

2018

3rd Complex PCI

**Critical Left Main Bifurcation
Stenting in an Octogenarian
with Acute Coronary Syndrome**

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Kaohsiung Medical University Hospital



2018-11-29



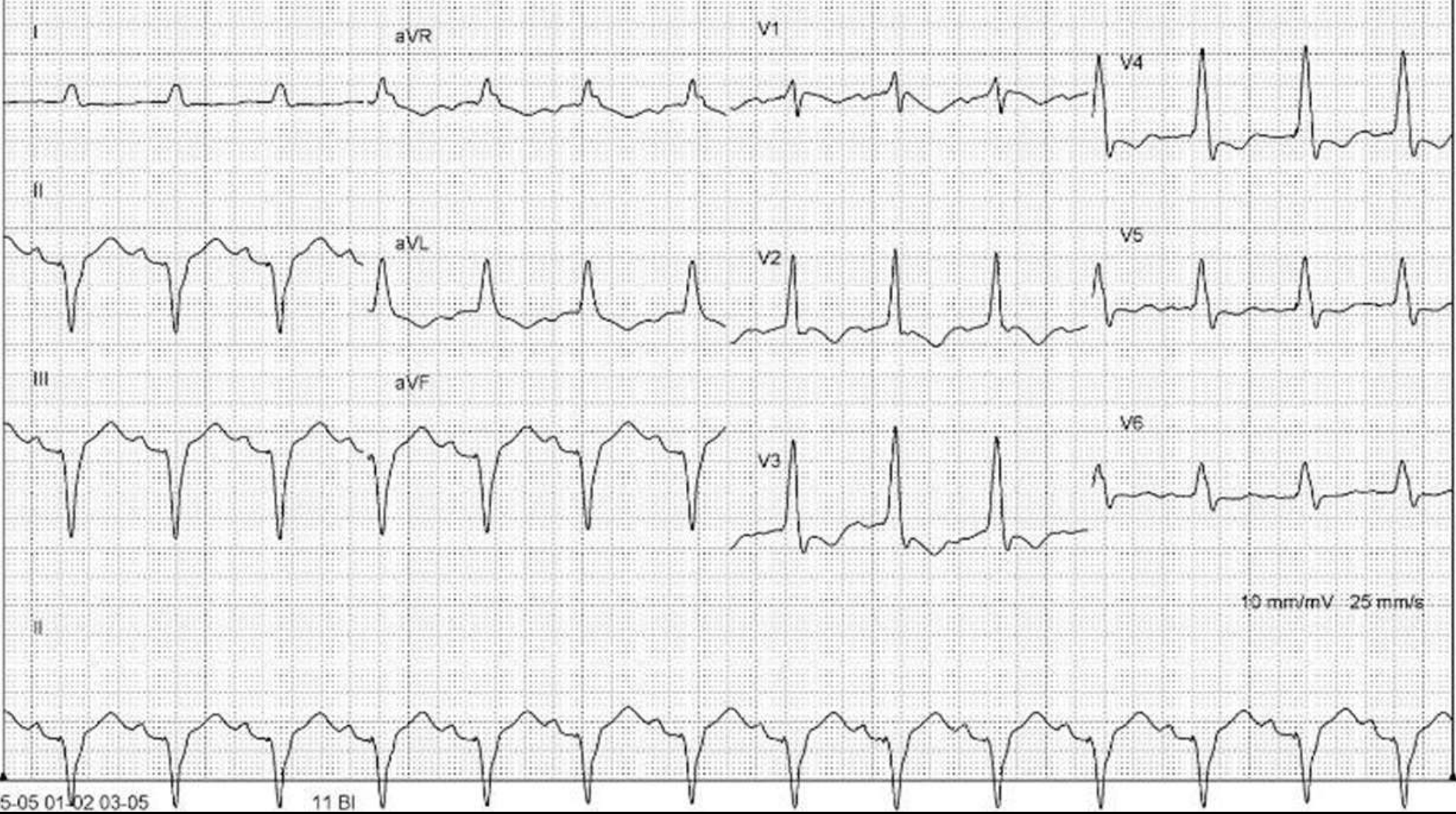
No conflicts of interest

Clinical History and data

- 87 year-old gentleman presented with dyspnea on exertion at ER in our branch Hospital on July 11, 2017.
- Other symptoms : diaphoresis(-), chest pain(-)
- Past History:
- HTN, complete AV block /p permanent pacemaker implantation (DDD)
- Initial Lab data: BUN 11.4mg/dL, Cr 1.25mg/dL, **Tn-I 1.75ng/mL, BNP 1630.5 pg/ml**
- **Acute coronary syndrome, susp NSTEMI** and acute heart failure impressed.

10.00 mm/mV 25.0 mm/s 25 Hz Continuous (3chx4)

10.00 mm/mV 25.0 mm/s 25 Hz



10 mm/mV 25 mm/s

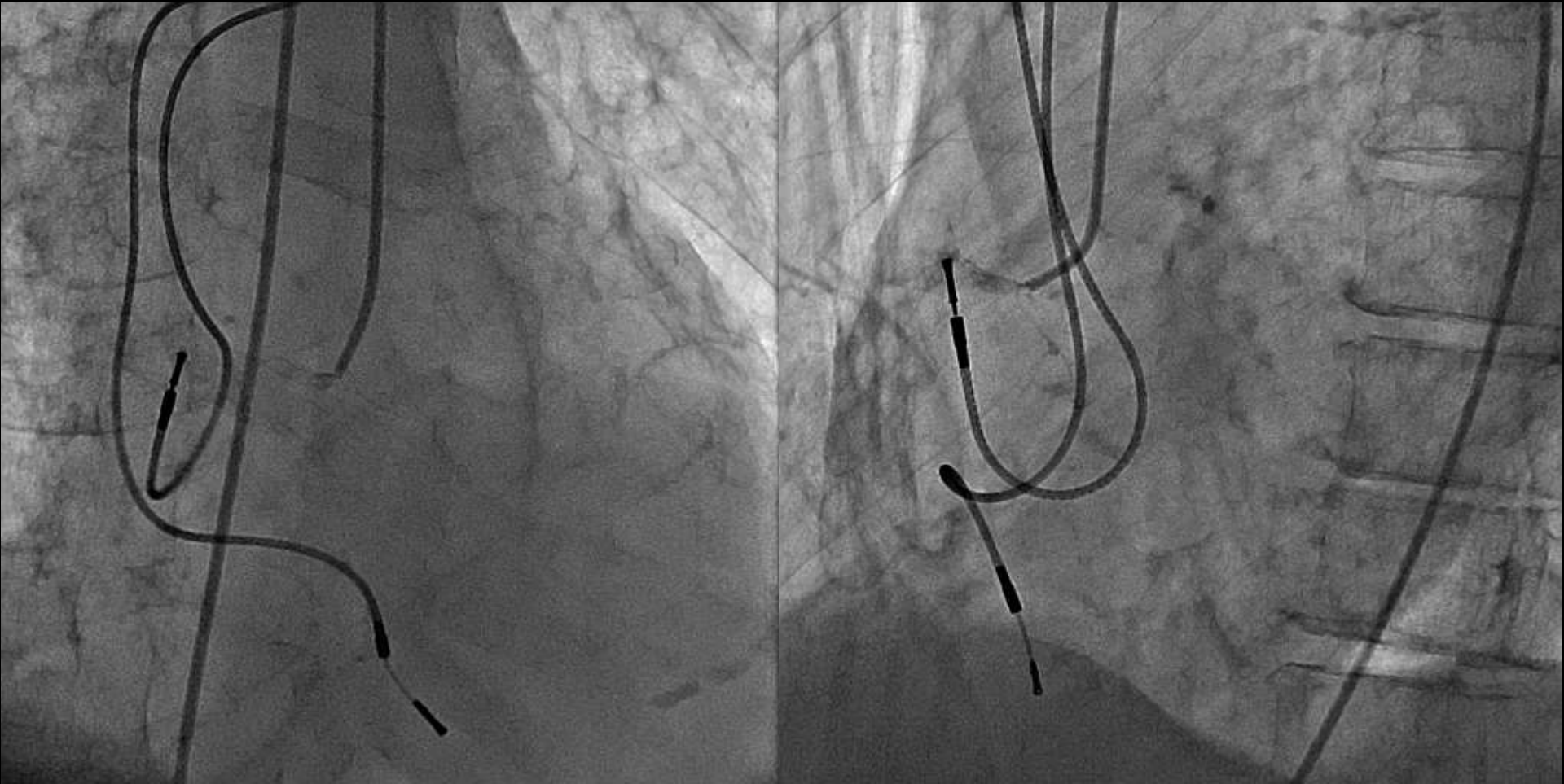
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11 BI

At our Branch Hospital

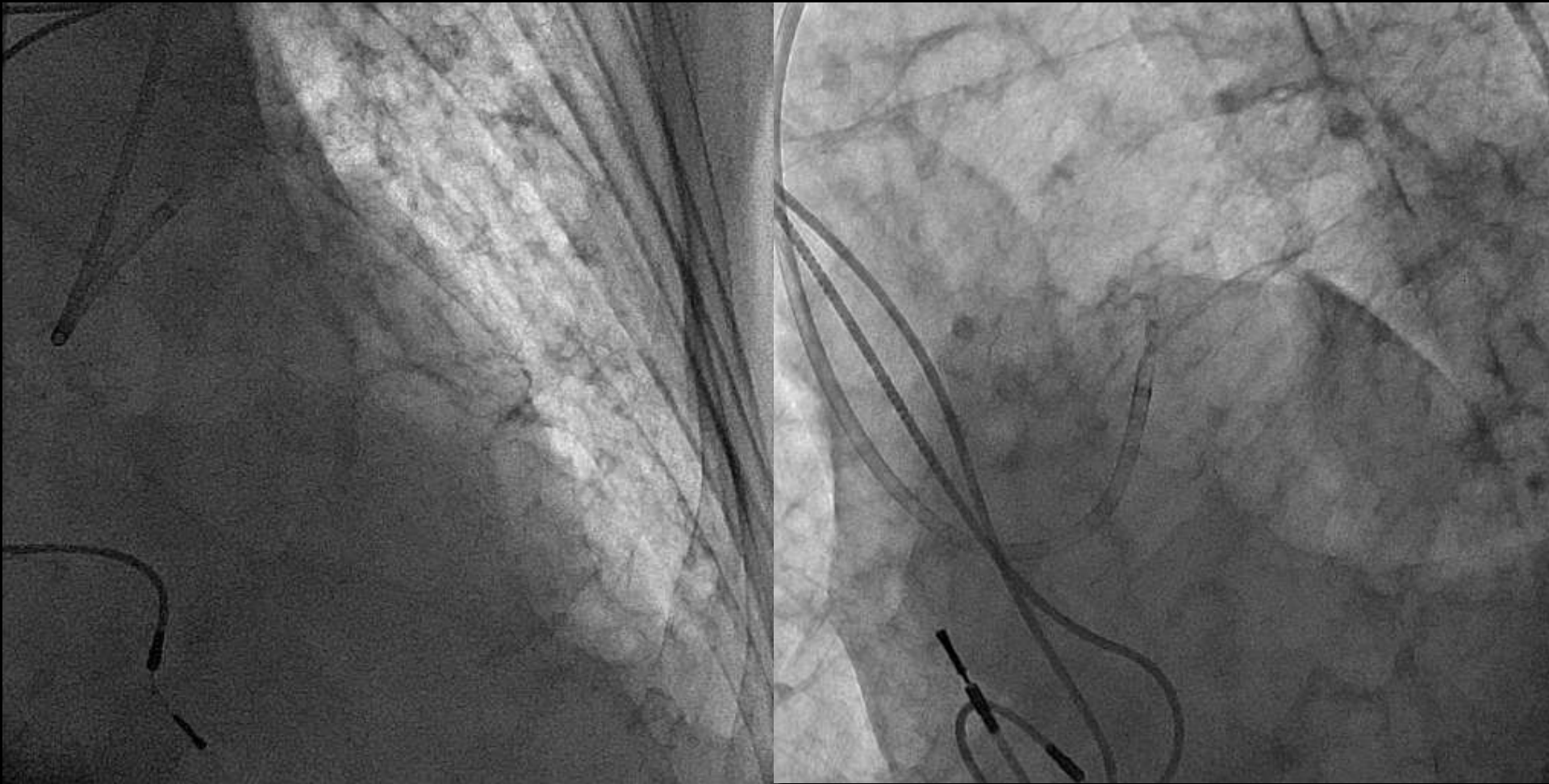
- Coronary Angiography
 - LM: distal 99% stenosis
 - RCA: OS & seg 1 : 50% stenosis
 - LAD: OS : 99% stenosis, seg 6 : 70% stenosis
 - LCX: OS : 99% stenosis, seg 11 : 70% stenosis
- Refer to KMUH for Surgical evaluation
- Family request PCI after Heart team consultation

Diagnostic CAG



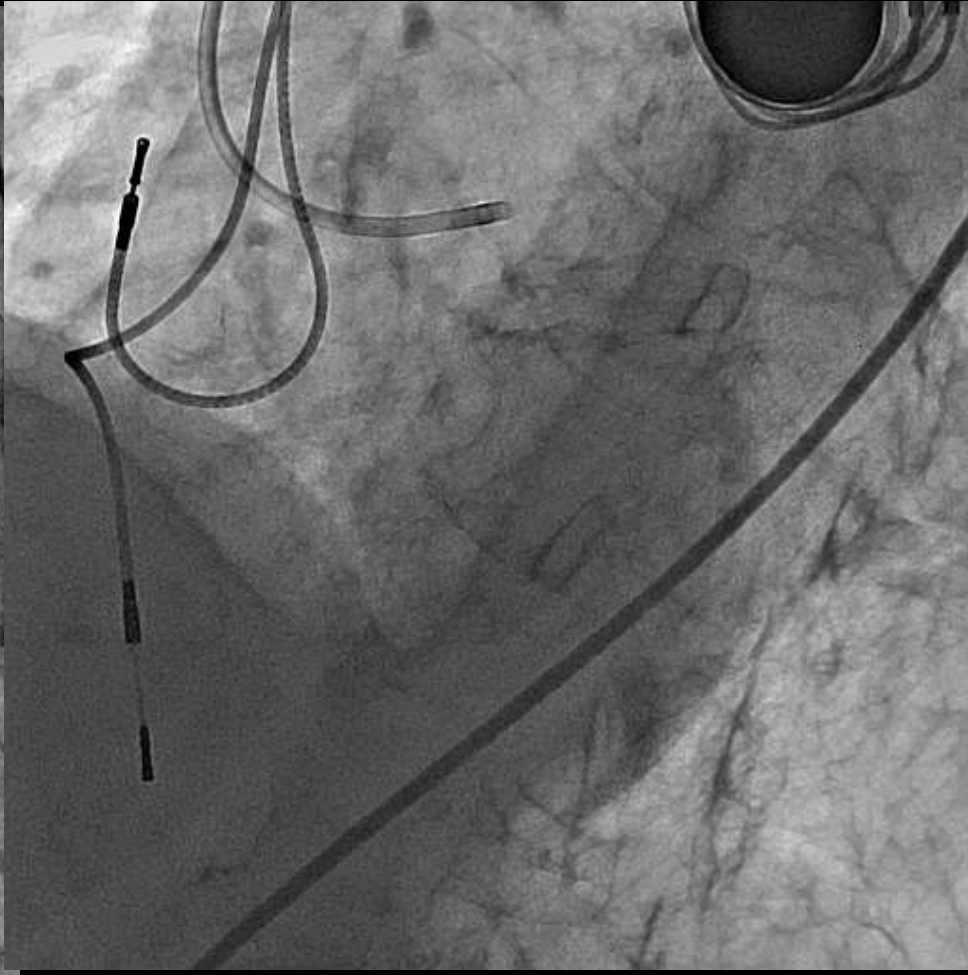
**Trans-femoral approach with a long sheath
6F JR4**

Diagnostic CAG



7F EBU 3.5 SH Guiding Catheter to engage LM

Diagnostic CAG



PCI for LM bifurcation lesions

Floppy to LCX

Hypercoat to LAD

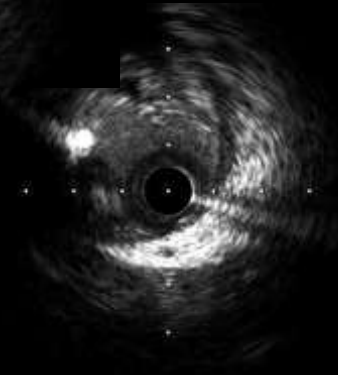
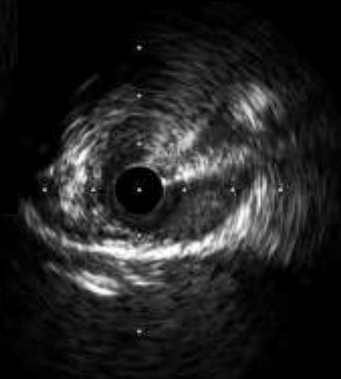
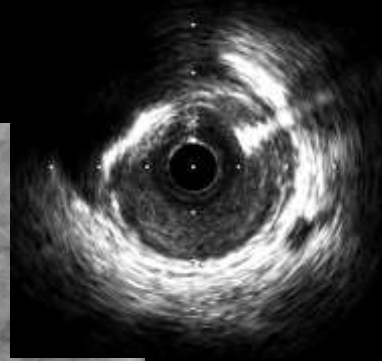
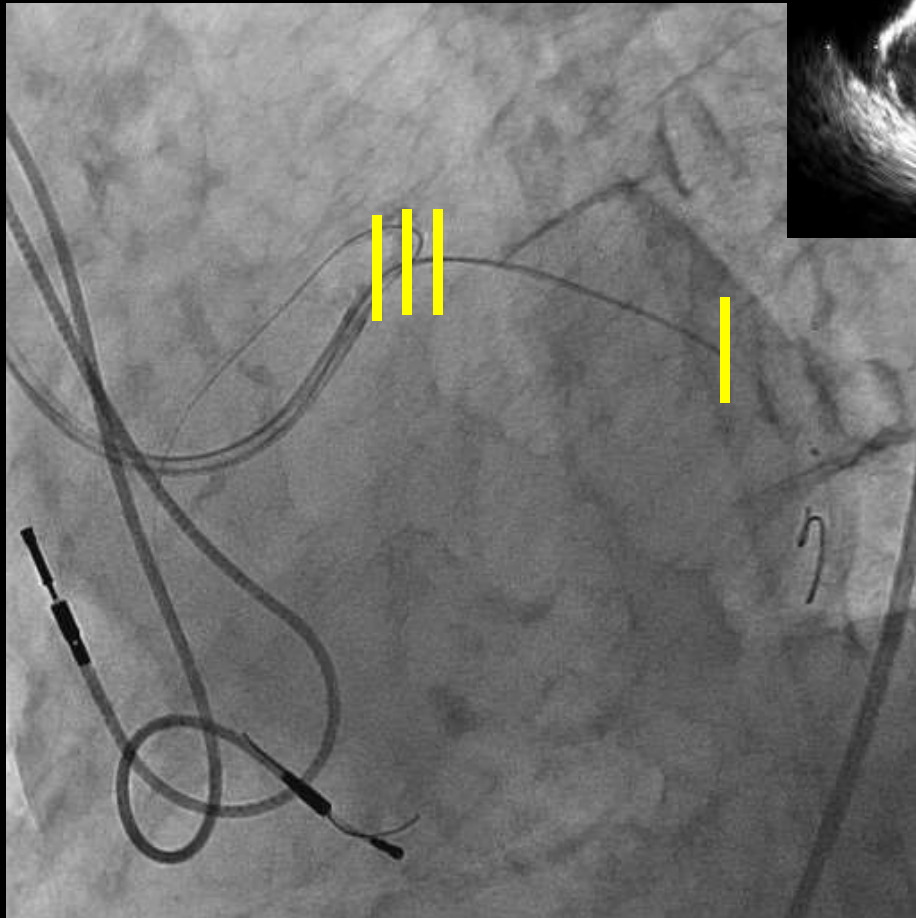


Sapphire bal 1.5x20 mm, at LAD and LCX

NC Euphoral bal 2.75x12 mm, LCX and LAD

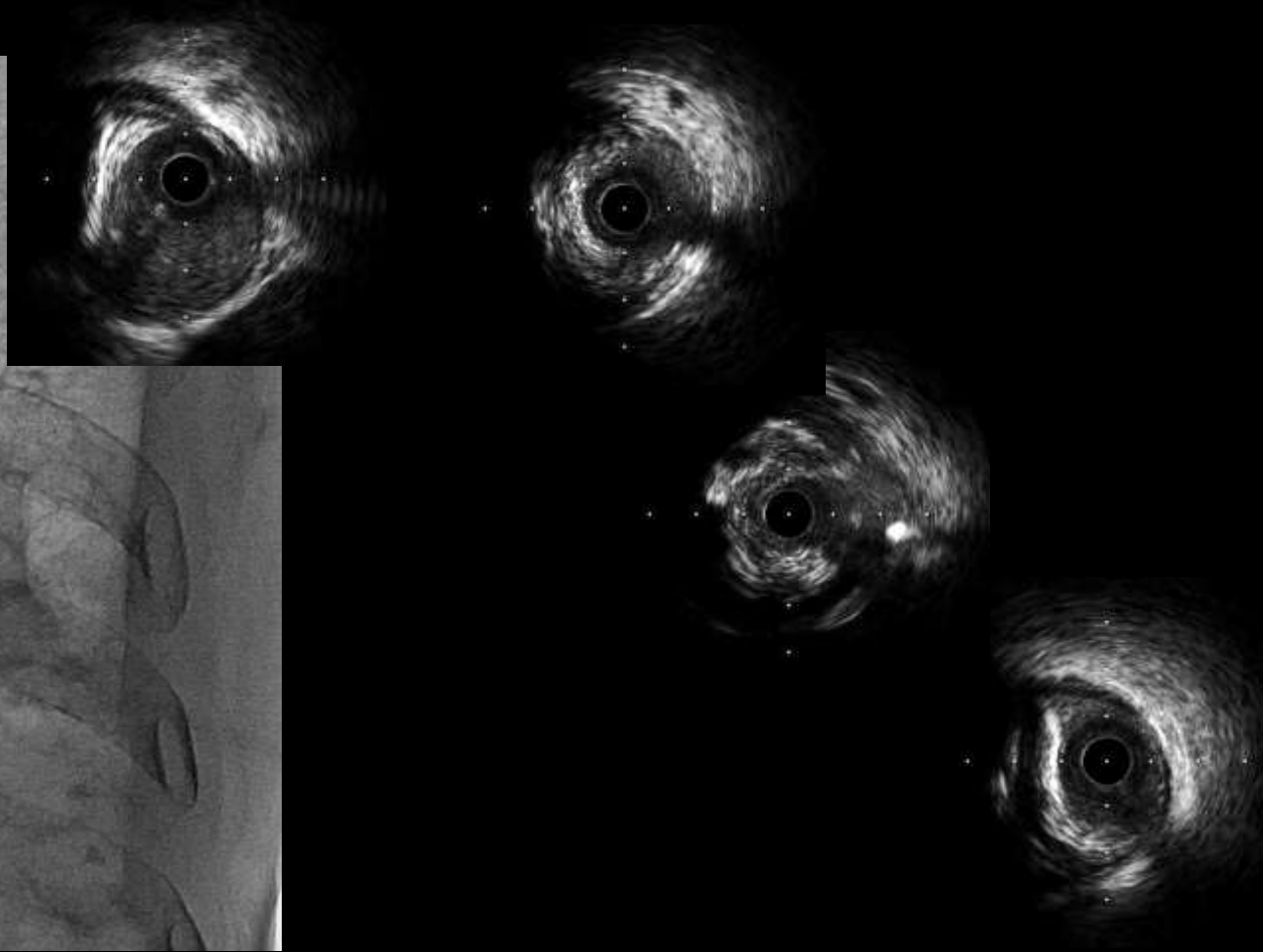
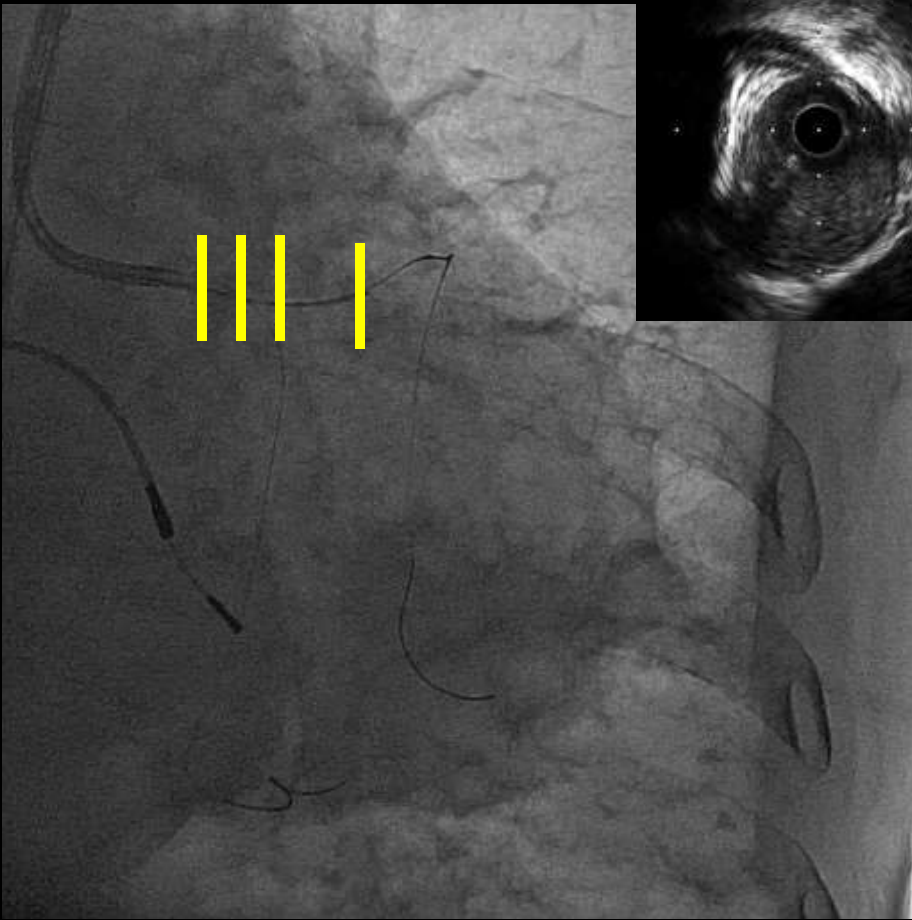
PCI for LM bifurcation lesions

IVUS for LCX



PCI for LM bifurcation lesions

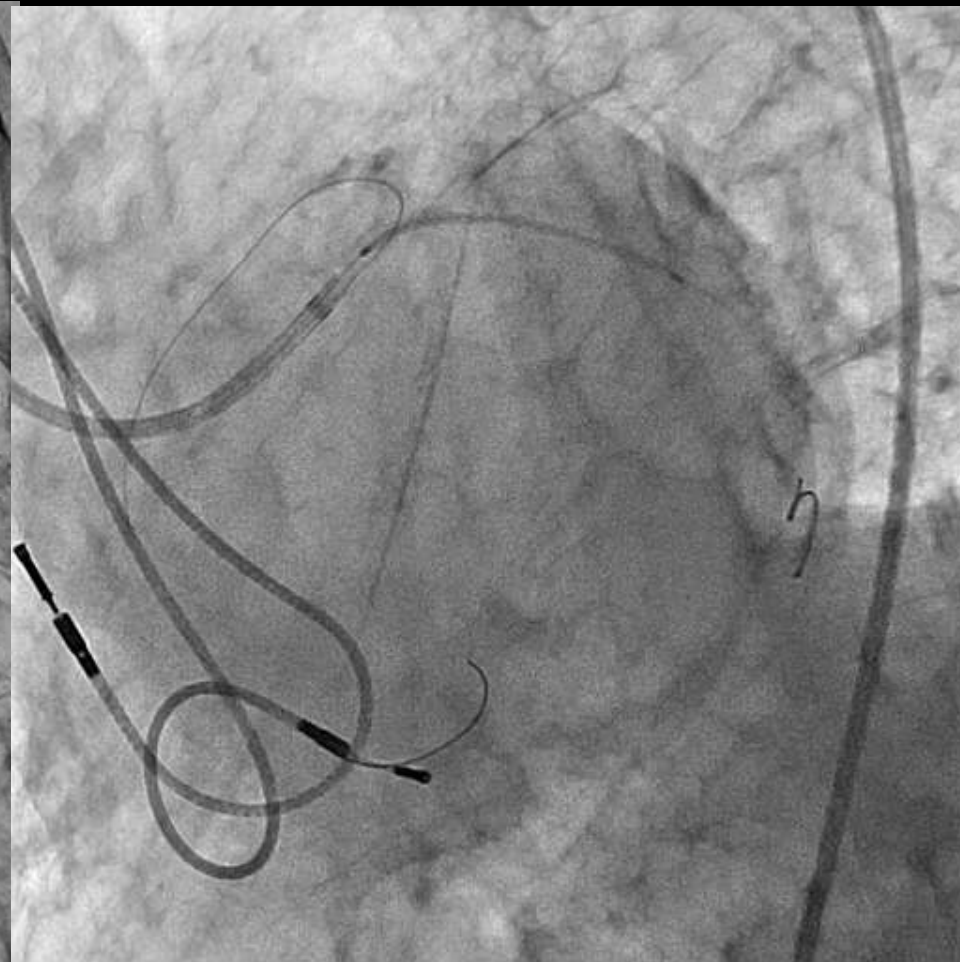
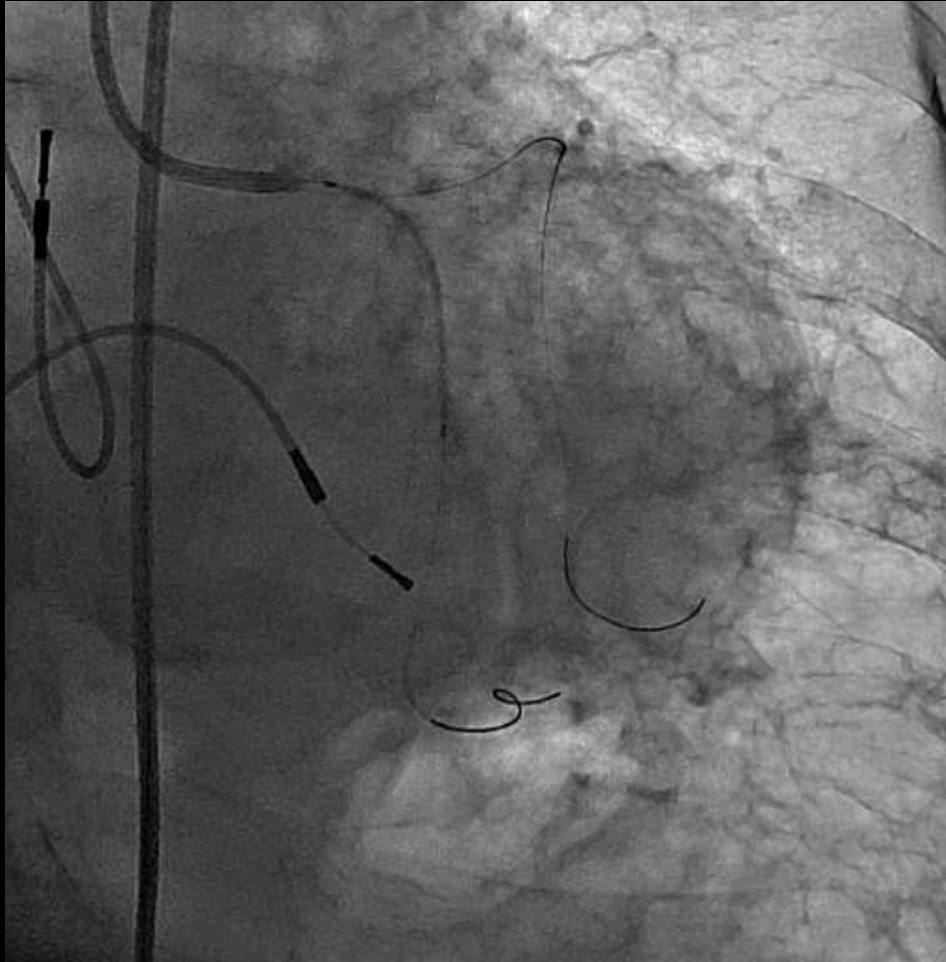
IVUS for LAD



Inverse Cullotte

Xience: LCX 2.75 x 38mm, LAD: 2.75x 23 mm

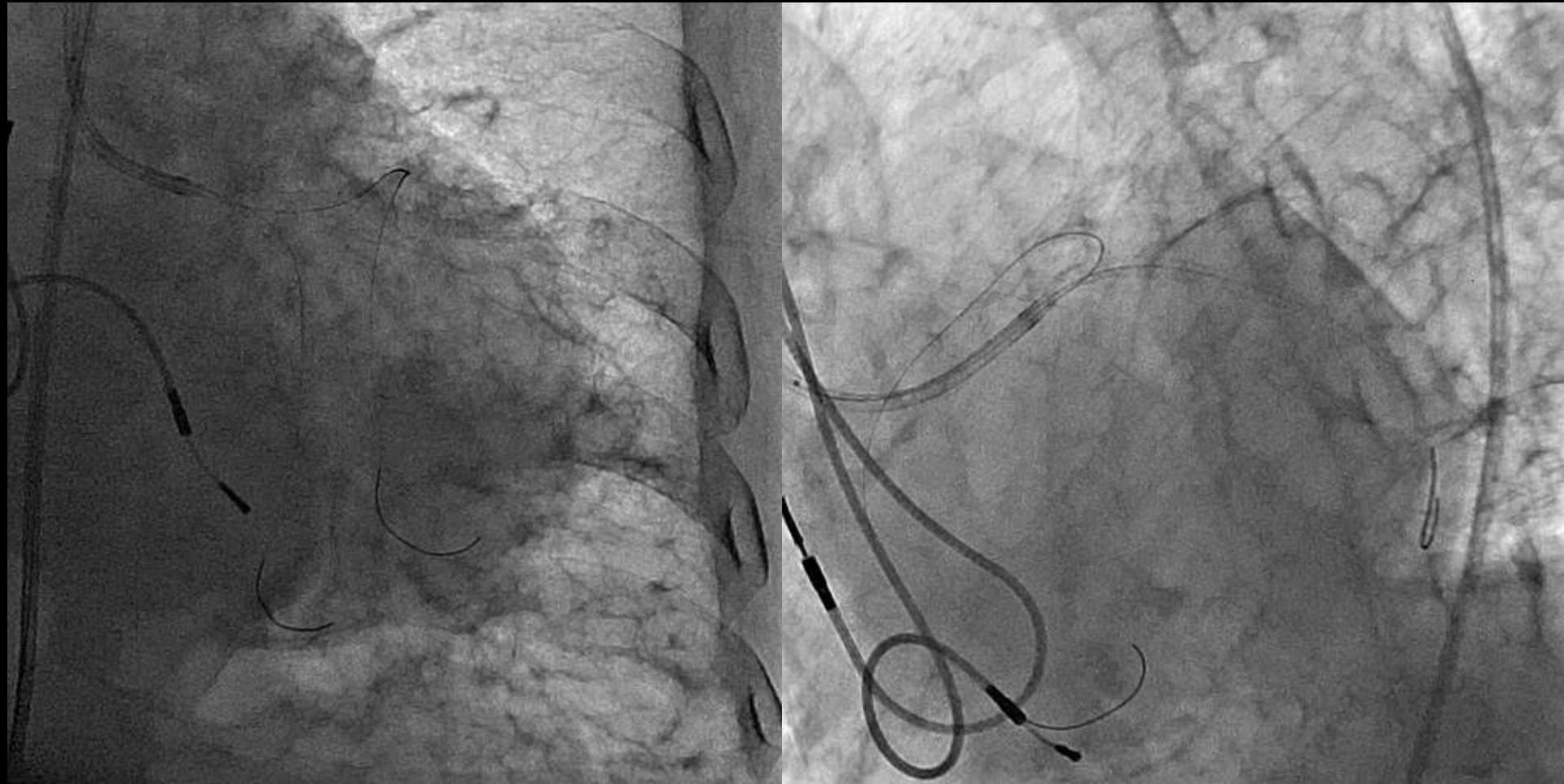
PCI for LM bifurcation lesions



Inverse Culotte Step 1:

Xience 2.75 x 38mm, then NC balloon 2.75 POBA

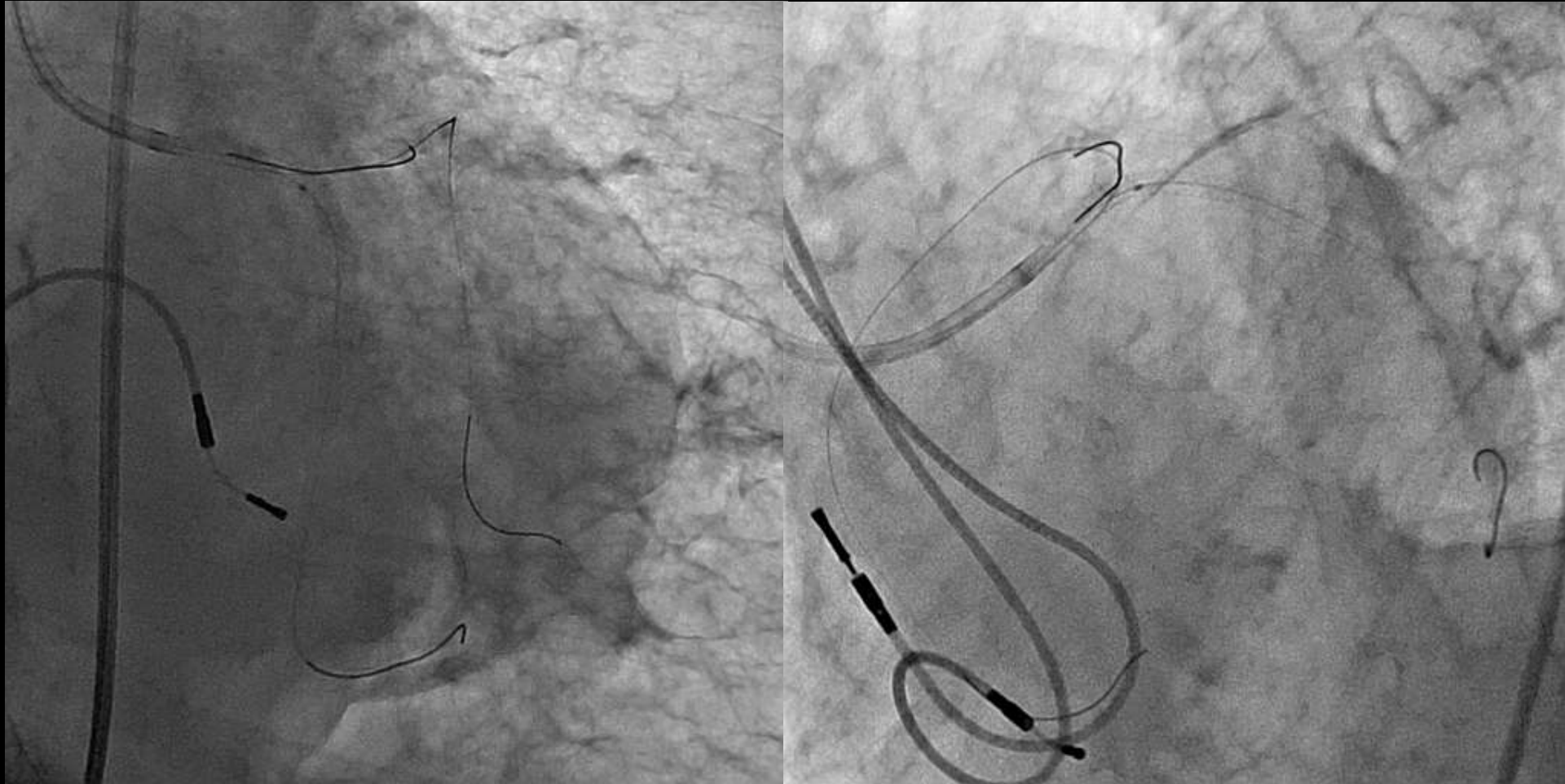
PCI for LM bifurcation lesions



Inverse Culotte Step 1:

LCX s/p sequential NC balloon 2.75 POBA

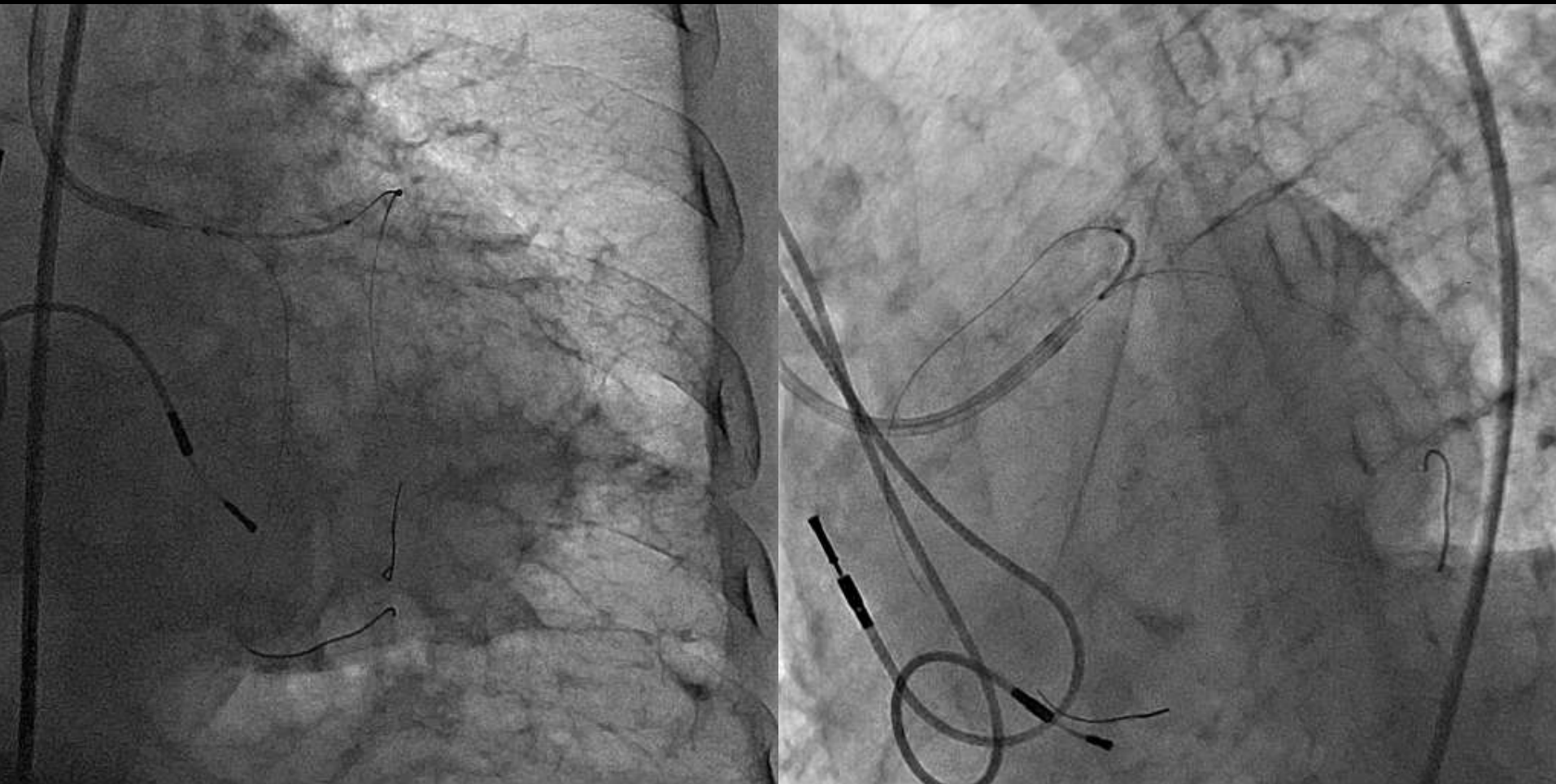
PCI for LM bifurcation lesions



Inverse Culotte Step 2:

Rewire to LAD with Sion Black under a Crusae

PCI for LM bifurcation lesions

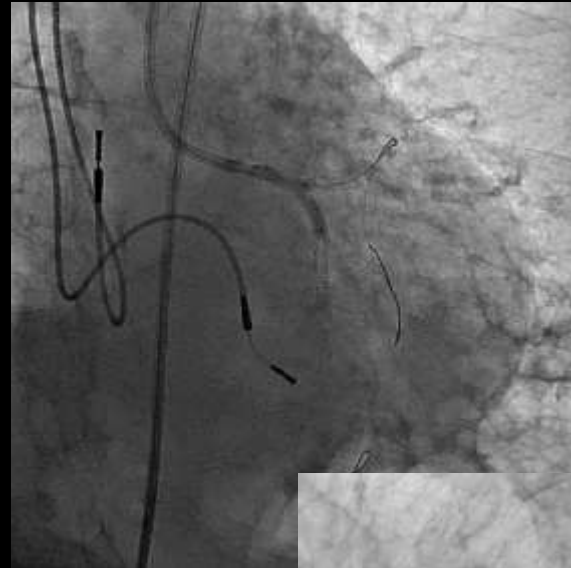


**Inverse Cullotte Step 3: Open LAD with NC
Euphora 2.75 balloon, then Xience 2.75 x 23mm**

PCI for LM bifurcation lesions

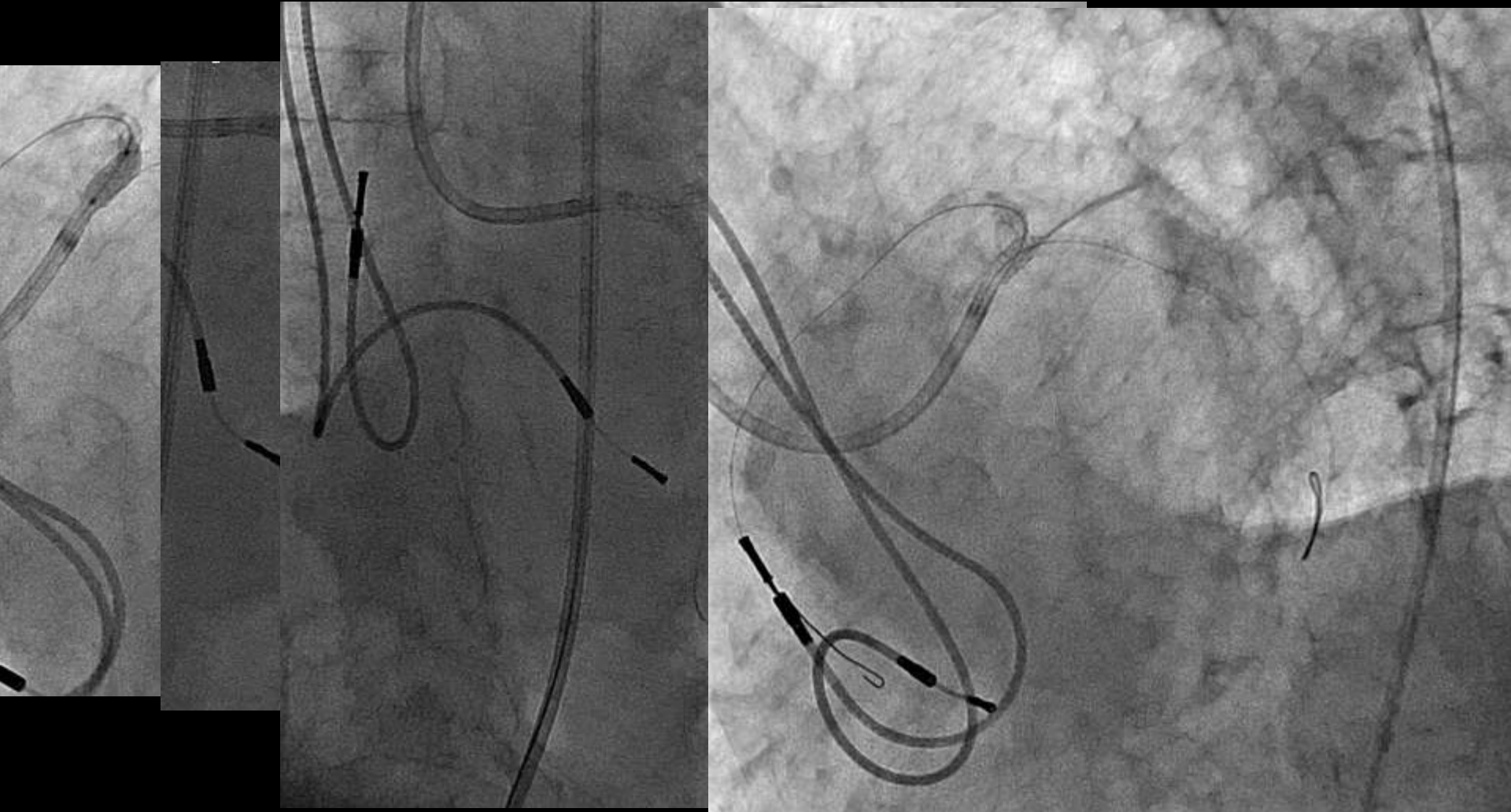


KBT with NC Euphora
2.75x12mm at LAD
2.75x20mm at LCX



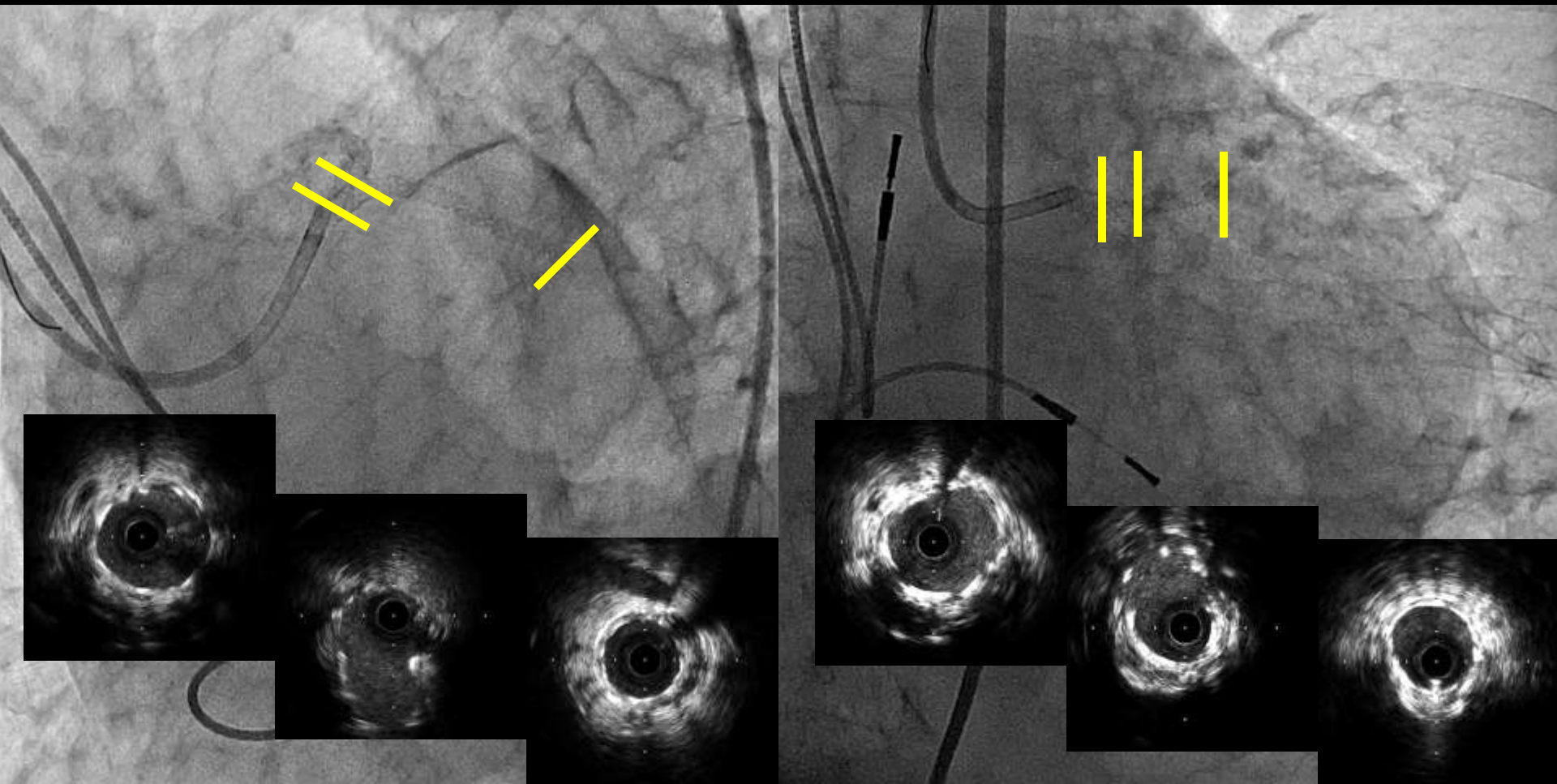
Inverse Cullotte Step 4: LAD Post-dilate with NC Euphora 2.75x20 mm then rewire and KBT

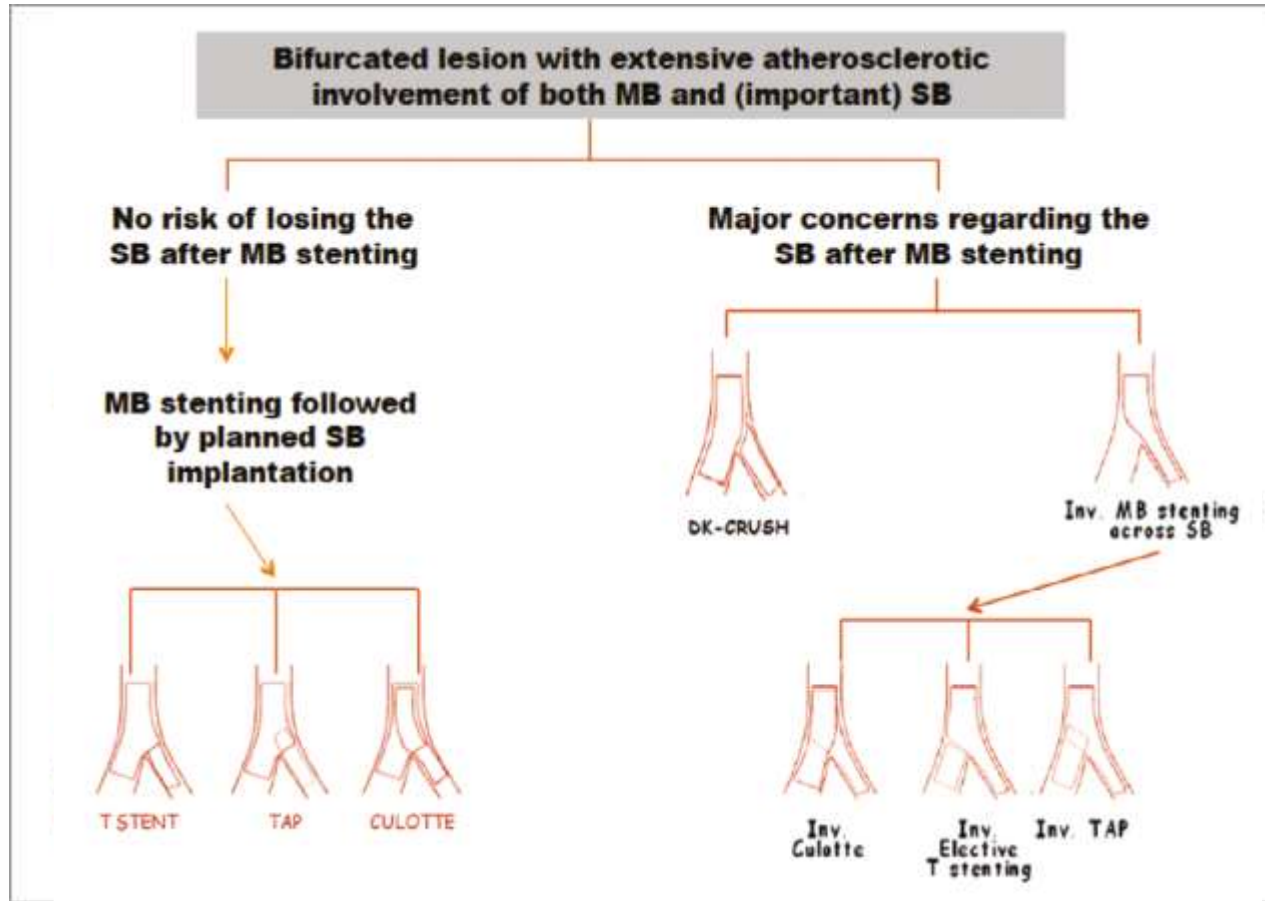
PCI for LM bifurcation lesions



**Inverse Cullotte Step 5: POT with NC Emerge
4.0x12mm at 16 atm**

Final Angiogram wit IVUS Recheck





EuroIntervention 2018;13:1540-1553 published online October 2017

Percutaneous coronary intervention for the left main stem and other bifurcation lesions: 12th consensus document from the European Bifurcation Club

The main focus points for guiding bifurcation stenting using intravascular imaging

Before stent implantation:

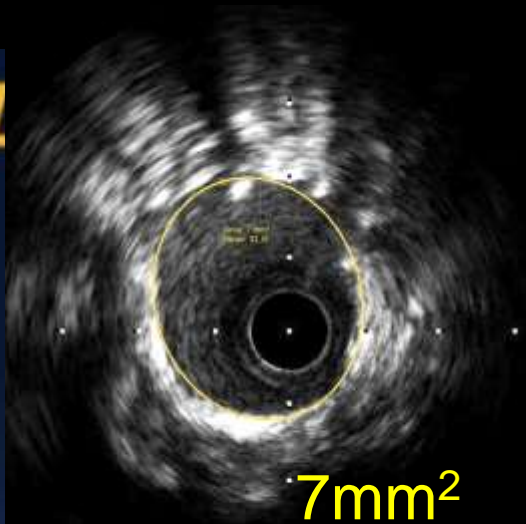
- 1) risk of SB compromise
- 2) planning of stent length to limit residual stenosis and fibroatheroma in adjoining segments,
- 3) assessment of segmental stent diameters based on proximal and distal reference size estimations,
- 4) planning the size and length of the balloon for POT to ensure it fits within the stent from carina to the proximal stent edge.

The main focus points for guiding bifurcation stenting using intravascular imaging

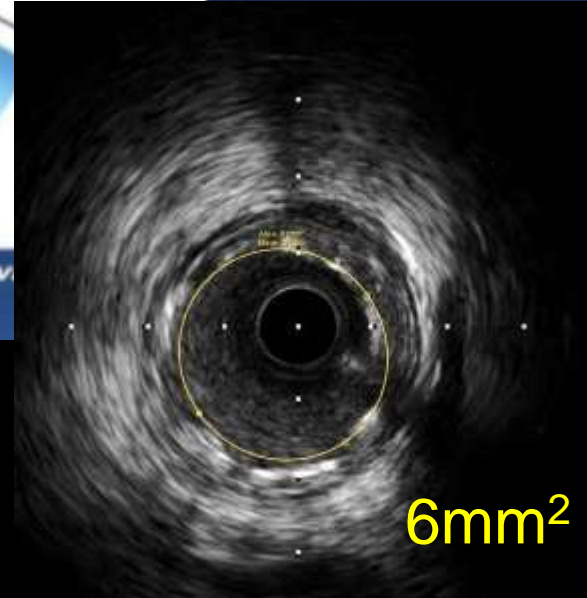
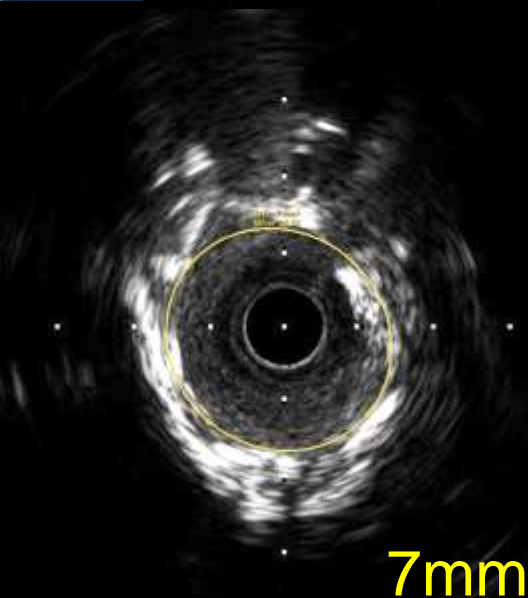
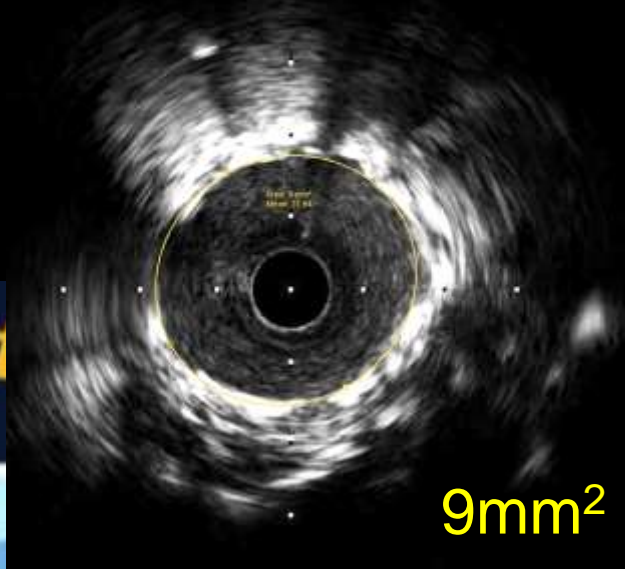
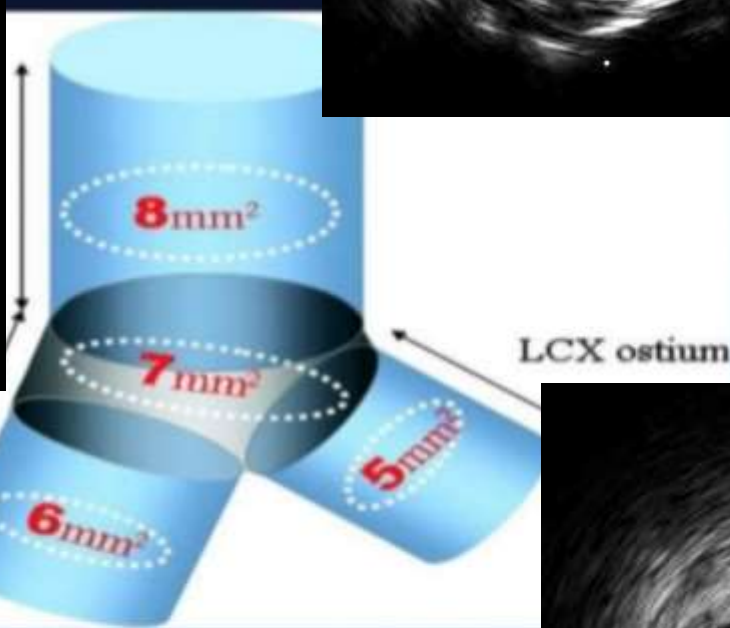
After stent implantation, post-dilatation, POT & rewiring,

- 1) rule out a higher degree of residual edge stenosis
- 2) evaluate stent expansion and apposition,
- 3) verify wire position in SB recrossing
- 4) rule out accidental abluminal rewiring
- 5) perform a final scan after KBI to evaluate the SB ostium.
- 6) If an SB stent is implanted, it is recommended to scan the stented SB and evaluate stent expansion and apposition.

Scanning of both MB and SB are recommended when guiding two-stent treatment by intravascular imaging.



Bifurcat



Kang S et al. *Circ Cardio*
2011;4:562-569



EXCEL

A Prospective, Randomized Trial Comparing Everolimus-Eluting Stents and Bypass Graft Surgery in Selected Patients with Left Main Coronary Artery Disease

Gregg W. Stone MD

Joseph F. Sabik, Patrick W. Serruys, Charles A. Simonton, Philippe Généreux, John Puskas, David E. Kandzari, Marie-Claude Morice, Nicholas Lembo, W. Morris Brown, III, David P. Taggart, Adrian Banning, Béla Merkely, Ferenc Horkay, Piet W. Boonstra, Ad Johannes van Boven, Imre Ungi, Gabor Bogáts, Samer Mansour, Nicolas Noiseux, Manel Sabaté, Jose Pomar, Mark Hickey, Anthony Gershlick, Pawel Buszman, Andrzej Bochenek, Erick Schampaert, Pierre Pagé, Ovidiu Dressler, Ioanna Kosmidou, Roxana Mehran, Stuart J. Pocock, and Arie Pieter Kappetein, for the EXCEL Trial Investigators

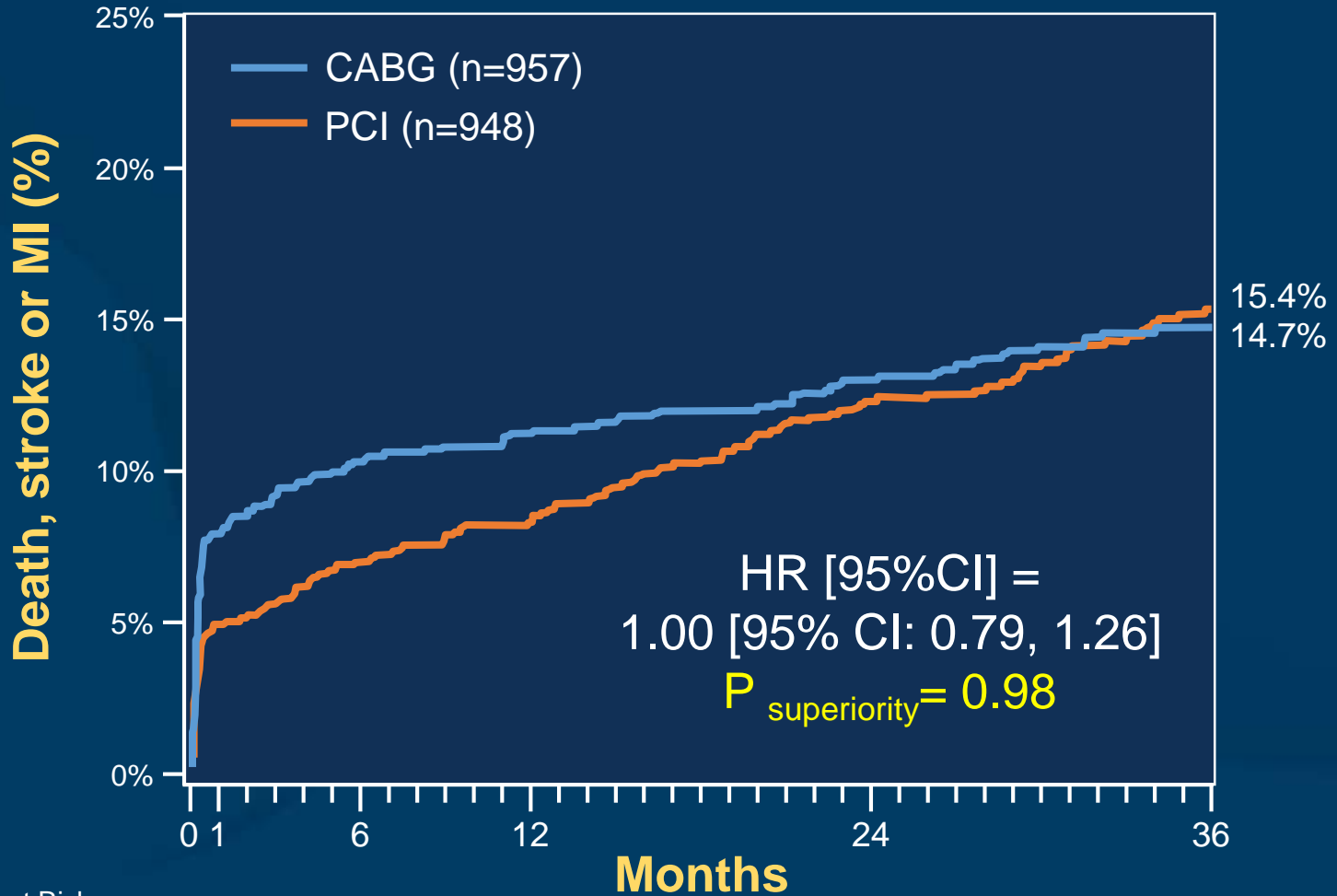
NCT01205776

Major Inclusion Criteria

- Unprotected LMCAD with $\geq 70\%$ DS, *or* $\geq 50\%$ - $< 70\%$ with either i) non-invasive evidence of LM ischemia, ii) IVUS MLA $\leq 6.0 \text{ mm}^2$, *or* iii) FFR ≤ 0.80
- Syntax score ≤ 32
- Clinical and anatomic eligibility for both PCI and CABG as agreed to by the local Heart Team

Primary Endpoint

Death, Stroke or MI at 3 Years



No. at Risk:

PCI	948	896	875	850	784	445
CABG	957	868	836	817	763	458

Take Home Message

- **Comprehensive Intra-coronary image evaluation of both MB and SB is the key to better clinical outcome in the left main bifurcation two-stent treatment.**
- **Individualized evaluation for best two-stent technique for each patient, especially the elderly.**
- **Safety is of the highest priority**



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Kaohsiung Medical University Hospital

Thank You for Listening



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