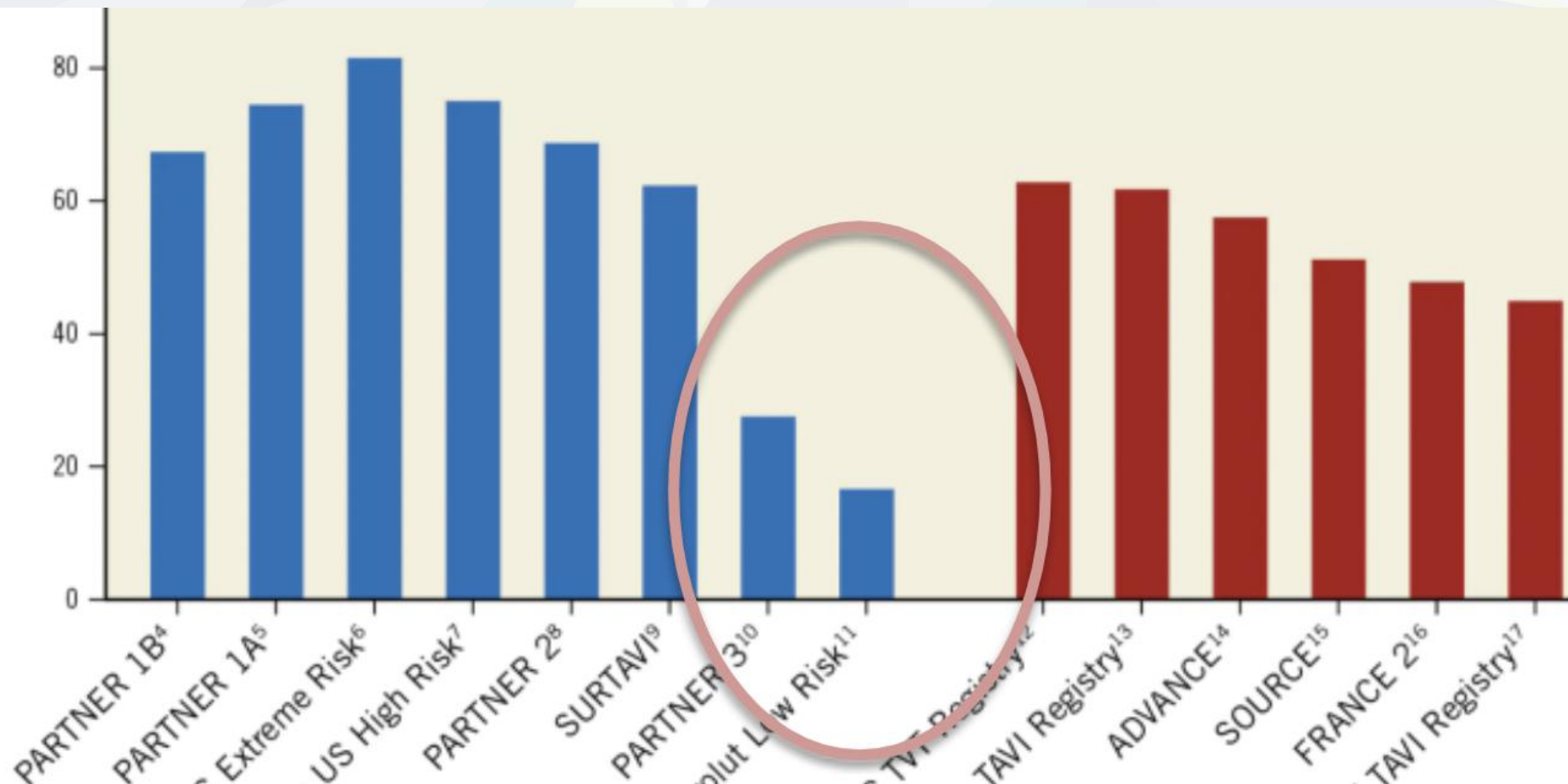


ENFERMEDAD CORONARIA Y TAVI: No PCI pre-TAVI

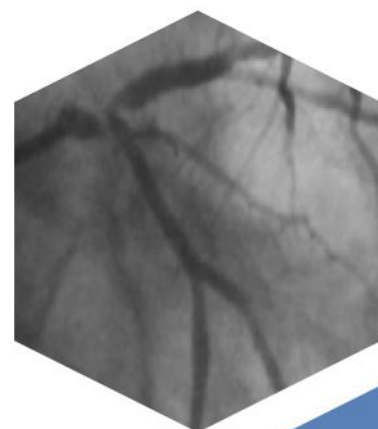
Ignacio J. Amat-Santos
Director, Cardiología Intervencionista
Hospital Clínico Universitario de Valladolid

QUÉ SABEMOS

1. Escasa información → Necesarios más estudios
2. Revascularización peri-TAVI: Evitar “automatismos”, decidir caso por caso
3. No hay que tratar todas las lesiones. A veces ninguna
4. Importante preservar el re-acceso coronario (alineamiento)
5. Tener en cuenta ciertos tips & tricks para el re-acceso post-TAVI

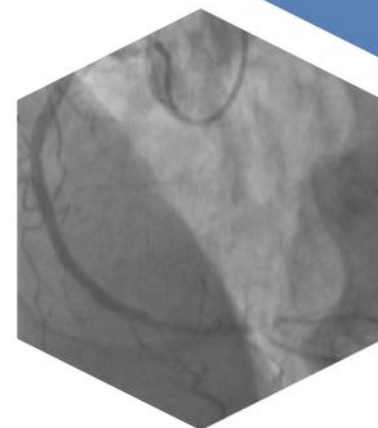
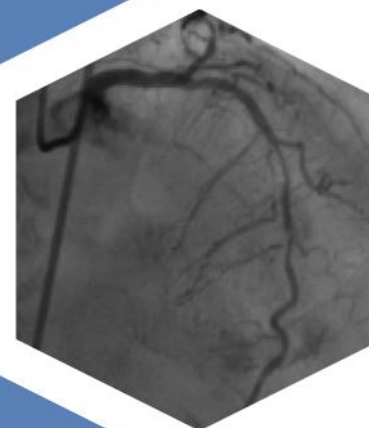


QUÉ TRATAR



>50% LMS

> 70%
proximal
segments



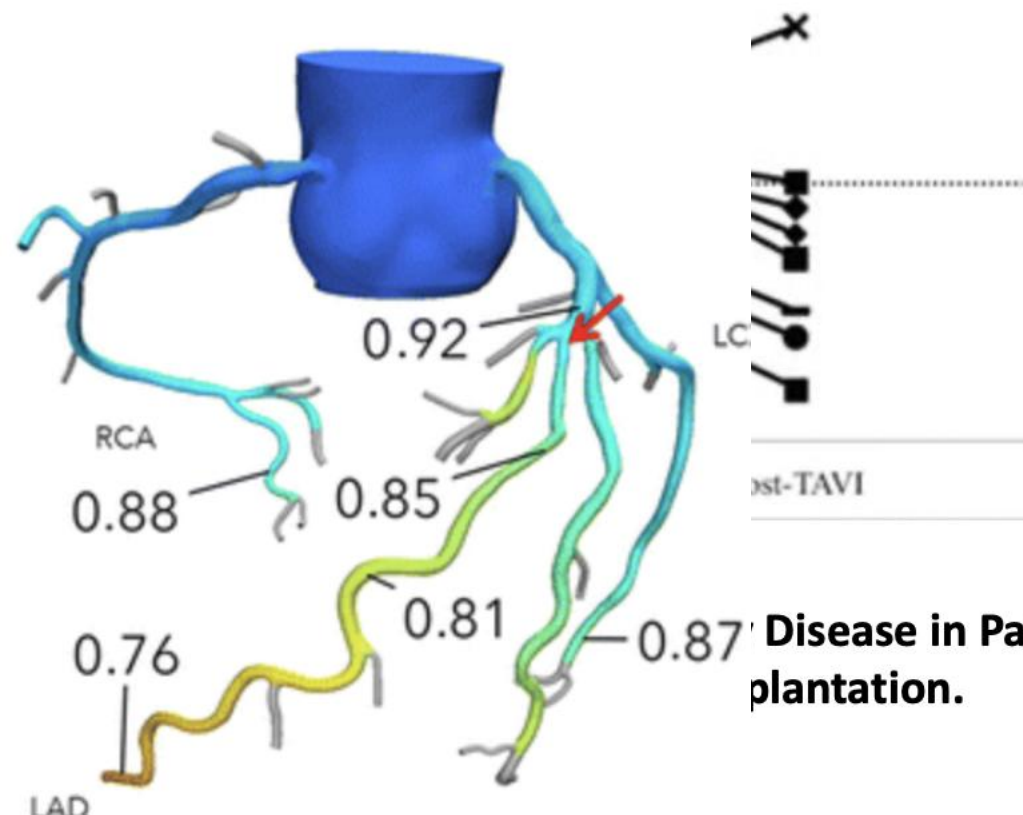
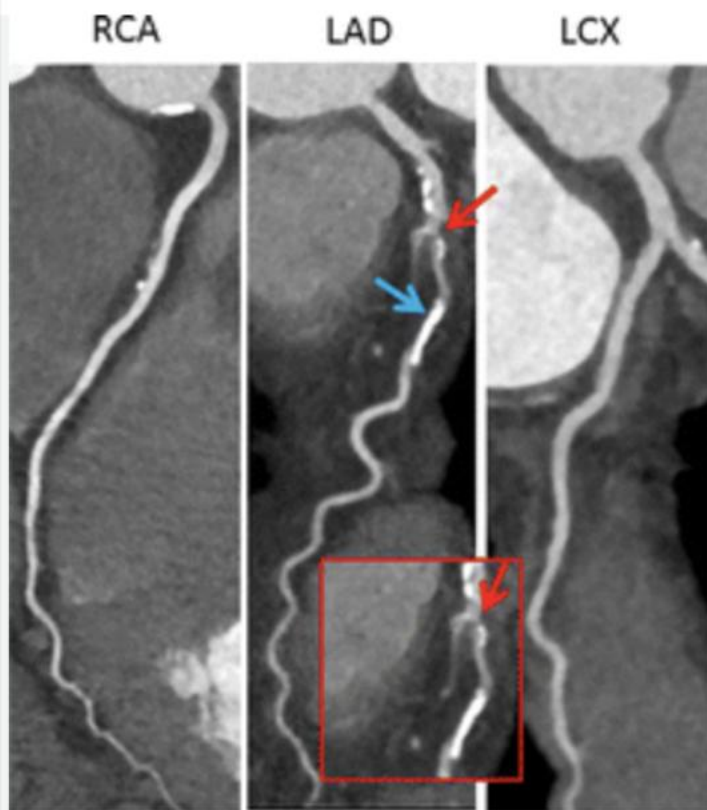
??
Intermediate

Post TAVI changed management in 6% of cases

FFR- CT



↑ EDP
Fibrosis
Microvascular
dysfunction



**Disease in Patients
plantation.**

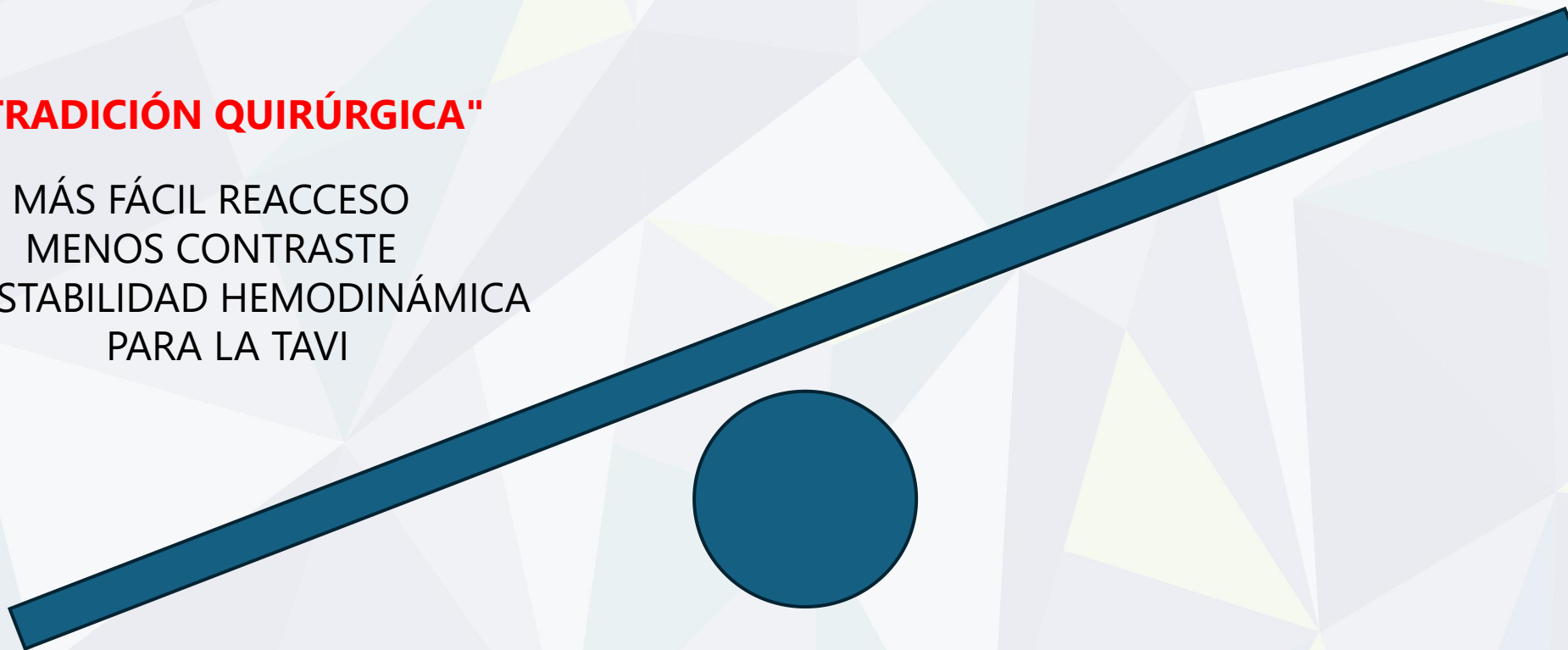
CUÁNDO TRATAR: PRE-TAVI

5, 6 y 7 NOVIEMBRE
HOTEL RIU PLAZA DE ESPAÑA

FISIOLOGÍA POCO FIABLE
MÁS SANGRADO

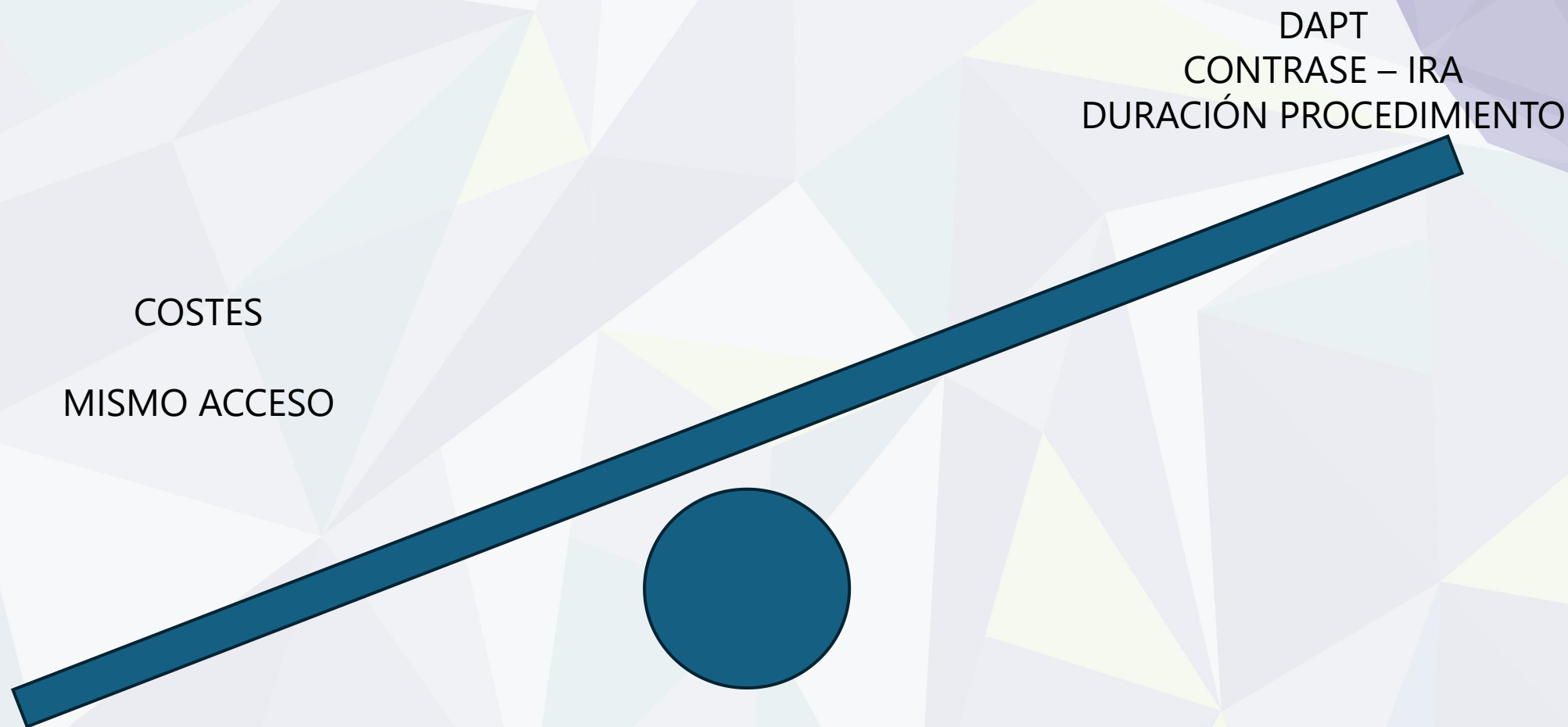
"TRADICIÓN QUIRÚRGICA"

MÁS FÁCIL REACCESO
MENOS CONTRASTE
MÁS ESTABILIDAD HEMODINÁMICA
PARA LA TAVI



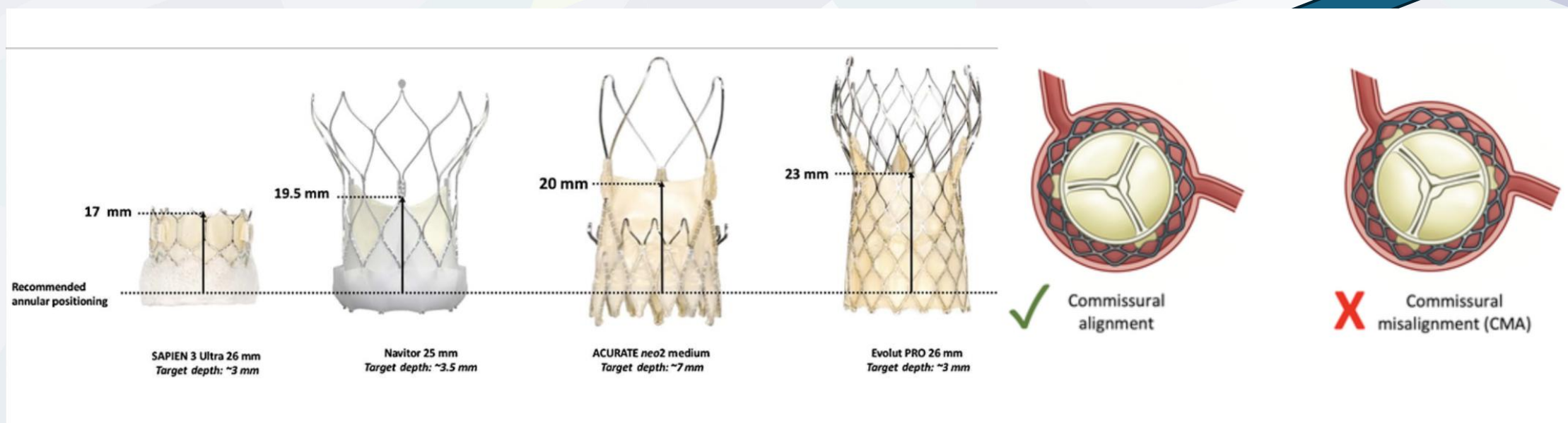
CUÁNDO TRATAR: DURANTE

5, 6 y 7 NOVIEMBRE
HOTEL RIU PLAZA DE ESPAÑA



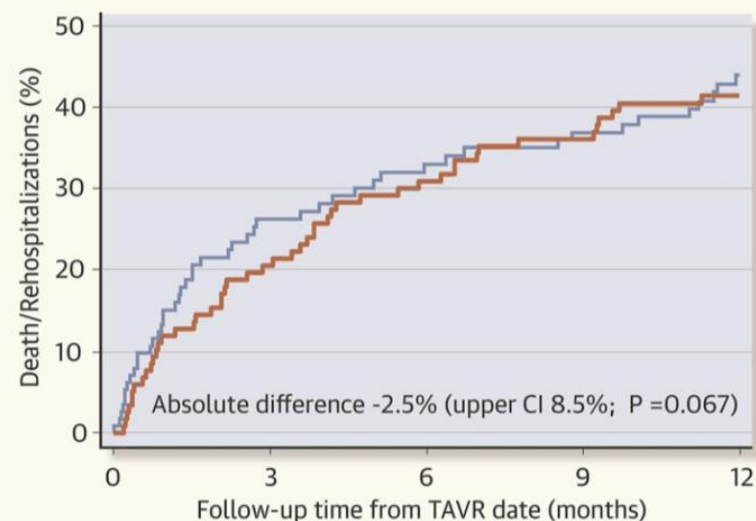
CUÁNDO TRATAR: DESPUÉS

REACCESO PEOR
SOPORTE PEOR



ACTIVATION Trial of PCI Before TAVR

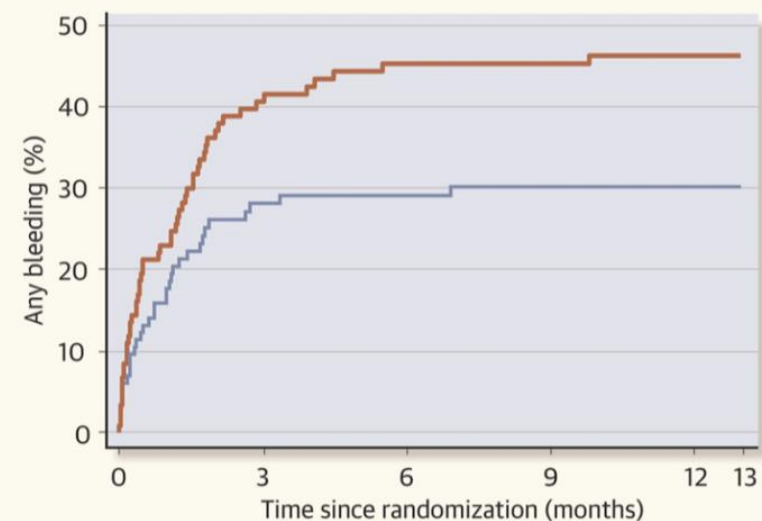
A



No. at risk:

— PCI	119	92	80	73	56
— No PCI	116	78	69	65	50

B



No. at risk:

— PCI	119	65	58	56	52	39
— No PCI	116	72	66	64	63	30

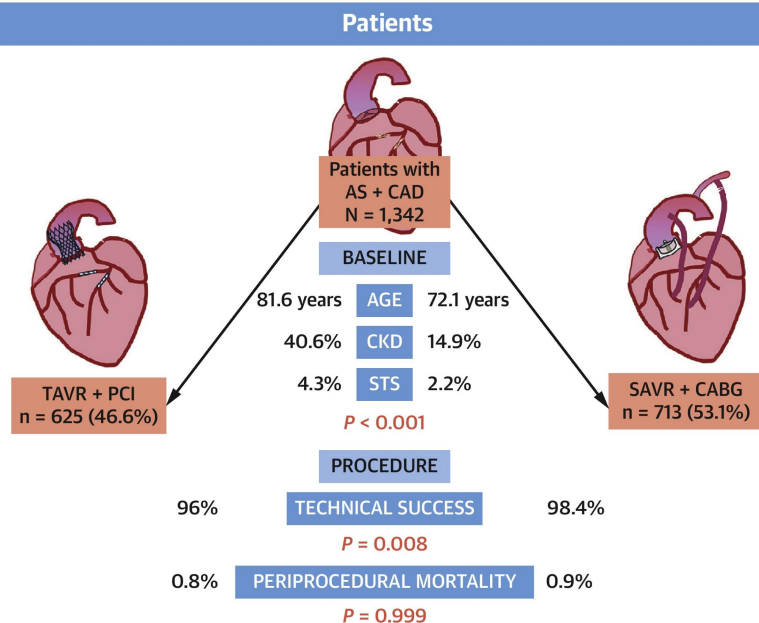
Patterson T et al, J Am Col l Cardio Intv : 2021;14(18)1965-1974

NO DIFFERENCE IN MACE; MORE BLEEDING IF PCI BEFORE

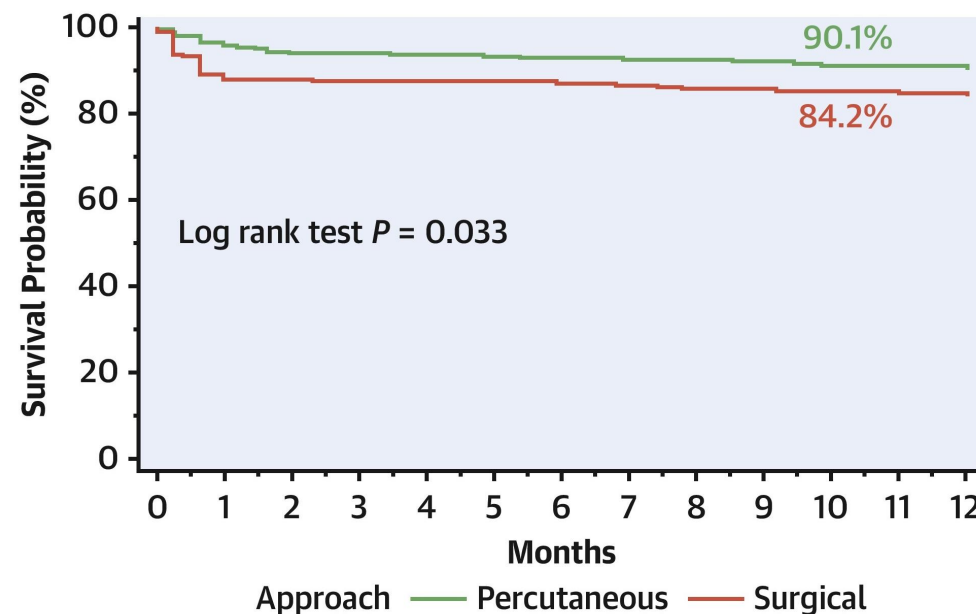
TAVI+PCI vs SAVR+CABG

CENTRAL ILLUSTRATION: Main Findings of the Study

1-Year Outcomes After Surgical Versus Transcatheter Treatment in Patients With CAD and Severe AS, N = 1,342



Survival Free of Stroke Over 1 Year

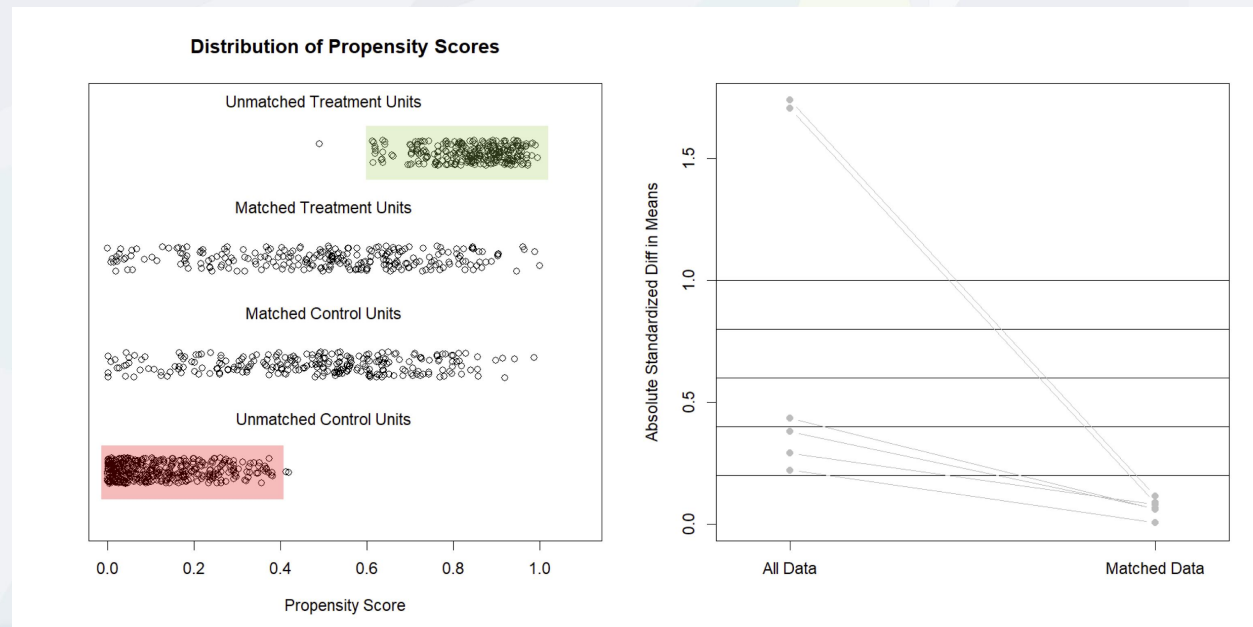


- Compared with patients with CAD and severe AS who underwent transcatheter treatment, and despite lower baseline risk, patients who underwent surgical treatment had lower survival free from stroke at 30-day and 1-year follow ups in this nation-wide retrospective analysis
- These findings should be tested in a large, randomized study

Amat-Santos IJ, et al. JACC Cardiovasc Interv. 2024;17(21):2472-2485.

- Patients with severe aortic stenosis (AS) present frequently (~50%) with **concomitant obstructive coronary artery disease (CAD)**
- The current guidelines recommend **combined surgical** aortic valve replacement (SAVR) and coronary artery bypass grafting (CABG) as the preferred treatment in these patients
- However combined surgical approach is associated with a **higher rate of adverse events** as compared to isolated SAVR or CABG.
- **Combined transcatheter** aortic valve implantation (TAVI) and percutaneous coronary intervention (PCI) have evolved as a valid alternative for SAVR and CABG
- We aimed to compare **percutaneous versus surgical approach** when combined coronary and aortic valve disease exists

TAVI+PCI vs SAVR+CABG



- National multicenter (14 centers) retrospective study of all patients with severe AS and CAD
- Treated between 2018 and 2021 with either PCI+TAVI or CABG+SAVR and with at least 1-year of follow up

Secondary endpoints

All-cause mortality,
Stroke, MI, AoReg,
Re-intervention
(CAD/Valve) at 1-y

TAVI+PCI vs SAVR+CABG



Variables	Global population (n=1342)	Unmatched cohort			Matched cohort		
		SAVR+CABG (n=713)	TAVI+PCI (n=625)	p-value	SAVR+CABG (n=254)	TAVI+PCI (n=254)	p-value
Clinical characteristics							
Variables	Global population (n=1342)	Unmatched cohort			Matched cohort		
		SAVR+CABG (n=713)	TAVI+PCI (n=625)	p-value	SAVR+CABG (n=254)	TAVI+PCI (n=254)	p-value
Echocardiographic findings							
LVEF, %	56.4±11.8	56.5±11.2	56.4±12.5	0.888	57.1±11.0	55.2±12.7	0.076
AVA, cm²	0.7±0.2	0.8±0.2	0.7±0.19	<0.001	0.8±0.2	0.7±0.2	0.052
Mean transaortic gradient, mmHg	45.4±14.1	44.6±14.4	46.3±13.8	0.040	43.7±13.6	45.5±13.7	0.192
Three-vessel or left main disease	27.2	33.7	19.8	<0.001	38.2	23.2	<0.001
SYNTAX score	27.4±7.2	28.9±8.2	26.7±6.9	0.031	27.2±8.1	26.4±7.4	0.073
Previous CABG	2.6	0.7	4.8	<0.001	0	7.5	0.653
Previous valve surgery	2.3	1.4	3.4	0.018	1.2	6.3	0.004
COPD	11.9	10	14.1	0.020	11.0	15.4	0.161
CKD (eGFR<60ml/min)	26.9	14.9	40.6	<0.001	20.1	39.0	<0.001
EuroSCORE II, %	2.6 [1.7-4.3]	2.3 [1.6-3.6]	3.1 [1.9-5.7]	<0.001	2.9 [2.1-4.6]	2.7[1.7-4.7]	0.662

TAVI+PCI vs SAVR+CABG

Variables	Global population (n=1342)	Matched cohort		
		SAVR+CABG (n=254)	TAVI+PCI (n=254)	p-value
PROCEDURAL OUTCOMES				
Number of grafts ≥ 3	-	51.7	-	-
Biological prosthesis		96.5	100	0.022
Re-intervention	0.9)	2.2	1.1	0.687
Procedural death	0.7	1.2	0.4	0.625
Technical success	97.2	96.5	95.2	0.648
IN-HOSPITAL OUTCOMES				
New PPI	10.5	9.8	12.2	0.488
AKI	11.2	20.5	7.1	<0.001
In-hospital death	3.8	6.3	2.4	0.052
Major vascular complic.	3.1	0.8	3.1	0.109
Major bleeding	12.3	12.2	9.4	0.401
Cerebrovascular events	2.3	5.5	1.6	0.031
MI	1	1.6	0.4	0.375
New onset AF	16.3	29.9	5.9	<0.001
Stroke + in-hospital death	5.3	10.6	3.1	0.002



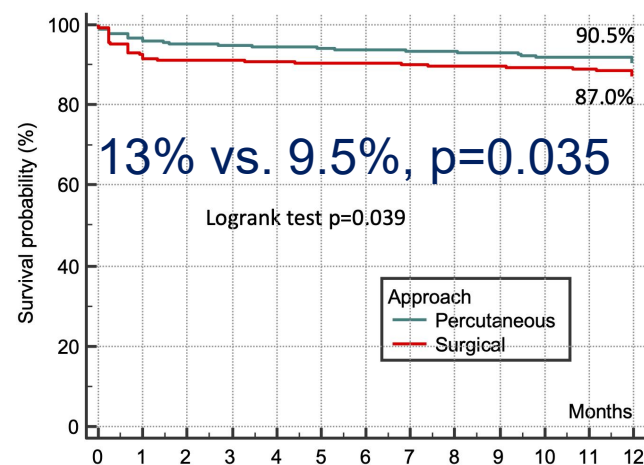
TAVI+PCI vs SAVR+CABG

- At 1-year follow up, the primary endpoint of **mortality + stroke was higher in the CABG+SAVR group** than in the PCI+TAVI cases both, in the matched and the unmatched cohorts
- Conversely, the PCI+TAVI group presented higher degree of:
 - Moderate-severe aortic regurgitation** (12.6 vs. 1.5%, $p<0.001$) and
 - New permanent pacemaker** (15 vs. 6.5%, $p<0.001$)

1-year



C. Global cohort



Number at risk

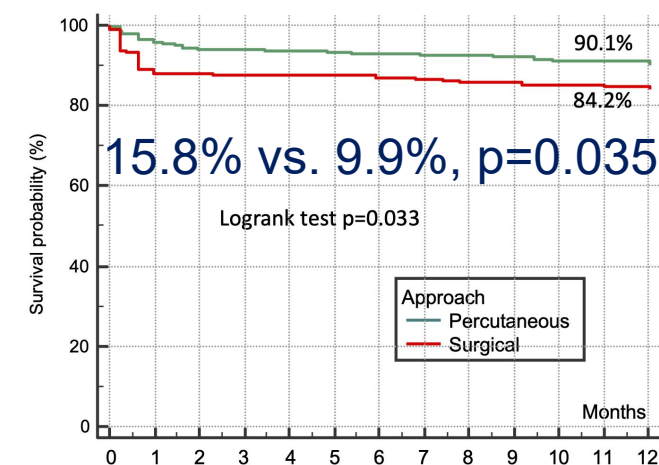
Group: Percutaneous

625 599 590 586 579 573 565 556 545 532 507 485 424

Group: Surgical

713 651 645 642 628 616 599 580 563 545 520 488 437

D. Matched cohort



Number at risk

Group: Percutaneous

254 243 236 234 232 230 229 224 221 214 205 197 171

Group: Surgical

254 223 221 220 214 209 206 199 193 188 177 171 153

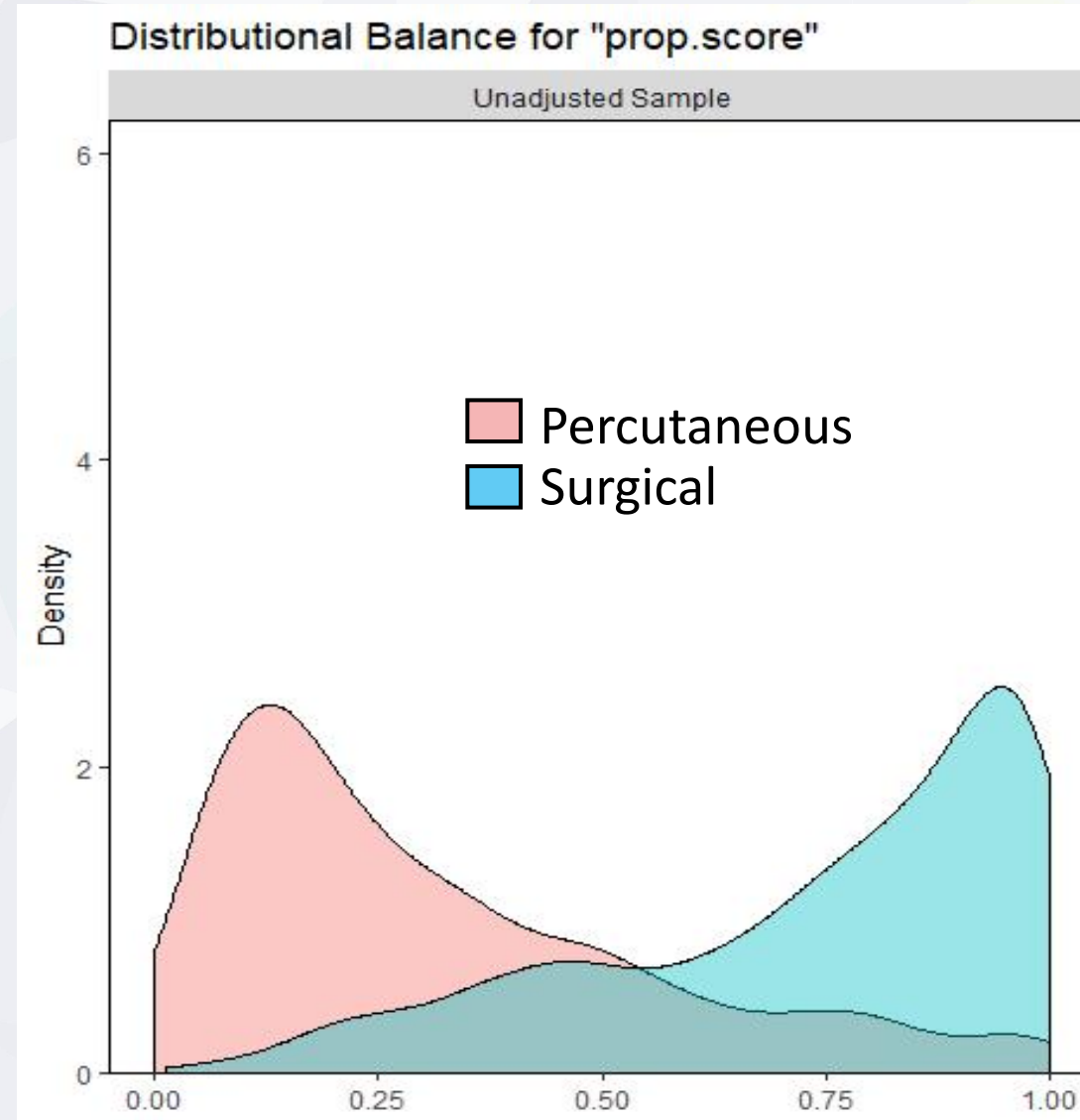
TAVI+PCI vs SAVR+CABG

Variables	Unmatched cohort						Matched cohort	
	SAVR+ CABG	TAVI+ PCI	HR (95% CI)	p-value	SAVR+ CABG (n=254)	TAVI+ PCI (n=254)	HR (95% CI)	p-value
Secondary endpoints*			NO DIFFERENCES IN THE SECONDARY OUTCOMES					
Mortality	10.3	7.5	1.328 (0.897-1.964)	0.156	12.2	8.0	1.488(0.816-2.714)	0.195
Need for new revascularization	1.3	1.6	0.844 (0.325-2.187)	0.726	0.5	2.7	0.214(0.025-1.835)	0.160
Myocardial infarction	4.1	2.3	1.707 (0.869-3.354)	0.120	3.4	3.6	0.930(0.337-2.566)	0.889
Stroke	5.1	3.3	1.545 (0.861-2.772)	0.144	7.4	4.0	1.789(0.783-4.088)	0.168

TAVI+PCI vs SAVR+CABG: PCI timing

TAVR+PCI (n=625)	PCI Pre-TAVR (n=318)	Concomitant PCI and TAVR (n=102)	PCI Post-TAVR (n=205)	p-value
Type of TAVR device				<0.001
- Balloon-exp	193 (60.7)	52 (51)	90 (43.9)	
- Self-exp	125 (39.3)	50 (49)	115 (56.1)	
30-Day Outcomes				
Mortality	3(1.0)	2(2.0)	0(0)	0.286
Stroke	3(1.0)	0(0)	0(0)	0.110
MI	2(0.6)	1(1.0)	0(0)	0.340
Need for new PCI	0(0)	1(1.0)	0(0)	0.920
Stroke + mortality	19(6.0)	6(5.9)	3(1.5)	0.018
1-Year Outcomes				
Mortality	27(8.5)	10(9.8)	5(2.4)	0.010
Stroke	13(4.1)	2(2.0)	3(1.5)	0.072
MI	9(2.8)	3(2.9)	1(0.5)	0.078
Need for new PCI	4(1.3)	4(3.9)	1(0.5)	0.515
Valvular re-intervention	0(0)	0(0)	2(1.0)	0.066
Stroke + mortality	38(11.9)	11(10.8)	7(3.4)	0.001

TAVI+PCI vs SAVR+CABG



TAVI+PCI vs SAVR+CABG

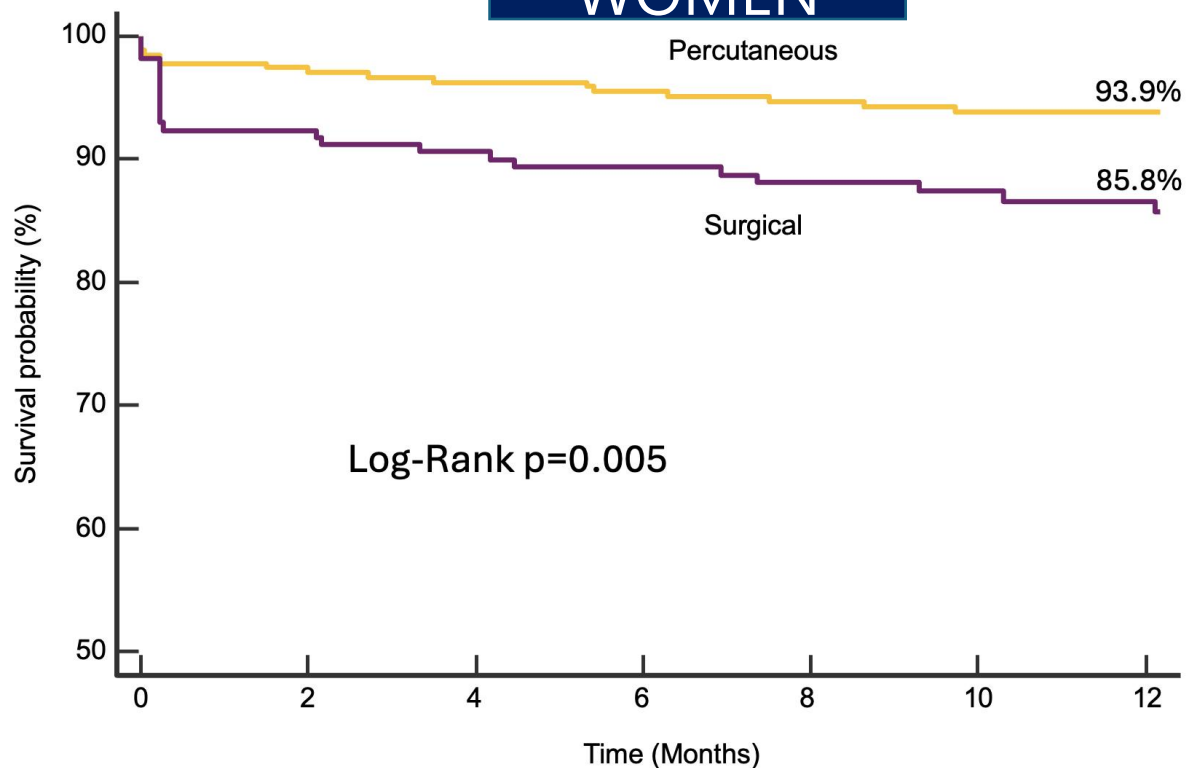
1-YEAR



+

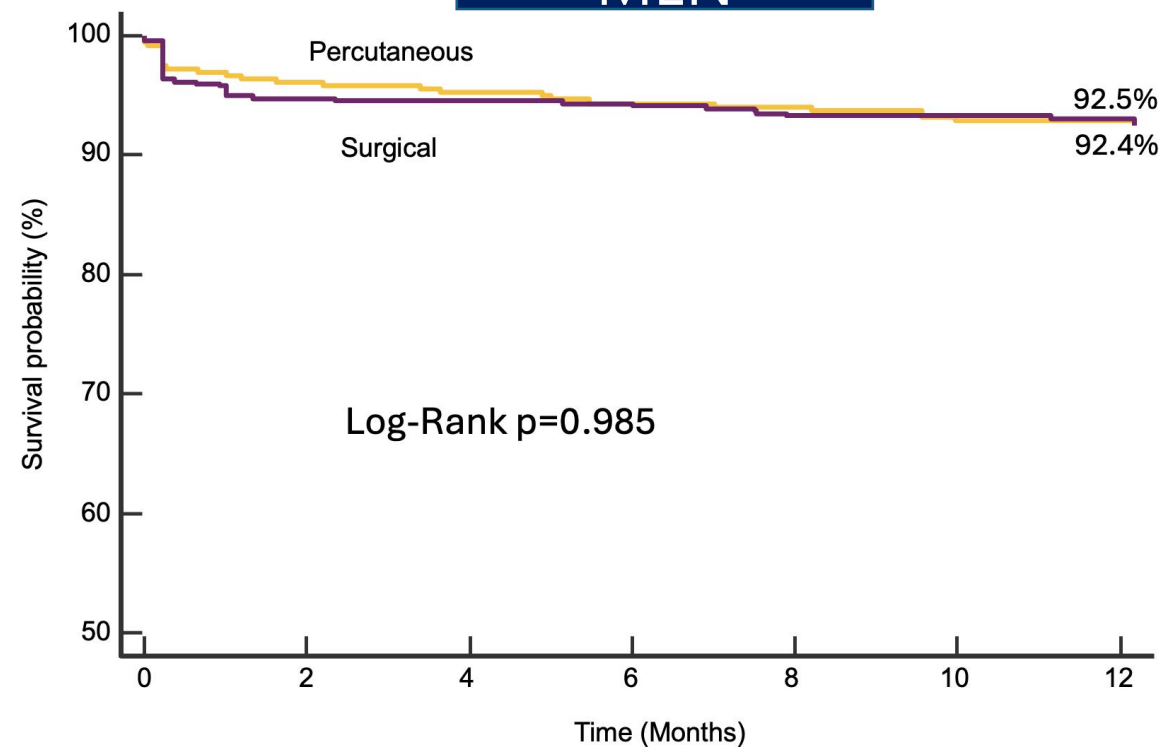


WOMEN



Number at risk							
Percutaneous	271	259	253	246	235	221	196
Surgical	170	156	150	140	133	122	100

MEN



Number at risk							
Percutaneous	354	338	333	326	317	294	239
Surgical	543	510	497	480	450	418	352

The best option in my opinion... SIMULTANEOUS

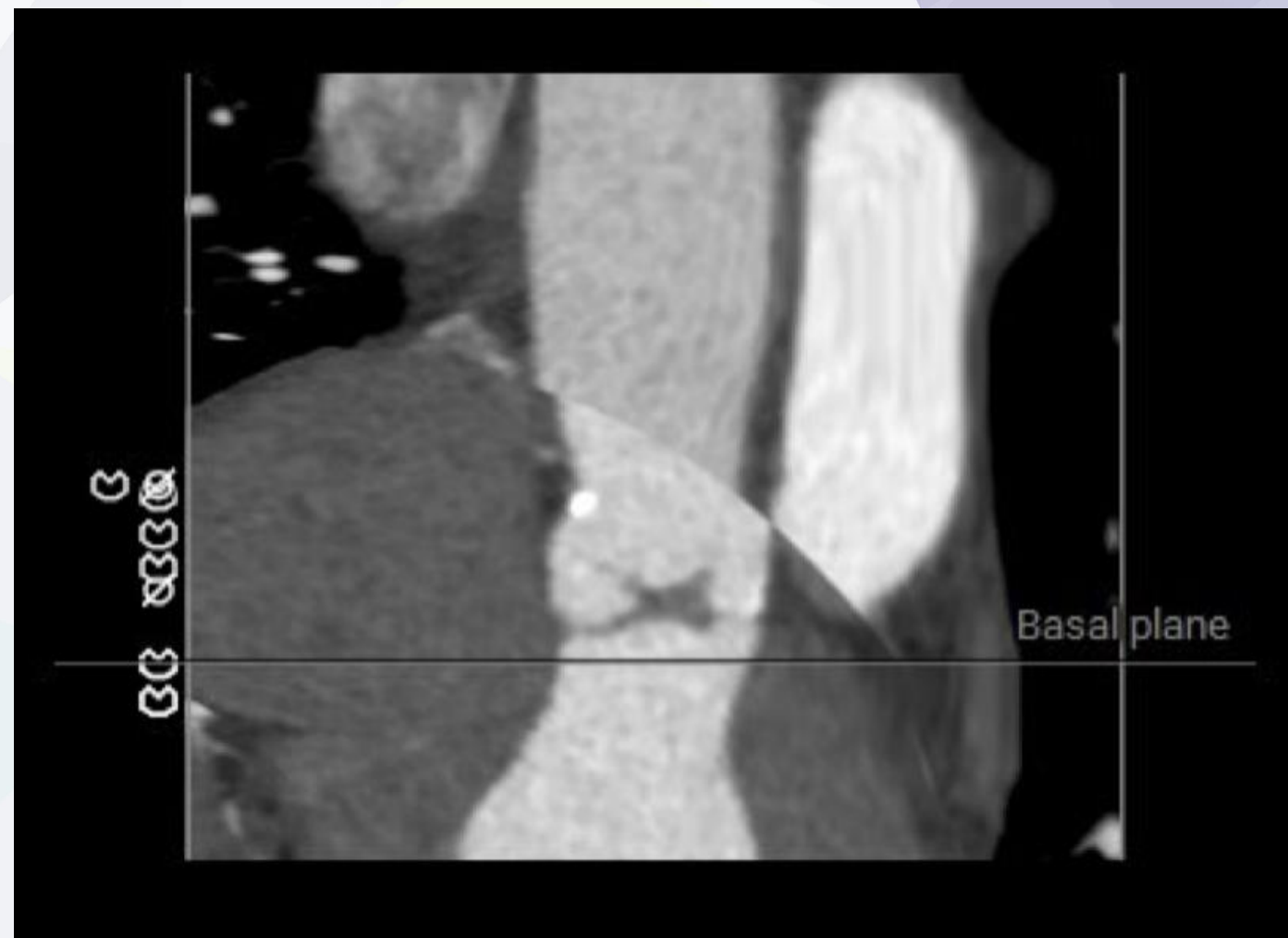
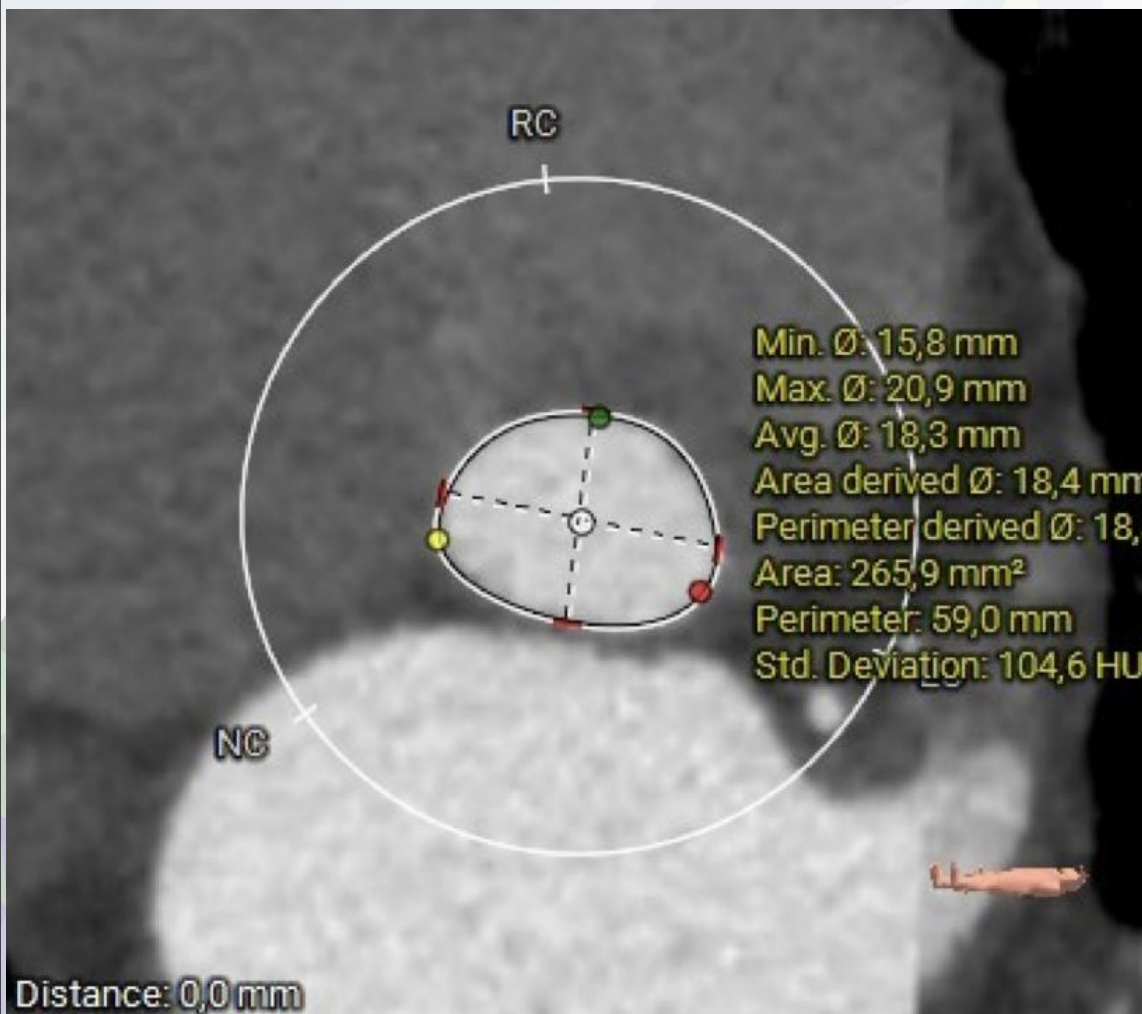
79 yrs woman

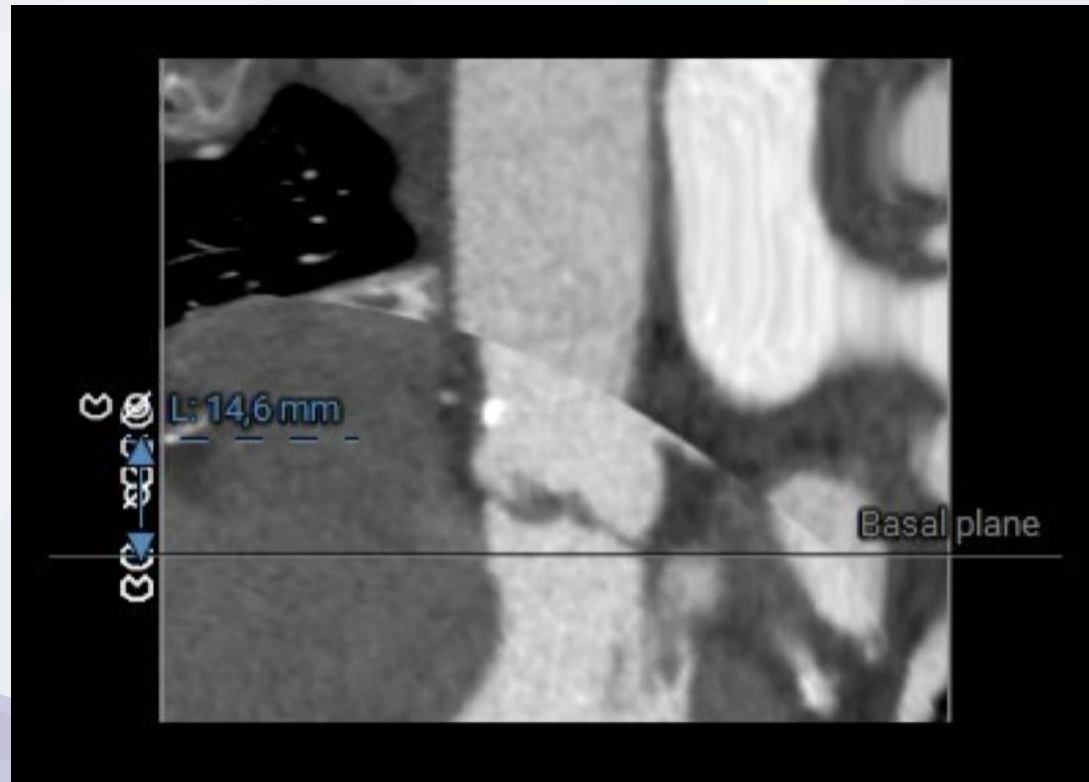


- Height: 155 cm ; Weight: 65 kg
- BMI: 27 Kg/m²; BSA: 1.6

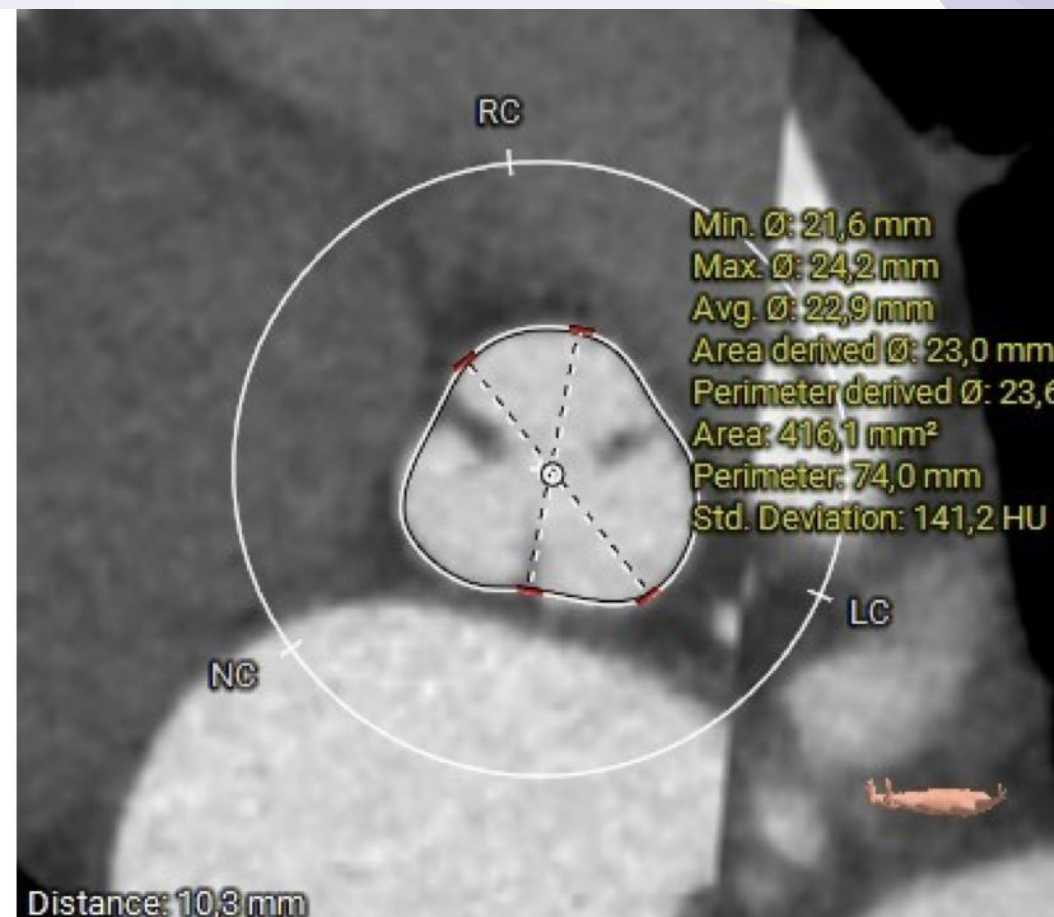
Prior clinical history...

- Hypertension
- Severe aortic stenosis







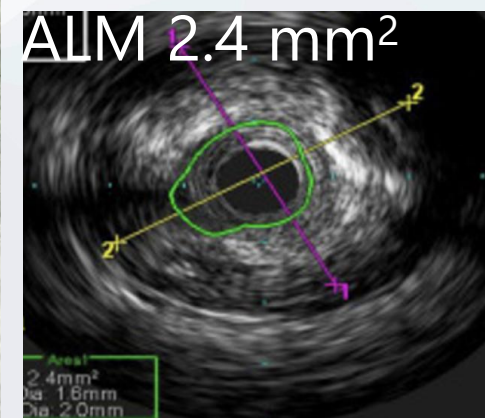
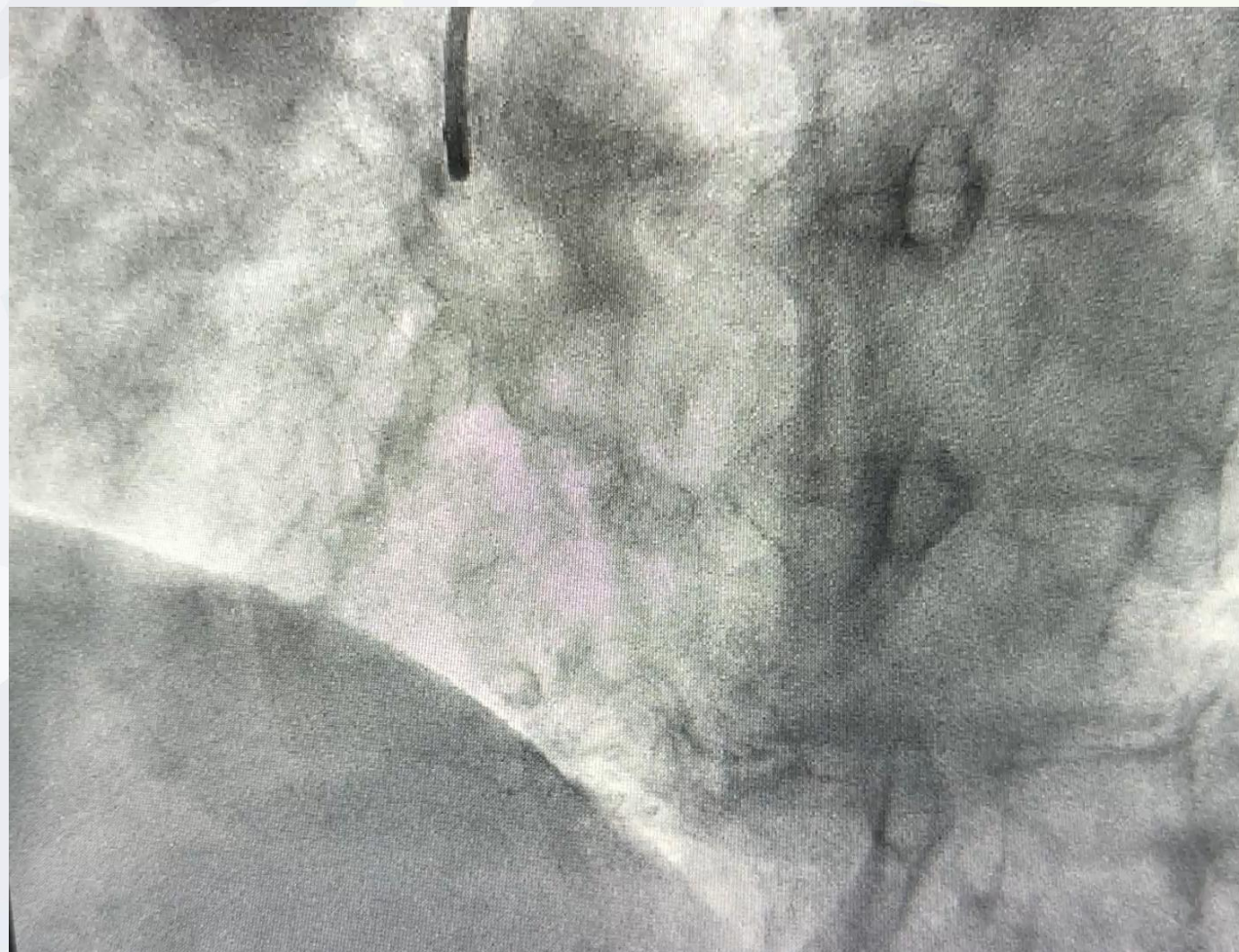




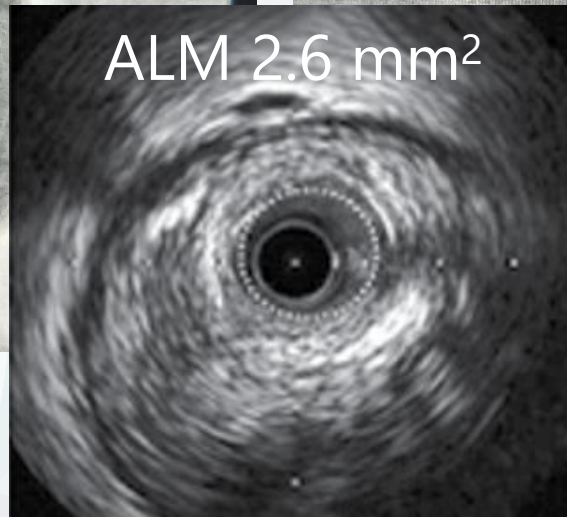
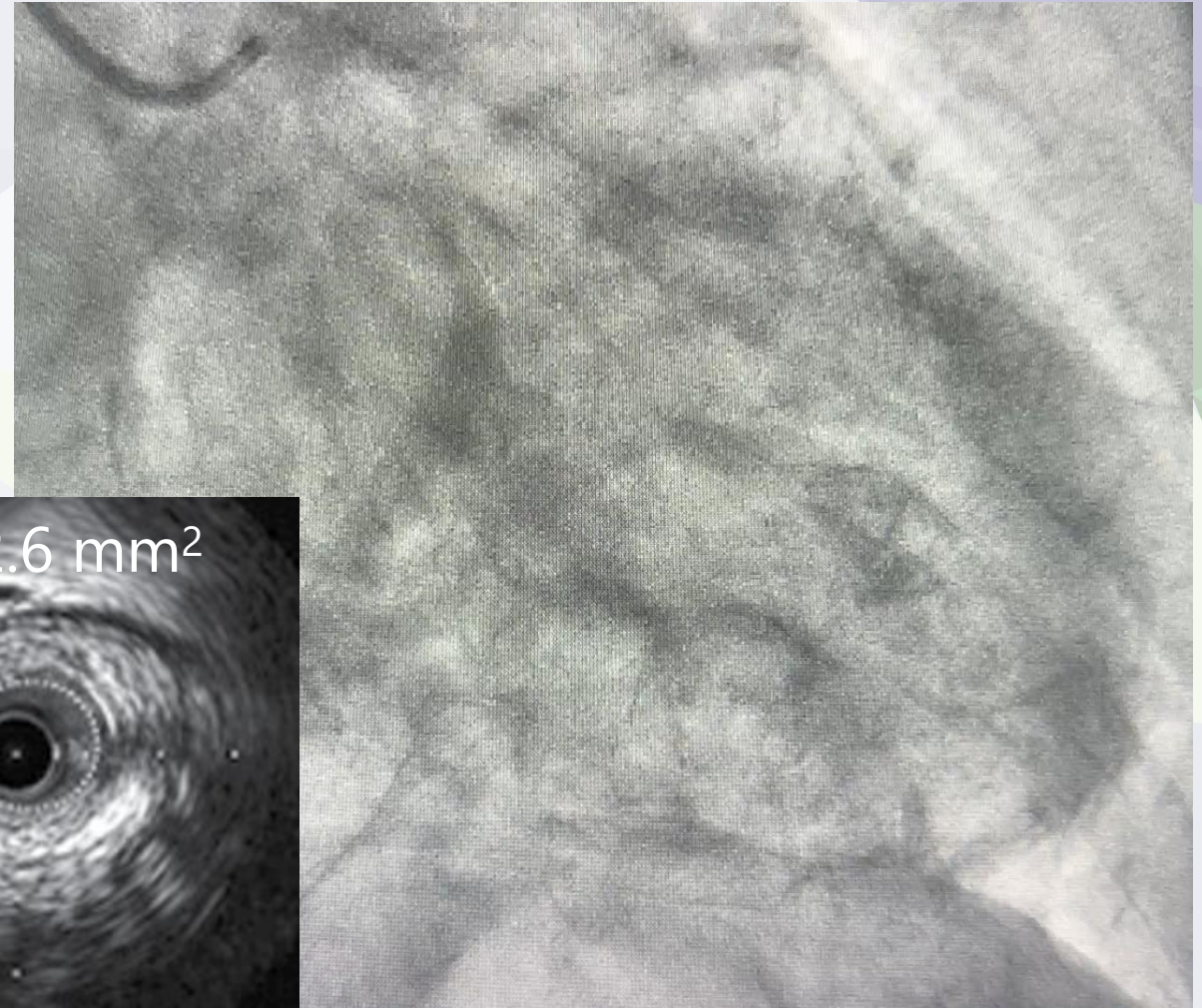
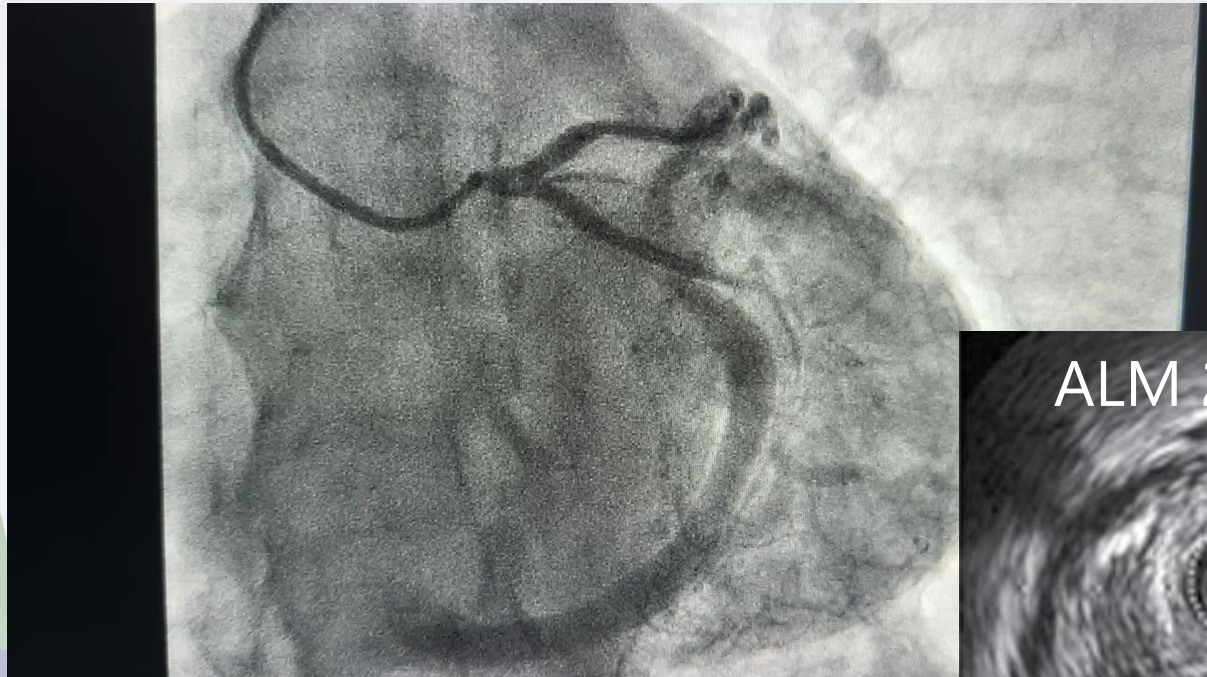
Coronary angiography?

- Yes / No
- Before the procedure?
- Same day, before TAVI?
- Same day, after TAVI?

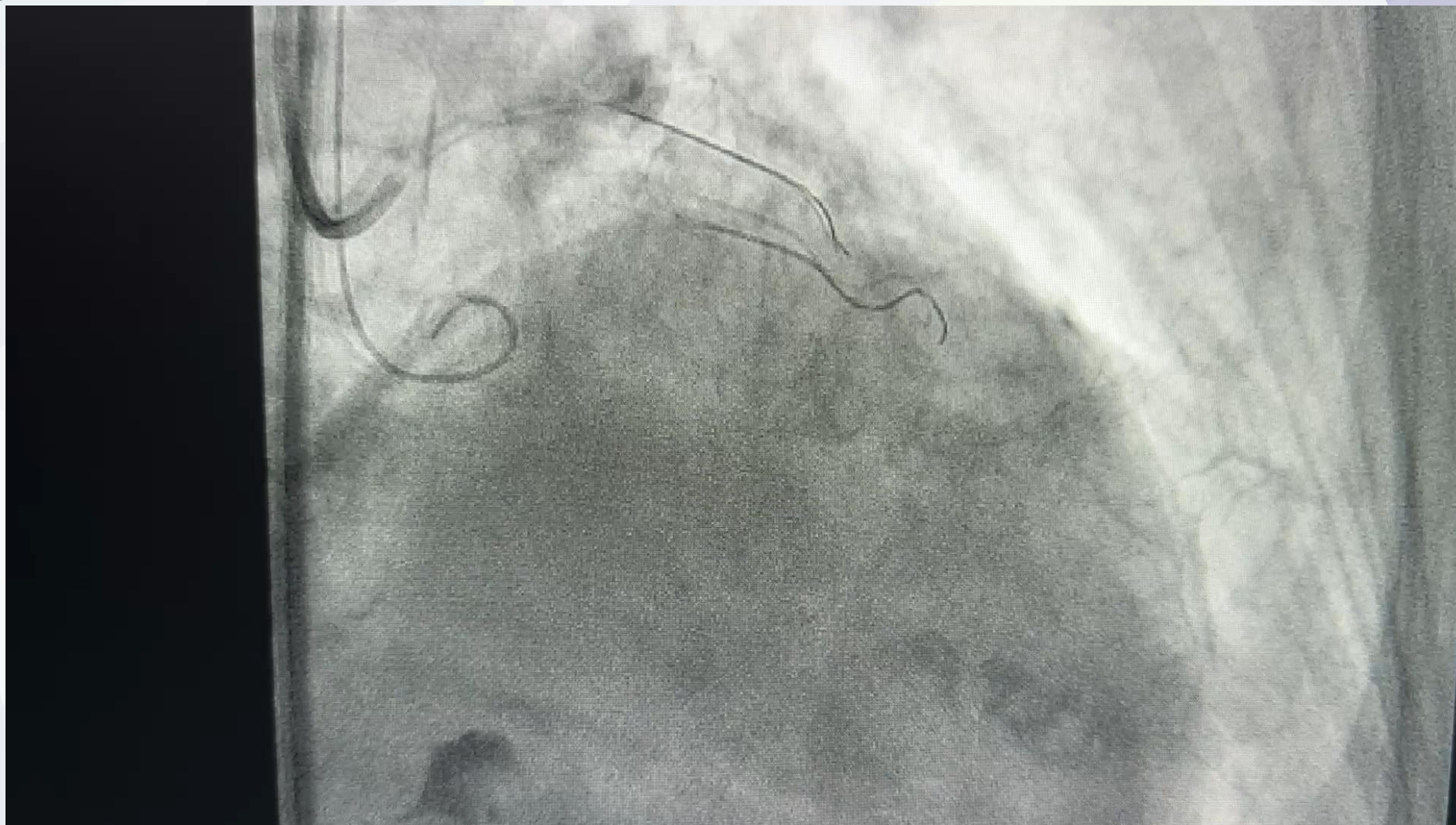
Coronary angiography: RCA



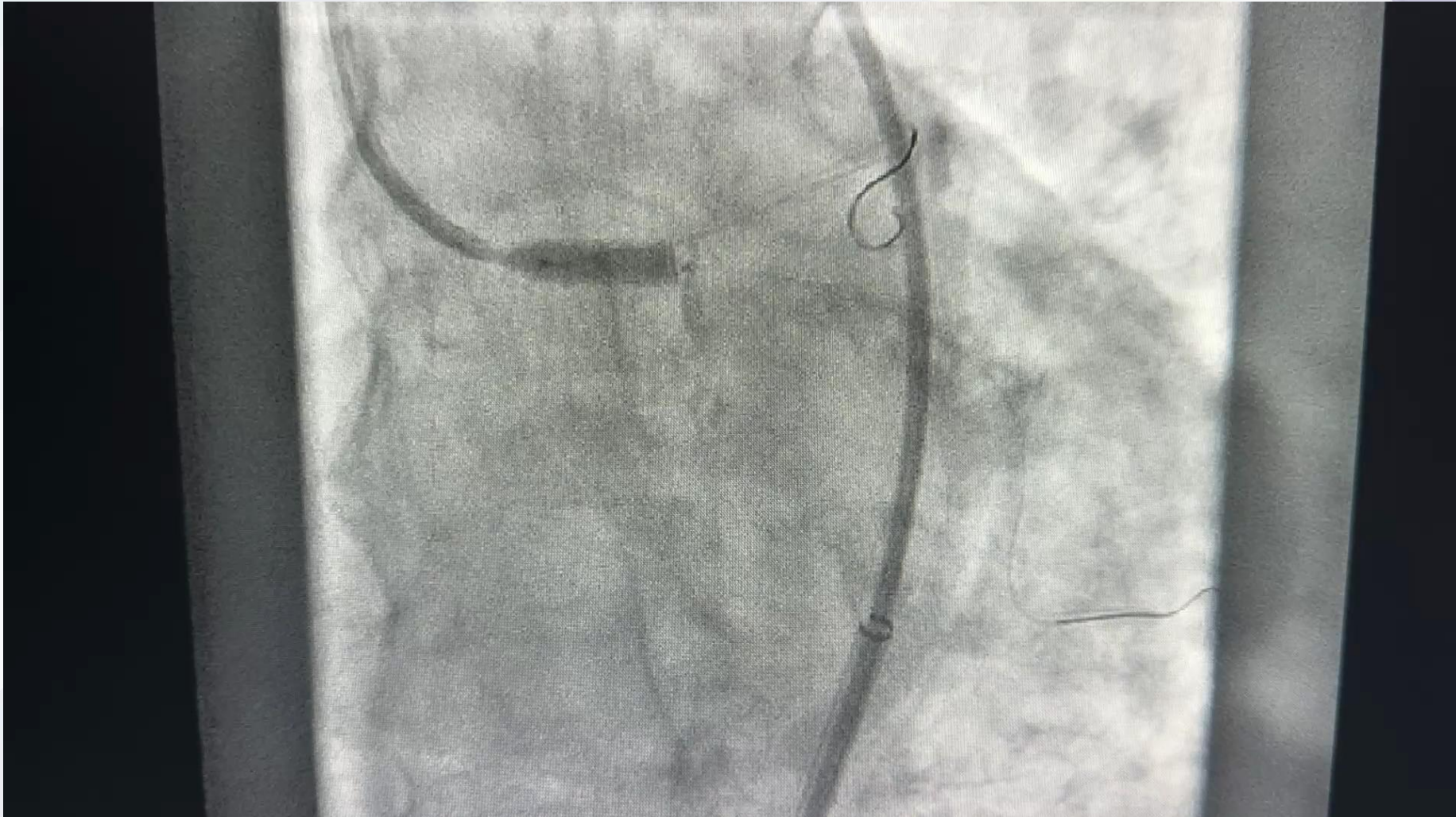




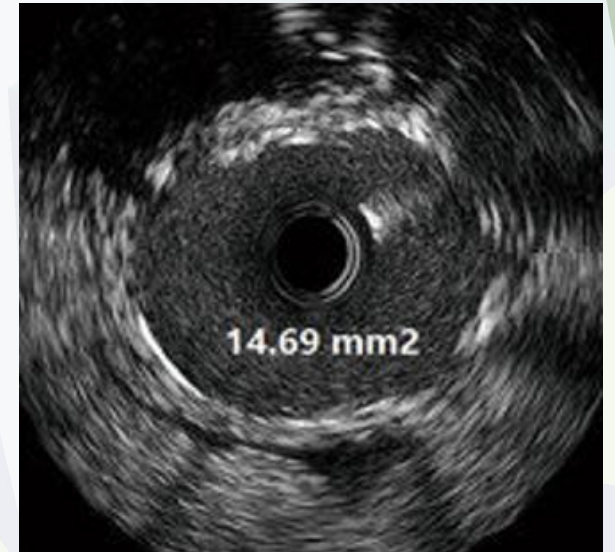
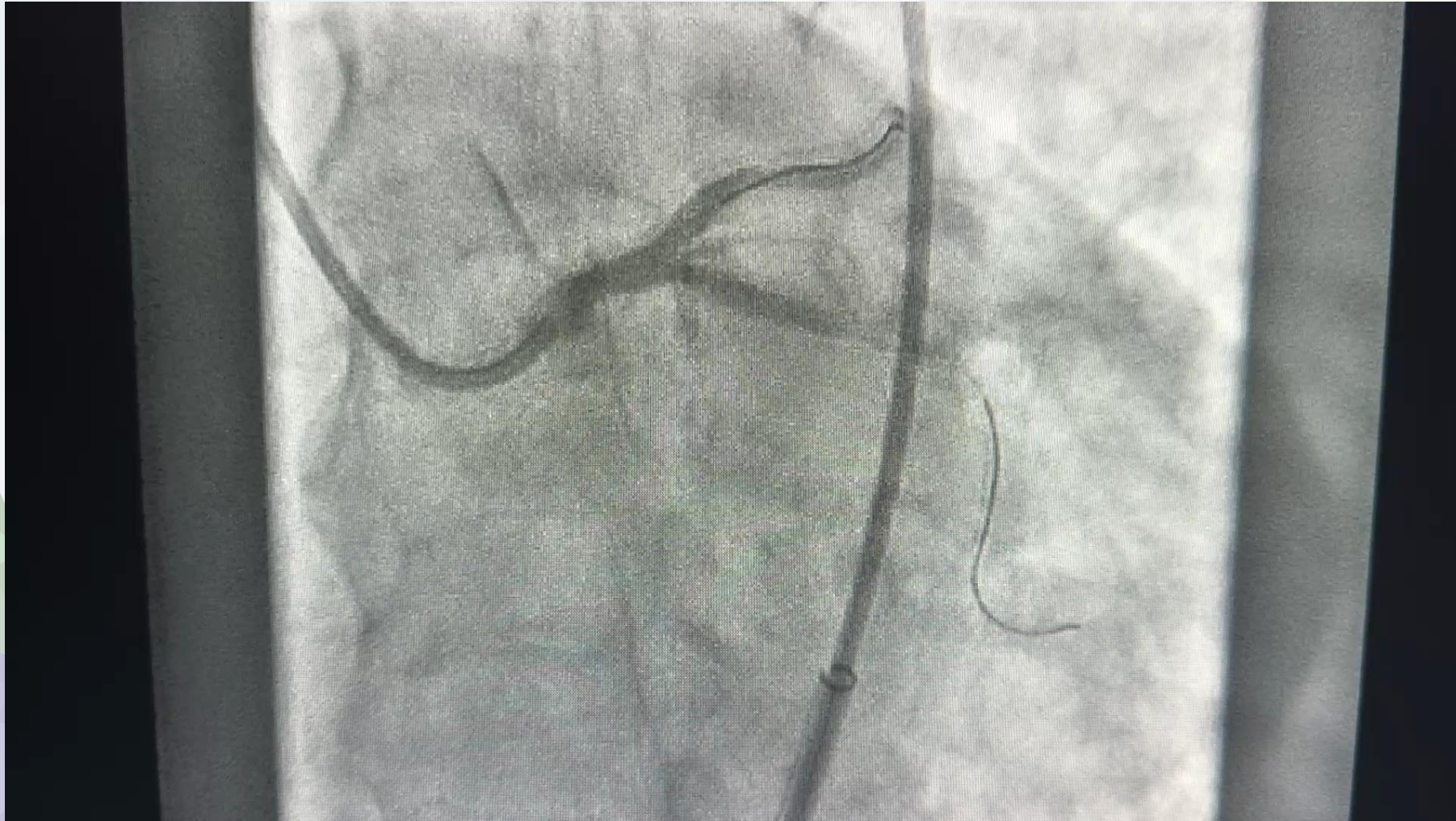
Single procedure: First, PCI (LM)



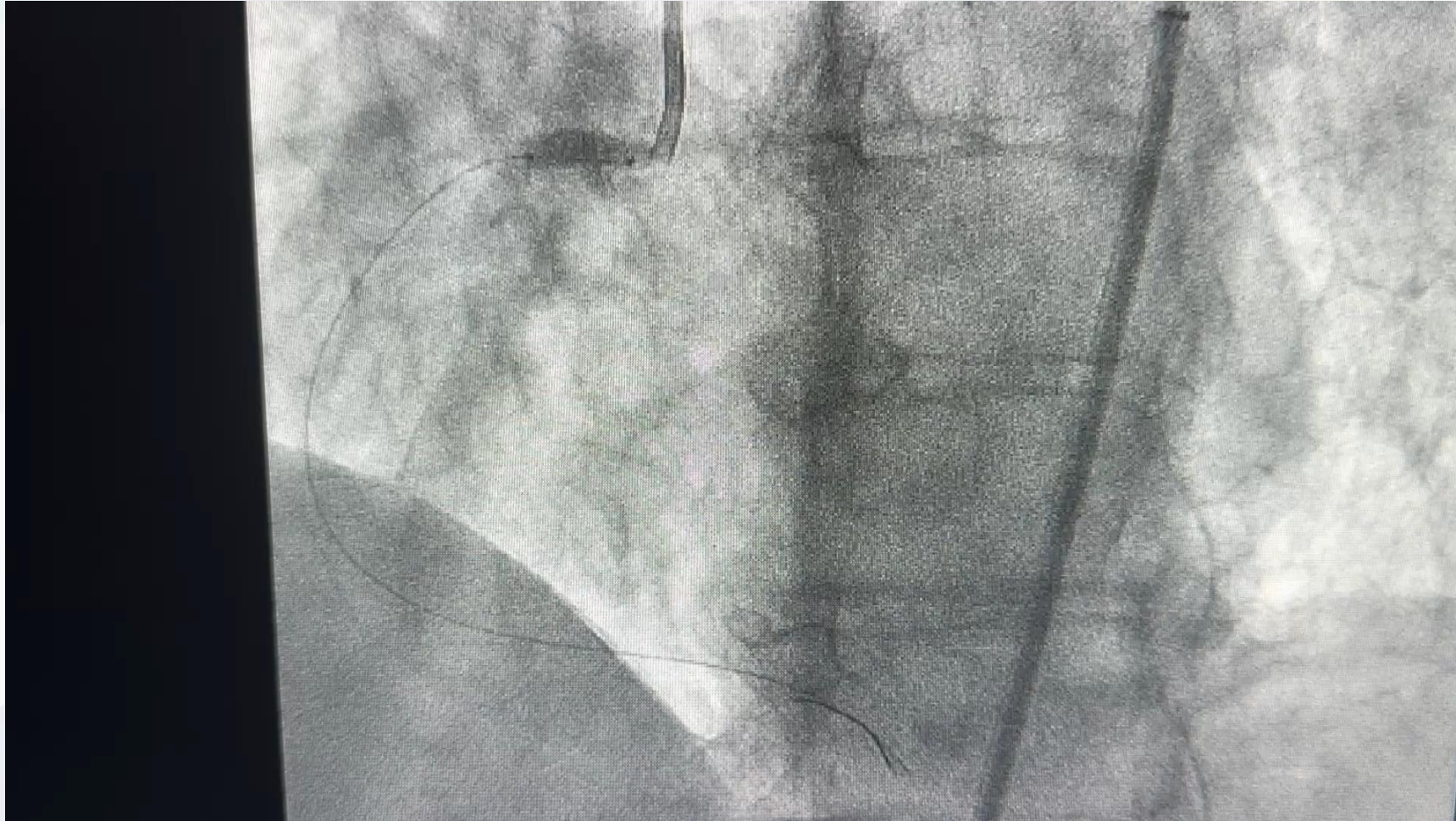
Single procedure: First, PCI (LM)



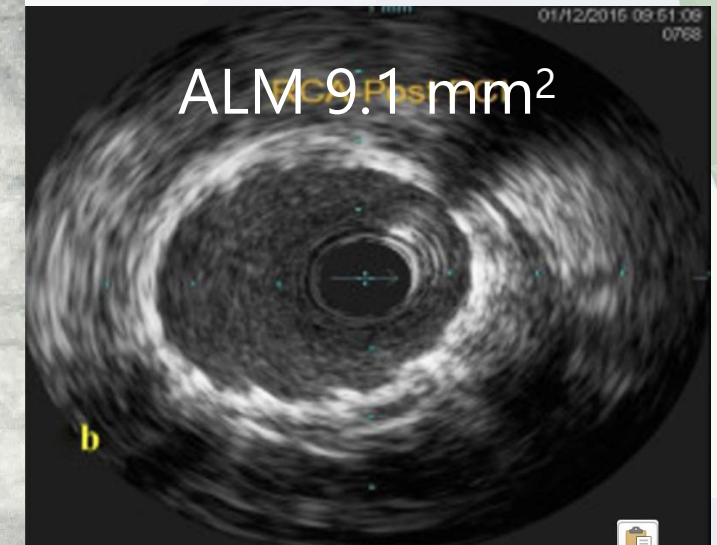
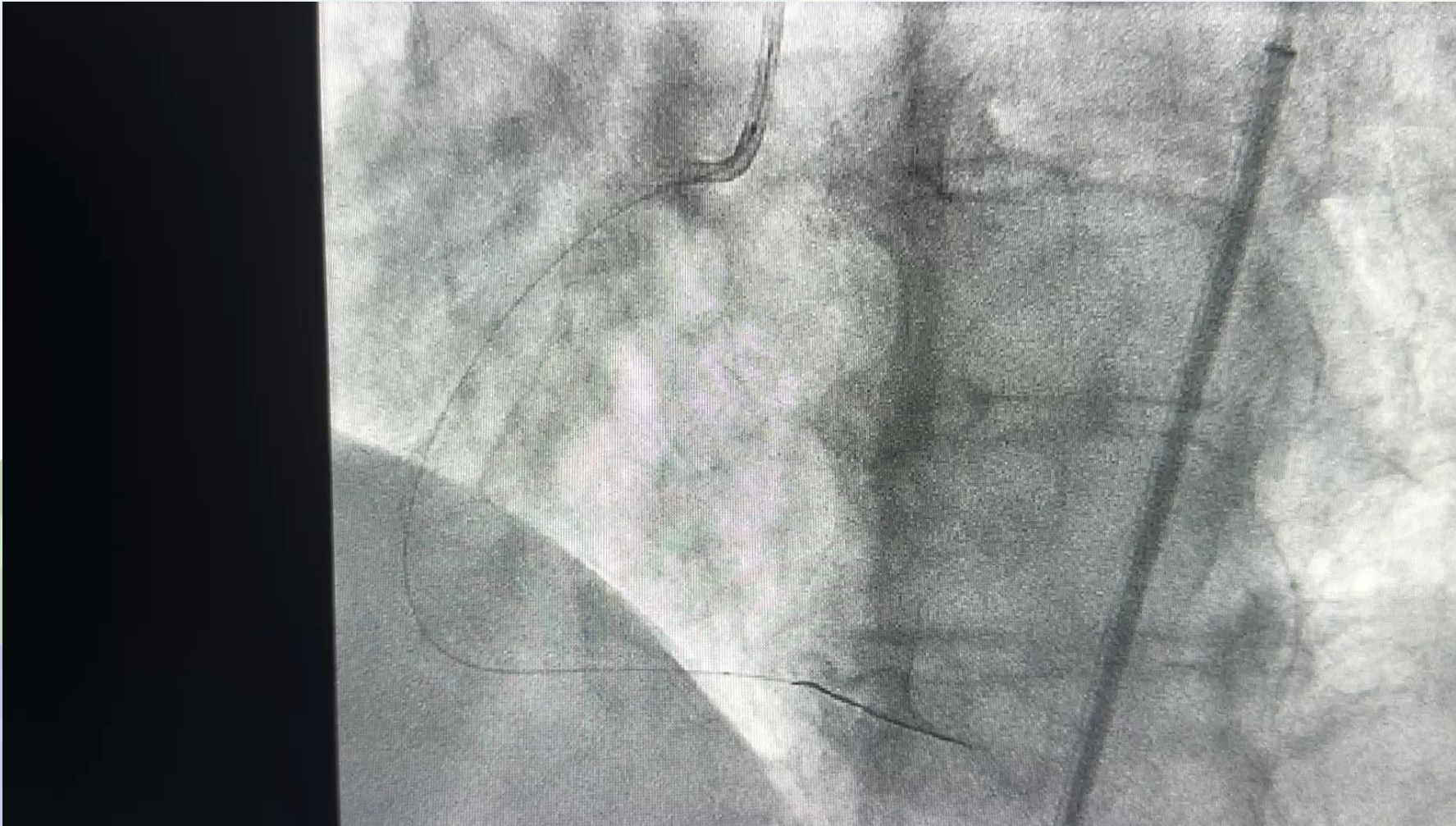
Single procedure: First, PCI (LM)



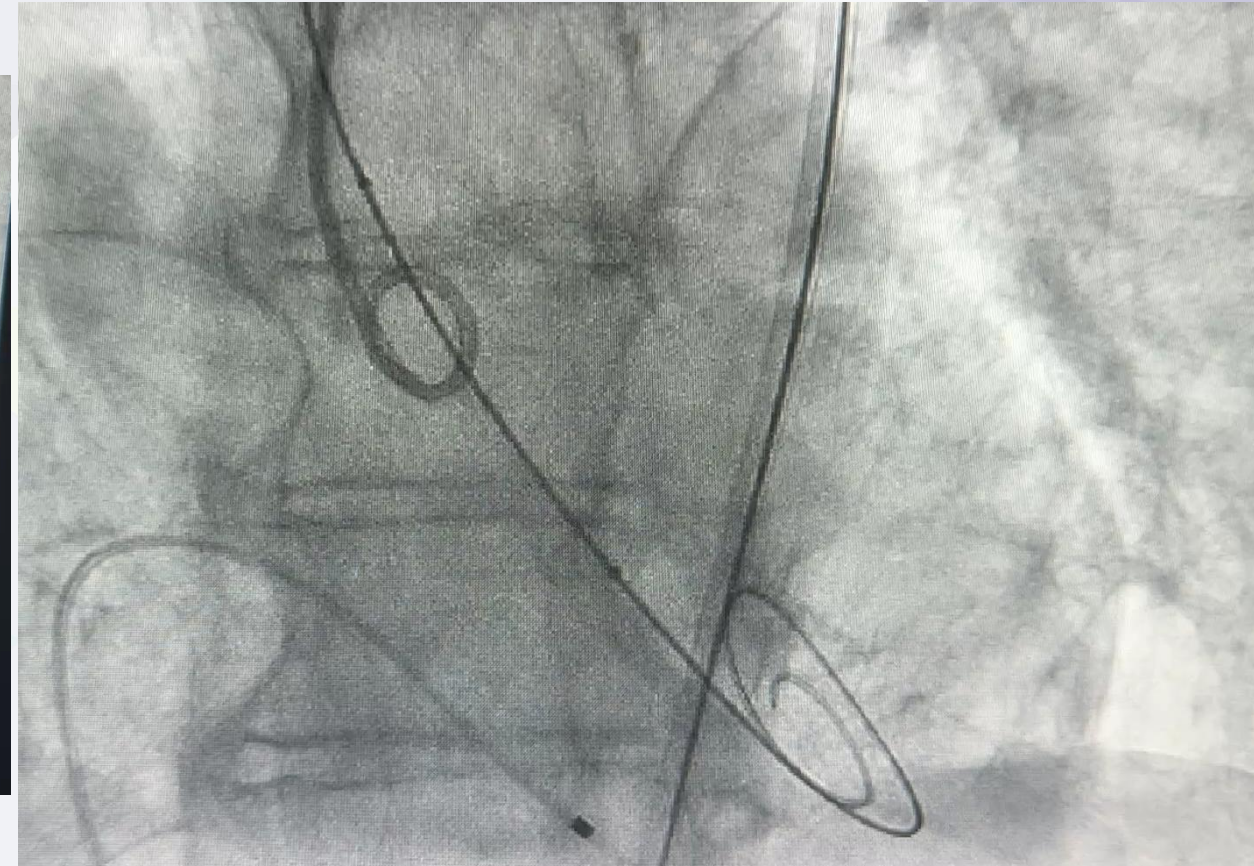
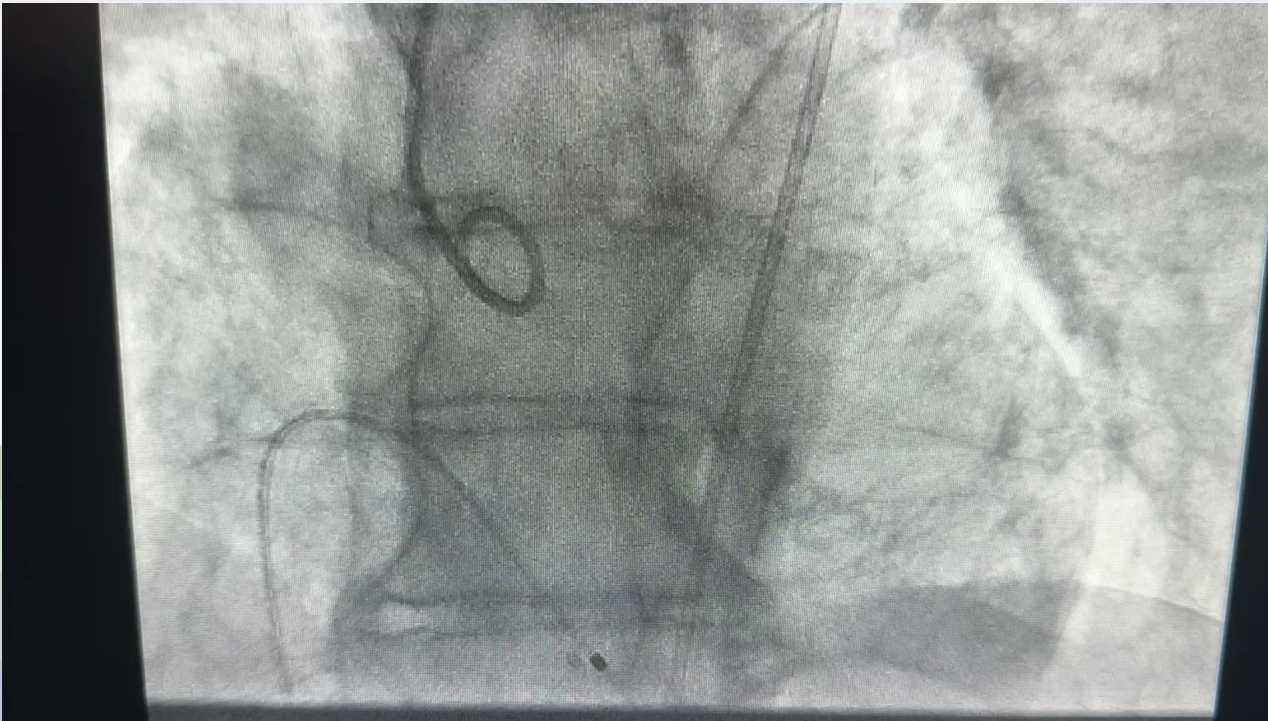
Single procedure: Second, PCI (RCA)



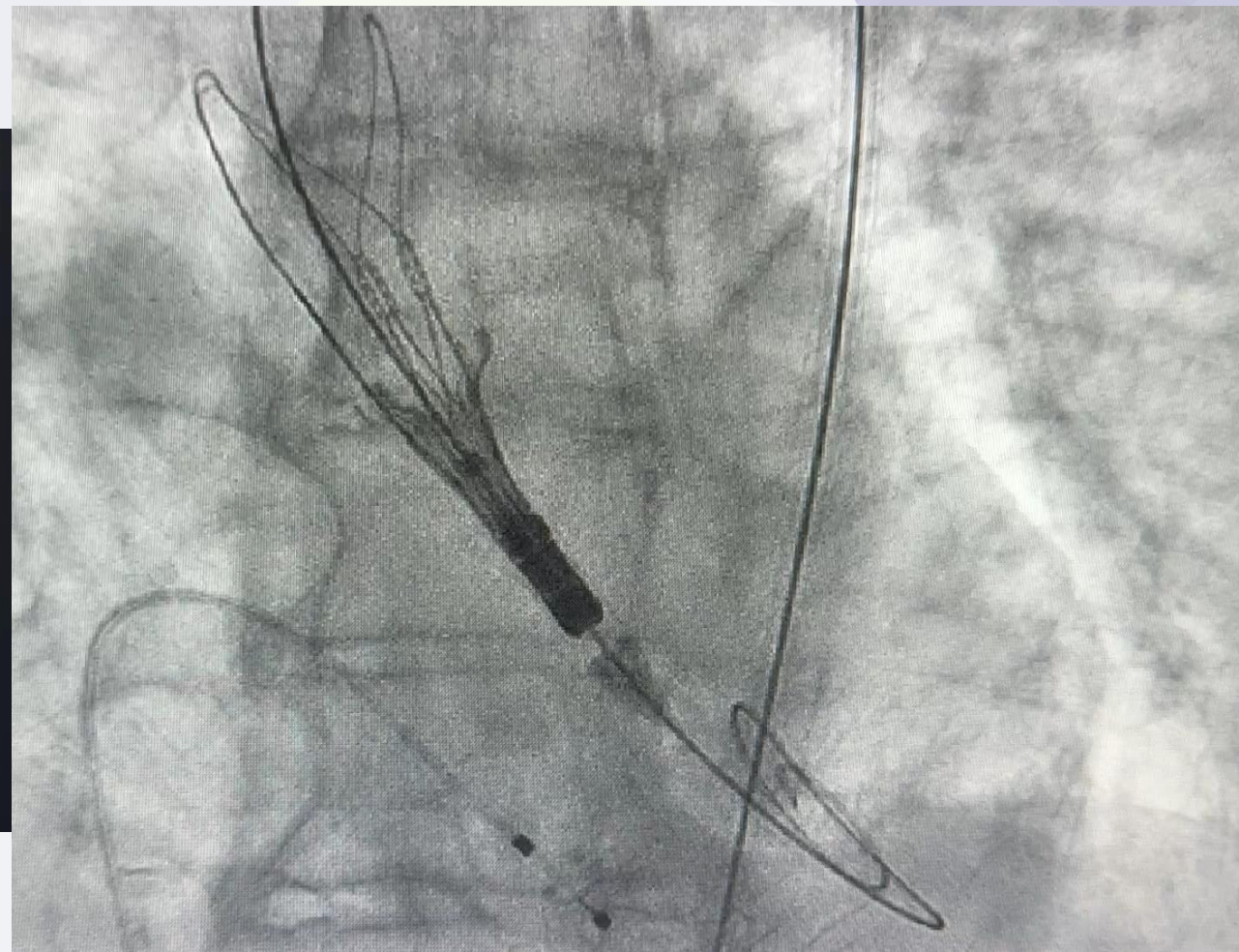
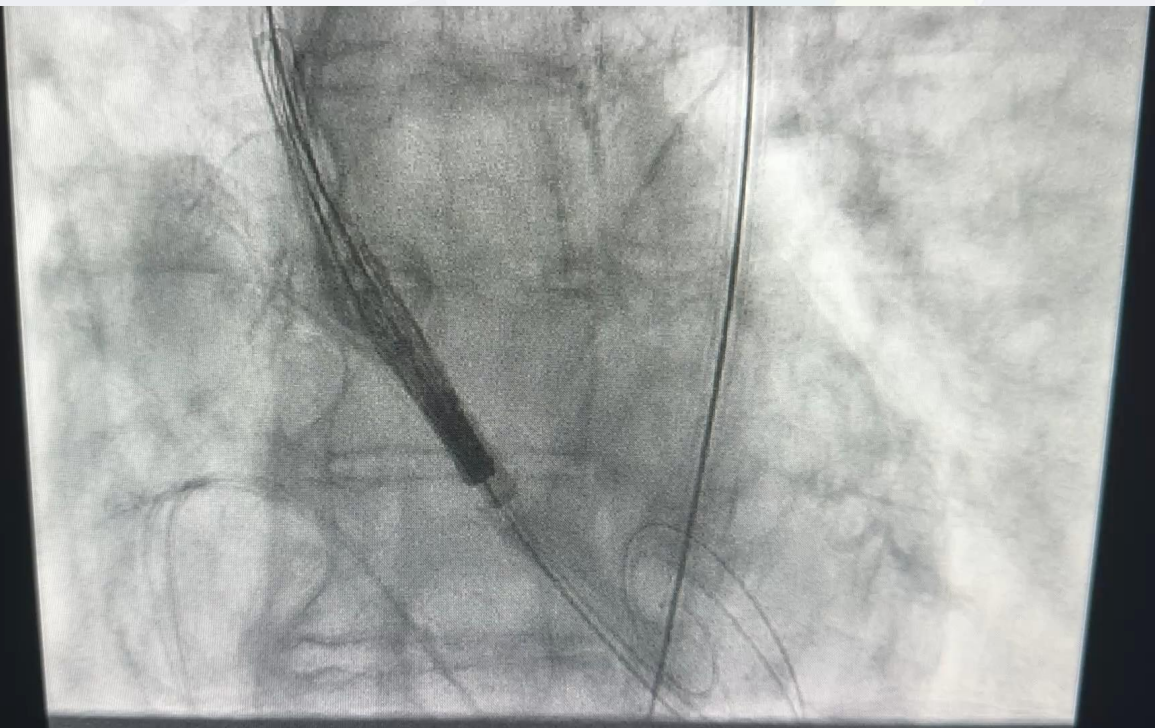
Single procedure: Second, PCI (RCA)



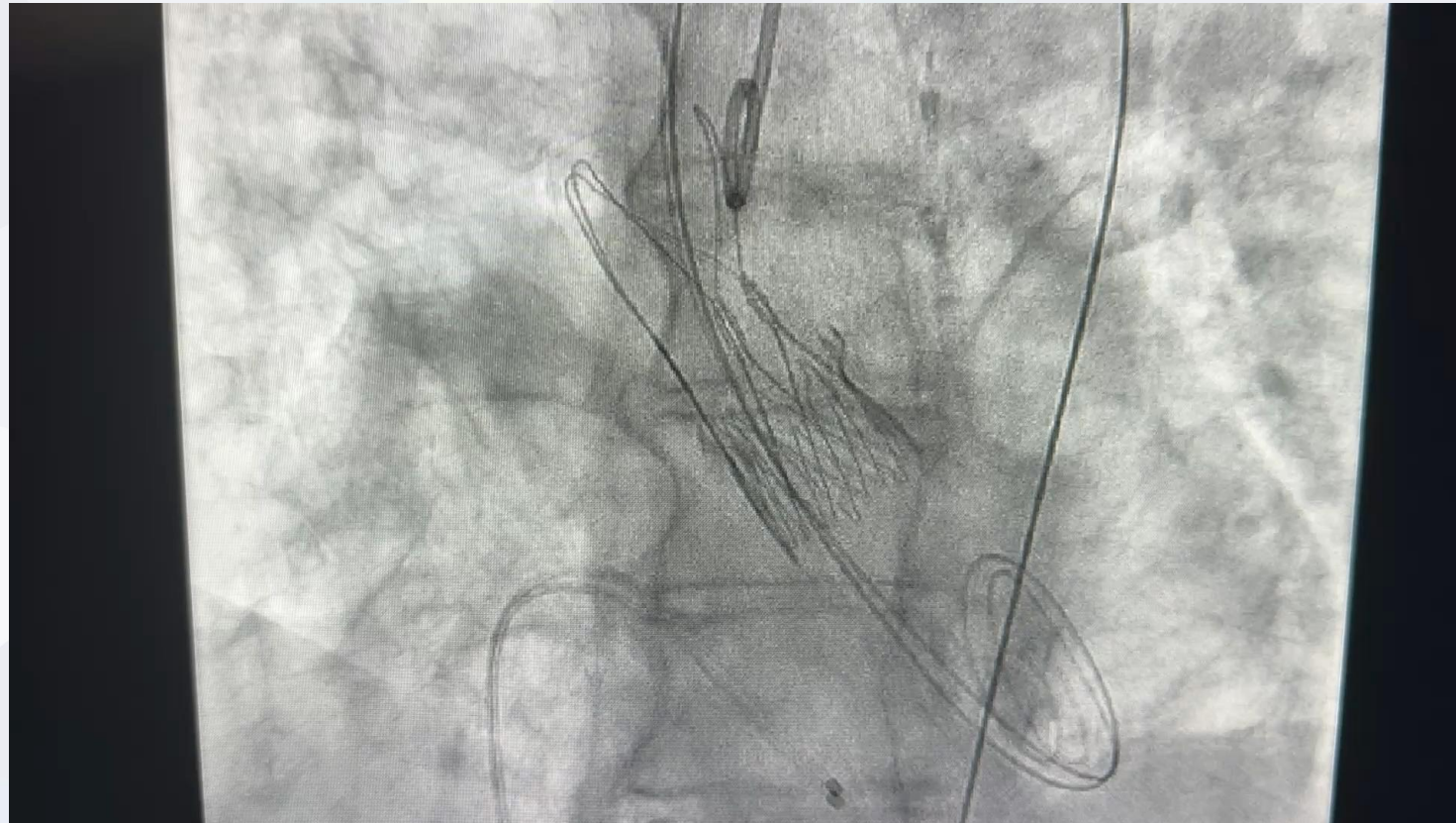
Single procedure: Third, TAVI



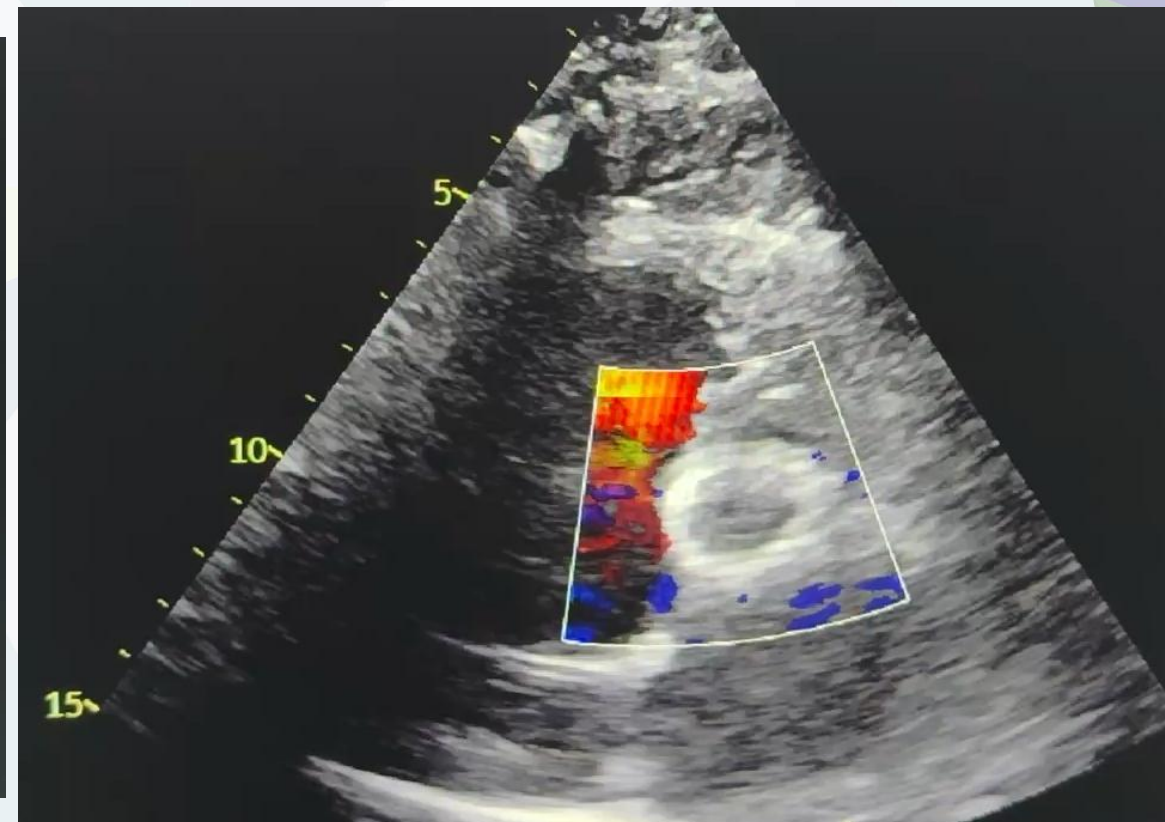
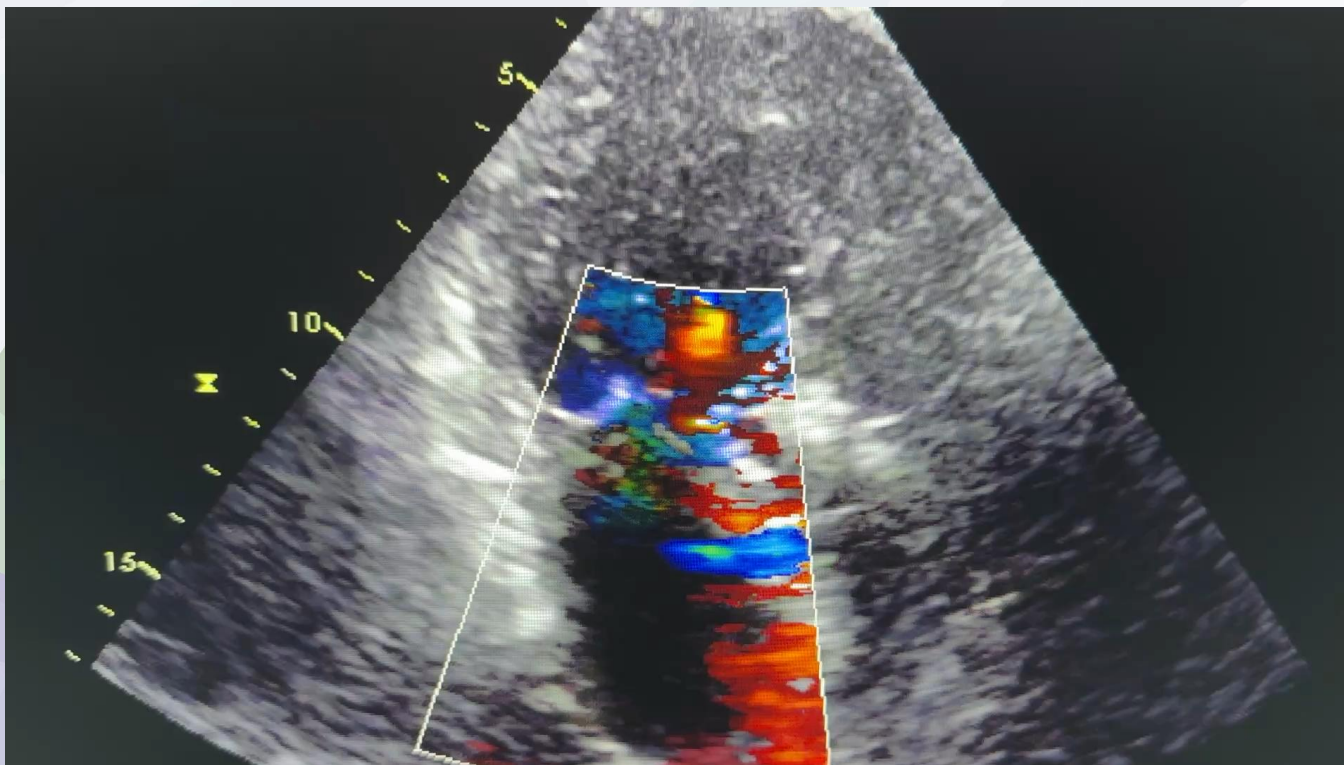
Single procedure: Third, TAVI



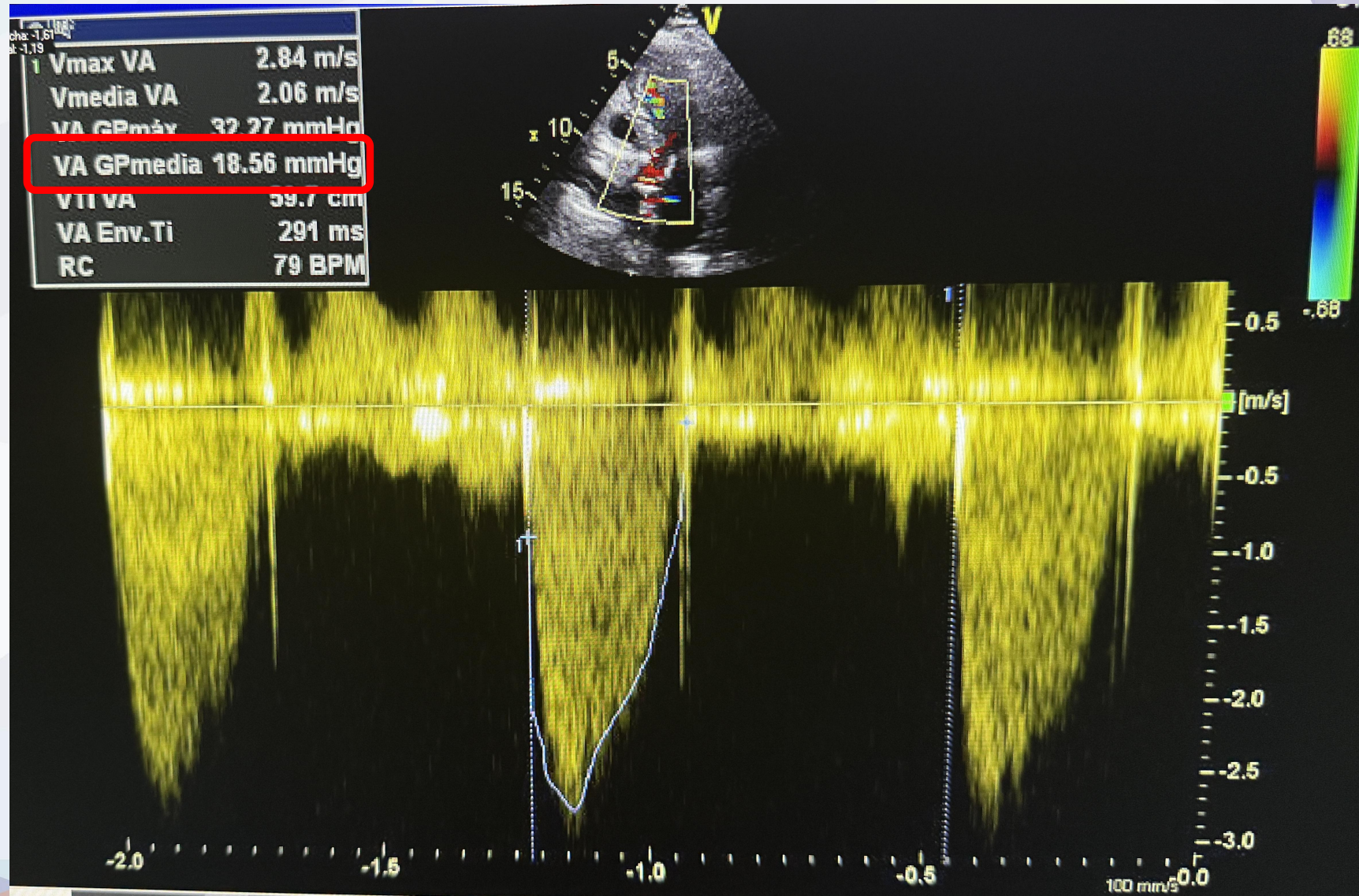
Single procedure: Third, TAVI



Acute Outcomes: Echo 2022



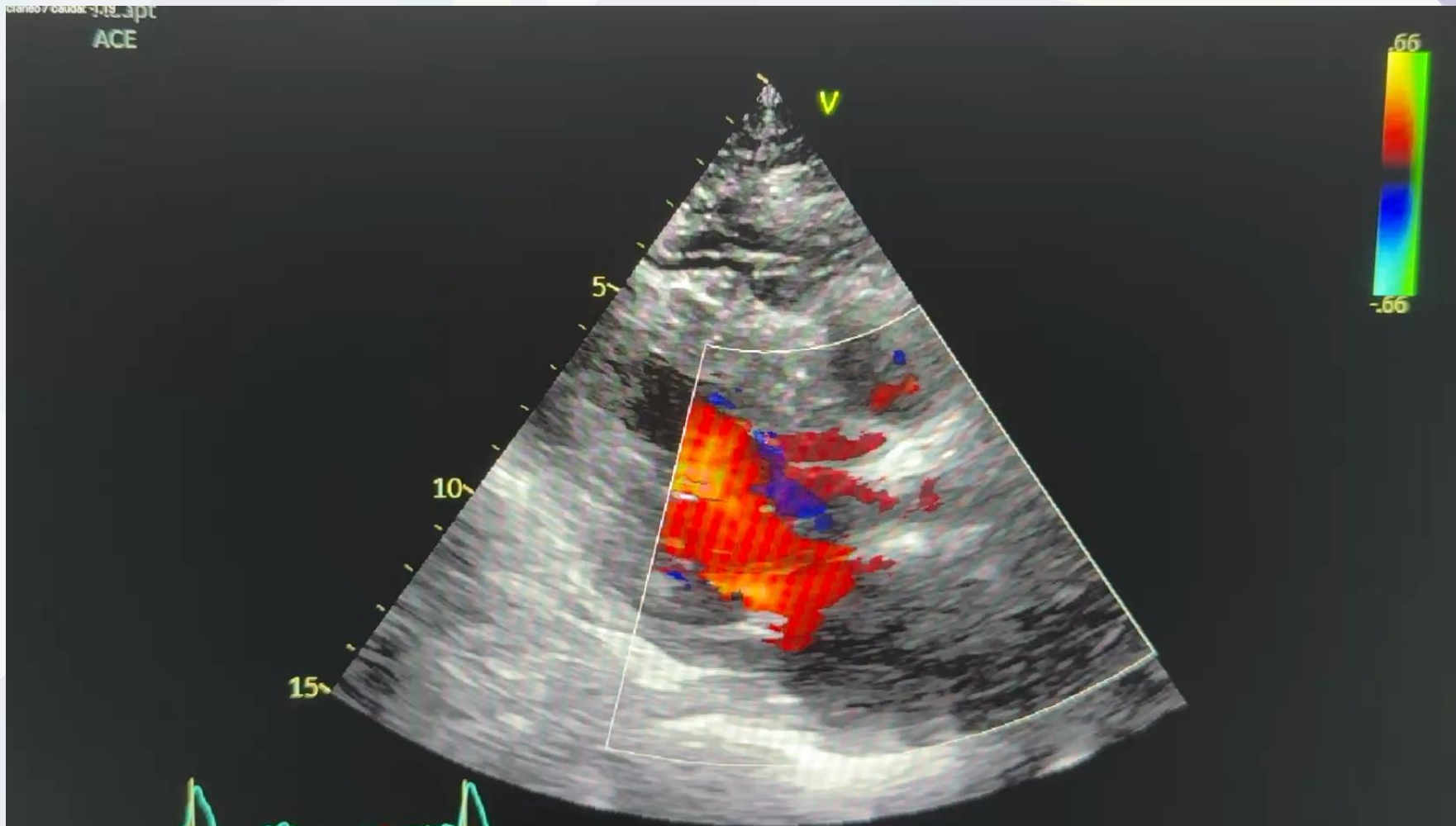
Acute Outcomes: Echo 2022



Late Clinical Outcomes

- Asymptomatic
- 2025: Breast Cancer → Surgery + Immunotherapy

Late Outcomes: Echo 2025

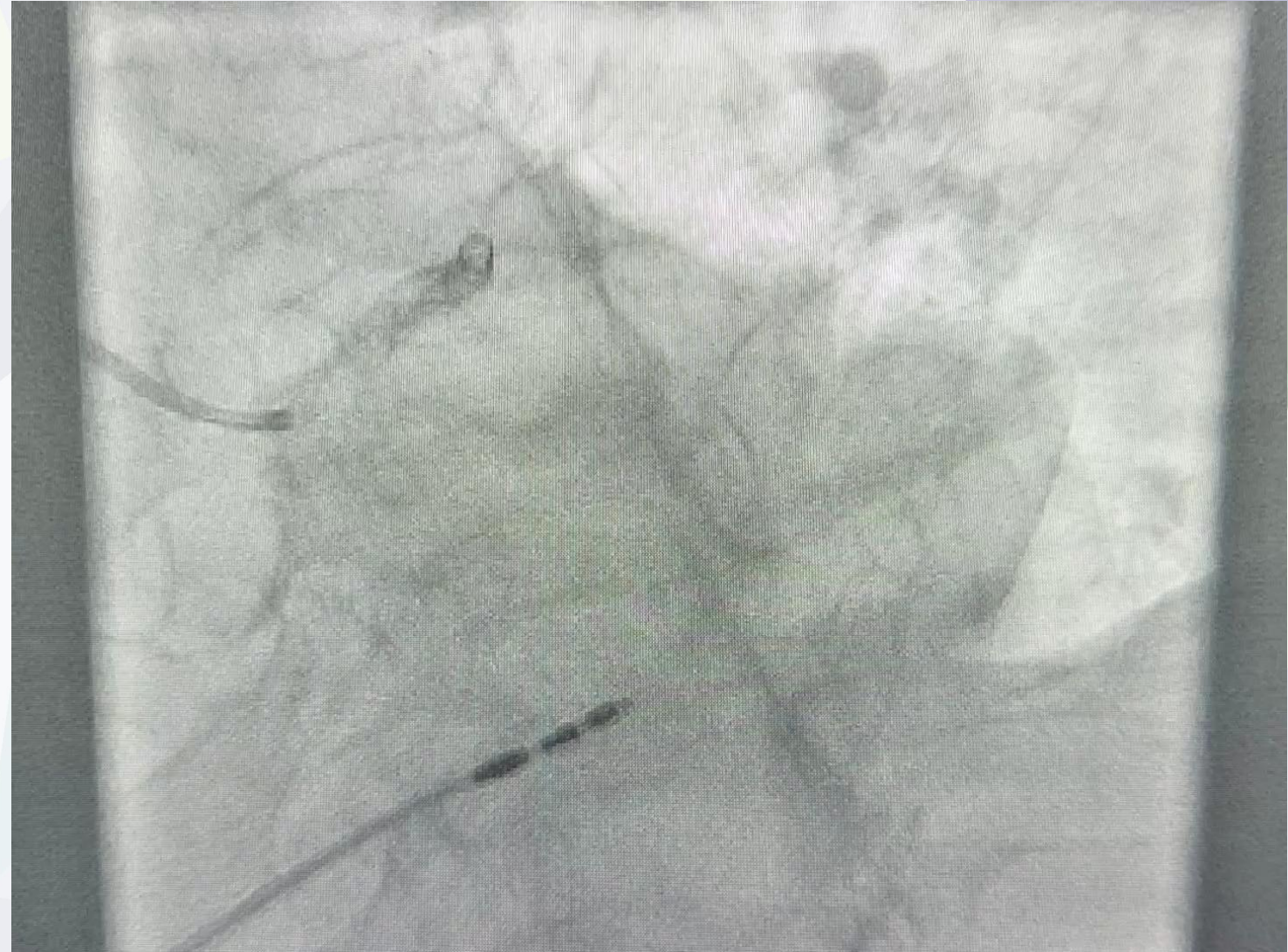
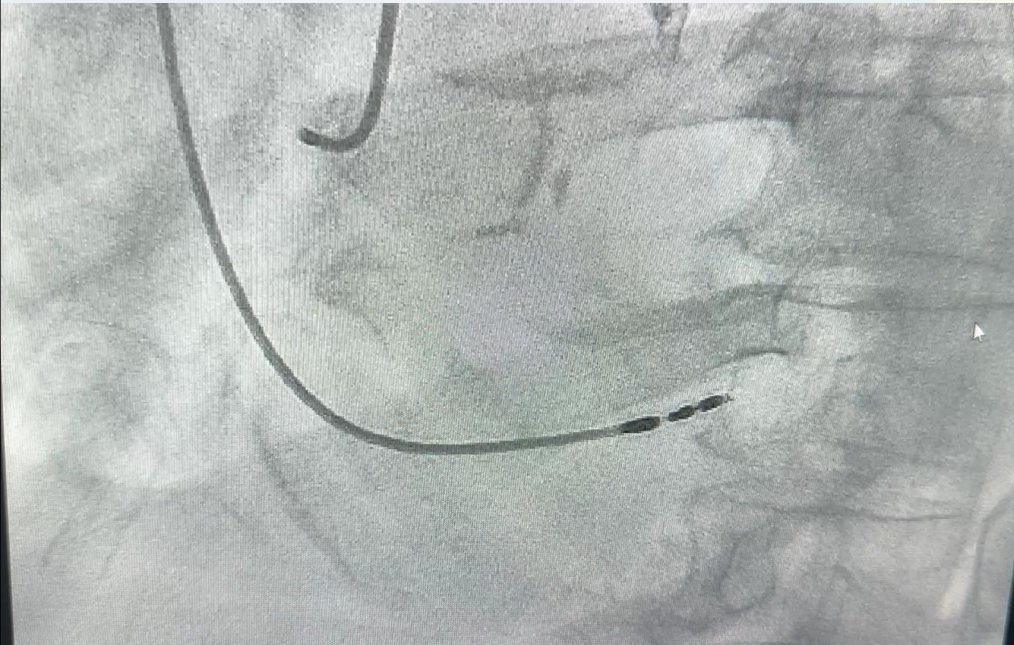


Late Outcomes: Echo 2025

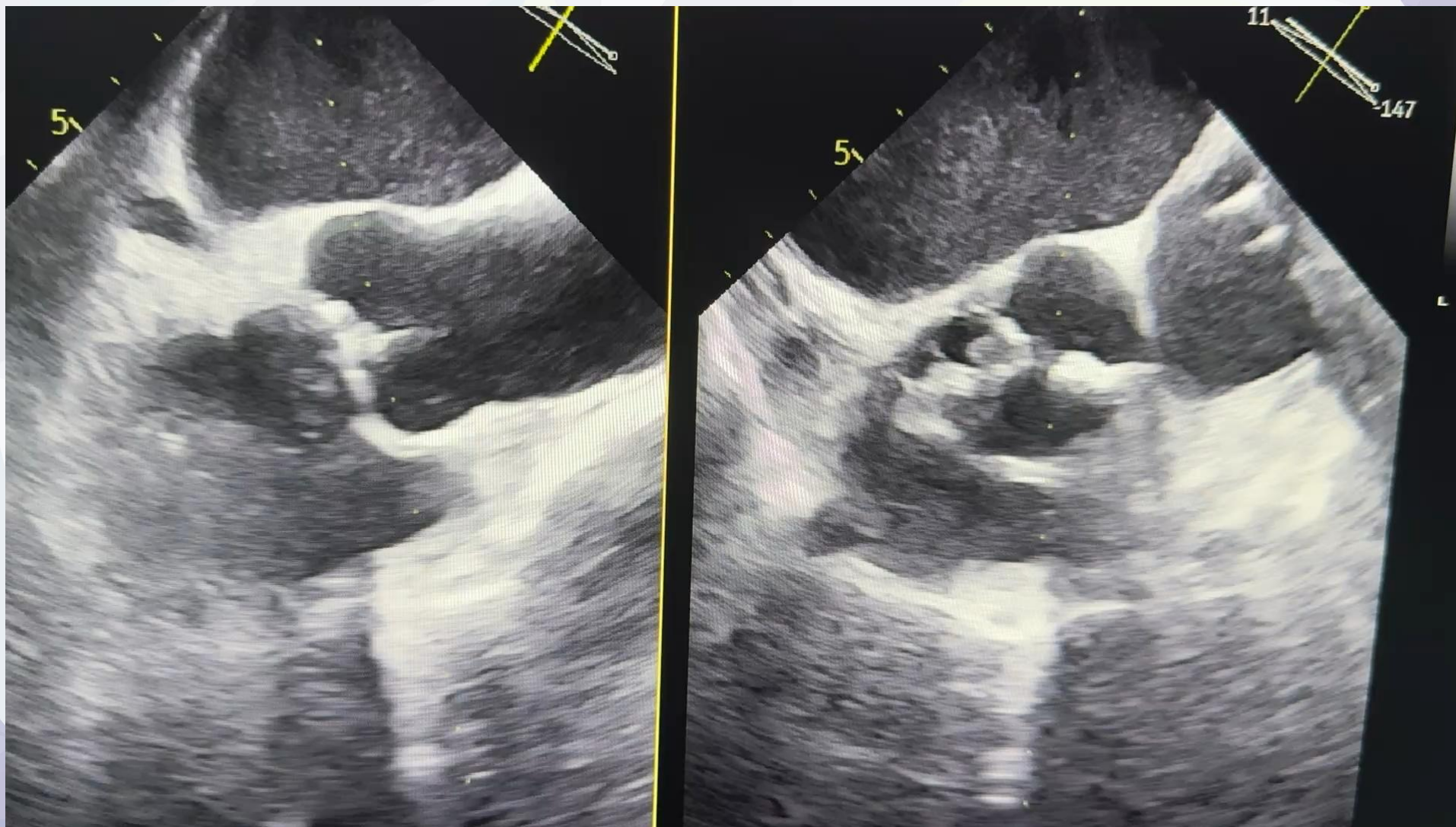


EJEMPLO 2: SIMULTÁNEO

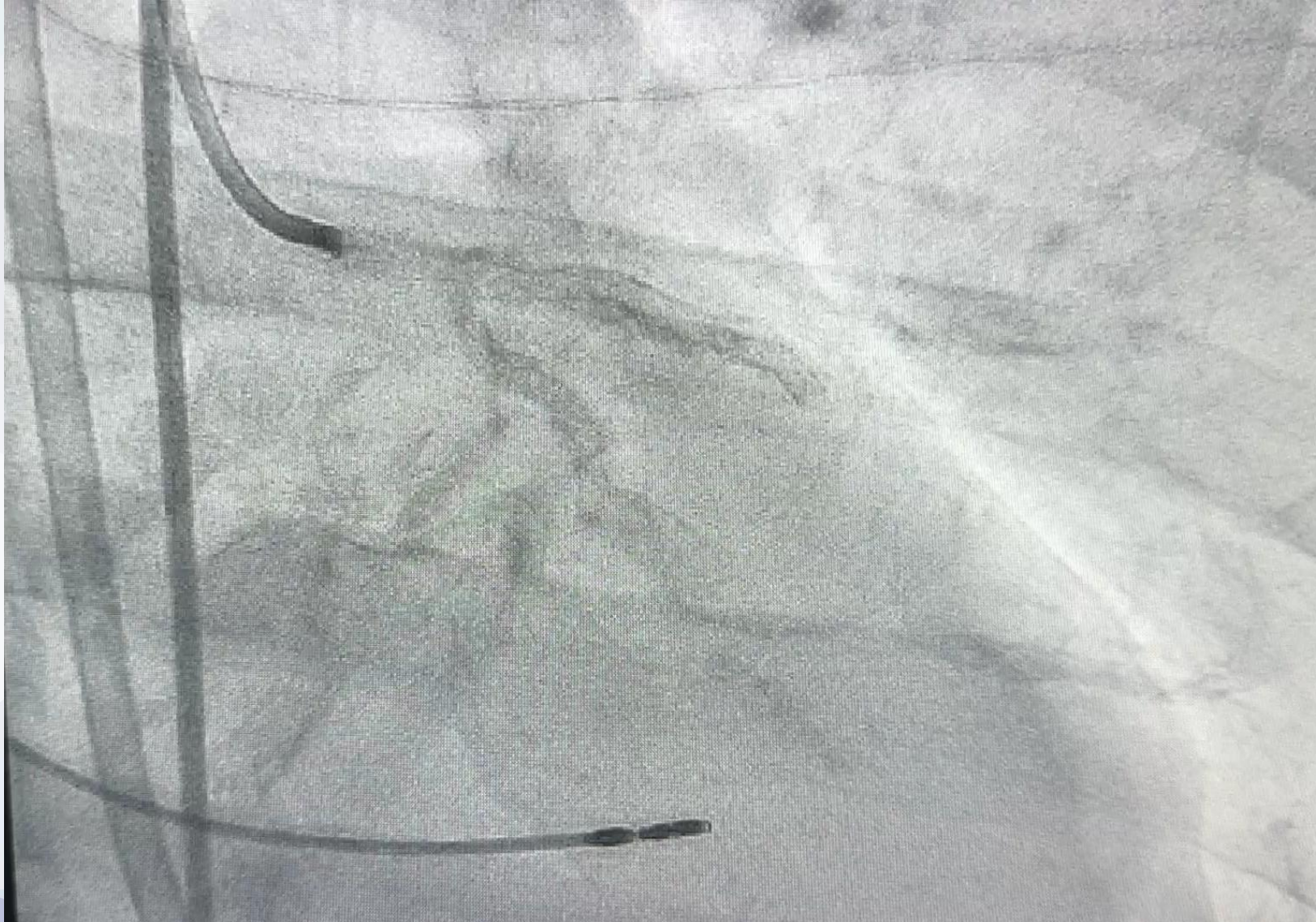
ESTENOSIS AÓRTICA + ENF. CORONARIA EN INSUF. CARDIACA AGUDA O SHOCK



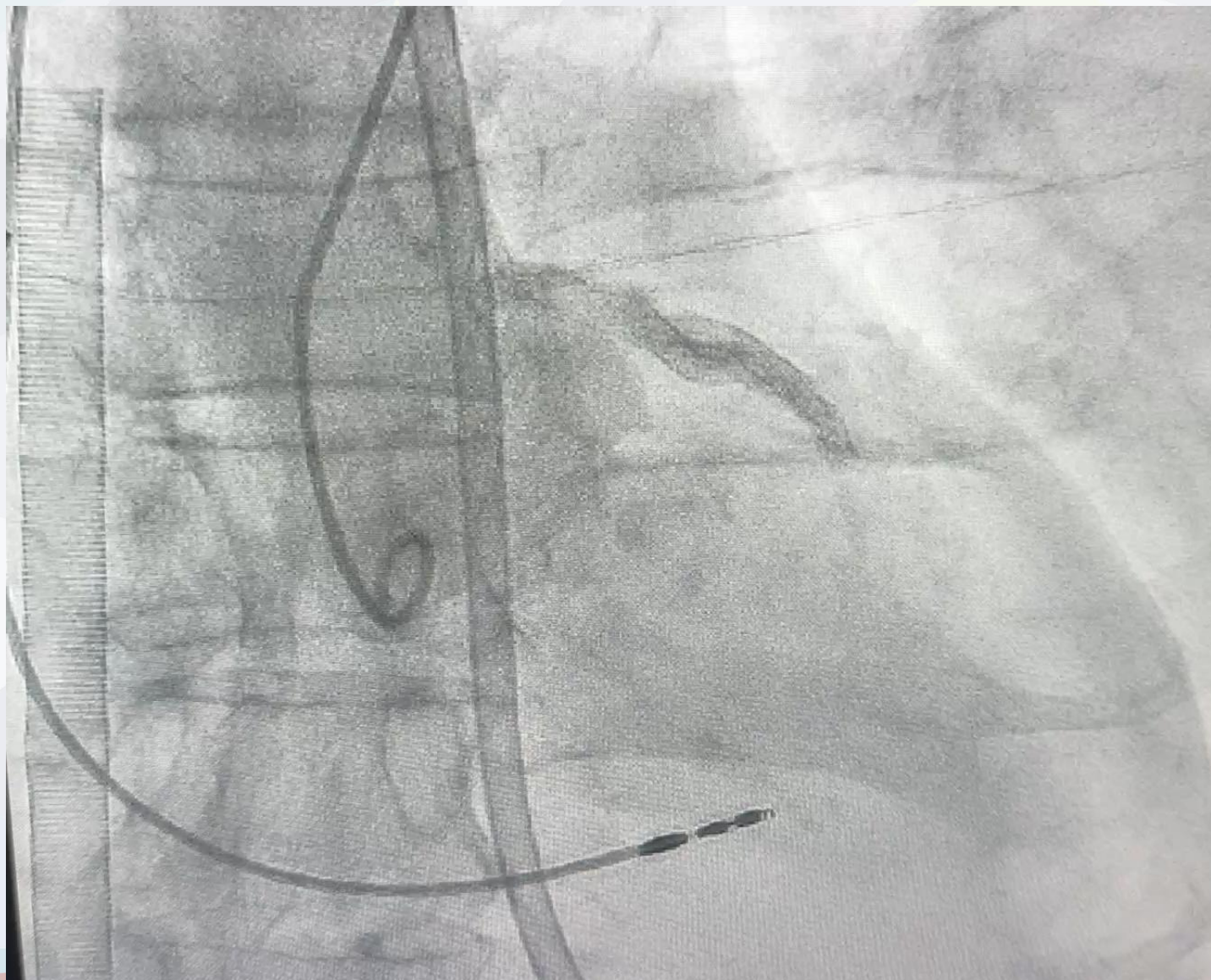
ESTENOSIS AÓRTICA + ENF.CORONARIA EN INSUF.CARDIACA AGUDA O SHOCK



ESTENOSIS AÓRTICA + ENF.CORONARIA EN INSUF.CARDIACA AGUDA O SHOCK



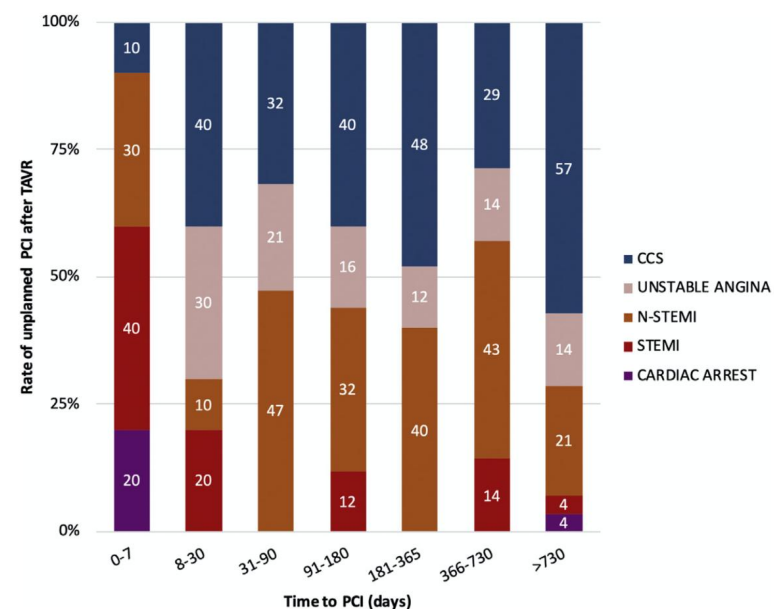
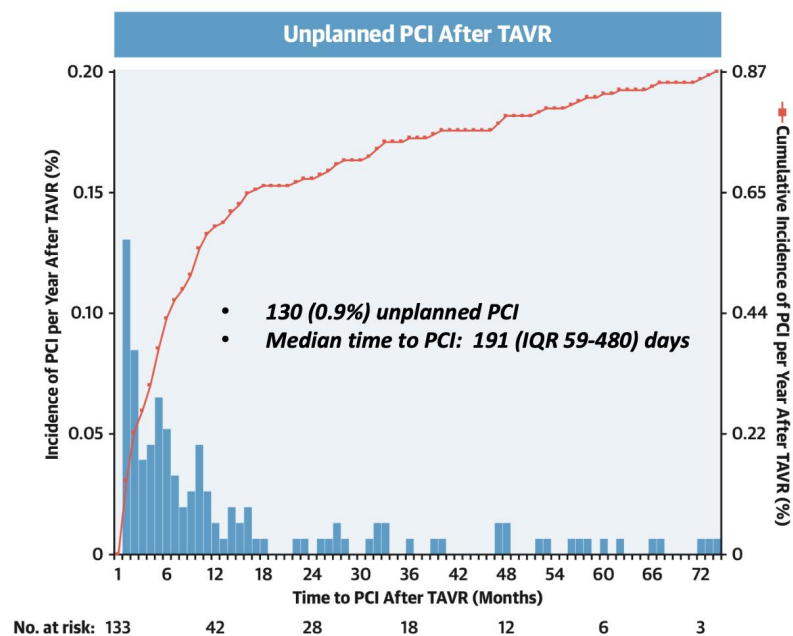
ESTENOSIS AÓRTICA + ENF. CORONARIA EN INSUF. CARDIACA AGUDA O SHOCK



UNPLANNED PCI AFTER TAVI

Multicenter Study: REVIVAL TAVI

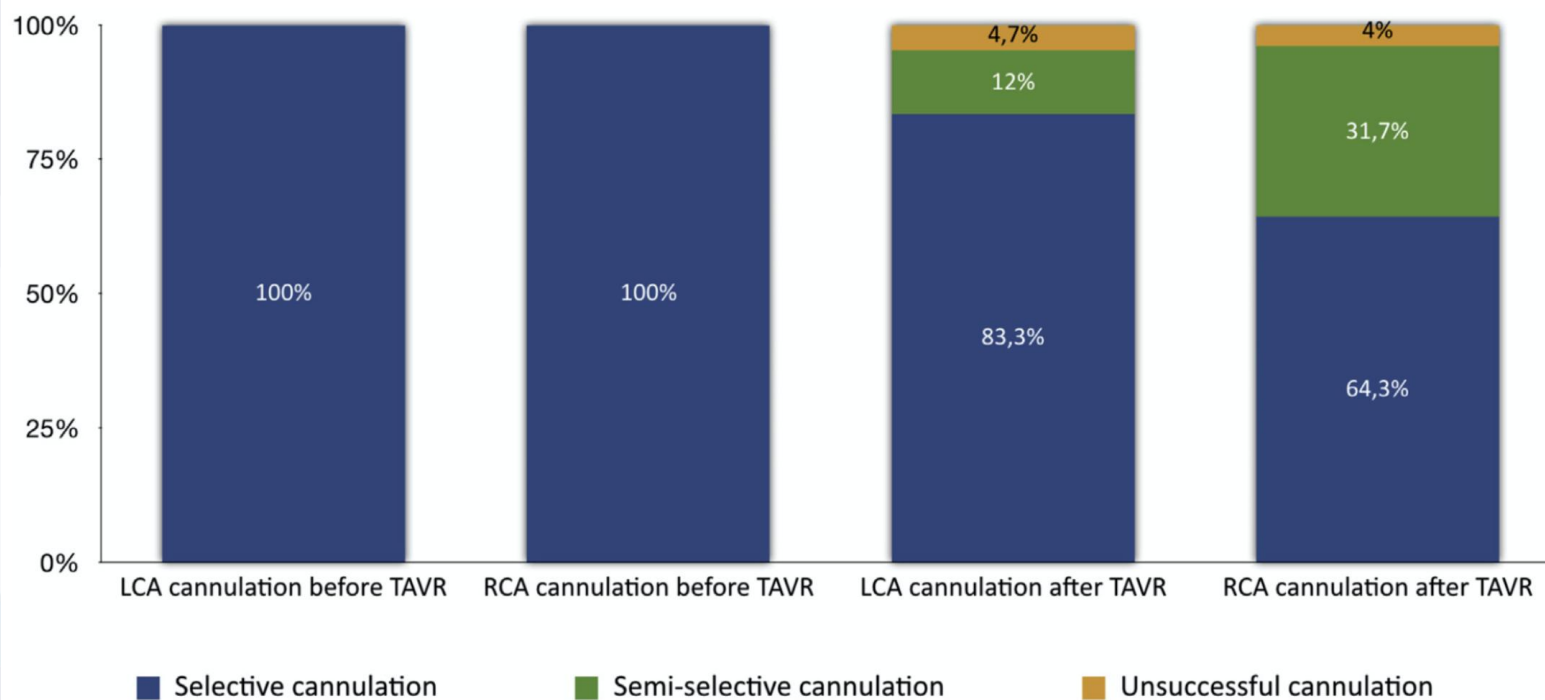
15,325 TAVI from 20 international centers



RE-ACCESS STUDY

300 PATIENTS:
41% Evolut, 32% Sapien 3/Ultra, 24% Acurate-neo, 3% Portico

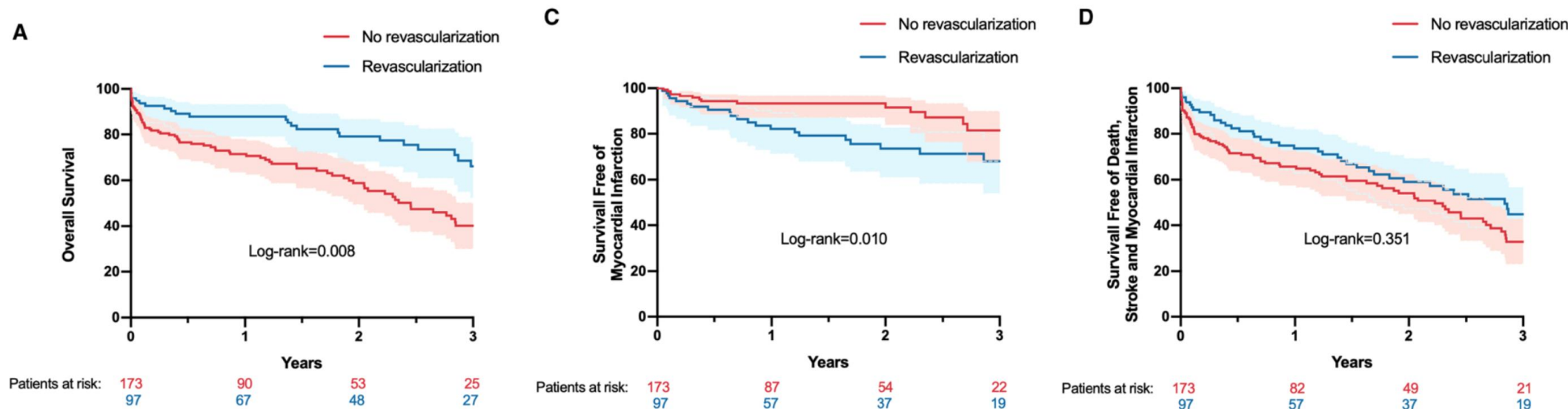
OUTCOMES OF CORONARY CANNULATION BEFORE AND AFTER TAVR



Barbanti M et al. JACC Intv 2020;13:2542-55

Multicenter cohort study

270 patients with ACS after a median time of 12 (IQR 5–17) months post-TAVR.

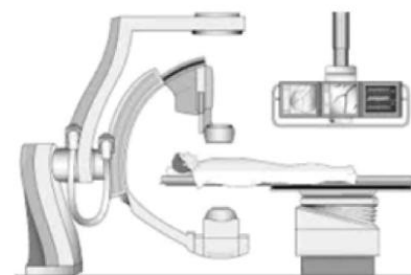


**Don't be afraid of post-TAVI PCI,
JUST PLAN IT !**



¿CÓMO HACER PCI POST-TAVI?

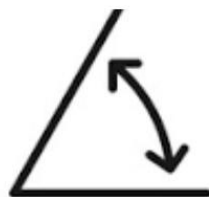
USAR EL TAC PRE-TAVI



Coronary
evaluation



Optimal fluoroscopic
viewing angles



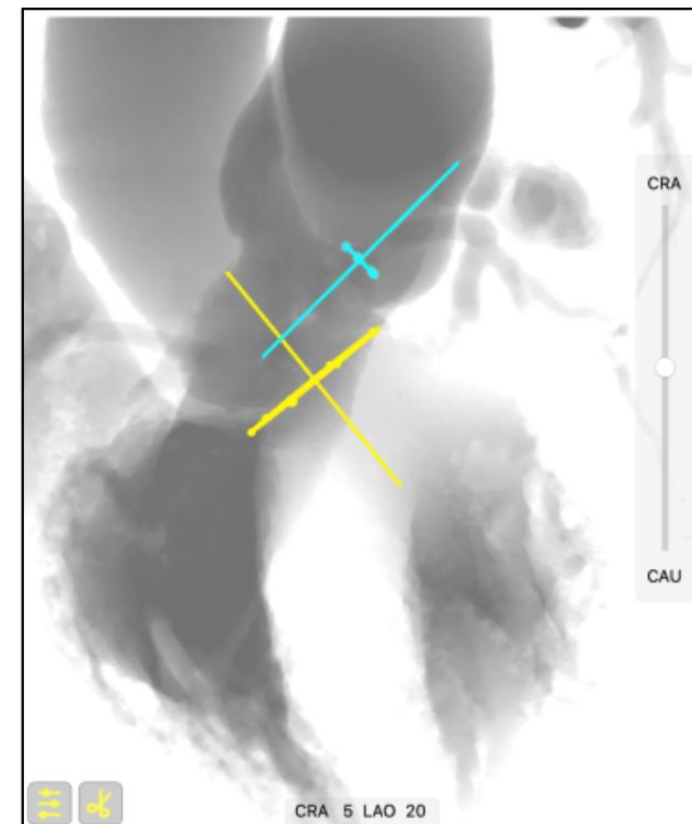
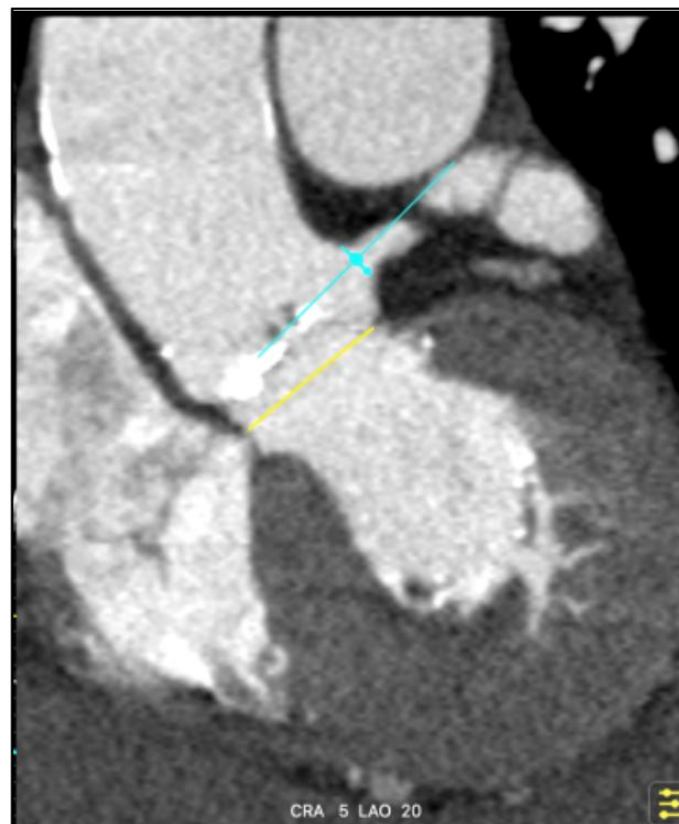
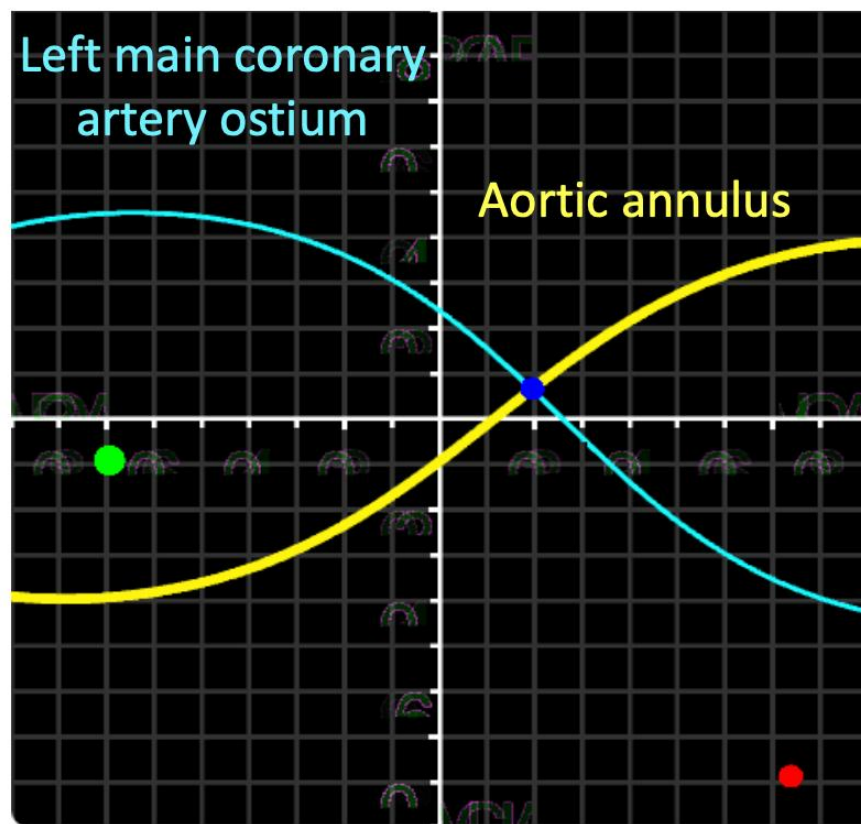
Material
selection



PCI
strategy

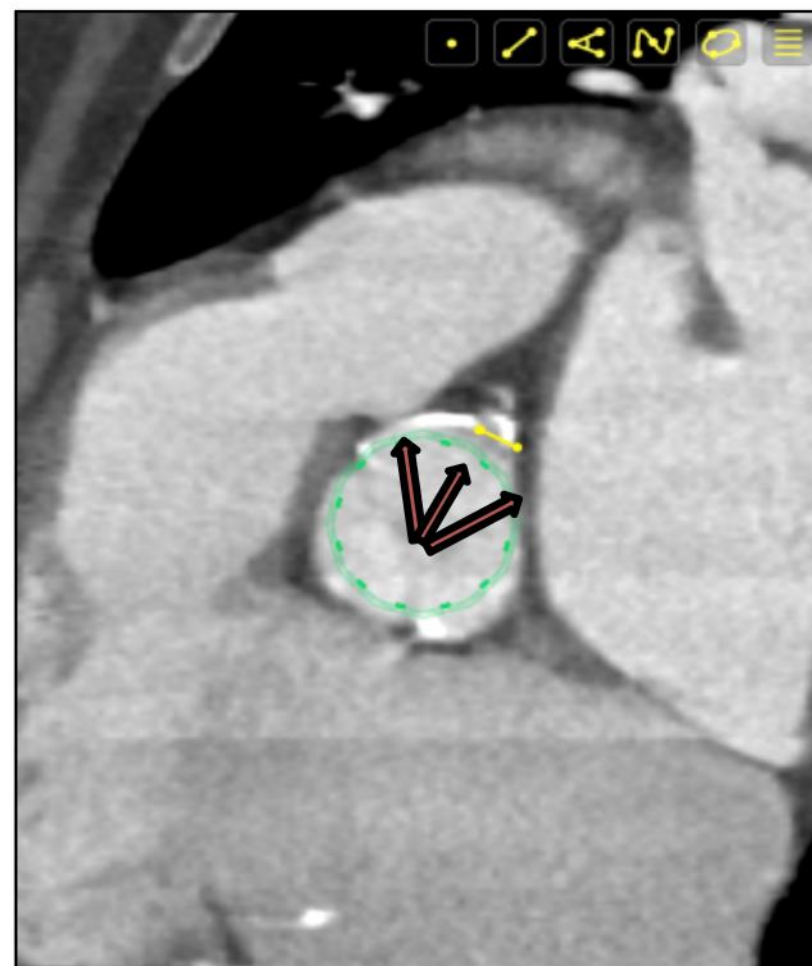
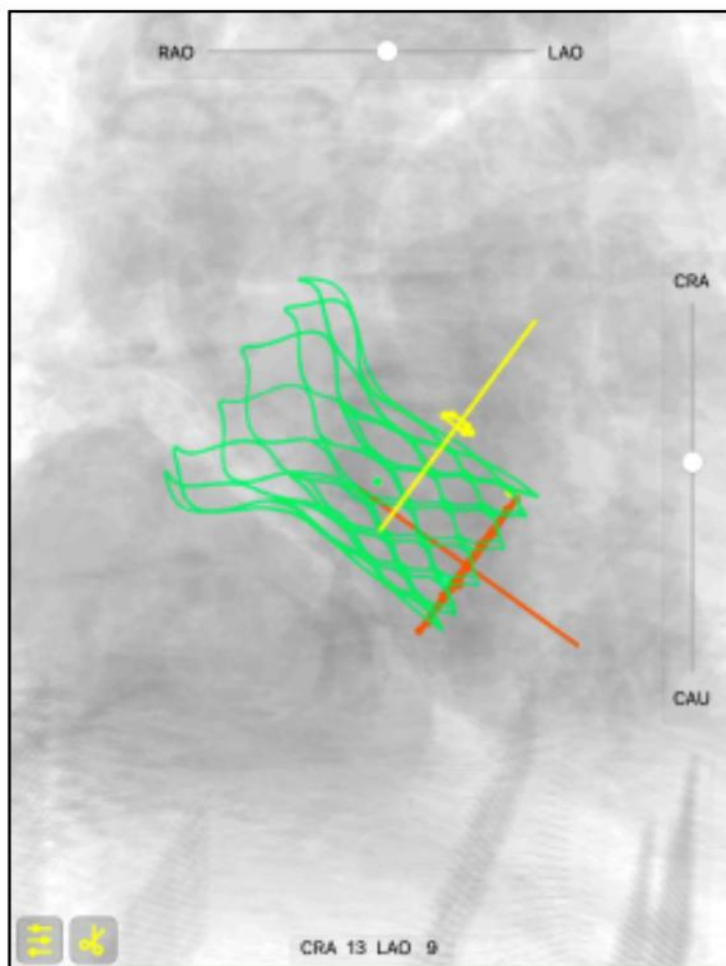


¿CÓMO HACER PCI POST-TAVI?

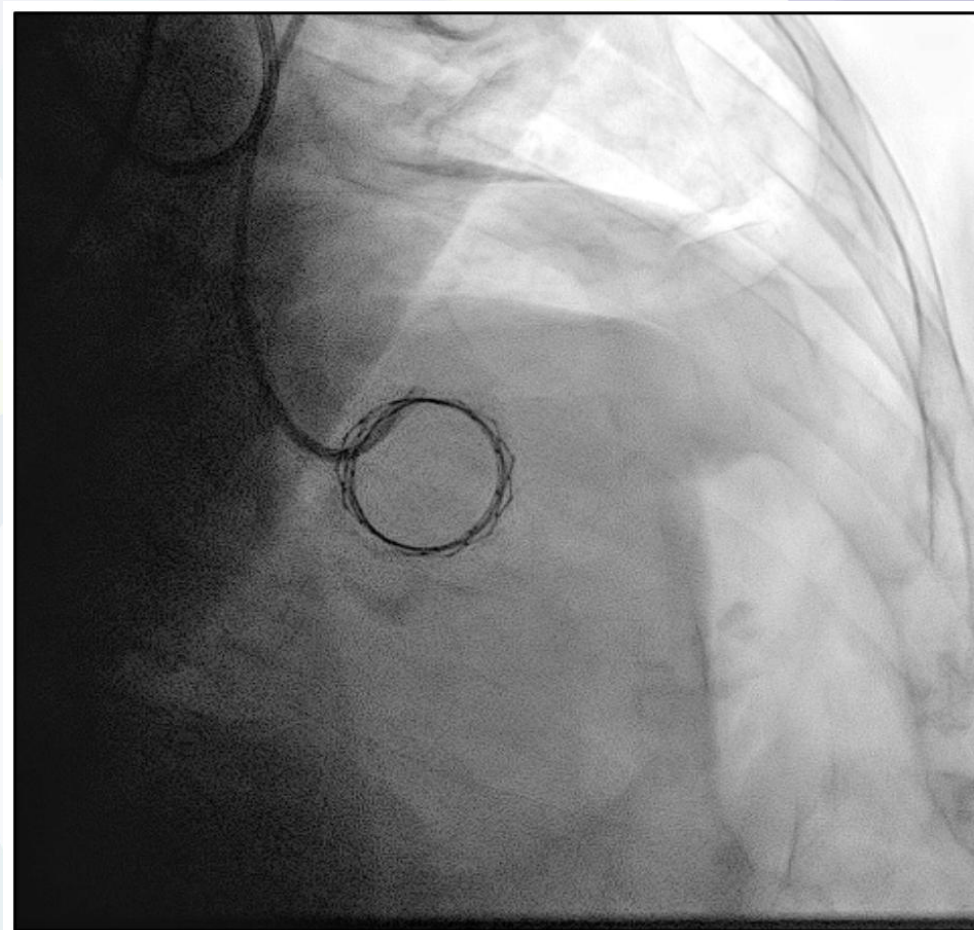
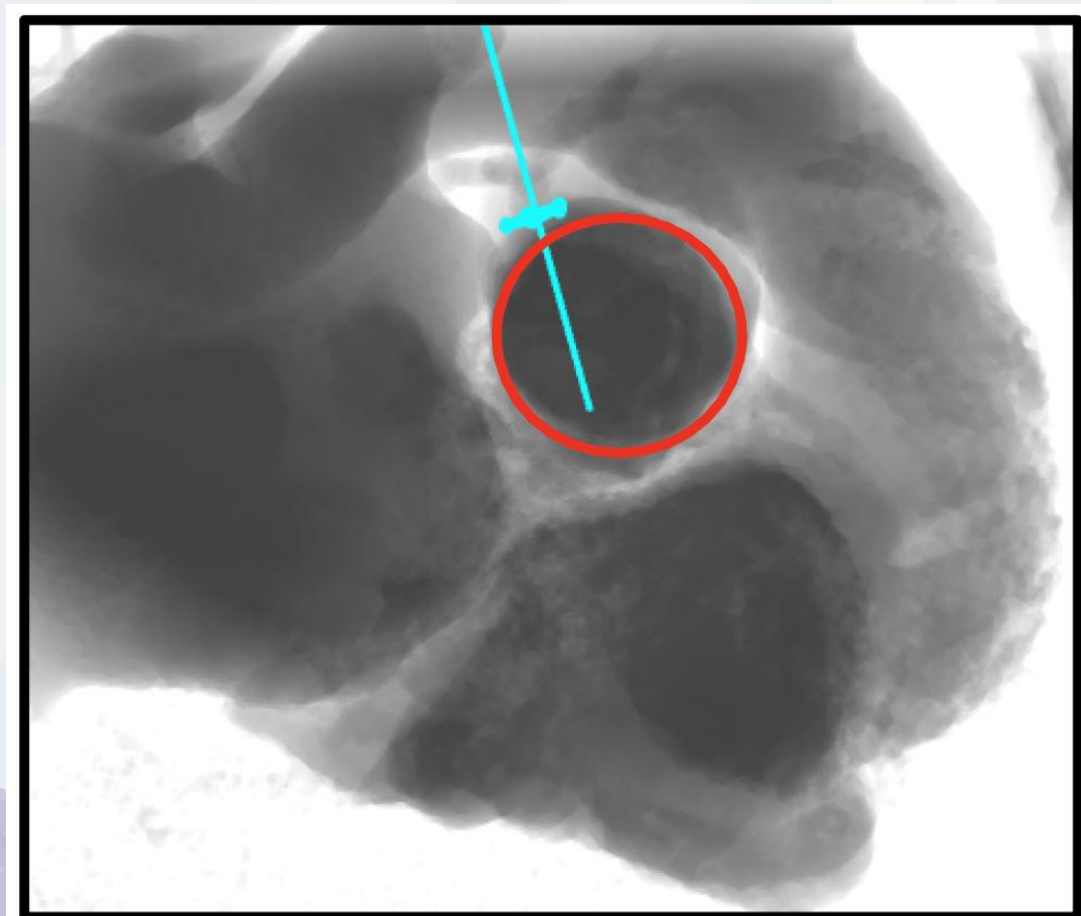


¿CÓMO HACER PCI POST-TAVI?

Finding the co-axial cell



¿CÓMO HACER PCI POST-TAVI?



STEP 1

¿CÓMO HACER PCI POST-TAVI?

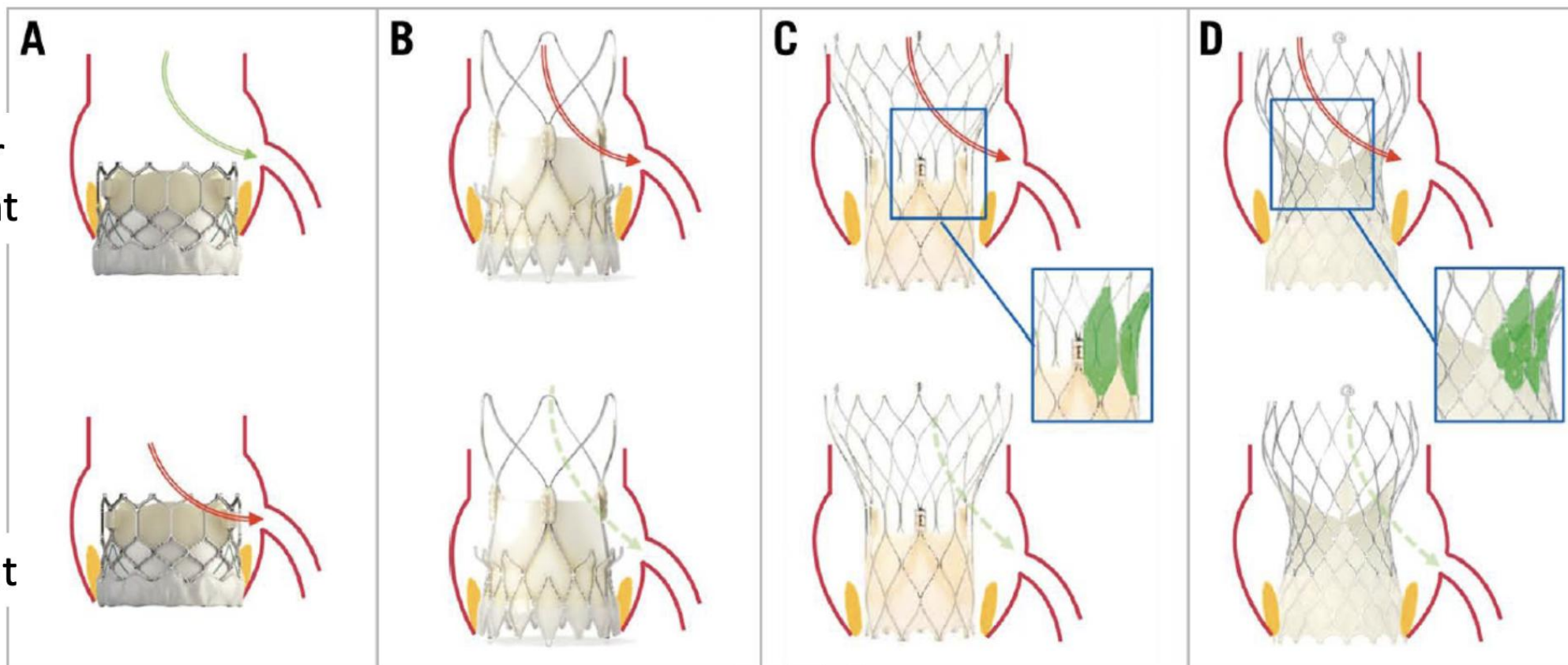
AORTOGRAM: **Implantation depth**



Regular or
low implant



High implant



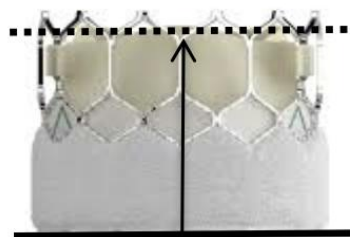
STEP 2

¿CÓMO HACER PCI POST-TAVI?

THV TYPE

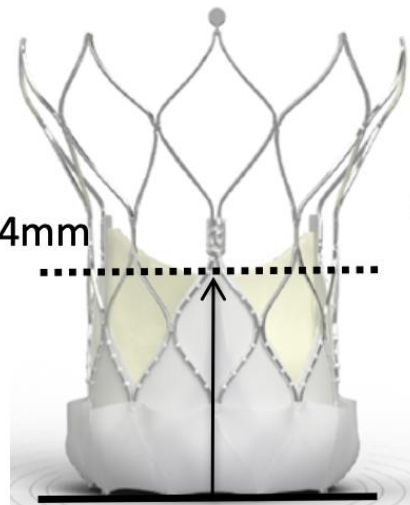
Leaflet Height

15-22mm



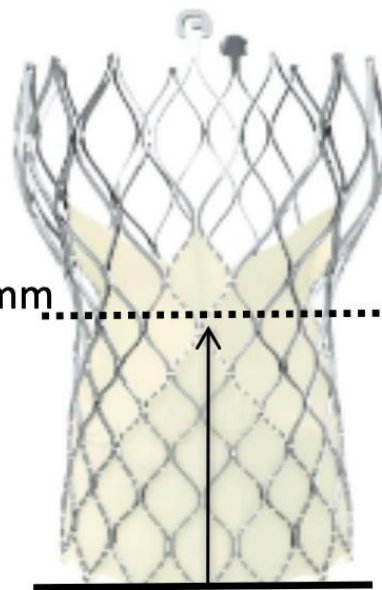
Sapien 3/ultra

21-24mm



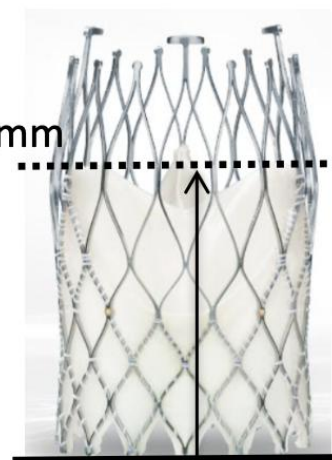
Navitor

26mm



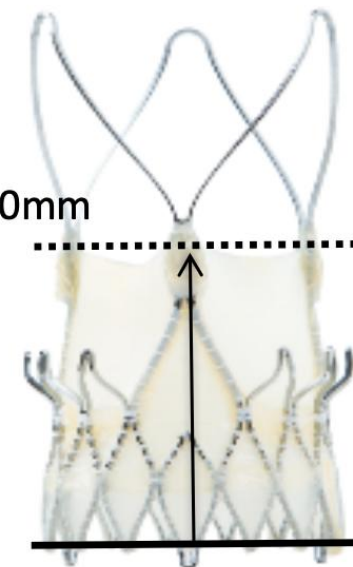
Evolut Pro

25-29mm



Allegra

25-30mm



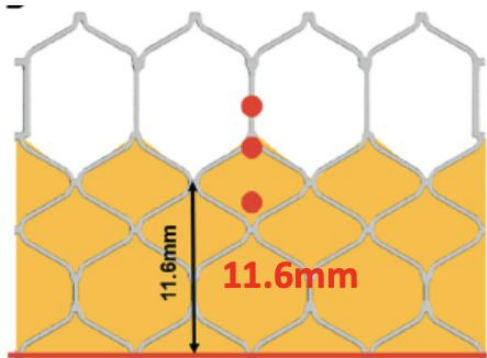
Acurate Neo 2

STEP 3

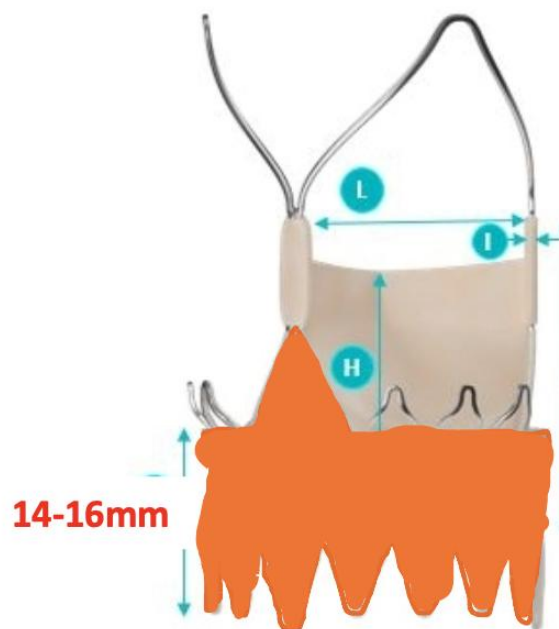
THV TYPE

¿CÓMO HACER PCI POST-TAVI?

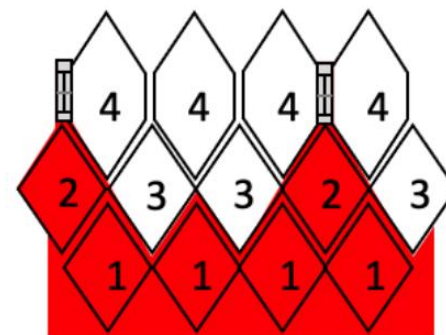
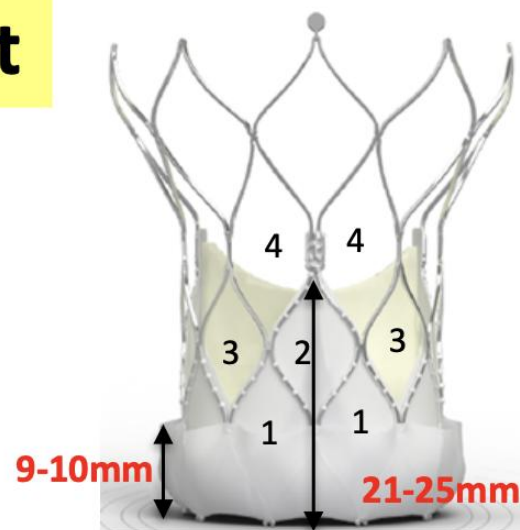
Sealing skirt height



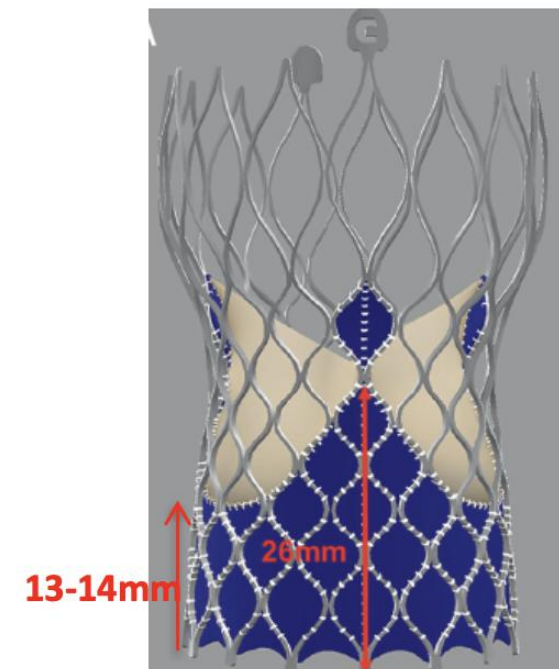
Sapien 3/ultra



Acurate Neo 2



Navitor



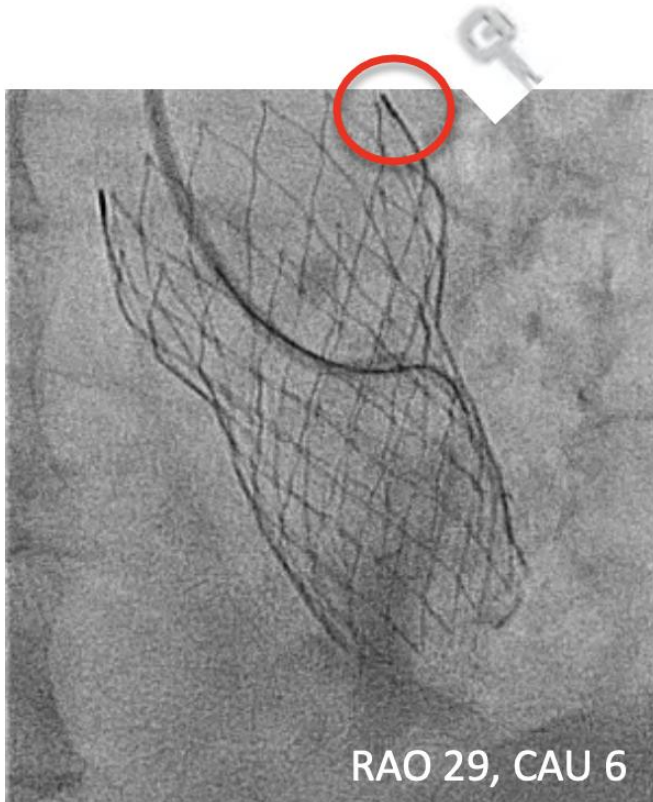
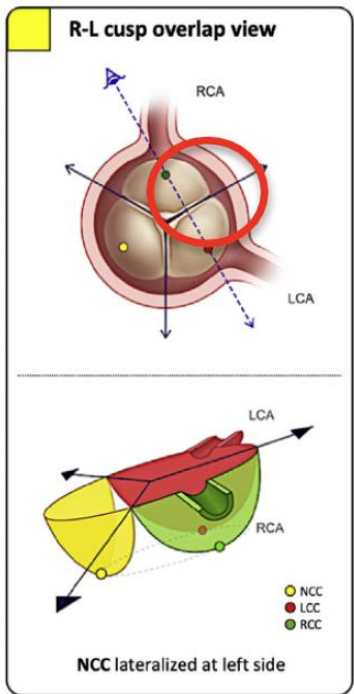
Evolut Pro

STEP 4

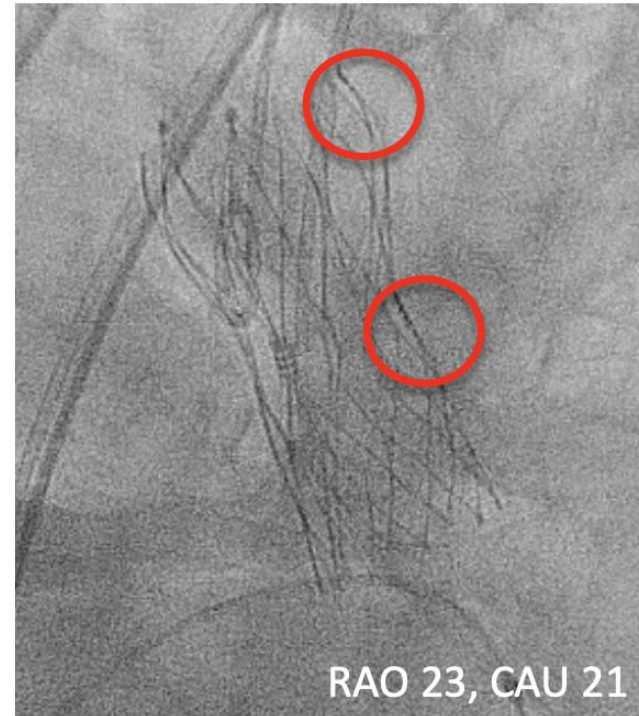
¿CÓMO HACER PCI POST-TAVI?

Is the THV aligned?

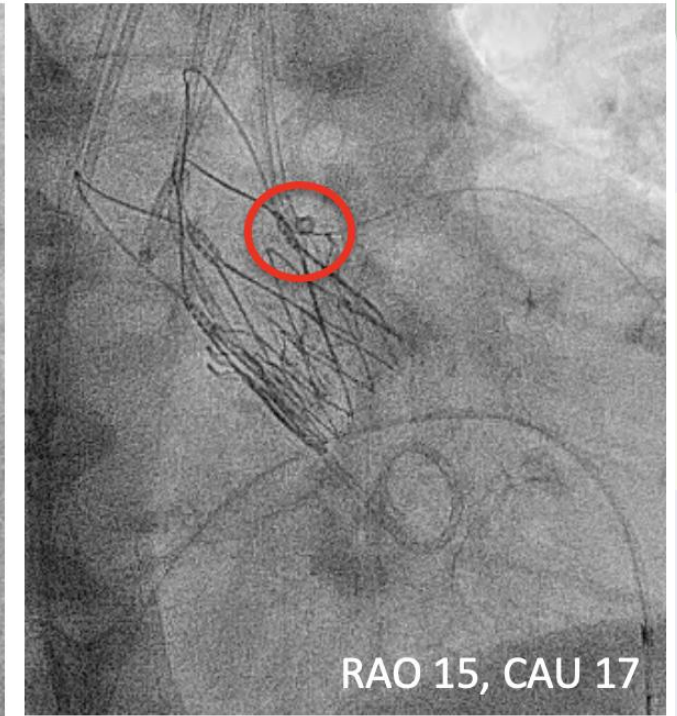
GO TO RIGHT AND CAUDAL



Evolut Pro



Navitor



Acurate Neo 2

¿CÓMO HACER PCI POST-TAVI?

Material: **Guiding catheter**

- Use the J-wire to enter the diamond in front (or the closest) of coronary ostia.
- Selective intubation is best achieved with **smaller GC** (downsize GC choice by 0.5) and try to **GO COAXIAL**

LEFT MAIN

1st Line: JL 3.5

2nd Line: XB 3.0 ; MP (strut above) or
Ikari Right 1.0 or JR 4.0

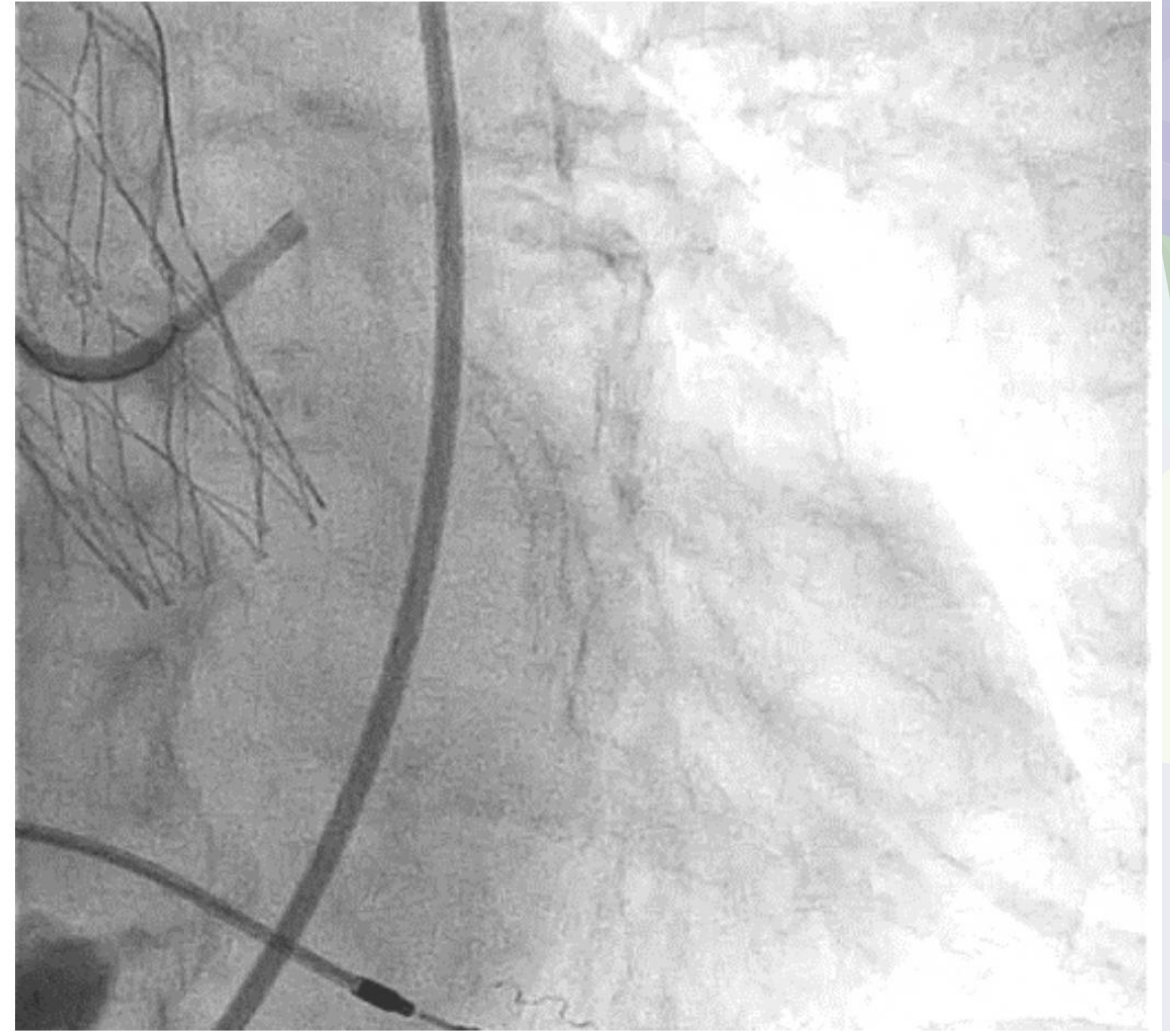
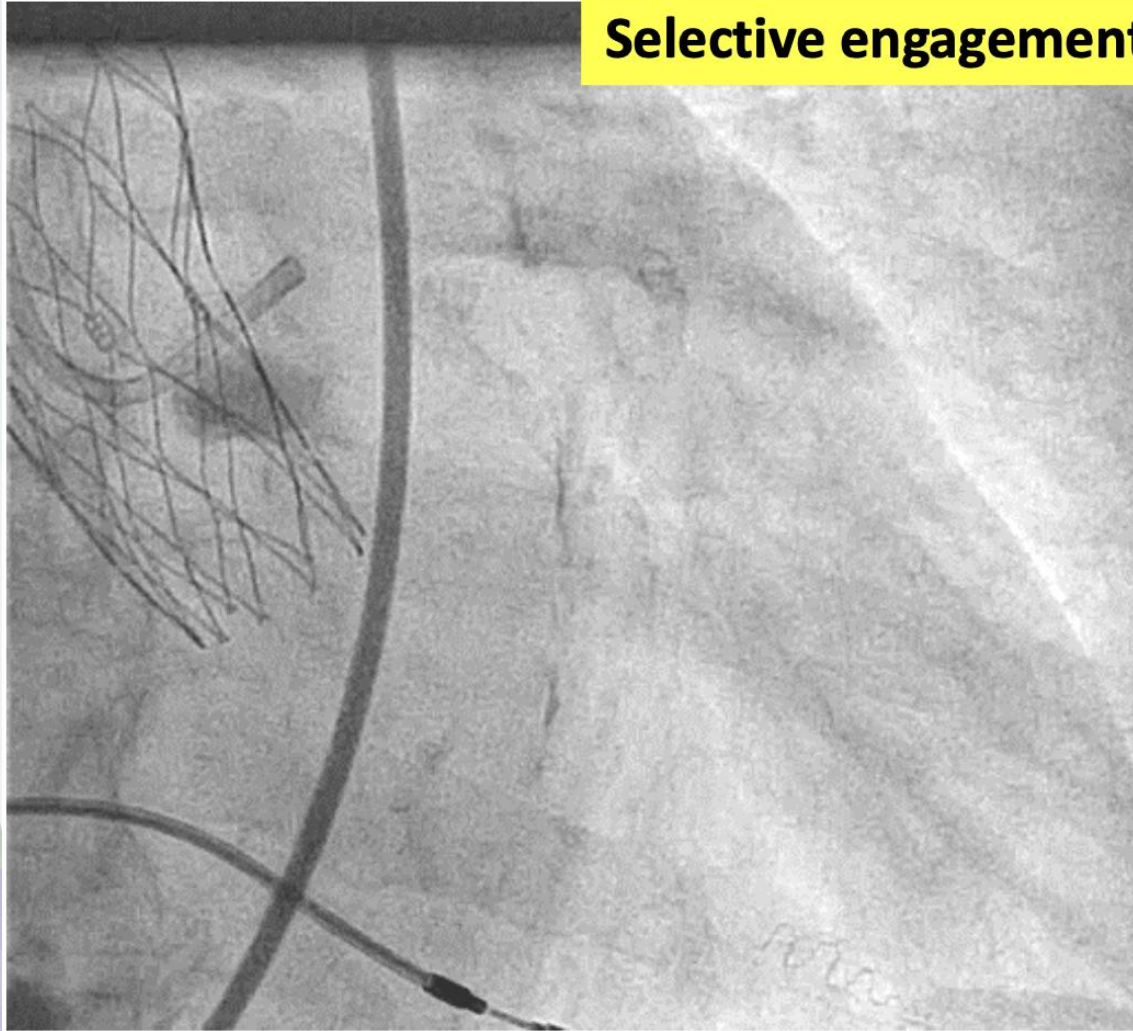
RIGHT CORONARY ARTERY

1st Line: JR 4.0 or AR 1.0

2nd Line: MP (strut above) or AR
2.0 (wide sinuses)

¿CÓMO HACER PCI POST-TAVI?

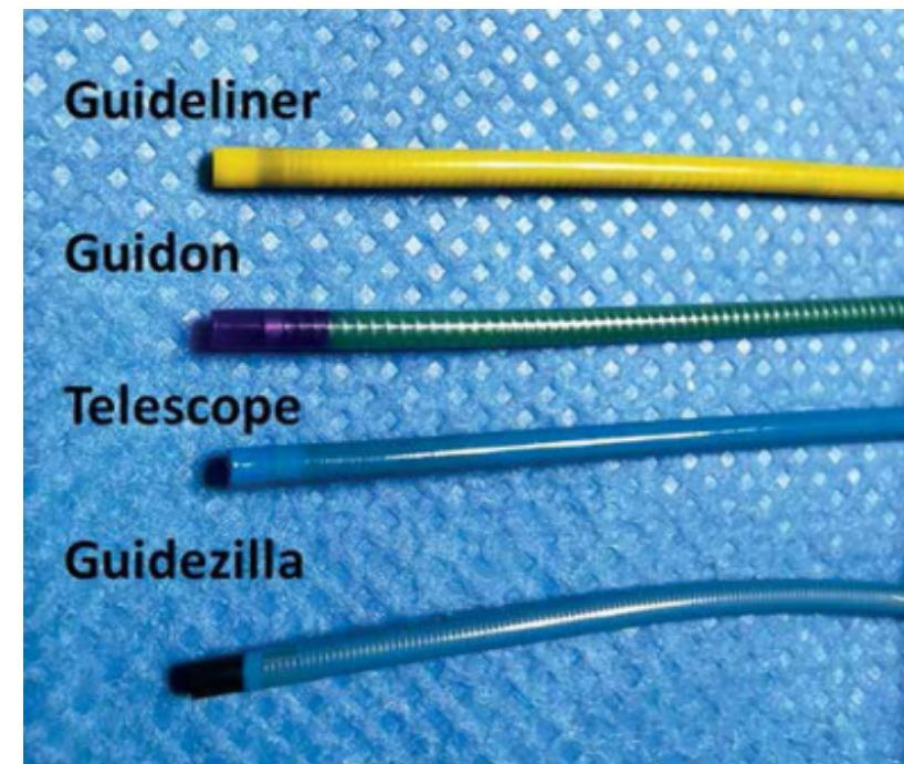
Selective engagement



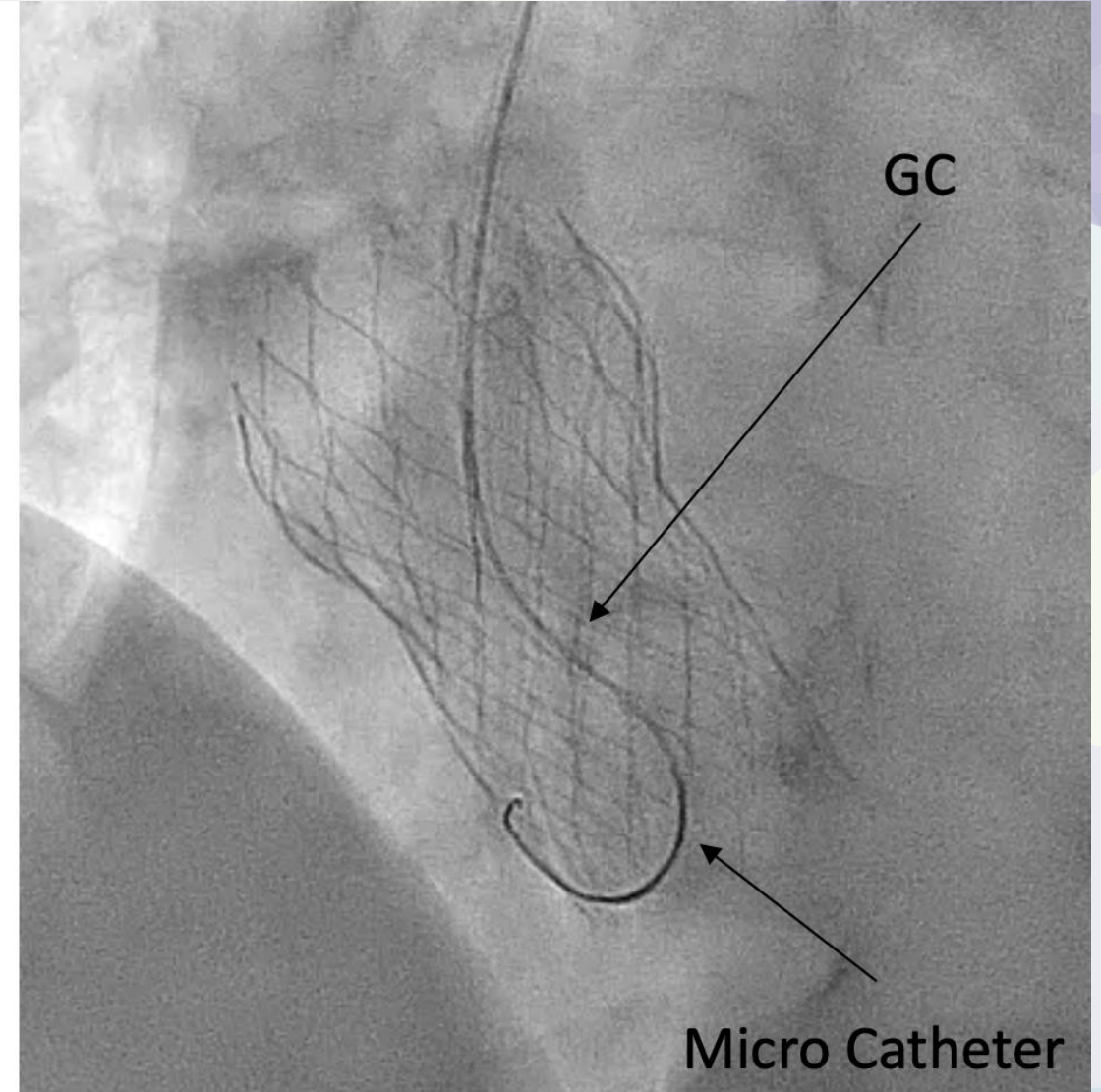
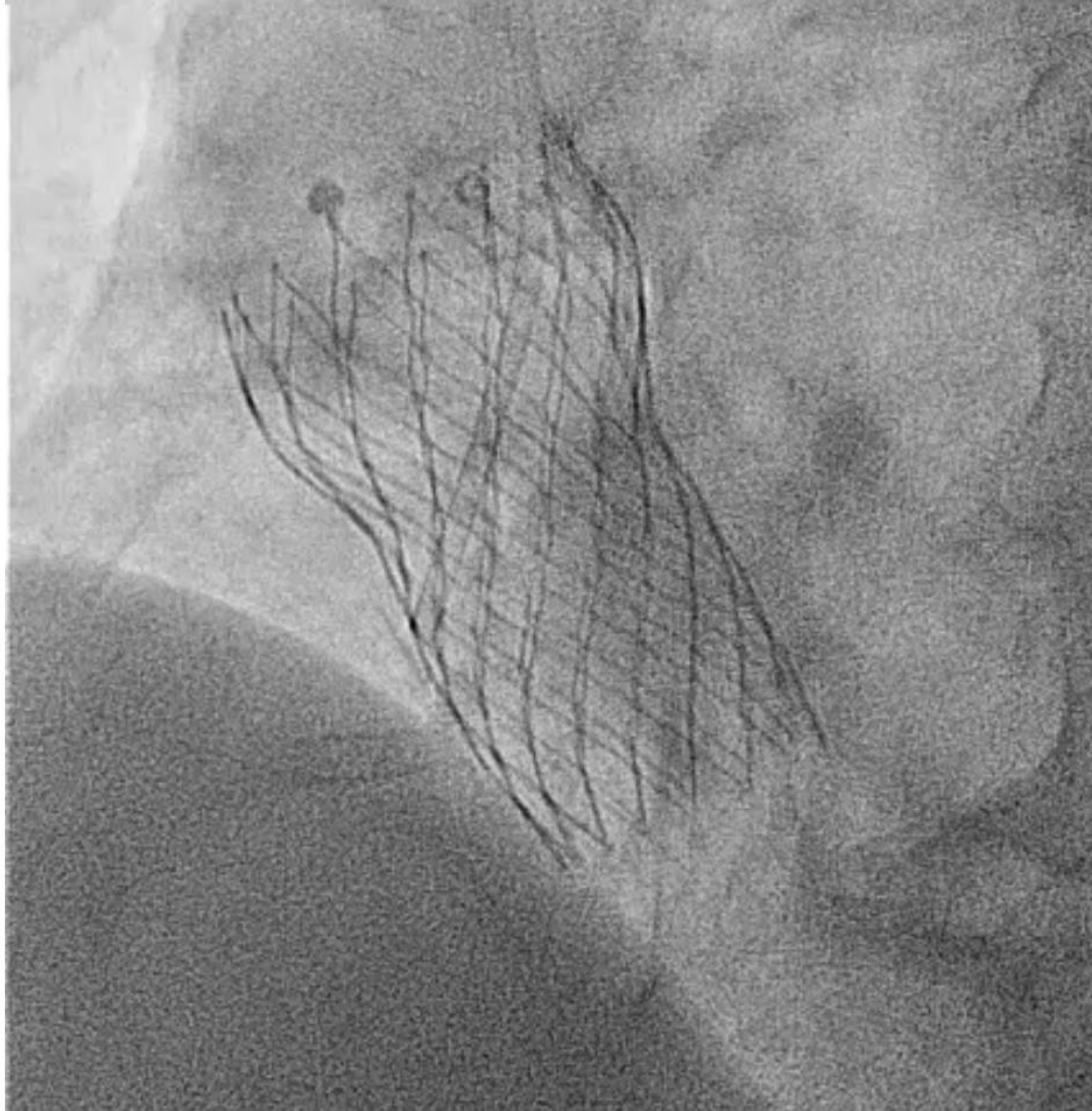
¿CÓMO HACER PCI POST-TAVI?

Material in case of **unselective engagement**:

- Leave PCI wire to find their place
- Use microcatheters inside the sinus
- Liberally use of GC extension



¿CÓMO HACER PCI POST-TAVI?



1. Evidencias crecientes para ICP **simultánea / post-TAVI**
2. Tendencia cada vez **más conservadora**
3. El momento de la ICP debe **elegirse para cada paciente**
4. Si es necesario, **sopORTE** hemodinámico
5. La selectivización coronaria **post-TAVI** debe planearse