
***ACCURATE NEO 2 FOR VALVE-IN-VALVE TREATMENT OF
DEGENERATED 3F ENABLE SUTURELESS BIOPROSTHETIC VALVE***



- 
- I have no conflict of interest to declare

PATIENT HISTORY

- 91-year-old gentleman
- Cardiovascular risk factor: hypertension, former smoker
- Comorbidities: liver cancer (prognosis >12 months), CKD (stage 3 A)

2015

Severe AR treated with a 3F Enable 25 mm (anterior right thoracotomy) complicated by advanced BAV treated with PMK implantation



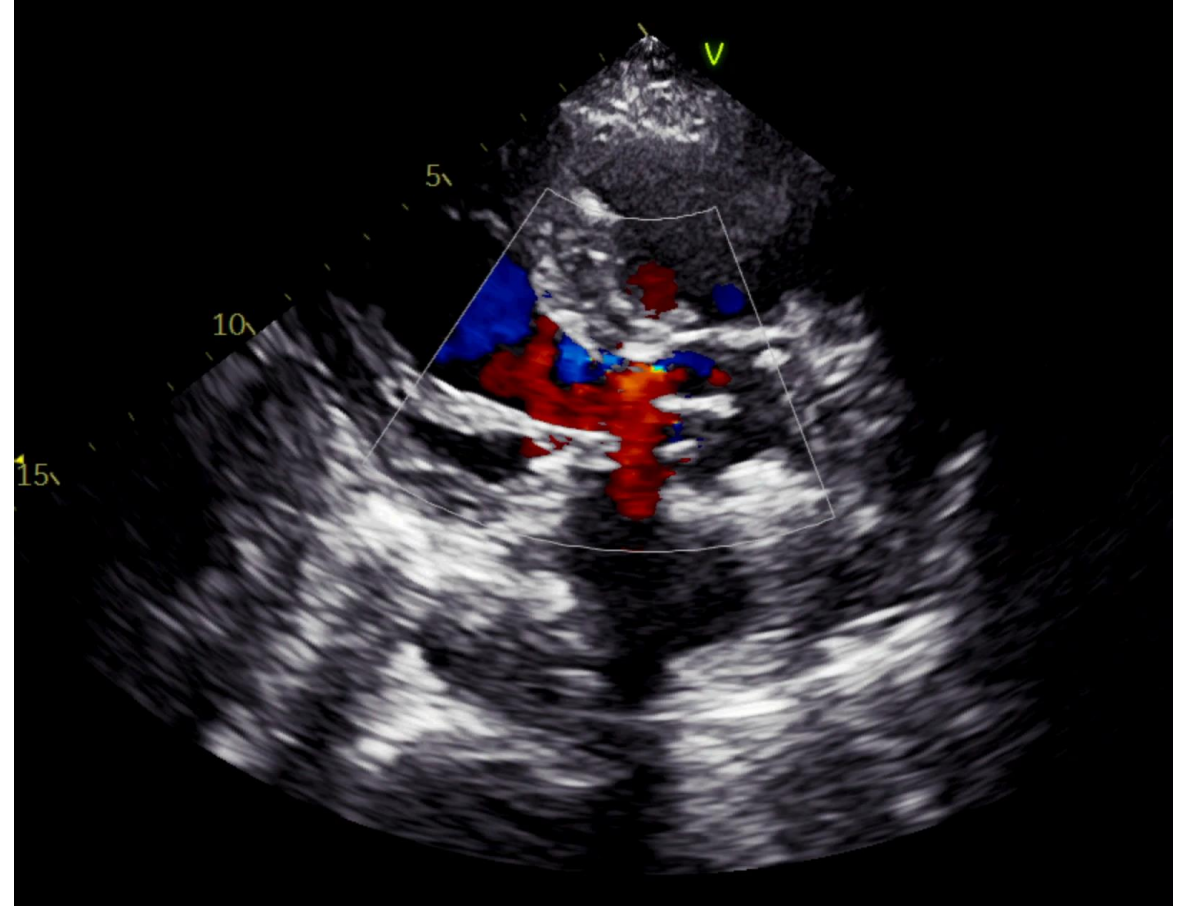
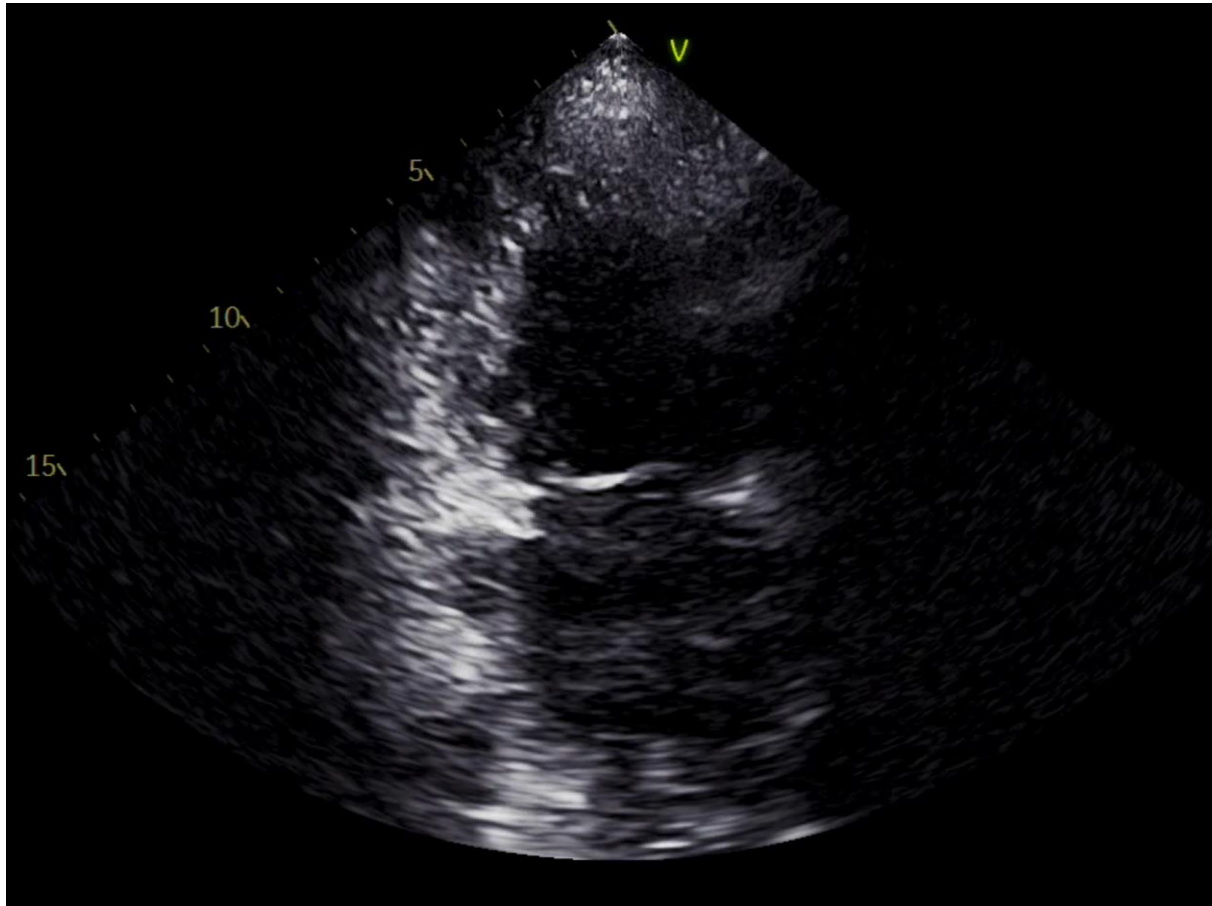
2022

Many episodes of HF (NYHA III/IV)

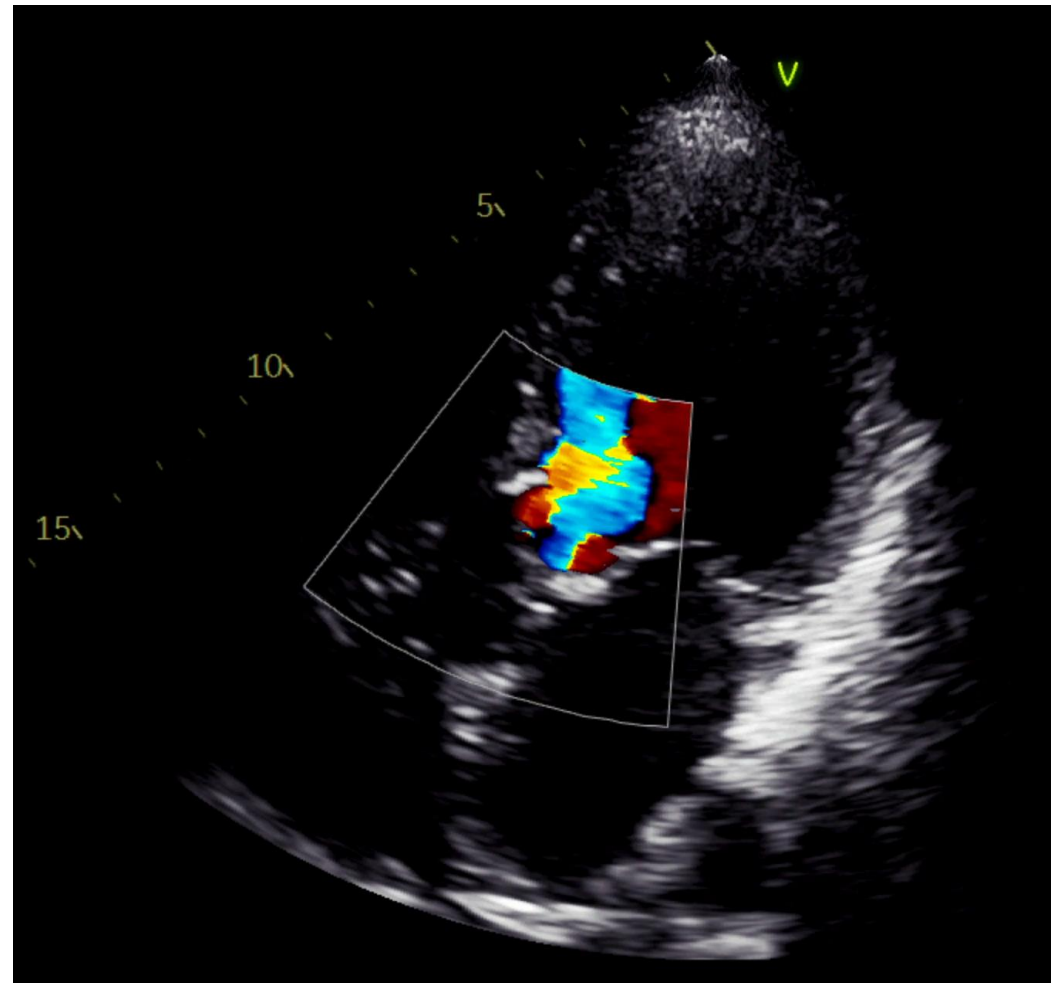
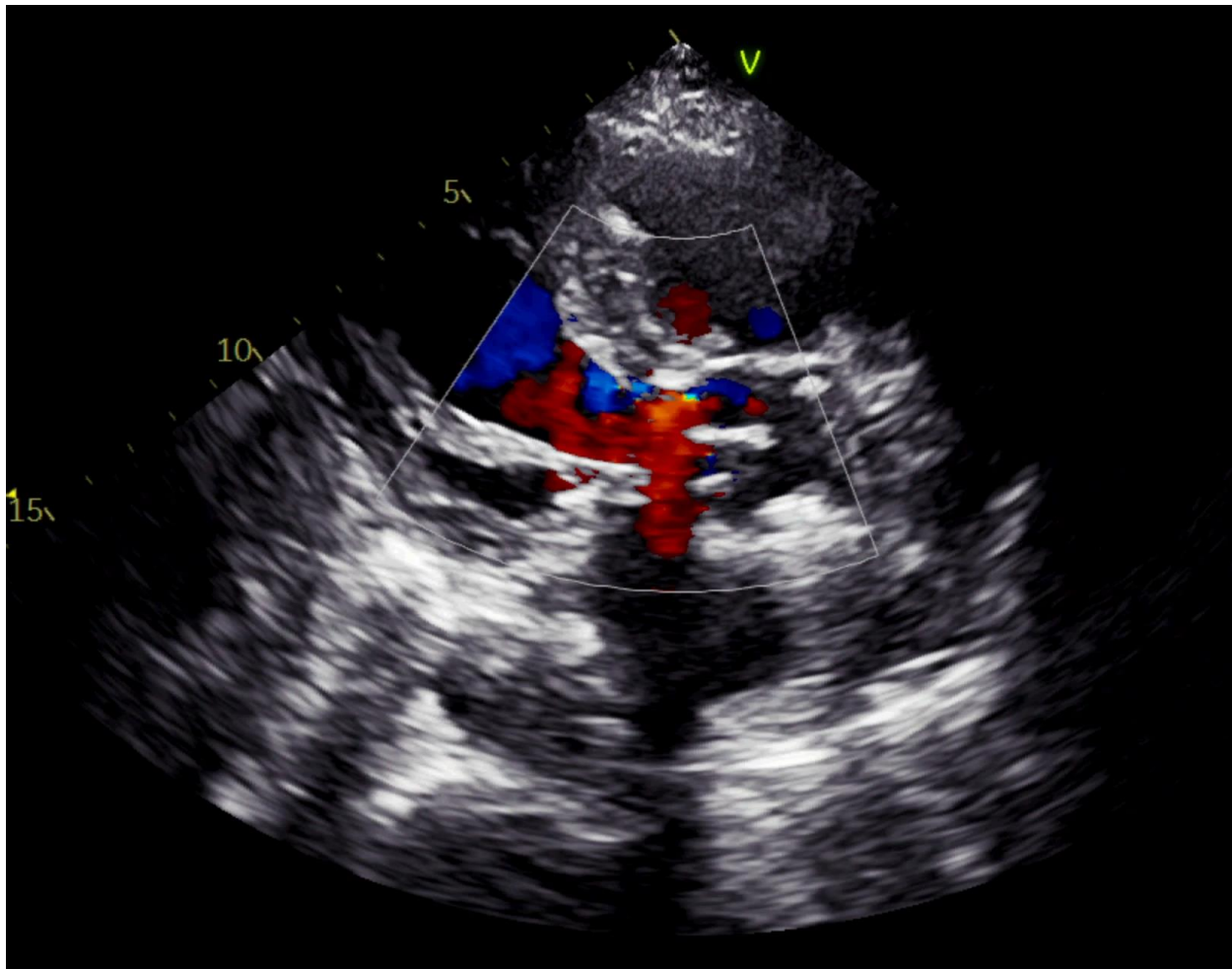
2023

Hospitalization for acute HF

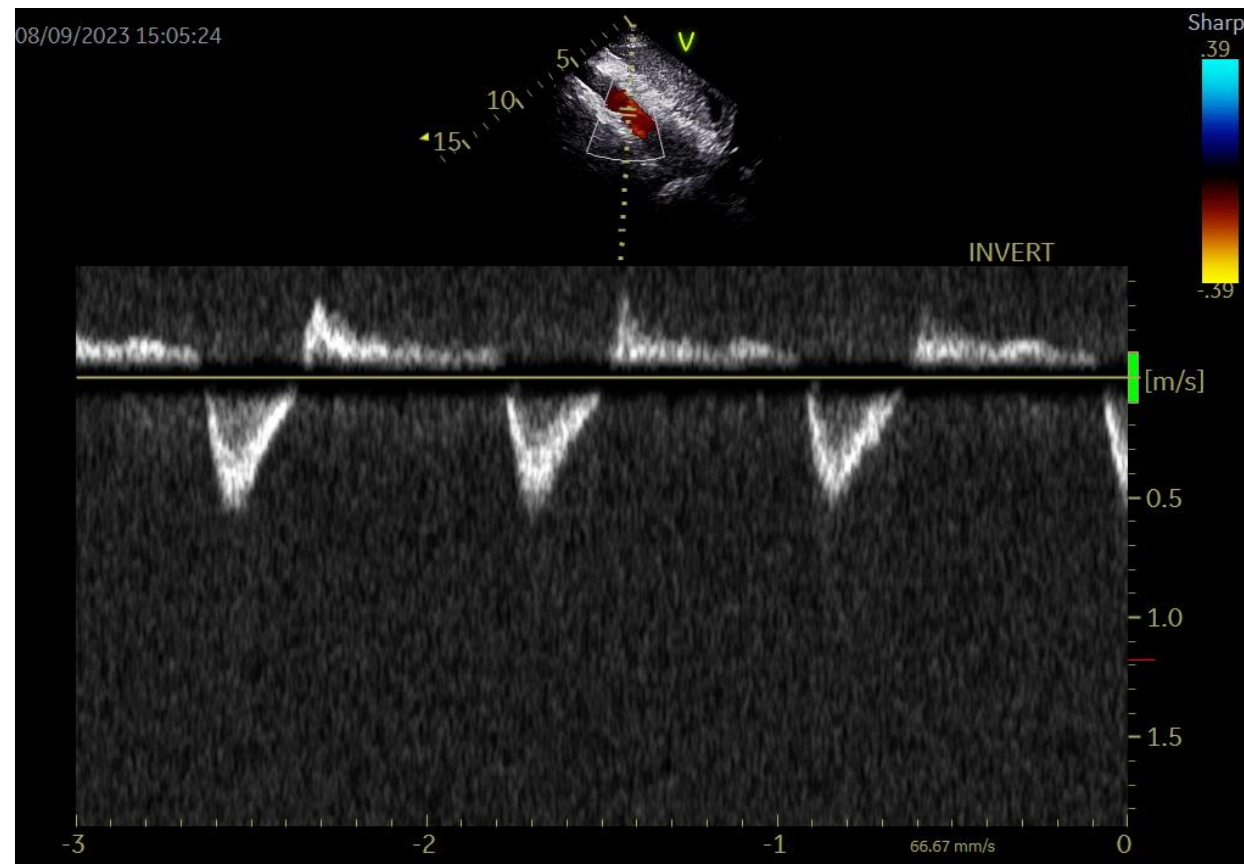
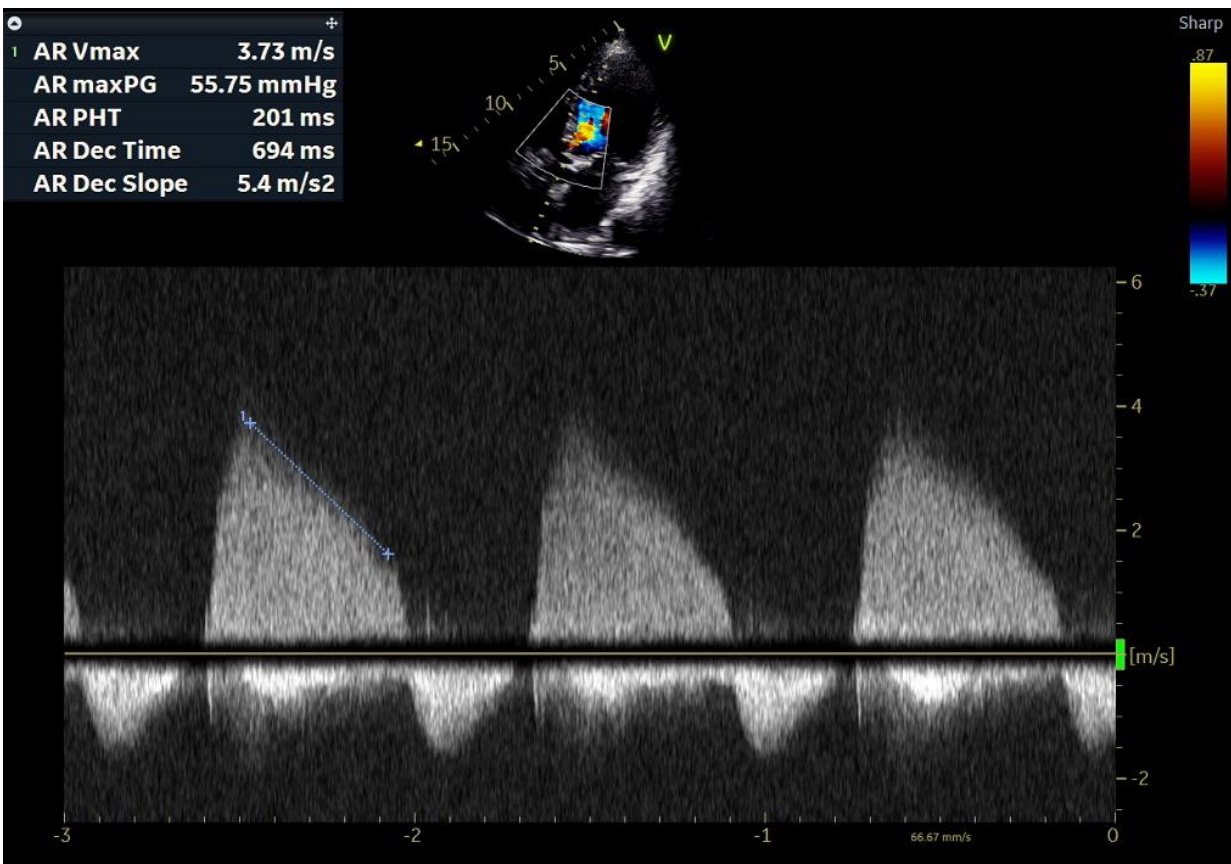
TRANSTHORACIC ECHOCARDIOGRAM



TRANSTHORACIC ECHOCARDIOGRAM

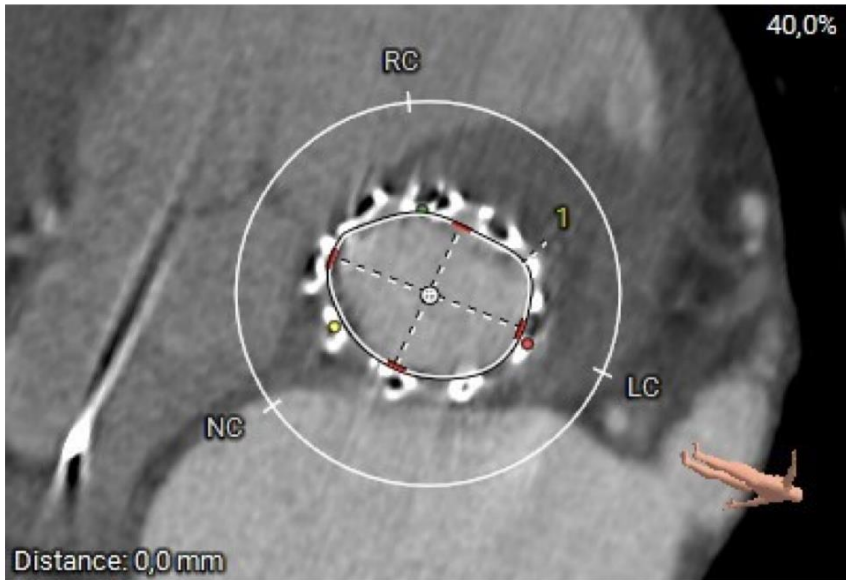


TRANSTHORACIC ECHOCARDIOGRAM



HEART CT SCAN

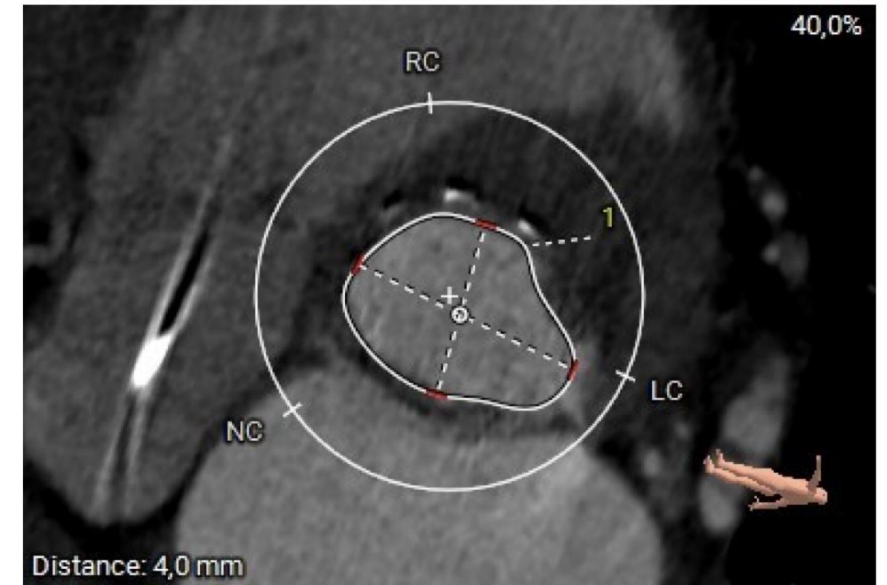
TRUE- ID



Perimeter: 74mm
True ID: 23.6mm
Absence of calcifications

ID Type	Label	Value
1	Polygon Annulus Dimensions - Min. Ø	20,0 mm
	Annulus Dimensions - Max. Ø	26,2 mm
	Annulus Dimensions - Avg. Ø	23,1 mm
	Annulus Dimensions - Area derived Ø	23,1 mm
	Annulus Dimensions - Perimeter derived Ø	23,6 mm
	Annulus Dimensions - Area	418,5 mm ²
	Annulus Dimensions - Perimeter	74,0 mm

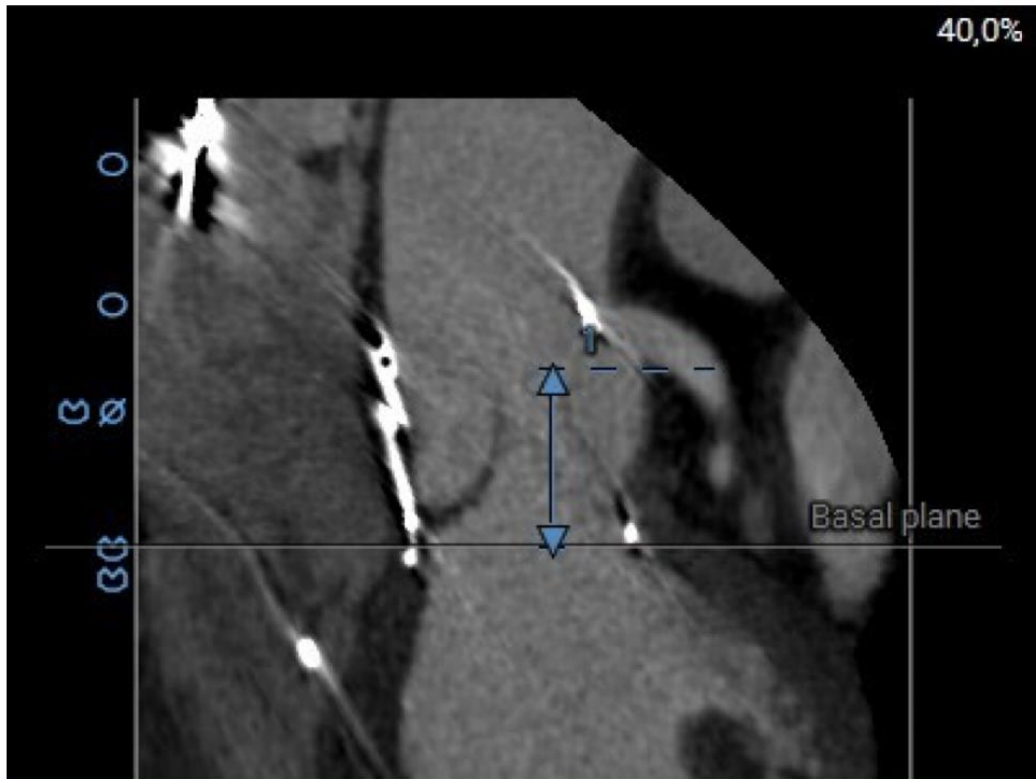
LVOT at -4mm



ID Type	Label	Value
1	Polygon LVOT Dimensions - Min. Ø	22,8 mm
	LVOT Dimensions - Max. Ø	30,9 mm
	LVOT Dimensions - Avg. Ø	26,9 mm
	LVOT Dimensions - Area derived Ø	26,0 mm
	LVOT Dimensions - Perimeter derived Ø	27,2 mm
	LVOT Dimensions - Area	529,3 mm ²
	LVOT Dimensions - Perimeter	85,3 mm

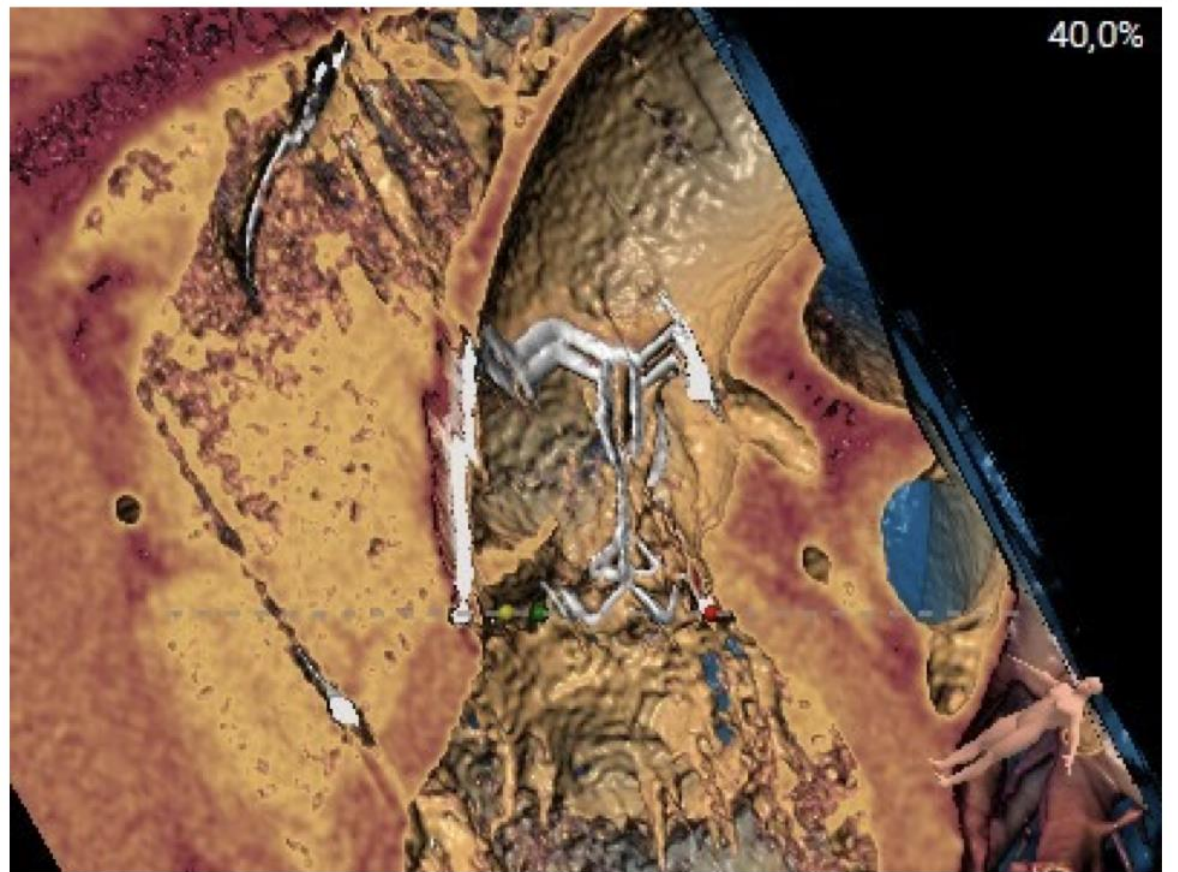
RISK OF CORONARY OBSTRUCTION

LCA base height



ID Type	Label	Value
1	Vessel Length Left Coronary Height	22,7 mm

LCA Ostium



RISK OF CORONARY OBSTRUCTION

RCA base height

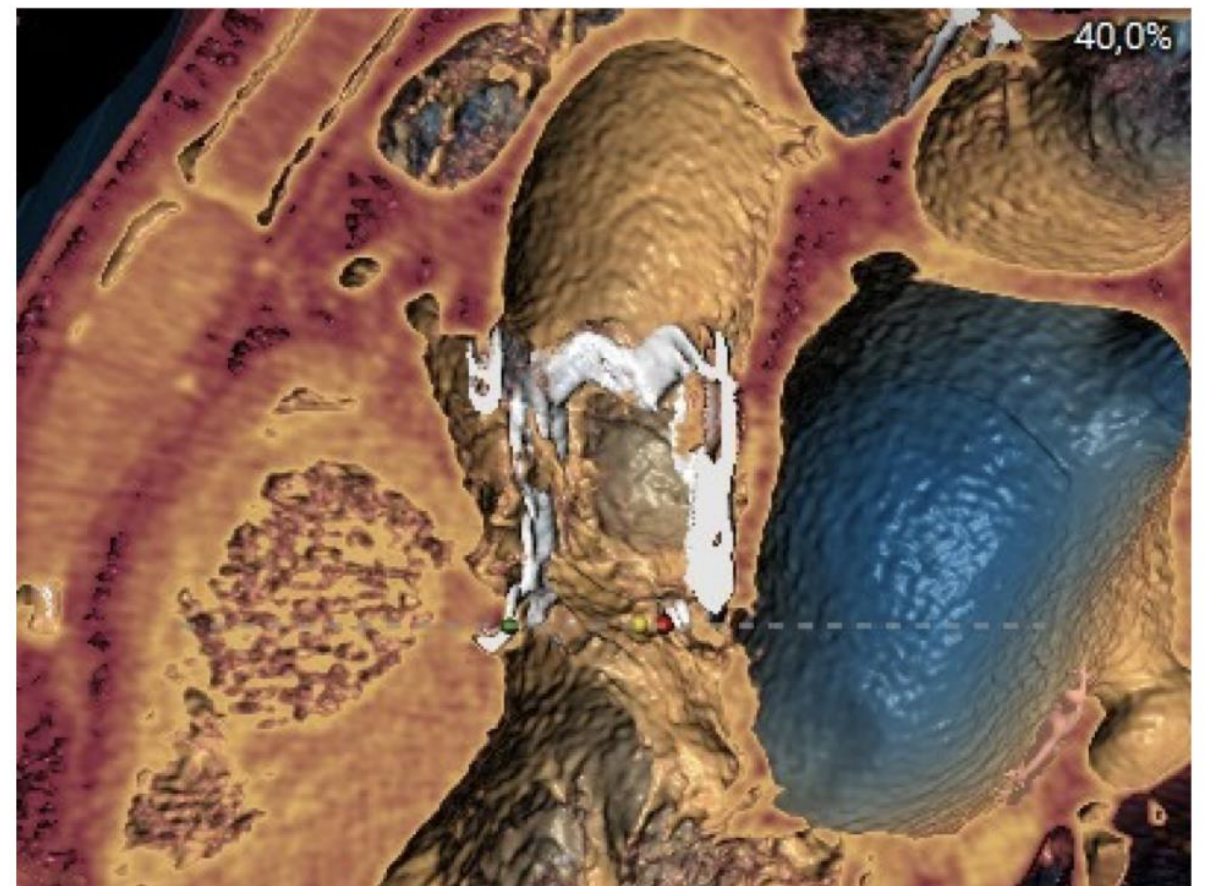
40,0%



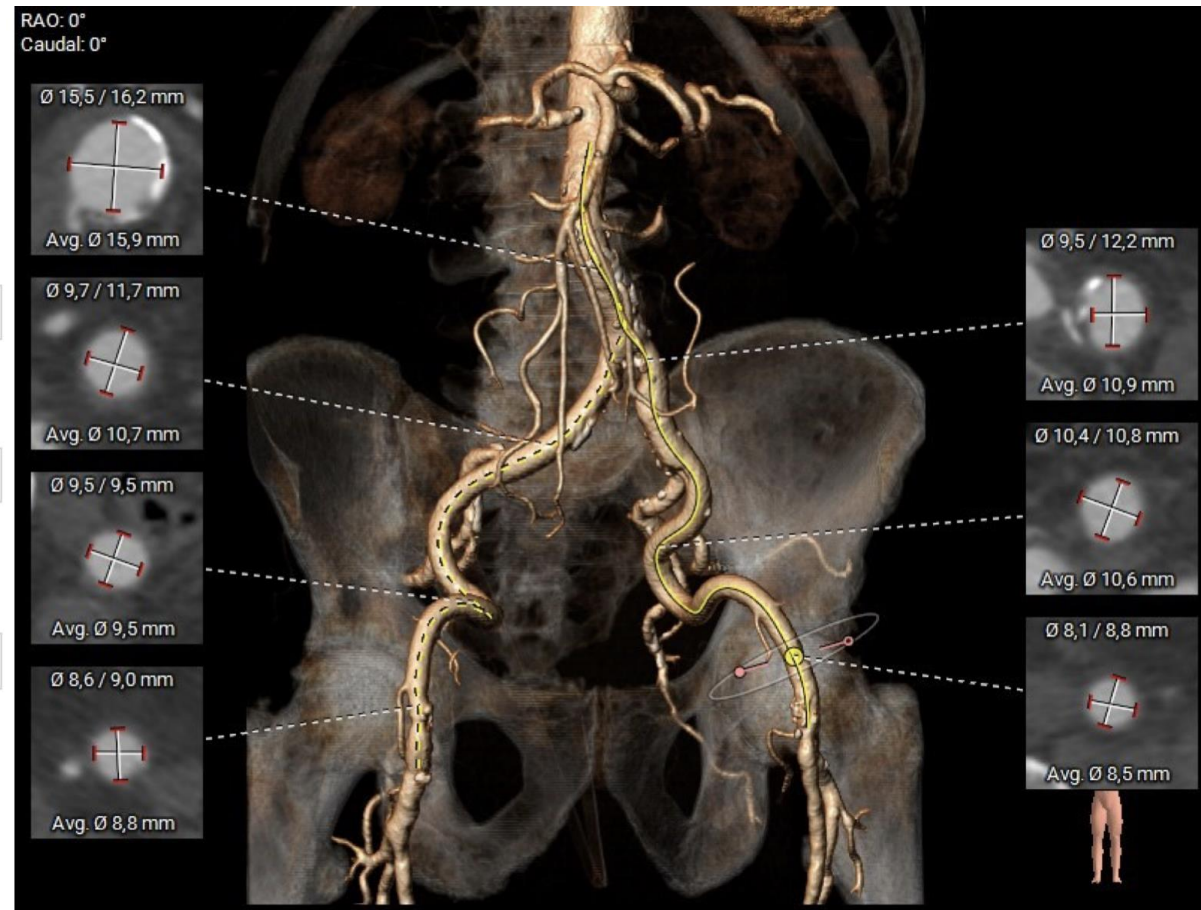
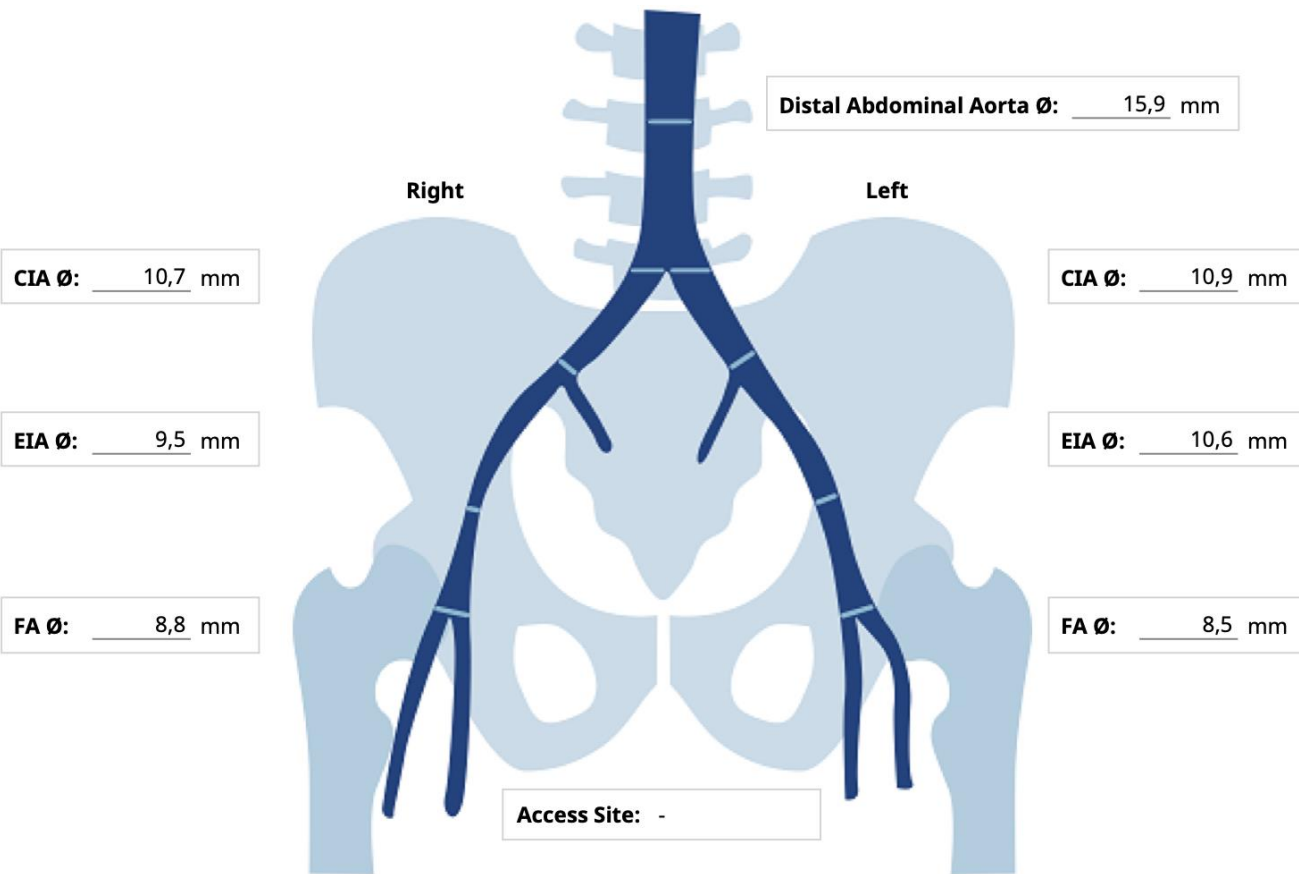
ID	Type	Label	Value
1	Vessel Length	Right Coronary Height	20,5 mm

RCA Ostium

40,0%

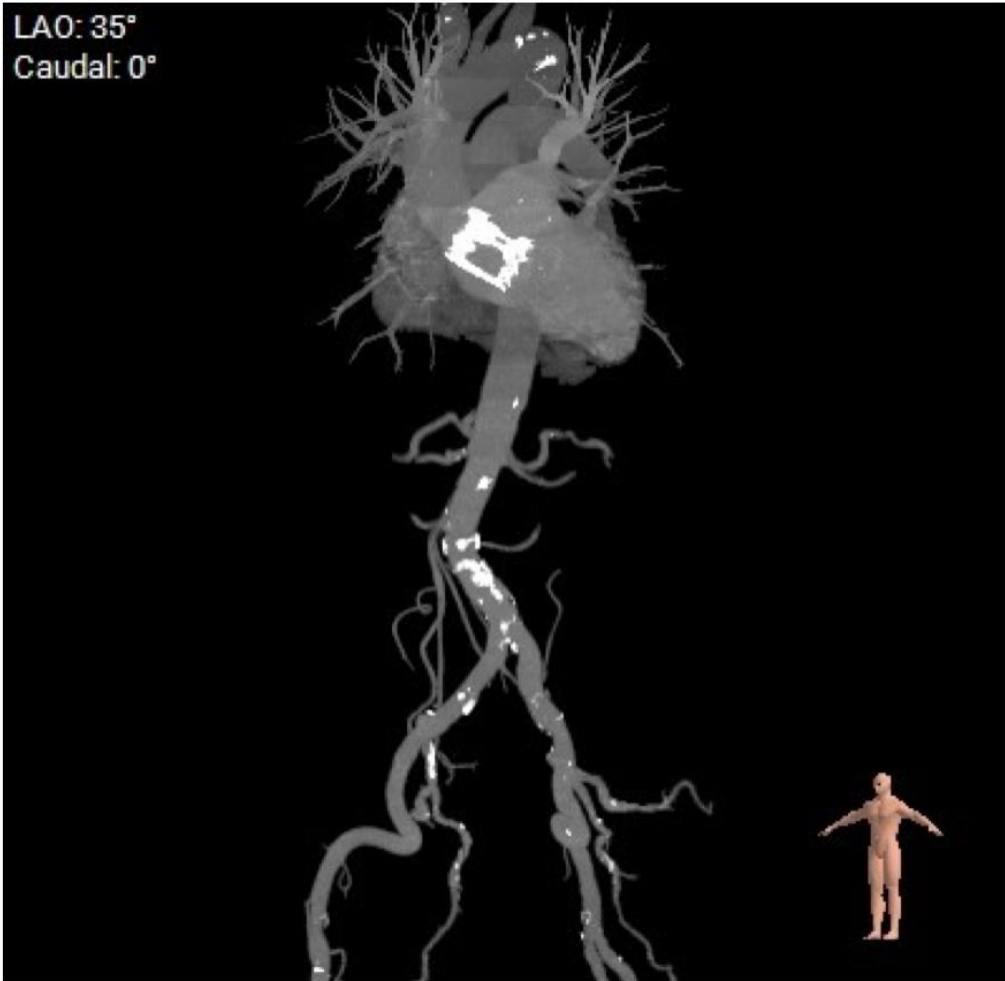


AORTO-ILIO-FEMORAL TRACT

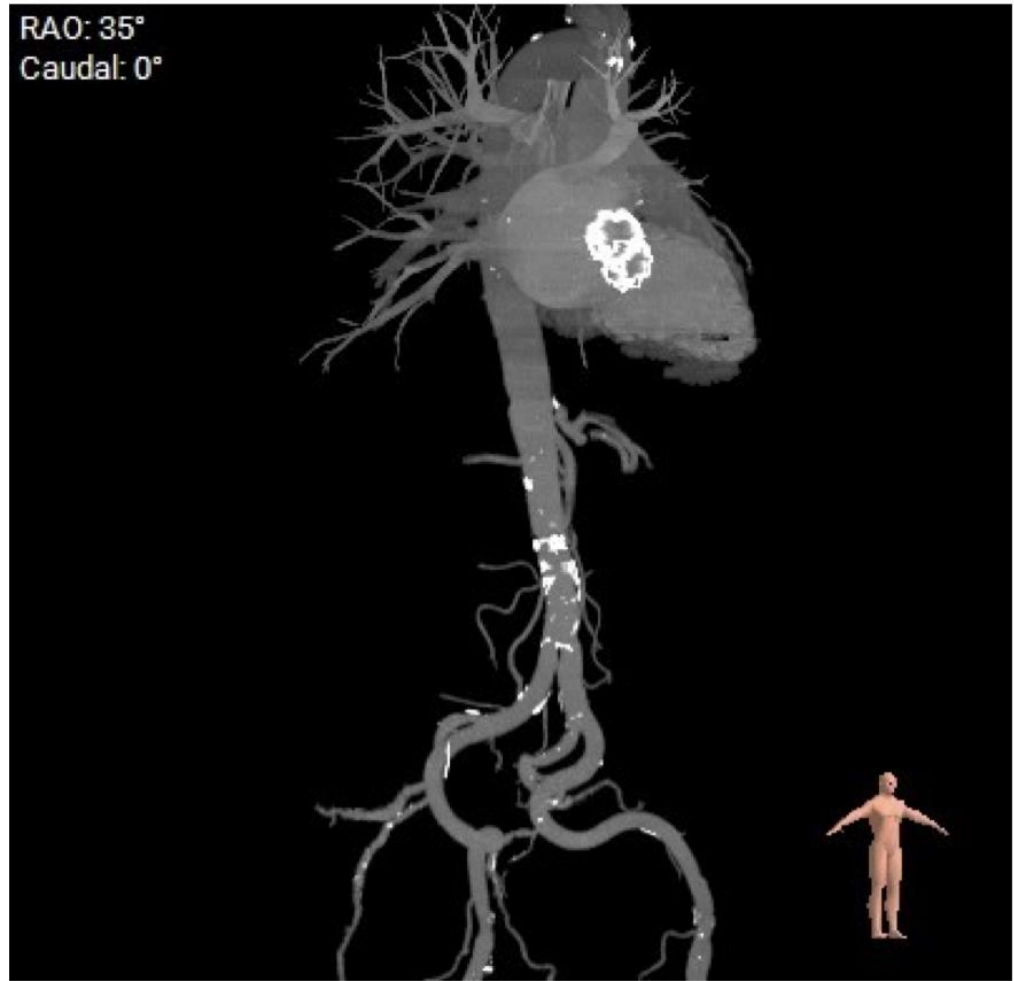


AORTO-ILIO-FEMORAL TRACT

LAO: 35°
Caudal: 0°



RAO: 35°
Caudal: 0°



HEART TEAM



2021 ESC/EACTS Guidelines for the management of valvular heart disease

Bioprosthetic failure		
Reoperation is recommended in symptomatic patients with a significant increase in transprosthetic gradient (after exclusion of valve thrombosis) or severe regurgitation.	I	C
Transcatheter, transfemoral valve-in-valve implantation in the aortic position should be considered by the Heart Team depending on anatomic considerations, features of the prosthesis, and in patients who are at high operative risk or inoperable. ⁵²⁹	IIa	B

STS Score:
Euroscore II

Characteristics	Redo SAVR favoured	TAV-in-SAV favoured
Patient		
Low/intermediate surgical risk	✓	
High/extreme surgical risk		✓
Age ≥80		✓
Young age (<75) where valve durability is important	✓	
Concomitant diseases needing surgical intervention	✓	
Significant paravalvular leak not amenable to percutaneous closure	✓	
Patient preference	✓	✓
Surgical valve		
Small size where severe PPM cannot be addressed	✓	
Large size without severe PPM		✓
Balloon valve fracture feasible and low risk		✓
Severe PPM when balloon valve fracture is not feasible or high risk	✓	
Anatomic		
High risk of coronary obstruction	✓	
High risk of THV malposition	✓	
High risk of aortic root injury	✓	
Favourable coronary anatomy		✓
Calcified aortic root or hostile chest		✓
PPM: prosthesis-patient mismatch; THV: transcatheter heart valve		

Tarantini G et al, *EuroIntervention*. 2021, doi:10.4244/EIJ-D-21-00157

Vahanian A et al, *Eur Heart J*. 2022, doi:10.1093/eurheartj/ehab395

BACKGROUND

- The absence of sutures may theoretically increase the risk of valve instability and dislocation.
- Most valve-in-valve (VIV) procedures have been performed in degenerated stented or stentless bioprosthetic valves with only a few cases reported in sutureless bioprosthetic valve (SBV) failure

In the era of the valve-in-valve: is transcatheter aortic valve implantation (TAVI) in sutureless valves feasible?

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2015, PERCEVAL S valve treated with SAPIEN XT

BACKGROUND

2016, 5 PERCEVAL S valves treated with COREVALVE

Early outcome of degenerated self-expandable sutureless aortic prostheses treated with transcatheter valve implantation: A pilot series



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From the ^aCardiology Department and ^bCardiac Surgery Department, Institut Mutualiste Montsouris, Paris, France.

Disclosures: C.C. is a proctor for Medtronic. All other authors have nothing to disclose with regard to commercial support.

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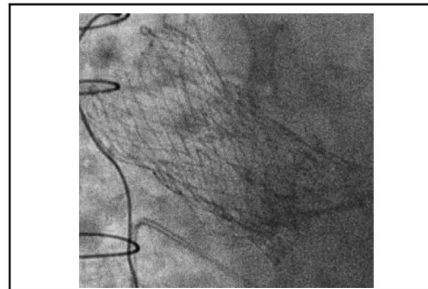
Address for reprints: Nicolas Amabile, MD, PhD, Department of Cardiology, Institut Mutualiste Montsouris, 42 Blvd Jourdan, 75014 Paris, France (E-mail: nicolas.amabile@imm.fr).

J Thorac Cardiovasc Surg 2016;152:1635-7

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<http://dx.doi.org/10.1016/j.jtcvs.2016.07.079>



Final result of a valve-in-valve TAVI procedure for treatment of a degenerated SSAD.

Amabile N, Zannis K, Veugeois A, Caussin C. *J Thorac Cardiovasc Surg*. 2016;152(6):1635-1637.

2023, 28 PERCEVAL S valves treated with COREVALVE, SAPIEN and ACCURATE



JACC: Cardiovascular Interventions

Volume 16, Issue 1, 9 January 2023, Pages 122-124



Letter

Research Correspondence

Transcatheter Aortic Valve-in-Valve Replacement for Failed Sutureless Aortic Valves

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[Xavier Millán MD, PhD](#), [Rafael Romaguera MD, PhD](#), [Xavier Carrillo MD, PhD](#),

[Eduard Fernández-Nofrerías MD](#), [Jose Montero-Cabezas MD](#), [Victoria Delgado MD, PhD](#),

[Ignacio Cruz-Gonzalez MD, PhD](#), [Antoni Bayés-Genís MD, PhD](#),

[Josep Rodés-Cabau MD, PhD](#)  

Vilalta V, Piñón P, García de Lara J, et al. *JACC Cardiovasc Interv*. 2023;16(1):122-124.

3F ENABLE

- The 3F Enable (Medtronic) was the first sutureless valve to obtain CE Mark approval and although promising results, in 2015 it was withdrawn from the market
- Among the few data available, there have been no reports available to date that demonstrate the feasibility of ViV procedures for the treatment of degenerated 3F-Enable SBV.



TRANSCATHETER PROSTHESIS SELECTION

Size: 25

Stent ID 27 | Height 34 | True ID 25

THV Selector: Current

Acurate NEO M/L	Allegra 27/31
Evolut 26/29	Portico 27
S3 26/29	

TC SCAN (ANULUS):
Perimeter: 74mm
True ID: 23.6mm

PROCEDURE'S POTENTIAL CHALLENGES:

- Elevated post-procedural gradients
- Risk of coronary obstruction
- Valve instability or dislocation



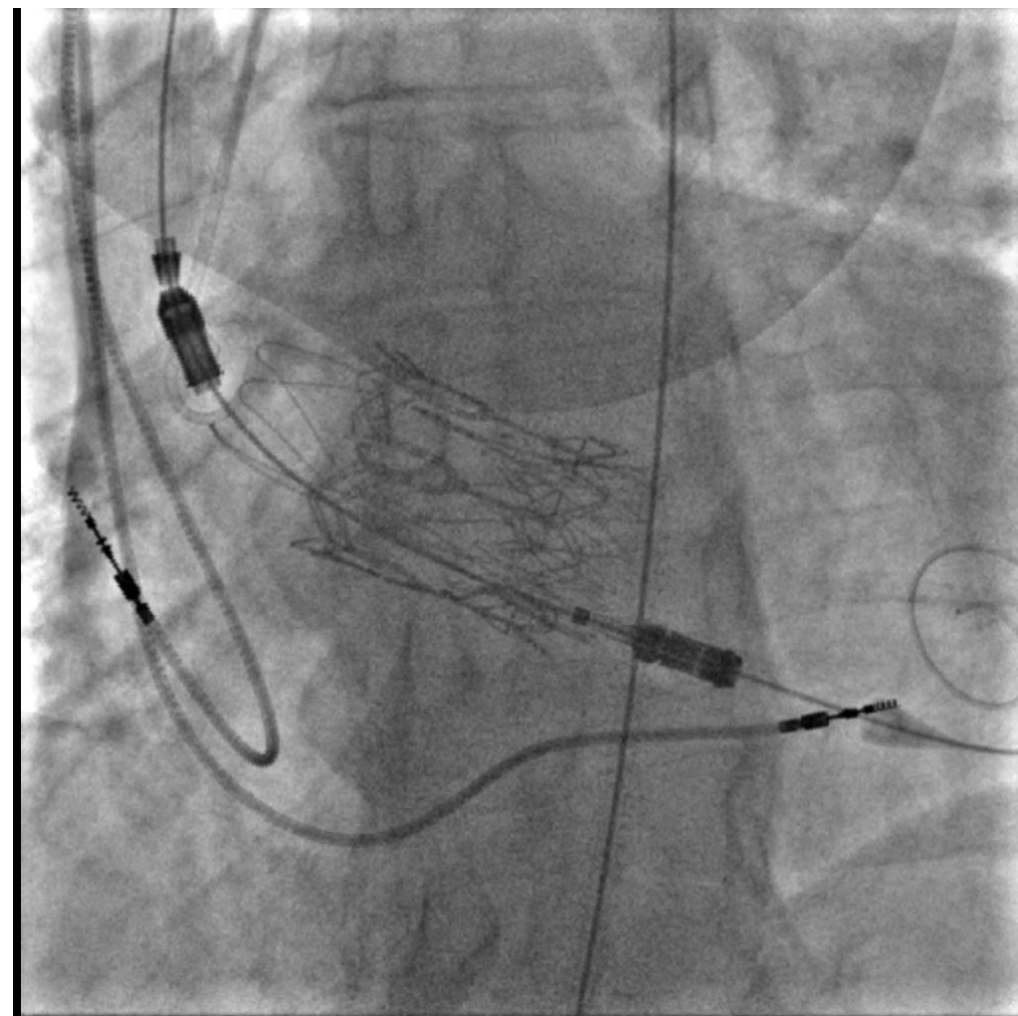
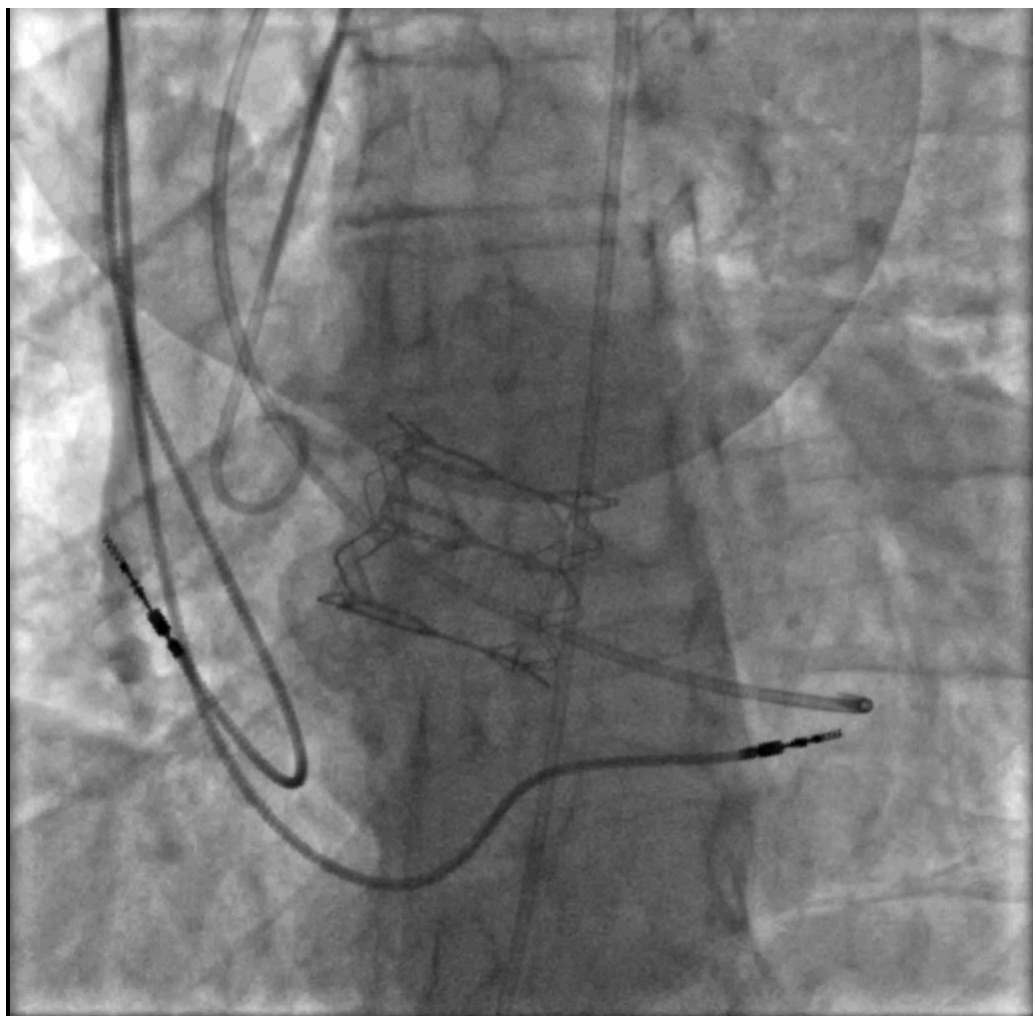
Accurate Neo 2 M

M – 25 mm

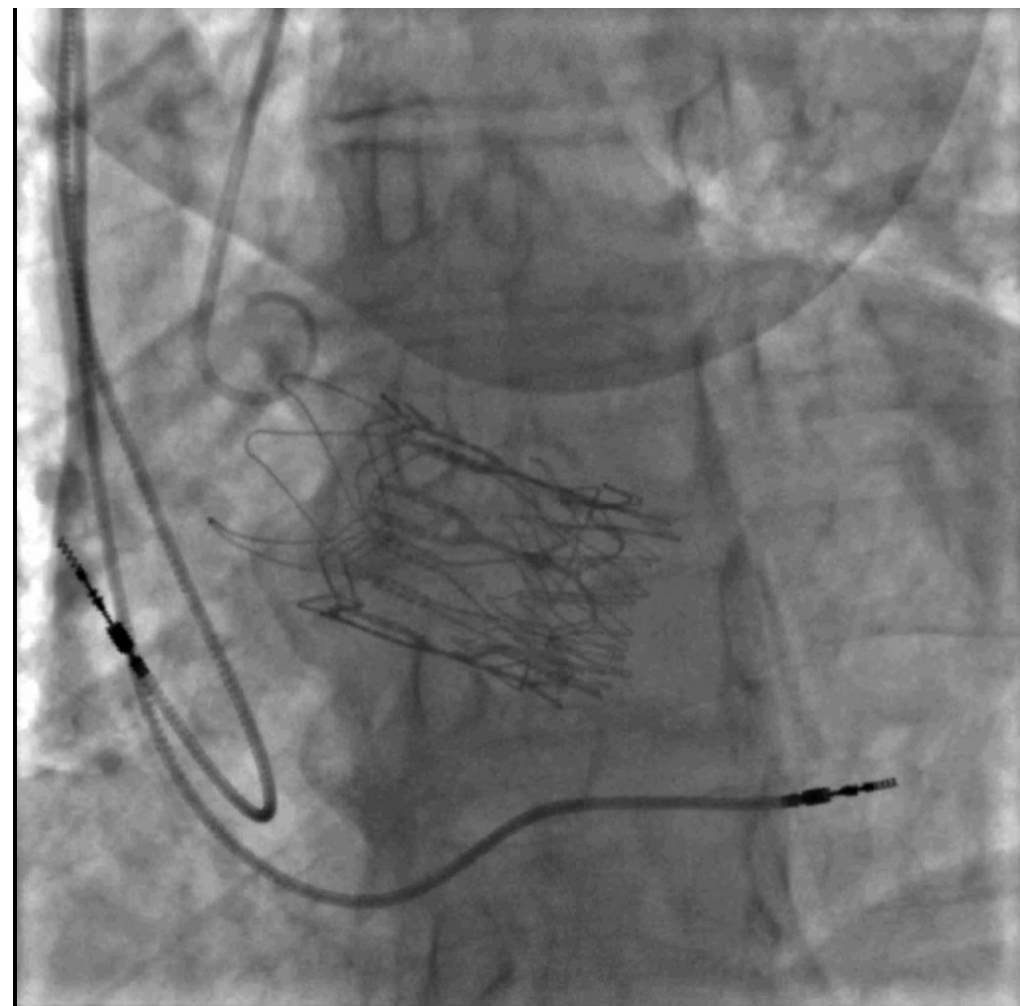
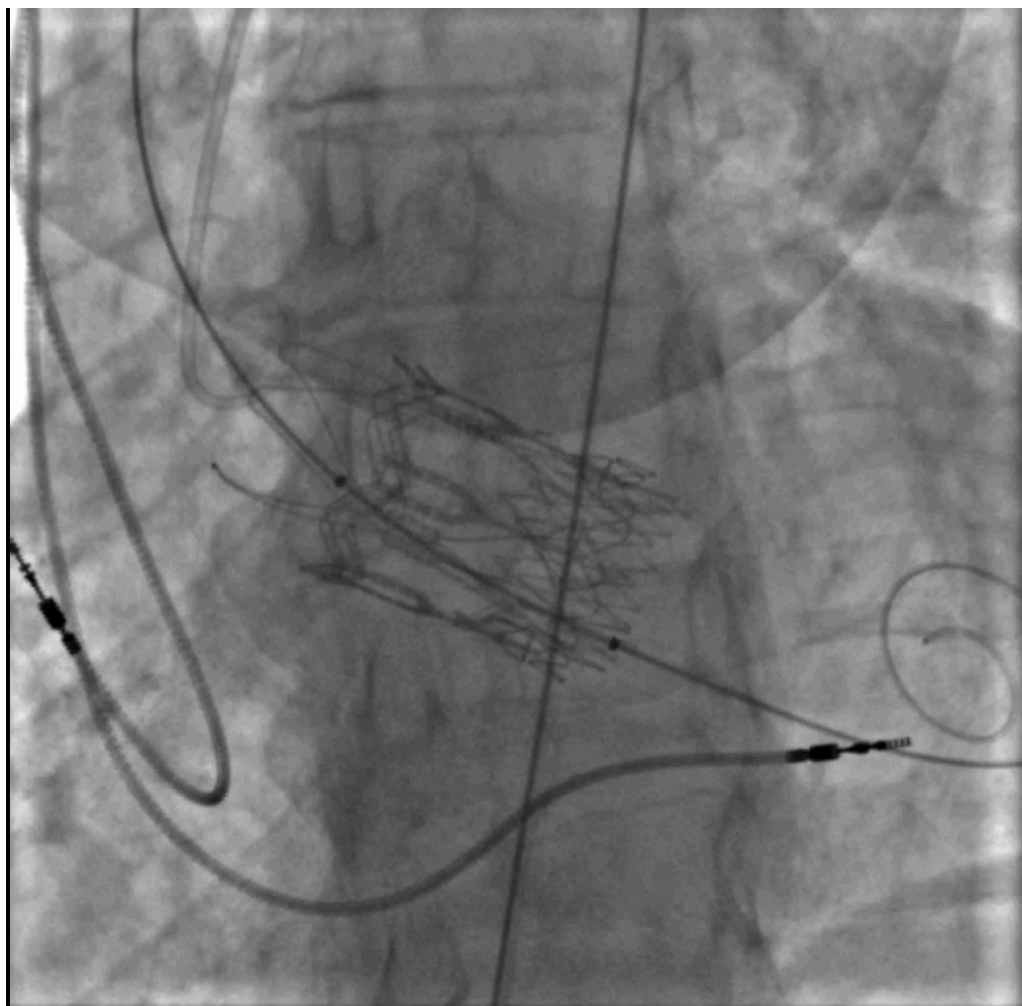
23 mm < annulus ≤ 25 mm

72 mm < annulus ≤ 79 mm

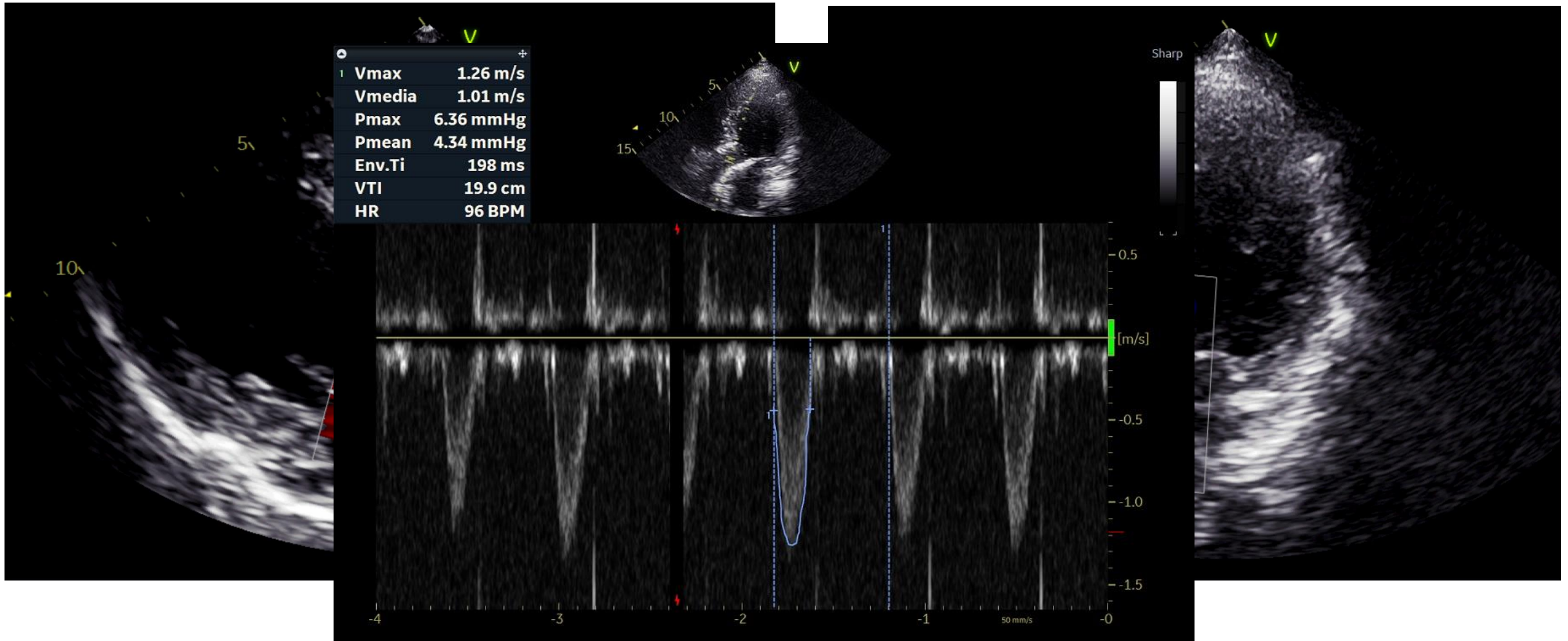
VIV TAVR PROCEDURE



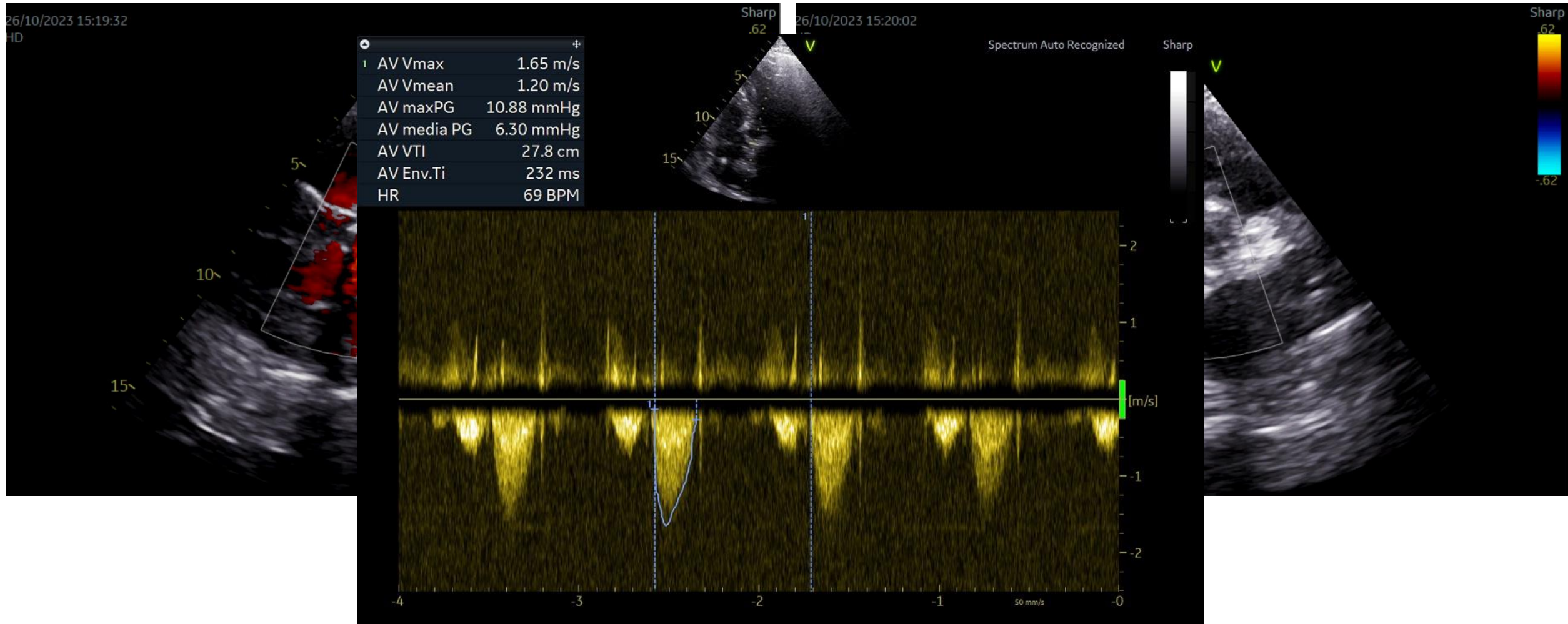
VIV TAVR PROCEDURE



ECHOCARDIOGRAM AT DISCHARGE



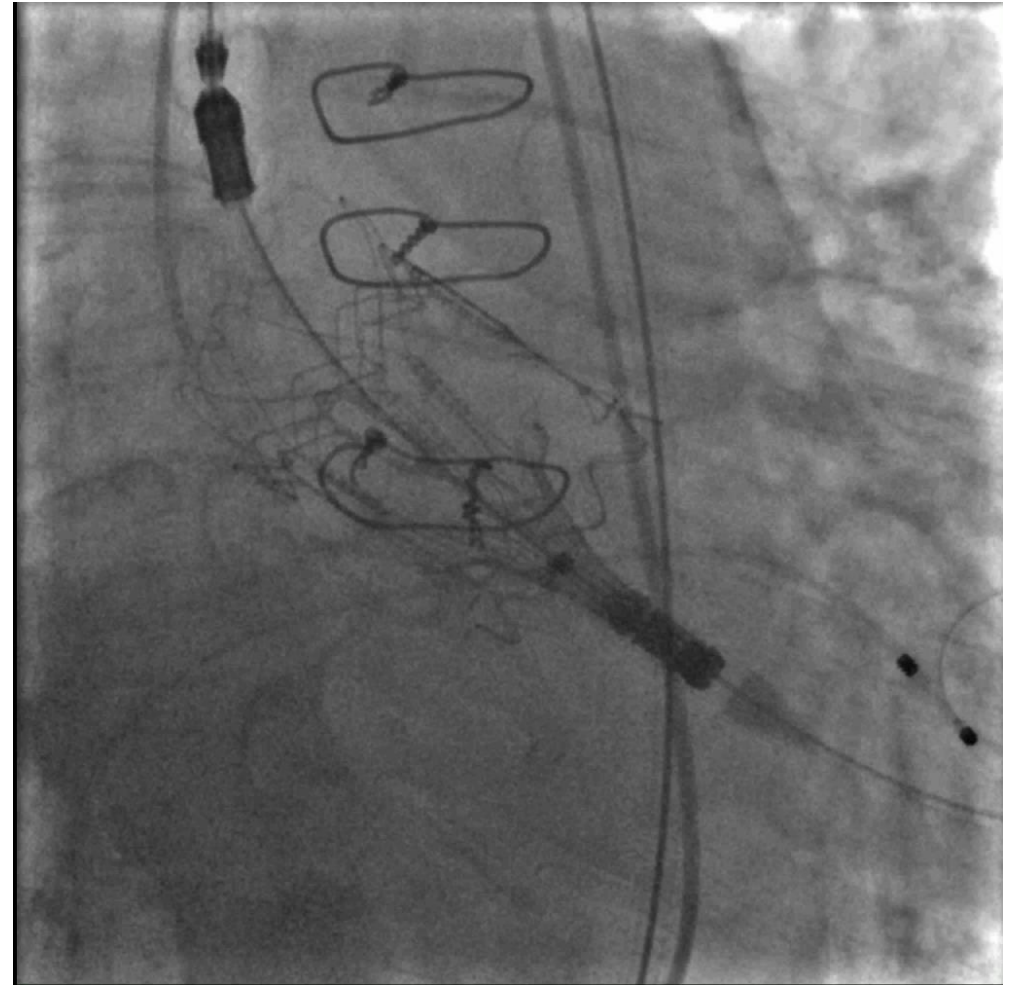
1-MONTH-FOLLOW-UP



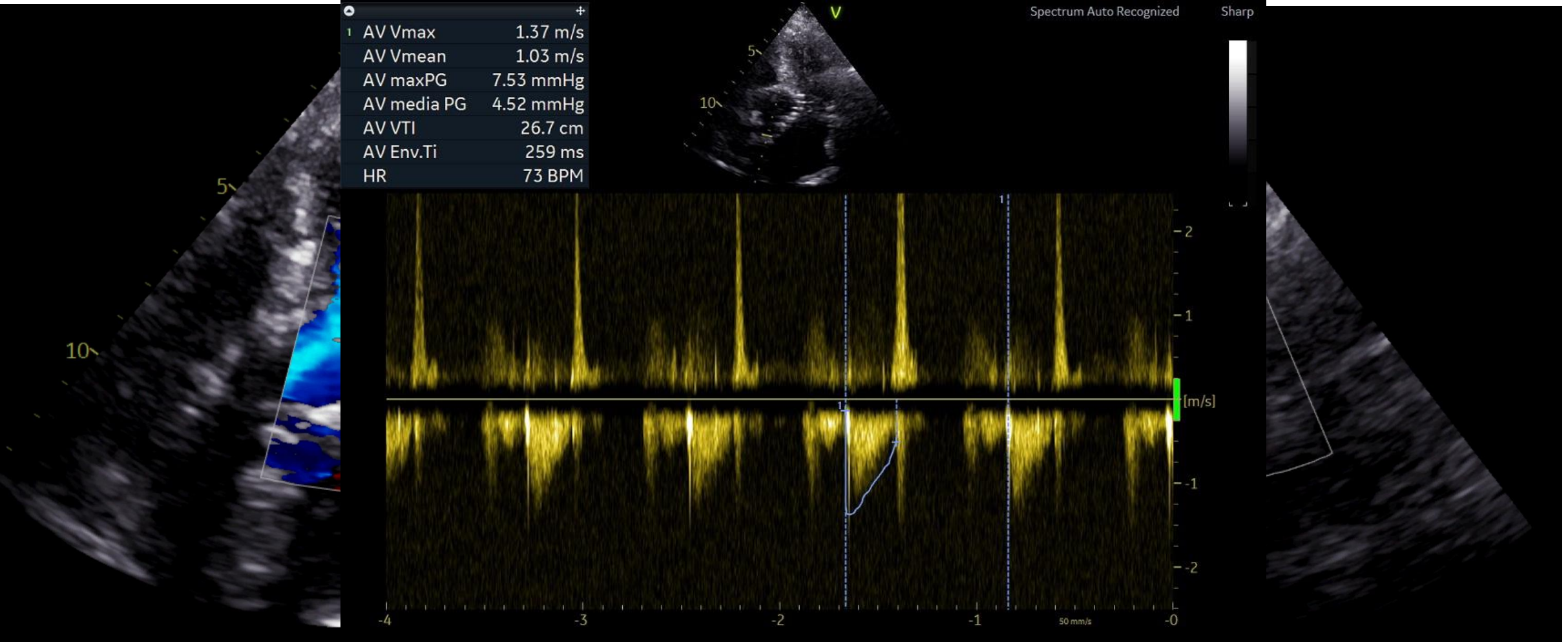
CLINICAL IMPLICATIONS

- SBV have been designed to simplify surgical implants, reduce cross-clamp time and obtain better hemodynamics. As any bioprosthesis they are not immune to degeneration creating a challenging problem given the unknown behavior of this valves during TAVR.
- The 3F Enable (Medtronic) was the first sutureless valve to obtain CE Mark approval and although it was withdrawn from the market in 2015 an important number have been implanted creating a potential patient population that may benefit from therapeutic alternatives in the future.
- This is the second case of ViV TAVR using Accurate Neo 2 in Enable 3F performed in our center with excellent hemodynamic and clinical results even after one year follow up

ONE YEAR BEFORE WITH ANOTHER PATIENT



1-YEAR-FOLLOW-UP



CONCLUSION

- Within the next few years, we are going to face up an upcoming number of bioprosthetic valve failure cases and among these a special population will be represented by sutureless valves.
- Our report demonstrates the feasibility of ViV TAVR using Acurate Neo2 in a degenerated 3f Enable SBV.
- We achieved good valve performance at one year follow-up, although more evidence are needed to establish procedural safety and efficacy.

THANK YOU FOR YOU ATTENTION!

