

New Strategy for TAVI Implantation

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Conflictos de Interés

O Mendiz MD.

Medtronic: Proctor CoreValve, Speaker

BSCI; Proctor Acurate Neo

Edwards: Proctor

Philips: Speaker

Cannon; Speaker

The beginning of our journey



Sept 2099

First Cases Enthusiasm

Operator & Proctors



Valve preparation behind operators



Surgeon



First Contribution

- Direct TAVI Implantation without Predilatation
 - Rationale: Less maneuvers >>>> ↓ □ periprocedural stroke rate

Feasibility of Transcatheter Aortic Valve Implantation Without Balloon Pre-Dilation

A Pilot Study

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Jose Mangione, MD,¶ Lutz Buellesfeld, MD#

Bonn and Essen, Germany; Sao Paulo, Brazil; Buenos Aires, Argentina; and Bern, Switzerland

Objectives The purpose of this pilot study was to evaluate the feasibility and safety of transcatheter aortic valve implantation (TAVI) without balloon pre-dilation.

Background Balloon pre-dilation of the stenosed aortic valve is currently believed to be a necessary step for valve preparation before device placement in patients undergoing TAVI and, therefore, is considered an obligatory part of the procedure. However, clear evidence supporting this policy is lacking. In contrast, pre-dilation might be responsible in part for distal embolizations as well as atrioventricular conduction disturbances seen during TAVI procedures.

Methods A total of 60 consecutive patients (mean age 80.1 ± 6.4 years, 53% female, mean logistic EuroScore $23.3 \pm 15.2\%$) undergoing TAVI using the self-expanding Medtronic CoreValve prosthesis (Medtronic, Minneapolis, Minnesota) have been prospectively enrolled at 13 international centers.

Results Pre-procedural mean transaortic valve gradient was 47.8 ± 15.5 mm Hg, mean effective orifice area was 0.67 ± 0.15 cm². Technical success rate was 96.7% (58 of 60) of patients. Post-dilation was performed in 16.7% (10 of 60) of patients. Post-procedural mean valve gradient was 4.4 ± 2.0 mm Hg. Circular and noncircular valve configuration was present in 41 and 19 cases (68.3% vs. 31.7%), respectively, with similar effective orifice areas (1.74 ± 0.10 cm² vs. 1.71 ± 0.22 cm², $p = NS$). In-hospital mortality, myocardial infarction, stroke, and major vascular complications occurred in 6.7% (4 of 60), 0%, 5%, and 10% of patients. There was no valve embolization. New permanent pacing was needed in 11.7% (7 of 60) of patients.

Conclusions Transcatheter aortic valve implantation without balloon pre-dilation is feasible and safe, resulting in similar acute safety and efficacy as the current standard approach of TAVI with pre-dilation. (J Am Coll Cardiol Intv 2011;4:751–7) © 2011 by the American College of Cardiology Foundation

It is feasible and safe

Transcatheter Aortic Valve Implantation Without Balloon Predilation: A Single-Center Pilot Experience

Oscar A. Mendiz,^{*} MD, Hugo Fraguas, MD, Gustavo A. Lev, MD, Leon R. Valdivieso, MD, and Roberto R. Favaloro, MD

Aim: To assess the results of transcatheter aortic valve implantation (TAVI) using the Medtronic CoreValve prosthesis (Medtronic, Minneapolis, MN), without balloon predilation, in high-risk patients with degenerated severe aortic stenosis. **Methods and Results:** Fifty-one consecutive patients who underwent direct TAVI, 98% through a transfemoral approach. Patients were 79 ± 8 years of age, 74% in New York Heart Association classes III or IV and at high risk for surgical valve replacement (mean logistic EuroScore 20 ± 15). Mean aortic valve area was 0.7 ± 0.2 cm². Procedural success rate was 94.2%. In-hospital, there were 2 deaths, 1 minor stroke with minimal sequelae, and 14 (28%) pacemaker implantation. At 30 days, there was one additional stroke and no new deaths. The mean postprocedural transprosthetic gradient was 15 ± 5 mm Hg; periprosthetic severe regurgitation was absent and moderate in one case. After a median follow-up of 7 months, there were five additional deaths (two cardiac), while 84% of survivors were in New York Heart Association classes I or II. **Conclusions:** These results suggest that direct CoreValve implantation in patients with severe aortic stenosis is feasible and may lead to hemodynamic and clinical improvement in patients who are poor candidates for aortic valve surgery, pending confirmation in larger series with longer follow-up. © 2013 Wiley Periodicals, Inc.

Key words: aortic stenosis; direct transcatheter aortic valve implantation; device underexpansion

INTRODUCTION

Transcatheter aortic valve implantation (TAVI) is emerging as a true alternative to surgical valve replacement in high-risk patients affected with symptomatic

selected by our multidisciplinary team had severe aortic stenosis, and deemed high surgical risk (age ≥ 80 years or logistic EuroScore ≥ 15 , or 1 to 2 high-risk comorbidities such as cirrhosis of the liver, pulmonary insufficiency, previous cardiac surgery, systolic pulmo-

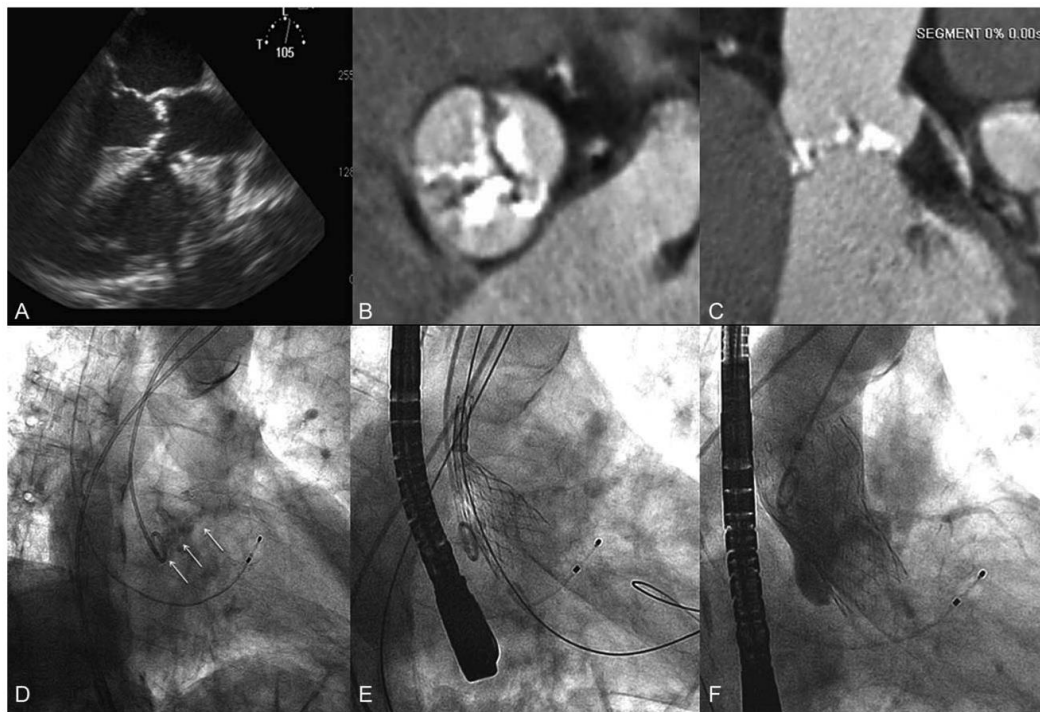


Fig. 1. TEE sagittal image (A), coronal and transverse (B and C) cross-sectional CT images showing severe aortic valve calcification. Left oblique angiographic images: at baseline (D) showing severe calcification at the level of the aortic cusps (arrows), during (E) and after (F) direct CoreValve deployment. Note device placed at correct height without aortic regurgitation.

Final Conclusion:

- Stroke rate is similar with or without predilatation
- Final conclusion:
 - Predilatation should be used at operators' discretion

What We Have Learned from TAVI Evidence?:

EVIDENCE:

What do we know?

- There is not a one single trial showing that SAVR is superior to TAVR, according to periprocedural and middle-term follow-up outcomes.

TAVR EVIDENCE:

- **Extreme Risk: (5y F-Up)**
 - PARTNER IB
 - CoreValve Extreme Risk (registry)
- **High Risk: (5y Fup)**
 - CoreValve Pivotal Trial
 - PARTNER IA
- **Intermediate Risk;**
 - SURTAVI
 - NOTION (7y F-Up)
 - PARTNER IIA
 - UK TAVI
- **Low Risk: (2y F-Up)**
 - PARTNER III
 - Low Risk CorValve Trial



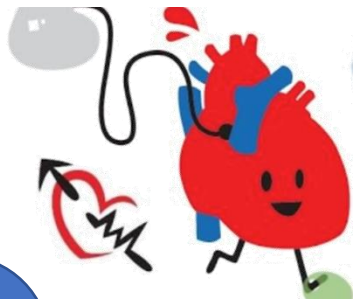


Potential Limitations N°1: Durability



- we don't want an early pit stop (new intervention) because an early device deterioration





Potential Limitation N° 2: Conduction Disturbances (PPMI)

Conduction Disturbances (PPMI)

Conduction disturbances after TAVR: All Cause Mortality

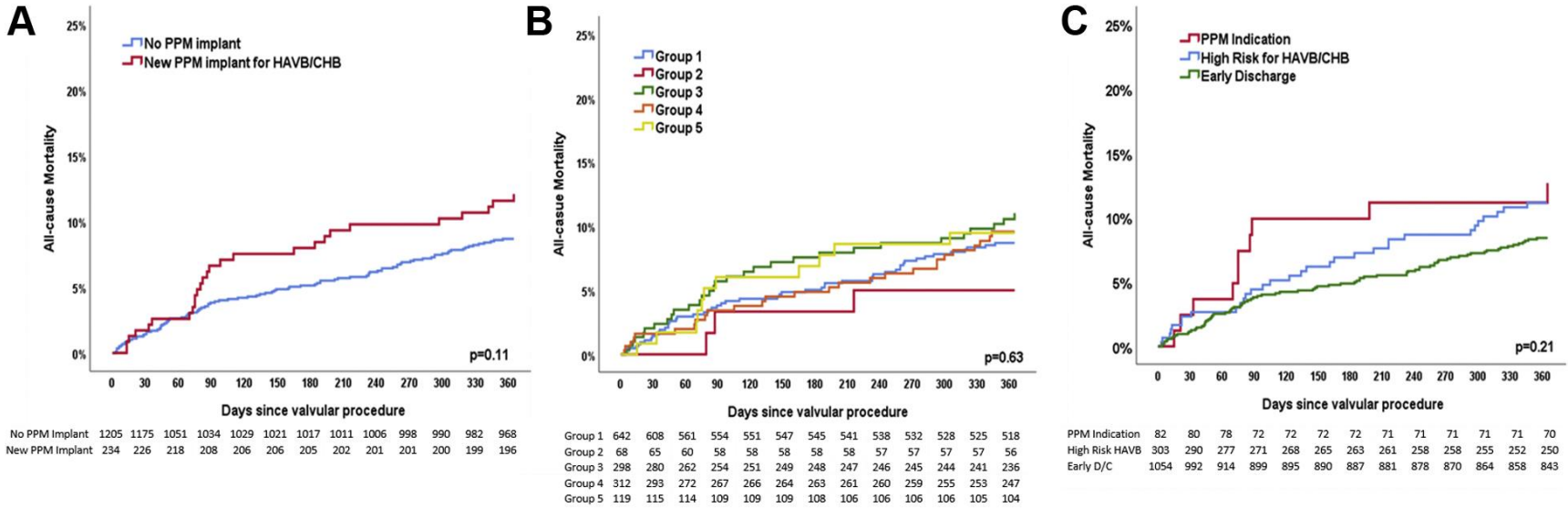
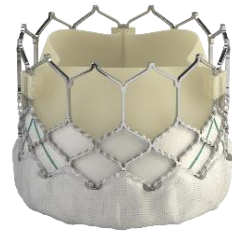


Figure 4: All-Cause Mortality After TAVR

All-cause mortality after TAVR in Kaplan-Meier analysis is shown according to need for PPM implantation for HAVB or CHB within the first 30 days (A), the recommendation of the algorithm (B), and the initial group assignment (C). Differences in all-cause mortality were assessed using the log-rank test. D/C = discharge; other abbreviations as in Figures 1 and 3.

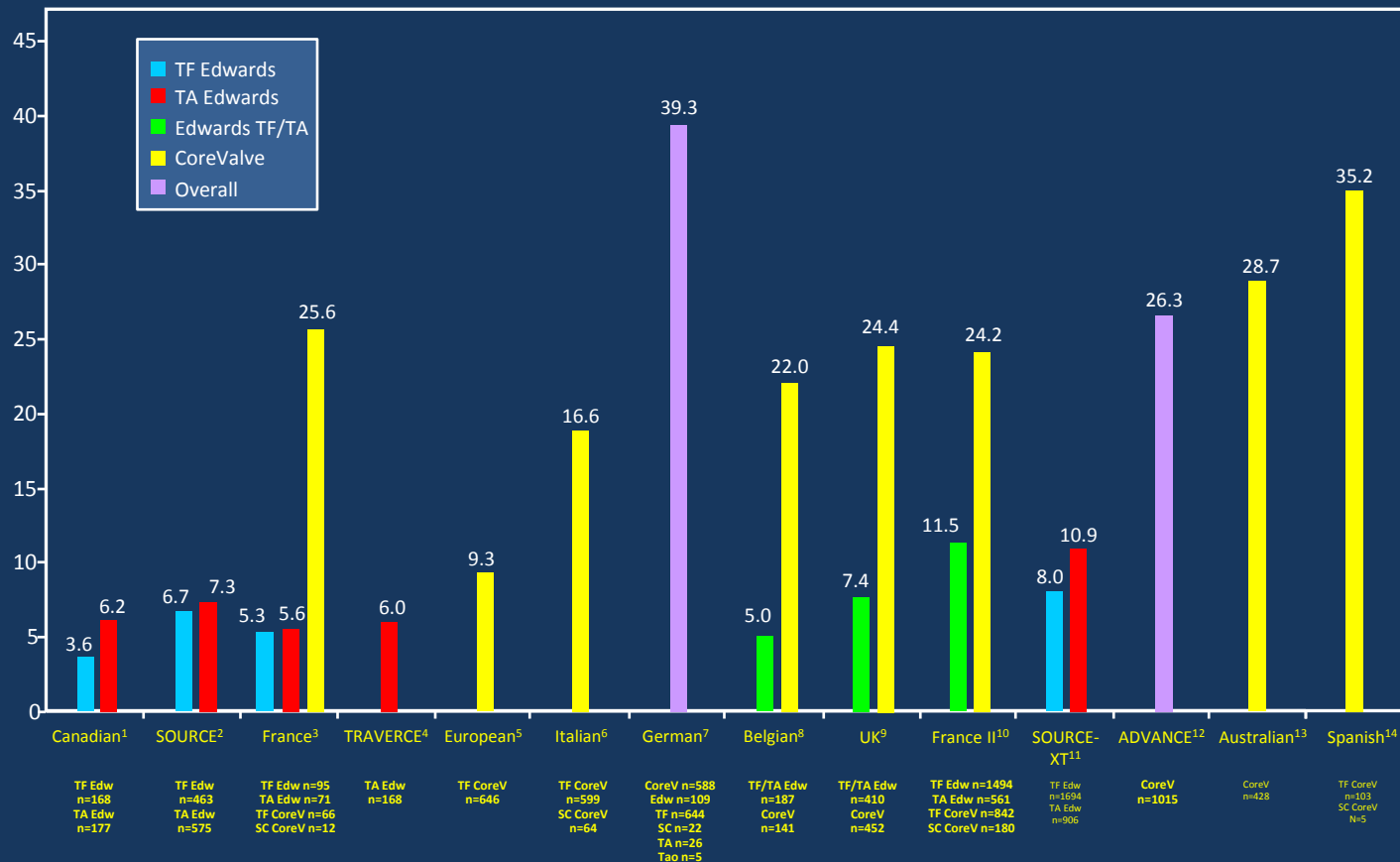
Conduction Disturbances with BEV



30-day PPMI rate after TAVI

PARTNER I	6.4%
PARTNER II	3.8%
PARTNER III	6.5%

Need for Pacemaker Implantation Following TAVI



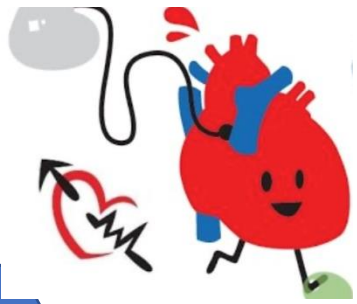
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 2-Thomas et al, Circulation 2010
 3-Eltchaninoff et al, Eur Heart J, 2010
 4-Walther et al, Eur J Cardiothorac Surg, 2010

5-Piazza et al, EuroInterv 2008
 6-Tamburino et al, Circulation, 2011
 7-Zahn et al, Eur Heart J, 2010
 8-Bosmans et al, Inter Cardiovasc and Thor Surg, 2011

9-Moat et al, JACC 2011
 10-Gilard et al, NEJM 2012
 11-Wendler et al, EuroPCR 2012
 12-Linke et al, TVT 2012

13-Meredith et al, TVT 2012
 14-Avanzas et al, Rev Esp. Cardiol 2010

Edw:Edwards
 CoreV: Corevalve
 TF: transfemoral
 TA: transapical
 Tao: transaortic



Potential Lin Conducti AVI: ces (PPMI)

Let's Try to Reduce PPMI rate by Using COVL view
for Implantation

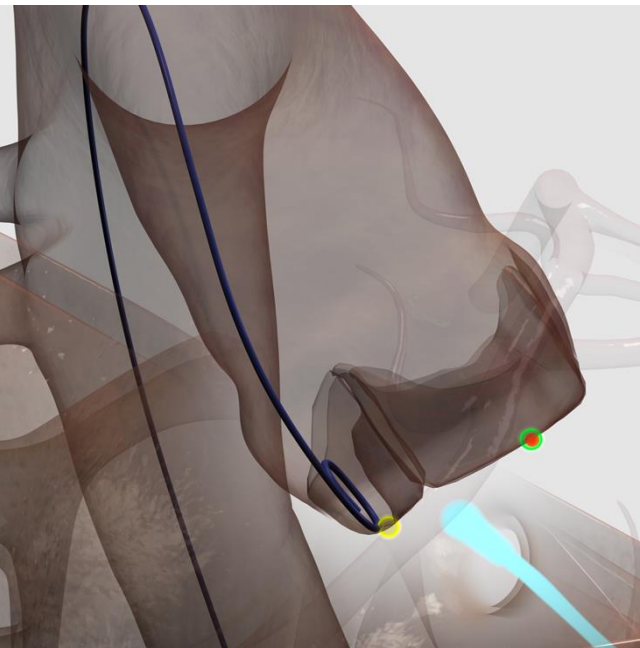
Conduction Disturbances (PPMI)

PRECISION !!

We need a **Reliable View** for an
Accurate Assessment of Depth

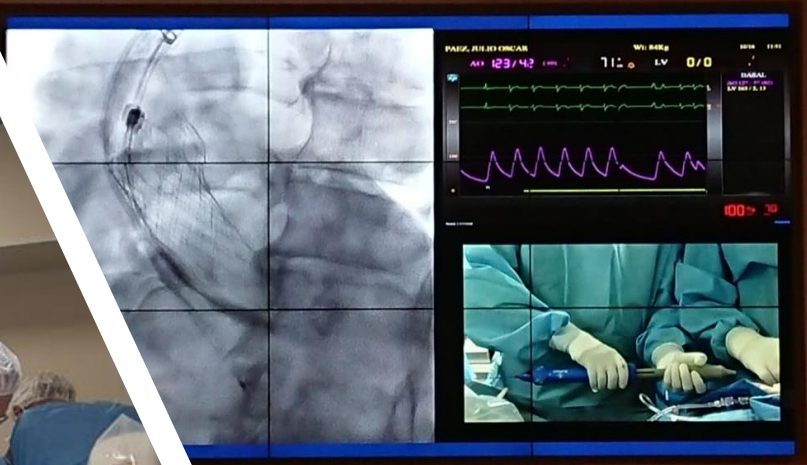
The cusp overlap view isolates the NCC to provide accurate assessment of deployment depth and:

- Maintains basal plane alignment of the coronary cusps
- Elongates the view of the LVOT
- Reduces or removes parallax in the marker band
- Provides an accurate view of the root regardless of angulation

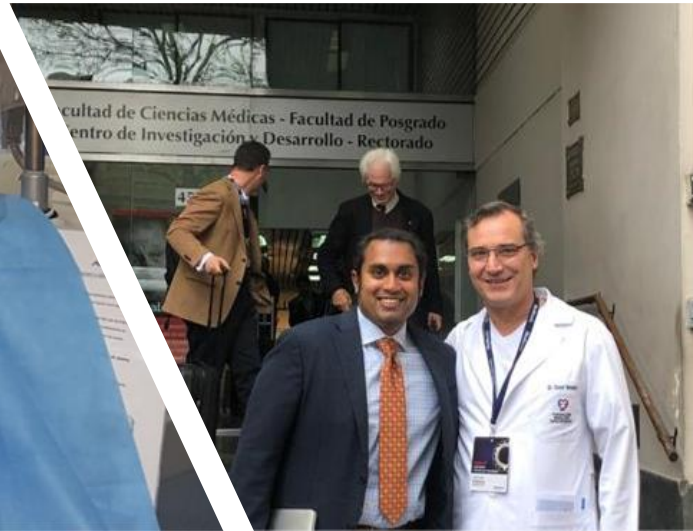


Courtesy Dr Hemal Gada

The Beginning of COVCL Experience at Favaloro Foundation

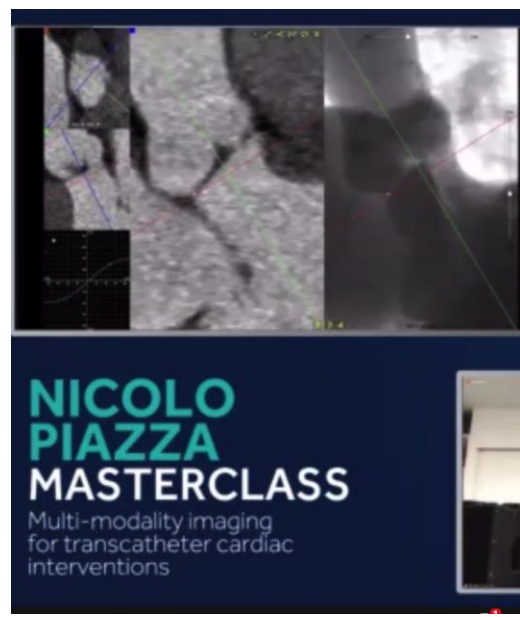


Oct 18, 2019

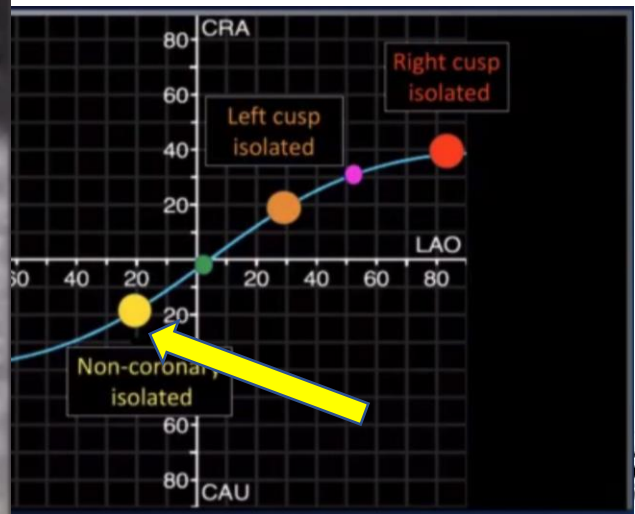
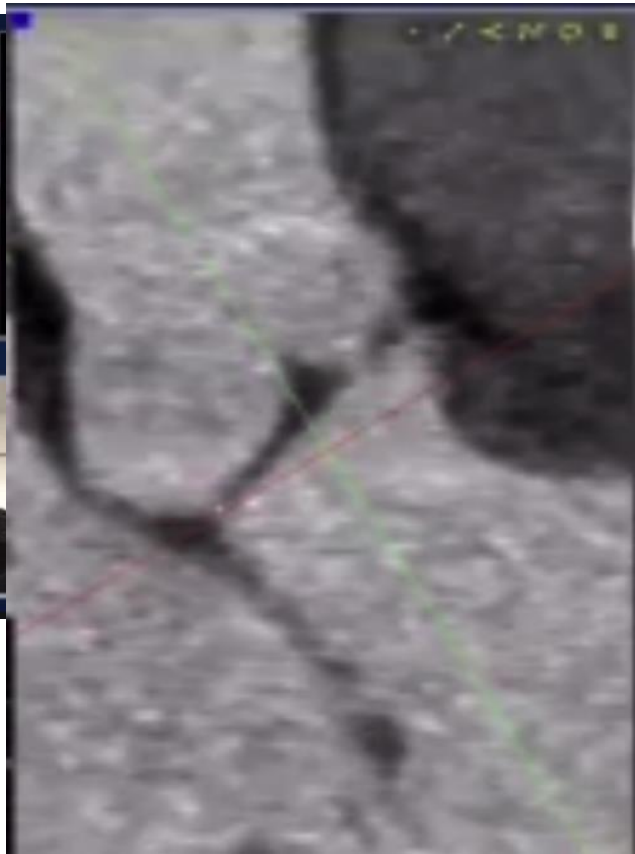


Tips & Tricks for COVL:

- To understand why this view would be useful



**NICOLO
PIAZZA
MASTERCLASS**
Multi-modality imaging
for transcatheter cardiac
interventions



Tips & Tricks for COVL: 3

• CT Pla

ProSizeAV Report

Oscar A Mendiz
Fundacion Favalaro
omendiz@favalaro.org

PDF Report ?

Reset

General Data:

Patient: [REDACTED]

Date of Birth: ----

Patient ID: 903524

Study Date: Apr 15, 2021

Examined by: Oscar A Mendiz

Aortic Annulus Measurements:

Perimeter:	64.9 mm (≠ 20.6 mm)
Area:	308.7 mm ² (≠ 19.8 mm)
Excentricity:	0.30 (16.1 x 23.1 mm)
Aortic Angulation:	45.1°
LCA Distance:	15.0 mm
RCA Distance:	12.3 mm

Calcium Assessment:

Cusp Calcification: Unknown

LVOT Calcification: Unknown

Annulus Calcification: Unknown

Implantation Plane:

RCC Anterior:	RAO 14° Cranial 0°
LCC Posterior:	RAO 52° Caudal 32°
NCC Posterior:	LAO 49° Cranial 42°
LV View:	RAO 30° Caudal 16°

Access:

Planned Access: Unknown

Pigtail Access: Unknown

Comments:

Area: 308.7mm²
Perimeter: 64.9mm

Max: 23.1mm
Min: 16.1mm

Height: 15.0mm
Height: 12.3mm

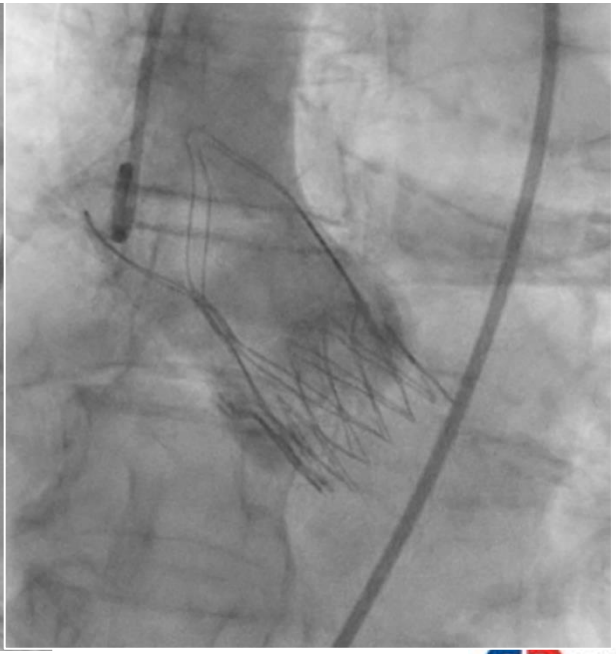
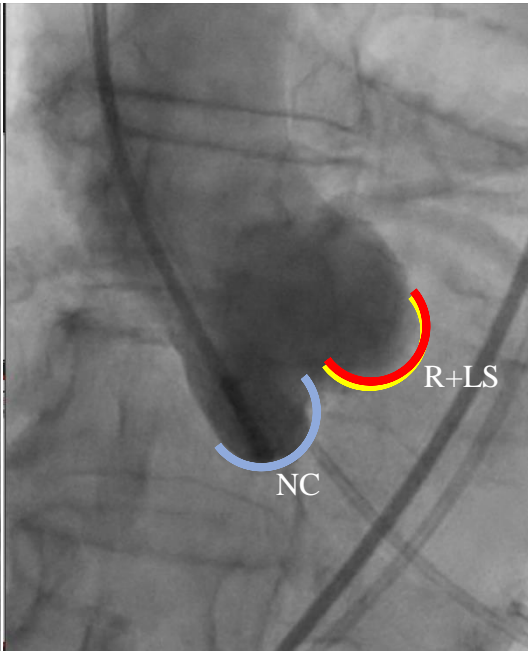
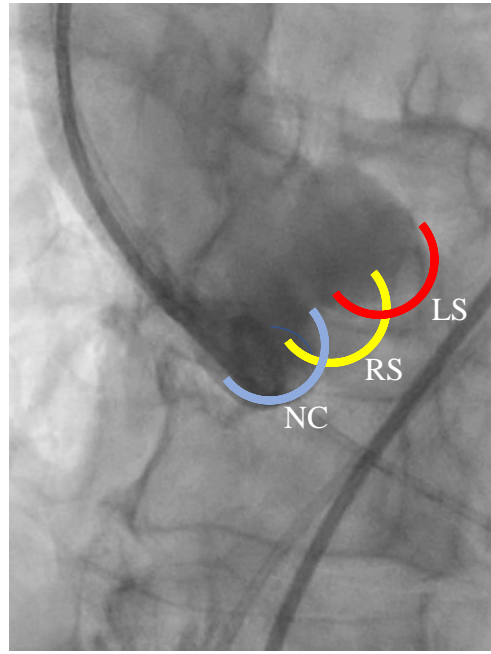
RAO 32.2°, CA 17.8°

RAO - LAO

Overlapping Technique: (Acurate Neo)


Previous Implantation Position

**OVERLAPPING
Implantation Position**



Research Article

Impact of Cusp-Overlap View for TAVR with Self-Expandable Valves on 30-Day Conduction Disturbances

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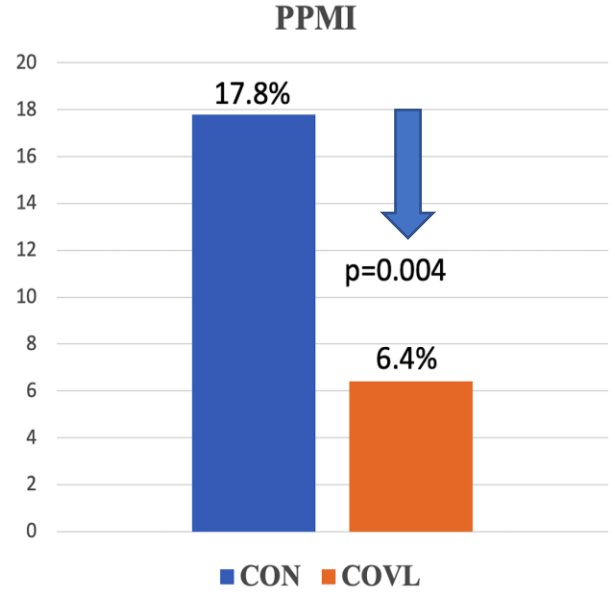
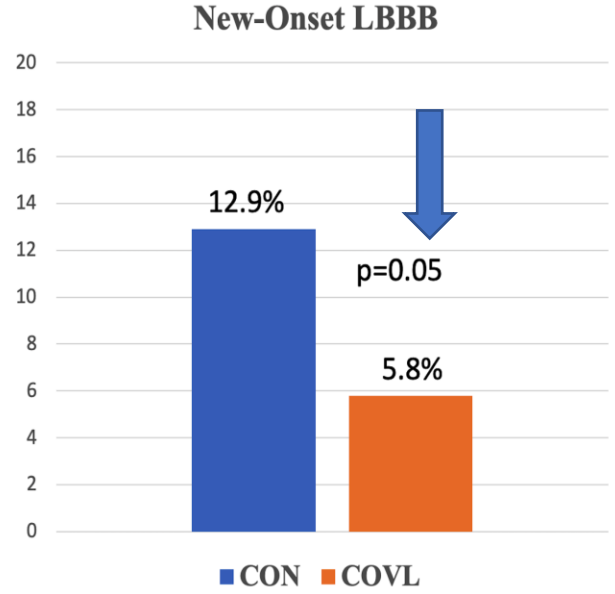
Academic Editor: Viktor Kočka

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Background and Aim. Conduction disturbances leading to permanent pacemaker implantation (PPMI) remains a common complication for TAVR procedures, particularly when self-expanding valves are used. We compared the 30-day incidence of new-onset left bundle branch block (LBBB) and permanent pacemaker implantation (PPMI) rate between two consecutive groups using either conventional 3-cusp coplanar view (CON) and right/left cusp-overlap view (COVL) for implantation. **Methods and Results.** We retrospectively compared 257 consecutive patients undergoing TAVR with self-expandable valves using either CON



Impact of Cusp-Overlap View for TAVR with Self-Expandable Valves on 30-day Conduction Disturbances



CON=101 Ptes
COVL=156 Ptes

Centers: Fundación Favaloro & Sro Finochietto from Argenitna, Medicor (Slovenia), Hospital Clinica Biblica (Costa Rica)



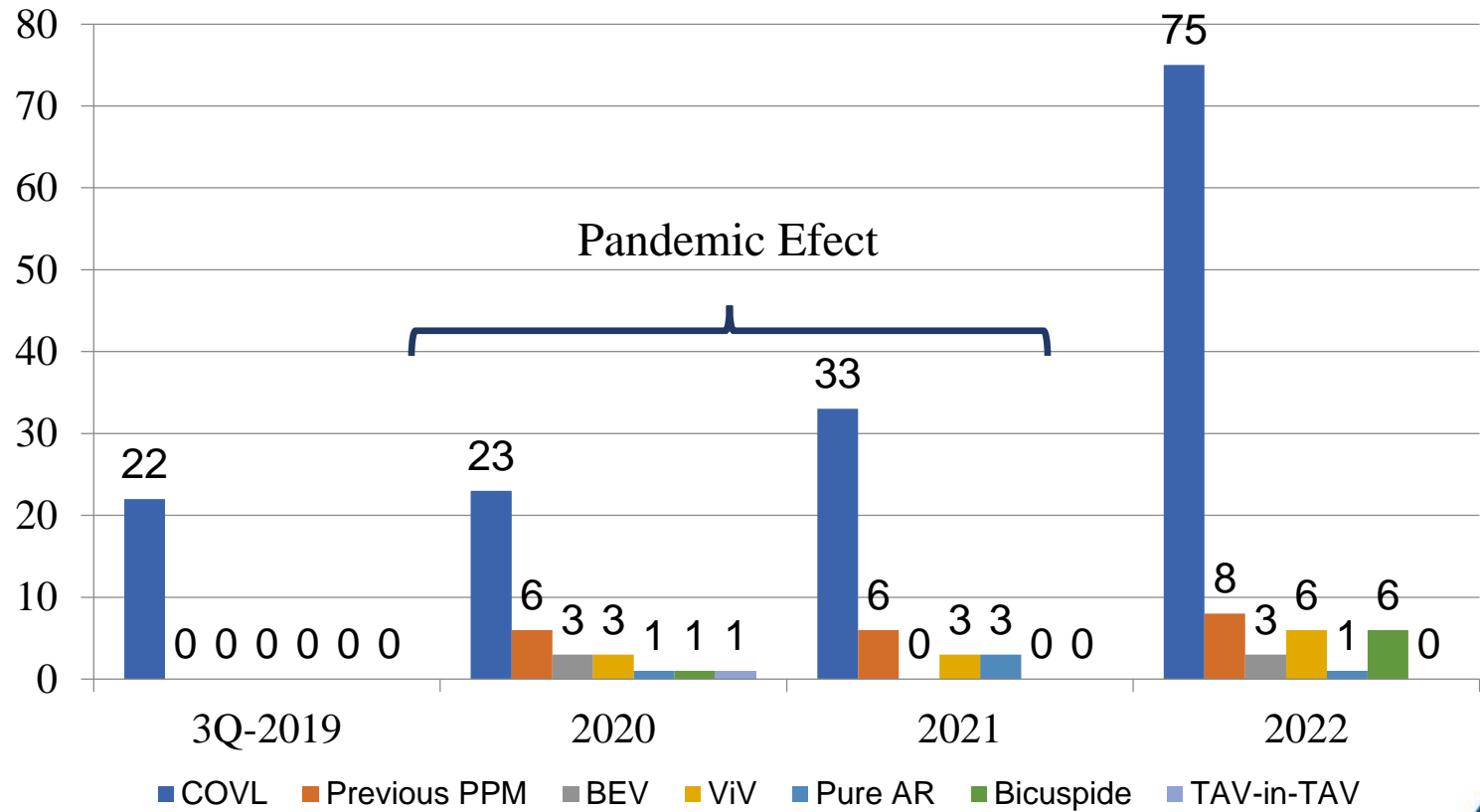
Evolute Low Risk Trial: Clinical Outcomes at 30 Days

Bayesian rates as %	TAVR (N=725)	SAVR (N=678)	(95% BCI for Difference)
30-Day composite safety endpoint*	5.3	10.7	(-8.3, -2.6)
All-cause mortality	0.5	1.3	(-1.9, 0.2)
Disabling stroke*	0.5	1.7	(-2.4, -0.2)
Life-threatening or disabling bleeding*	2.4	7.5	(-7.5, -2.9)
Acute kidney injury, stage 2-3*	0.9	2.8	(-3.4, -0.5)
Major vascular complication	3.8	3.2	(-1.4, 2.5)
Atrial fibrillation*	7.7	35.4	(-31.8, -23.6)
Permanent pacemaker implant*	17.4	6.1	(8.0, 14.7)
All-cause mortality or disabling stroke*	0.8	2.6	(-3.2, -0.5)
All stroke	3.4	3.4	(-1.9, 1.9)
Aortic regurgitation	0.4	0.4	(-0.8, 0.7)

* Significantly favors TAVR; * Significantly favors SAVR

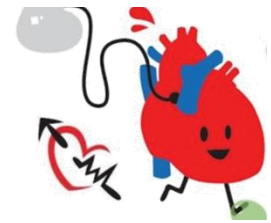
Our PPMI rate using COVL is similar to SAVR in arm of this trial

TAVI Using COVL View: ICyCC Experience



TAVI Using COVL View: ICyCC Experience

Ptes Characteristics



	n (%)
N (Oct 2019- Nov 2022)	153
Age	81,5±6,1
≥80 años	112 (73,2)
Male	82 (53,6)
Previous PCI	66 (43,1)
PCI Pre TAVI (within 3 months)	48 (31,4)
Previous CABG	19 (12,4)
STS Score	7,3±4,1
LVEF (%)	55,7±9,9 %
LVEF ≤40%	18 (11,8)

Excluding BEV, Previous PPM, ViV, Bicuspide, Pure AR, TAV-in-TAV.



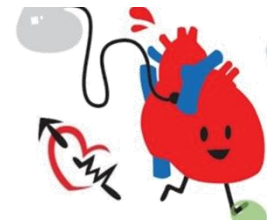
TAVI Using COVL View: ICyCC Experience

Procedural Characteristics

	n (%)
Conscious sedation	153 (100%)
Percutaneous Vasc. Closure	150 (98)
Femoral Access	149 (97,4)
Subclavian	3 (2)
Percutaneous TransAxillary	1 (0,7)
Predilatation	134 (87,6)
Post-dilatation	57 (37,2)
Pop Up	-

TAVI Using COVL View: ICyCC Experience

Ptes Characteristics



	n (%)
Pte with Normal Sinus Rhythm	78 (51%)
Atrial Fibrillation	33 (21,6)
Any previous conduction Disturbances	57 (37%)
Trifasicular Block	4 (2,6)
RBBB	24 (15,7)
Complete LBBB	16 (10,4)
Uncomplete LBBB	6 (3,9)
LAFB	7 (4,6)



TAVI Using COVL View: ICyCC Experience

30-day Outcomes

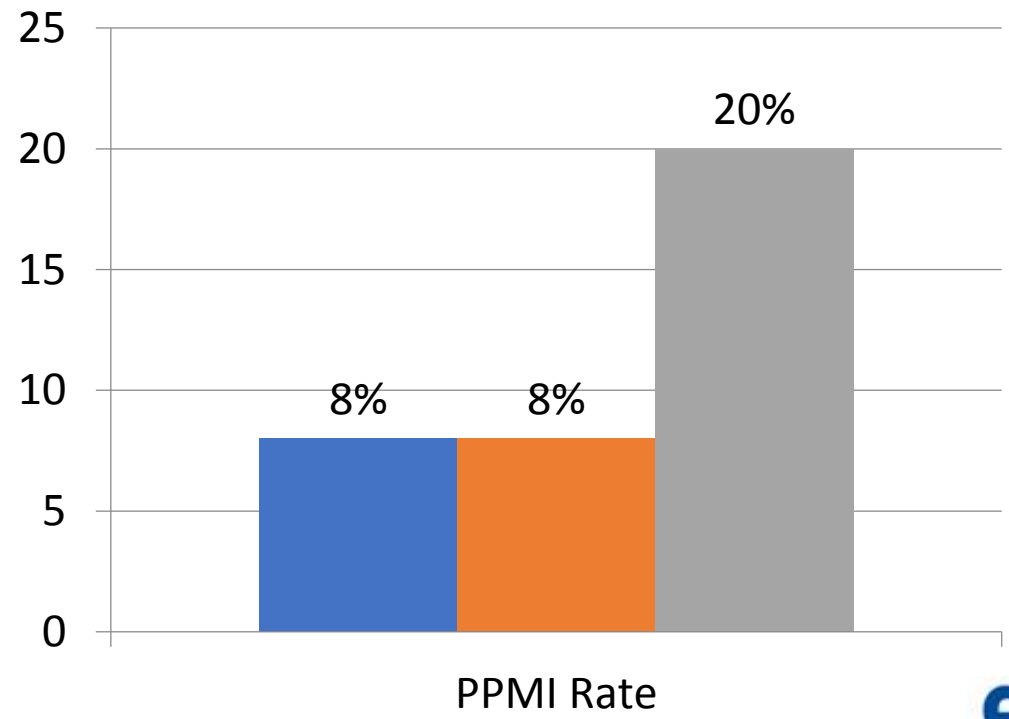
	n (%)
Mortality	4 (2,6)
AMI	1 (0,6)
Any Stroke	1 (0,6)
Major Bleeding	1 (0,6)
Vascular Compl. (all solved with stent graft)	6 (3,9)
PPMI	17 (11,1)
New LBBB	10 (6,5)

TAVI Using COVL View: ICyCC Experience

30-day Outcomes: PPMI rate according to the experience



- 0-50
- 51-100
- 101-153



TAVI Using COVL View: ICyCC Experience Preprocedural EKG Findings

	0-50 n (%)	51-100 n (%)	101-153 n (%)
Normal RS	25 (50)	27 (54)	23 (43,4)
1º AV Block	-	6 (12)	8 (15,1)
Trifasicular Block	-	1 (2)	3 (5,7)
RBBB	6 (12)	5 (10)	13 (24,5)
LBBB	3 (6)	7 (14)	6 (11,3)
Incomplete LBBB	1 (2)	2 (4)	3 (5,7)
LAHB	-	3 (6)	4 (7,5)
A Fib.	15 (30)	7 (14)	11 (20,7)

TAVI Using COVL View: ICyCC Experience

30-day Outcomes

Previous Conduction Disturbances and PPMI rte

N=153 Ptes	PPMI 18 (%)	No PPMI 135 (%)	p
Normal SR	3 (16,7)	75 (55,5)	0,002
1º AV Block	4 (22,2)	10 (7,4)	0,05
Trifasicular Block	2 (11,1)	2 (1,5)	0,04
RBBB	9 (50)	15 (11,1)	<0,001
Complete LBBB	1 (5,5)	15 (11,1)	0,77
Incomplete LBBB	-	6 (4,4)	1
LAHB	1 (5,5)	6 (4,4)	0,47
A Fib.	4 (22,2)	33 (24,4)	0,83



TAVI Using COVL View: ICyCC Experience Preprocedural EKG Findings and PPMI Rate

	Previous Cond. Disturbances	No Cond. Disturbances
PPMI (18 Ptes)	15 (83,3%)	3 (16,7%)
No PPMI (135 Ptes)	41 (30,4%)	94 (69,6%)

p=<0,001



TAVR Minimalist Approach:



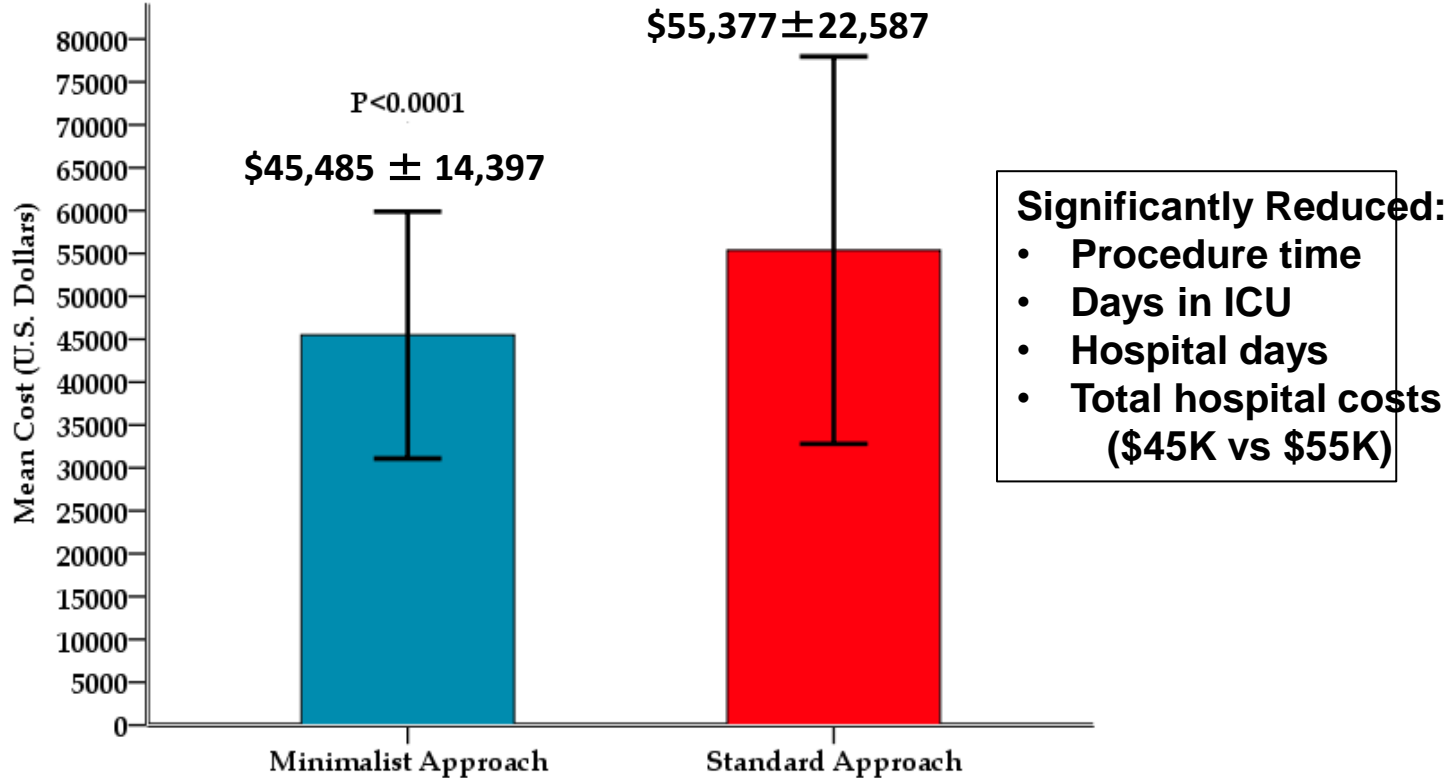
Minimally Invasive TAVR



- **Selection:**
 - No high risk (clinical or anatomic)
- **Minimalist Approach**
 - Conscious Sedation
 - Transthoracic Echo
 - No neck line or Swan Ganz
 - Percutaneous Vascular Access
 - No Foley catheter
 - ICU ???



Cost Saving with Minimalist Approach





Conscious Sedation vs. General Anesthesia for TAVR: Insights from the NCDR® STS/ACC TVT Registry

Conscious sedation was used in 1,737/10,997 (15.8%) cases with a significant trend of increasing usage over the time

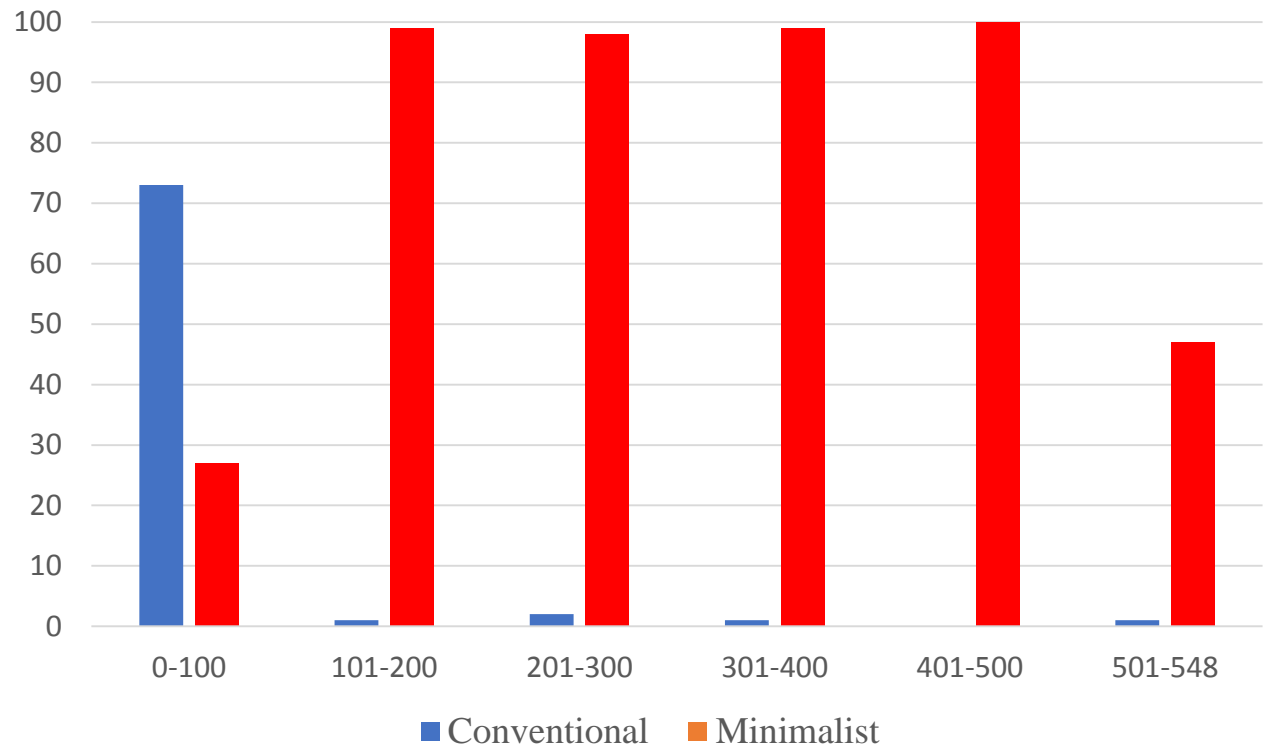
Outcome	Unadjusted General Anesthesia	Unadjusted Conscious Sedation	P Value	Odds Ratio [±]	95% CI	Adjusted General Anesthesia	Adjusted Conscious Sedation	P Value
In Hospital Outcomes								
Mortality (%)	2.5%	1.6%	0.03	0.65	(0.44, 0.96)	2.4%	1.5%	0.01
Mortality/Stroke (%)	4.2%	3.1%	0.03	0.72	(0.54, 0.96)	4.1%	3.1%	<0.001
Procedural Success (%)	98.5%	98.2%	0.31	0.82	(0.56, 1.21)	98.6%	97.9%	<0.001
Intraoperative Inotrope Use (%)	43.9%	36.8%	<0.0001	0.74	(0.67, 0.83)	43.7%	29.3%	<0.001
Procedural Duration (hours)	2.1 ± 3.4	1.9 ± 2.9	0.0003	0.95	(0.92, 0.99)	1.7 ± 1.6	1.9 ± 1.5	0.14
Hospital Length of Stay (days)	6.7 ± 9.6	6.0 ± 10.7	<0.0001	0.99	(0.98, 1.0)	6.5 ± 5.5	6.0 ± 7.1	<0.001
Discharge Home (%)	74.8%	80.7%	<0.001	1.41	(1.24, 1.61)	74.4%	77.1%	<0.001
30-day Outcomes								
Mortality (%)	4.1%	2.9%	0.03	0.70	(0.50, 0.97)	4.0%	2.3%	<0.001
Mortality/Stroke (%)	6.4%	4.8%	0.02	0.74	(0.57, 0.95)	6.4%	4.8%	<0.001

Conclusions: In U.S. practice, conscious sedation is associated with briefer length of stay and lower in-hospital and 30-day mortality compared to TAVR with general anesthesia.





More Experience, Less Invasive



Transcatheter Laceration of Aortic Leaflets to Prevent Coronary Obstruction During TAVI:

defectos (DID). Tipo **B**: defecto grande junto a otro moderado y acompañado con otros defectos pequeños con diferentes DID. Tipo **C**: septum interauricular cribiforme con 5 o más defectos. Tipo **D**: defectos pequeños y moderados con DID igual o mayor a 7 mm. Los defectos más oscuros son los que deberían elegirse para implantar el dispositivo. Defecto grande (15 mm), moderado (5-14 mm) y pequeño (<5 mm). Seno coronario (SC). Adaptado de Farhaj Z y col (3).

second closure device in patients with residual shunt after percutaneous closure of patent foramen ovale. *Catheter Cardiovasc Interv* 2004;63:490-5. <https://doi.org/10.1002/cod.20221>

Laceración intencional de la valva de una bioprótesis valvular aórtica para prevenir oclusión coronaria durante el TAVI

Una complicación poco frecuente, pero con severas consecuencias durante el implante de una válvula

Pacientes con antecedentes residuales después del cierre de FOP por eventos recurrentes recurrir a implantar un seccortocircuitos re

Este caso repite a la necesidad de CIA después de FOP con dispositivo de evitar cortocircuitos prevención secu

Declaración de conflicto de intereses
Los autores declaran no tener conflicto de intereses.
(Véase fórmula en la web / Materias)

Consideraciones éticas
No aplican

Alejandro María La

¹Servicio de Hematología Hospital Privado Instituto Universitario
²Servicio de Neurología Instituto Modelo de

CARTAS CIENTÍFICAS

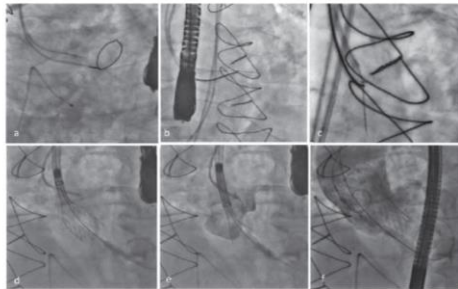


Fig. 2. a- Perforación de la valva protésica, b- enlazado de la guía en la cavidad ventricular, c- corte de la valva mediante electrobisturí conectado al alambre guía, d-e posicionamiento de la válvula aórtica auto-expandible por cateterismo (TAVI), f- resultado final que muestra la permeabilidad del ostium izquierdo y el correcto implante de la TAVI.

Consideraciones éticas

No aplican

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²División de Ecocardiografía. Hospital Universitario Fundación Favaloro. Instituto de Cardiología y Cirugía Cardiovascular

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BIBLIOGRAFÍA

- Ribeiro HB, Webb JG, Makkar RR, Cohen MG, Kapadia SR, Kodali S, et al. Predictive factors, management, and clinical outcomes of coronary obstruction following transcatheter aortic valve implantation: insights from the PARTNER 2 trial. *J Am Coll Cardiol* 2013;62:1552-62. <https://doi.org/10.1016/j.jacc.2013.07.040>.

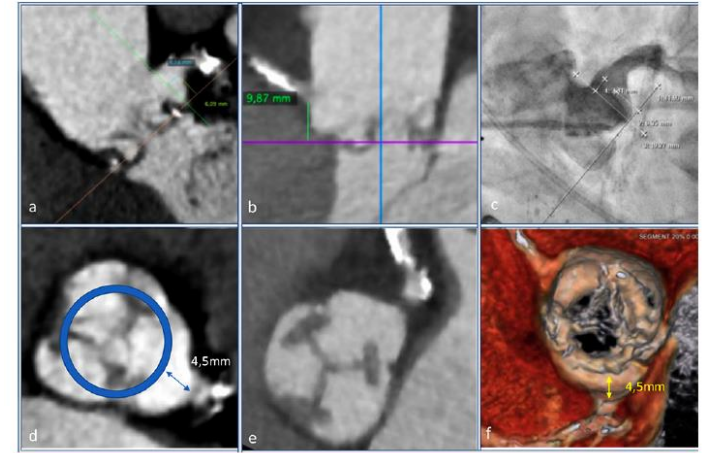


Fig. 1. a- y c- Mediciones de altura y distancia desde la válvula previa al ostium de la Coronaria Izquierda (CI), b- altura del ostium de la Coronaria Derecha, d- distancia virtual al ostium de CI, e- relación del ostium de CI con los postes de la válvula previa, f- distancia ostium de CI.



TAVI in Calcified Iliac Artery

Clinical Case:

- Female 84y/o
- Presentation:
 - Dyspnea
- Clinical History:
 - RF: HTA - DSP -
Fragile
 - Echo: Severe AS (Gradients: 55/30mmHg, area 0.7cm²), LVEF 60%

Clinical Case:

ProSizeAV: Ferro Ana Maria

Oscar A Mendiz
Fundacion Favaloro
omendiz@ffavaloro.org

PDF Report ?

Reset

ProSizeAV Report

General Data:	
Patient:	Ferro Ana Maria
Date of Birth:	6 Oct 1940 (82)
Patient ID:	5159423
Study Date:	Jul 27, 2022
Examined by:	Oscar A Mendiz

Aortic Annulus Measurements:	
Perimeter:	77.1 mm (ϕ 24.5 mm)
Area:	449.4 mm ² (ϕ 23.9 mm)
Excentricity:	0.22 (21.2 x 27.3 mm)
Aortic Angulation:	43.9°
LCA Distance:	12.5 mm
RCA Distance:	16.9 mm

Calcium Assessment:	
Cusp Calcification:	Unknown - [v]
LVOT Calcification:	Unknown - [v]
Annulus Calcification:	Unknown - [v]

Implantation Plane:	
RCC Anterior:	LAO 0° Caudal 2°
LCC Posterior:	RAO 42° Caudal 34°
NCC Posterior:	LAO 62° Cranial 40°
LV View:	RAO 30° Caudal 27°

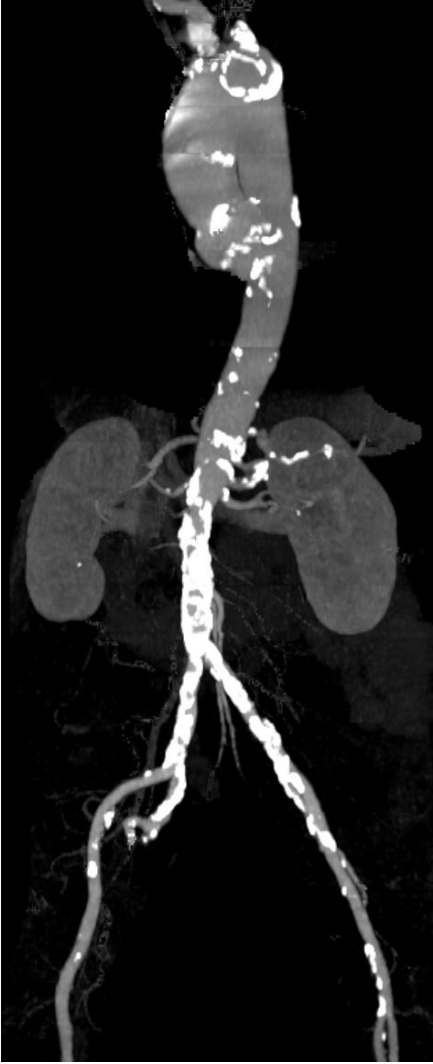
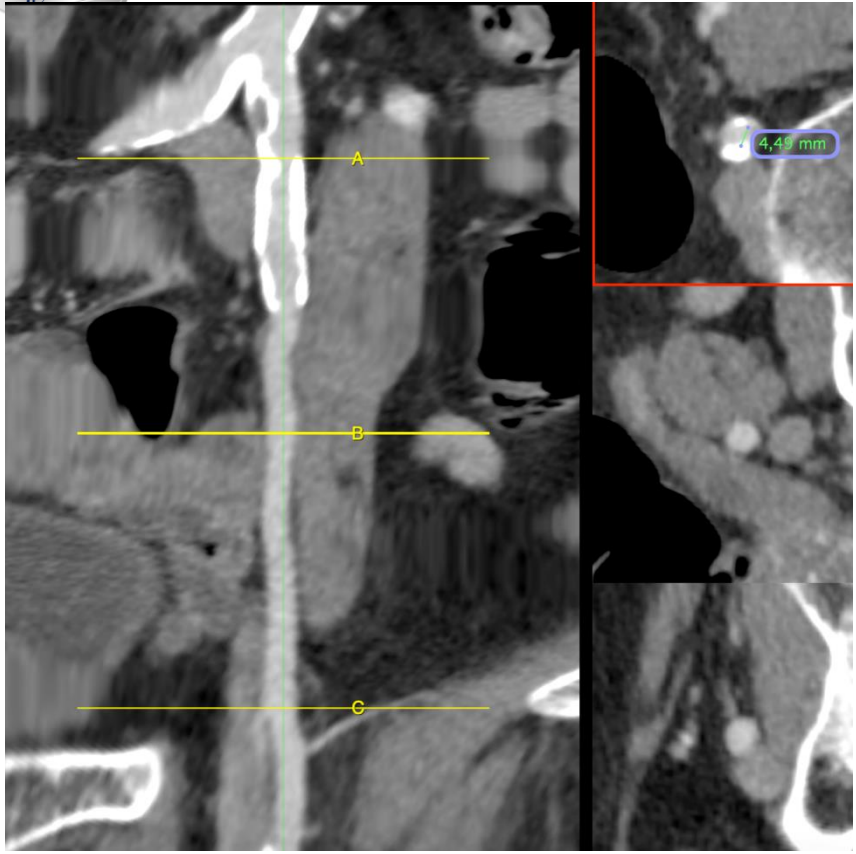
Access:	
Planned Access:	Unknown - [v]
Pigtail Access:	Unknown - [v]

Comments:

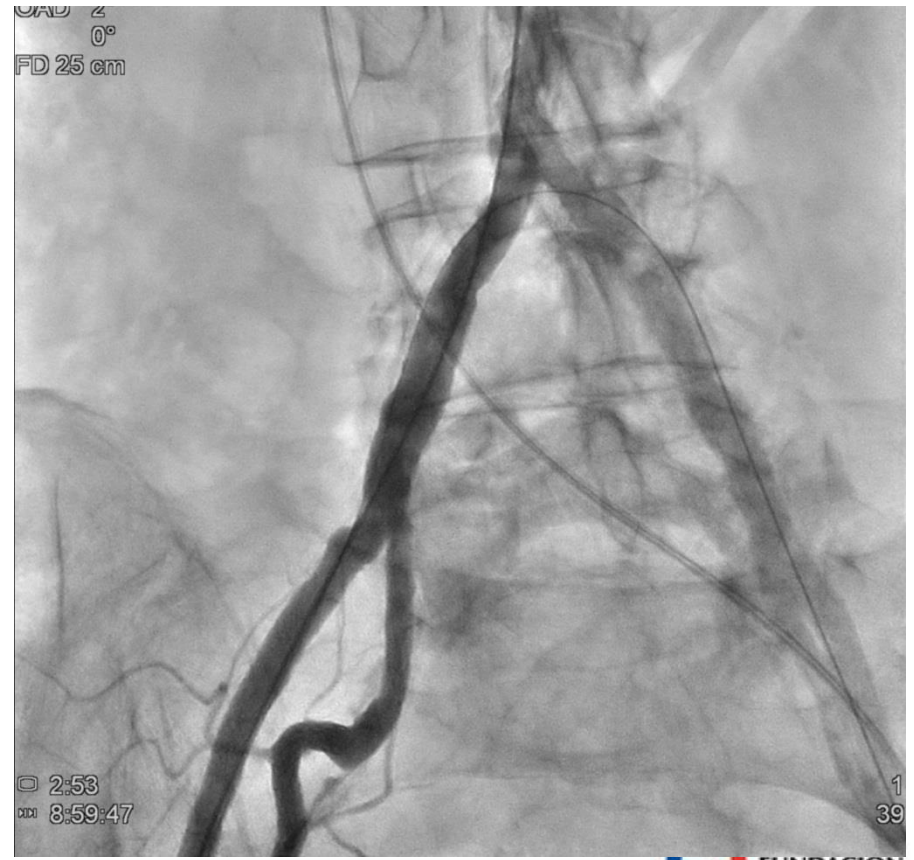
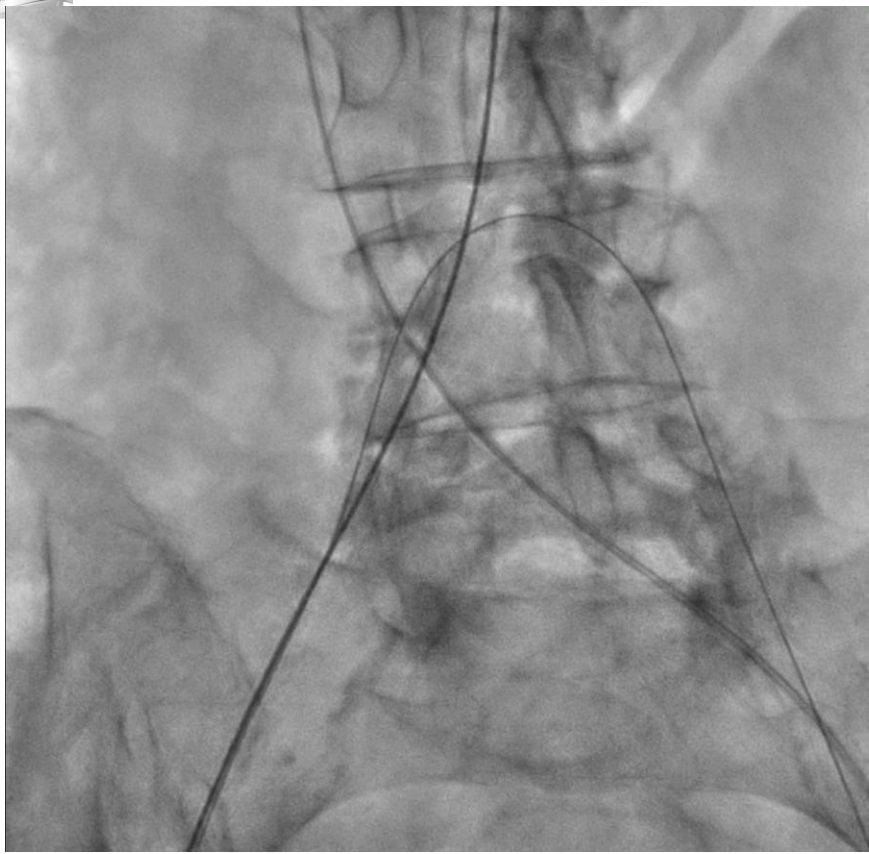
RAO 20.6°, CA 20.6°

RAO - LAO

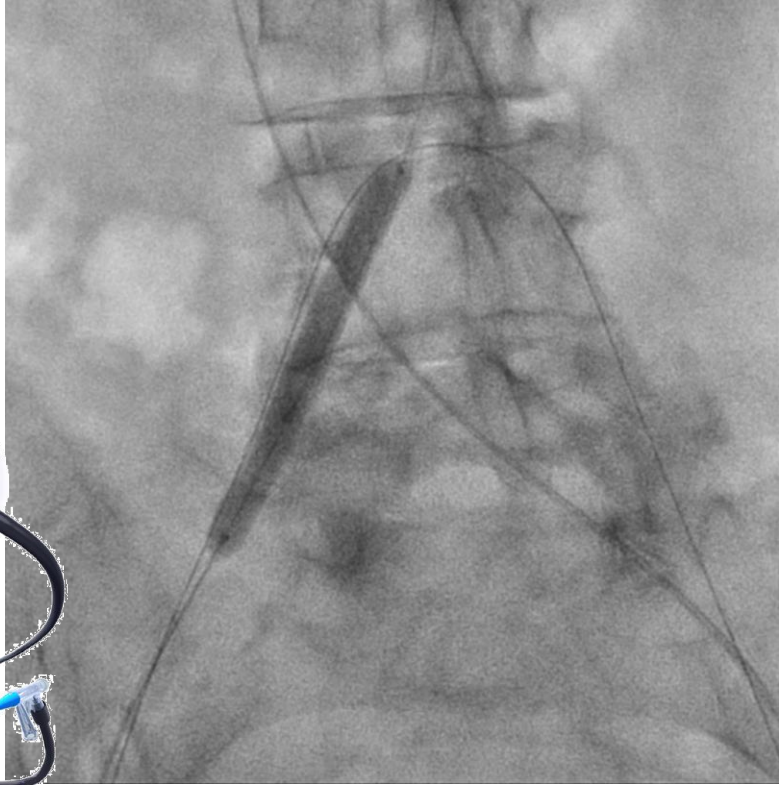
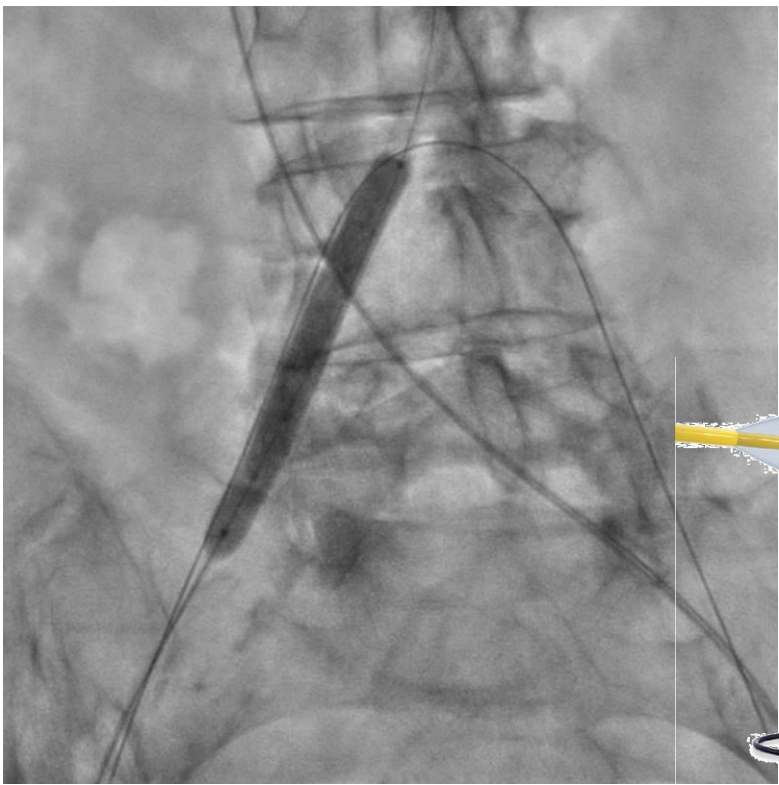
AngioCT:



Vascular Access:

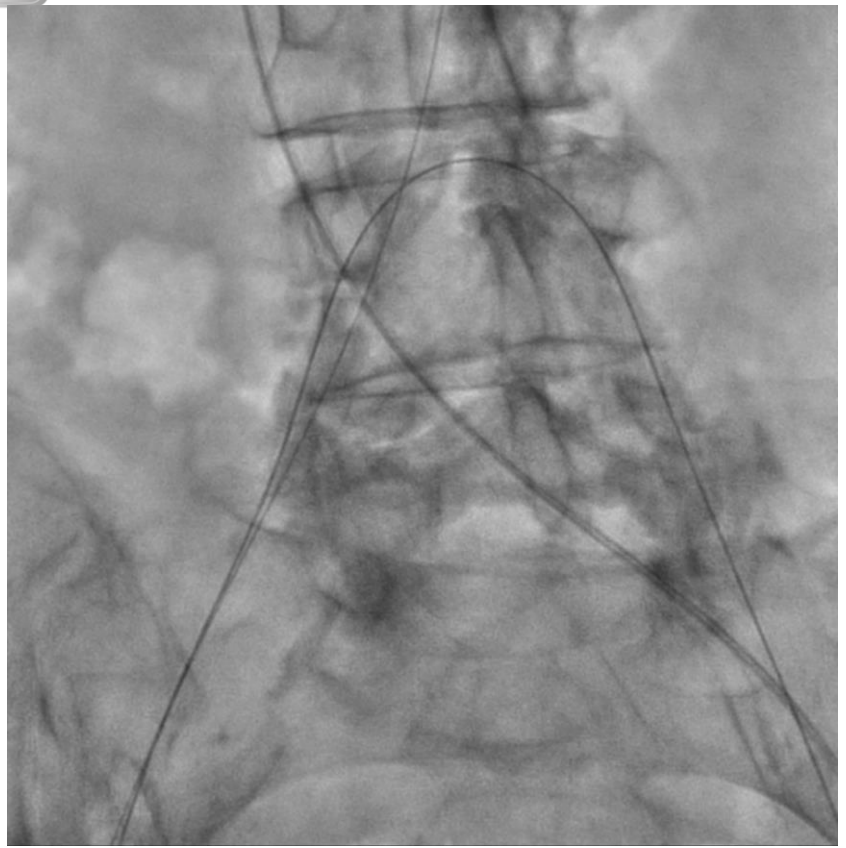


Vascular Access:

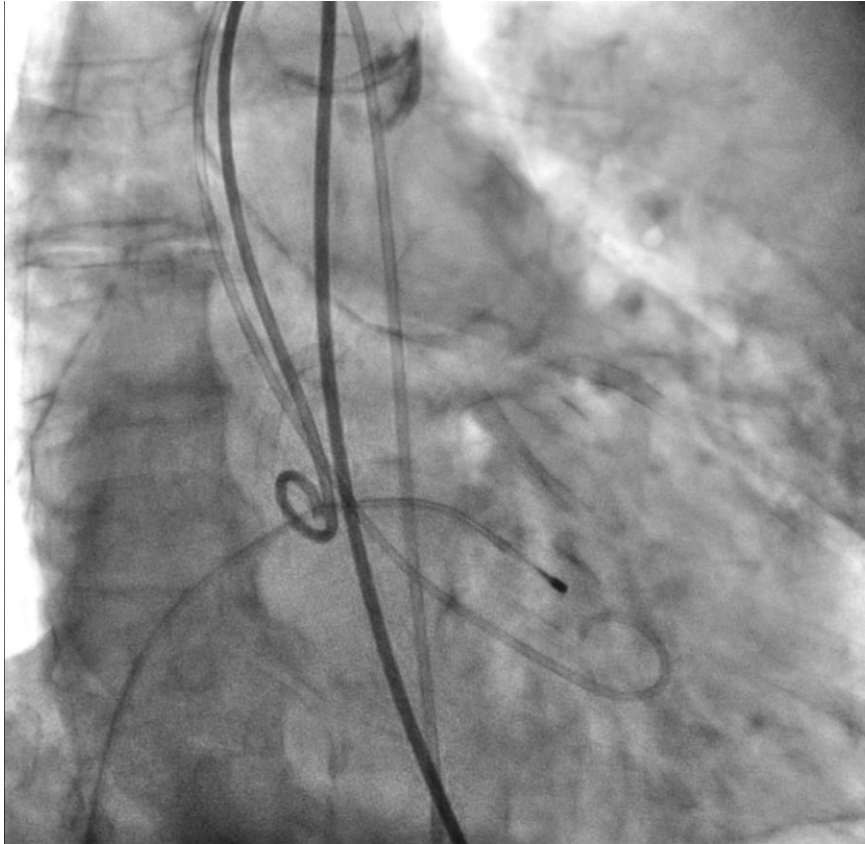
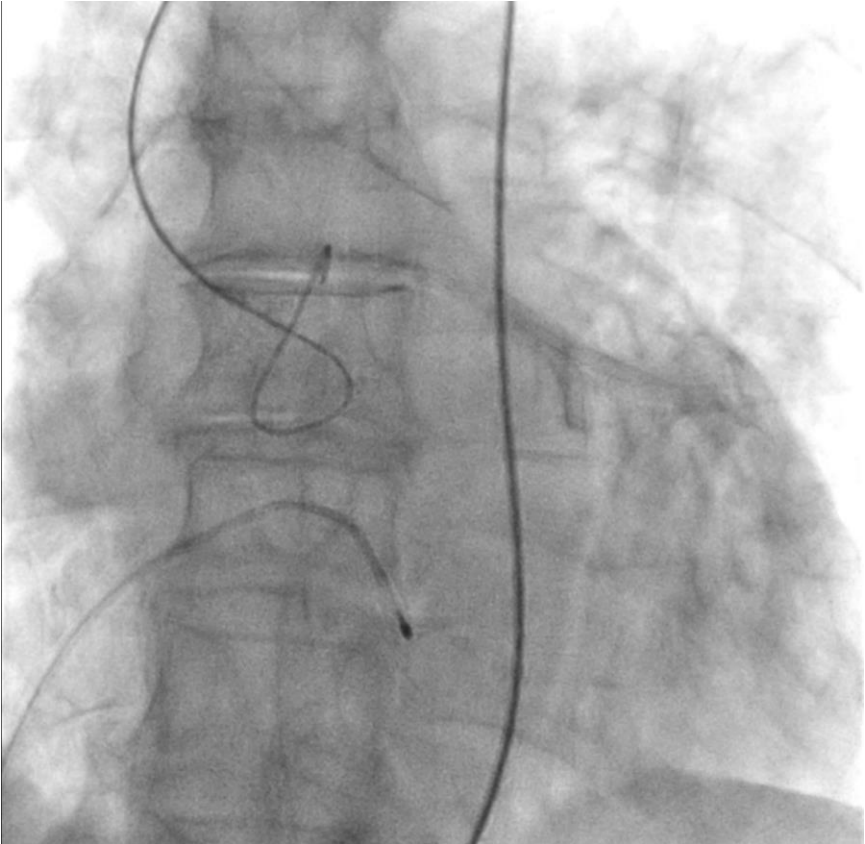


IVL Balloon 7.0x60mm

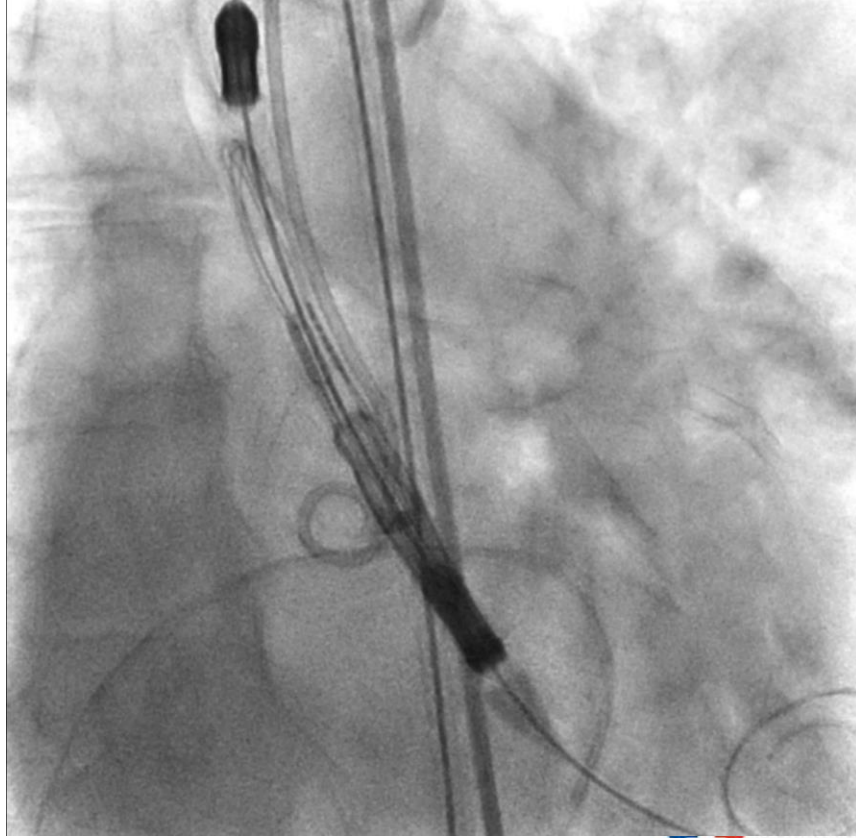
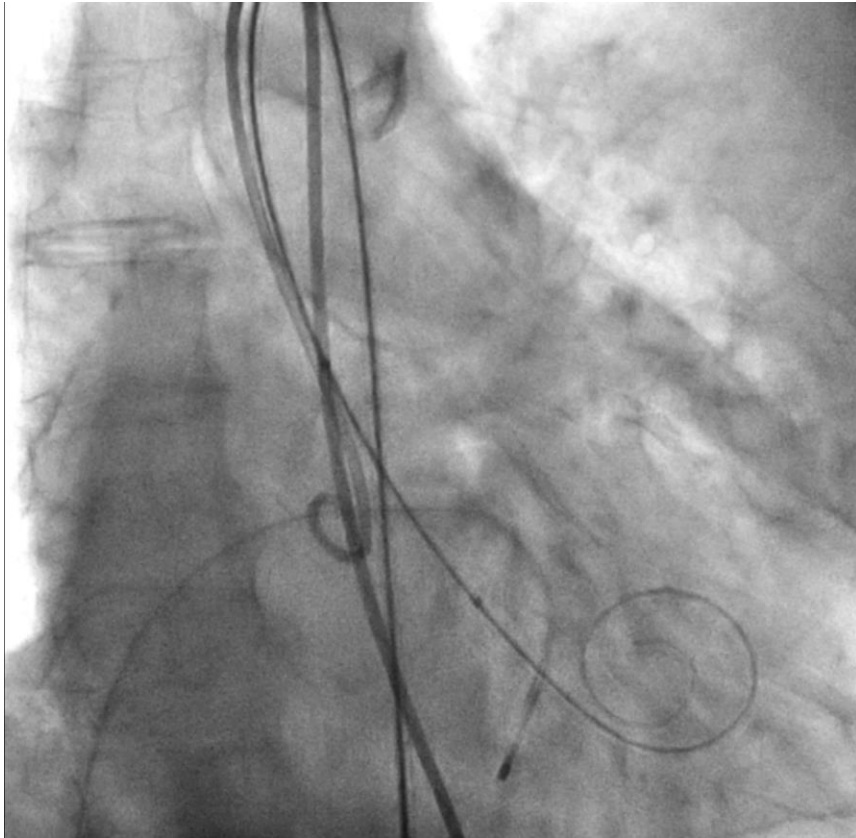
Vascular Access:



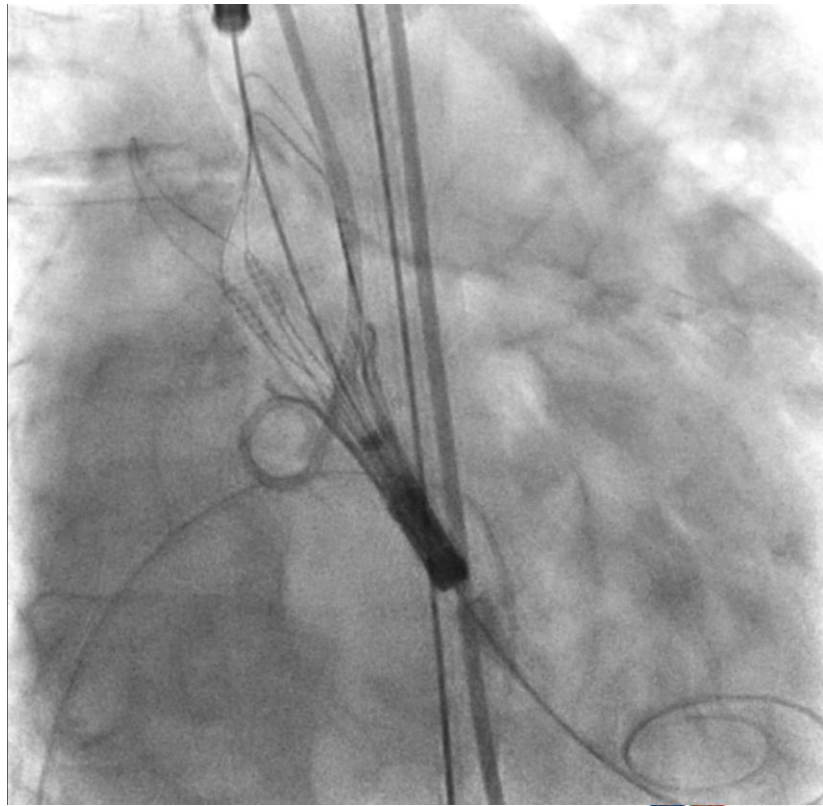
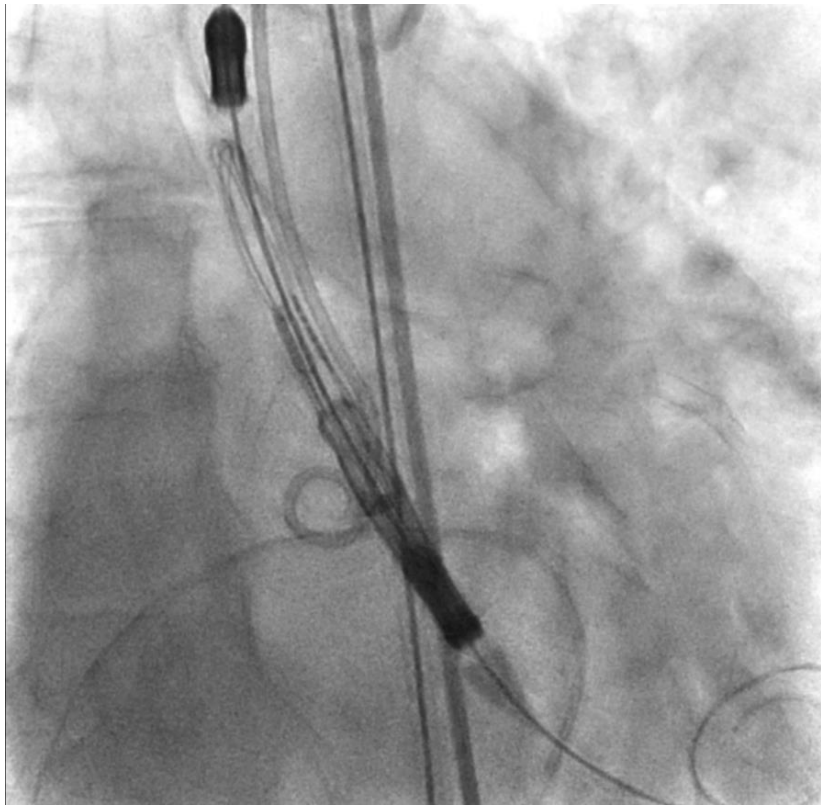
Vascular Access:



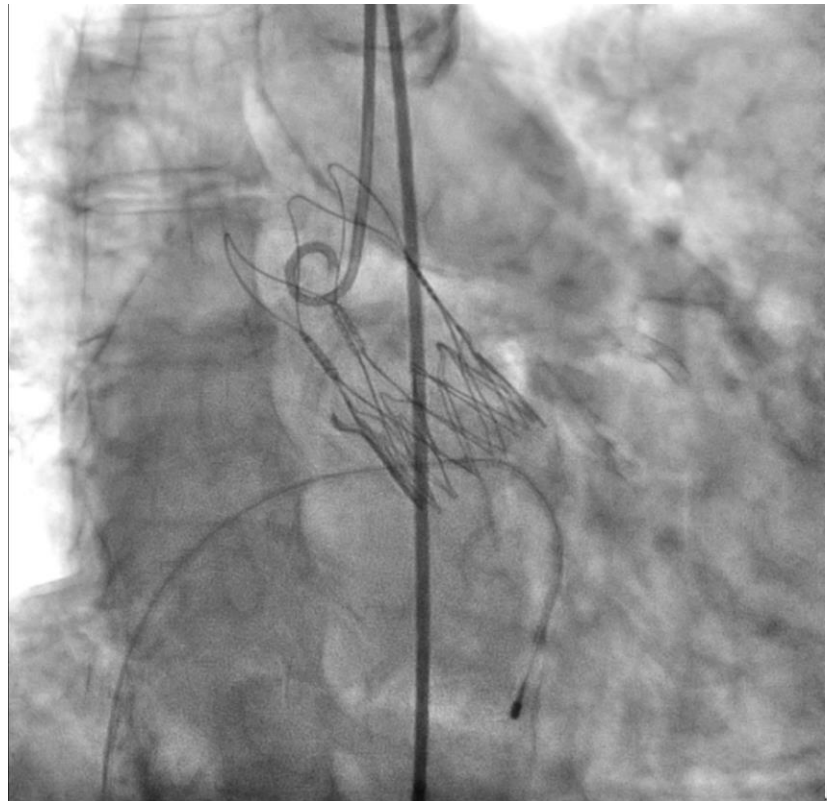
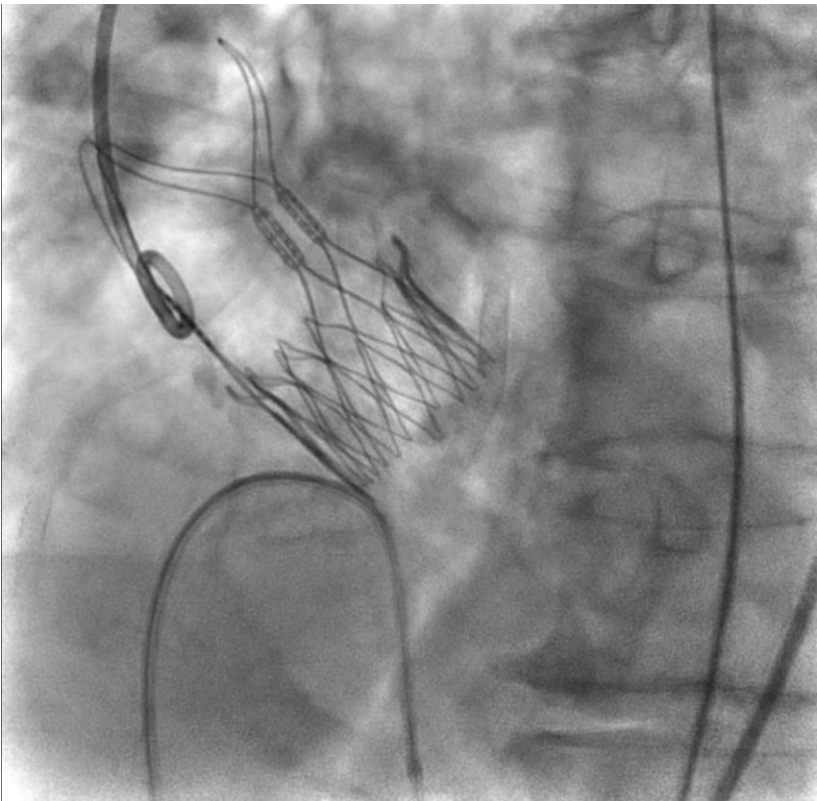
Vascular Access:



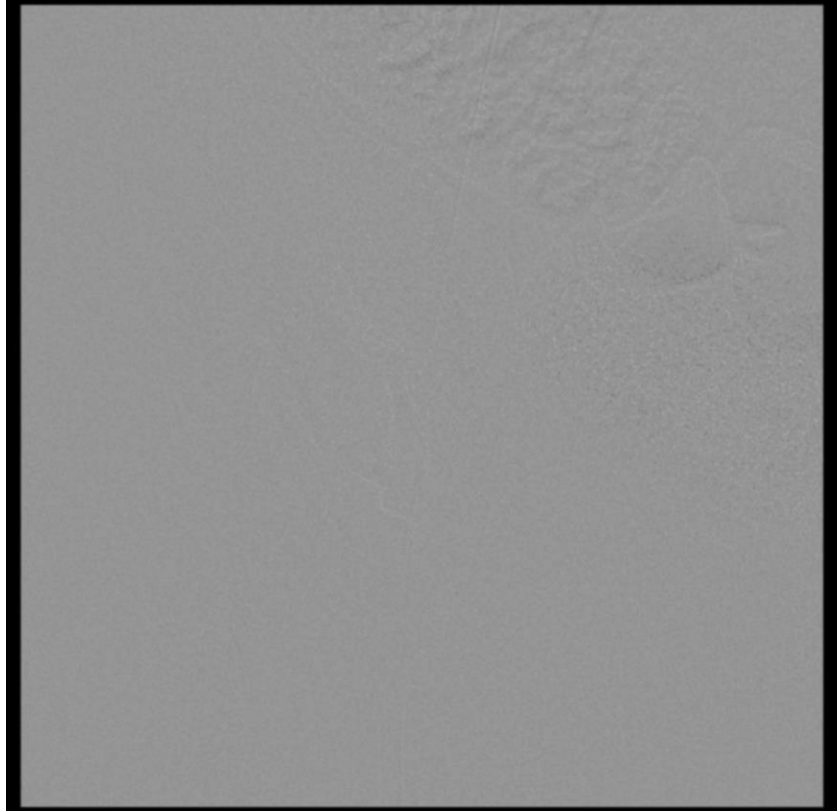
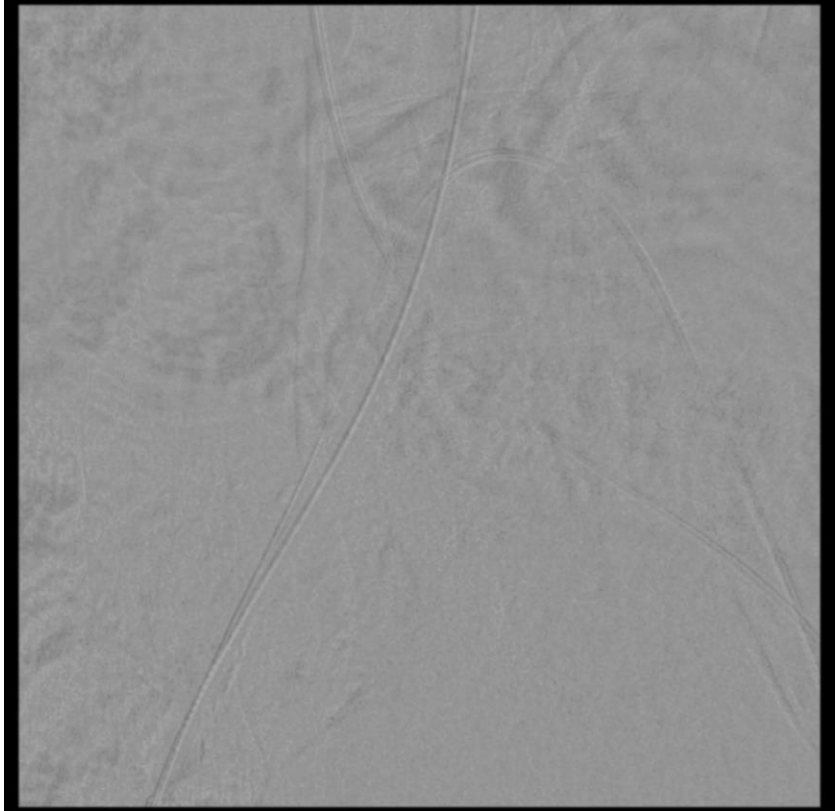
Vascular Access:



Vascular Access:



Vascular Access:





TAVR ViV Calcified Iliac Artery

Calcified Iliac Artery

Clinical Case:

- Female 84y/o
- Presentation:
 - Dyspnea
- Clinical History:
 - RF: HTA - DSP - DBT II
 - Fragile
 - AVR St Jude N° 21 (13 years ago)
 - AV dysfunction (Gradients: 68/41mmHg)

AngioCT:

General Data:

Patient:	Ranieri Gladys Amelia
Date of Birth:	15 Jan 1935 (87)
Patient ID:	121296/165519
Study Date:	Jul 6, 2022
Examined by:	Oscar A Mendiz

Aortic Annulus Measurements:

Perimeter:	56.2 mm (ϕ 17.9 mm)
Area:	243.8 mm ² (ϕ 17.6 mm)
Excentricity:	0.21 (15.5 x 19.6 mm)
Aortic Angulation:	6.5°
LCA Distance:	12.6 mm
RCA Distance:	11.5 mm

Calcium Assessment:

Cusp Calcification:	Unknown
LVOT Calcification:	Unknown
Annulus Calcification:	Unknown

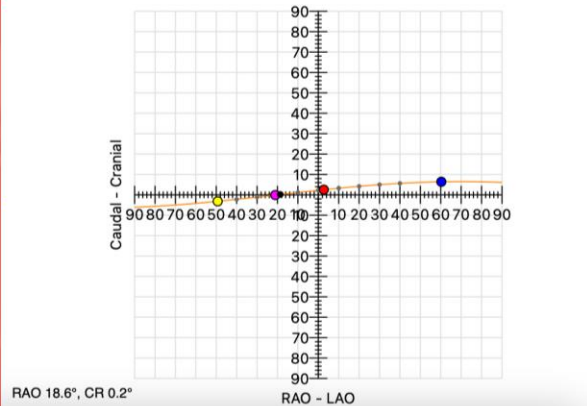
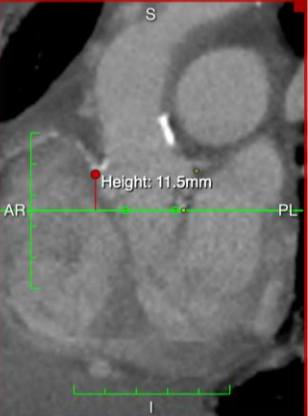
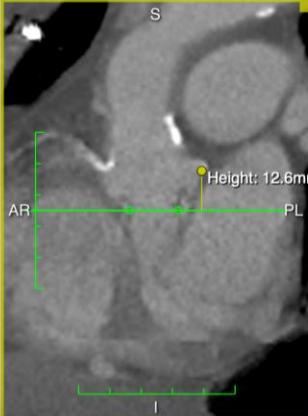
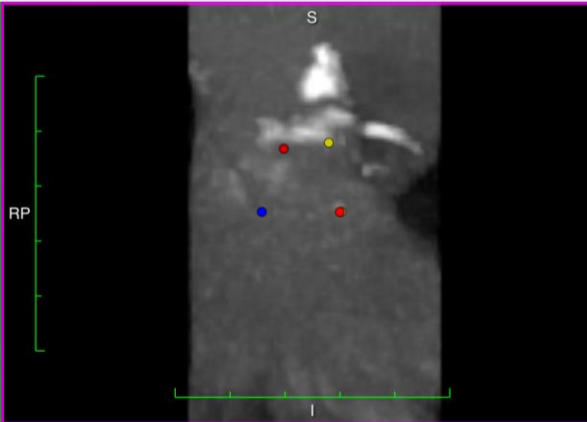
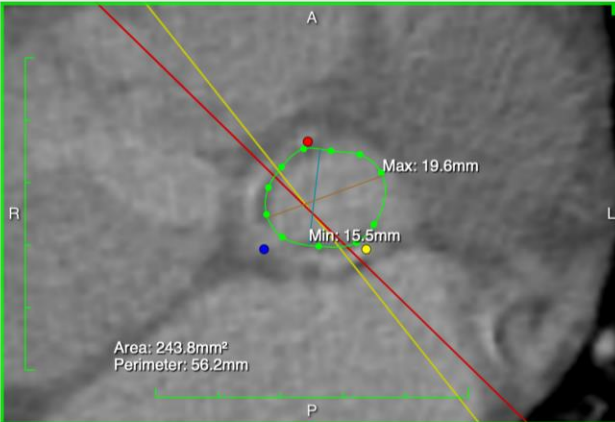
Implantation Plane:

RCC Anterior:	LAO 3° Cranial 3°
LCC Posterior:	RAO 49° Caudal 3°
NCC Posterior:	LAO 60° Cranial 6°
LV View:	RAO 30° Caudal 1°

Access:

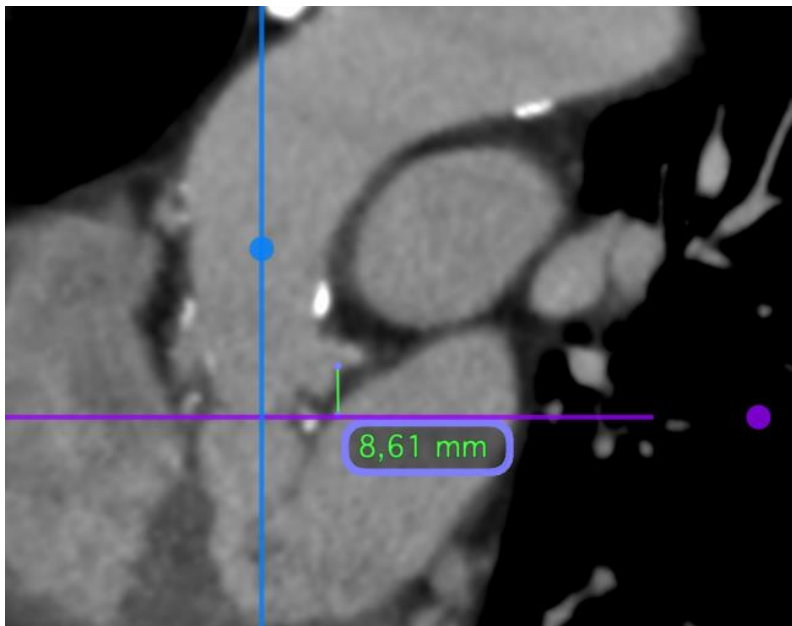
Planned Access:	Unknown
Pigtail Access:	Unknown

Comments:

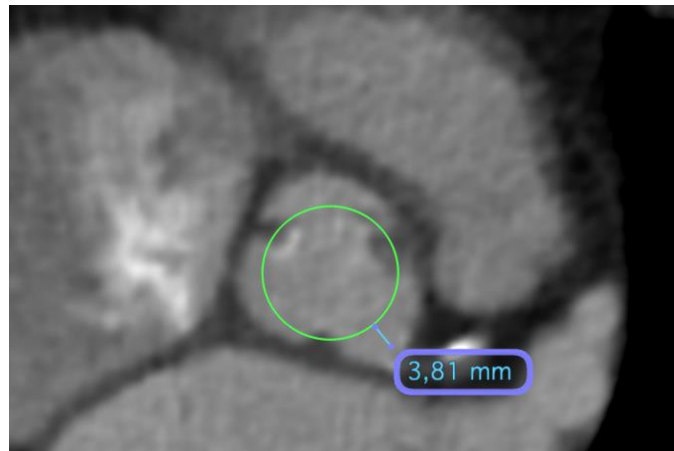


AngioCT:

LM Ostium Height

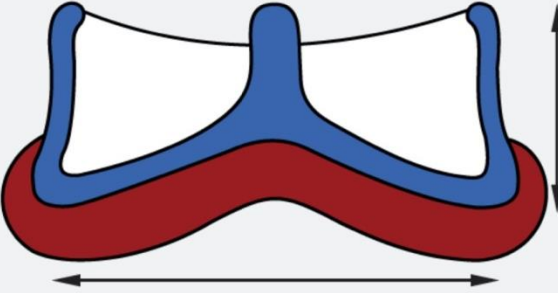


THV Distance



Surgical Aortic Valve: Biocor N° 21

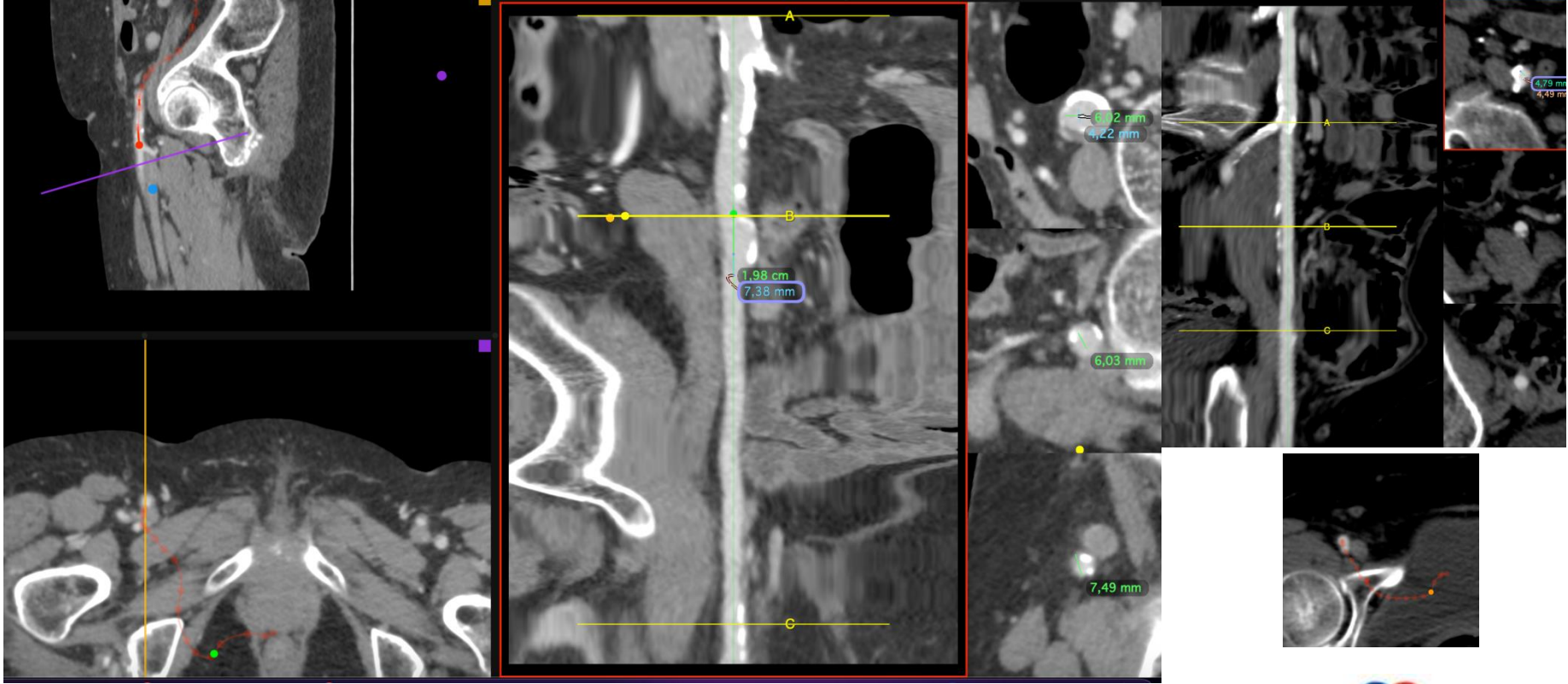
Size: 21



Stent ID	Height	True ID <i>i</i>
19	14	17

Fracturable
True Balloon Size: 20mm

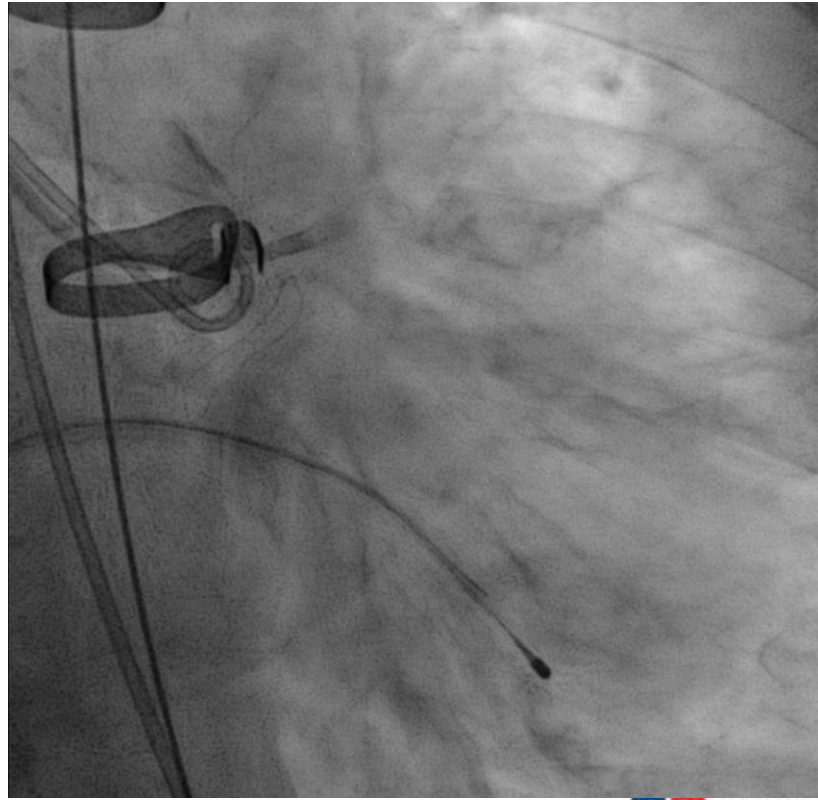
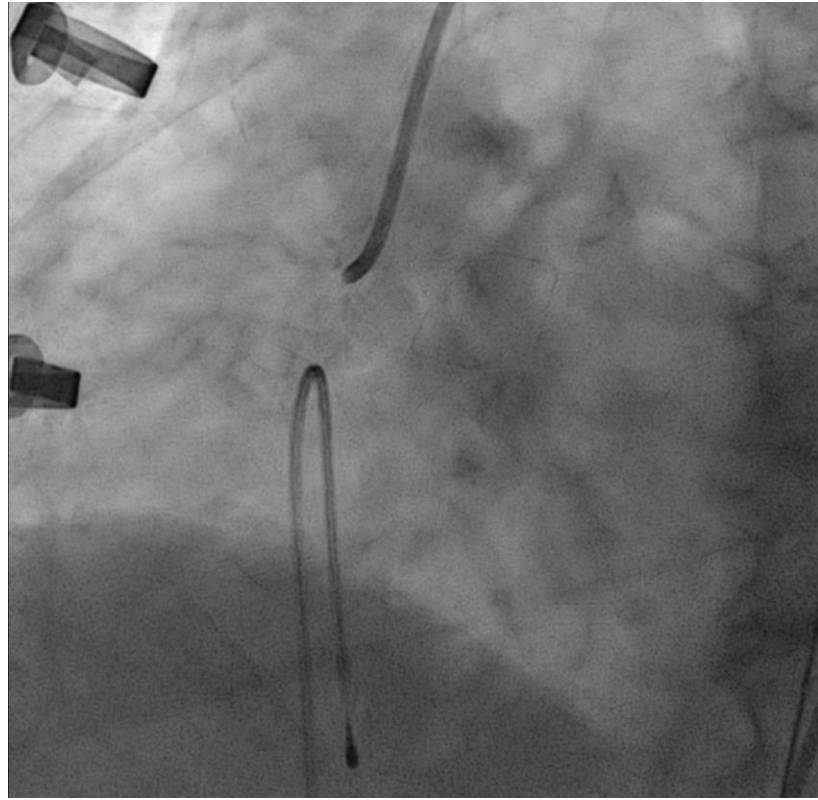
AngioTAC: Vascular Access



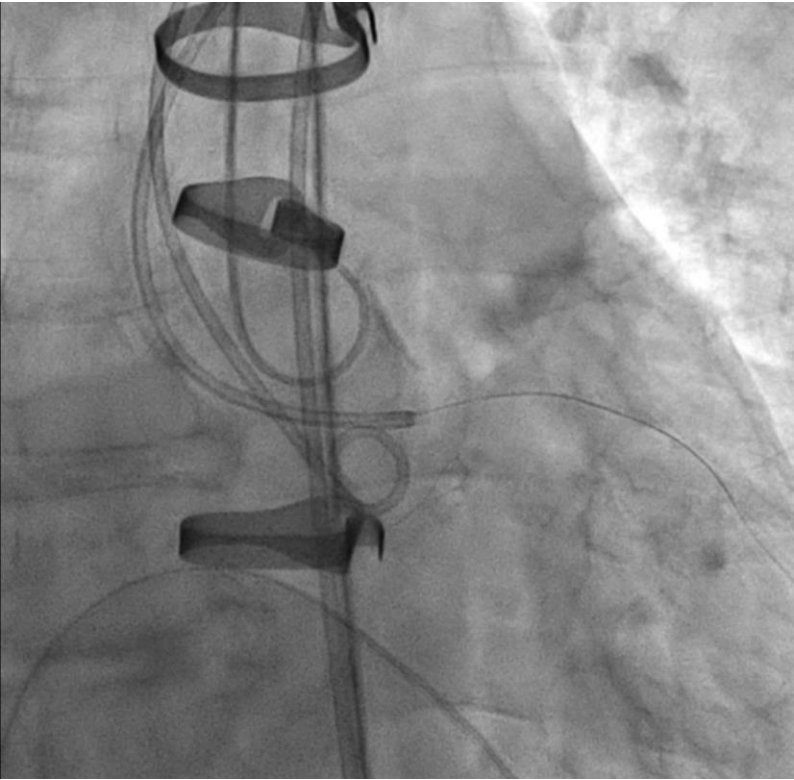
Angio Guided Vascular Access



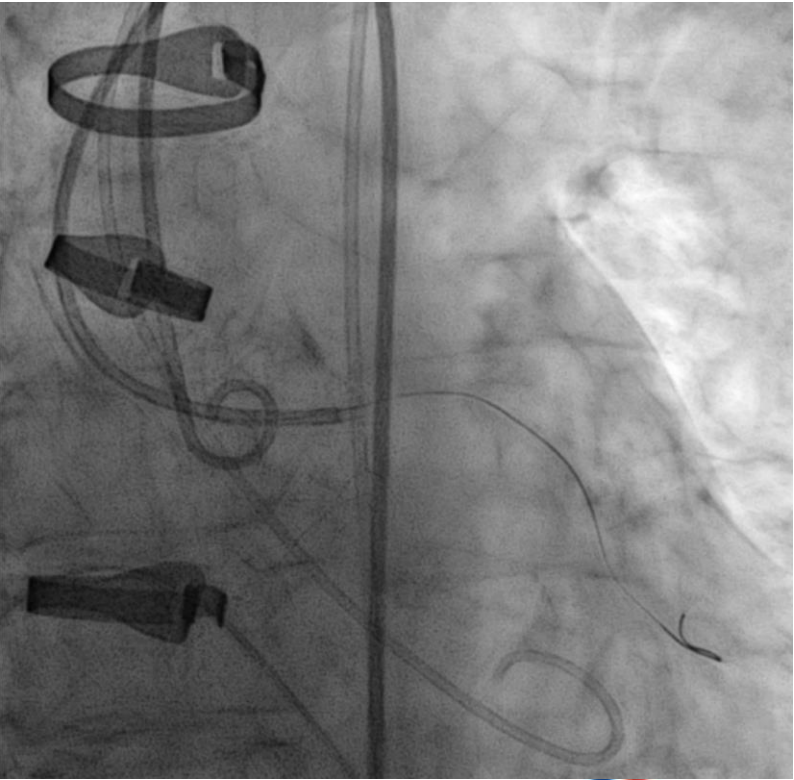
Coronary Angio



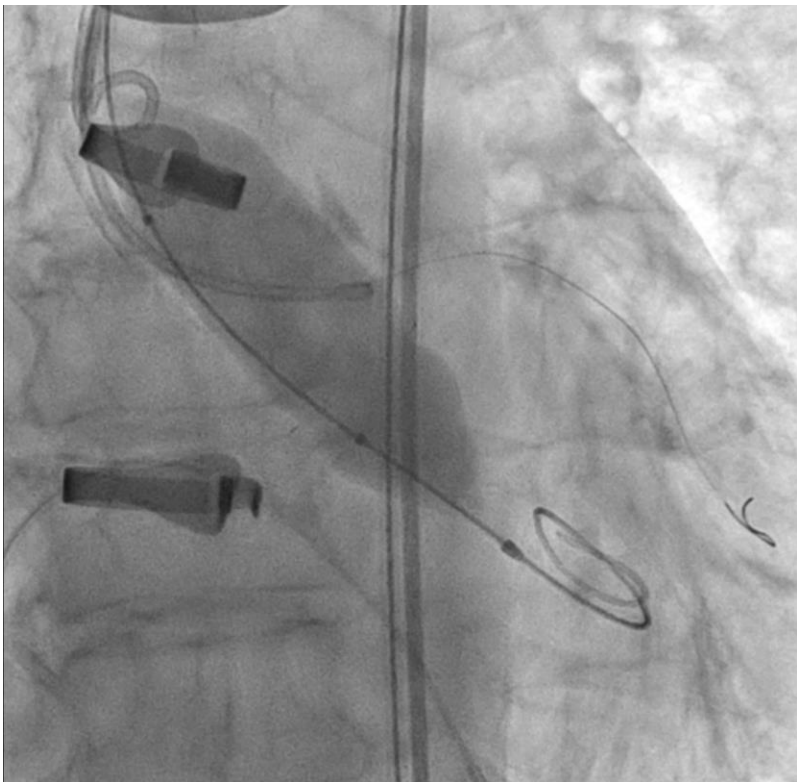
LM Protection



902492



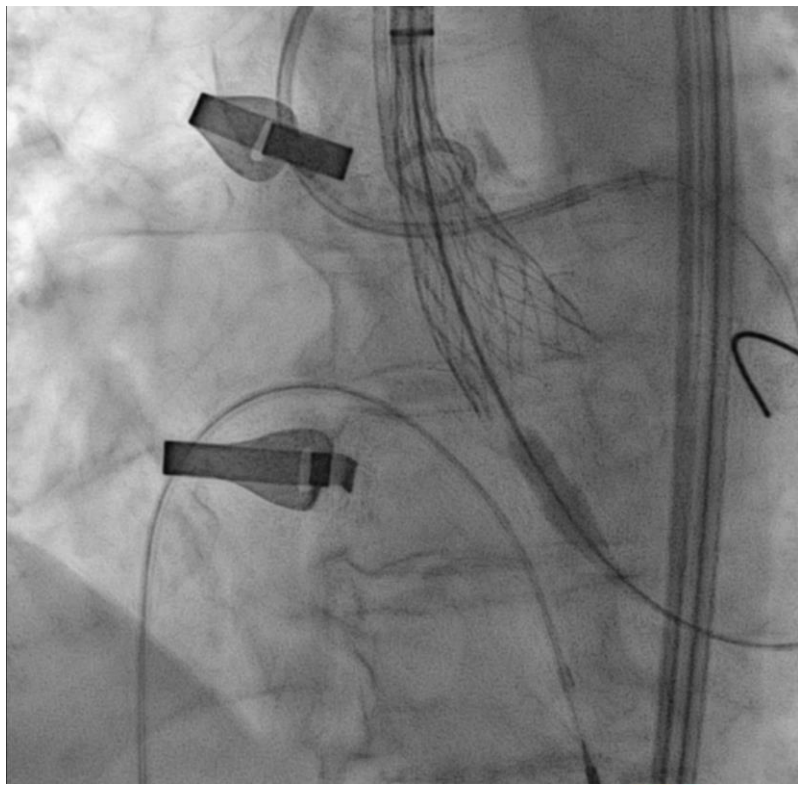
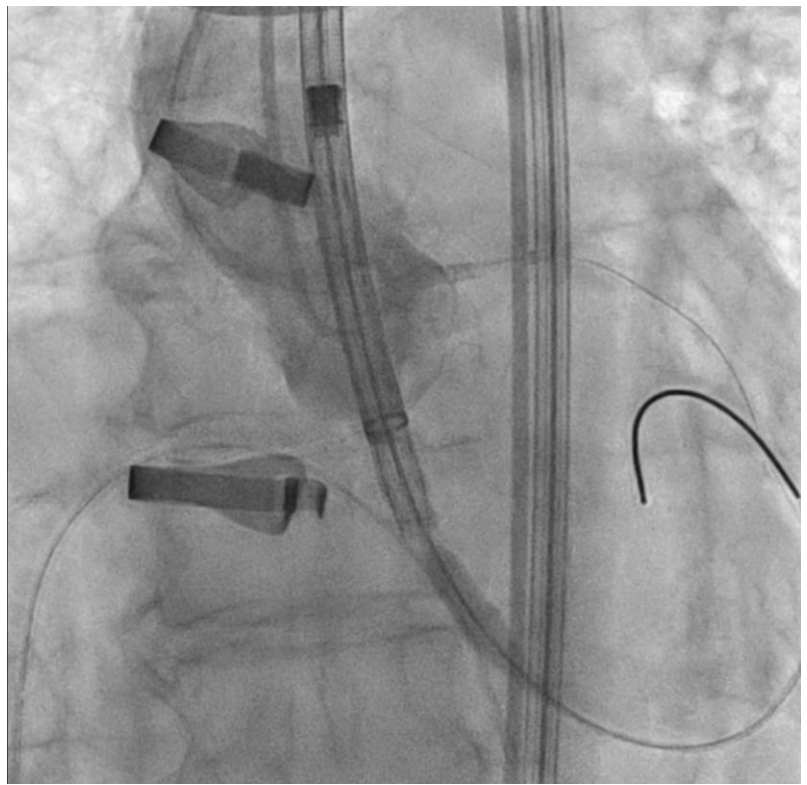
Pre TAVI Surgical Valve Cracking



**Pte Crushed
CPR was initiated**

Echo did not show pericardial
effusion

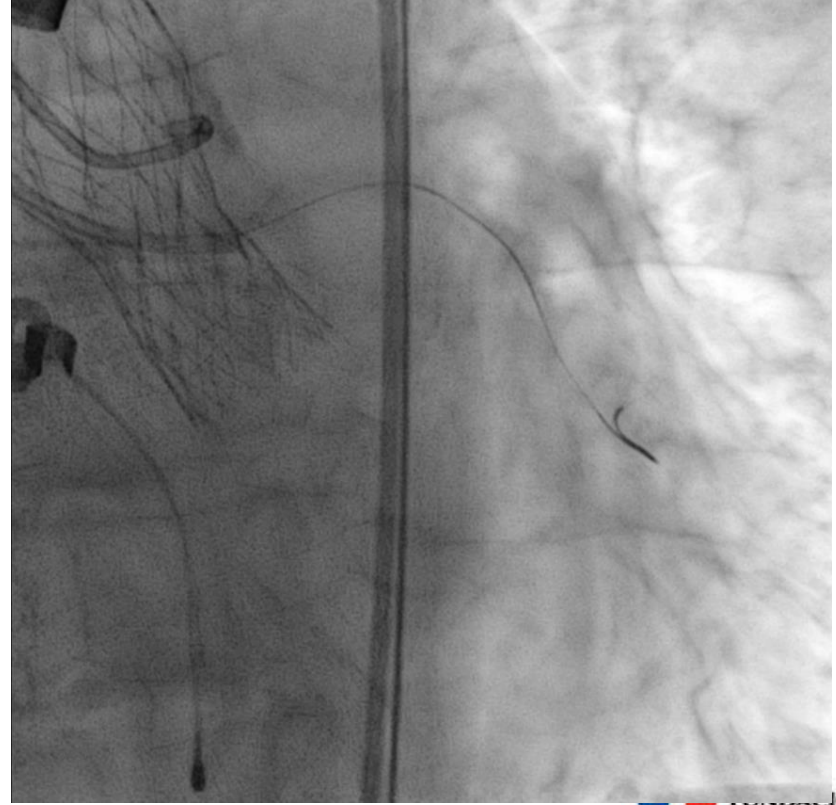
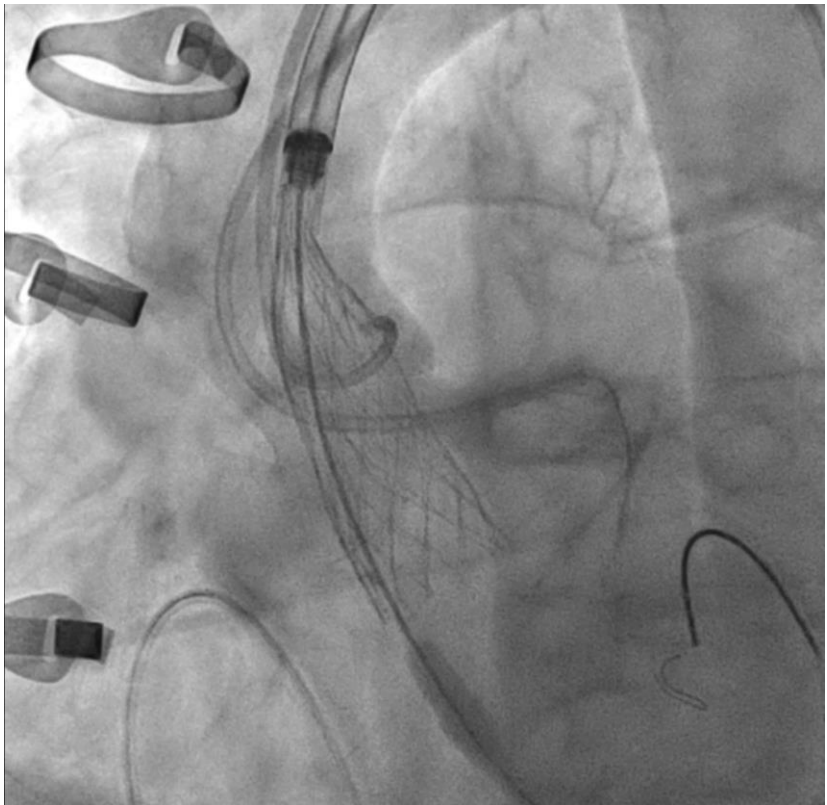
TAVI in a Pte under CPR



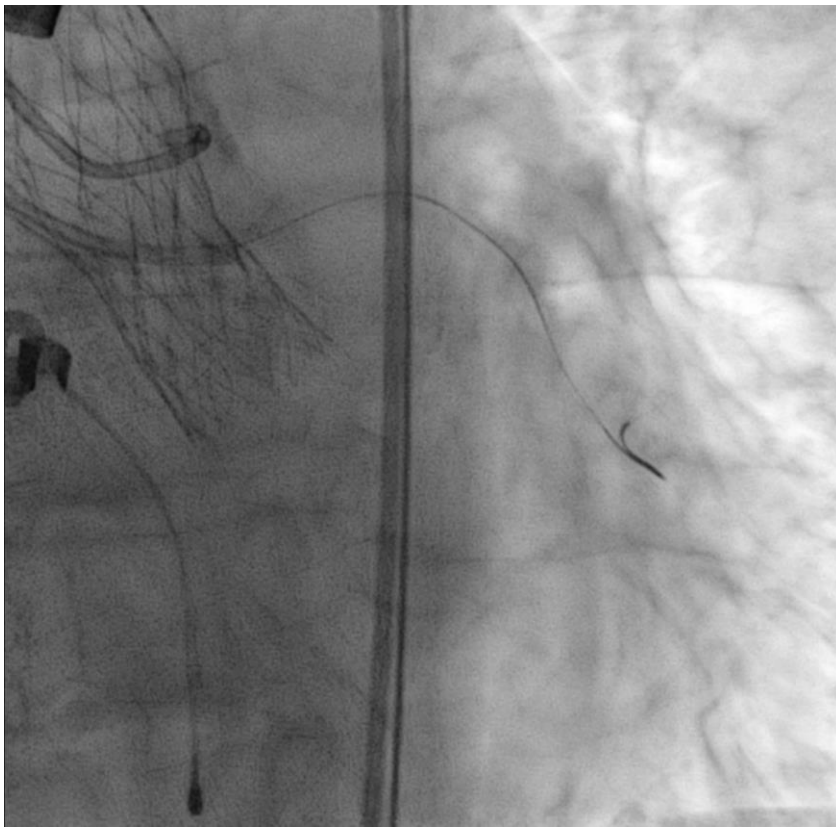
902492

Evolute 23

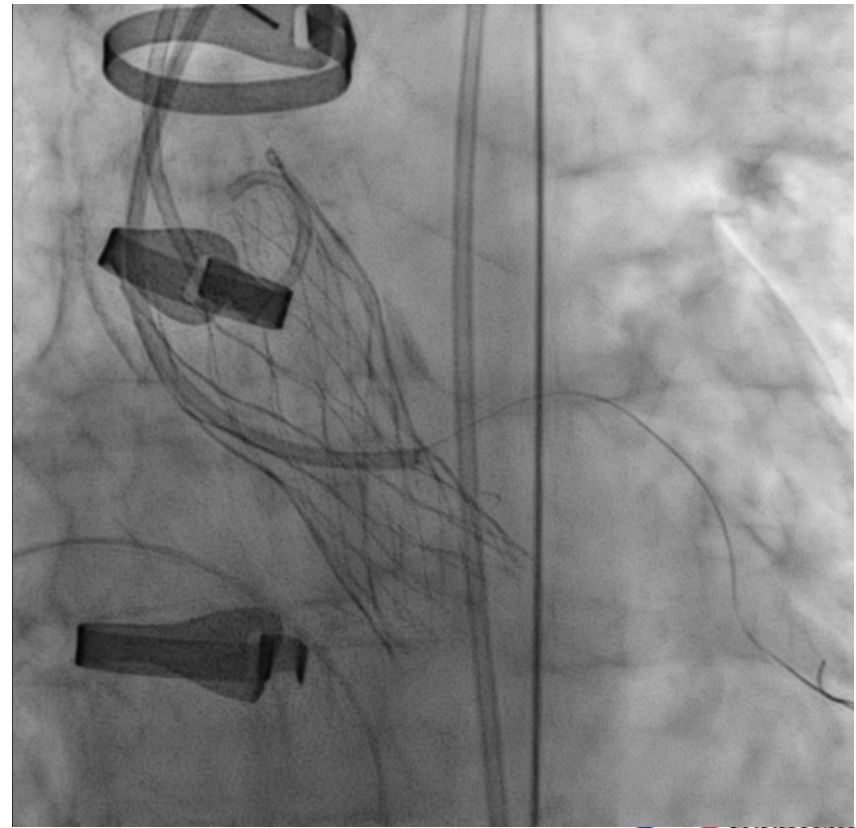
TAVI: final Delivery



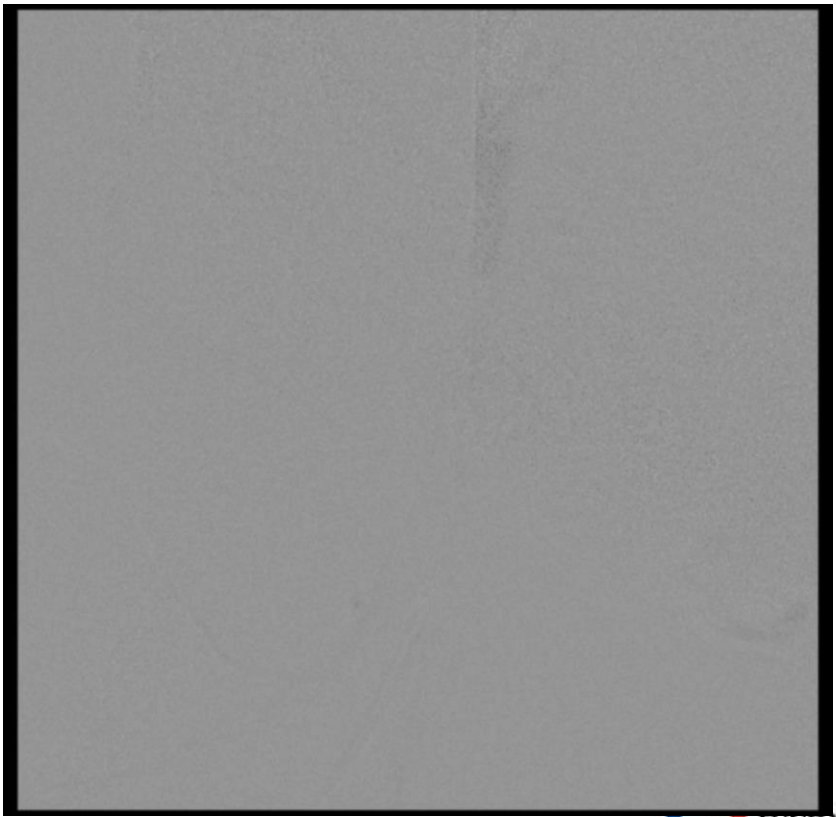
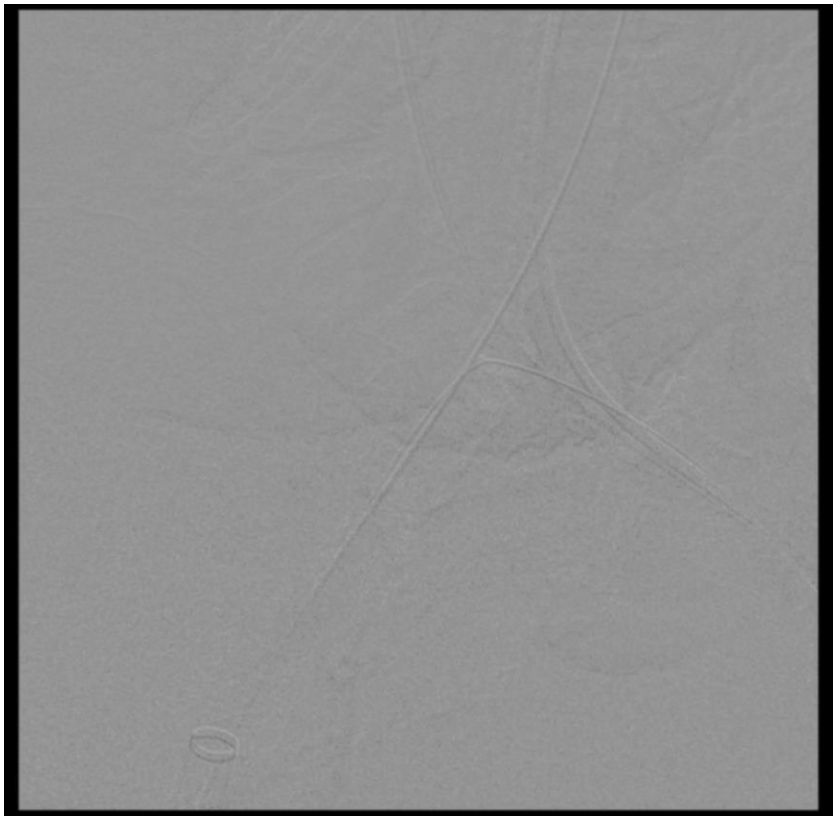
TAVI: LM Patency



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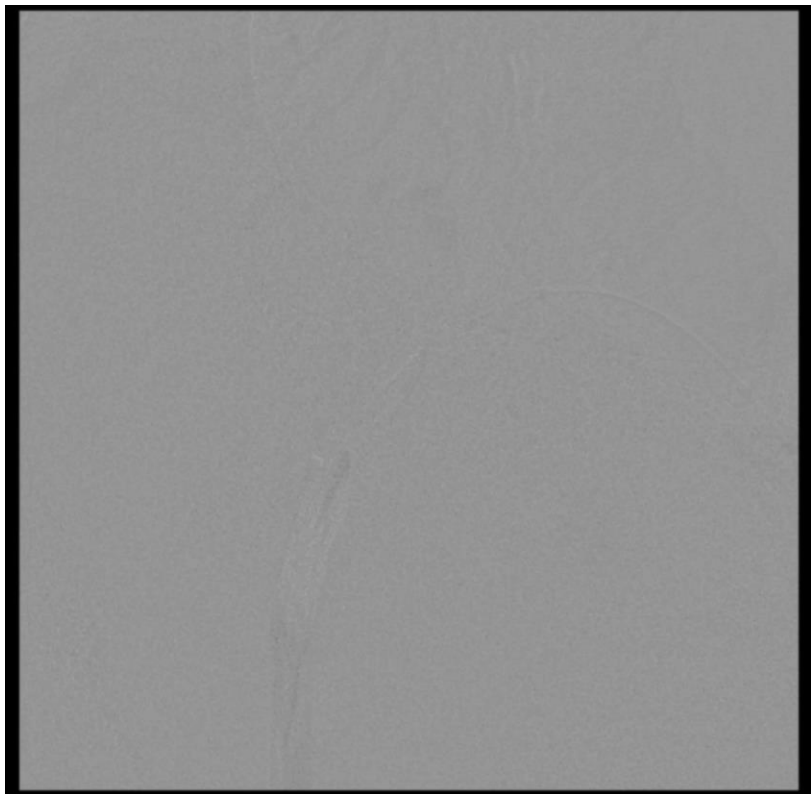


TAVI: Vascular Access Control

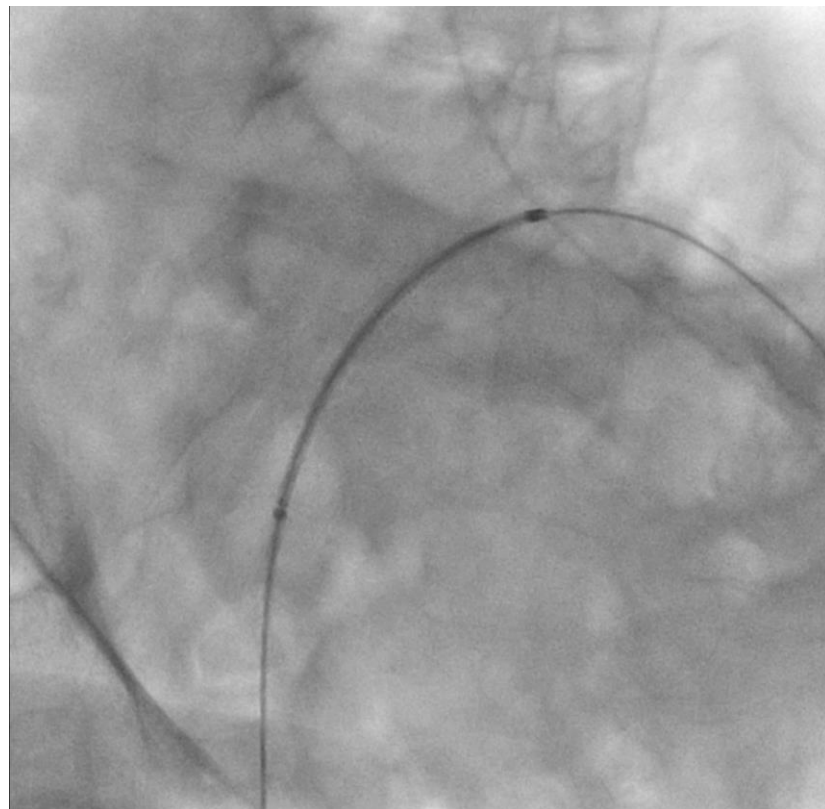


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TAVI: Iliac Dissection

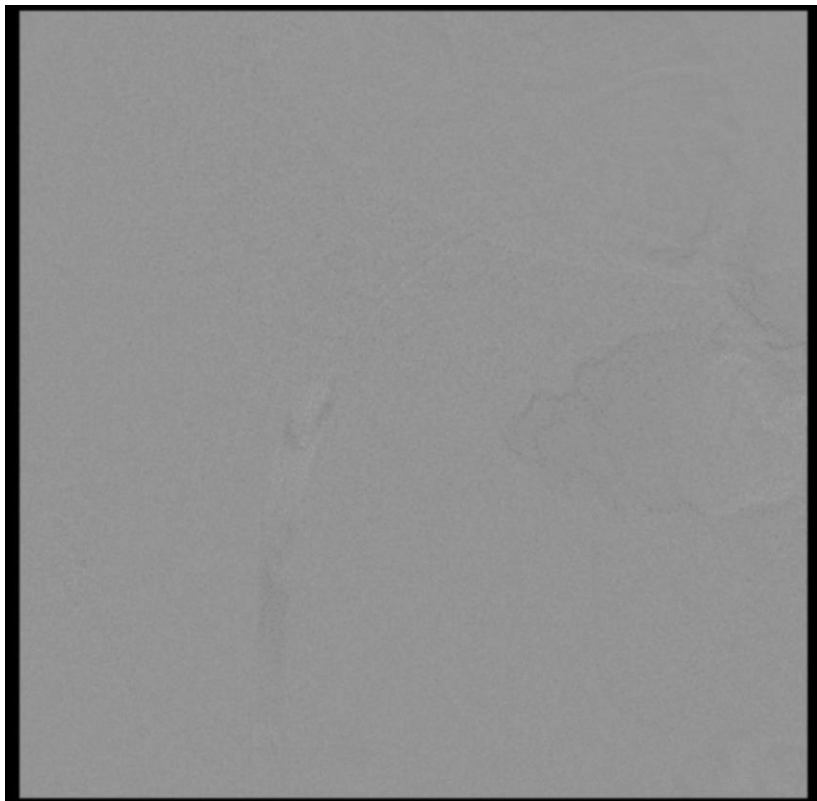


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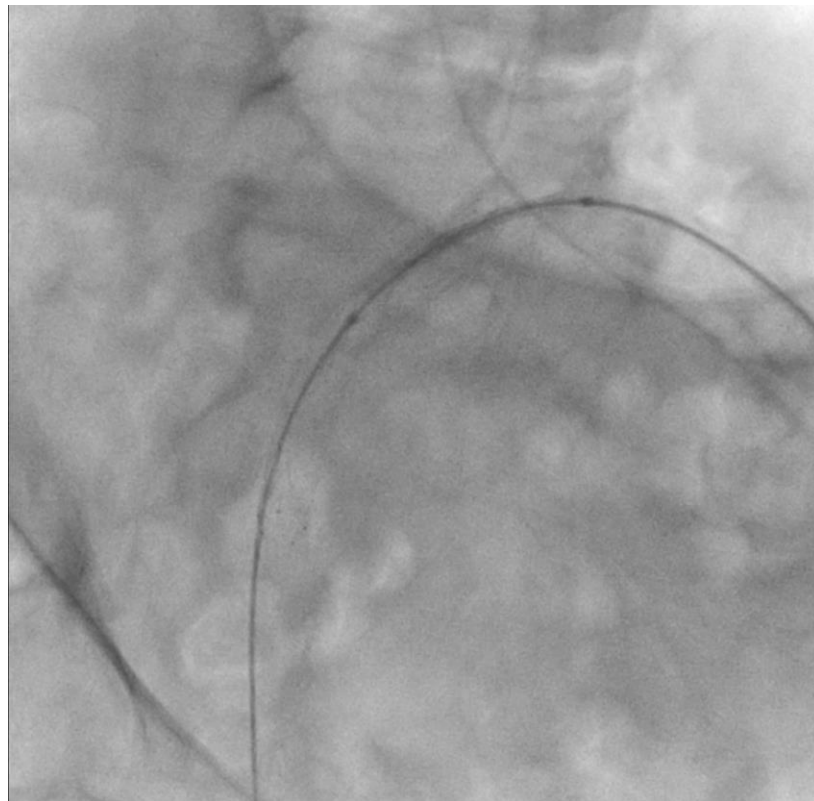


9.0x60mm Self-Expandable Stent

TAVI: Iliac Dissection

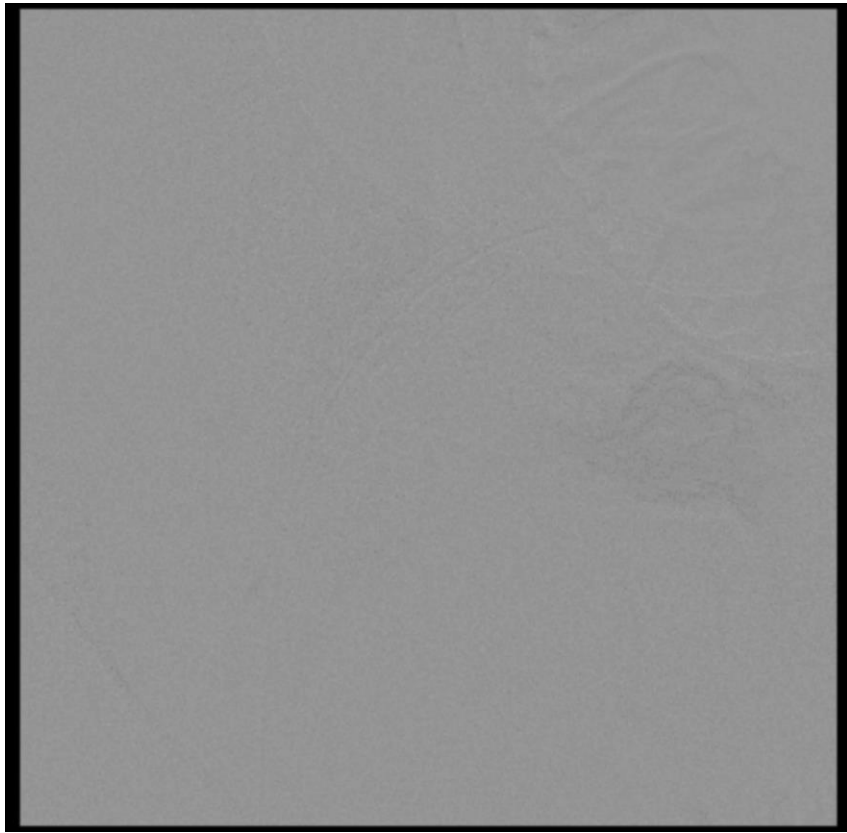


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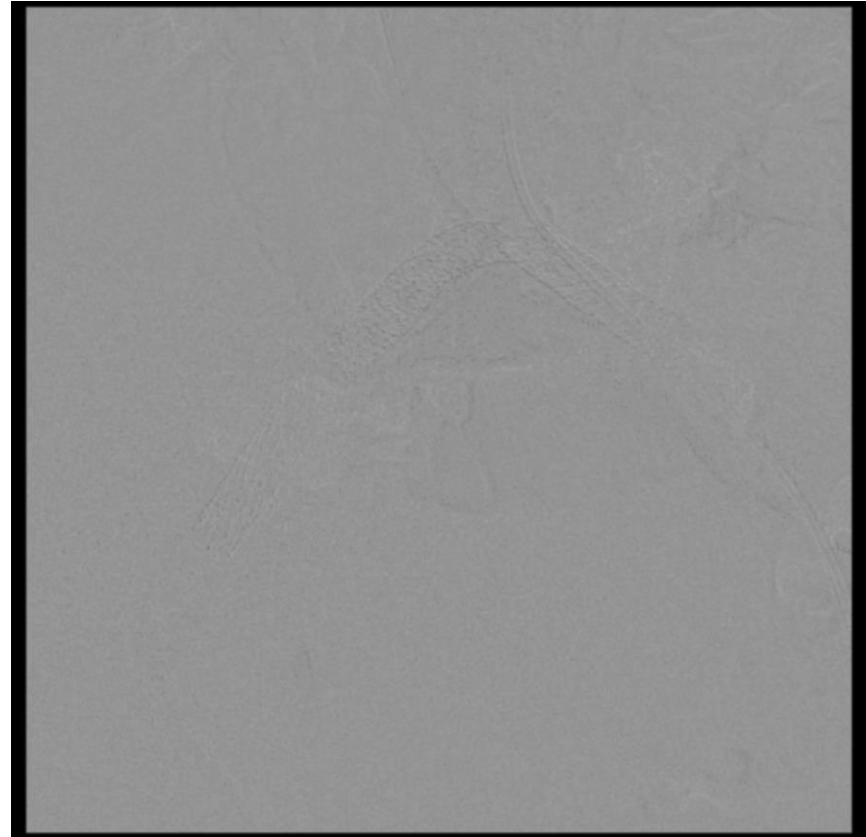
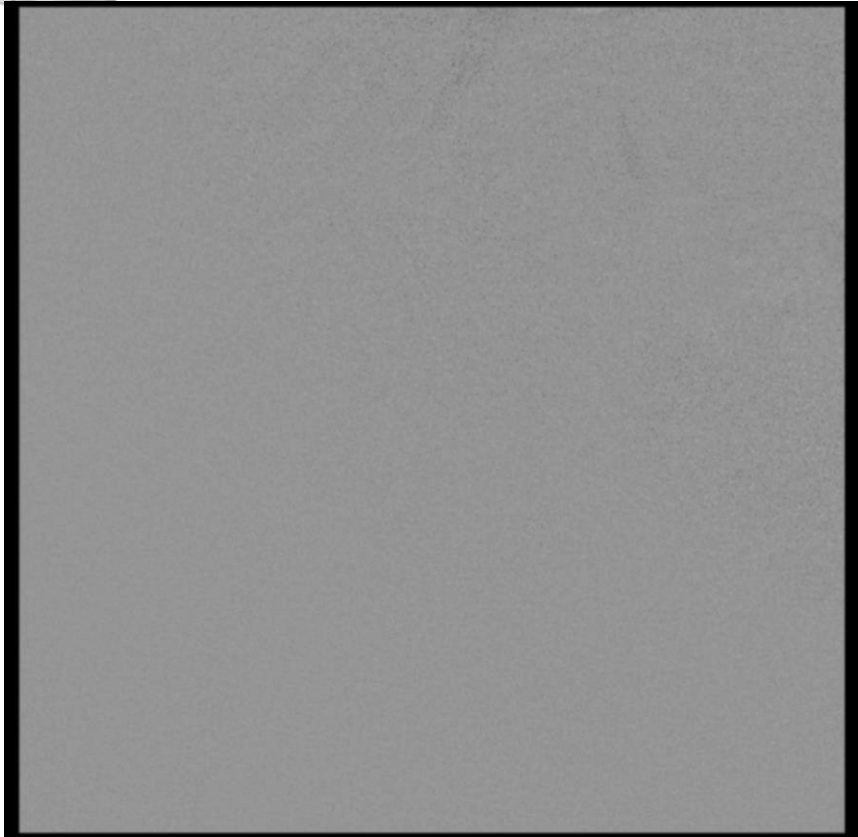


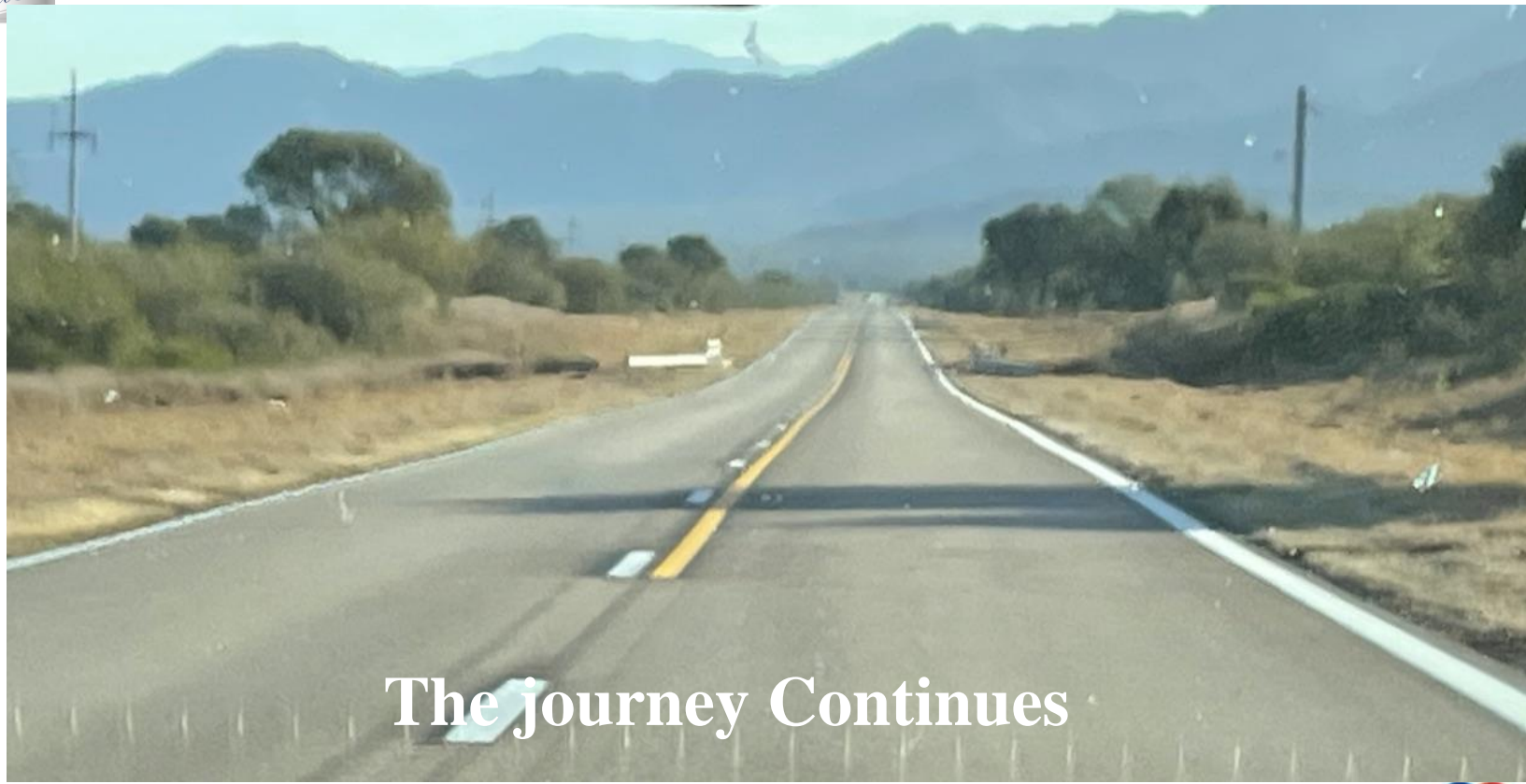
9.0x27mm Balloon-Expandable Stent

TAVI: Iliac Dissection



TAVI: Iliac Dissection





The journey Continues

