

Coronary Reaccess and PCI After TAVR: Tips and Tricks

Didier Tchétché, MD.

Clinique Pasteur, Toulouse, France

DISCLOSURE

-Consultant for

Medtronic/ Edwards/Boston Sci/Abbott/T-Heart

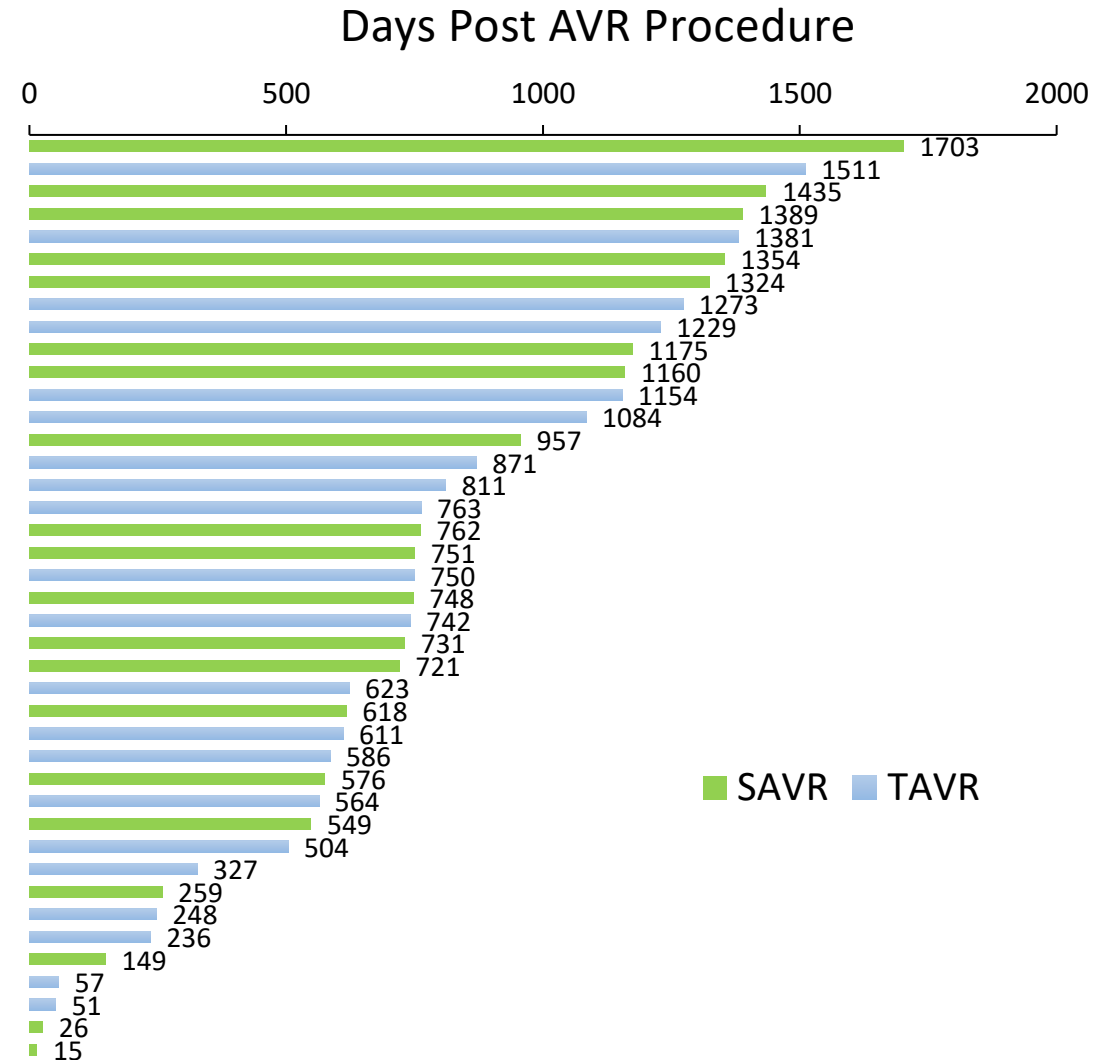
Coronary access after TAVR

TIMING OF POST-AVR PCI

In the multicenter SURTAVI trial, 2.2% (36/1660) of patients required PCI after valve replacement with a surgical or transcatheter valve.

The duration of time between the index AVR procedure and PCI varied widely for both TAVR and SAVR patients:

- Mean days from index AVR to PCI Procedure
 - TAVR: 699.8±406.9 days
 - SAVR: 822.1 ±527.1 days
- Linearized rate of PCI post AVR in patients (per year)
 - TAVR: 0.008
 - AVR: 0.009



Coronary access after TAVR

POST-TAVR ANGIOGRAPHY AND PCI SUCCESS RATES

Clinical data show that coronary access post-TAVR is technically feasible

Source	TAVs	PCI Success Rate**
Tanaka, et al. Cardiovascular Revasc Med, 2019 ¹	37 CoreValve™ 4 Evolut R™	28/30 (93.3%)
Kleiman, et al. Presentation at CRT, 2019 ²	20 CoreValve	30/33 (90.9%)
Htun et al., Catheter Cardiovasc Inter, 2018 ³	28 CoreValve	29/29 (100%)
Zivelonghi et al., Am J Cardiol, 2017 ⁴	41 SAPIEN 3™* 25 Evolut R	17/17 (100%)
Chetcuti et al., TCT, 2016 ⁵	169 CoreValve	103/113 (91.2%)
Allali et al. Cardiovasc Revasc Med, 2016 ⁶	24 CoreValve	23/24 (95.8%)
Blumenstein et al., Clin Res Cardiol, 2015 ⁷	19 SAPIEN™* 10 CoreValve 4 Symetis™* 1 Portico™* 1 Jena Valve™*	10/10 (100%)

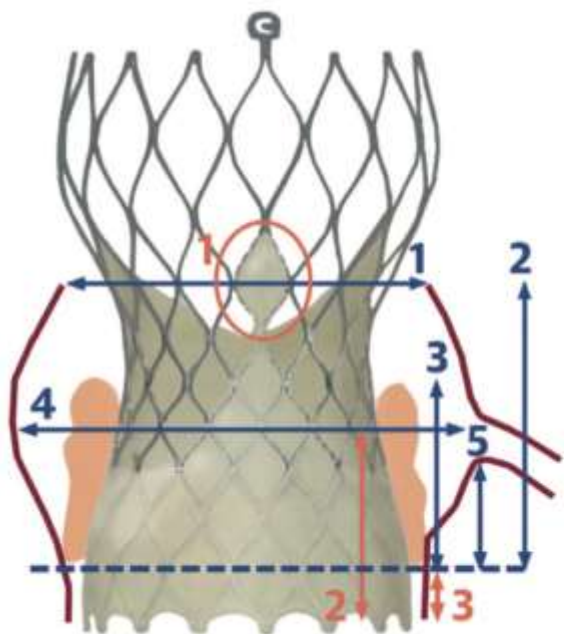
**Average PCI
Success Rate**1-7**

93.8%

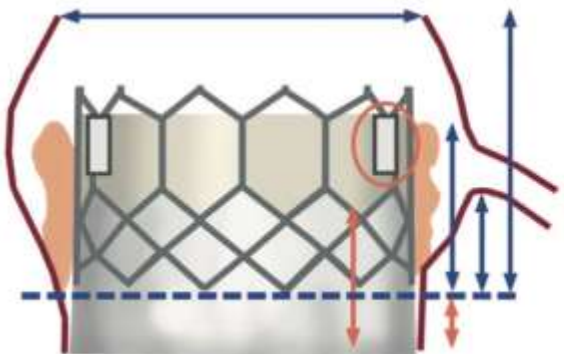
Refer to individual study for definition of PCI success rates.

** PCI success rates calculated for those patients in which PCI was attempted.

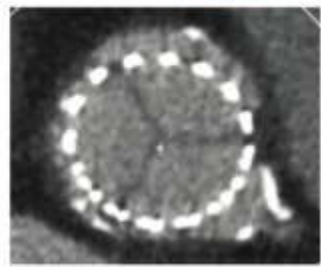
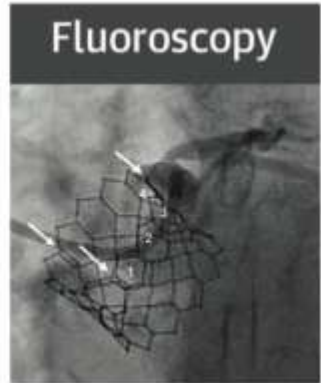
Factors influencing coronary access post TAVI



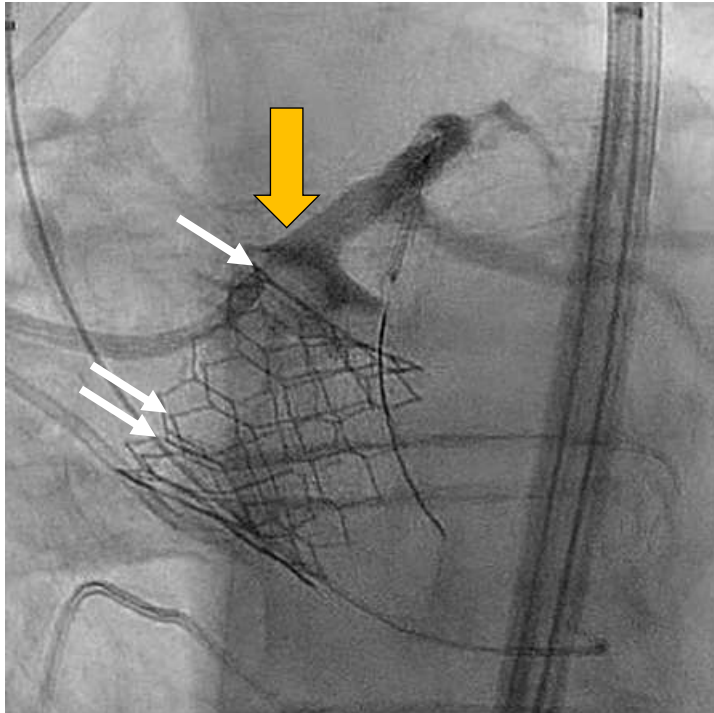
- Anatomical**
1. Sinotubular junction dimensions
 2. Sinus height
 3. Leaflet length and bulkiness
 4. Sinus of Valsalva width
 5. Coronary height



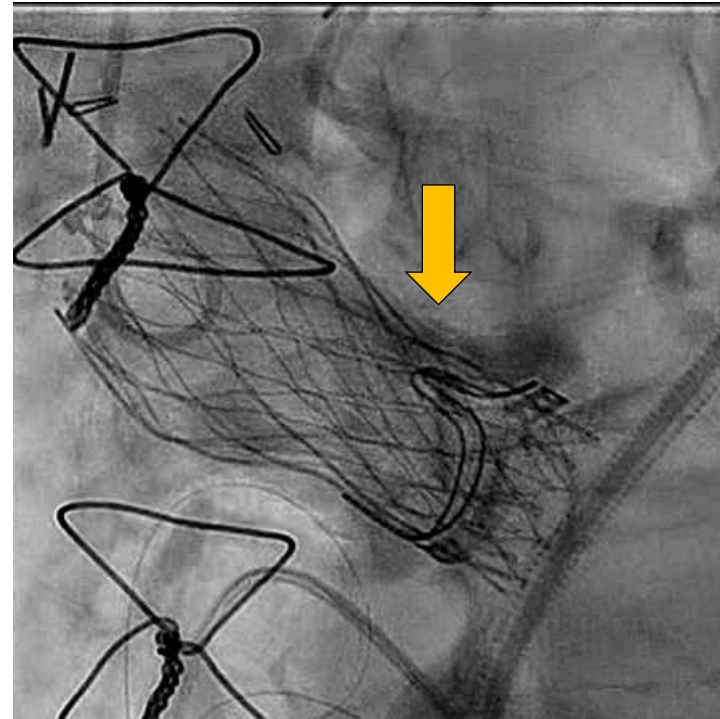
- Device and Procedural**
1. Commissural tab orientation
 2. Sealing skirt height
 3. Valve implant depth



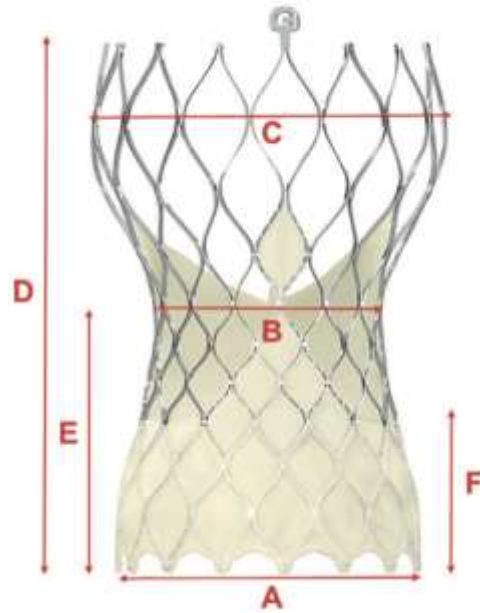
Reasons for Difficult Coronary Re-access



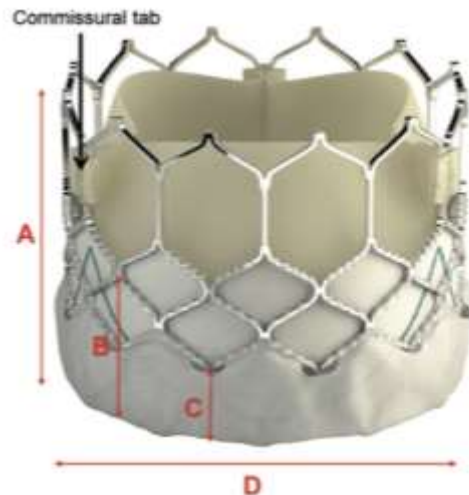
Bulky calcium at LM orifice;
Commissural tab facing LM



Supra-annular leaflet with
small STJ

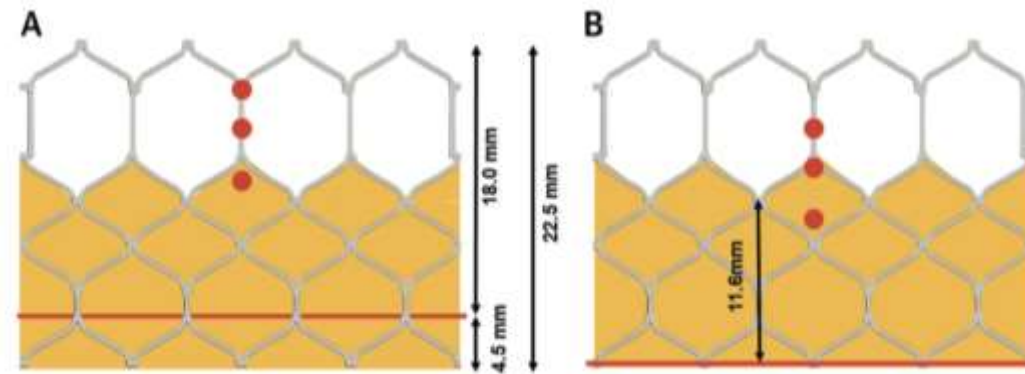
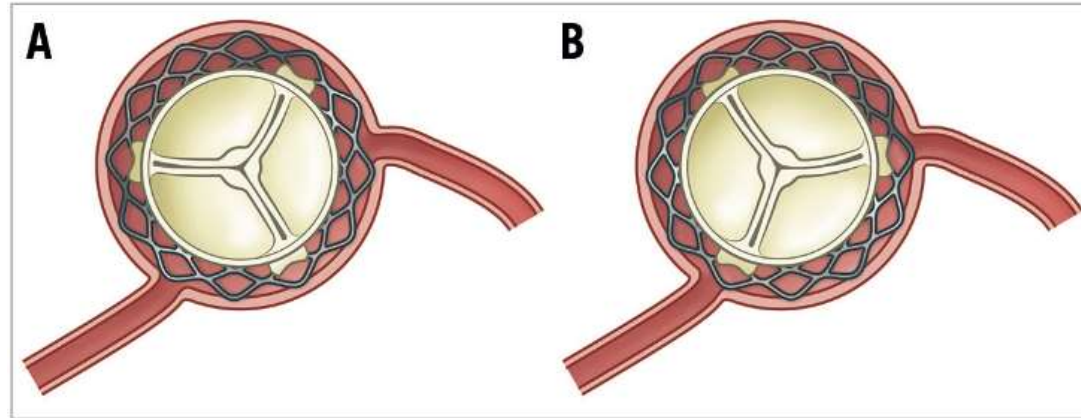


	23mm Evolut R / PRO	26 mm Evolut R / PRO	29mm Evolut R / PRO	34mm Evolut R
A. Inflow Diameter	23 mm	26 mm	29 mm	34 mm
B. Waist Diameter	20 mm	22 mm	23 mm	24 mm
C. Outflow Diameter	34 mm	32 mm	34 mm	38 mm
D. Frame height	45 mm	45 mm	45 mm	46 mm
E. Commissure Height	26 mm	26 mm	26 mm	26 mm
F. Skirt Height	13 mm	13 mm	13 mm	14 mm



	23 mm Sapien 3	26 mm Sapien 3	29 mm Sapien 3
A. Frame Height	18 mm	20 mm	22.5 mm
B. Inner Skirt Height	9.3 mm	10.2 mm	11.6 mm
C. Outer Skirt Height	6.6 mm	7.0 mm	8.1 mm
D. Valve Diameter	23 mm	26 mm	29 mm

Commissural alignment



Case 1

85 y.o. male

CABG and PCI of SVG

Cr Cl 35 ml/min/m²

NYHA 3 no angina

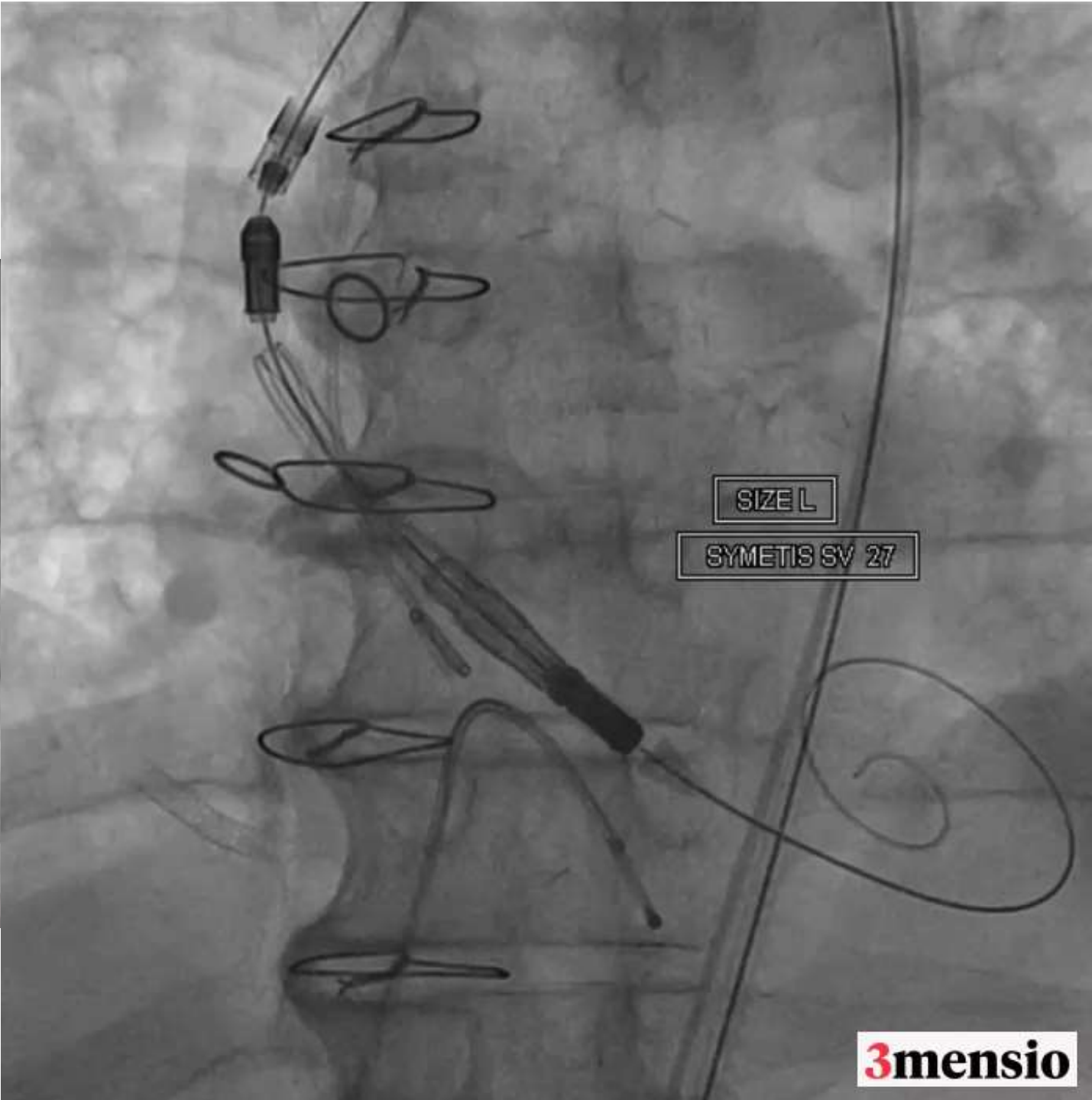
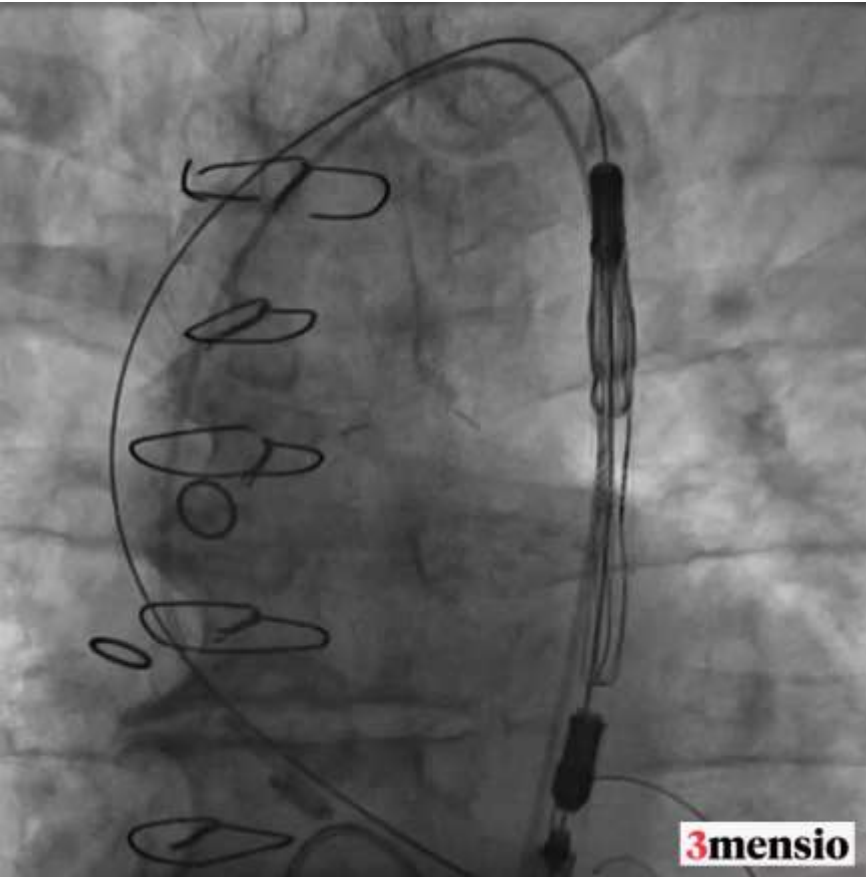
AS: AVA 0.8 cm²-Mean Gdt 45 mmHg-LVEF 45%-SPAP 56 mmHg

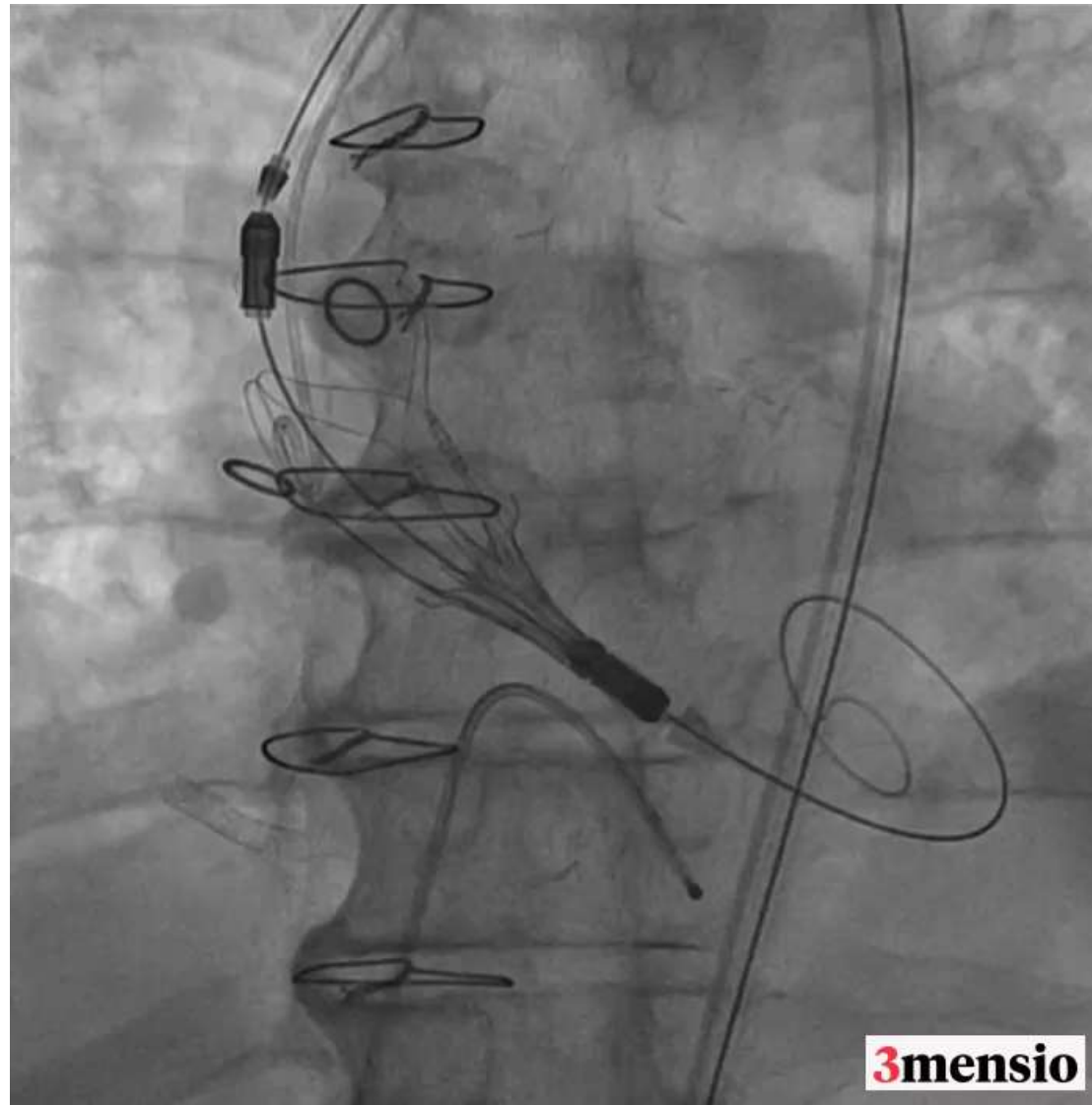
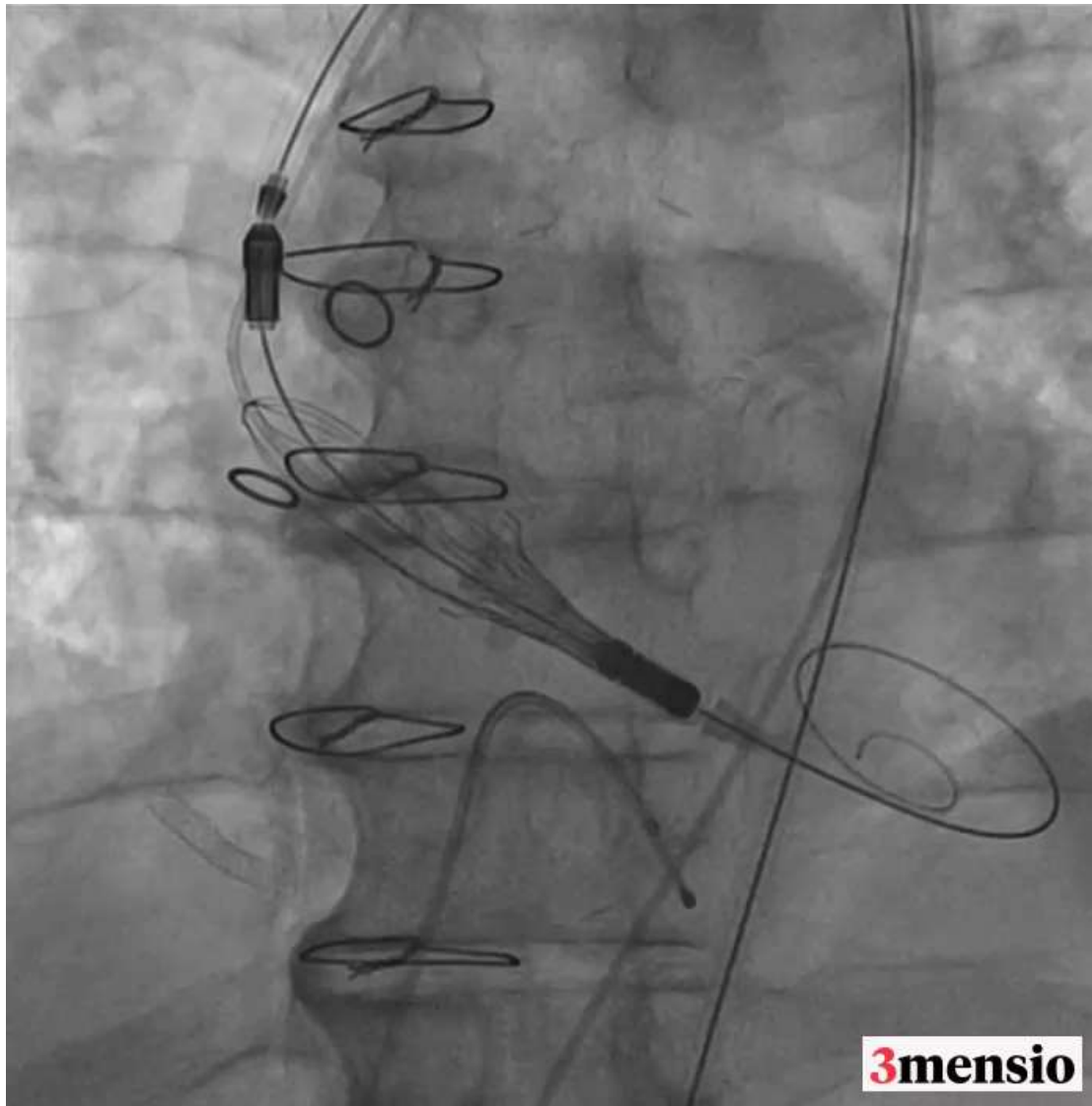
70% Proximal LCx (aneurysmal segment)

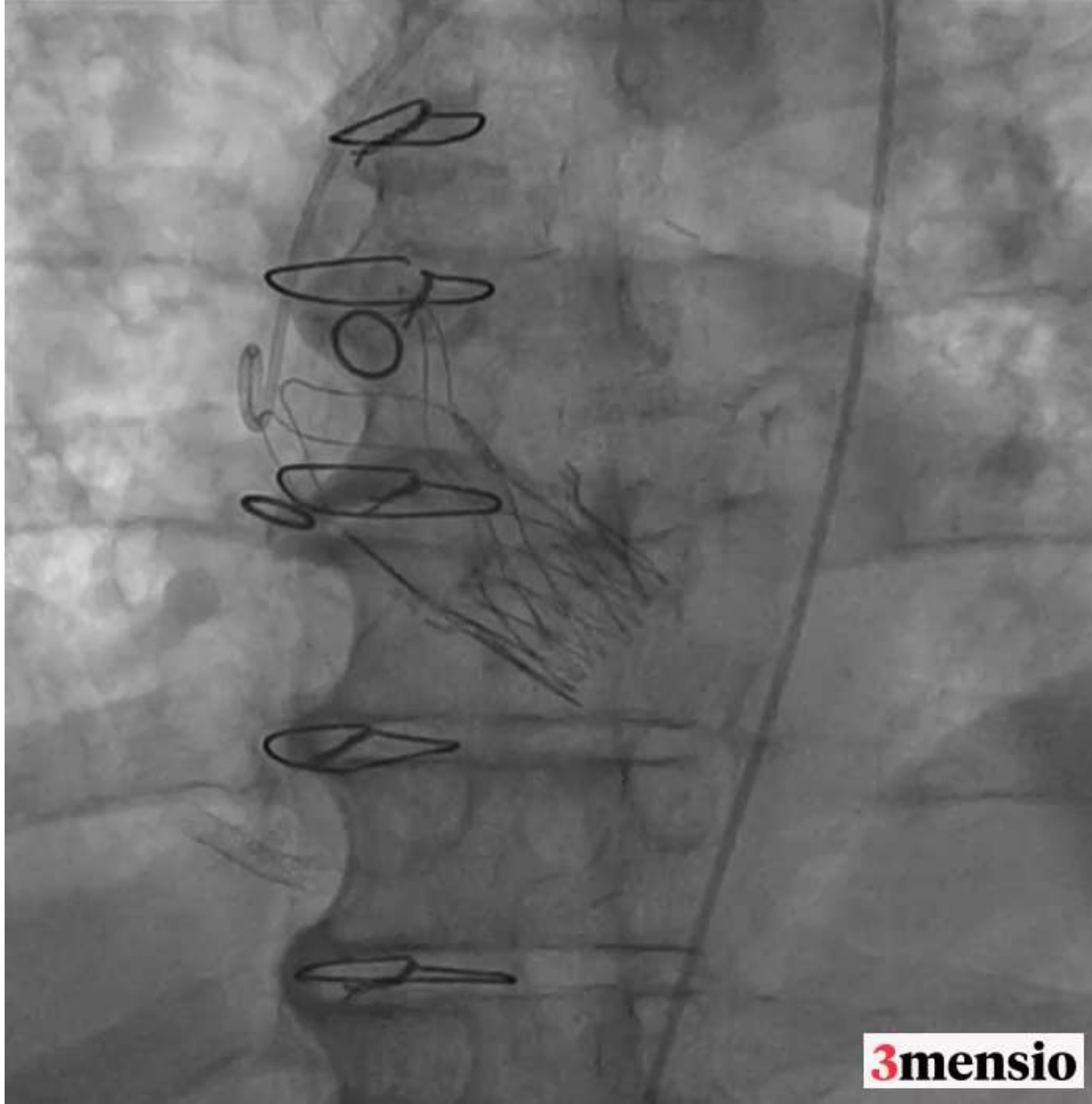
50% PDA

40 % proximal SVG-PDA

→ TF TAVI no coronary treatment





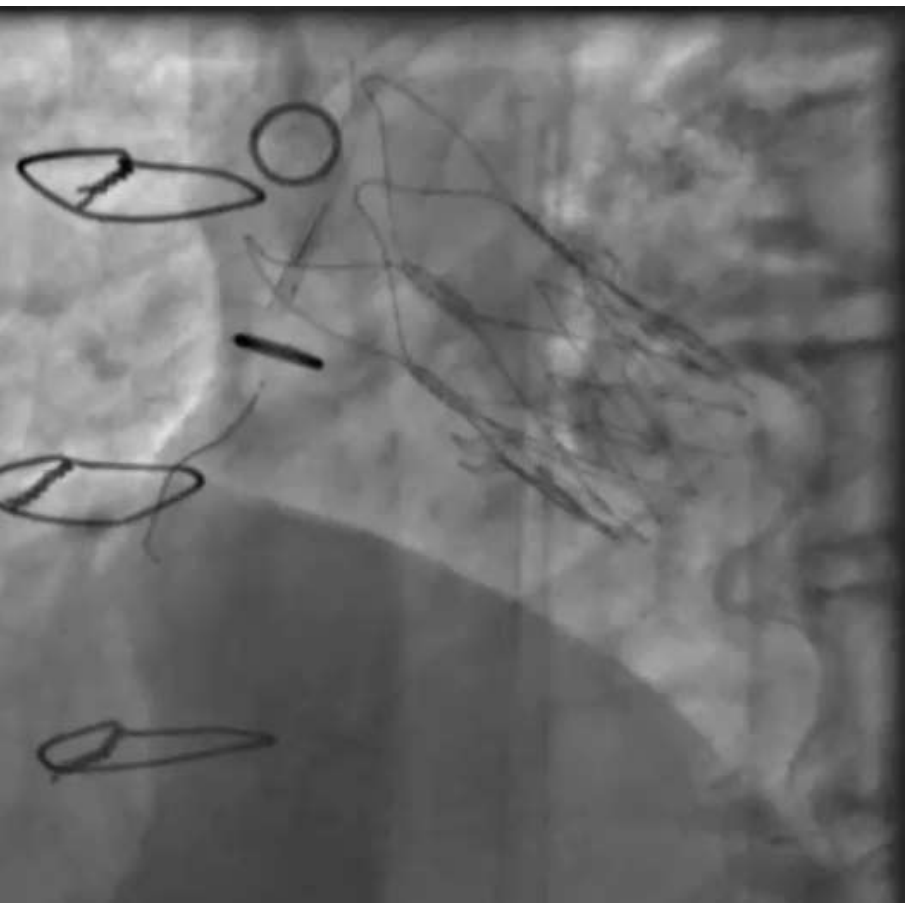


12 months post TAVI: angina CCS2

15% ischemia inferior and lateral wall

LCx disease + SVR-PDA disease



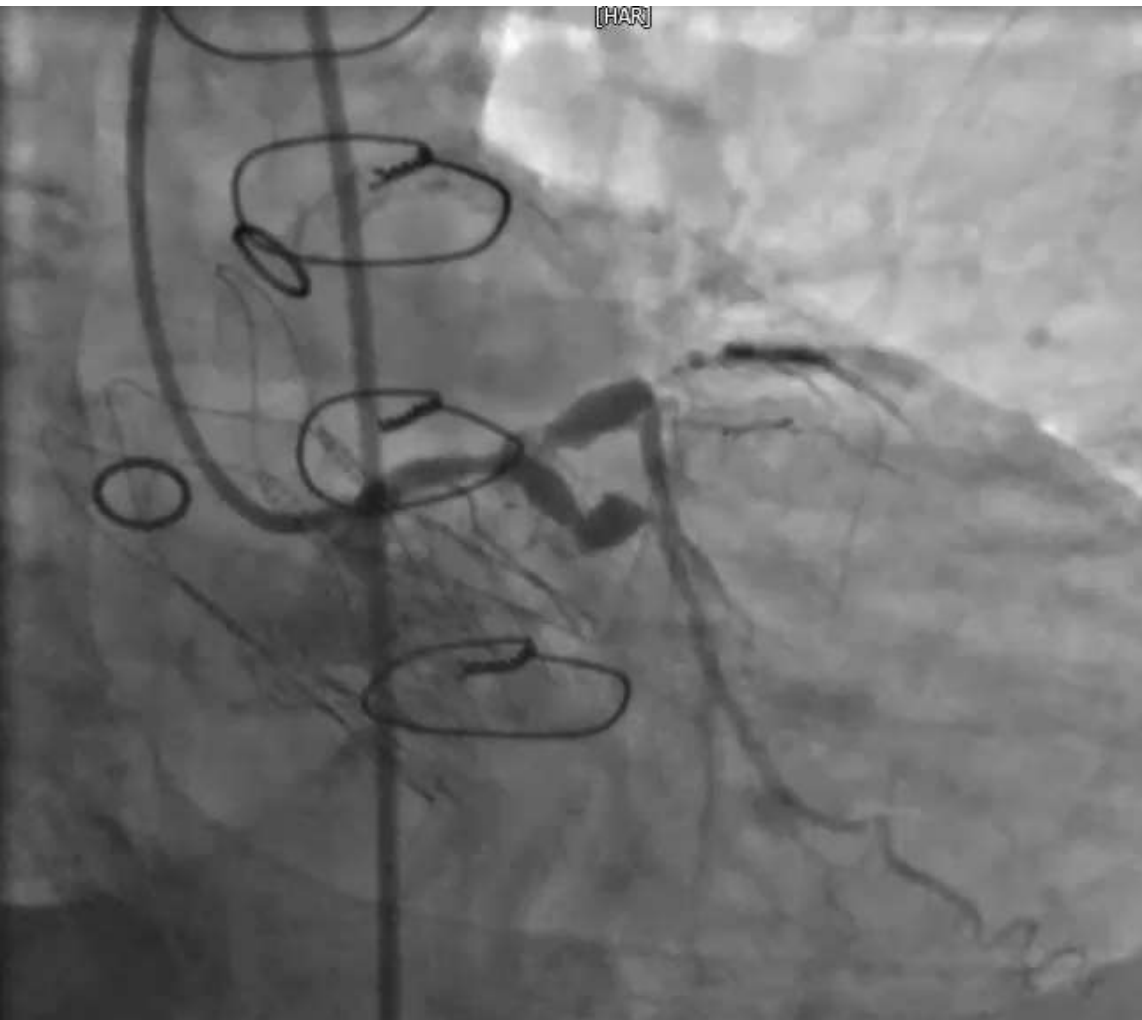


Filter EZ

3.0/15 balloon

SYNERGY 3.5/20 mm





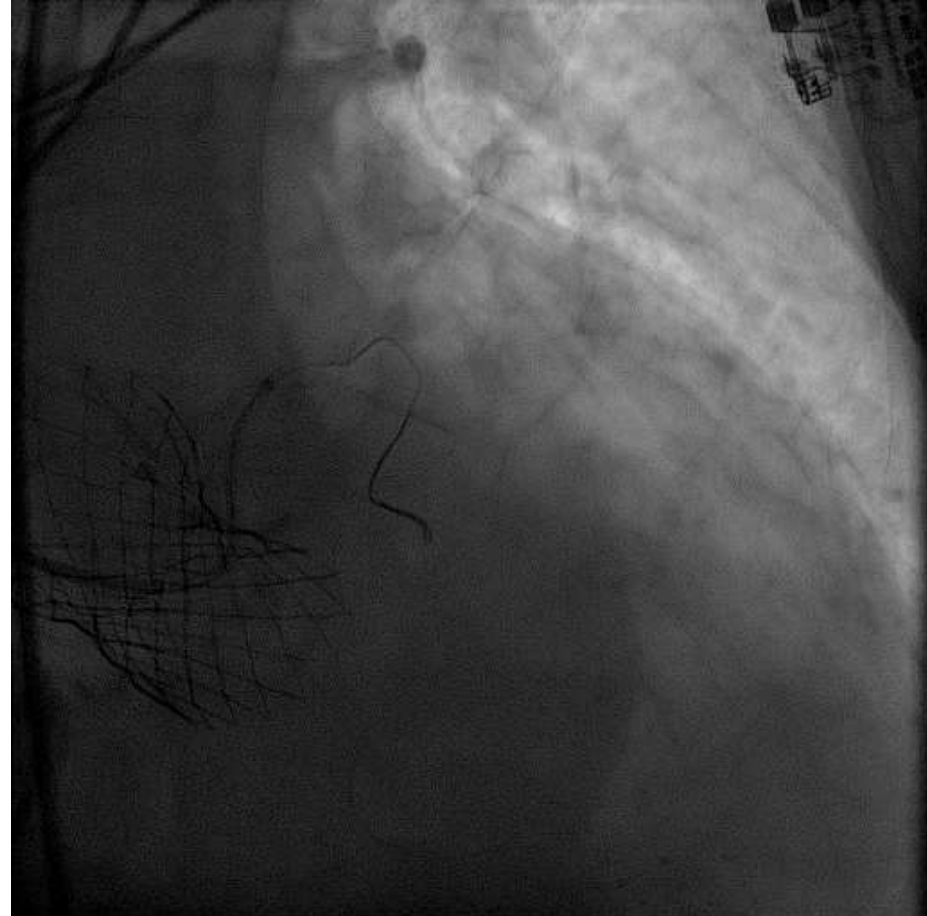
3.5/15 balloon

SYNERGY 4/20 mm



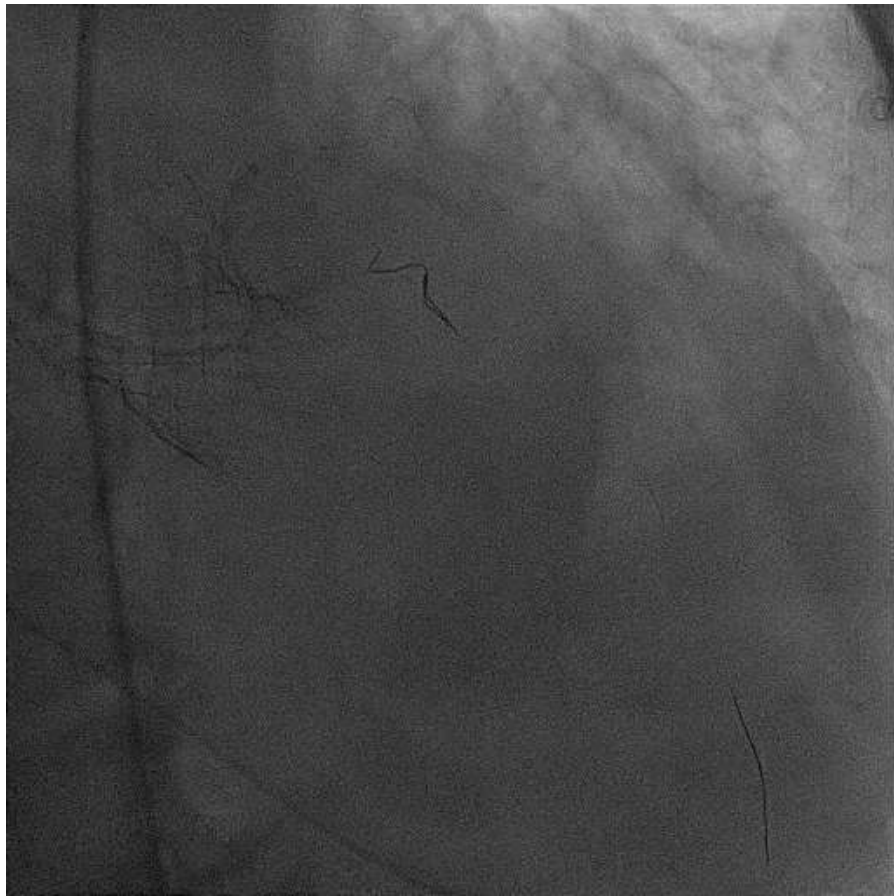
Case 2

Case Example 2

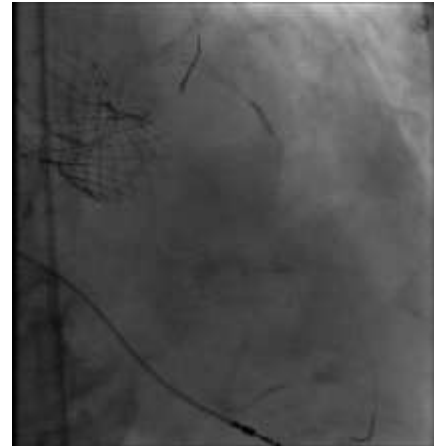


Tip: 0.35" J-wire advanced through strut close to LCA

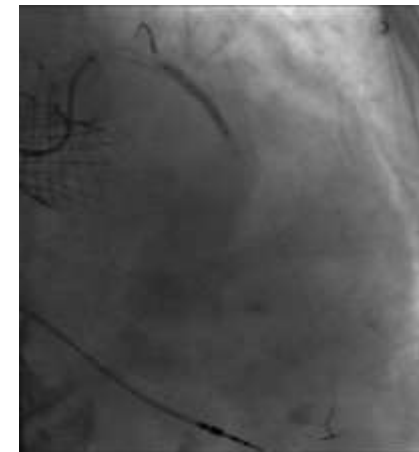
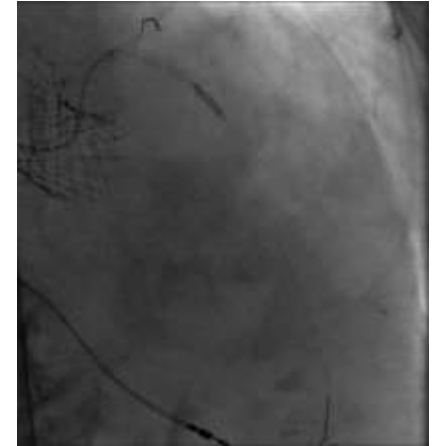
Case Example 2



Tip: GC extension facilitates procedure

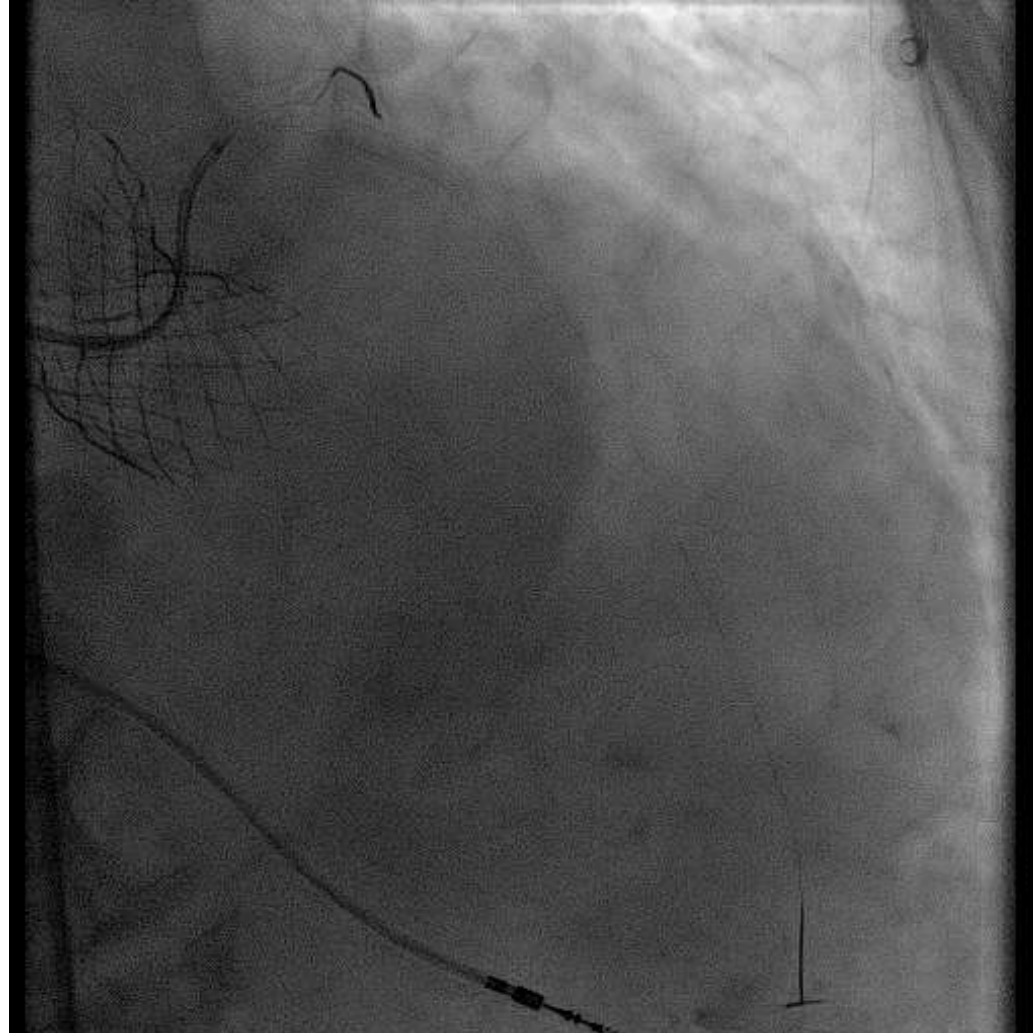


Predilation



DES 3.0x28mm

Case Example 2



Final Result

Case 3



TAVI MCV in 2011

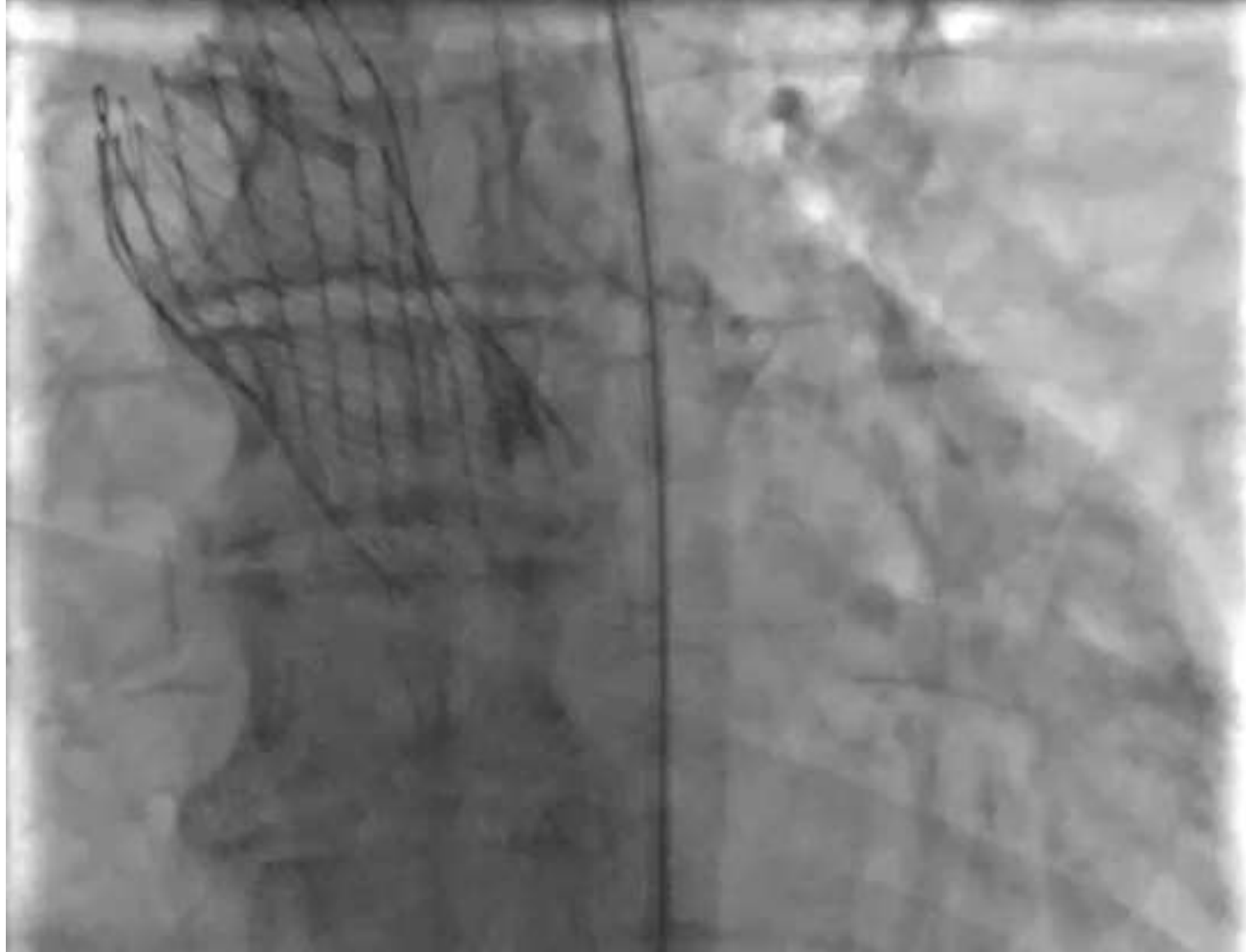
NSTEMI + acute pulmonary oedema

Calcified Distal LM lesion

CTO OM

1.25 Rota burr



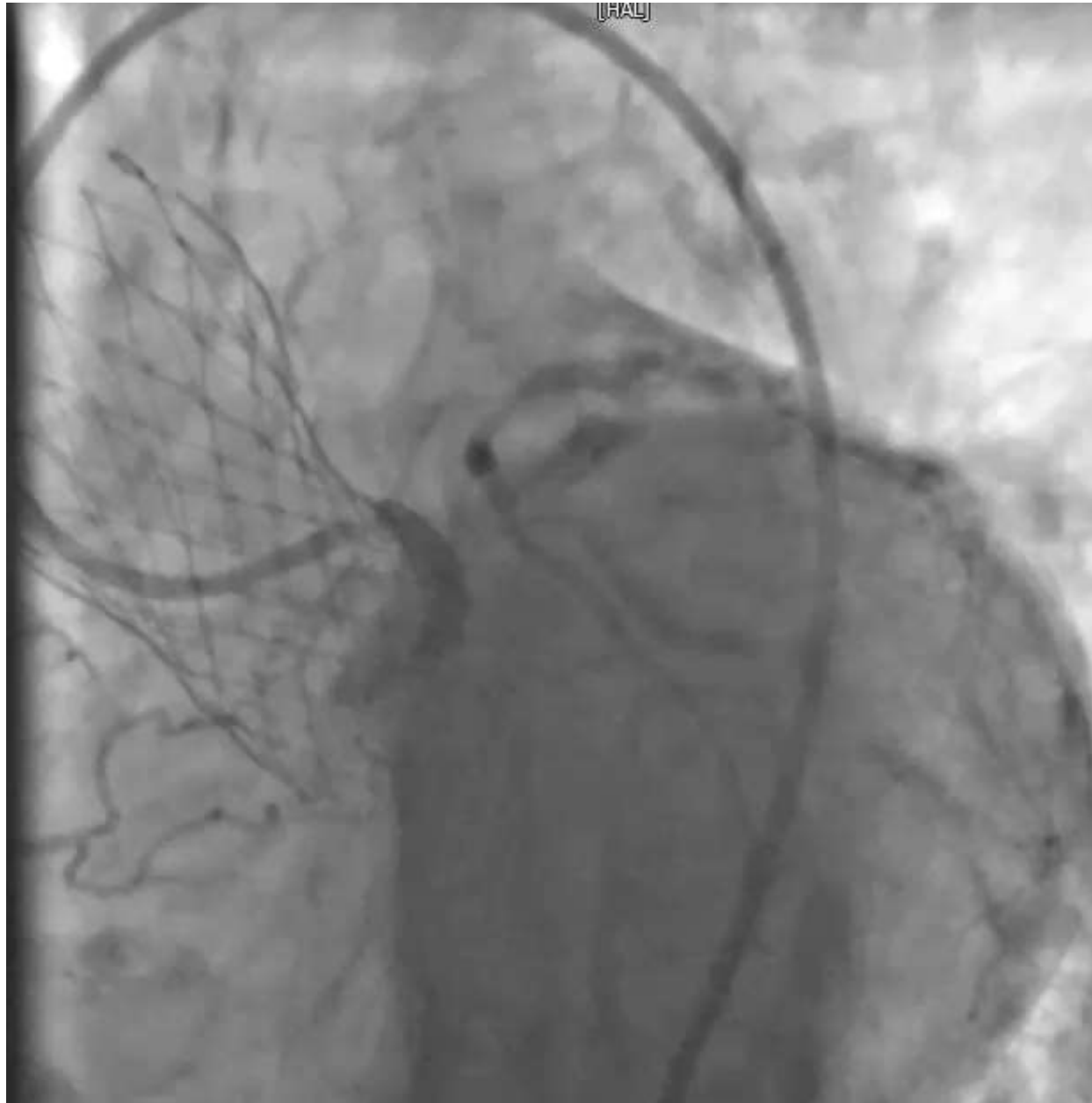




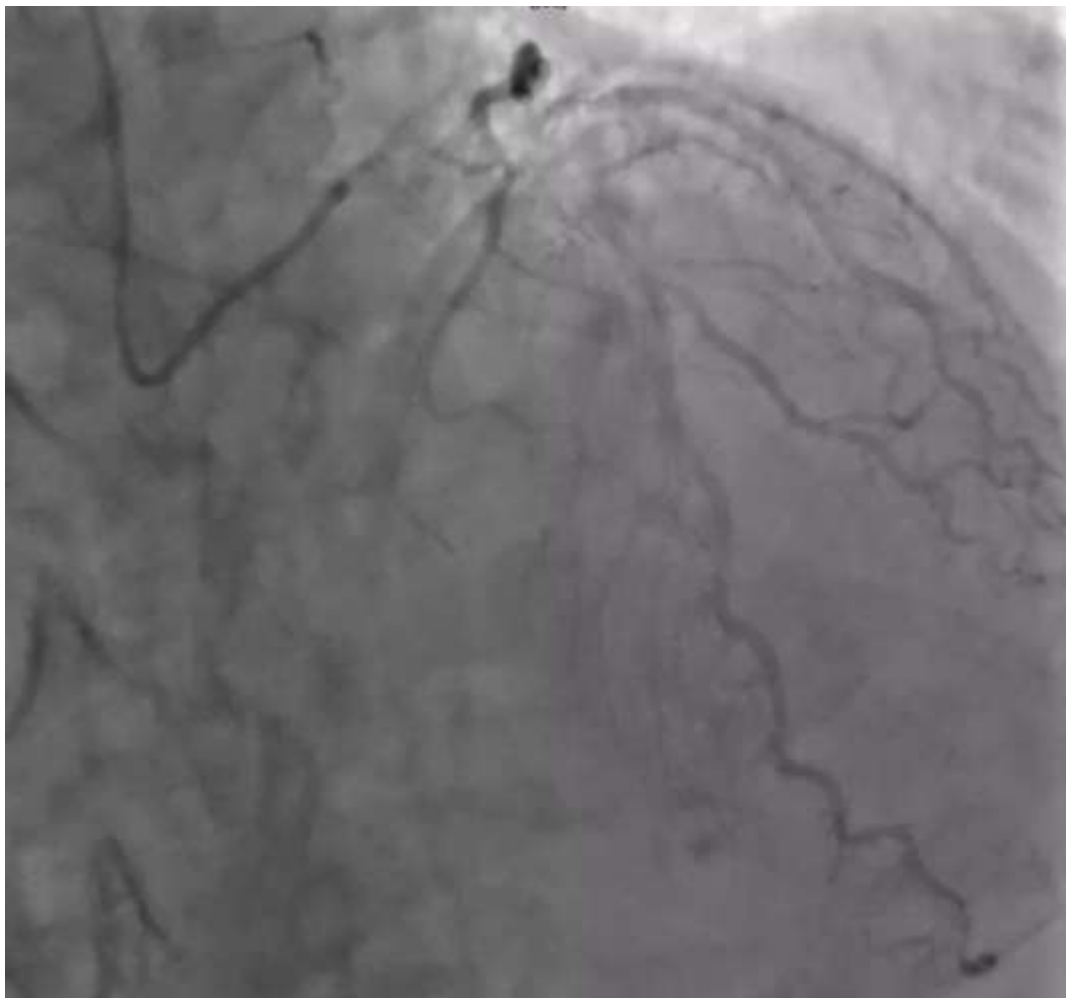
1.25 Rota burr

SYNERGY 4/20 mm

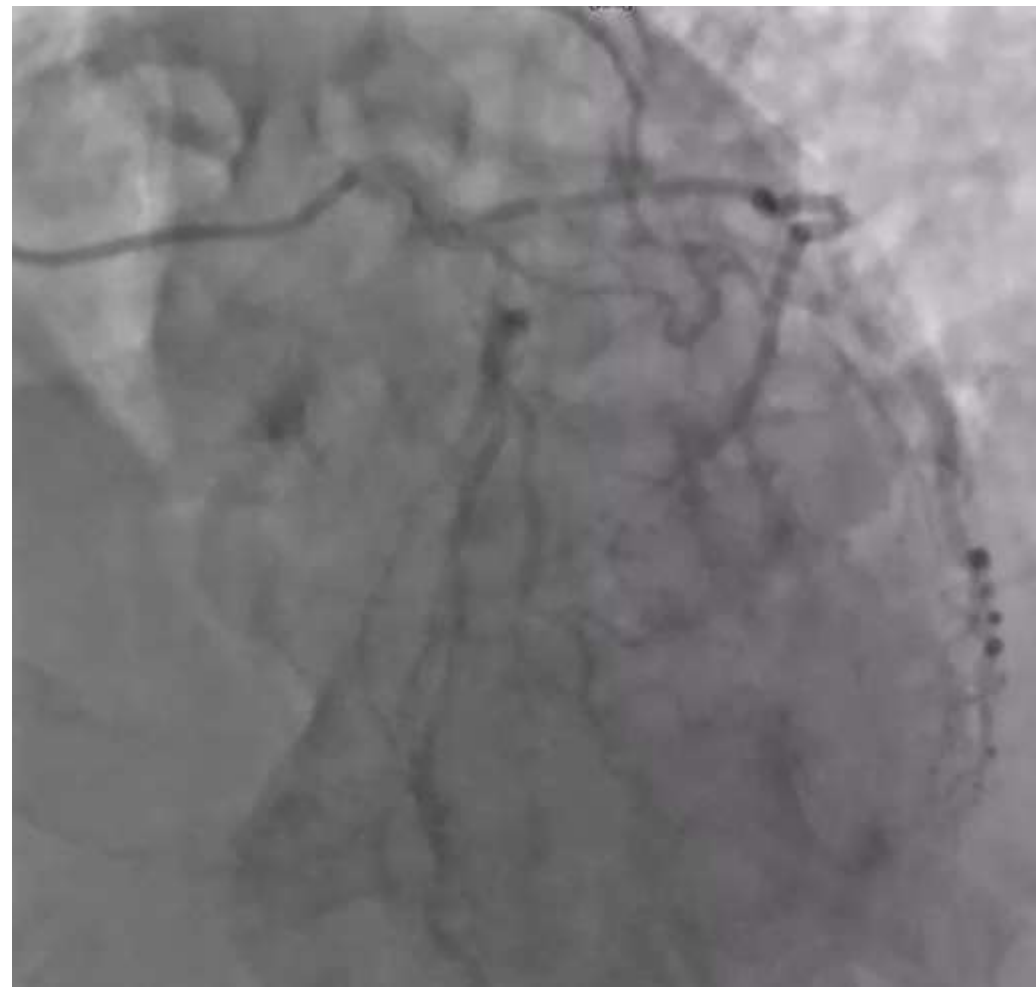
POT 4.5 NC



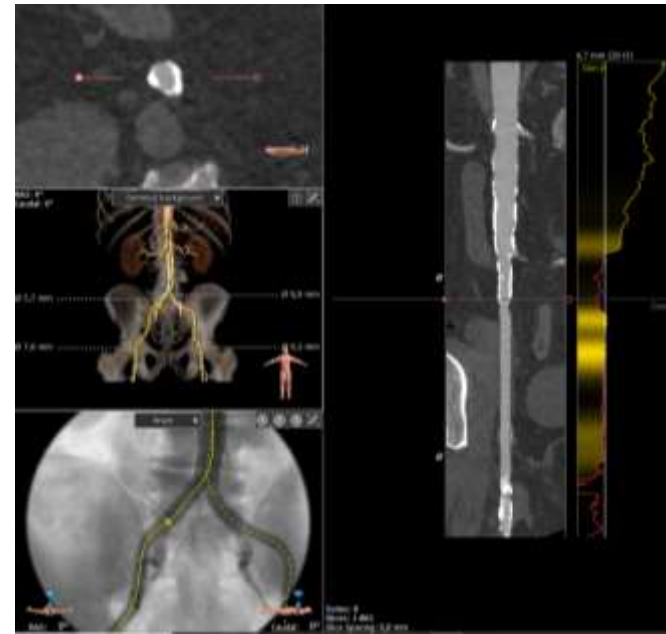
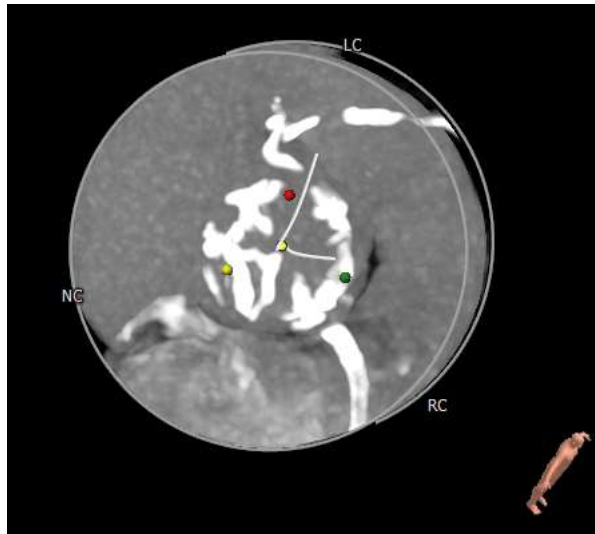
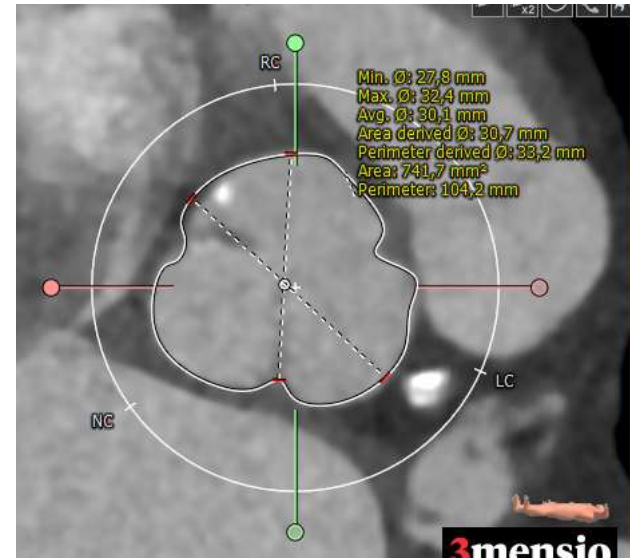
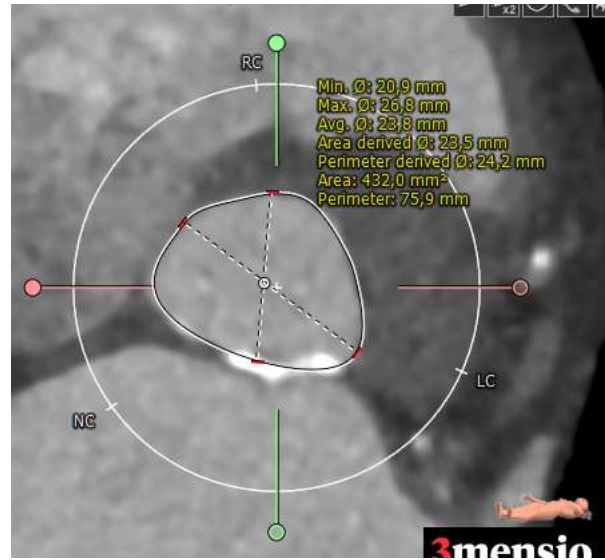
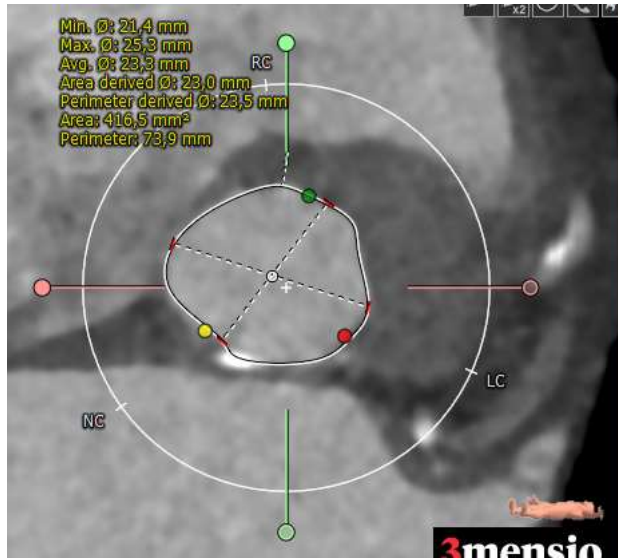
Case 4



FFR 0.73



LM and Mid LAD



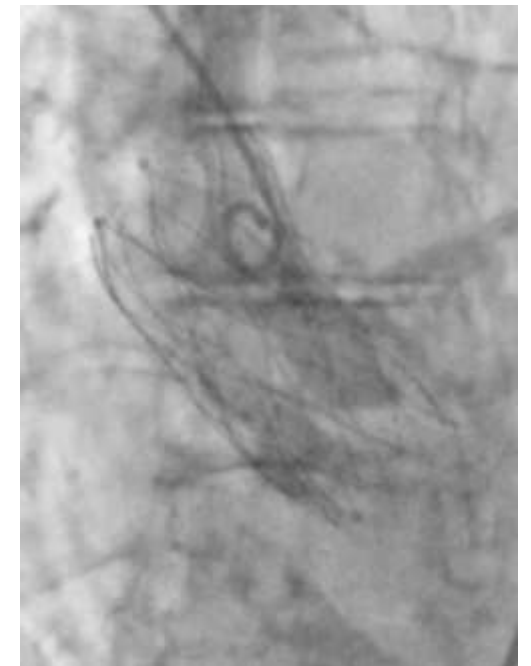
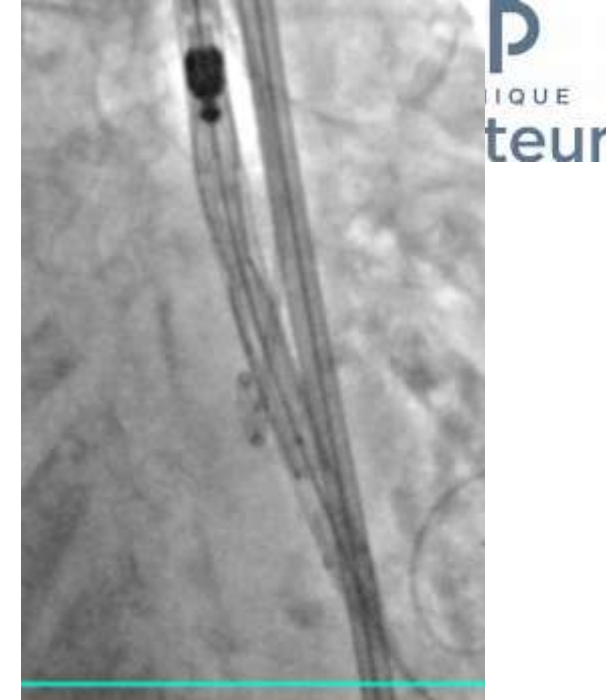
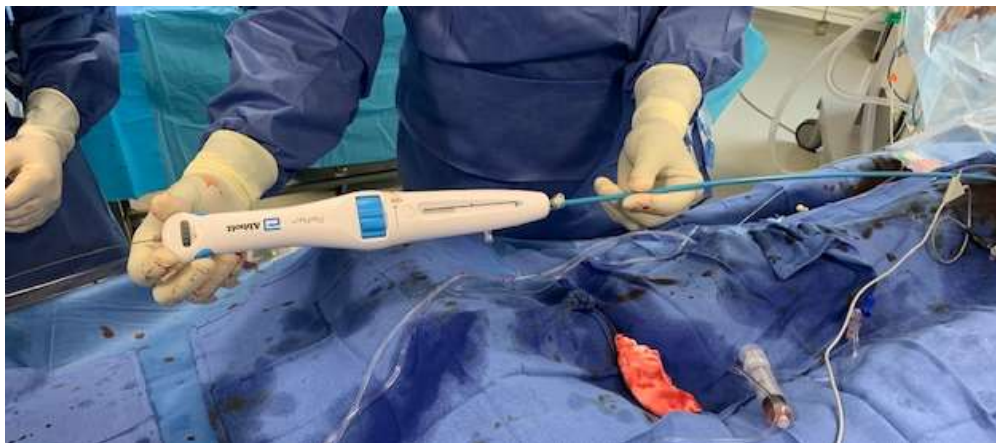
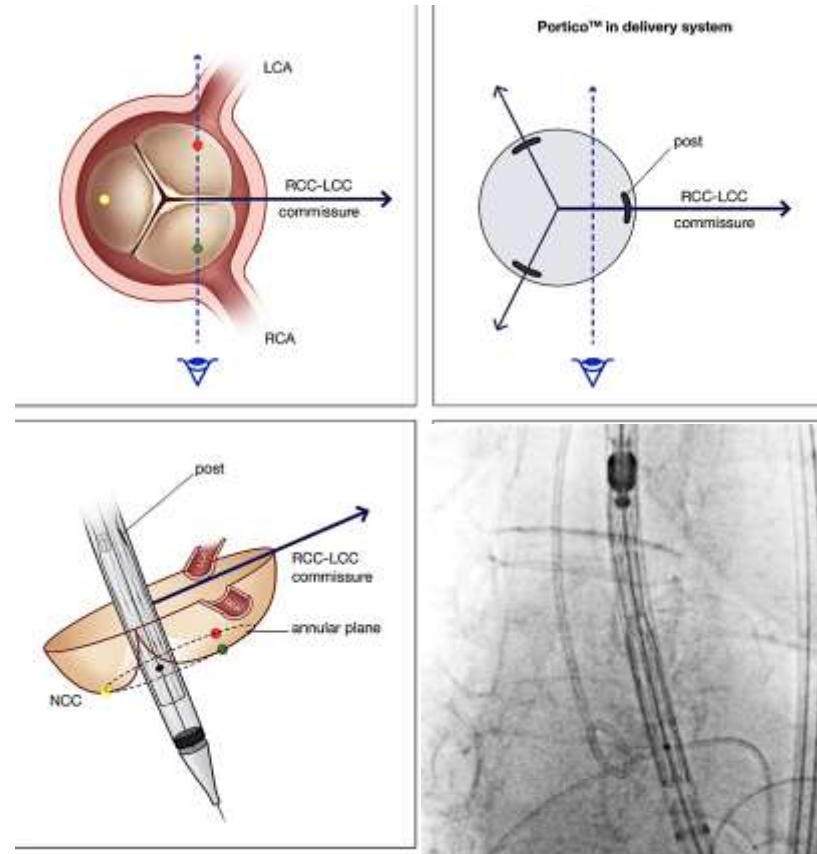
Strategy

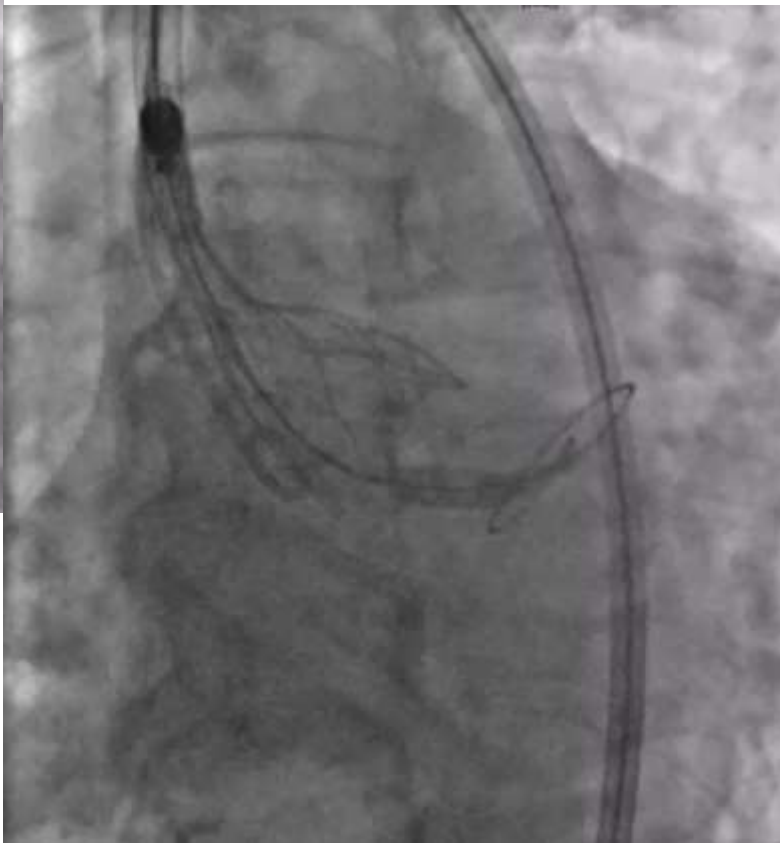
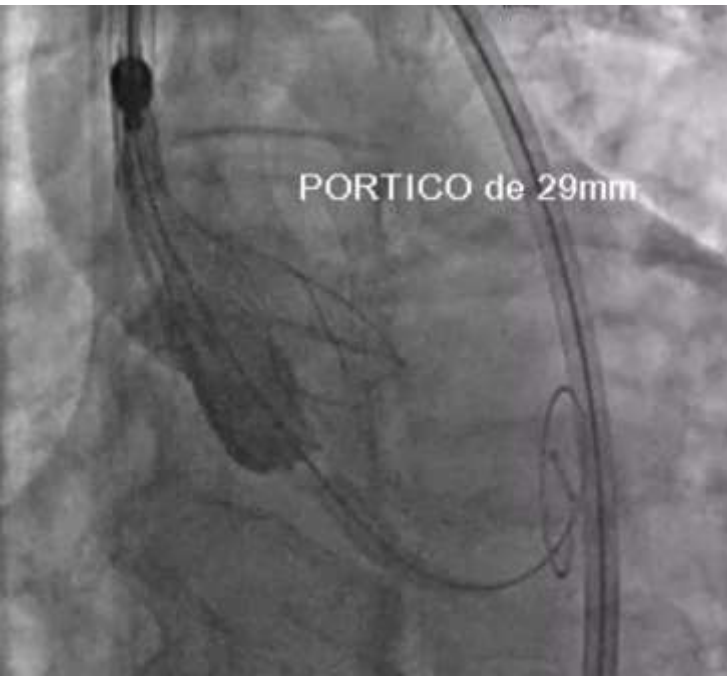
Streamlined TAVI with Portico 29 mm

Predil with 22 mm balloon

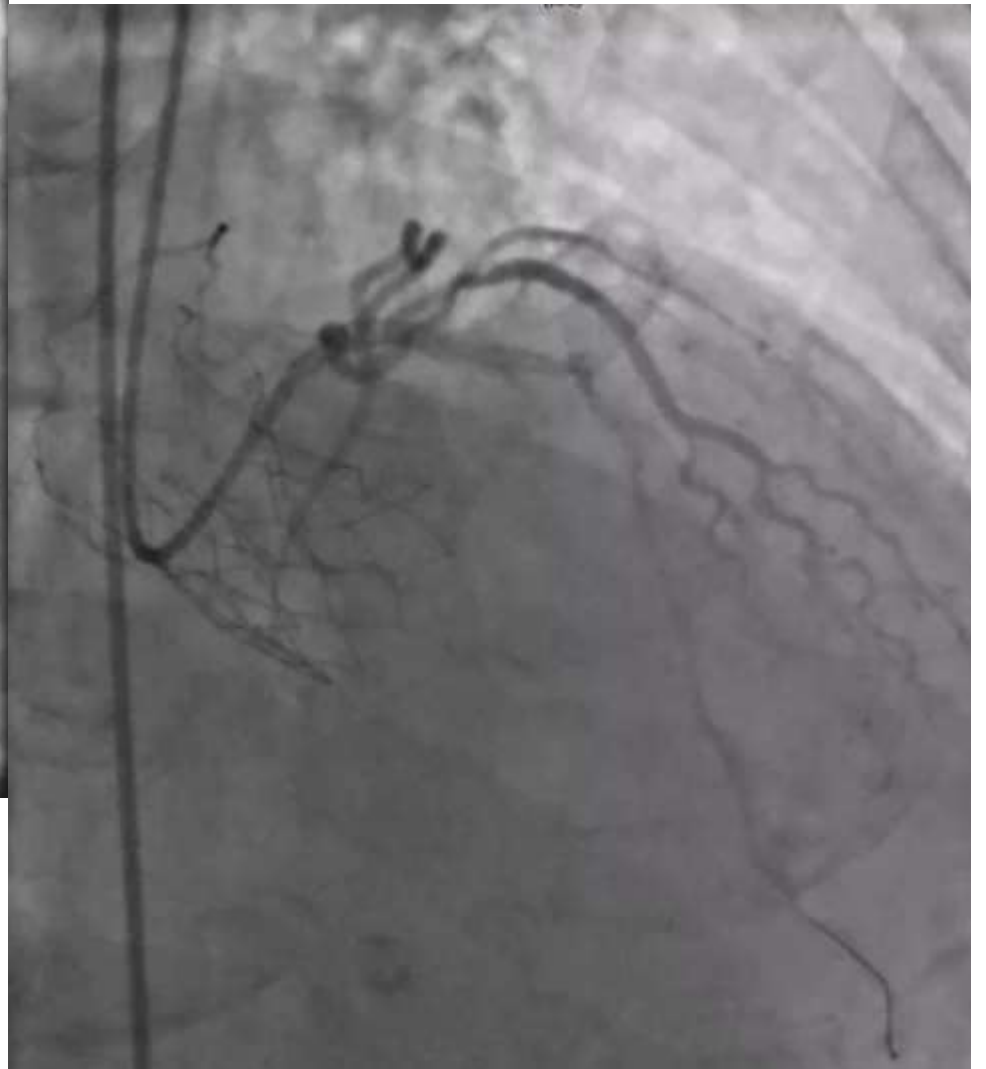
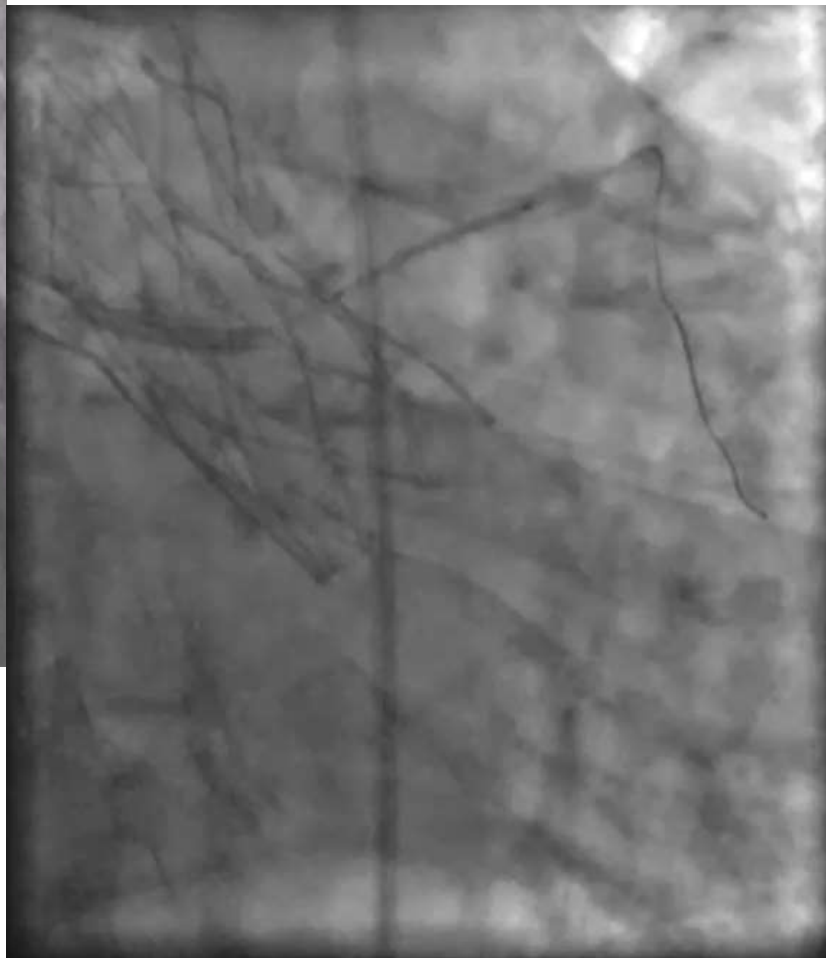
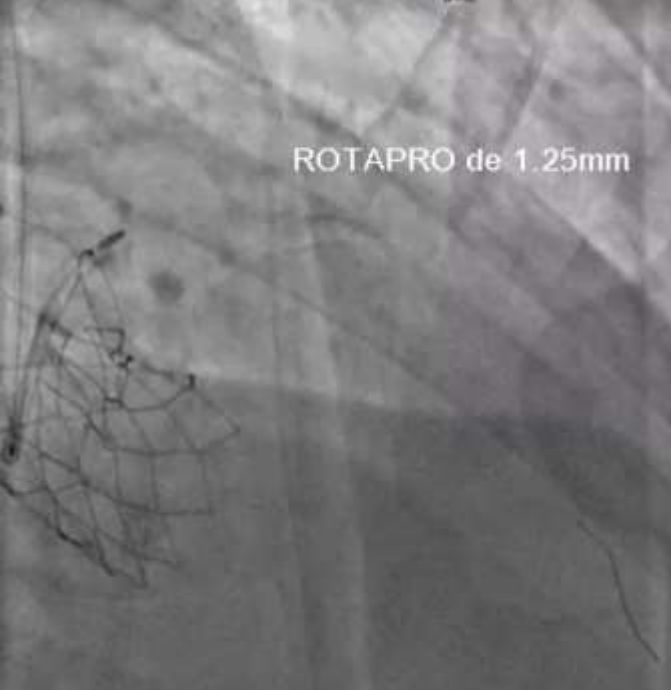
Commissural alignment

Post TAVI PCI

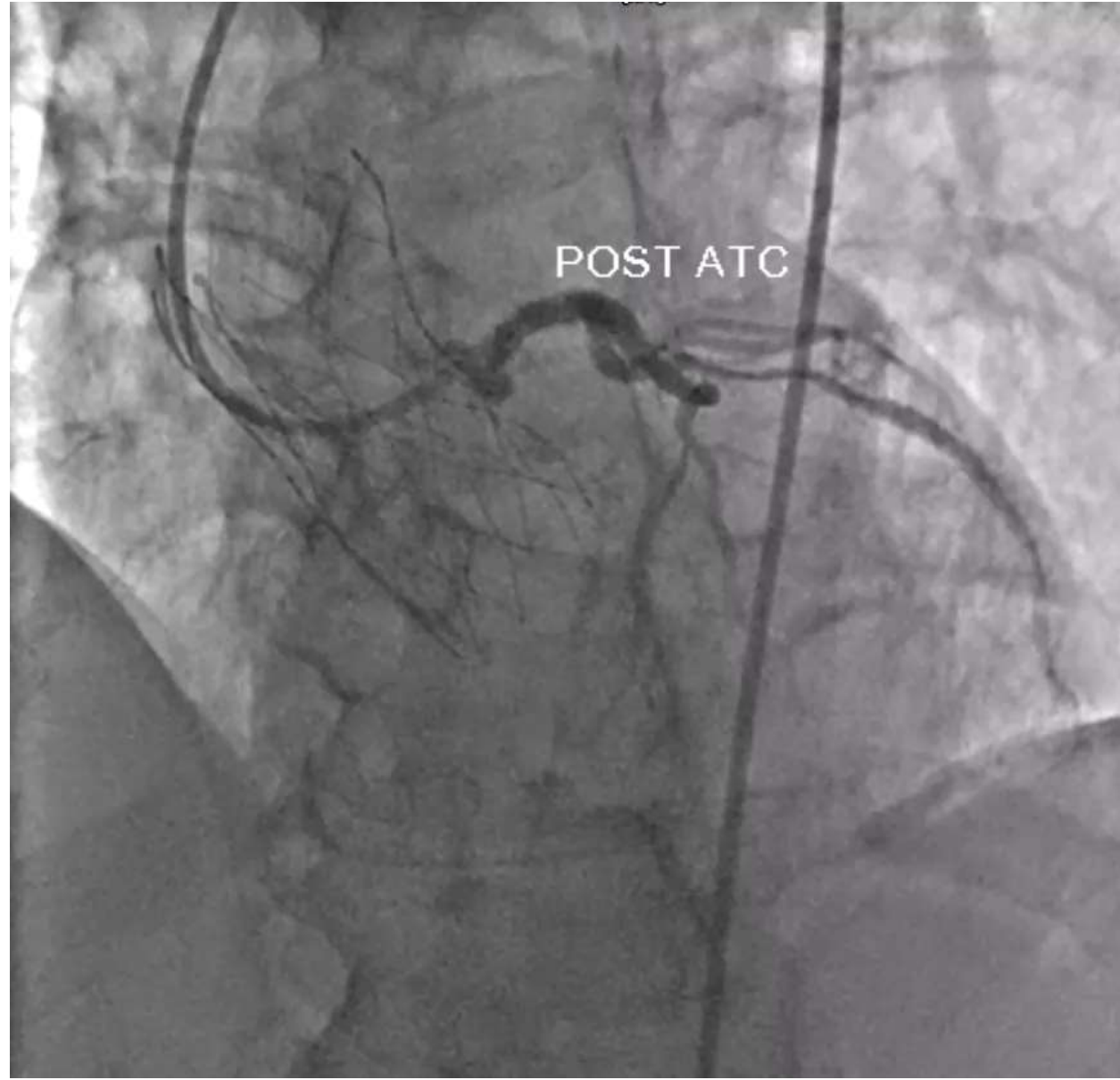








RotraPro 1.25 mm + XIENCE x2



POST ATC

Tips & Tricks for coronary access post TAVI

- Aortic root shot to understand the anatomy
- Consider using pigtail catheter or placing wire in LV to ensure you are inside the THV, especially in dilated aorta
- LCA: EBU/XB, JL, AL. Use ½ size smaller than you would normally use
- RCA: JR, AL 0.75, AR, MPA
- Non-selective wiring of coronary artery
- Consider microcatheter exchange or dual lumen catheter for more supportive wire, e.g. Grand Slam as GC may be non-selective for most of procedure
- Liberal use of GC extension, esp. if struggling to advance the GC through a valve strut. Beware of damaging or distorting GC tip or dissecting coronary ostium. GC extension softer
- May need an anchoring balloon in coronary to advance GC extension into ostium
- Cobra or Venture steerable microcatheters may be useful