



Optimizing First TAVR to Confer Optimal Durability?

Pre vs. Post Dilate? Fracture?

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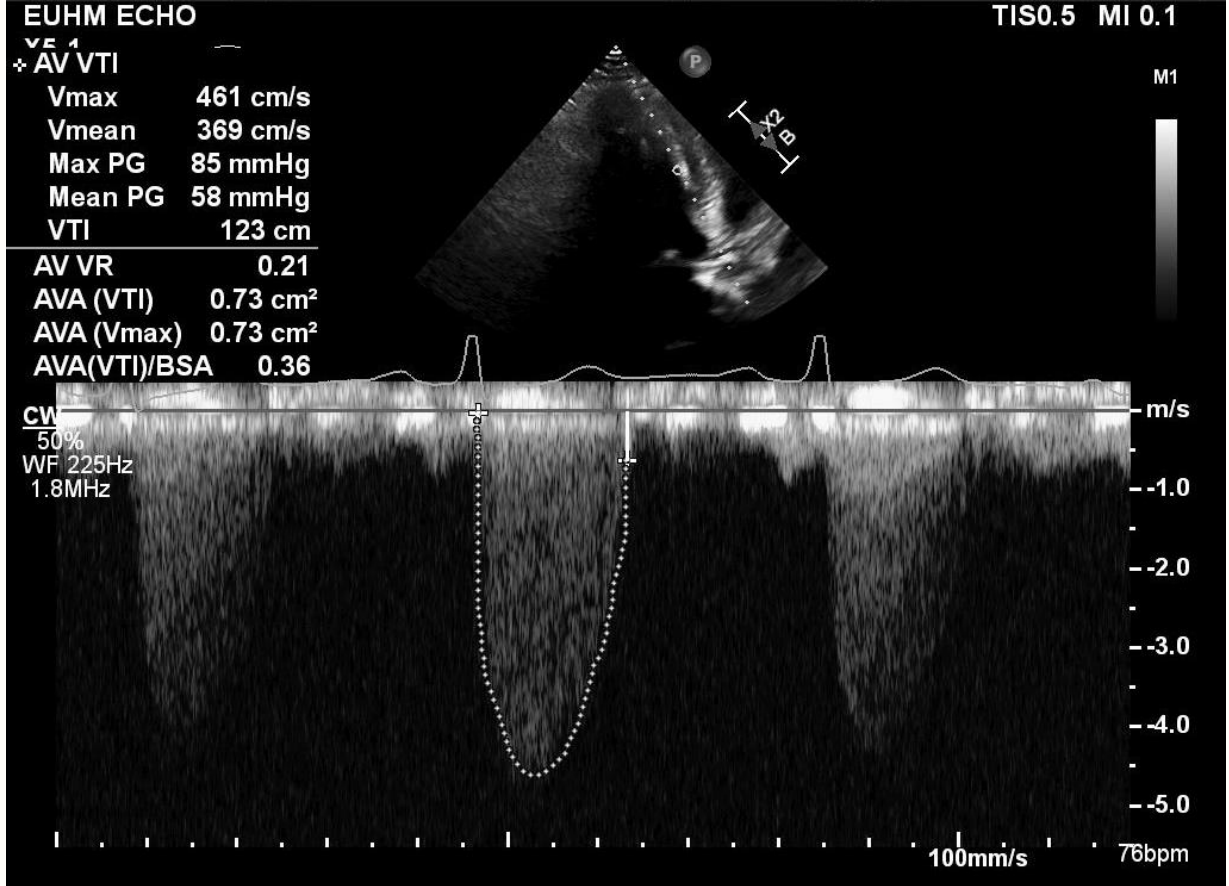
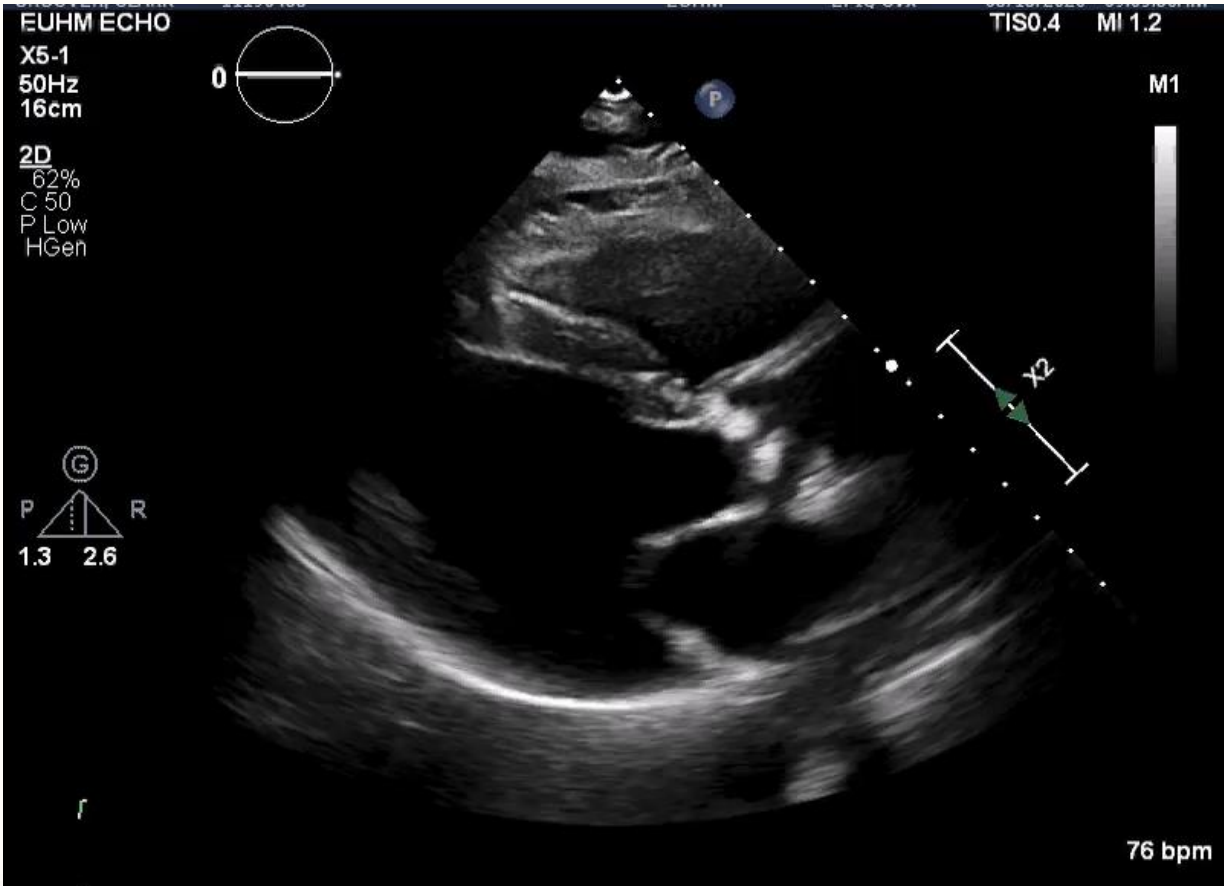
Division of Cardiothoracic Surgery, Emory University

REQUIRED

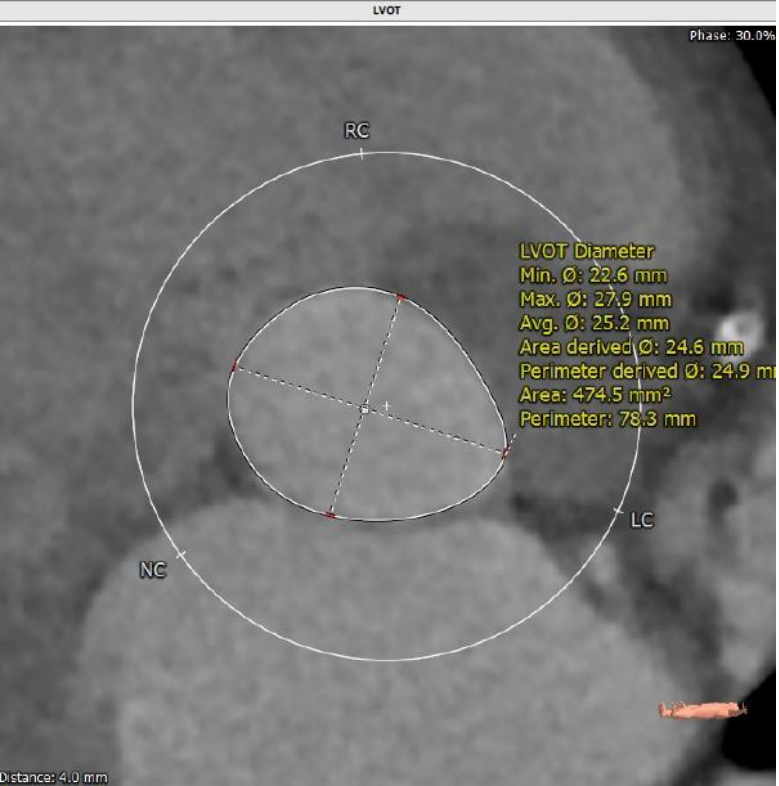
Kendra J Grubb, MD, MHA, FACC

- *Ancora Heart – Speaker/Proctor, PI, Advisory Board*
- *Edwards – Speaker/Proctor, PI*
- *Medtronic – Speaker/Proctor, PI, Advisory Board, International PI*
- *Boston Scientific – Speaker/Proctor, Advisory Board*
- *Abbott – Advisory Board*
- *4C Medical – Consultant, International PI*
- *Jena Valve – Consultant*
- *OpSens – Consultant*
- *Fiterlex – Consultant*

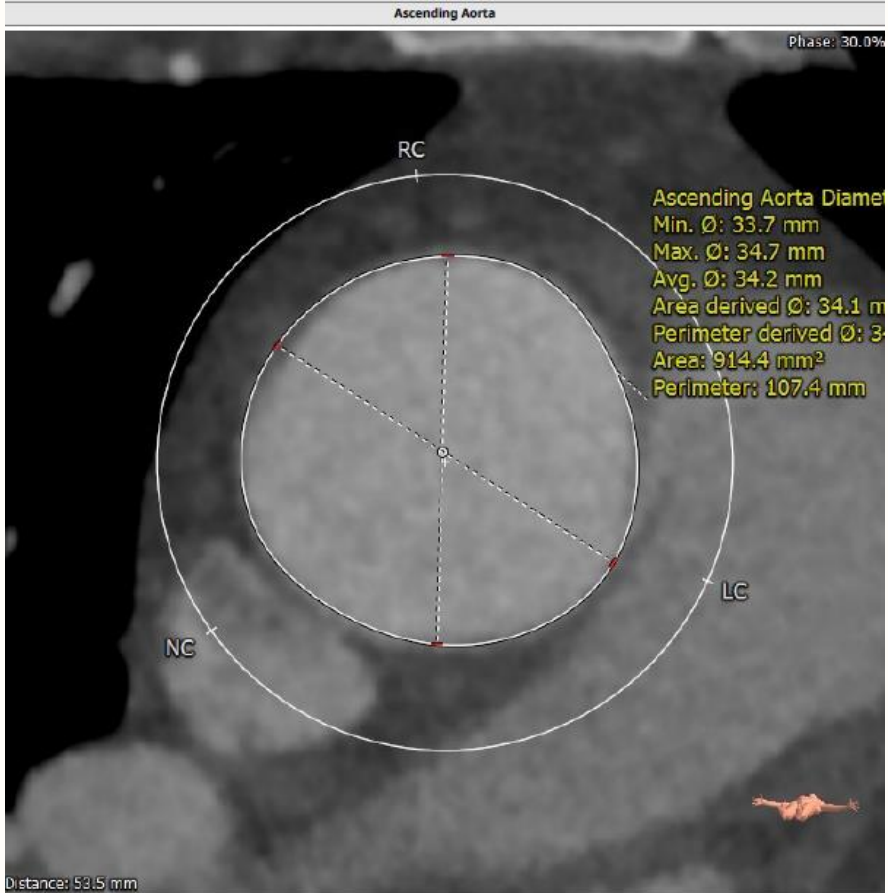
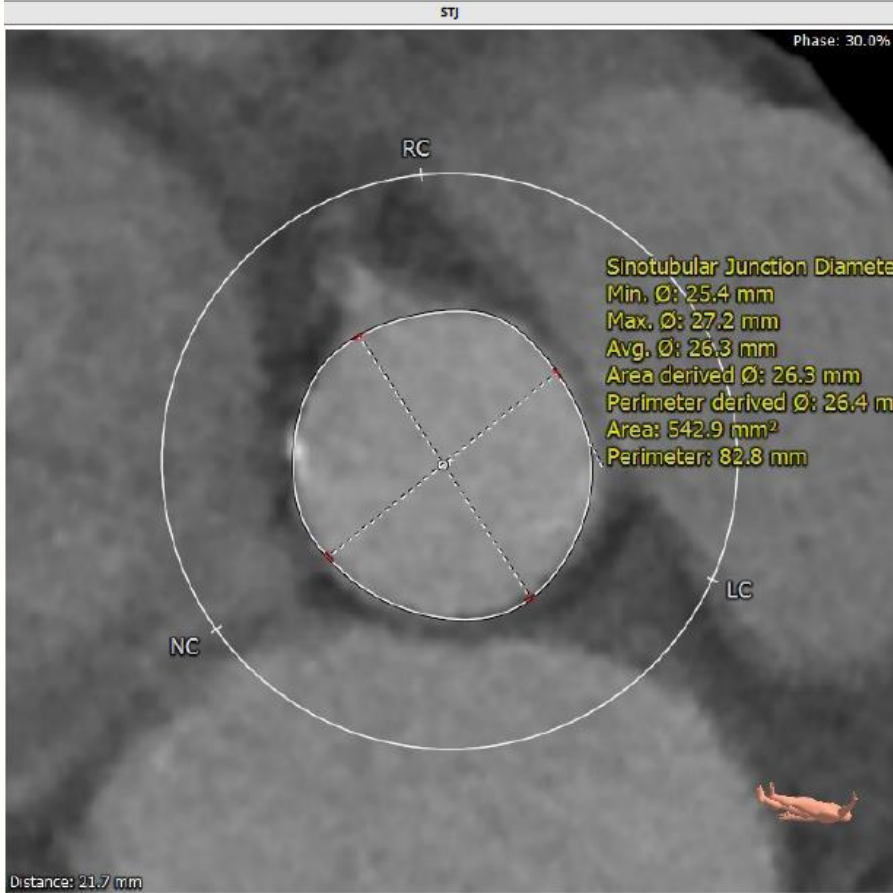
65 y/o male with shortness of breath



TAVR CTA



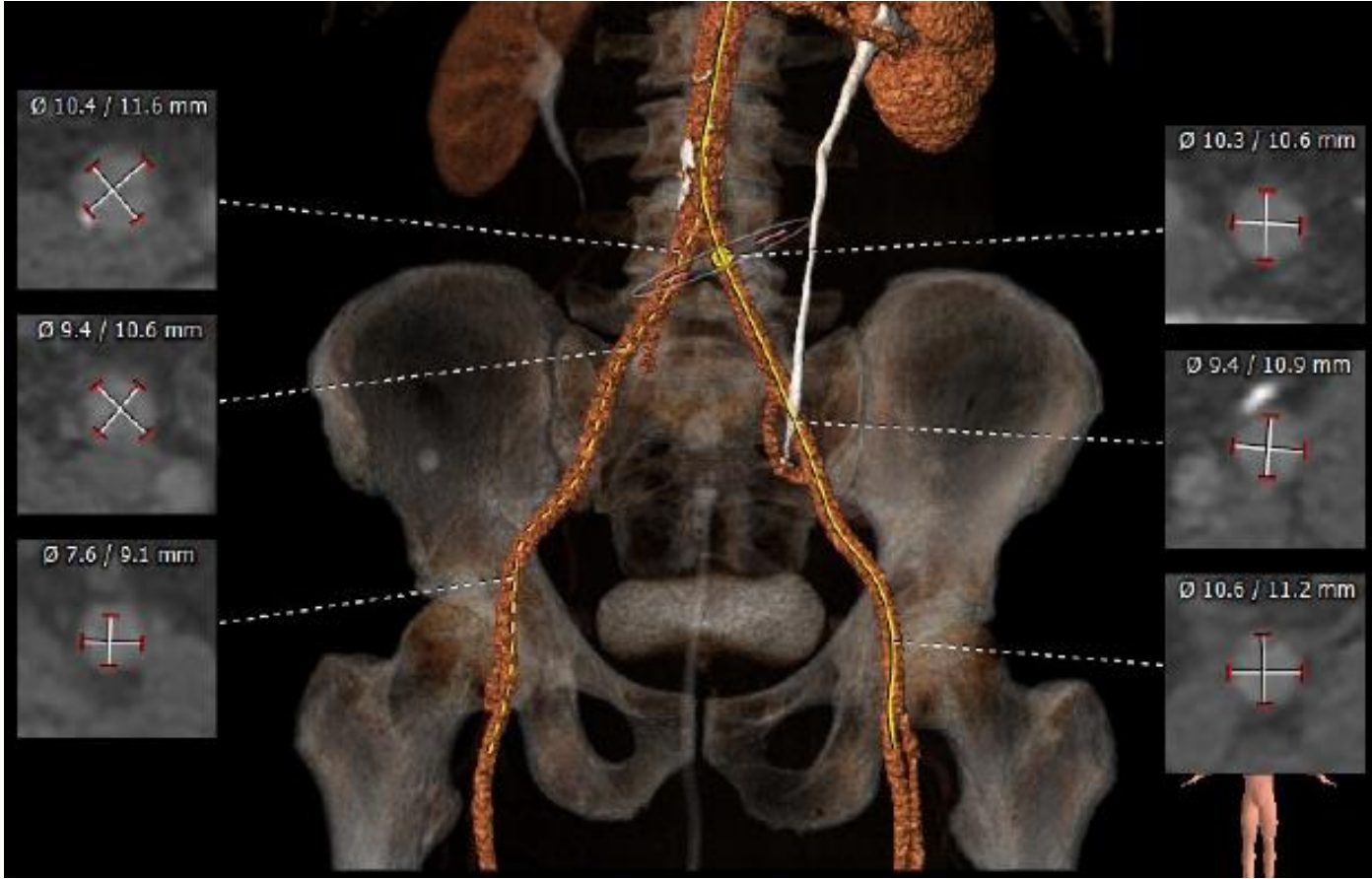
TAVR CTA



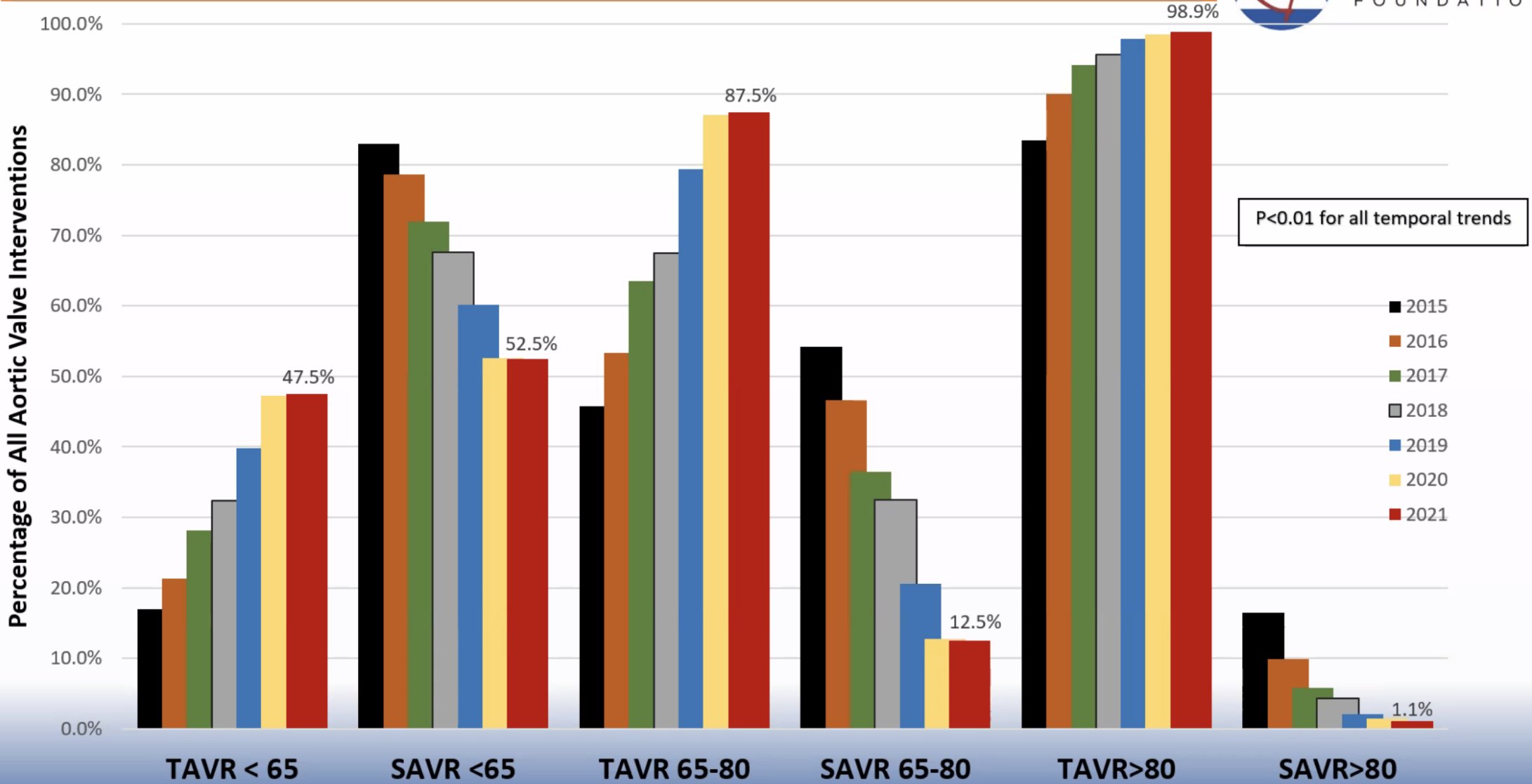
TAVR CTA



TAVR CTA

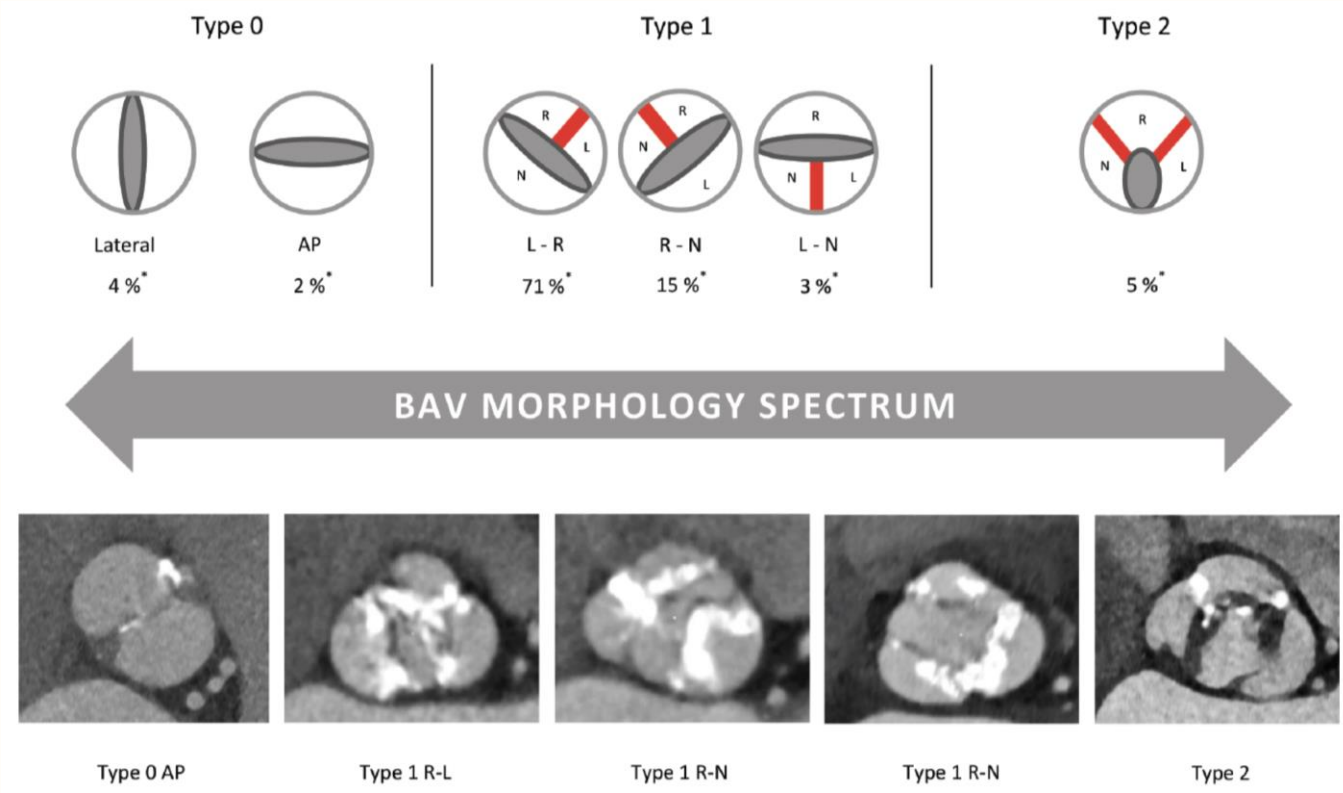


National Trends in TAVR vs SAVR Stratified by Guideline Recommended Age Groups



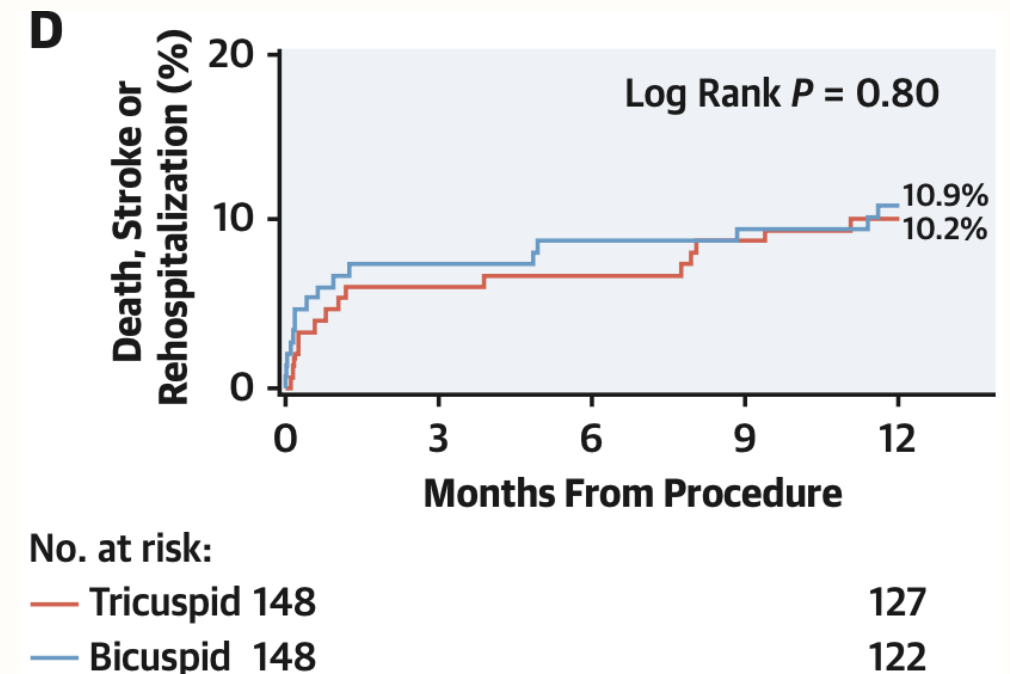
Sharma T, Dauerman HL et al. *J Am Coll Cardiol* 2022

No Randomized Controlled Trials for TAVR vs SAVR in Bicuspid Aortic Stenosis

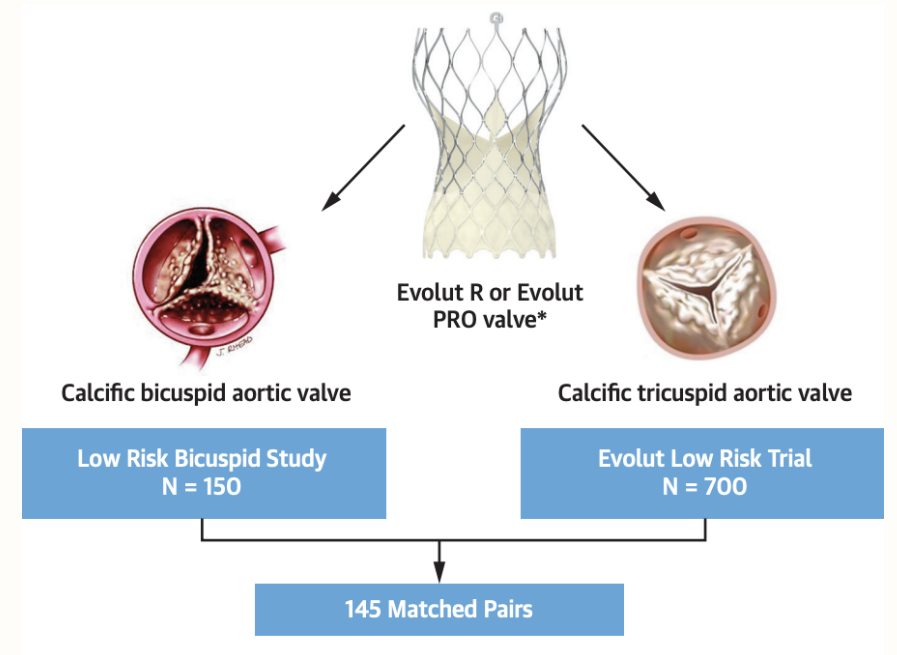
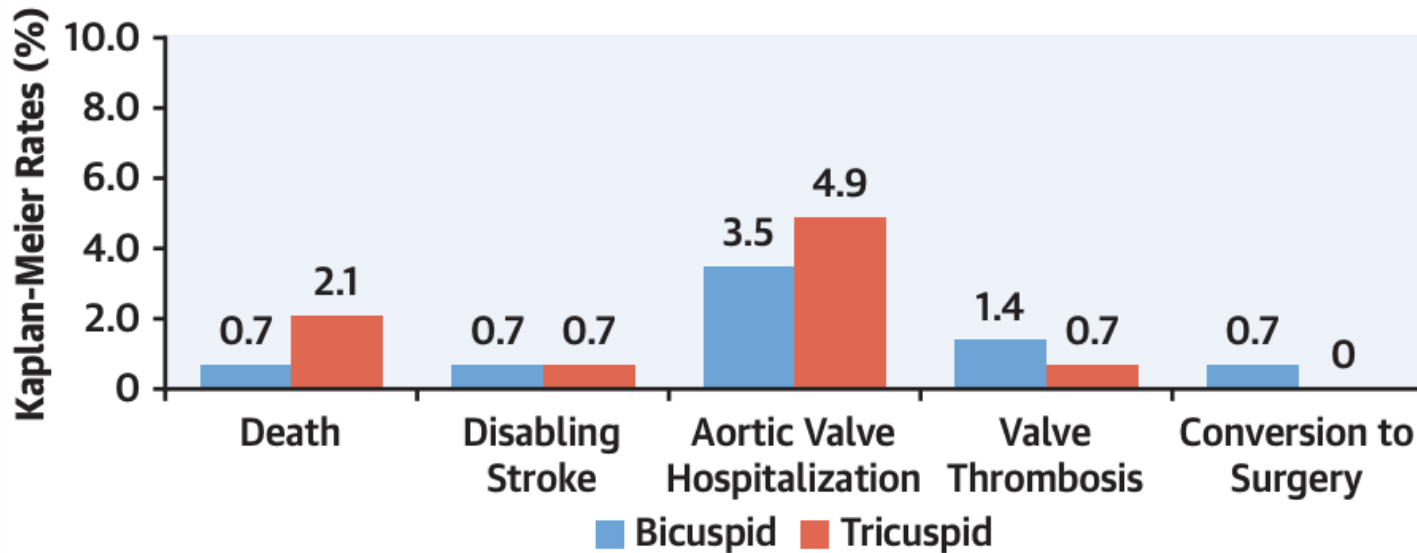


Low-Risk at 1 Year Partner 3 Bicuspid Registry

- Highly selected cohort of Bicuspid AS patients from the registry and continued access compared to randomized Tricuspid TAVR patients treated with the Balloon Expandable Sapien 3
- 169 treated, most Sievers type 1 (85.8%)
 - 46.6% of consented patients were excluded
 - Subannular calcium
 - Extensive raphe
 - Ascending aorta >4cm
 - Propensity Matched, 148 pairs
- No difference in death, stroke, cardiovascular rehospitalization, or composite
- No difference in rate of new pacemaker (6.1% vs 6.8%)
- Similar rates of PVL and mean gradients



1-Year Outcomes in Low-Risk TAVR patients treated with Evolut



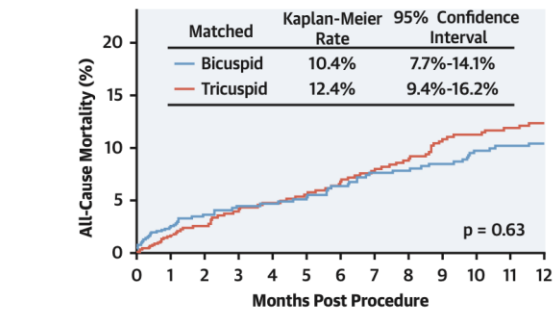
STS/TVT Registry 2020

- July 2015 – Sept 2018
 - 26,154 Tricuspid AS vs. 932 Bicuspid AS with Evolut R or Evolut PRO
 - Propensity matched
- All-cause mortality
 - 30 days (2.6% vs 1.7%; p=0.18)
 - 1 year (10.4% vs 12.1%; p=0.63)
- Stroke
 - 30 days (3.4% vs 2.7%; p=0.41)
 - 1 year (3.9% vs 4.4%; p=0.93)

Transcatheter Aortic Valve Replacement in Bicuspid Versus Tricuspid Aortic Valves From the STS/ACC TVT Registry

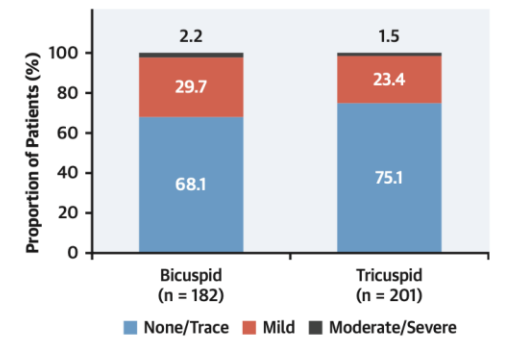
John K. Forrest, MD,^a Ryan K. Kaple, MD,^a Basel Ramlawi, MD,^b Thomas G. Gleason, MD,^c Christopher U. Meduri, MD, MPH,^d Steven J. Yakubov, MD,^e Hasan Jilaihawi, MD,^f Fang Liu, MD, MS,^g Michael J. Reardon, MD^h

CENTRAL ILLUSTRATION Key Outcomes



No. at Risk:	0	1	2	3	4	5	6	7	8	9	10	11	12
Bicuspid	929	791	496	456	445	437	425	321					
Tricuspid	929	796	508	474	463	449	432	314					

Forrest, J.K. et al. J Am Coll Cardiol Intv. 2020;13(15):1749-59.



(Left) All-cause mortality at 1 year for matched patients. (Right) Aortic regurgitation at 30 days for bicuspid and tricuspid patient groups implanted with the Evolut PRO valve.



Medtronic

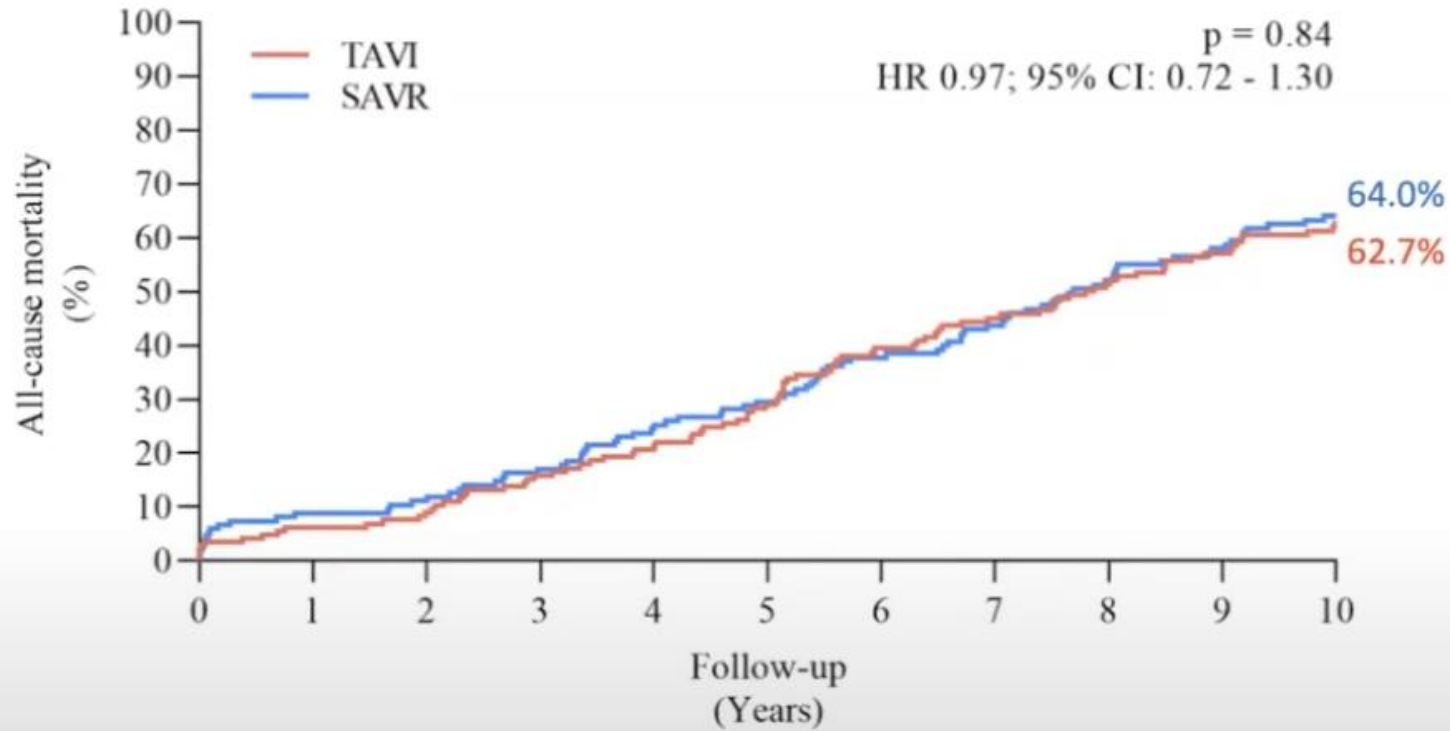


NOTION trial

The Nordic Aortic Valve Intervention Trial

The 5 year follow up results
ACC 2018

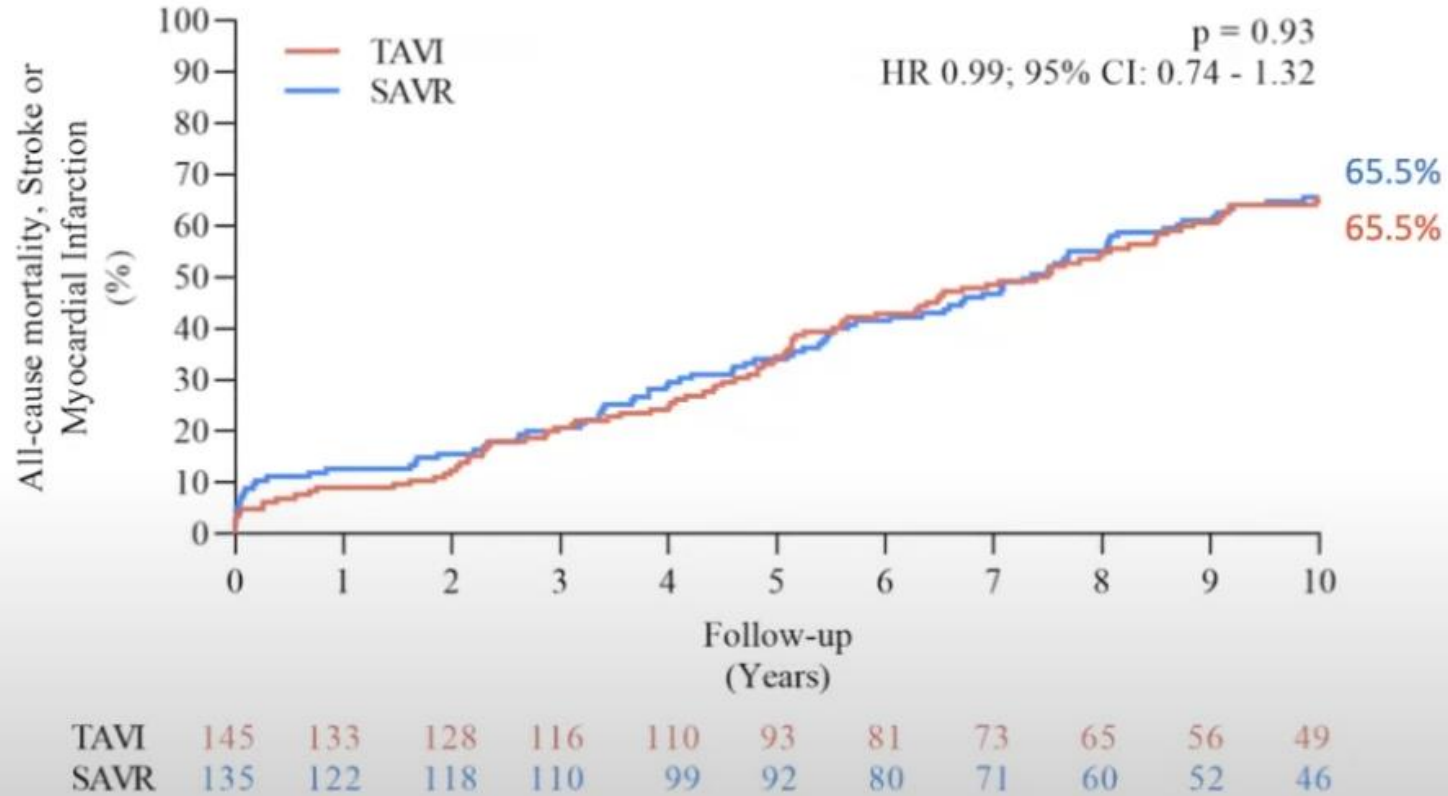
All-cause mortality



TAVI	145	136	132	122	115	101	86	78	69	61	53
SAVR	135	123	120	112	102	95	83	75	64	56	48

NOTION 10-Year Follow-up

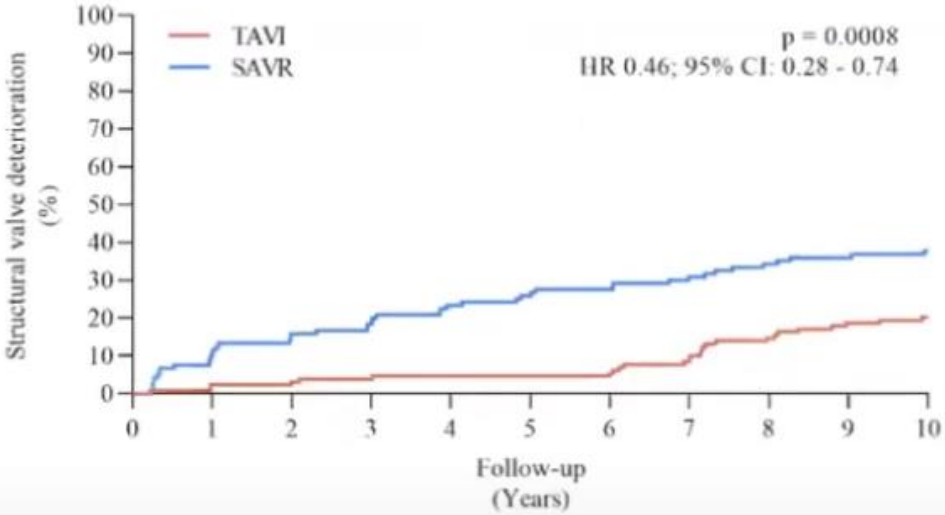
All-cause mortality, stroke, myocardial infarction



TAVI	145	133	128	116	110	93	81	73	65	56	49
SAVR	135	122	118	110	99	92	80	71	60	52	46

NOTION 10-Year Follow-up

Structural Valve Deterioration

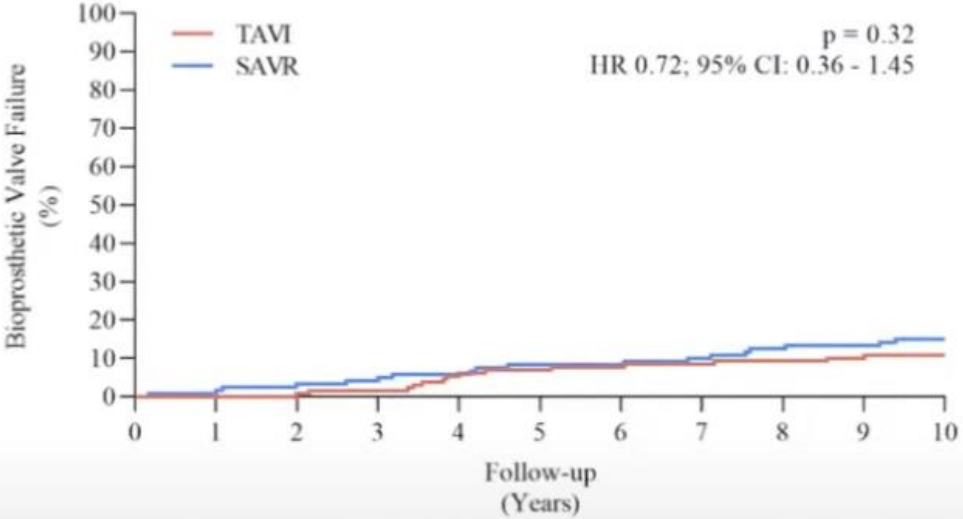


TAVI	130	125	122	113	105	92	79	67	52	41	34
SAVR	120	107	100	92	81	72	59	50	39	32	27

	TAVI (n = 130)	SAVR (n = 120)	p-value
Structural valve deterioration	20.2	37.7	0.0008
Moderate structural valve deterioration	19.4	36.0	0.0012
- Mean gradient 20 - 40 mmHg	14.3	34.0	<0.0001
- Mean gradient 10 - 20 mmHg from 3 months	13.3	18.5	0.21
- Moderate intraprosthetic AR	4.5	0	0.018
Severe structural valve deterioration	3.1	11.0	0.014
- Mean gradient ≥40mmHg	0.8	5.7	0.024
- Mean gradient ≥20mmHg from 3 months	2.3	10.9	0.006
- Severe intraprosthetic AR	0	0	-

NOTION 10-Year Follow-up

Bioprosthetic Valve Failure



	TAVI (n = 130)	SAVR (n = 120)	p-value
Bioprosthetic valve failure	10.8	15.1	0.32
Valve-related death	5.0	3.7	0.60
Severe structural valve deterioration	3.1	11.0	0.014
Aortic valve re-intervention	4.3	2.2	0.33

	0	1	2	3	4	5	6	7	8	9	10
TAVI	130	128	124	116	107	94	81	72	62	53	46
SAVR	120	118	115	107	99	90	78	69	57	49	42

NOTION 10-Year Follow-up





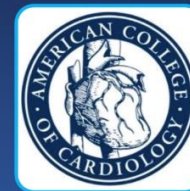
Primary Results From the Evolut Low Risk Trial

Michael J. Reardon, MD, FACC
Houston Methodist DeBakey Heart & Vascular Institute, Houston, TX
For the Evolut Low Risk Trial Investigators



PARTNER 3

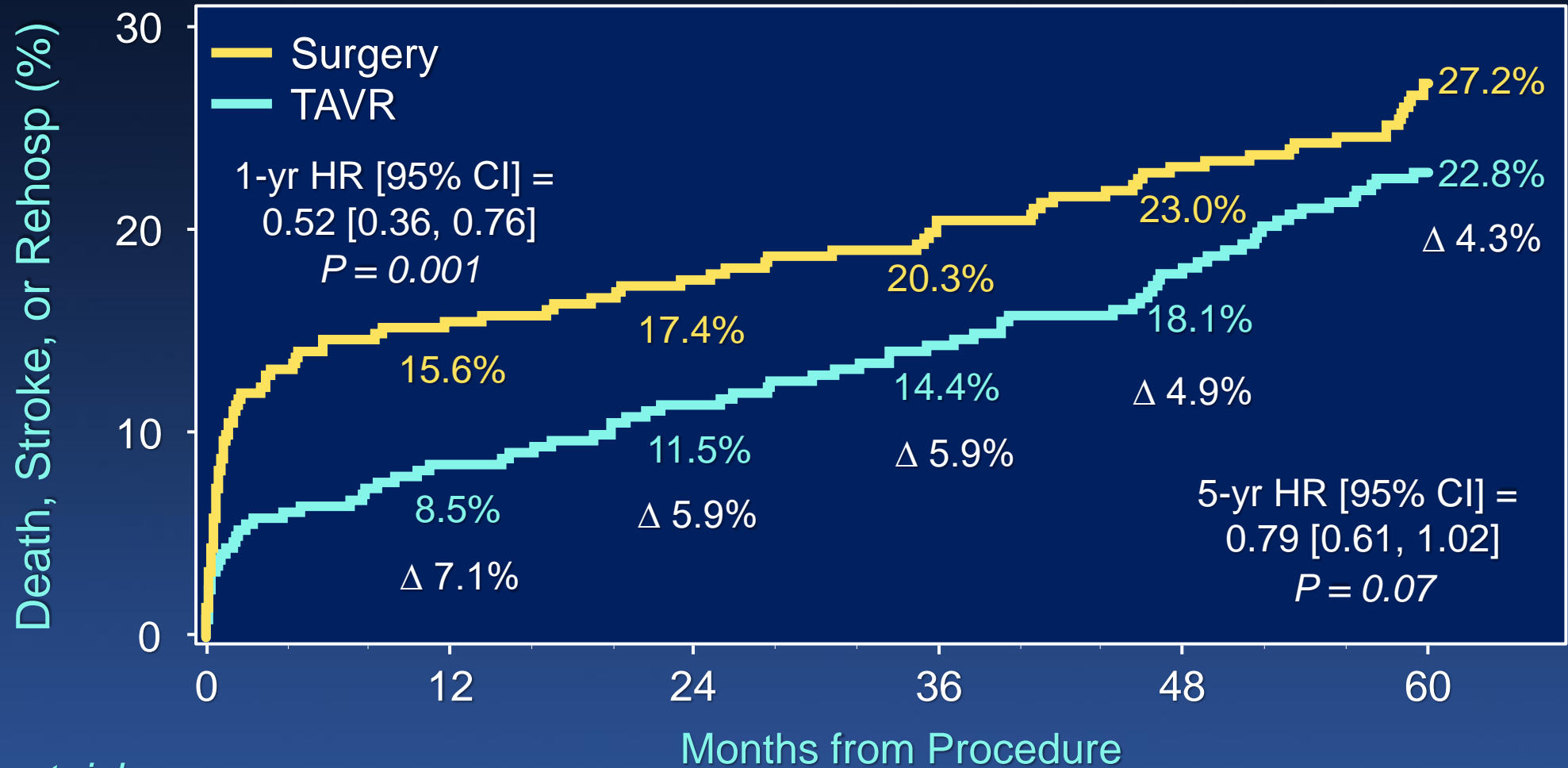
Transcatheter or Surgical Aortic Valve Replacement in
Low Risk Patients with Aortic Stenosis



**Martin B. Leon, MD &
Michael J. Mack, MD**

on behalf of the PARTNER 3 Trial Investigators

Primary Endpoint 5 Years



Number at risk:

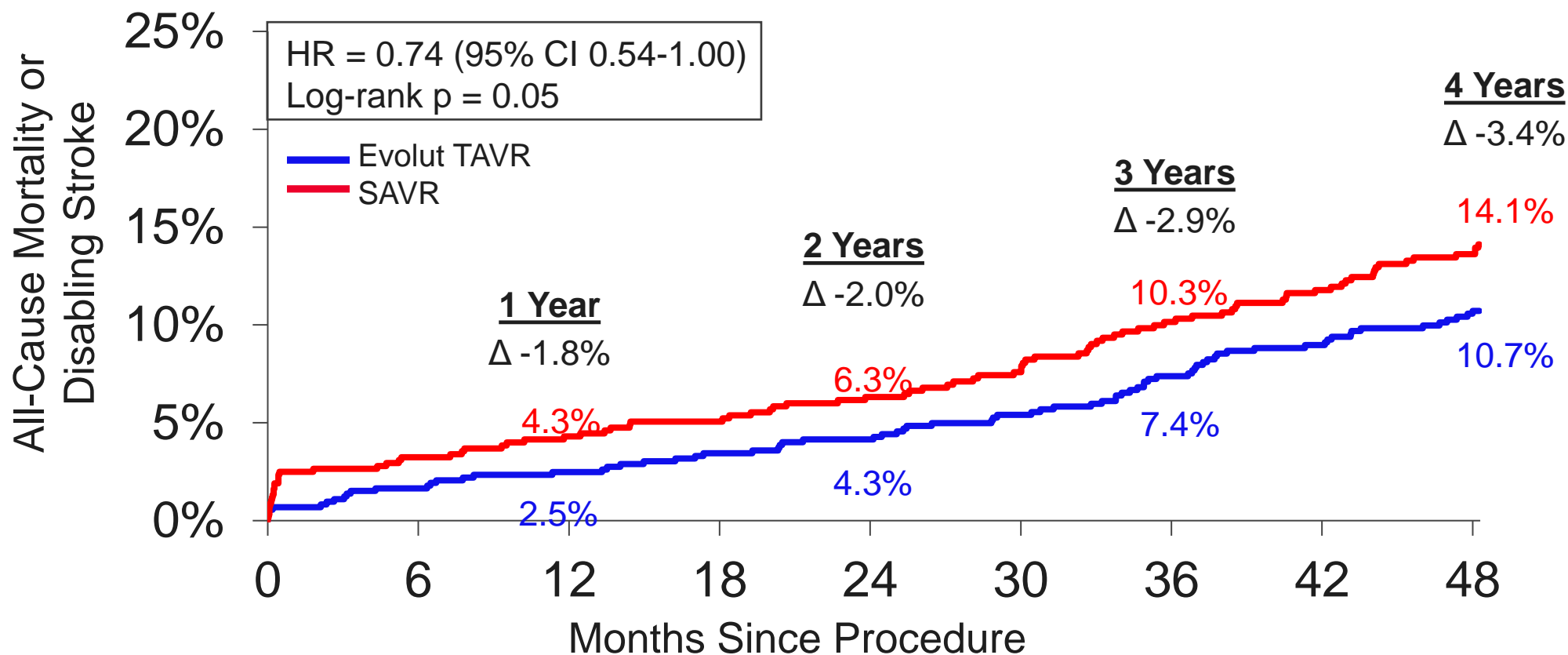
TAVR	496	453	434	415	391	353
Surgery	454	372	349	328	309	276

EVOLUT LOW RISK TRIAL | 4 YEAR RESULTS



PRIMARY ENDPOINT: ALL-CAUSE MORTALITY OR DISABLING STROKE

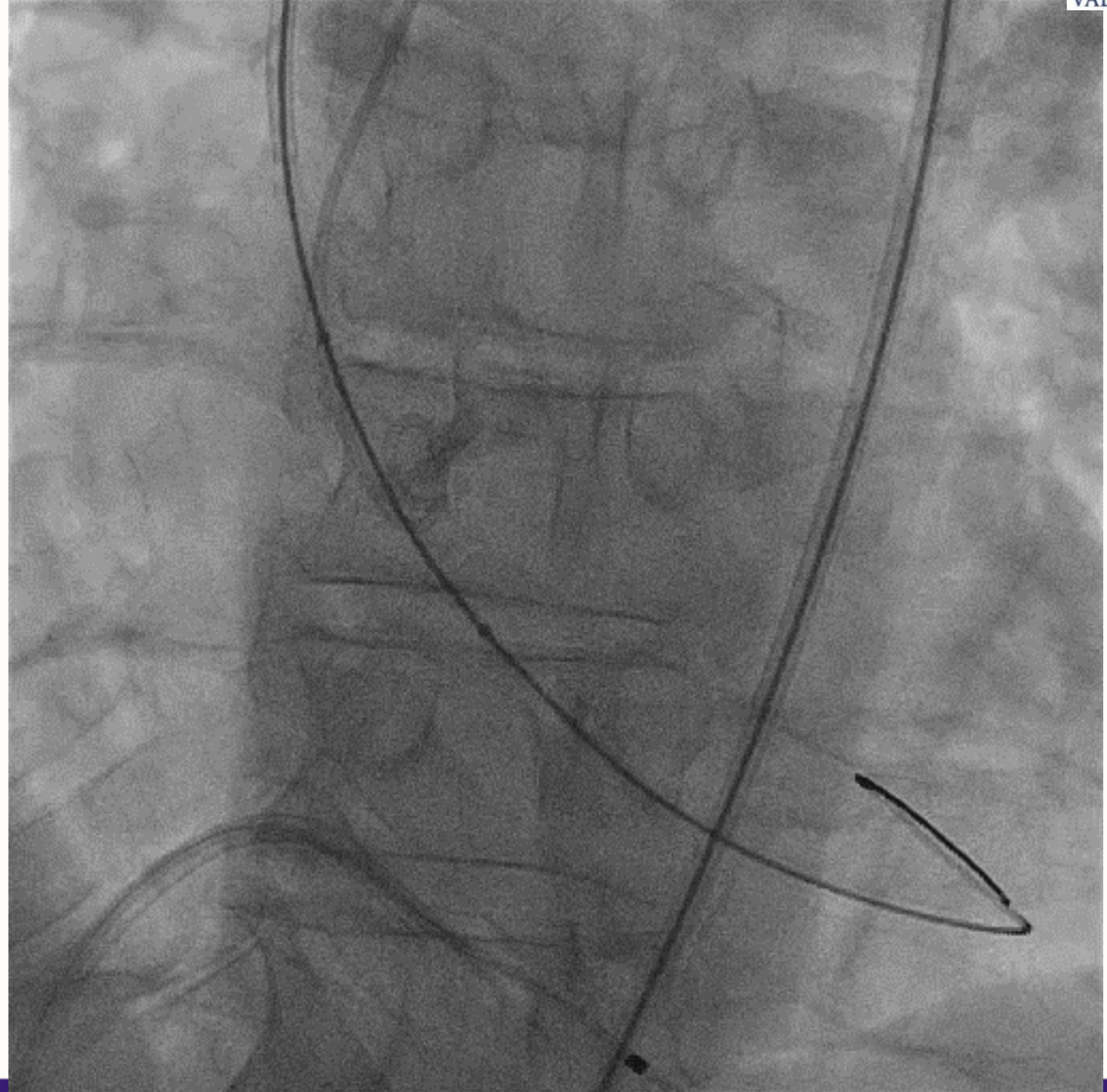
26% Relative Reduction in Hazard for Death or Disabling Stroke (p = 0.05) with Evolut TAVR vs SAVR and the Curves Continue to Separate Over Time



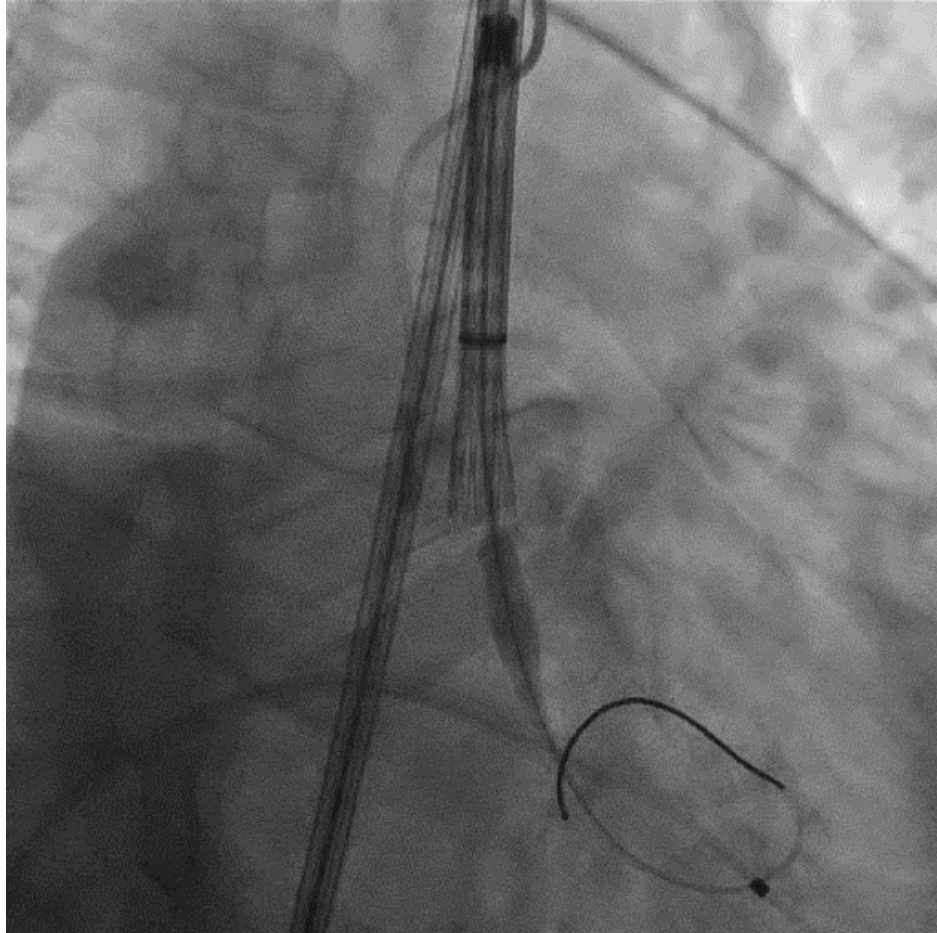
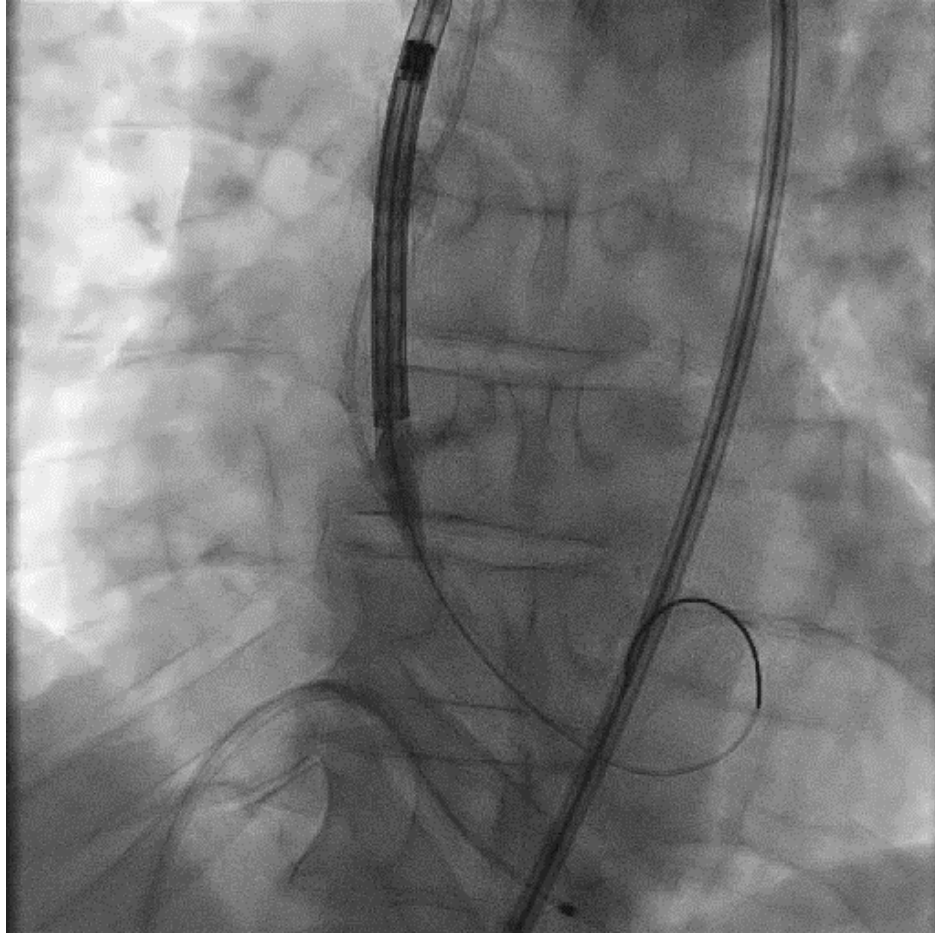
—	Evolut TAVR	730	715	706	695	685	671	651	627	592
—	SAVR	684	648	627	616	595	574	556	533	505

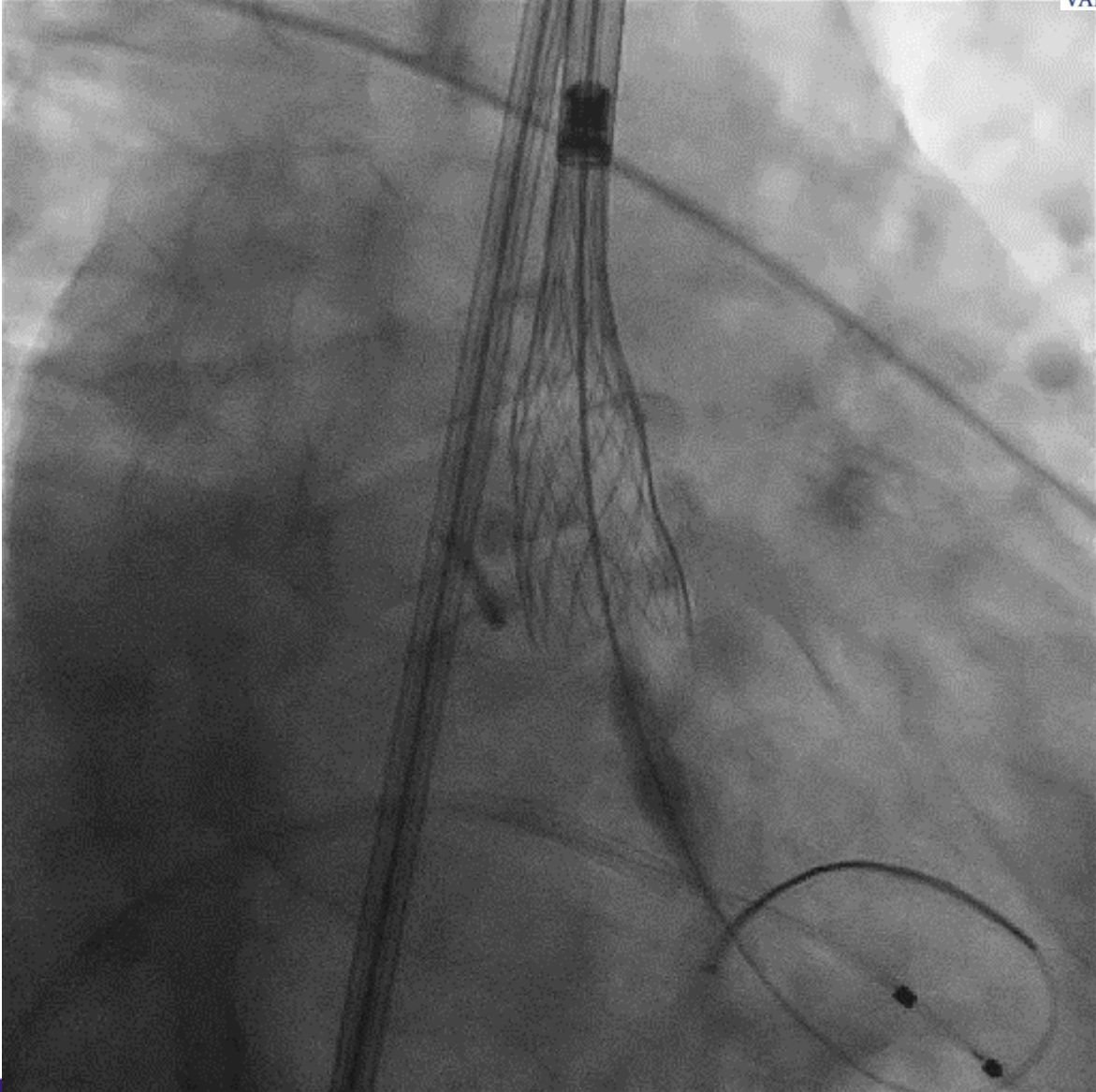
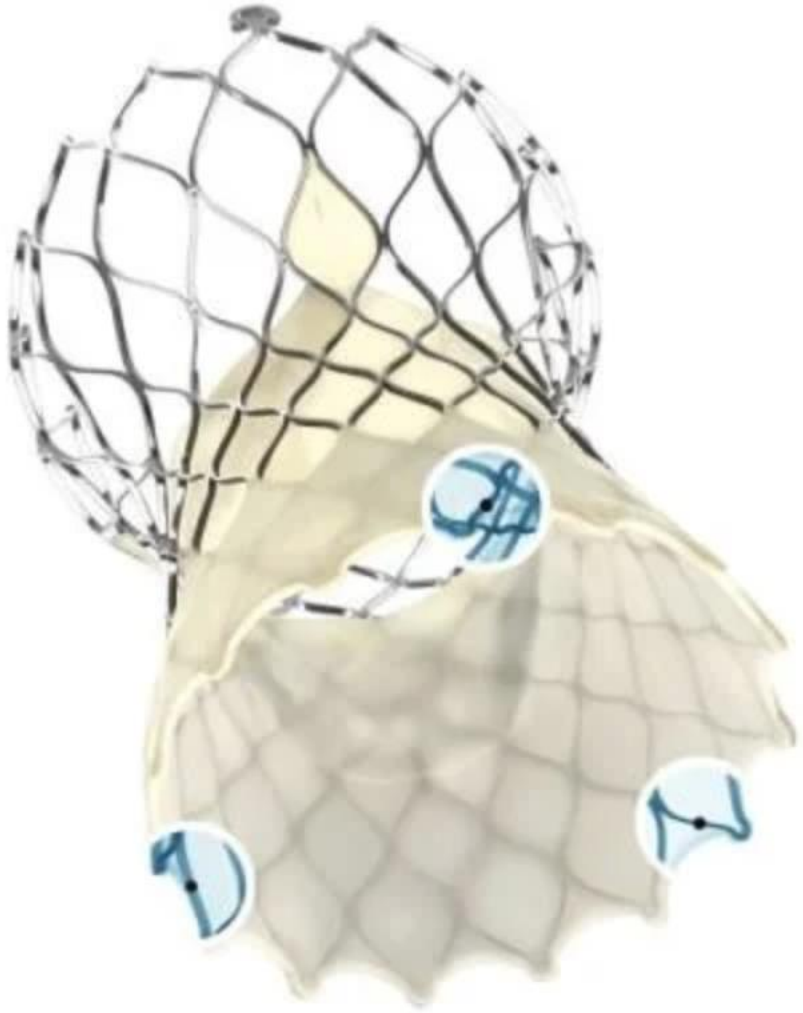
**Optimizing First TAVR to Confer
Optimal Durability?
Pre vs. Post Dilate? Fracture?**

**Pre BAV -
20mm
Balloon**

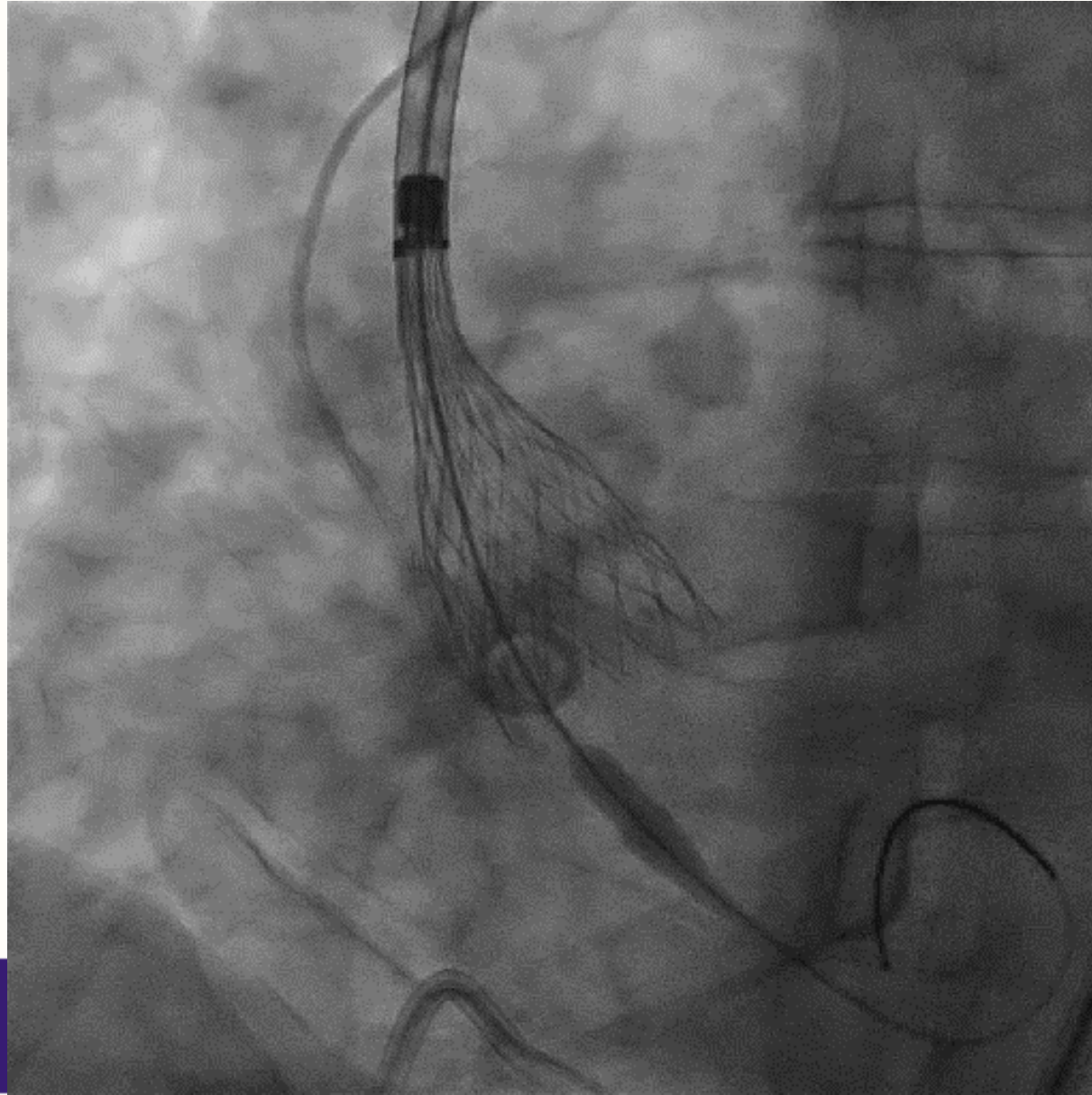


RAO Positioning and Deployment

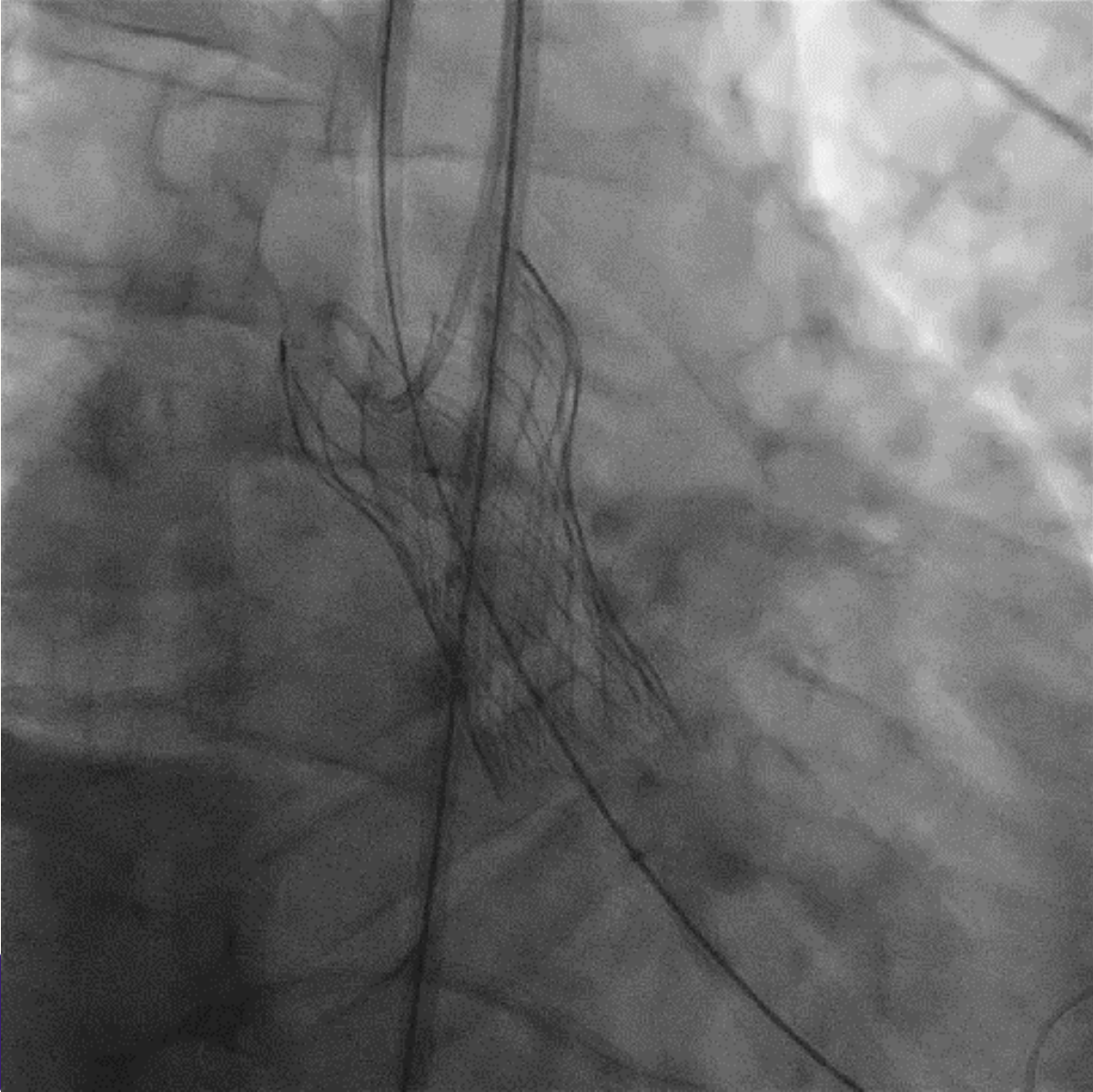


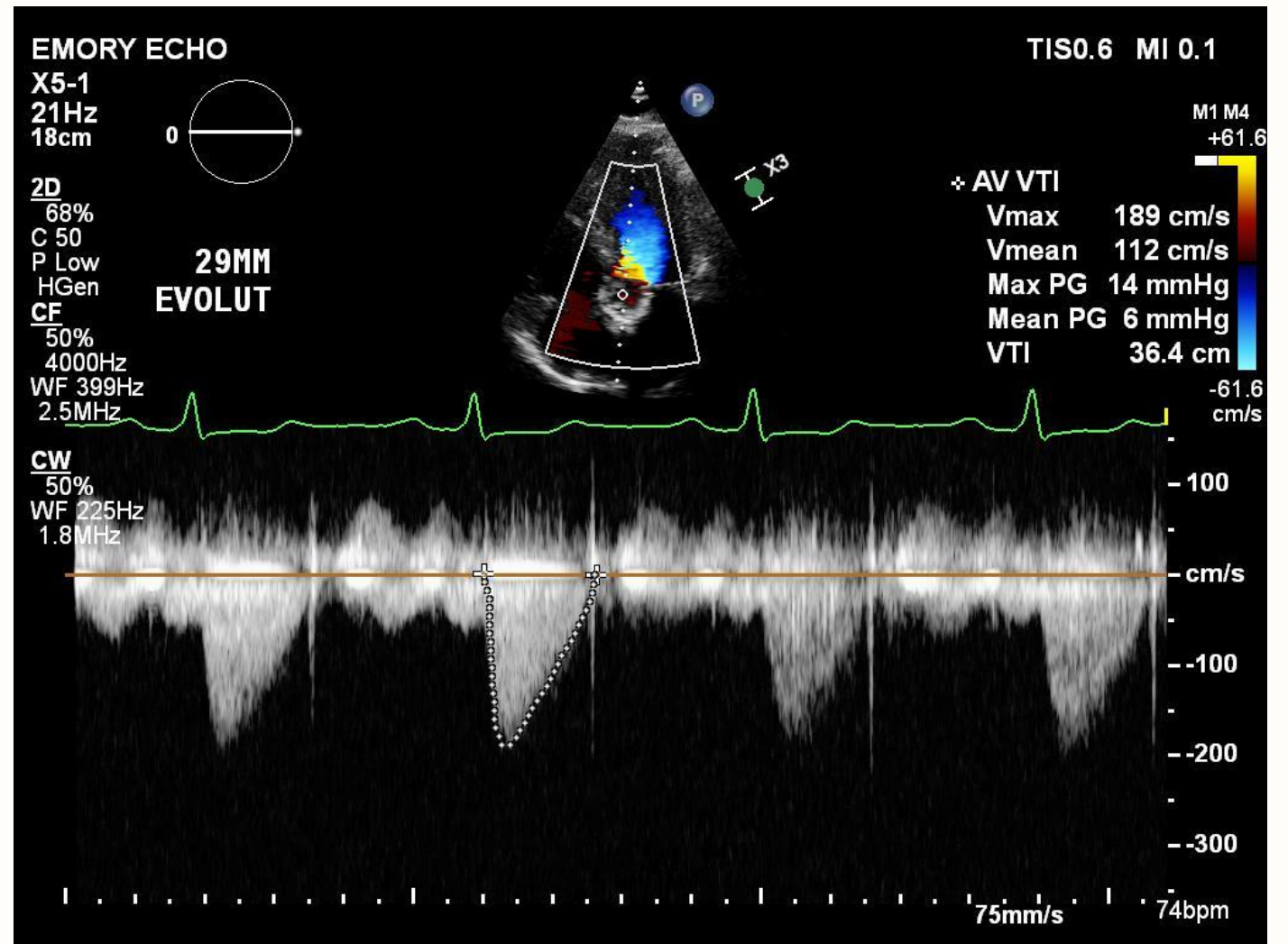
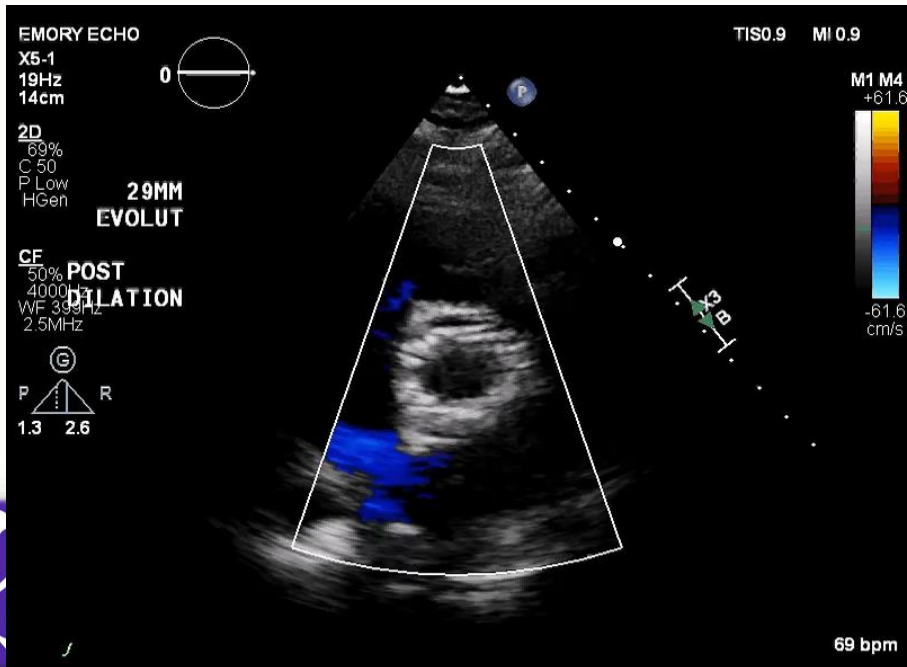
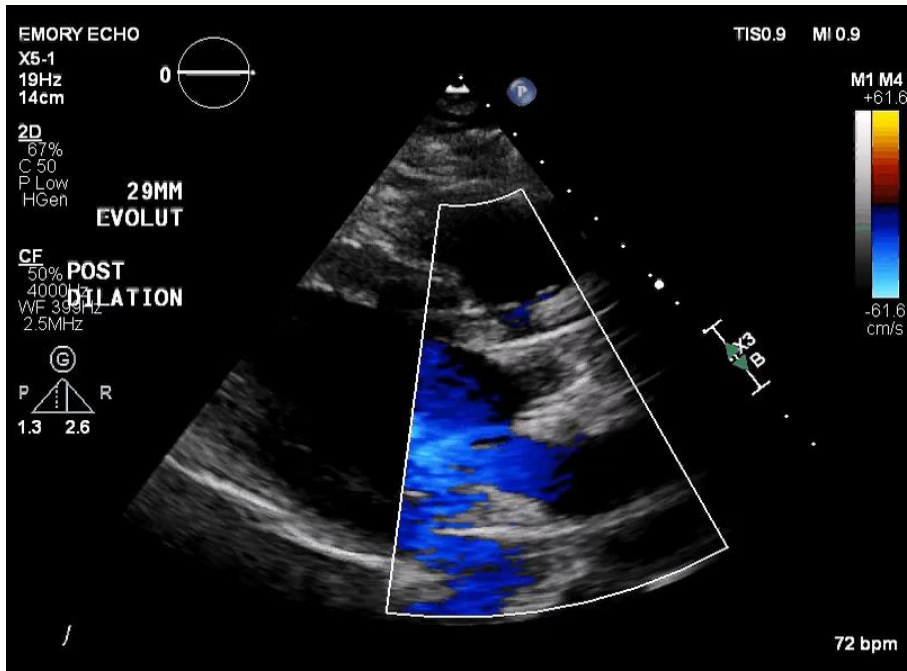


LAO Left Coronary Cusp Assessment



Post BAV - 23 mm Balloon





Postoperative EKG

13-FEB-1955 (65 yr)
Male Caucasian
Room: 12
Loc: 40

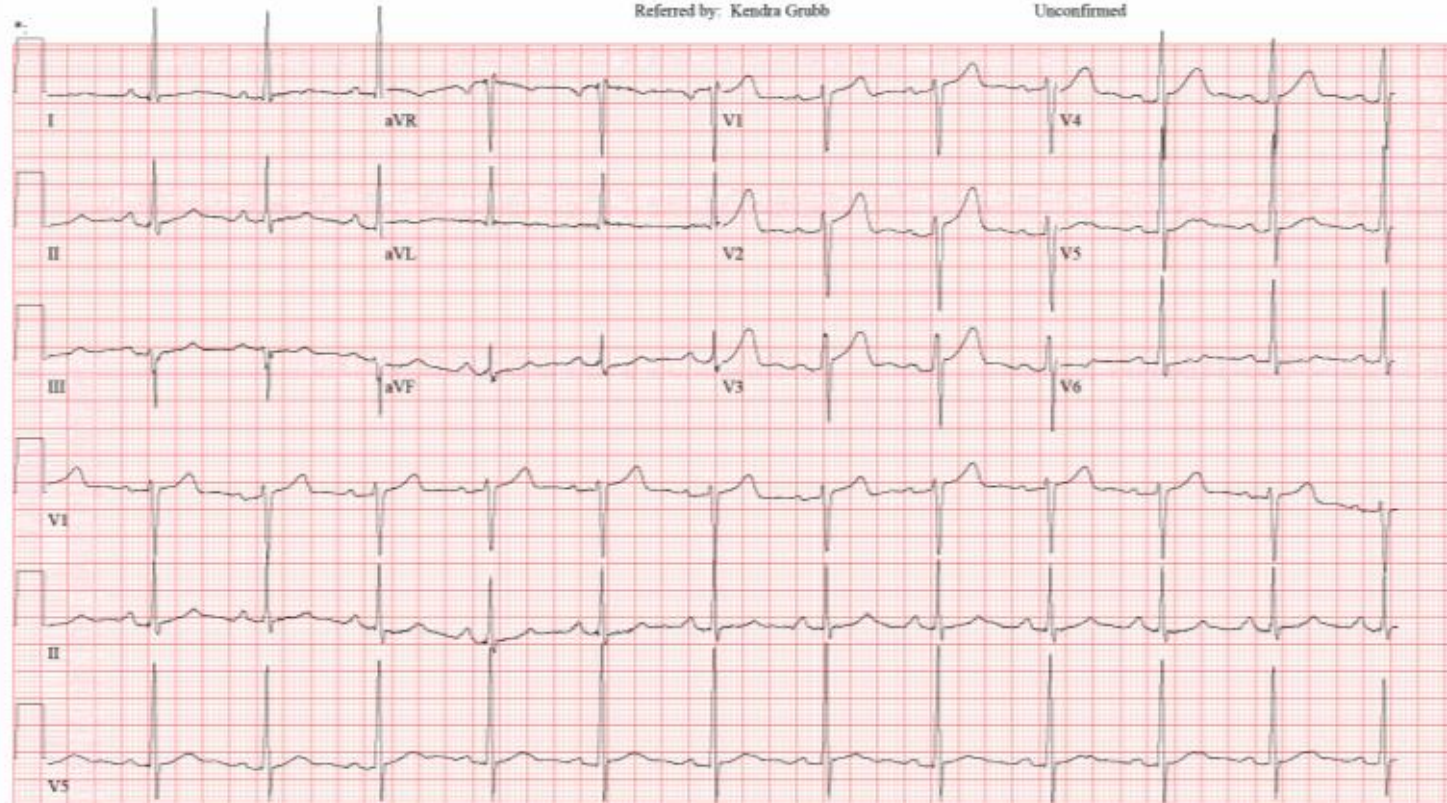
Vent. rate 72 BPM
PR interval 192 ms
QRS duration 92 ms
QT/QTc 412/451 ms
P-R-T axes 62 7 67

Normal sinus rhythm
Nonspecific T wave abnormality
Abnormal ECG
No previous ECGs available

Technician: LLOYD MITCHELL
Test ind: Heart Failure

Referred by: Kendra Grubb

Unconfirmed

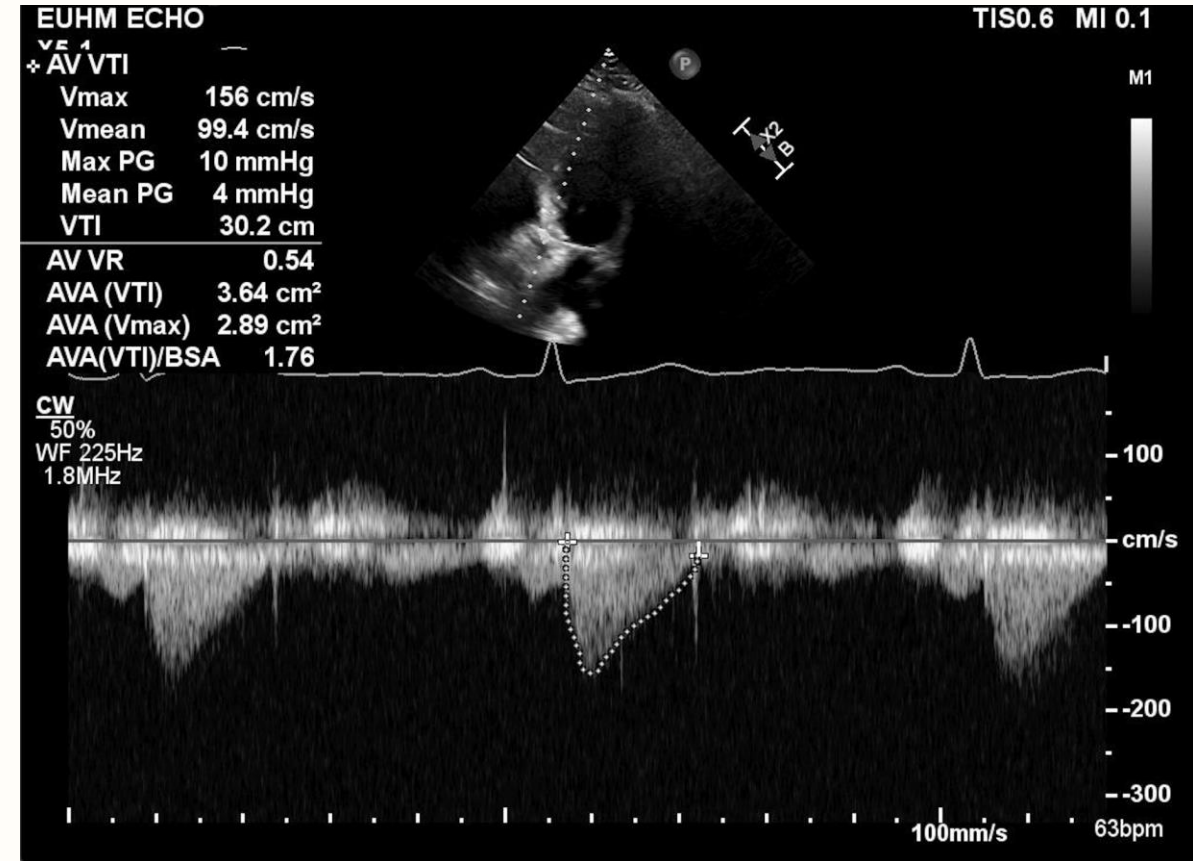
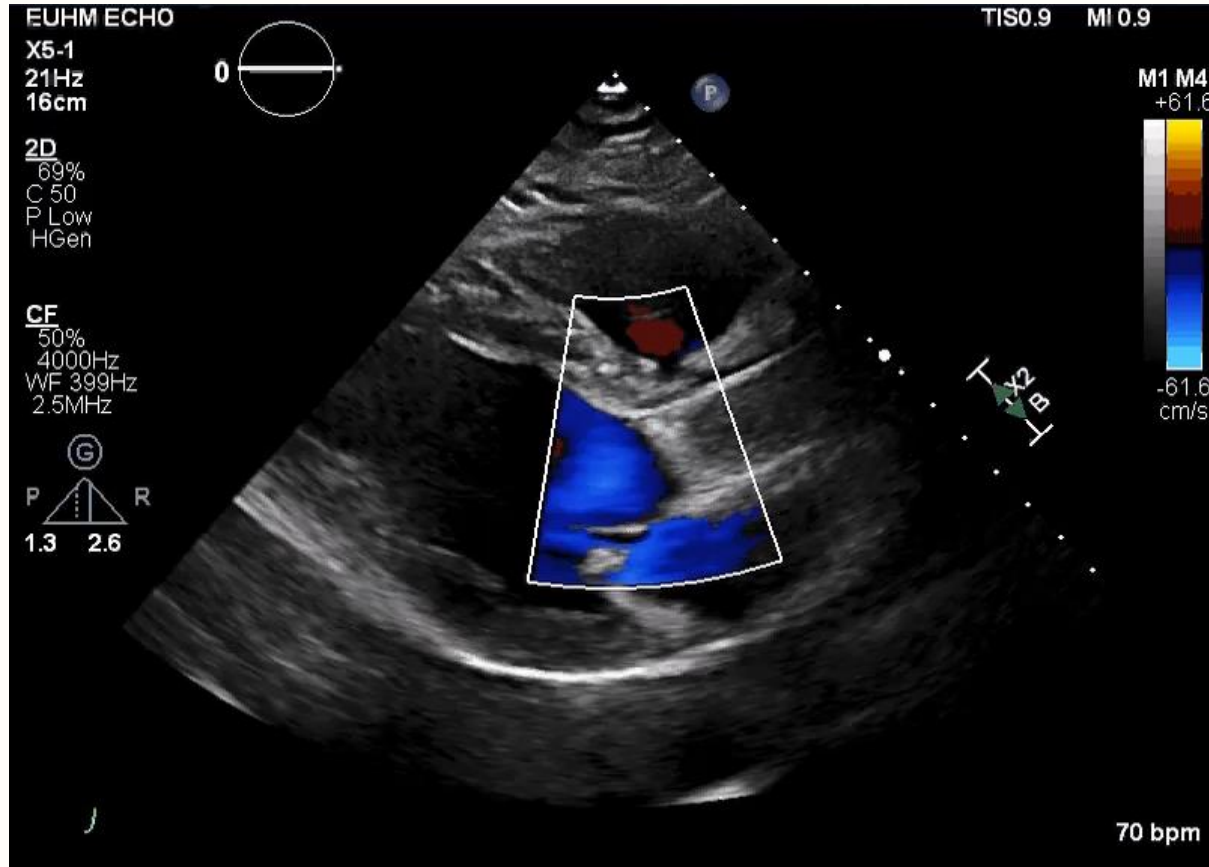


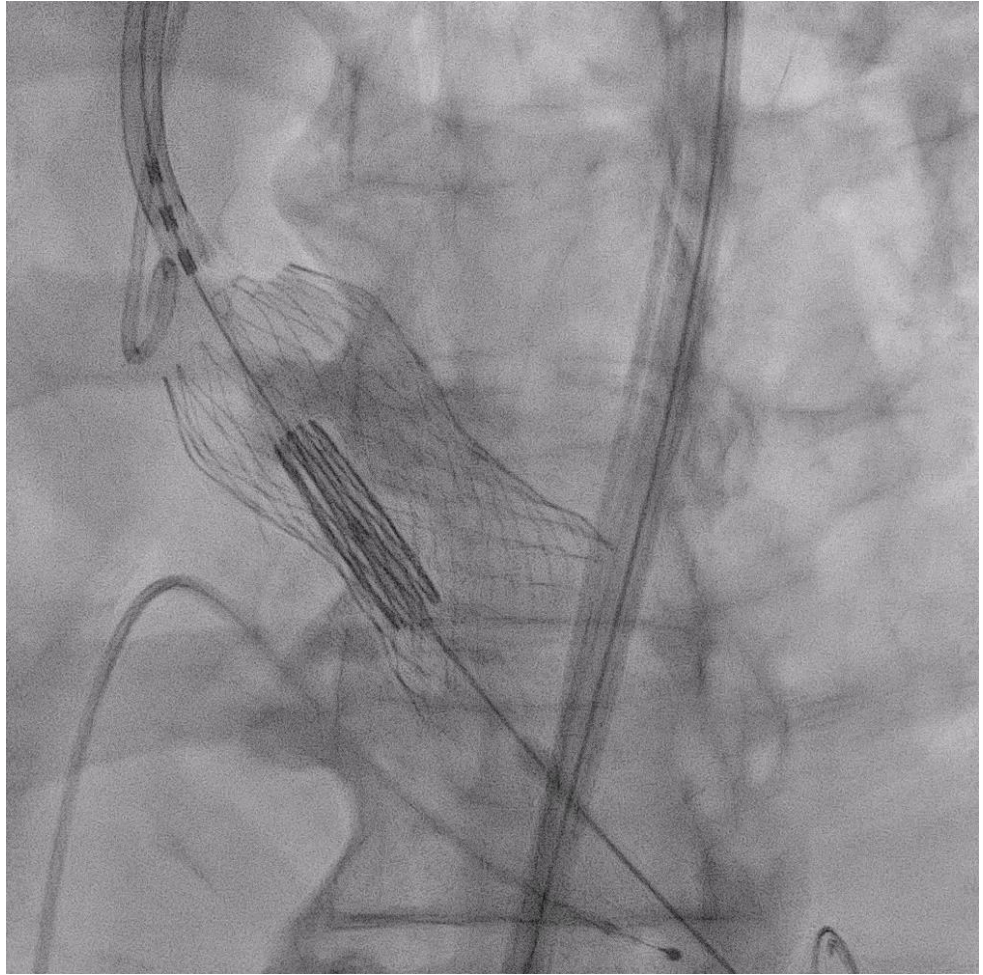
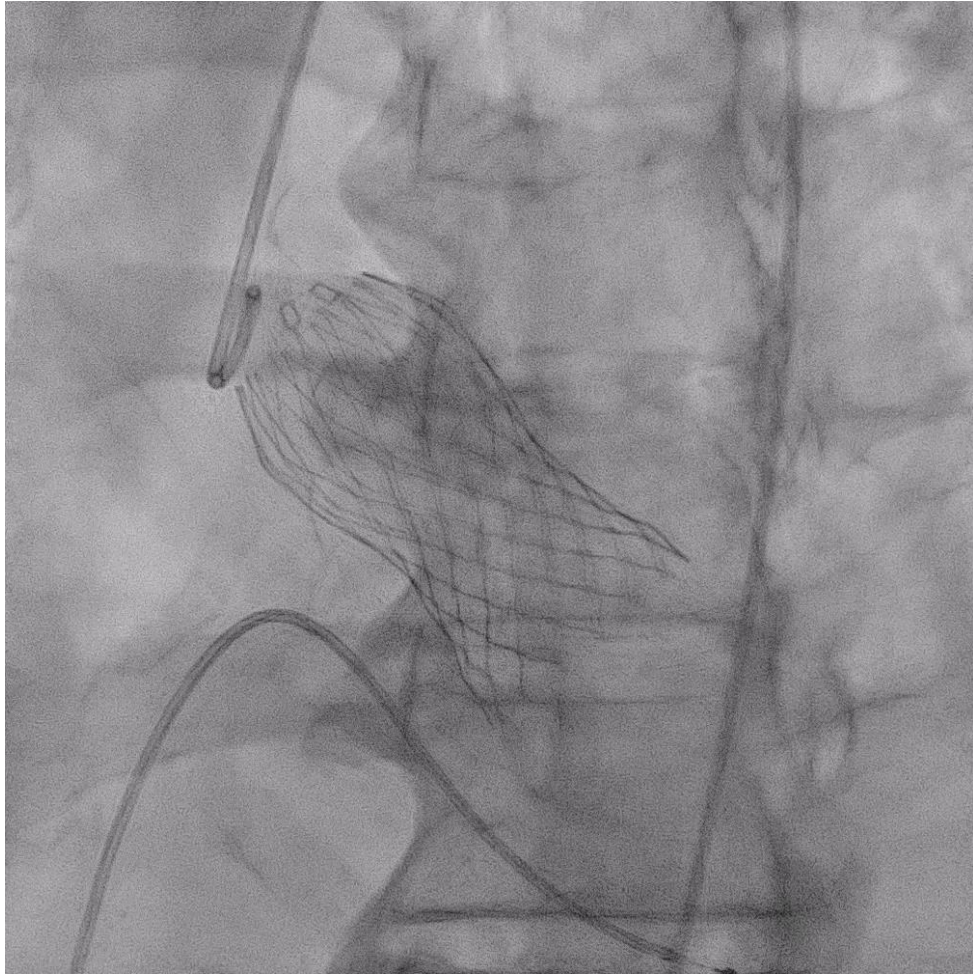
25mm/s 10mm/mV 150Hz 9.0.9 12SL 241 CID: 2

SID: 11196433 EID: 6 EDT: 11:46 25-JUN-2020 ORDER: 051127043 ACCOUNT: 65370940168

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Echocardiogram at 30 days





You get 1 shot at a perfect first result!



Thank you!

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