One of the Toughest TAVR case

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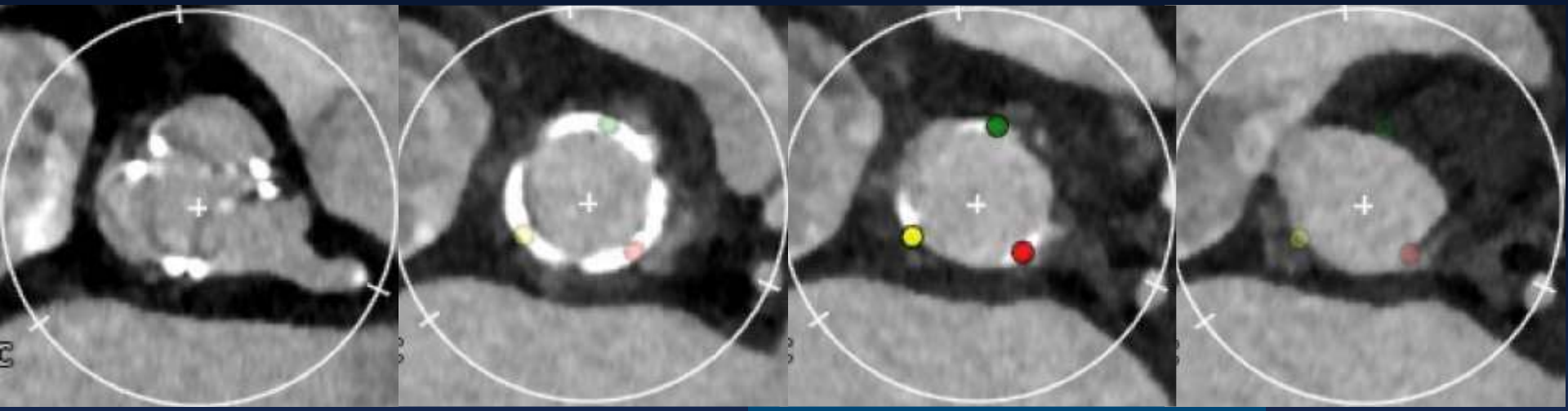
Case

- 80/F, 148.6 cm, 47.7 kg, BMI 21.60, BSA 1.40
- Chief complaints
  - DOE (NYHA II)
- Medical history
  - HT, DM
  - HCV LC
  - s/p CABG and AVR(C-E 19mm) (2009)
- ECG : NSR
- Serum Cr : 0.86 (GFR 63)
- PFT : FEV1 70% / FVC 67% = 72%
- STS score = 9.371%
- Euroscore I = 7.94%, Euroscore II = 1.65%

Echo findings

- S/P AVR(C-E 19mm)
- EF = 71 %
- AVA = 0.3 cm^2
- Vmax 4.5 m/sec
- PG 81/45 mmHg
- LVOT diameter, TTE = 17.8 mm
- Severe aortic prosthetic valve stenosis
- Concentric LVH with normal LV systolic function

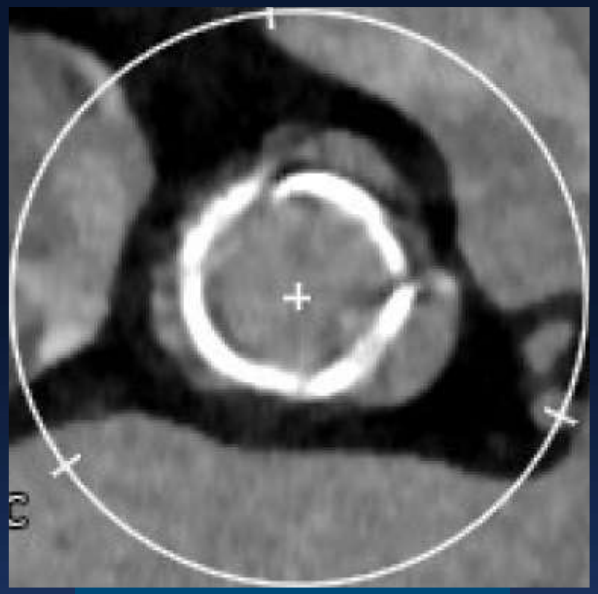
Bioprosthetic valve basal plane



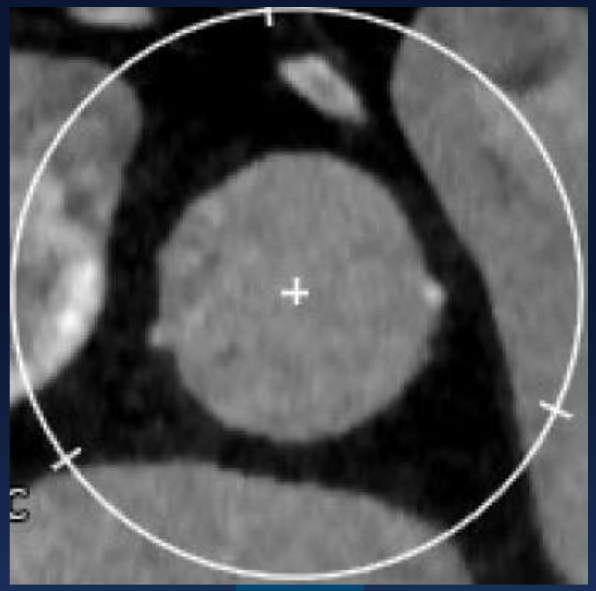
Base of the surgical valve

Bioprosthetic valve parameters	
Valve internal short diameter	16.6 mm
Valve internal long diameter	18.1 mm
Valve internal mean diameter	17.3 mm
Valve internal area	238 mm^2
Valve internal area-derived diameter	17.4 mm
Valve internal perimeter	54.9 mm
Valve internal perimeter-derived diameter	17.5 mm

CT findings – Aortic Valve Complex



Sinus of Valsalva

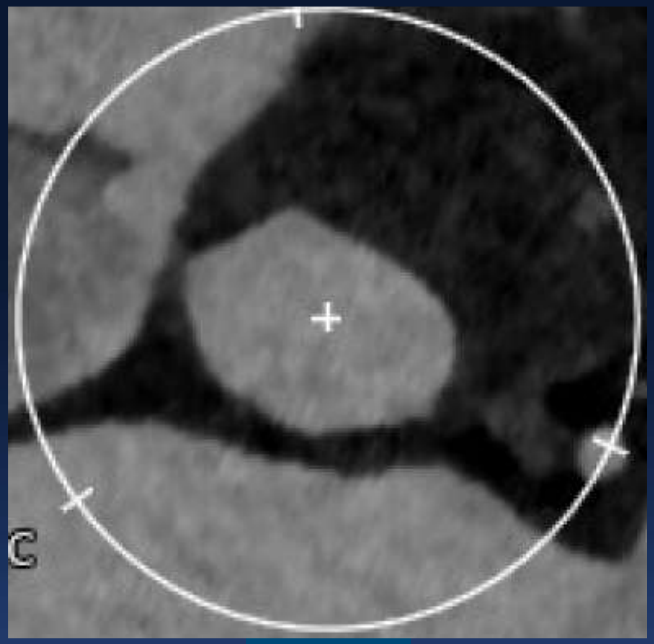


STJ

Sinus of Valsalva		STJ	
Area	507 mm^2	Area	485 mm^2
Sinus / Annulus Area Ratio	2.13	STJ/ Annulus Area Ratio	2.04
NCC diameter	25.2 mm	Mean diameter	24.8 mm
LCC diameter	25.6 mm		
RCC diameter	24.0 mm		

Mean Sinus / Annulus Area Ratio **1.83 ± 0.27** **Mean STJ / Annulus Area Ratio** **1.49 ± 0.29**

CT findings – Aortic Valve Complex



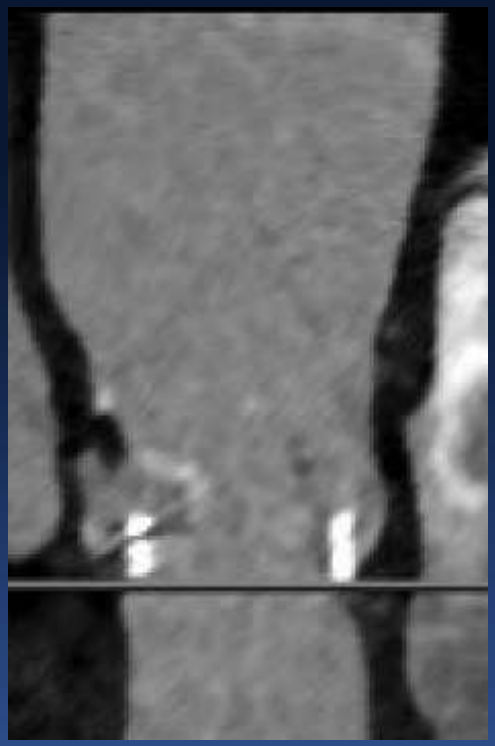
LVOT

LVOT	
Area	284 mm^2
LVOT / Annulus Area Ratio	1.19
Short diameter	16.2 mm
Long diameter	23.2 mm
Mean LVOT / Annulus Area Ratio	**0.95 ± 0.12**

CT – Coronary heights

LCA

RCA



Coronary Height	
LCA	6.8 mm
RCA	8.8 mm

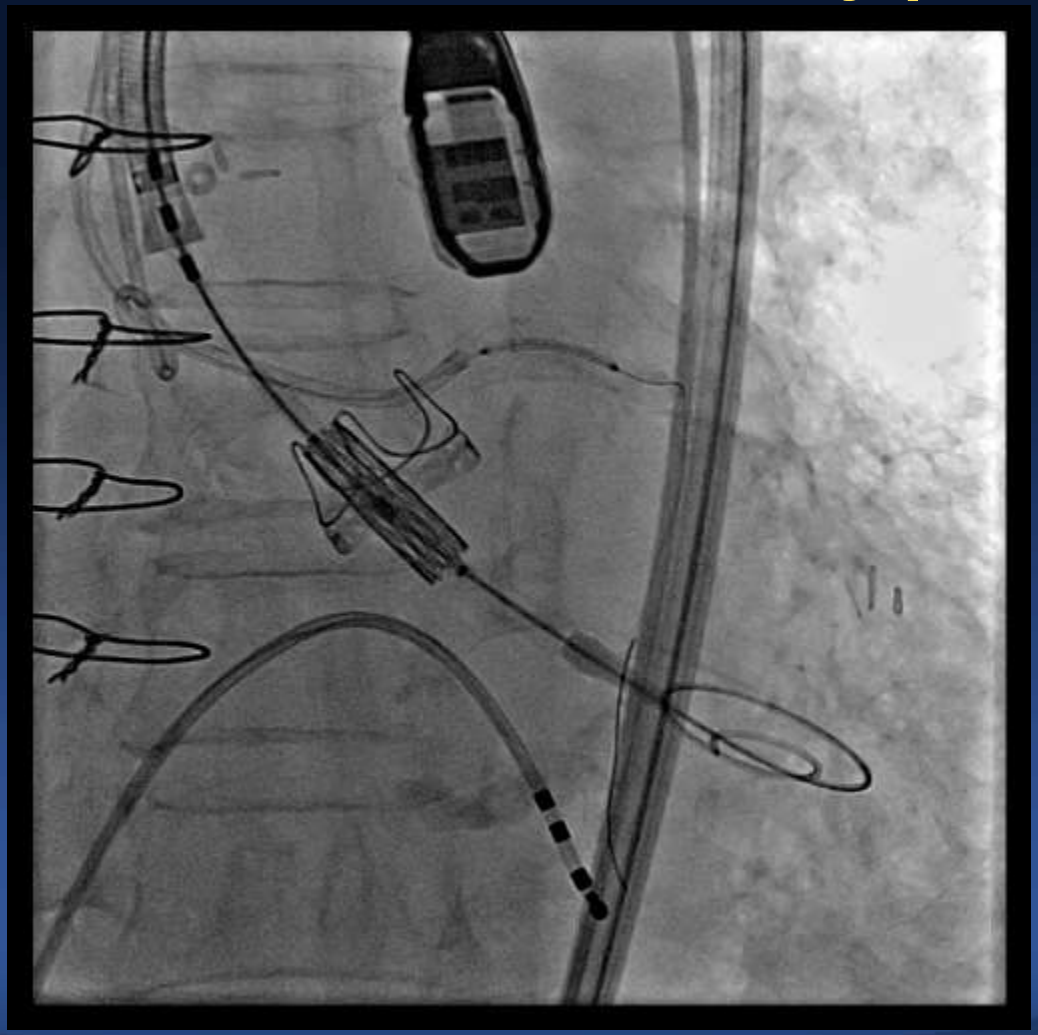
Sizing for Sapien 3

Size	Area_oversize (%)	Perimeter_oversize (%)
20	137.8	116.9
21	151.9	122.7
22	166.7	128.6
23	171.8	130.1
24	187.1	135.8
25	203.0	141.4
26	218.0	147.0

TAVR procedure

TAVR procedure

SAPIEN 3: 20mm with coronary protection

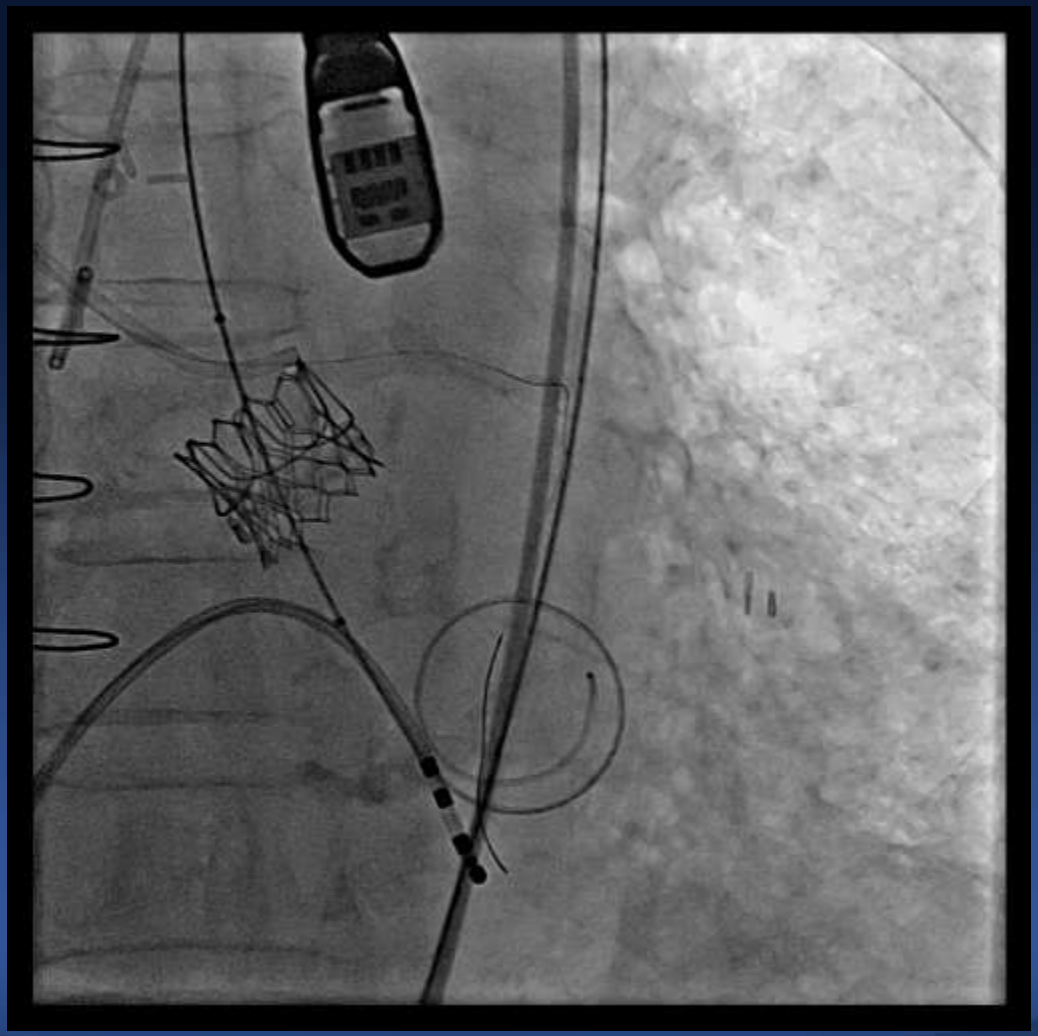


TAVR procedure

At least Mild PVR

TAVR procedure

Post-dilation with 20mm

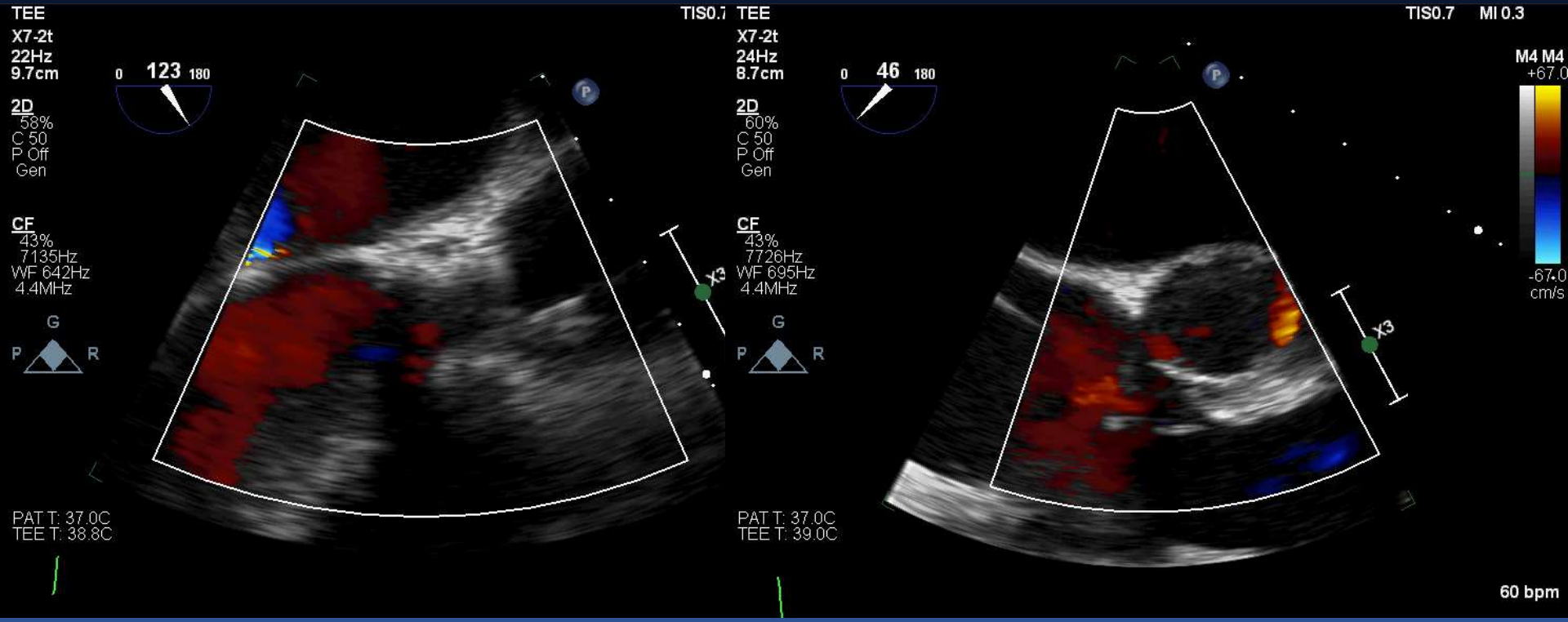


TAVR procedure

PVR did not reduce

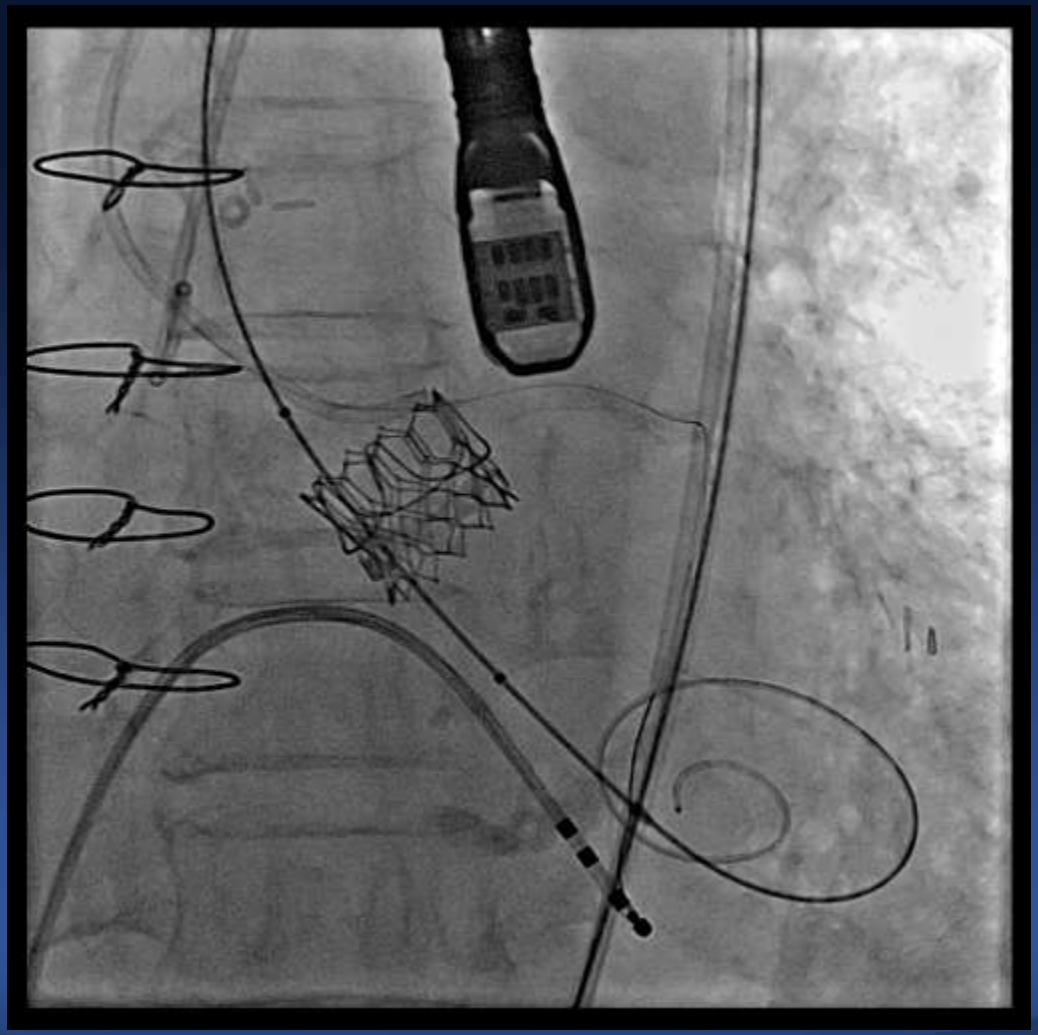
TAVR procedure

PVR of surgical valve



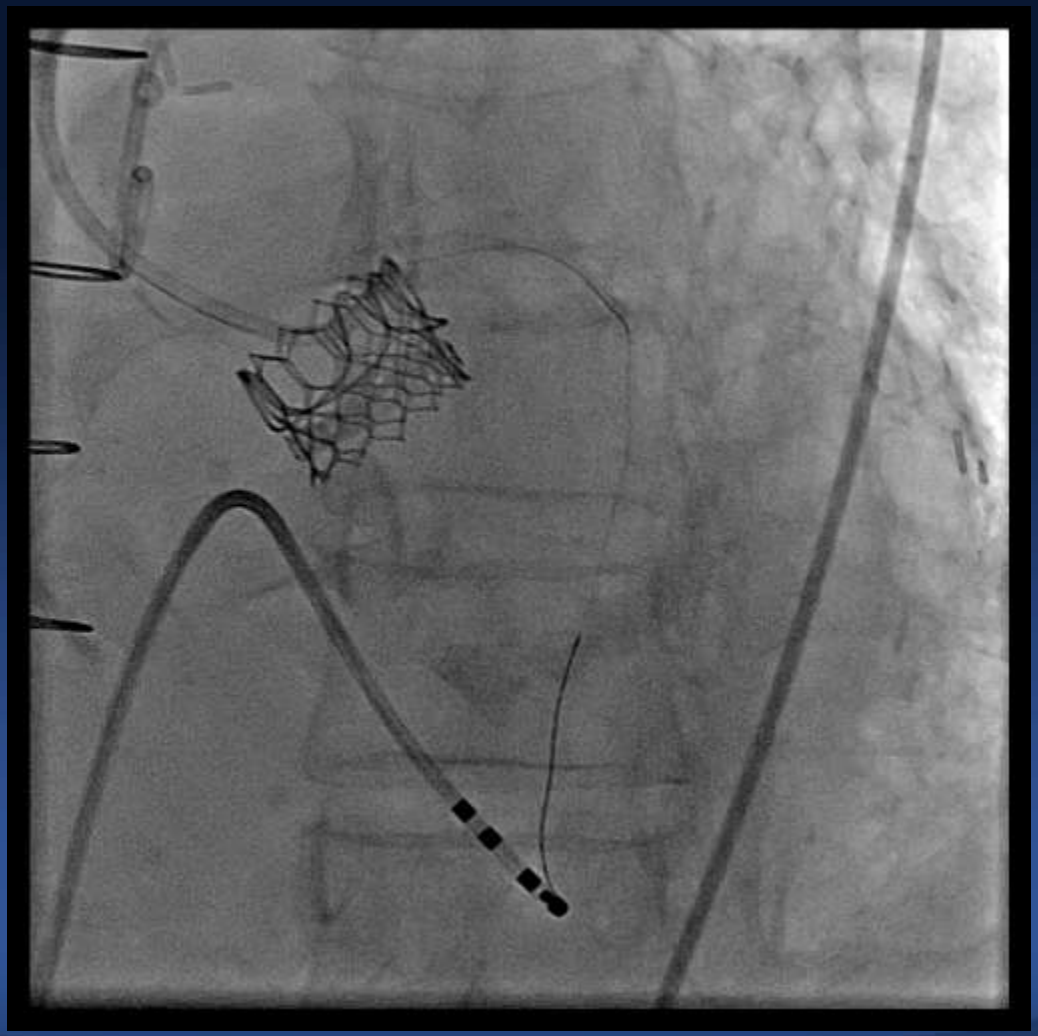
TAVR procedure

Fracture with 20mm ATLAS GOLD



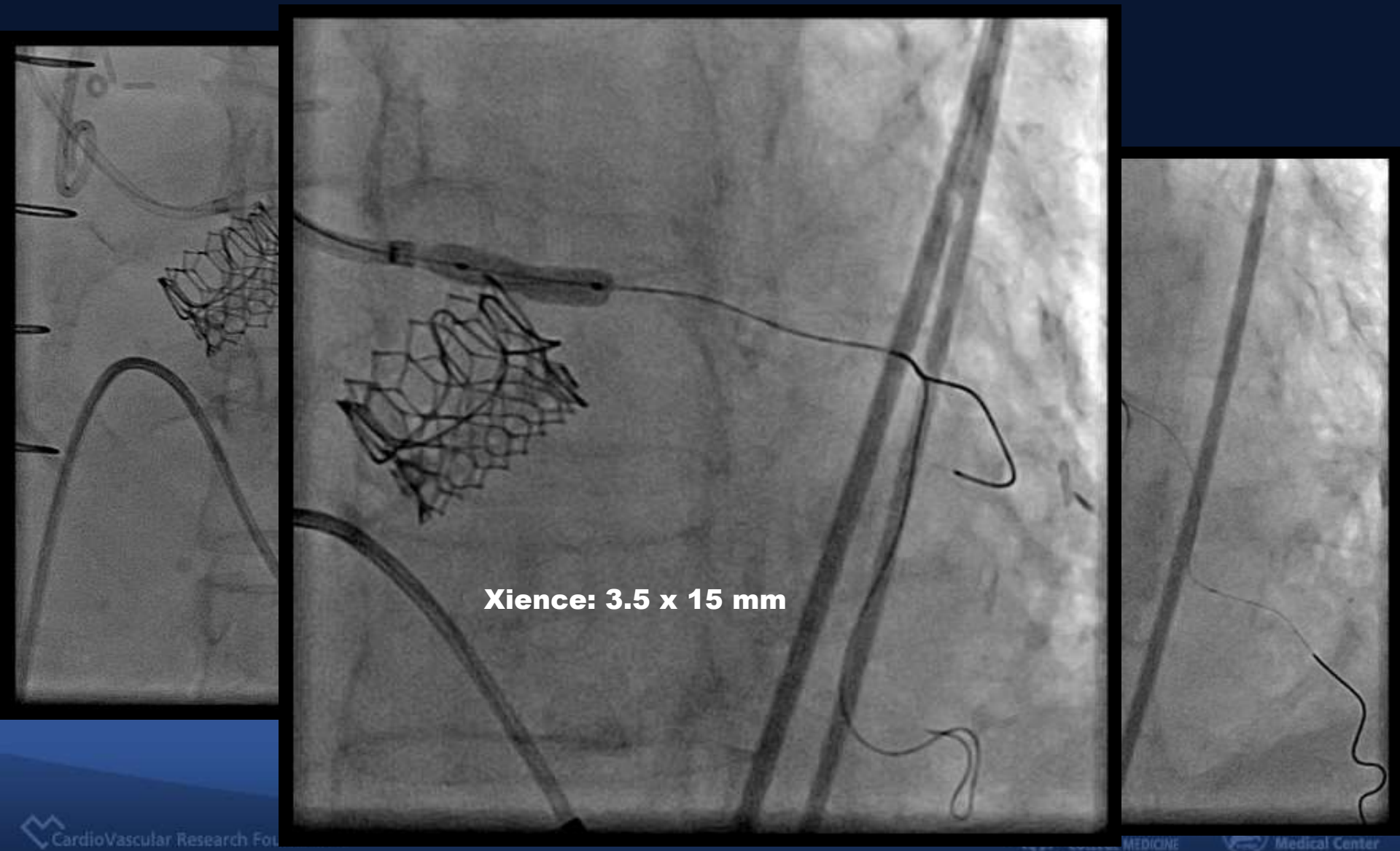
TAVR procedure

Tight stenosis between S3 and STJ by surgical leaflet



TAVR procedure

Dilation with several size of balloon under Guidzilla support



TAVR procedure

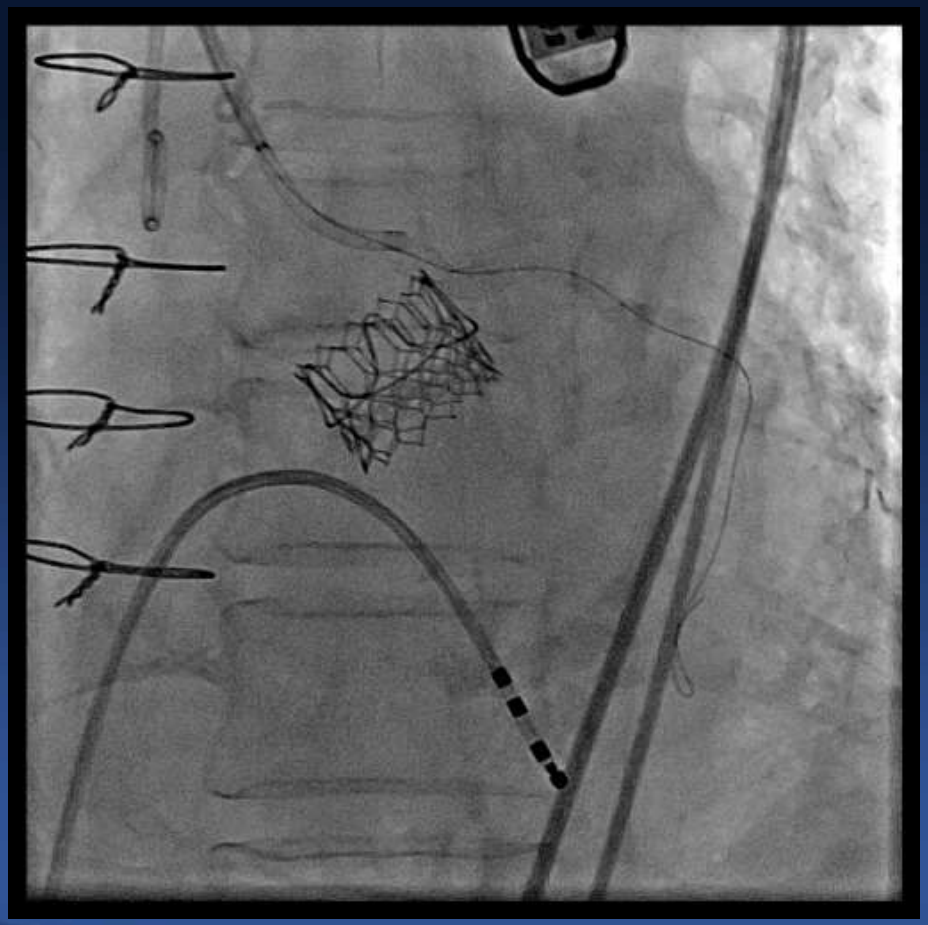
Stenosis due to acute recoil was still tight

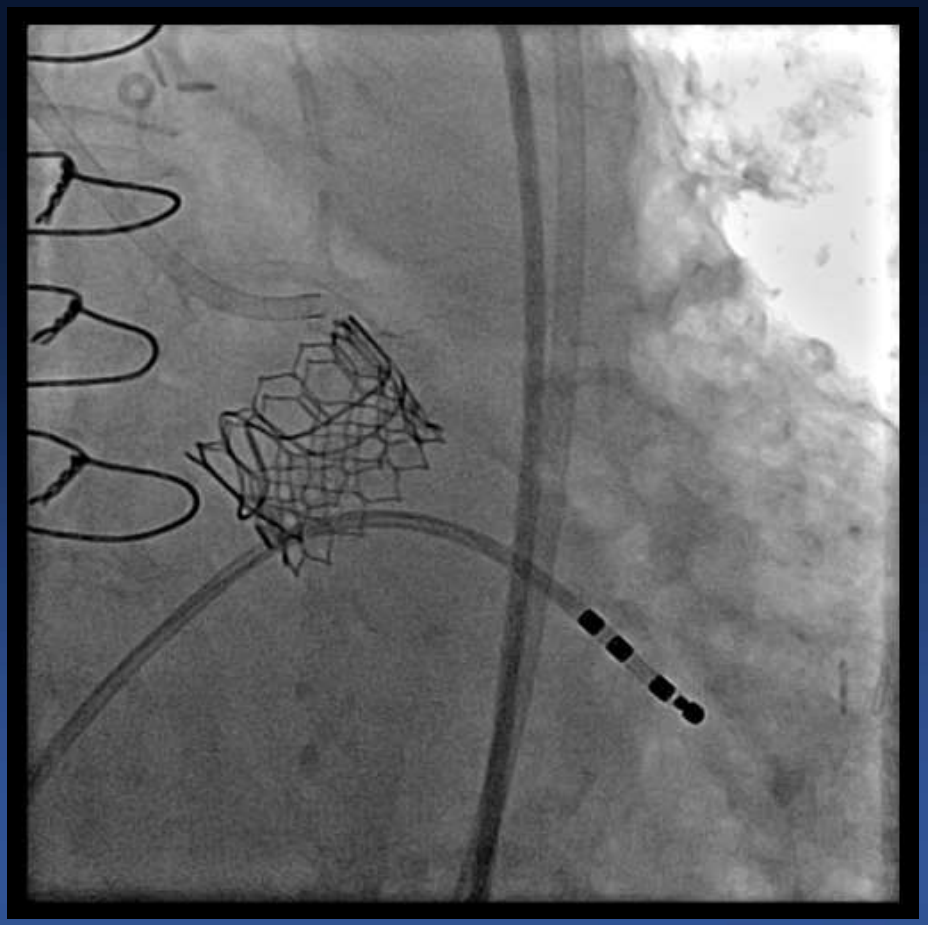
TAVR procedure

Stent-in-Stent to increase radial force

TAVR procedure

Final angiography





TAVR procedure

PVR of surgical valve

Summary

- ViV case with surgical valve fracture has really high risk of coronary obstruction.
- Before fracture, we should have inserted stent in coronary.
- Is it really predictable that initial PVR of surgical valve will decrease after fracture?
- Acute and late recoil of Xience remains concern