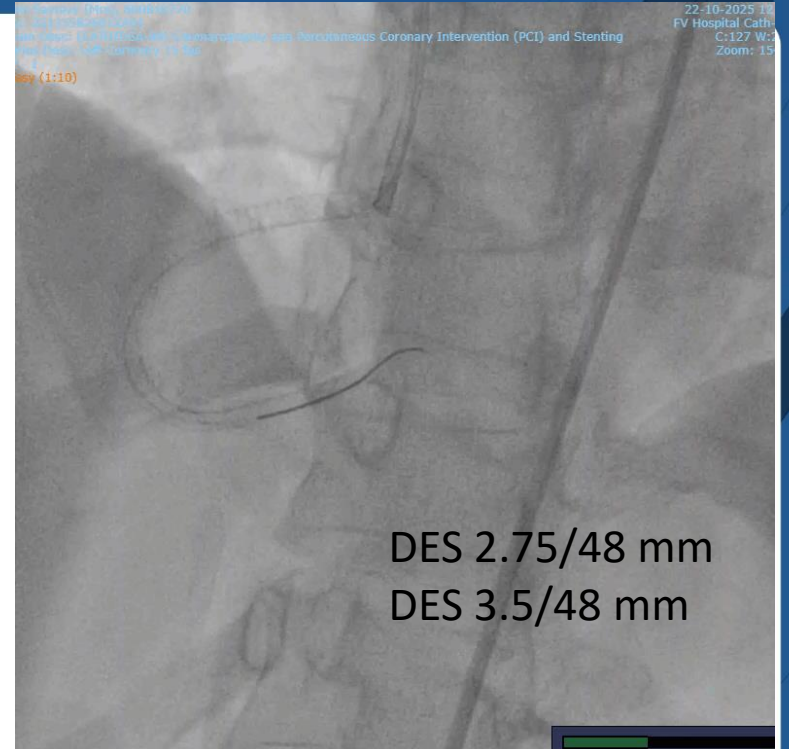


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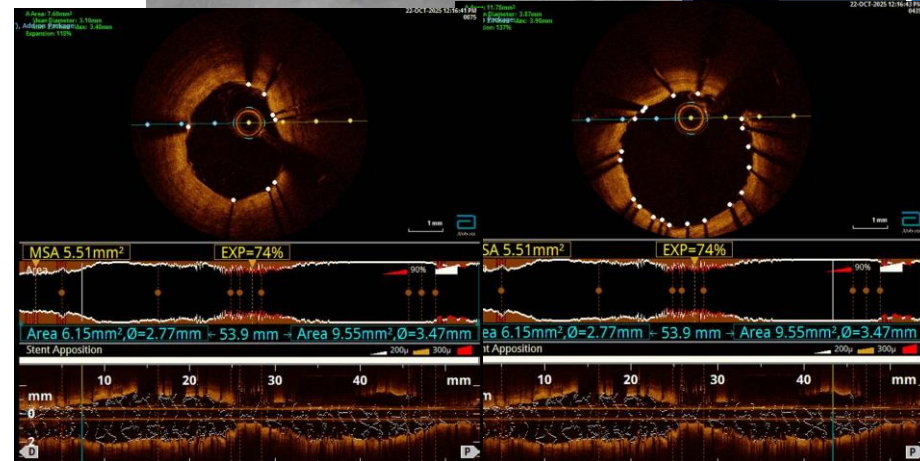
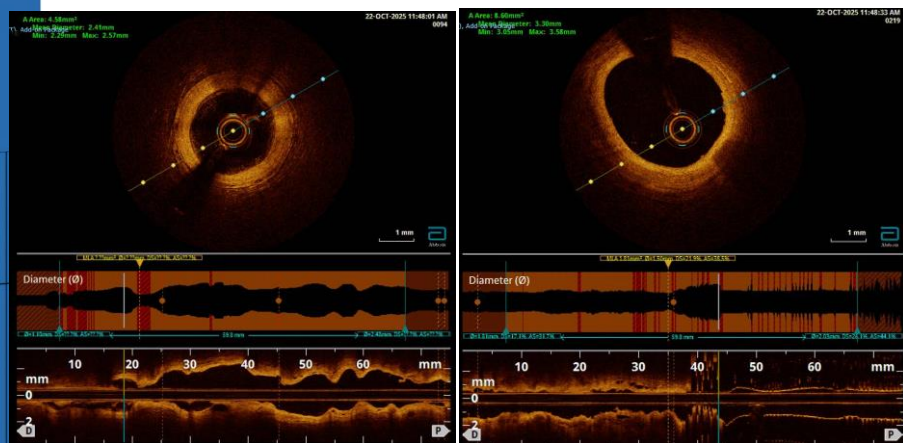
Lossy
Images may be skipped



Lumen based stent size: prox segment
EEM based stent size: distal segment



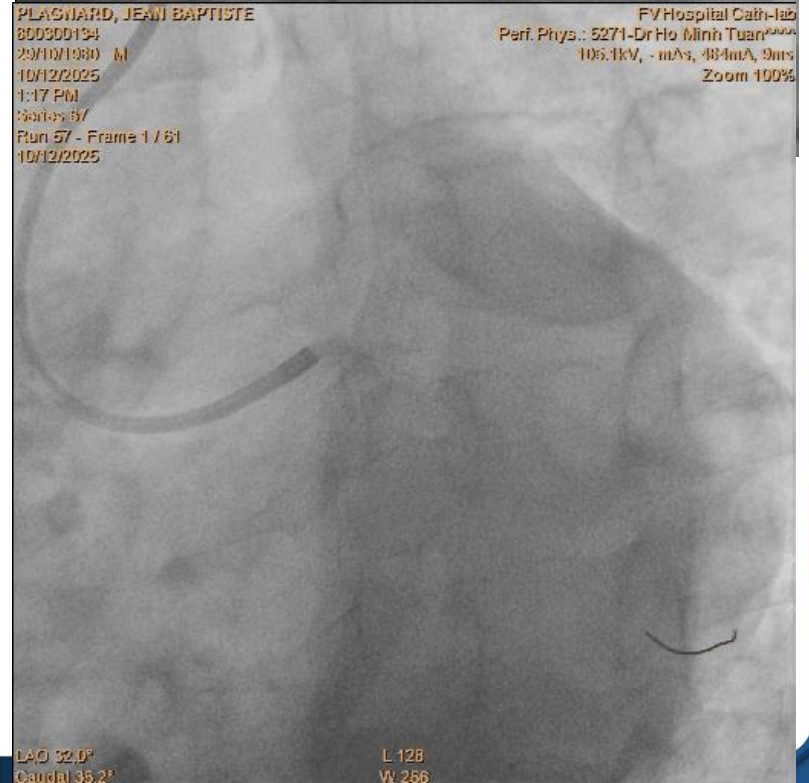
DES 2.75/48 mm
DES 3.5/48 mm



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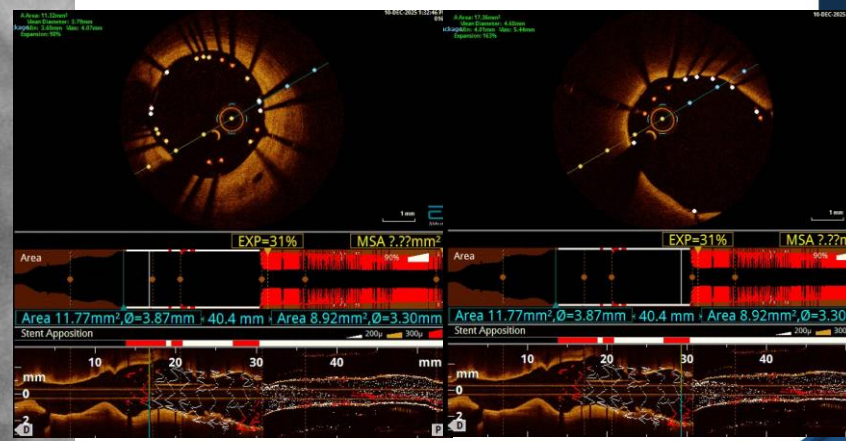
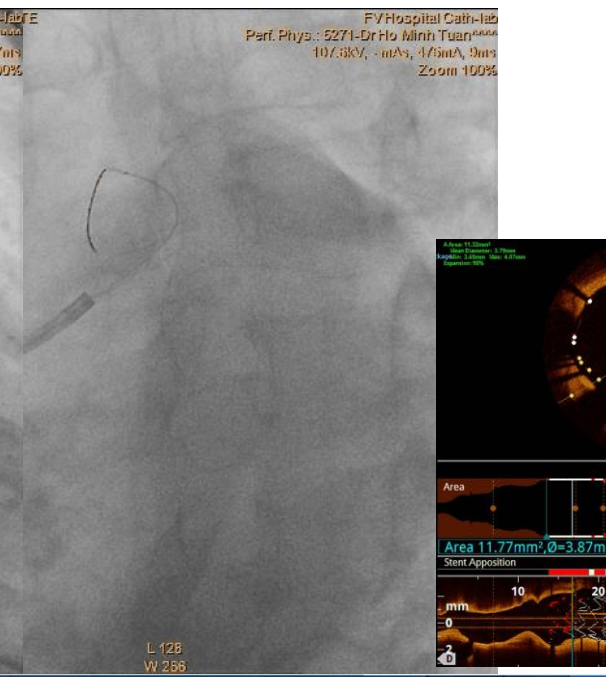
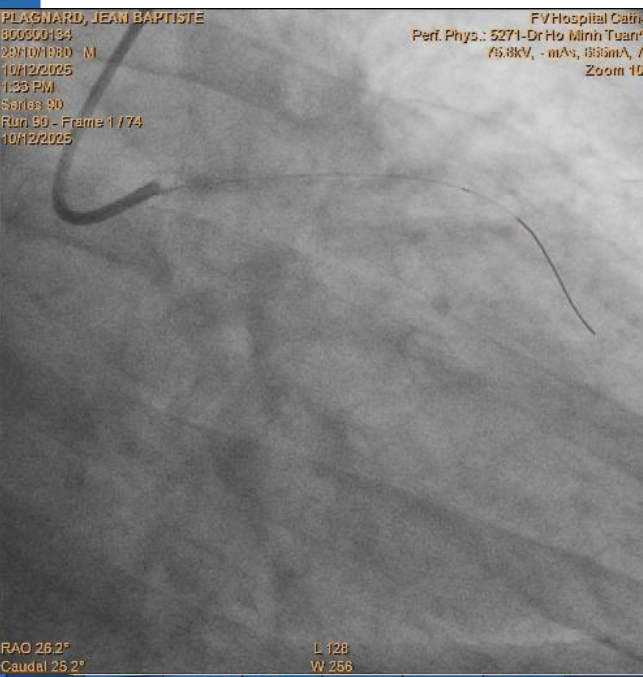
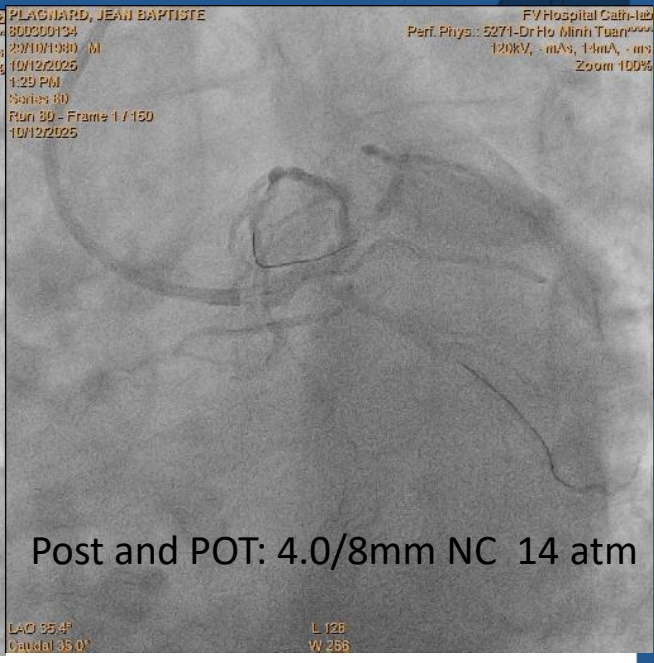
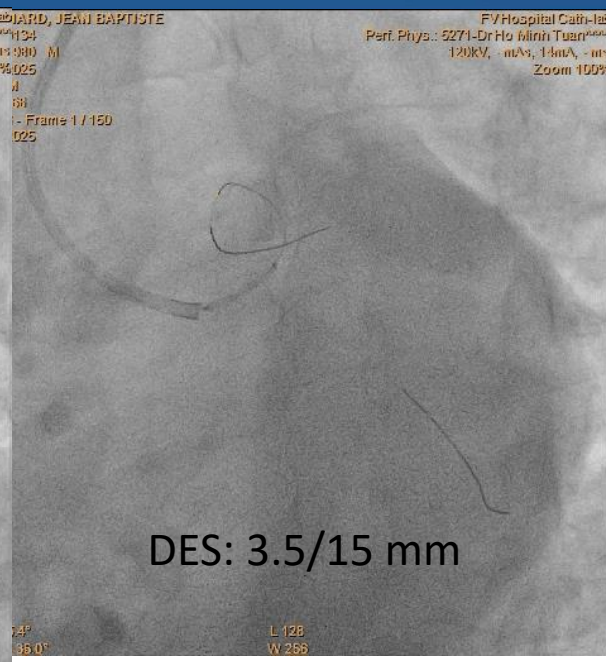
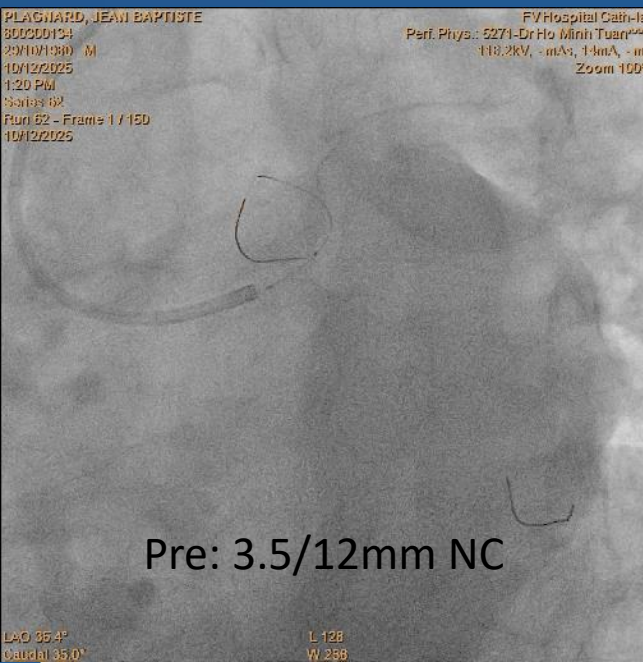
Sirolimus Coating Balloon: OCT based Balloon size

+ 2.5/35mm: 120s

+ 2.5/20mm: 120s



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PLAGNARD, JEAN BAPTISTE
800800134
29/10/1980 M
10/12/2025
1:38 PM
Series 89
Run 99 - Frame 1 / 150
10/12/2025

FV Hospital Cath-lab
Perf. Phys.: 5271-Dr Ho Minh Tuan^{AAAA}
80.8kV, - mAs, 17mA, - ms
Zoom 100%

PLAGNARD, JEAN BAPTISTE
800800134
29/10/1980 M
10/12/2025
1:40 PM
Series 103
Run 100 - Frame 1 / 150
10/12/2025

FV Hospital Cath-lab
Perf. Phys.: 5271-Dr Ho Minh Tuan^{AAAA}
80.7kV, - mAs, 17mA, - ms
Zoom 100%

Post and POT 4.0/8mm NC at 22 atm

PLAGNARD, JEAN BAPTISTE
800800134
29/10/1980 M
10/12/2025
1:42 PM
Series 110
Run 110 - Frame 1 / 61
10/12/2025

Perf. Phys.: 5271-Dr Ho Minh Tuan^{AAAA}

PLAGNARD, JEAN BAPTISTE
800800134
29/10/1980 M
10/12/2025
1:42 PM
Series 109
Run 109 - Frame 1 / 67
10/12/2025

FV Hospital Cath-lab
Perf. Phys.: 5271-Dr Ho Minh Tuan^{AAAA}
105.7kV, - mAs, 463mA, 8ms
Zoom 100%

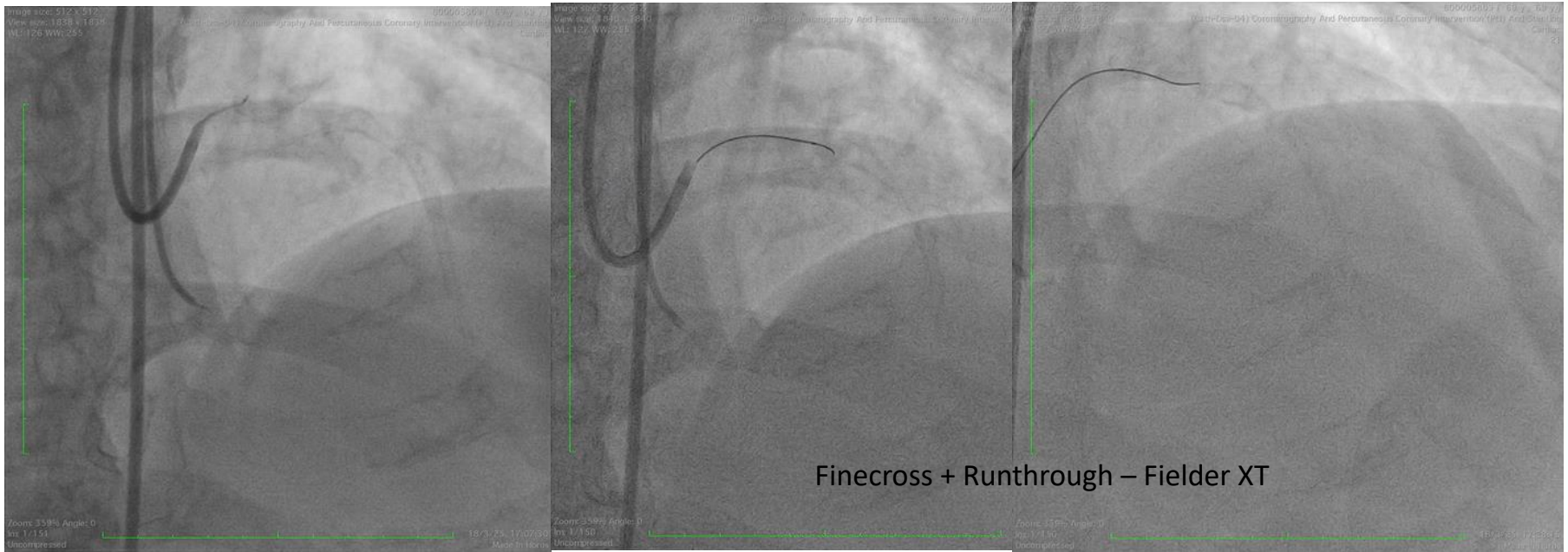
RAO 26.2°
Caudal 26.2°

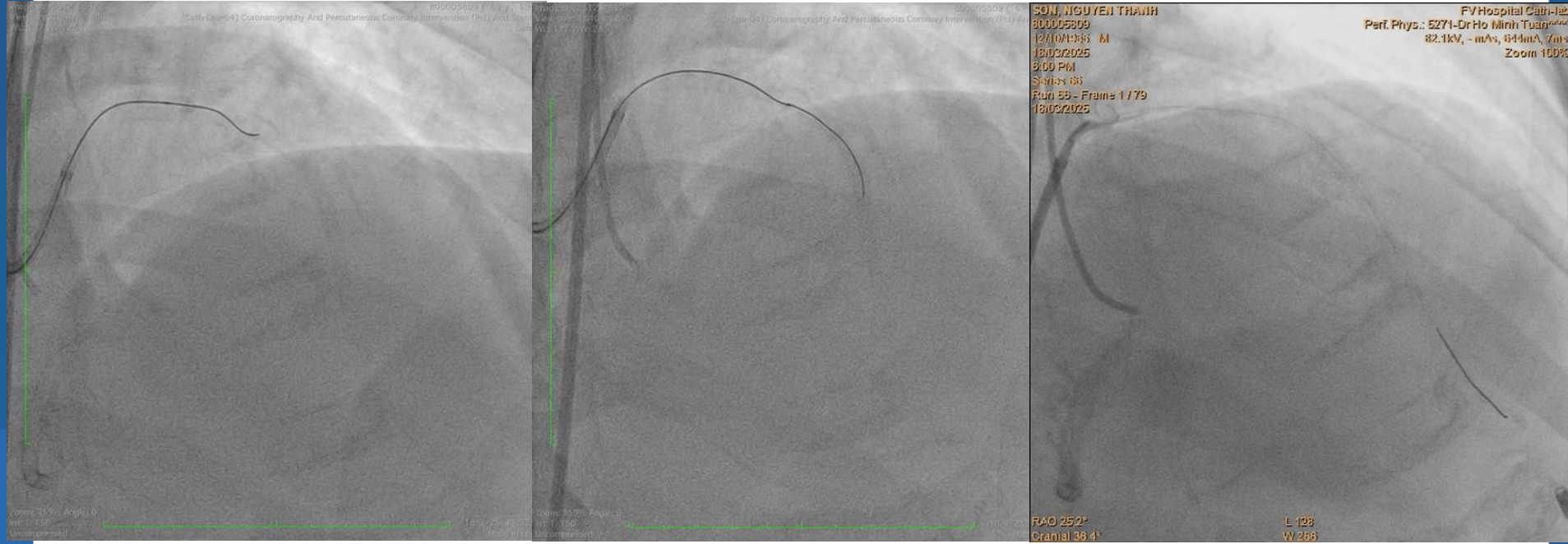
RAO 24.8°
Caudal 28.4°



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- + 69 yrs Gentleman, angina CCS Class II-III since 6 months, HTN, T2DM
- + Prior MI / stent/RCA 10yrs ago
- + LVEF: 55%
- + Nuclear MPI: positive
- + **eGFR: 43ml/min/1.73m²**





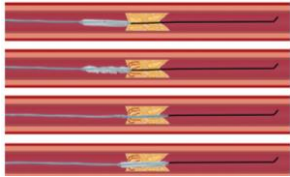
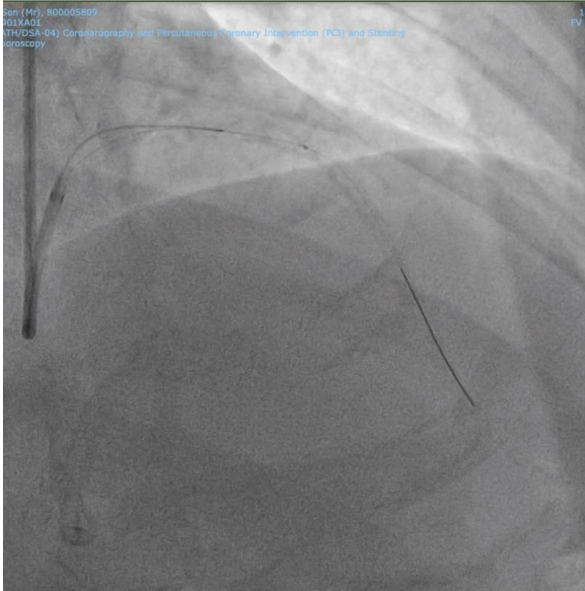
Asahi Gaia Third next

-----> Runthrough

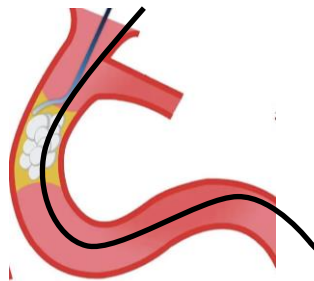




Balloon 1.25 x 10mm at 22atm
Intentionally rupturing



BAM: Rupture of balloon



Plaque cracking:

intentional subintimal or track around lesion by stiff wire

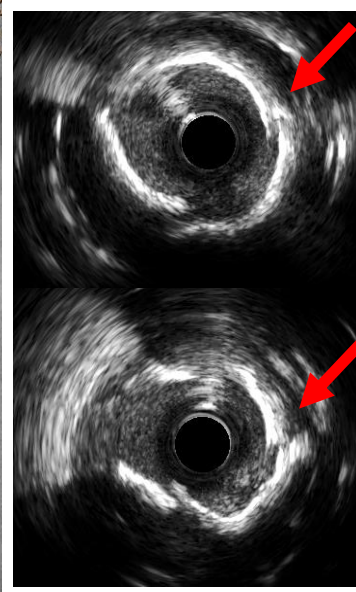


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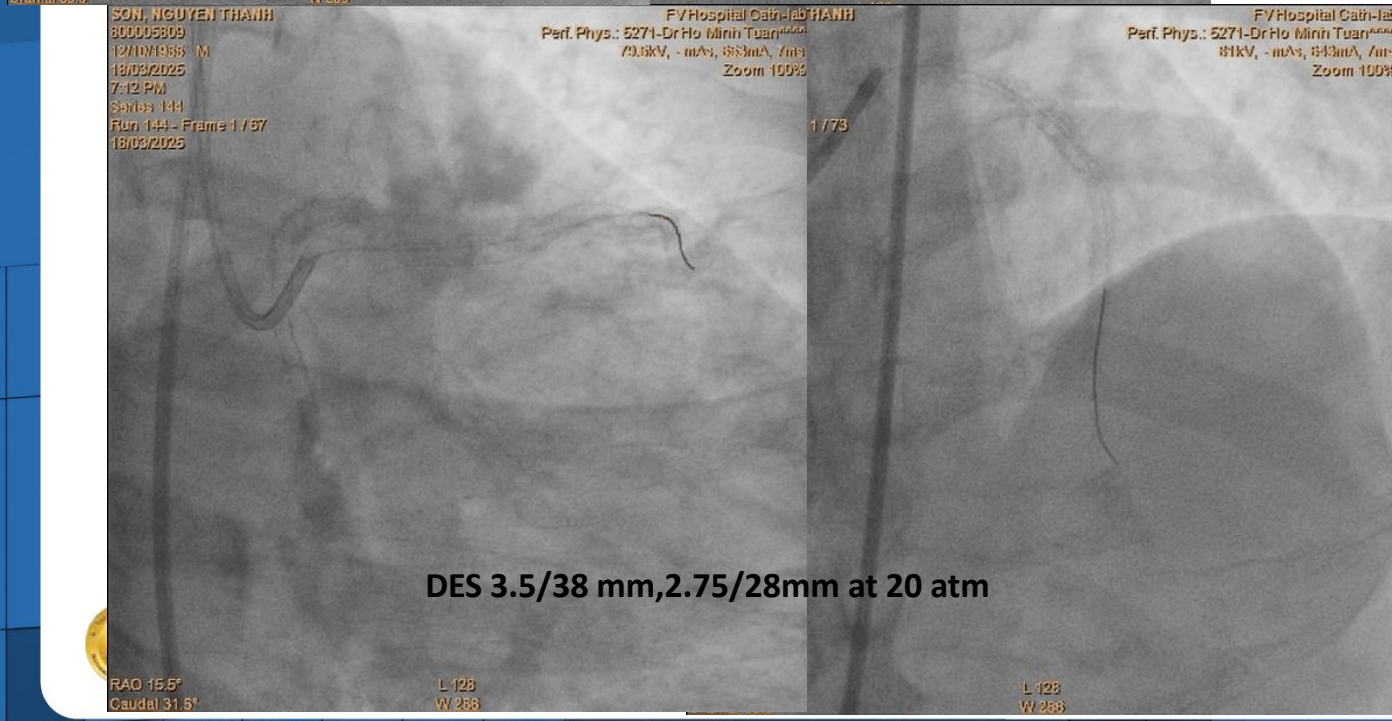


ROTAPRO 1.50 mm Burr, 150k RPM

Scoreflex 3.0/15



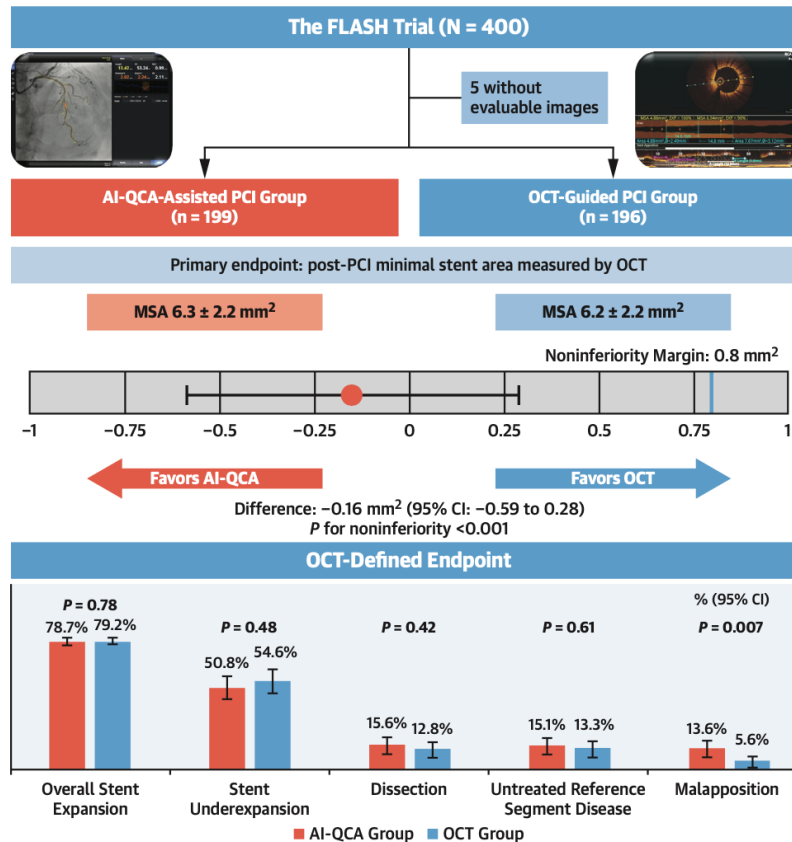
Calcium Fracture



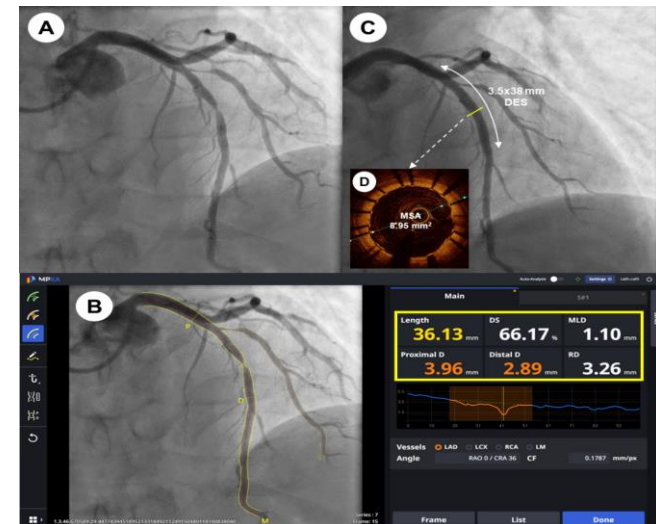
DES 3.5/38 mm, 2.75/28mm at 20 atm

Final result

Preprocedural AI-QCA Matches OCT-Guided PCI for Noncomplex Lesions



MPXA-2000 system



- AI-QCA-assisted PCI was noninferior to OCT-guided PCI regarding achieving minimal stent area
- Procedural complications were similar between the imaging groups except malapposition occurred more frequently in the AI-QCA group
- While not powered for major clinical outcomes, no differences were observed at 6 months

Conclusion

- Therapeutic benefit of OCT as an effective IVI modality in treating complex lesions.
- Pre-procedural IVI is crucial for planning debulking strategies, particularly in cases with heavily calcified, bifurcation, CTO, LM lesions.
- RA/IVL, special balloon and advanced imaging are essential for optimal acute and long-term results
- “AI is not going to replace physicians, but physicians who don’t use AI will be replaced”



Thank you