Cocktail Therapy for Unusual Calcified Lesion the Road to Success

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Disclosure

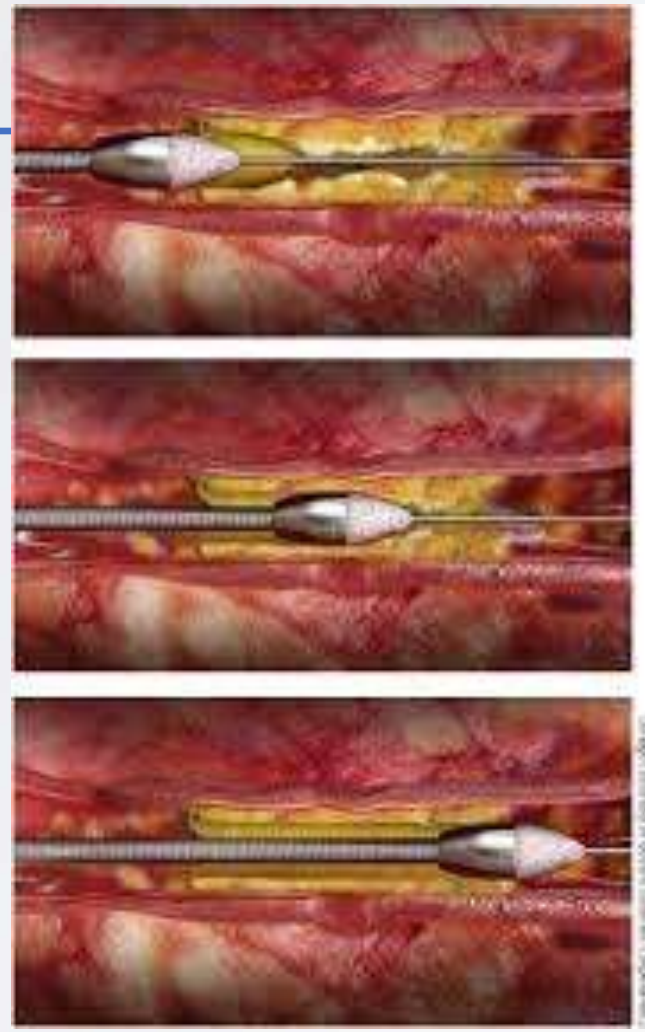
- I do not have any conflict to disclose

Weapon for Calcified disease

Cutting balloon

Ansiosculpt

OPN balloon

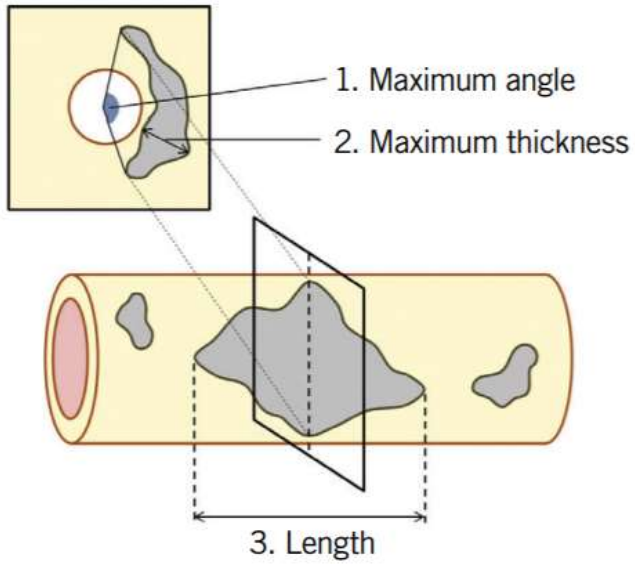


Rotation atherectomy

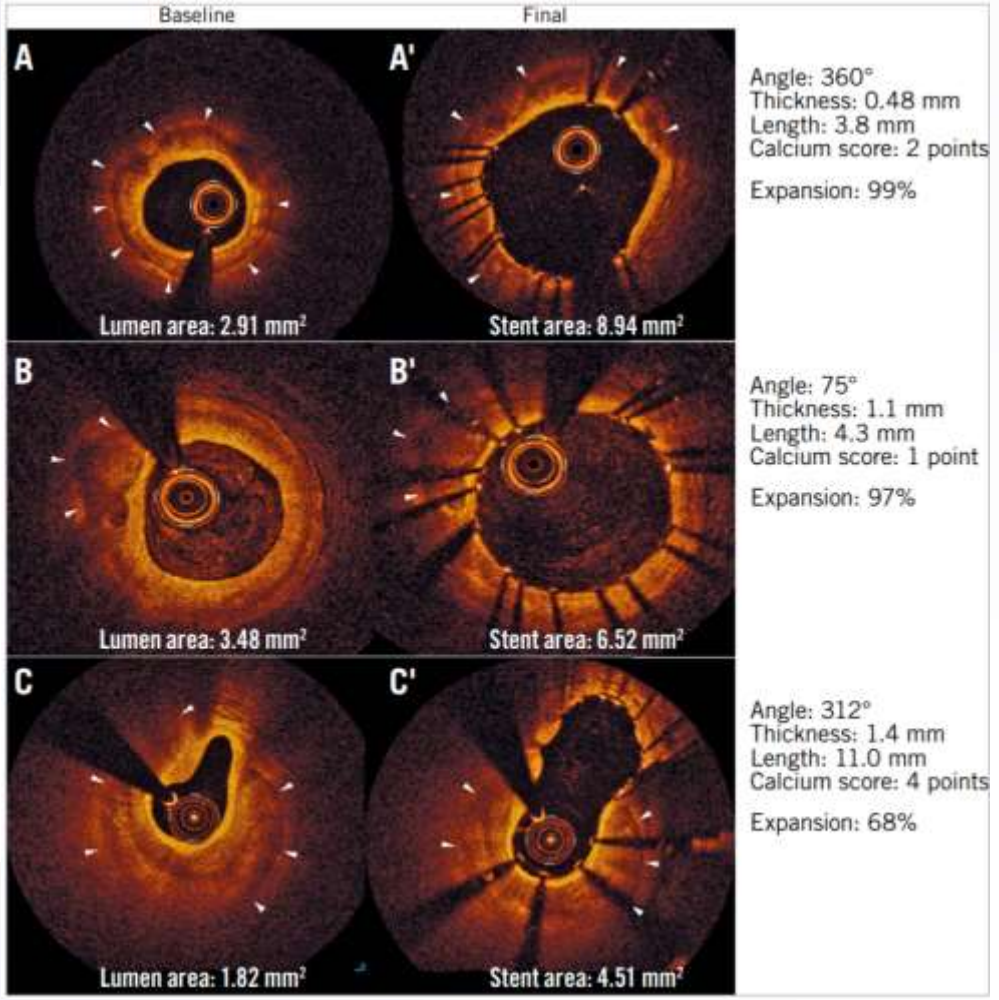
Orbital atherectomy

Shockwave lithotripsy

Rule of “5”



OCT-based calcium score		
1. Maximum calcium angle (°)	≤180°	➡ 0 point
	>180°	➡ 2 points
2. Maximum calcium thickness (mm)	≤0.5 mm	➡ 0 point
	>0.5 mm	➡ 1 point
3. Calcium length (mm)	≤5.0 mm	➡ 0 point
	>5.0 mm	➡ 1 point
Total score	**0 to 4 points**	



Fujino A, et al. A new optical coherence tomography-based calcium scoring system to predict stent underexpansion. EuroIntervention. 2018;13:e2182-9

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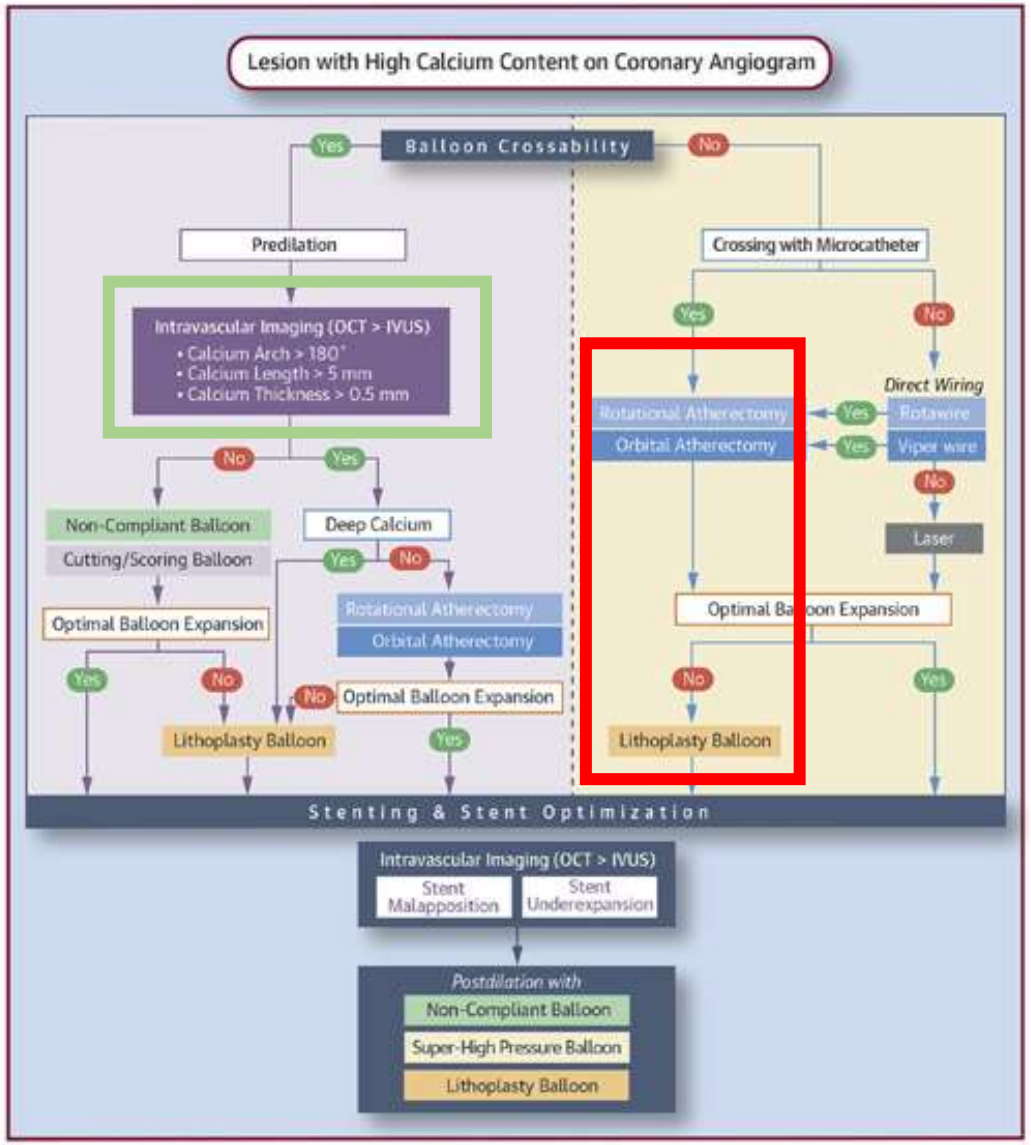
STATE-OF-THE-ART REVIEW

Management of Calcific Coronary Artery Lesions

Is it Time to Change Our Interventional Therapeutic Approach?

Giovanni Luigi De Maria, MD, PhD,* Roberto Scarsini, MD,* Adrian P. Banning, MD

CENTRAL ILLUSTRATION: Algorithm for Optimal Management of Coronary Calcified Lesions



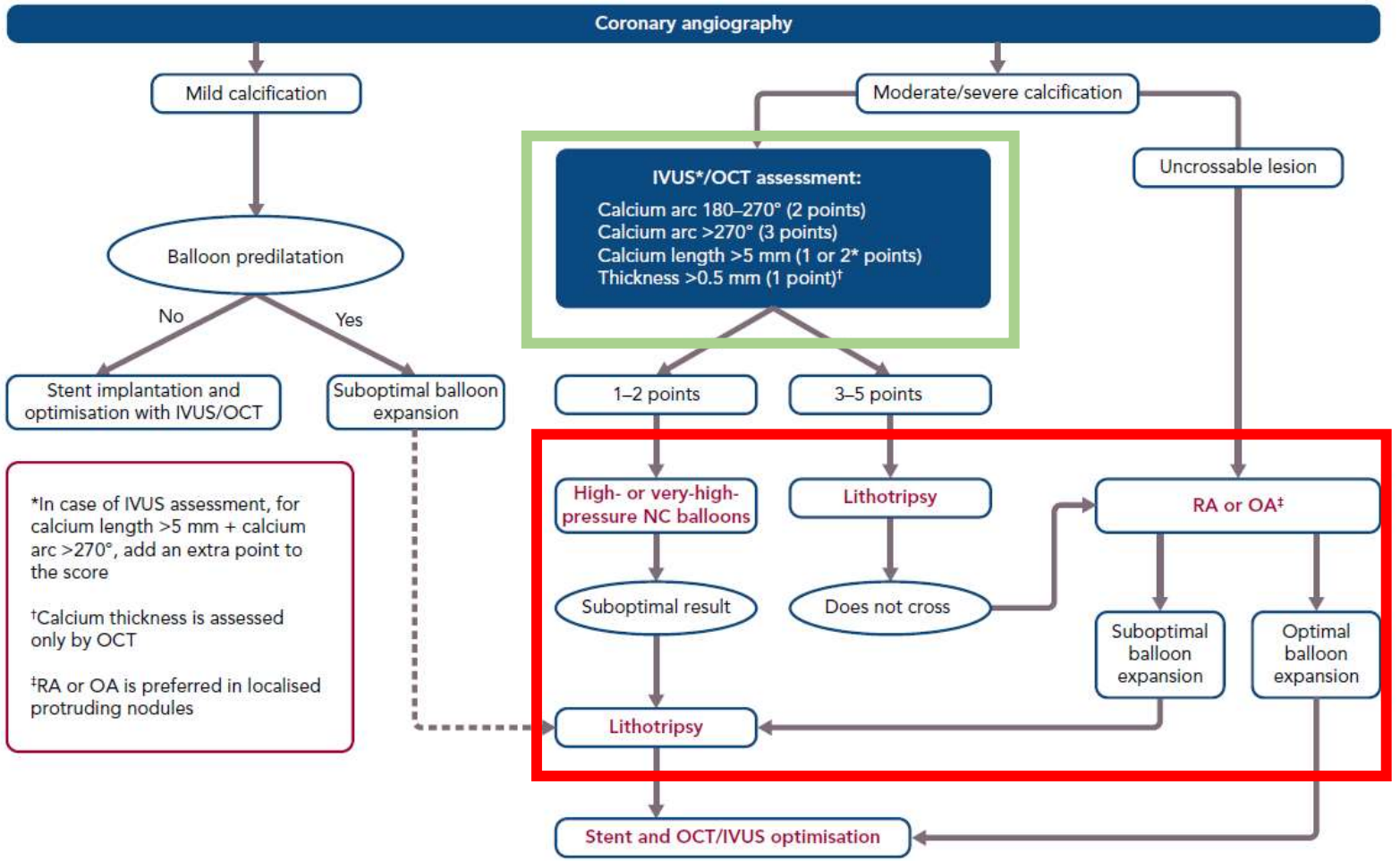
De Maria, G.L. et al. J Am Coll Cardiol Intv. 2019;12(15):1465-78.

Article

Contemporary Approach to Heavily Calcified Coronary Lesions

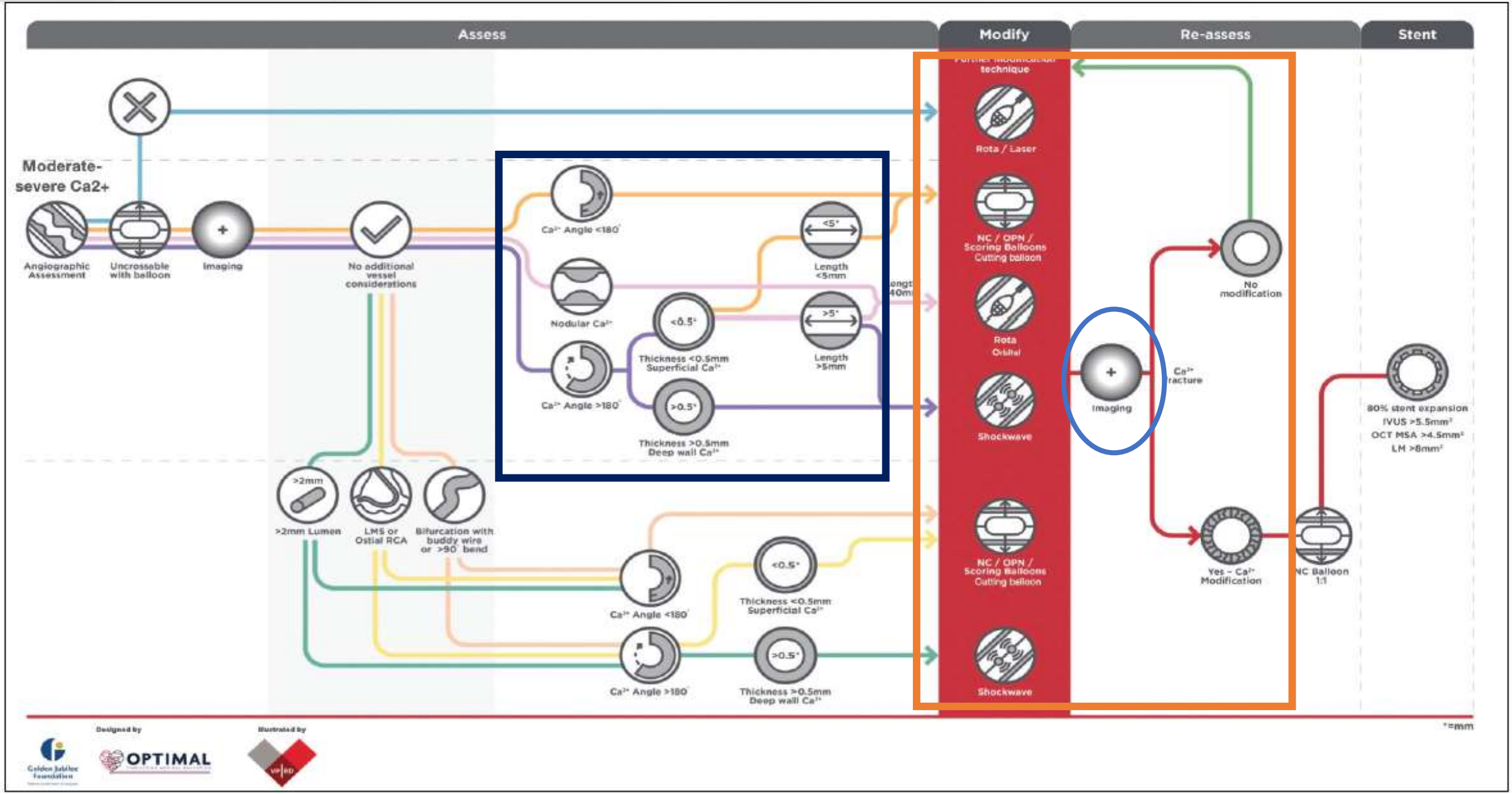
Carlotta Sorini Dini, Giulia Nardi, Francesca Ristalli, Alessio Mattesini, Brunilda Hamiti, Carlo Di Mario.

Figure 2: Decision Algorithm for the Treatment of Calcified Coronary Lesions



IVUS = intravascular ultrasound; NC, non-compliant; OA = orbital atherectomy; OCT = optical coherence tomography; RA = rotational atherectomy.

Interventional Cardiology Review 2019;14(3):154–63



Calcium algorithm: a systematic approach to calcium modification. Illustration by McEntegart M, Spratt JC, and Vascular Perspectives Education.

JACC: CASE REPORTS VOL. 1, NO. 5, 2019

CASE REPORT

ADVANCED

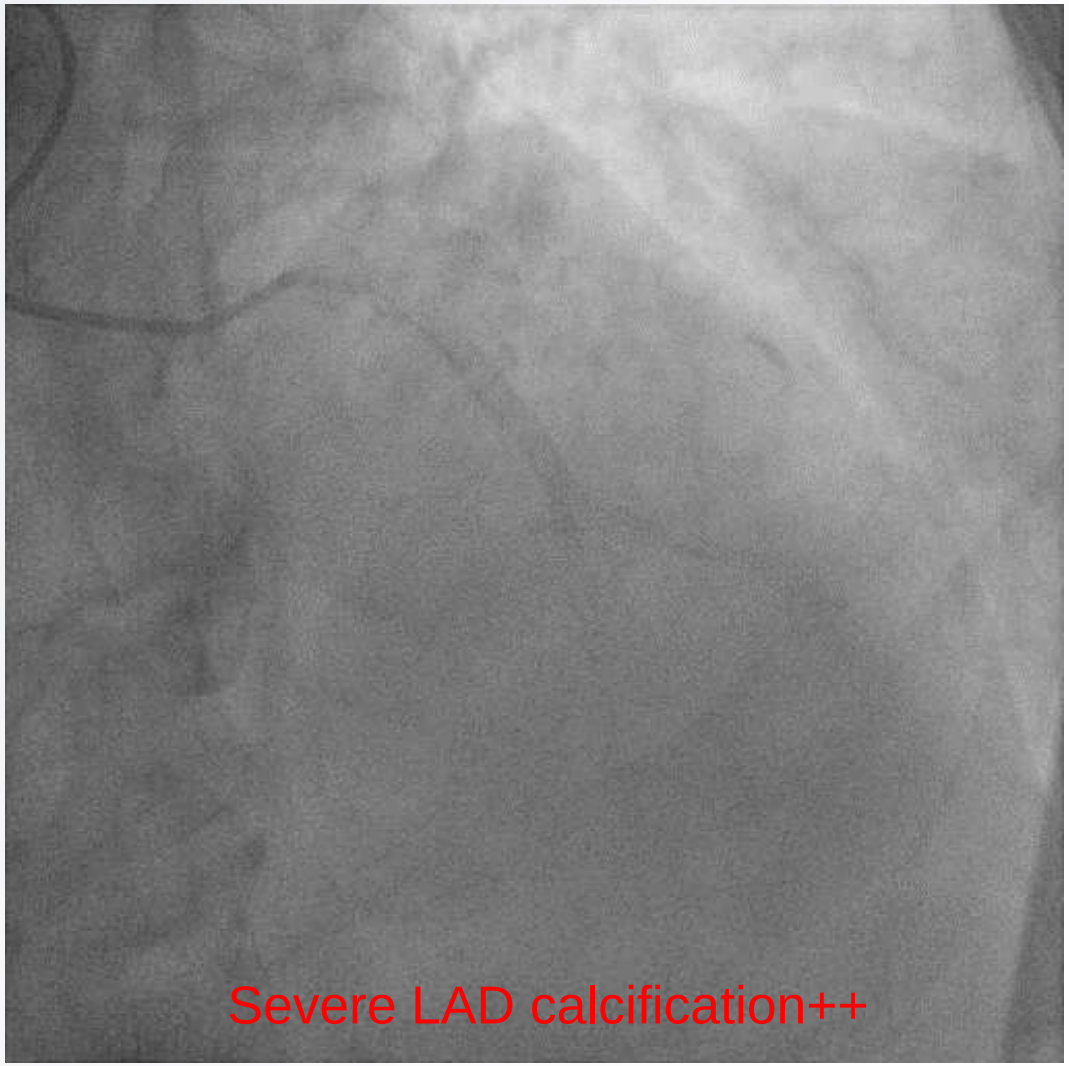
CLINICAL CASE

A Case of Rota-Shock-Pella

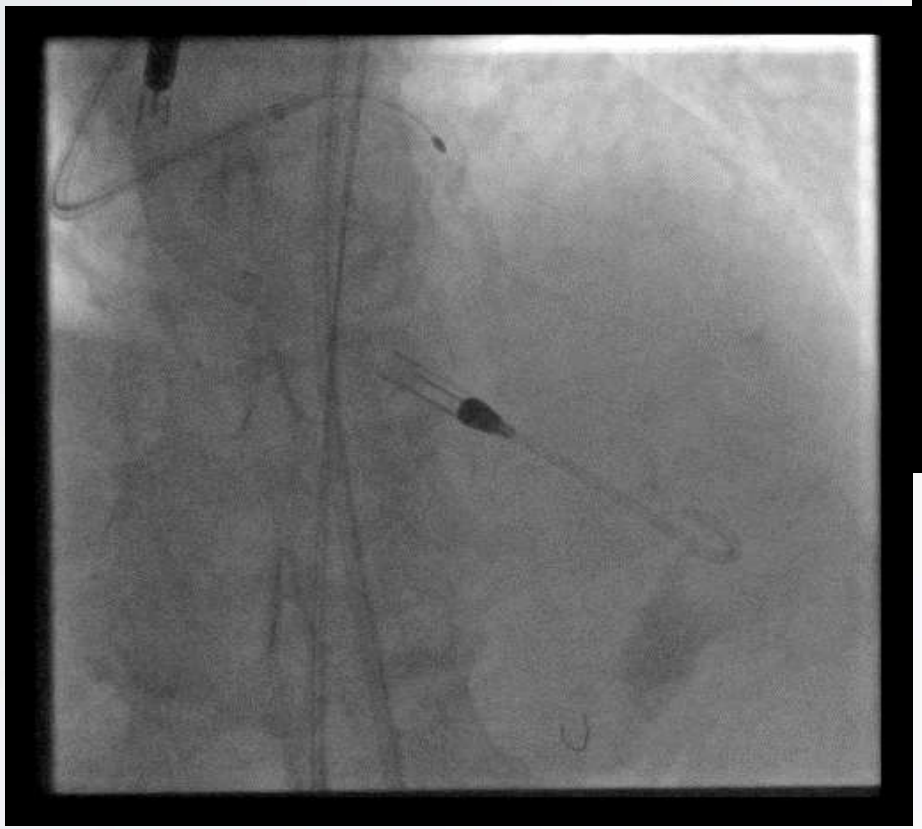
Ka Chun Alan Chan, MBBS, Ngai Hong Vincent Luk, MBBS, Kang Yin Michael Lee, MBBS, Kam Tim Chan, MBBS

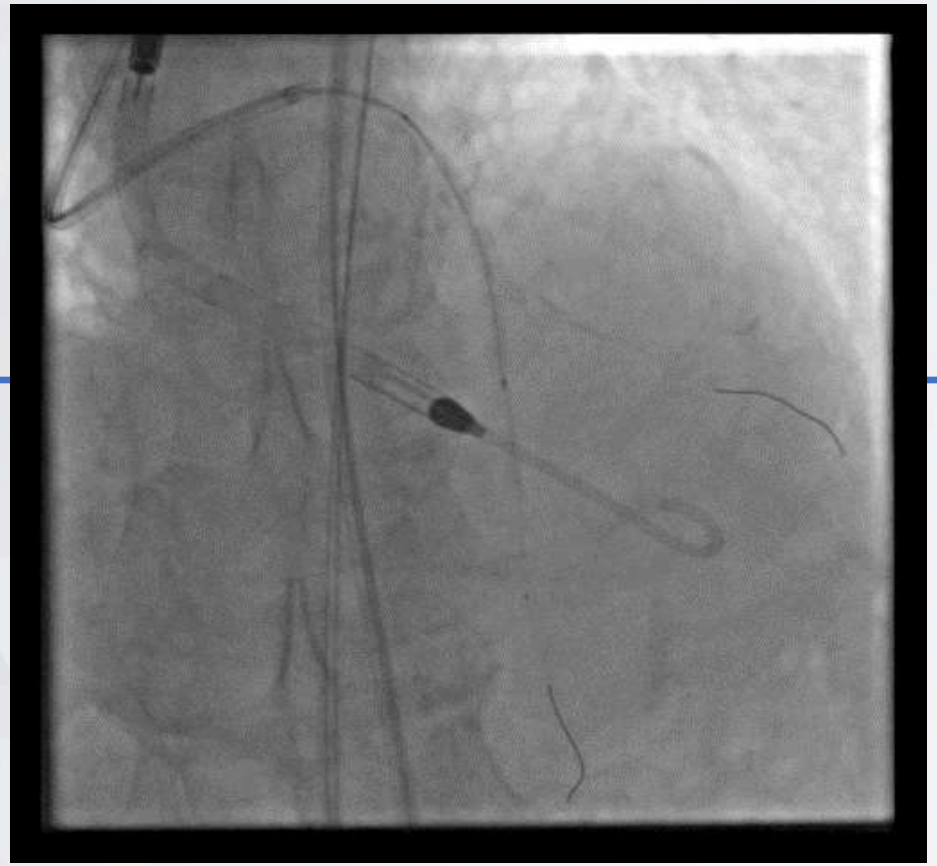
- 74/M, DM/HT/lipid
- Present with CHF
- LV EF 25-30%
- Nuclear scan: multiple ischemia throughout all territory
- Coro LMN , LAD Cto, mRCA CTO
- Severe calcification+
- Heart team-> high risk PCI

Case 1



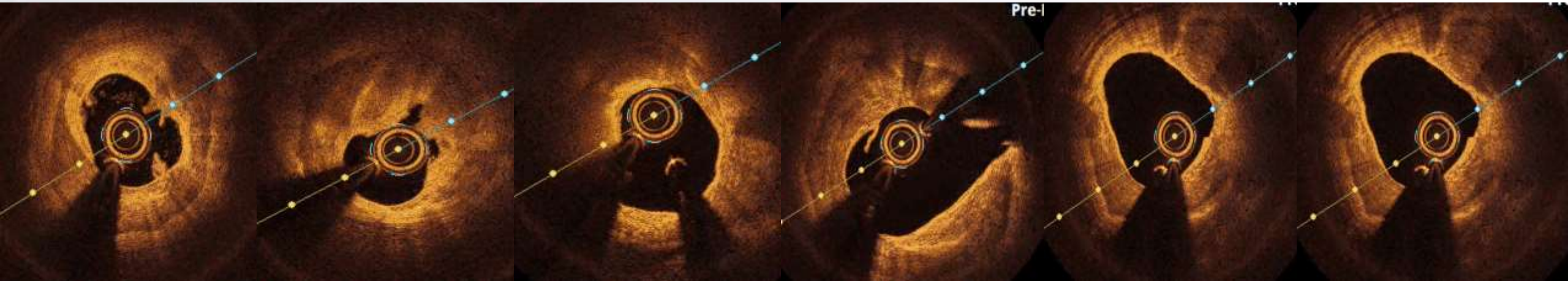
Impella supported HRPCI, Rotational atherectomy with 1.5 burr after crossing LAD CTO with XT-R

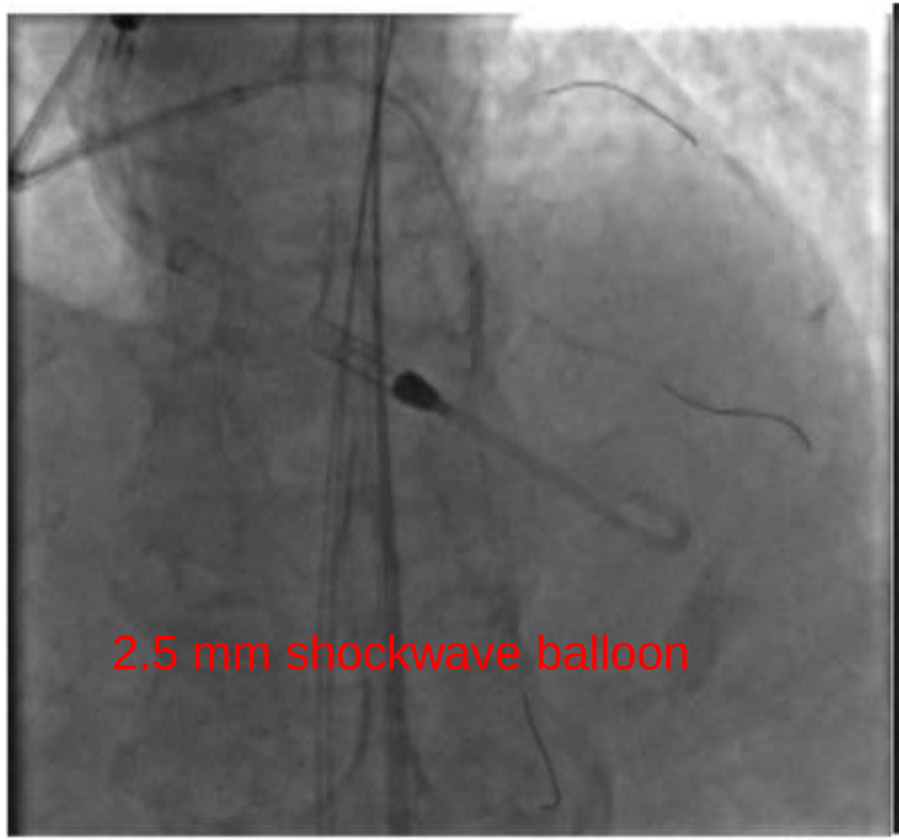


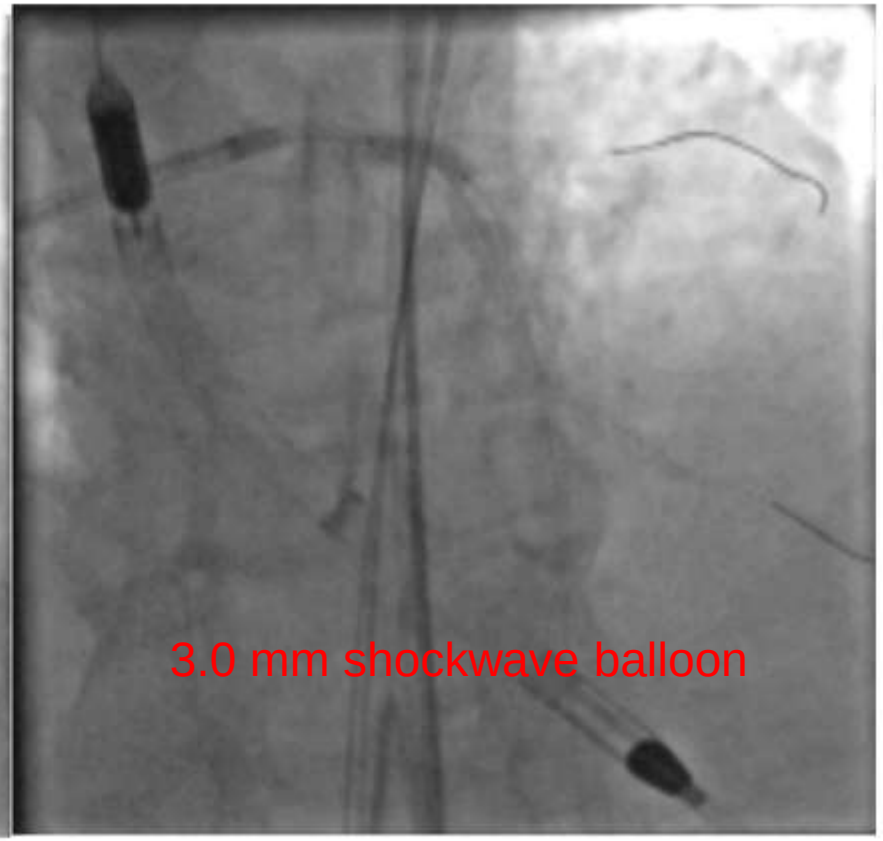


Post Rota OCT

Distal ⟵ ⟶ Proximal

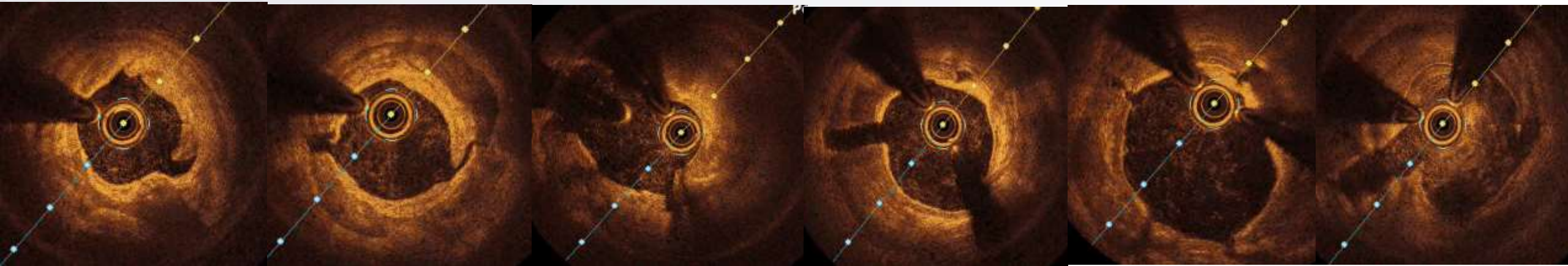


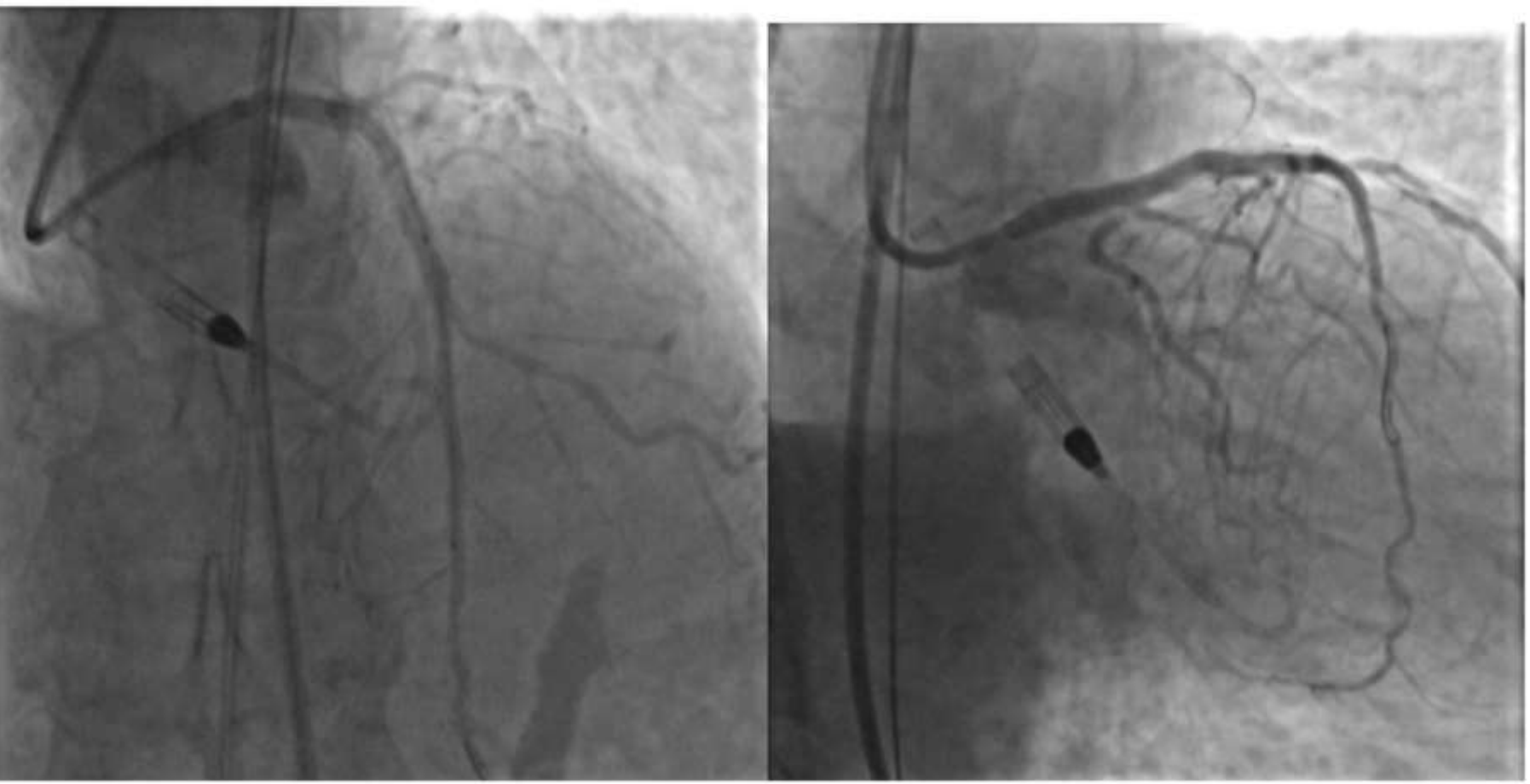




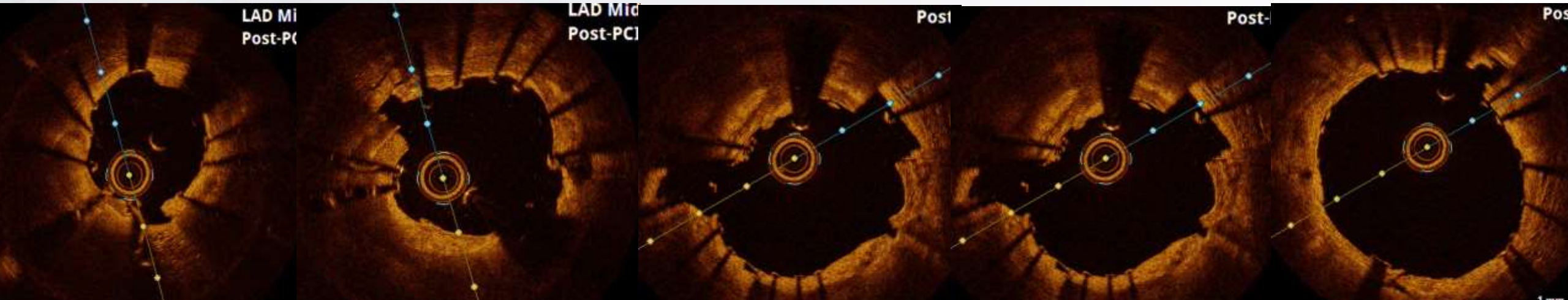
Post Rota shock OCT

Distal ← → Proximal





Post Stenting OCT



Case 2

JACC: CASE REPORTS VOL. 2, NO. 15, 2020

MINI-FOCUS ISSUE: INTERVENTIONS

INTERMEDIATE

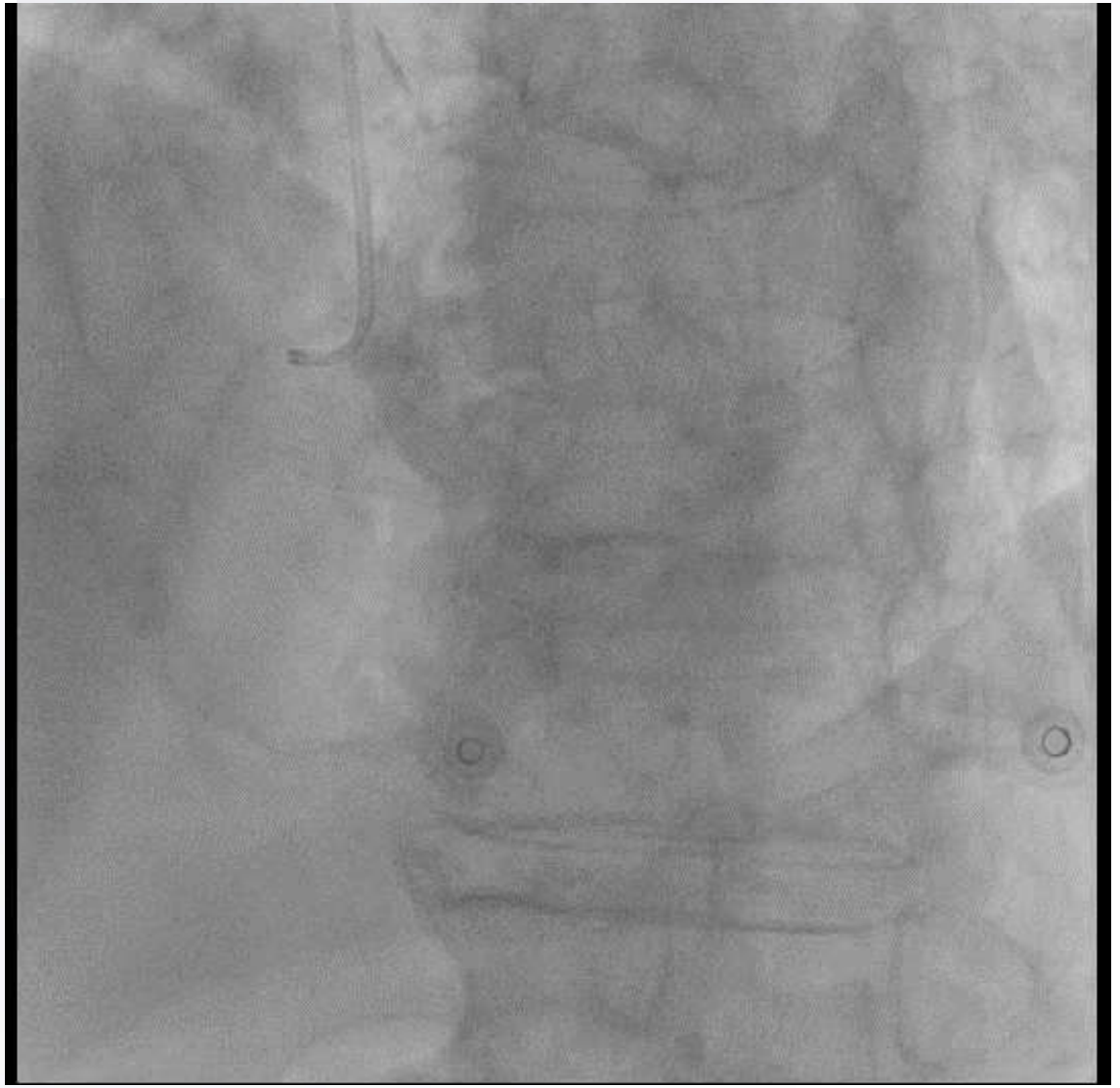
CASE REPORT: CLINICAL CASE

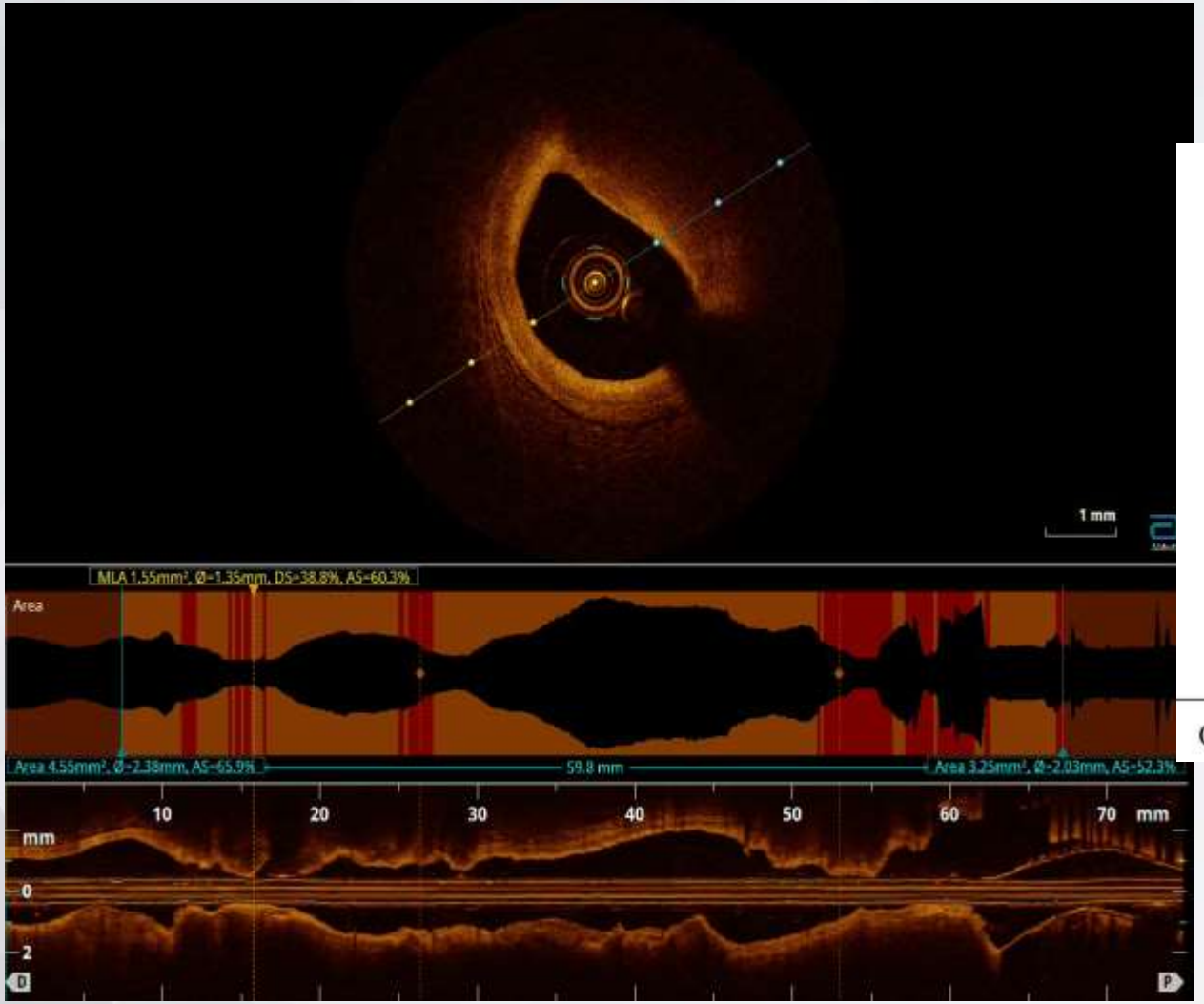
Orbital-Tripsy: Novel Combination of Orbital-Atherectomy and Intravascular-Lithotripsy, in Calcified Coronaries After Failed Intravascular-Lithotripsy

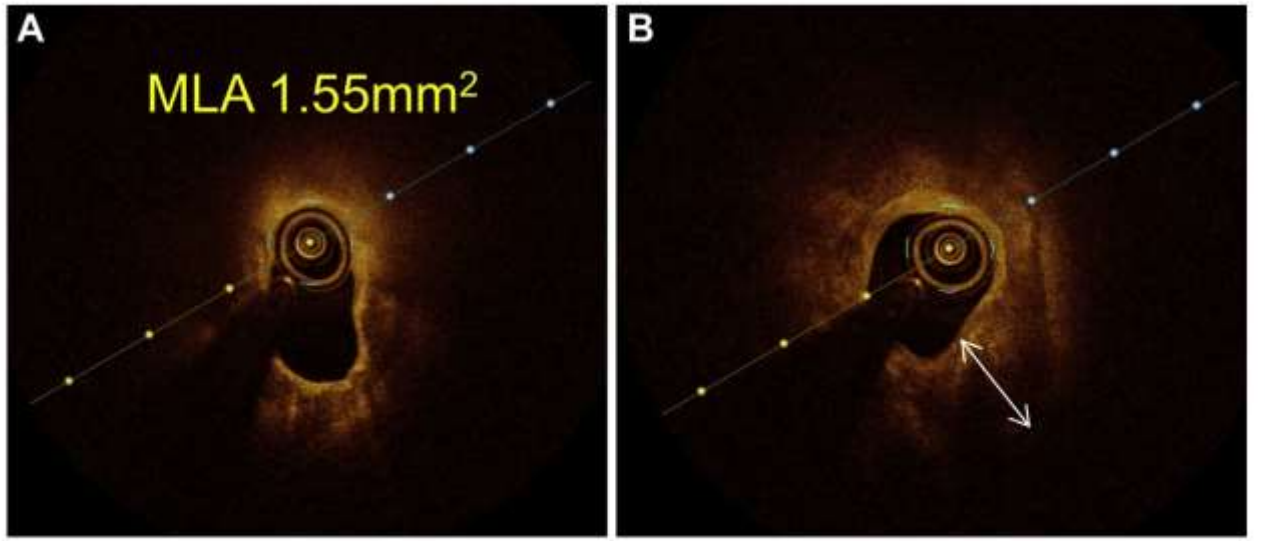
Chi Shing Michael Chiang, MBBS, Ka Chun Alan Chan, MBBS, Michael Lee, MBBS, Kam Tim Chan, MBBS

- 82/M
- DM,HT,lipid, COPD,AF
- NSTEMI in another hospital
- LV EF 60-65%,severe AS
- Coro TVD/LMN

- Heart team -> PCI Then TAVI

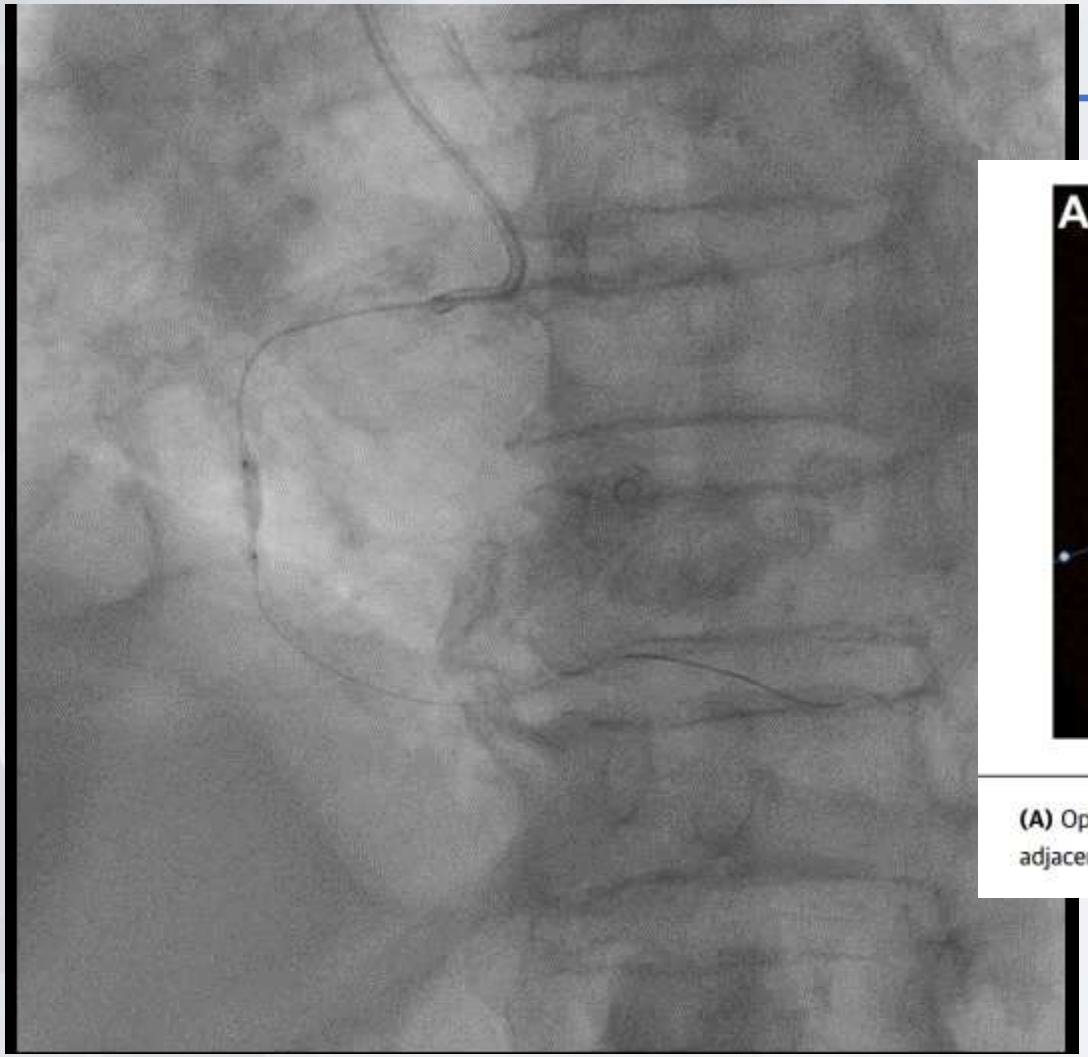


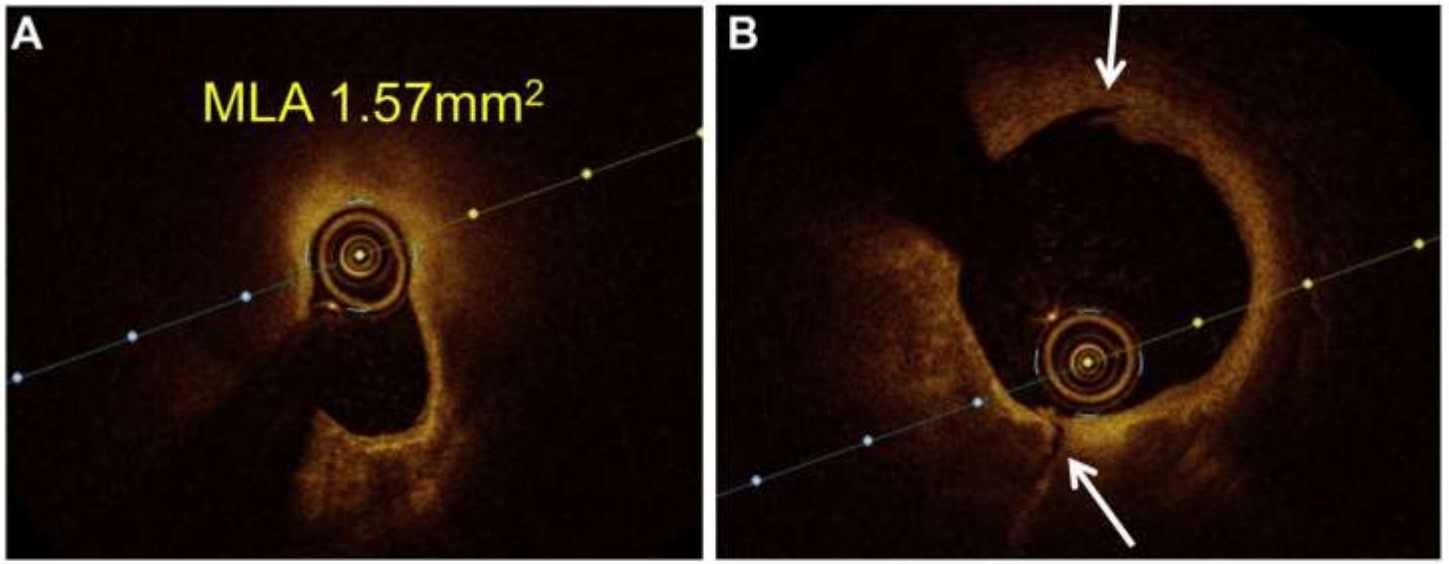




(A) First optical coherence tomography (OCT) of right coronary artery (RCA) minimal luminal area (MLA). **(B)** First OCT RCA adjacent to MLA.

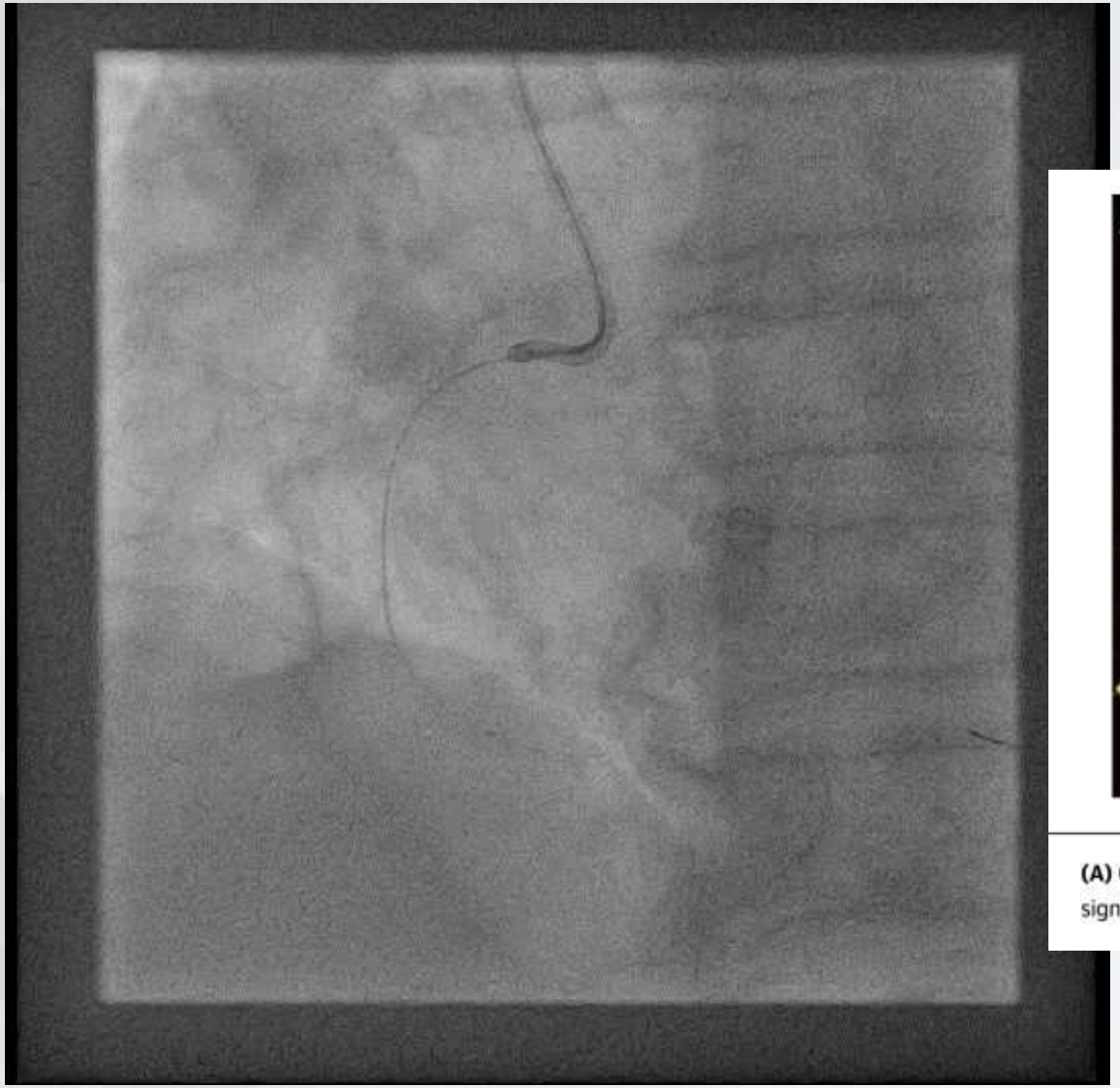
3.0mm Shockwave balloon

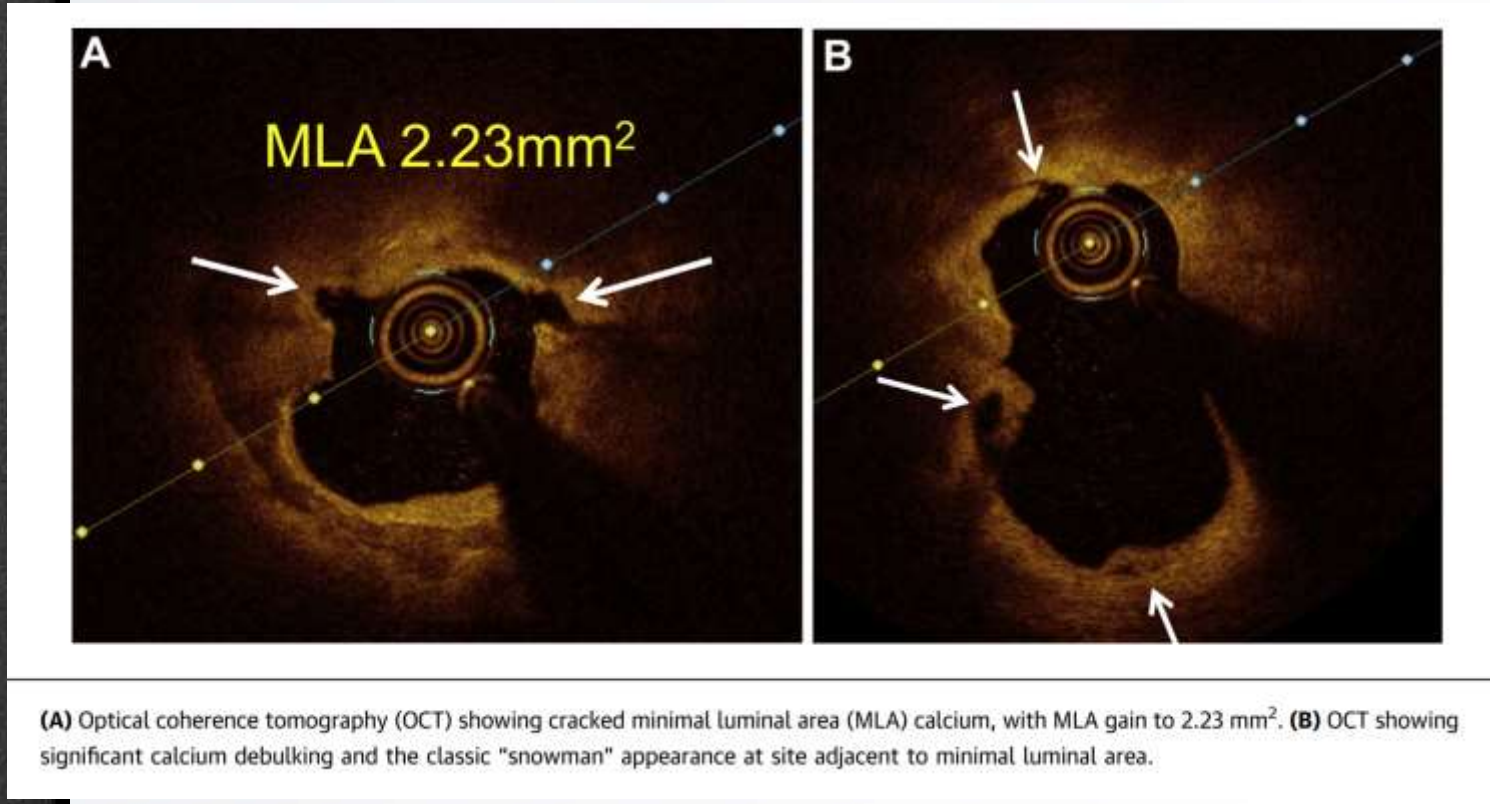




(A) Optical coherence tomography (OCT) showing no sign of cracking at minimal luminal area. **(B)** OCT showing very minor cracking at site adjacent to minimal luminal area.

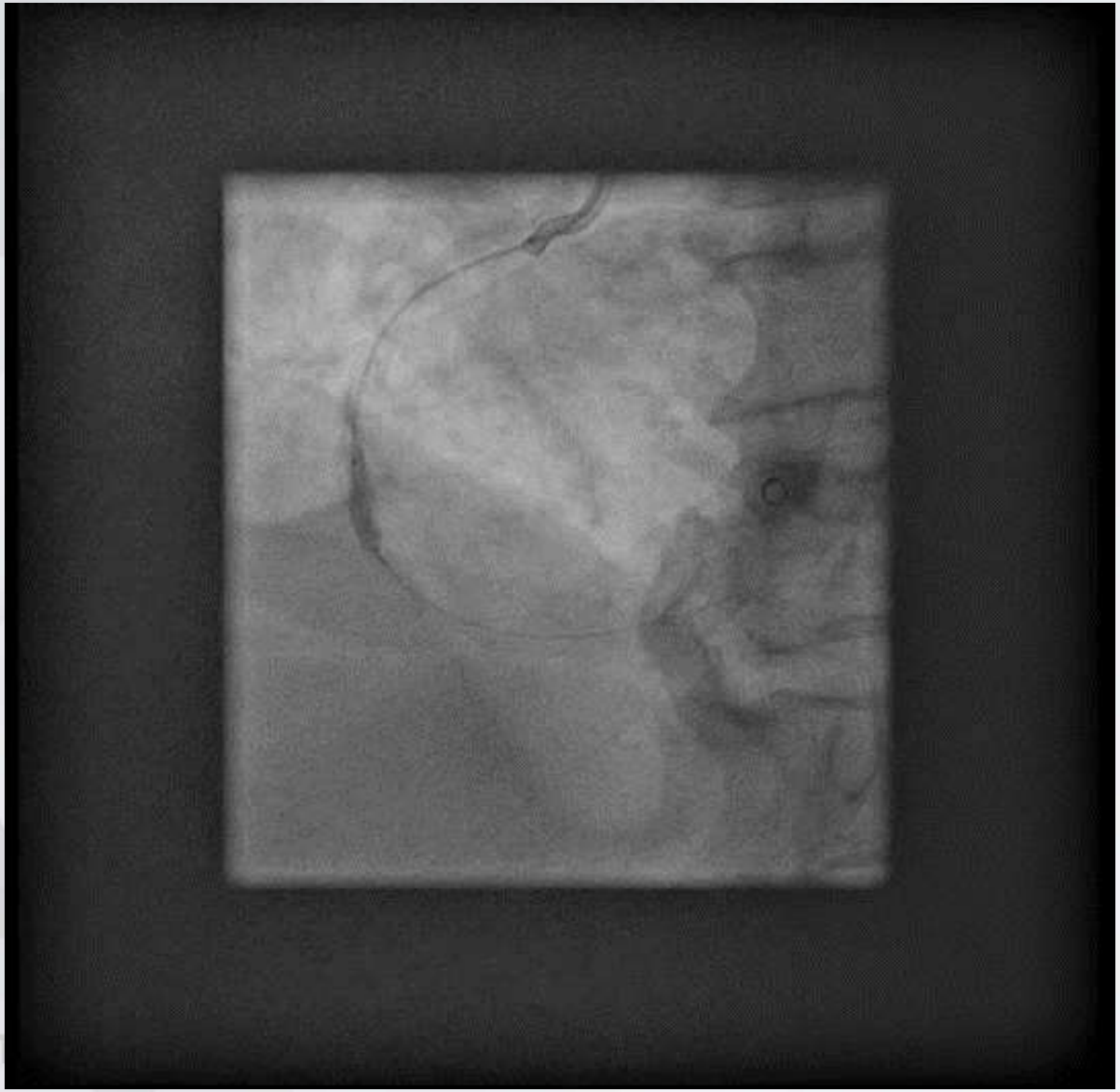
Orbital atherectomy , low speed distal then high speed proximal

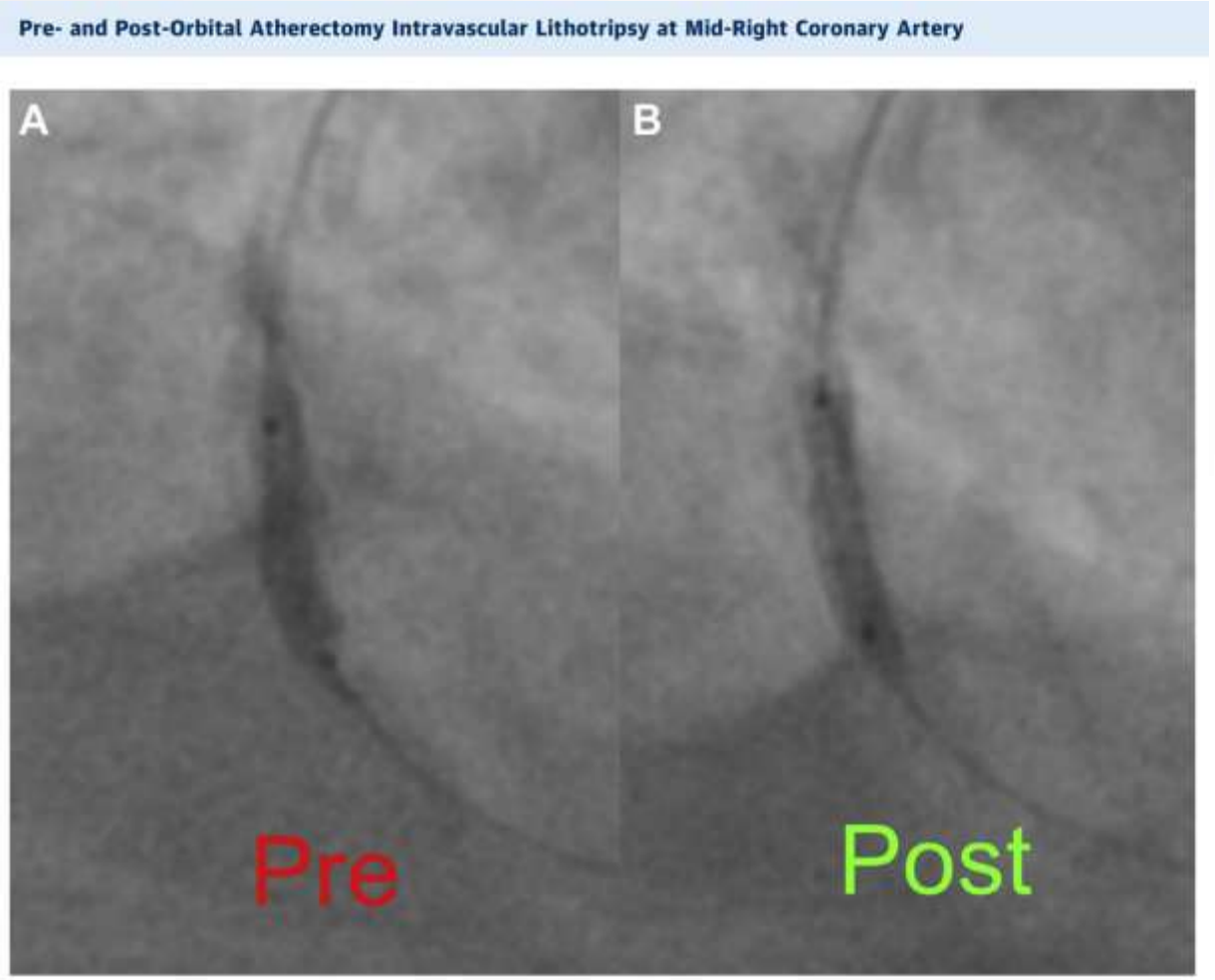




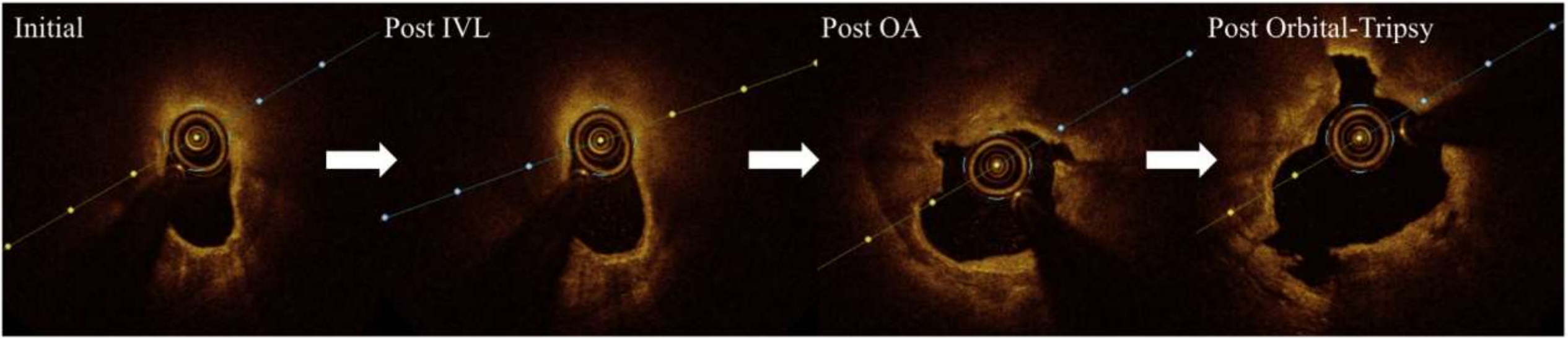
(A) Optical coherence tomography (OCT) showing cracked minimal luminal area (MLA) calcium, with MLA gain to 2.23 mm^2. **(B)** OCT showing significant calcium debulking and the classic "snowman" appearance at site adjacent to minimal luminal area.

Further 3.0mm shockwave balloon

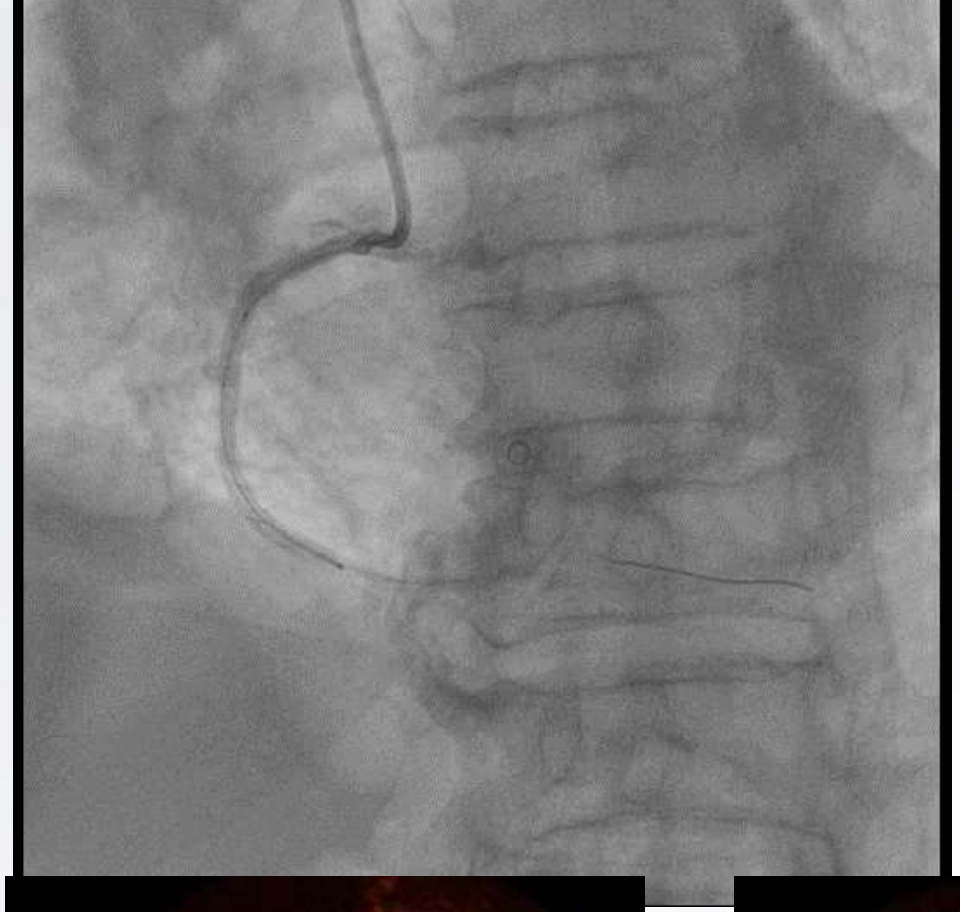


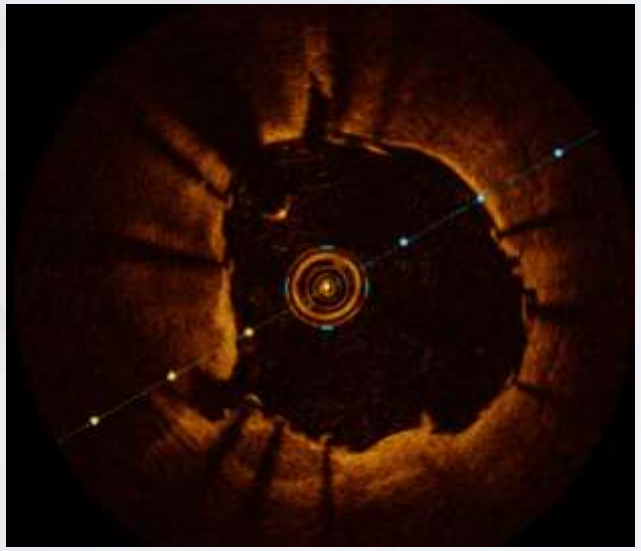


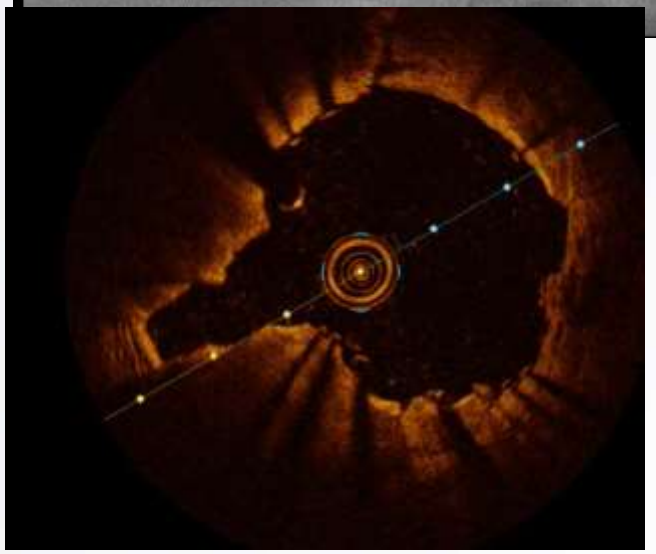
Optical Coherence Tomography Series of Minimal Luminal Area From Beginning of Procedure

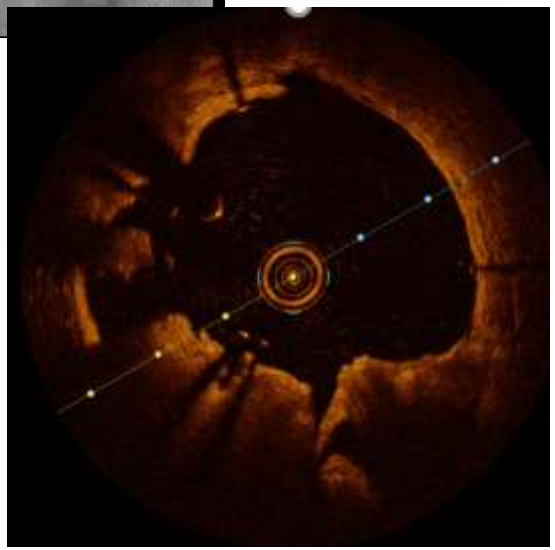


Finishing OCT









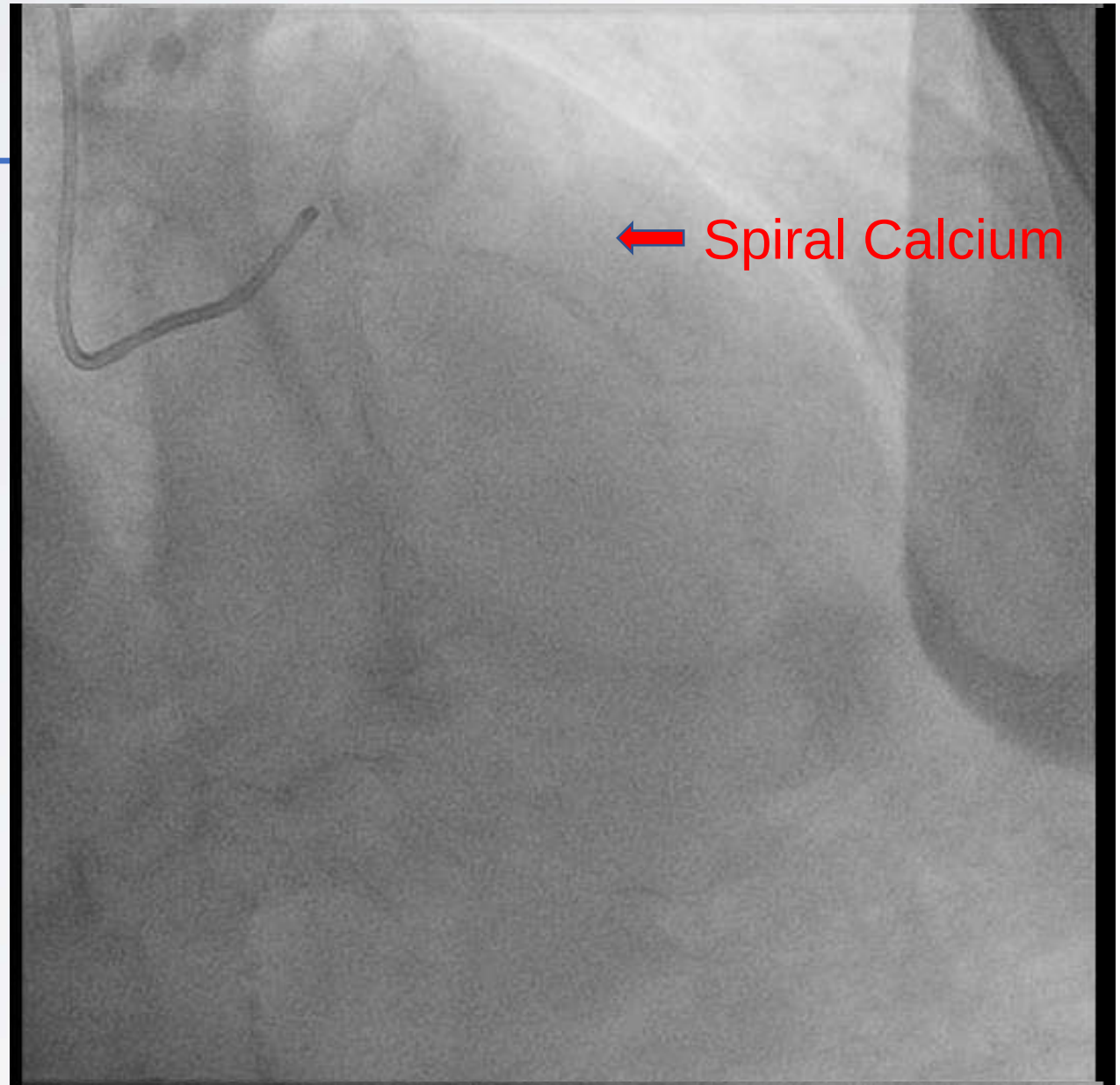
Conclusion

- Intravascular imaging in particular OCT can help assess and guide treatment strategy of calcified coronary lesion
- Various Treatment algorithm available to optimize our approach in calcified coronary lesion
- Important to visualize calcium fracturing before stenting
- Cocktail/combination therapy may be required to treat “Super” calcified lesion

Thank you!!

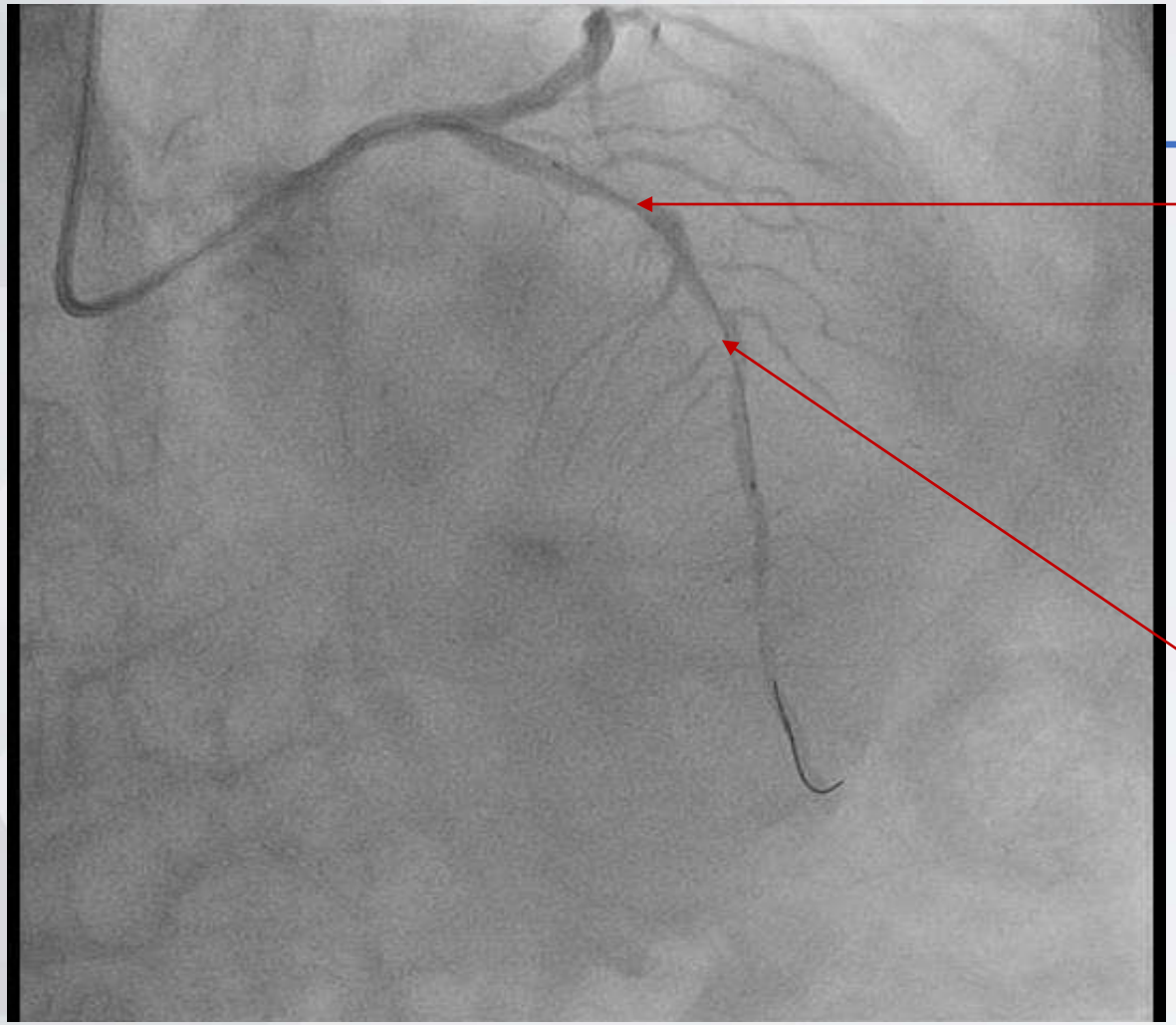
Case 3

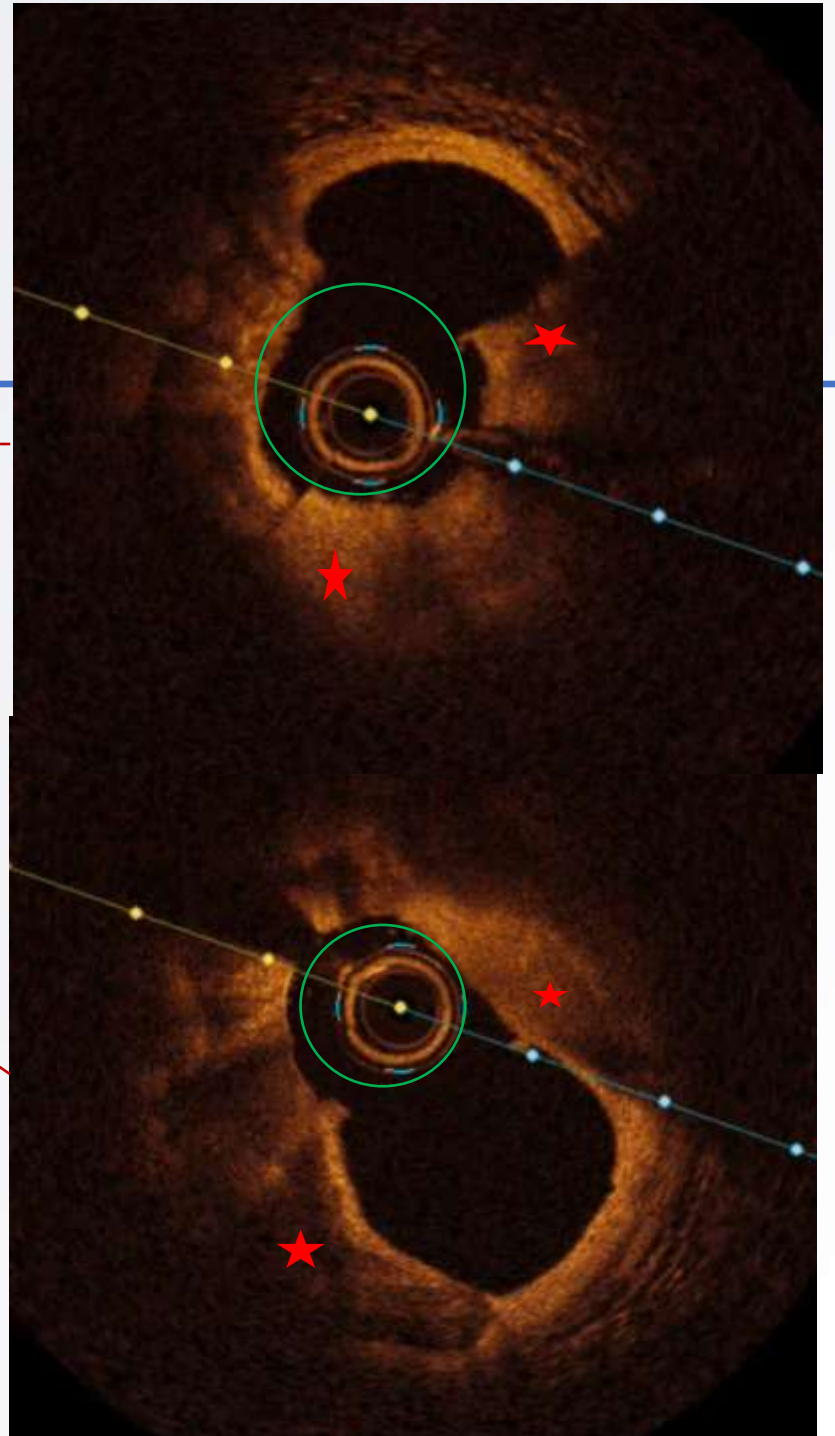
- 72/M, Hyperlipidaemia
- Stable effort angina with positive nuclear stress test
- Coronary angiogram show LAD stenosis
- Adhoc PCI was planned
- OCT catheter won’t cross tight proximal calcified lesion



Orbital atherectomy both low and high speed

Post atherectomy OCT

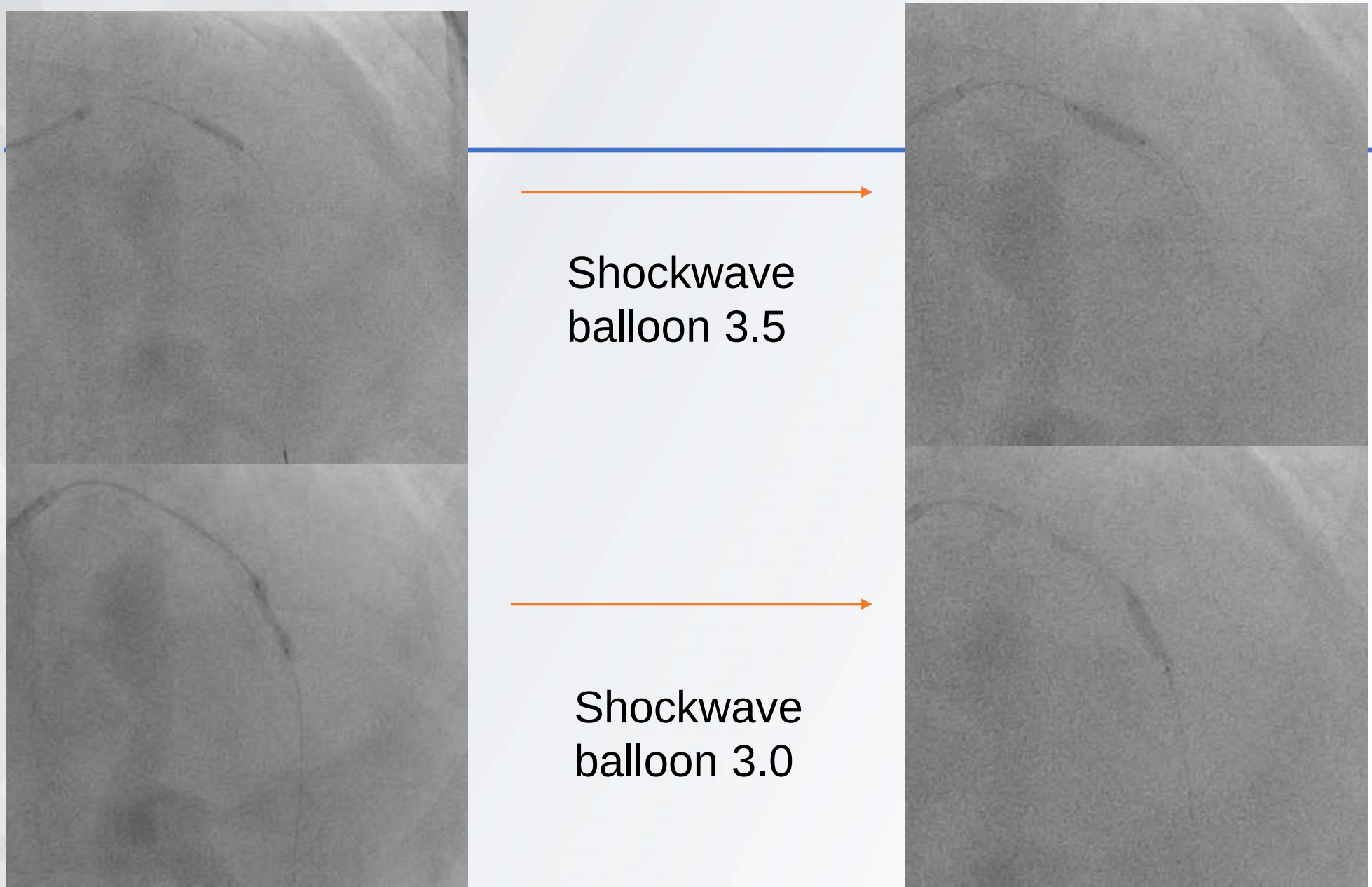




= post atherectomy luminal gain

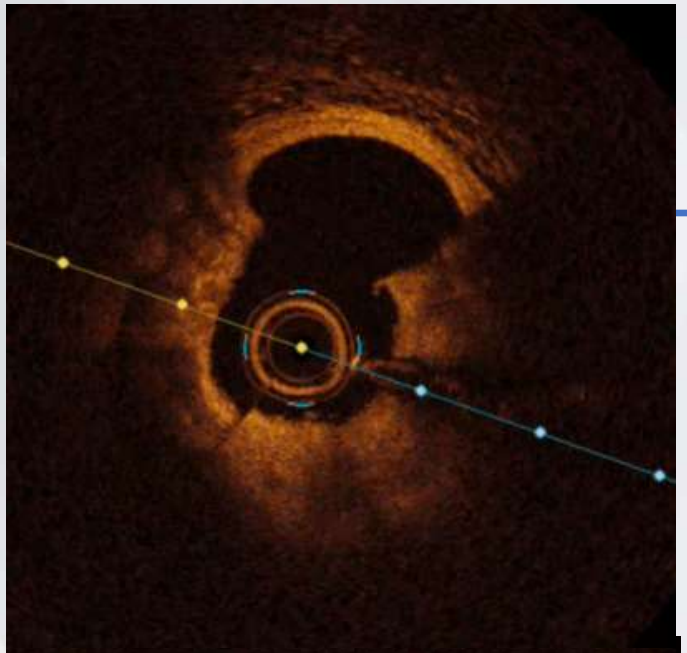
★ =remaining thick Calcified plaque

Shockwave lithotripsy for remaining severe Ca

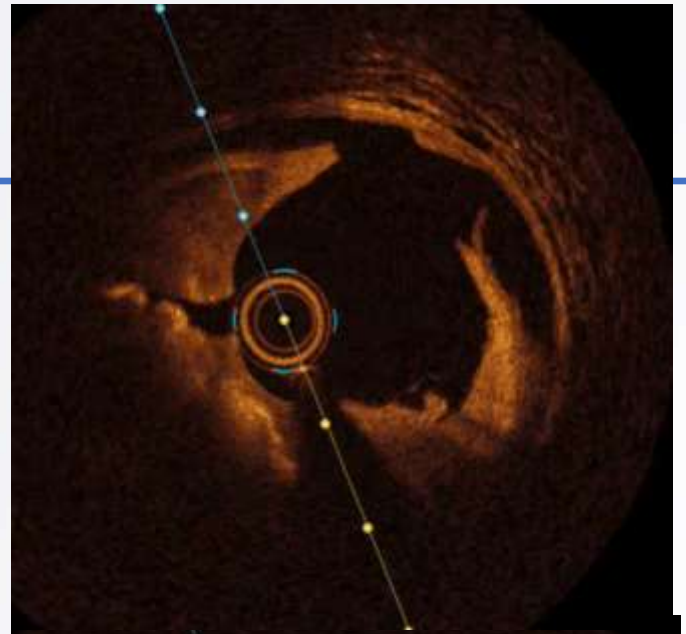


Post shockwave OCT

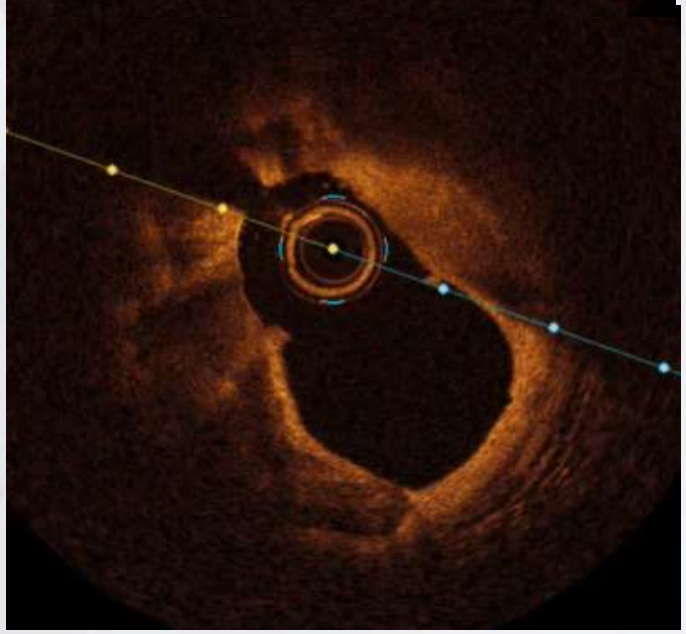
proximal



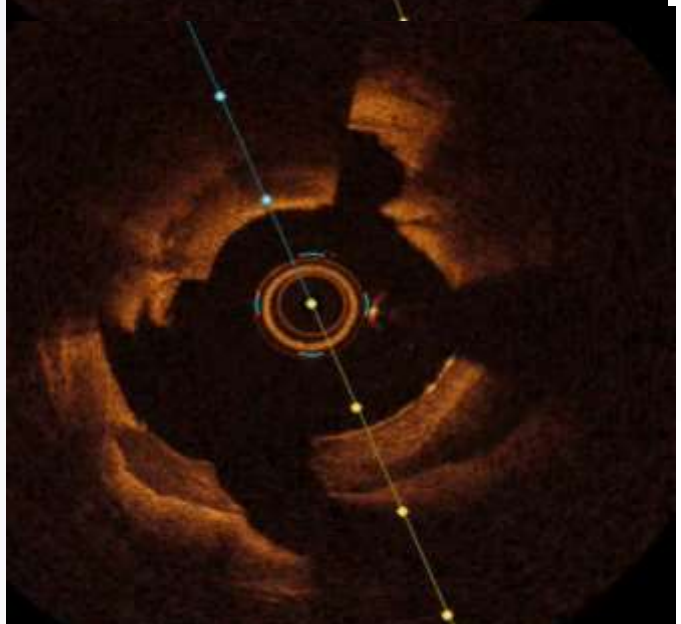
Shockwave
balloon 3.5



distal



Shockwave
balloon 3.0



Finishing angiogram and OCT