

Severe Calcification & CAD

How to overcome?

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□ I have the following potential conflicts of interest to report:

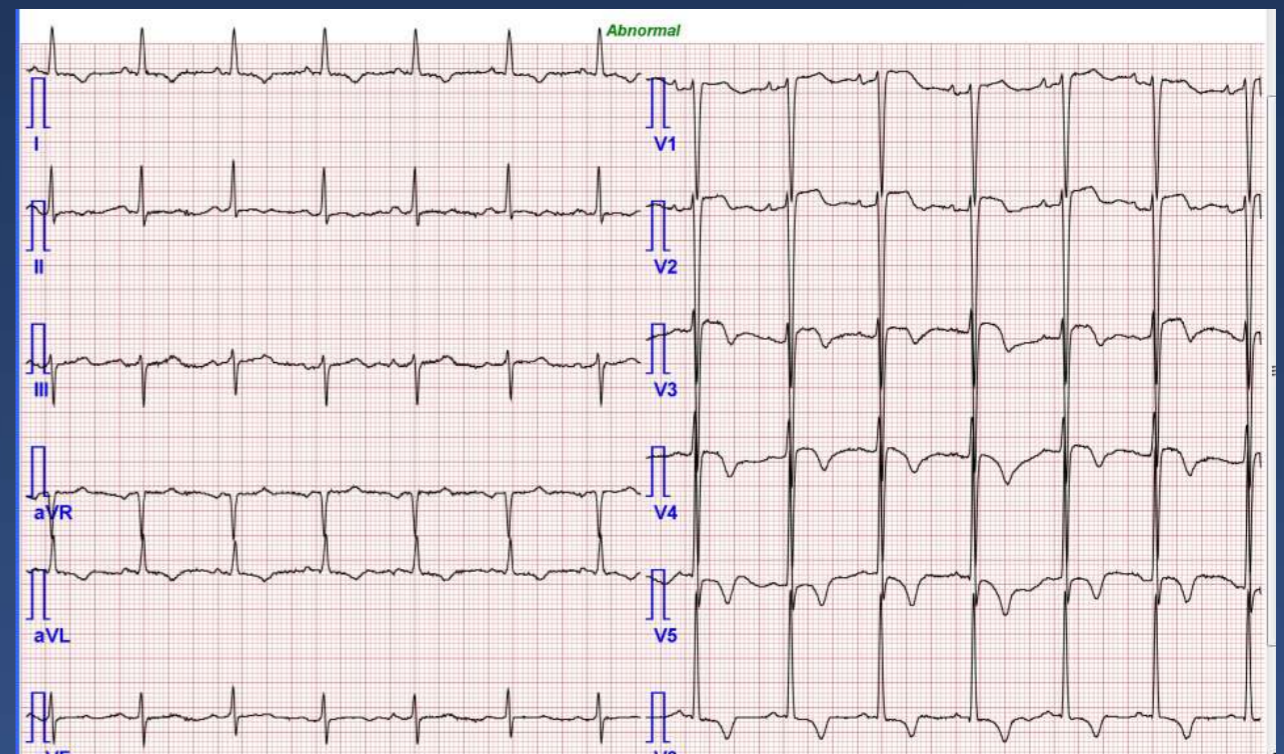
- Proctor of Edwards Lifesciences
- Proctor of Medtronic

My strategy of TAVI on severely calcified AV

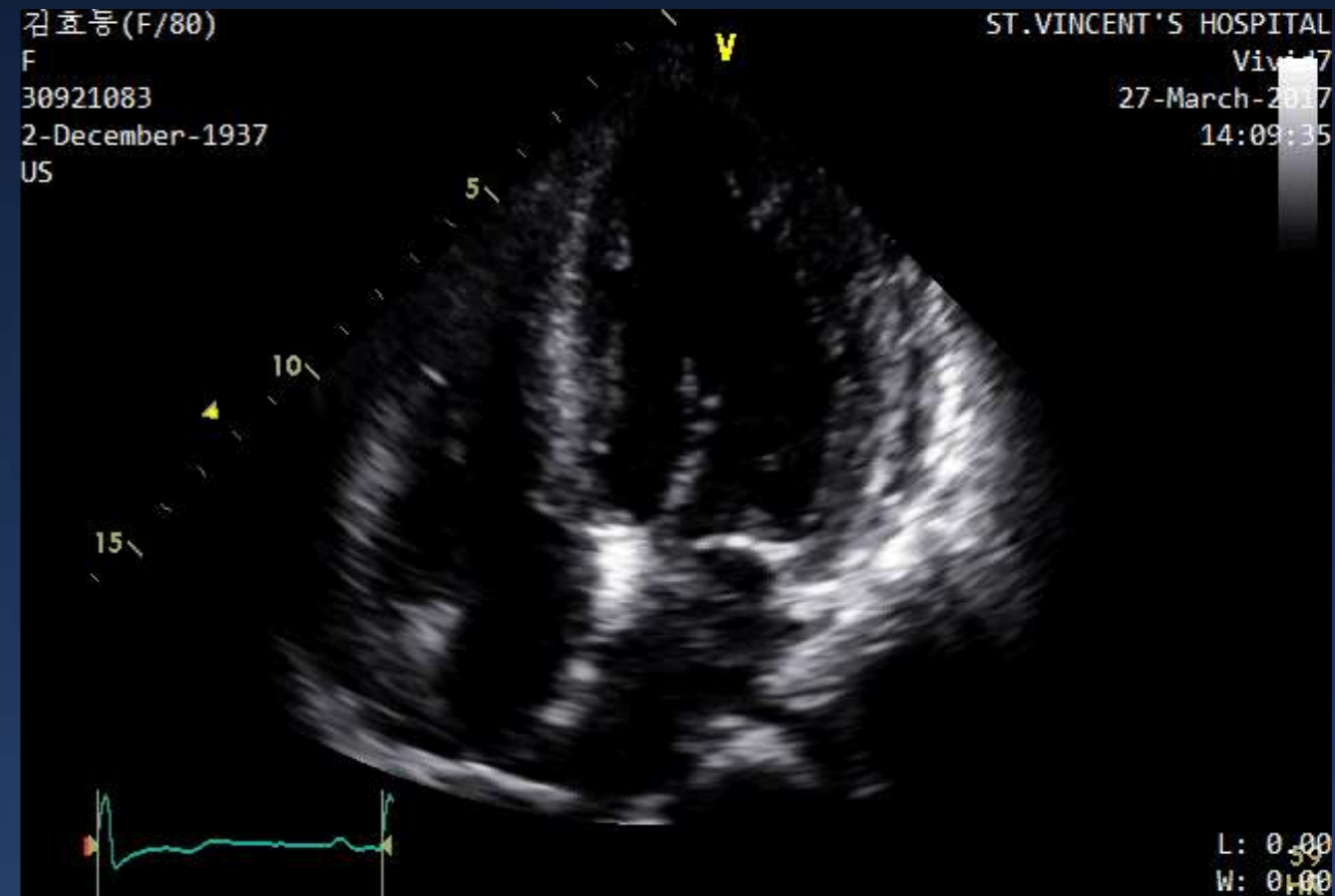
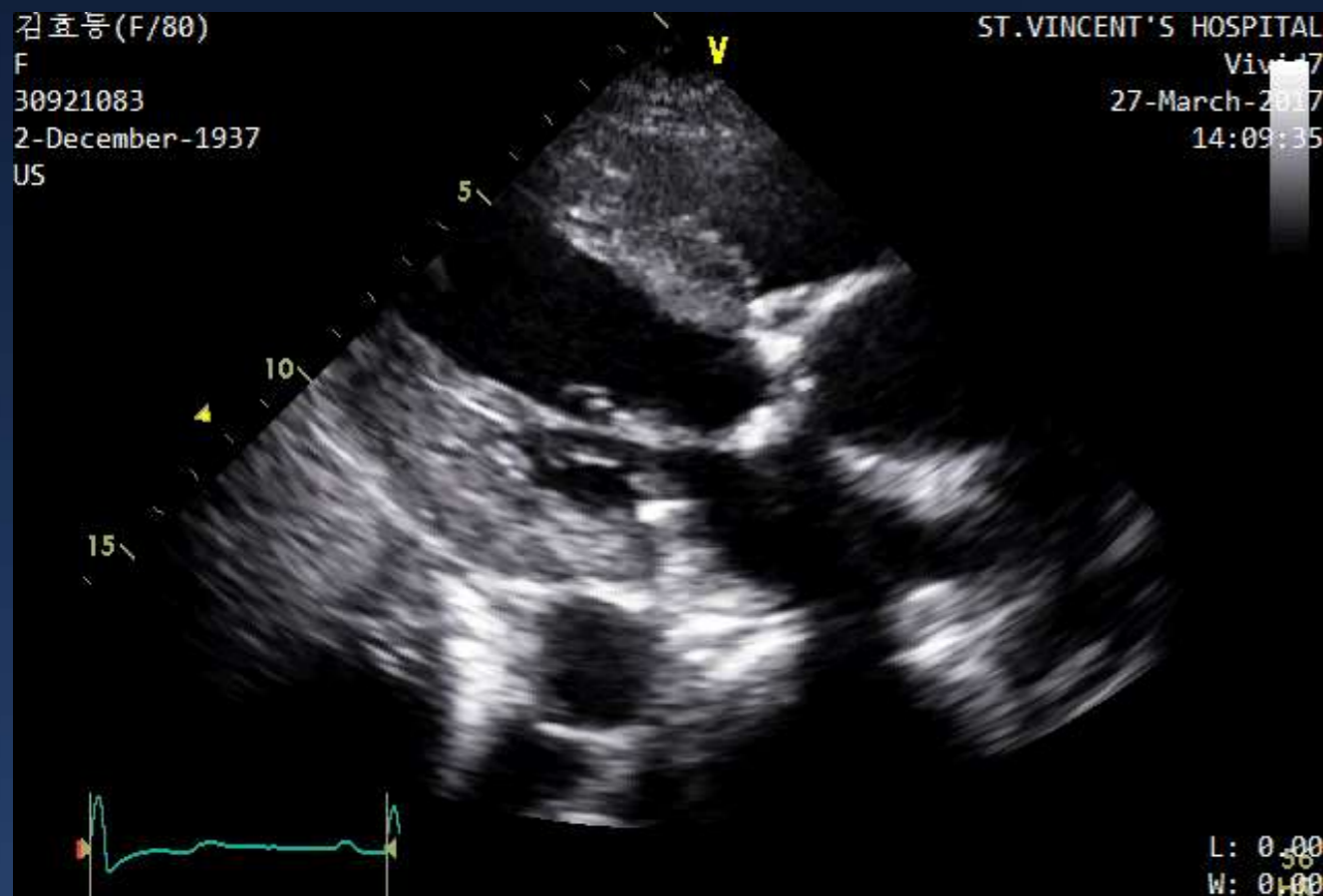
- Predilation with small balloon
- Smaller valve size if Sapien3 (avoid oversizing)
- Dare to perform post-ballooning when needed
- Accept some PVL
- Carefully look at LVOT calcification: appearance, amount
- Either Sapien3 or EvolutR

80 year-old female

- Presented to NYHA III SOB since 20 days ago & orthopnea last night
- Transferred to another affiliated hospital with dobutamine for emergent TAVI



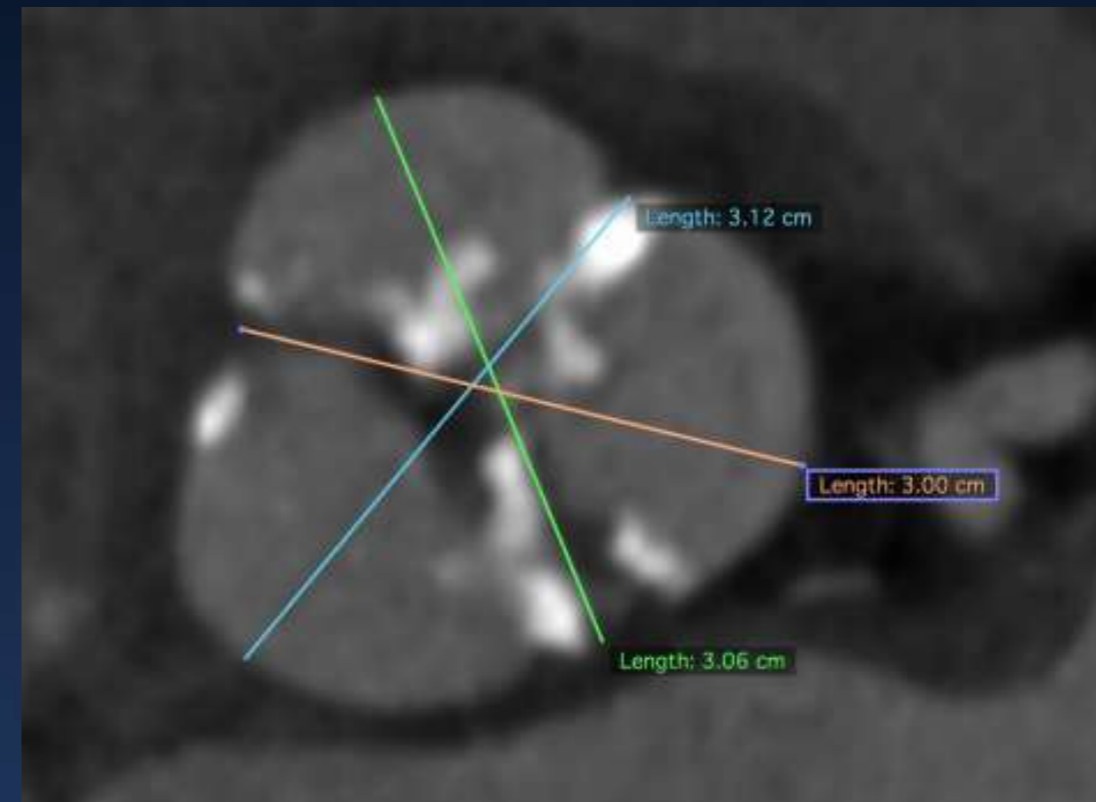
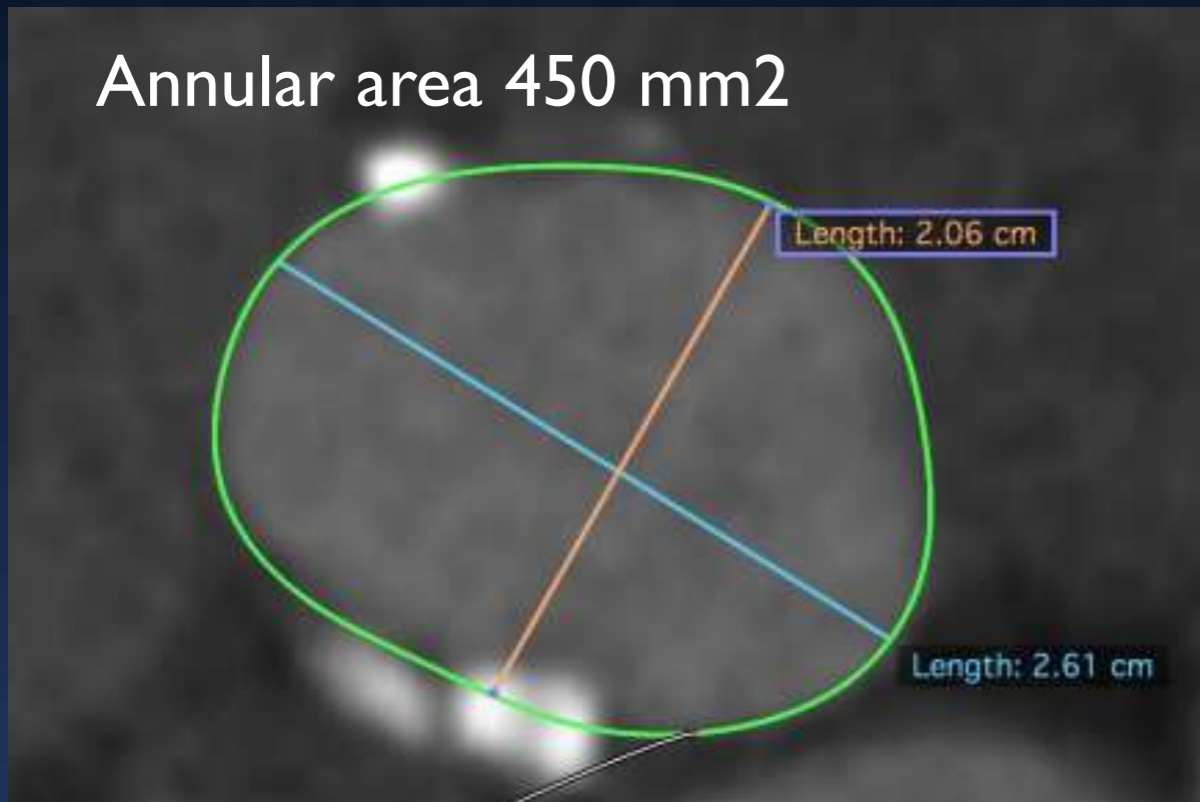
80 year old female: Echo



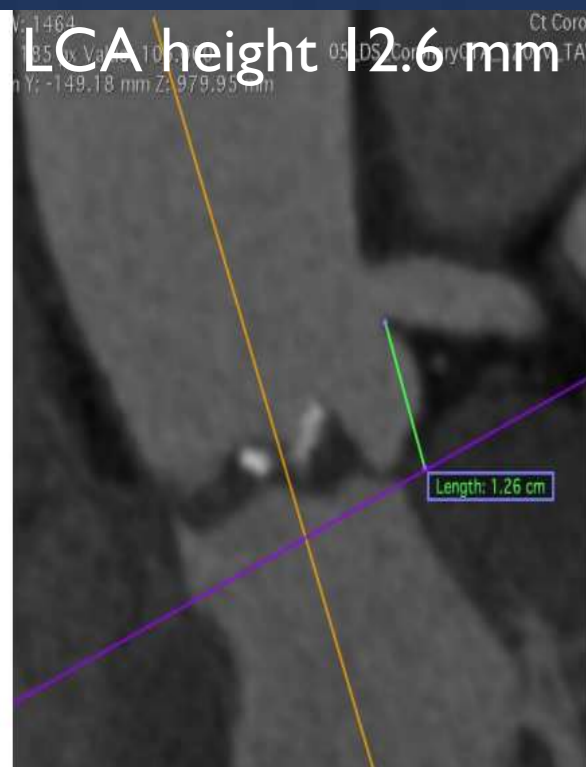
LVEF 39%, AoV Vmax 5.1 m/s
AoV meanPG 68.1 mmHg
AVA 0.6/0.4 cm² by 2D/CE

CCTA analysis

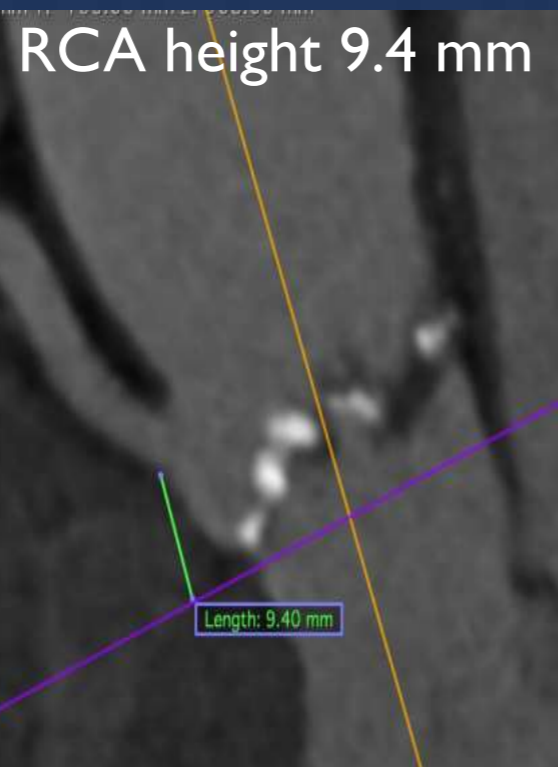
Annular area 450 mm²



LCA height 12.6 mm



RCA height 9.4 mm

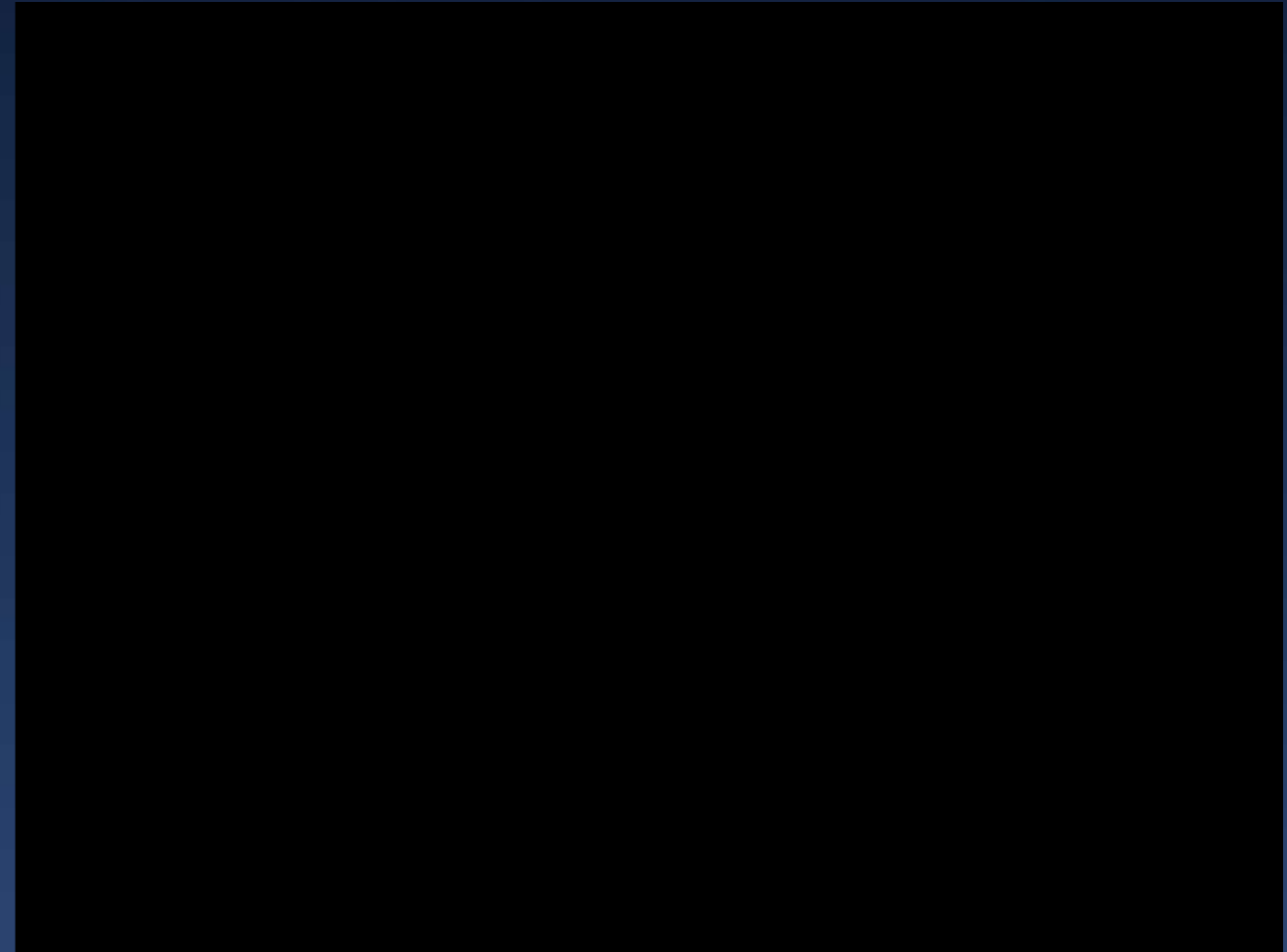
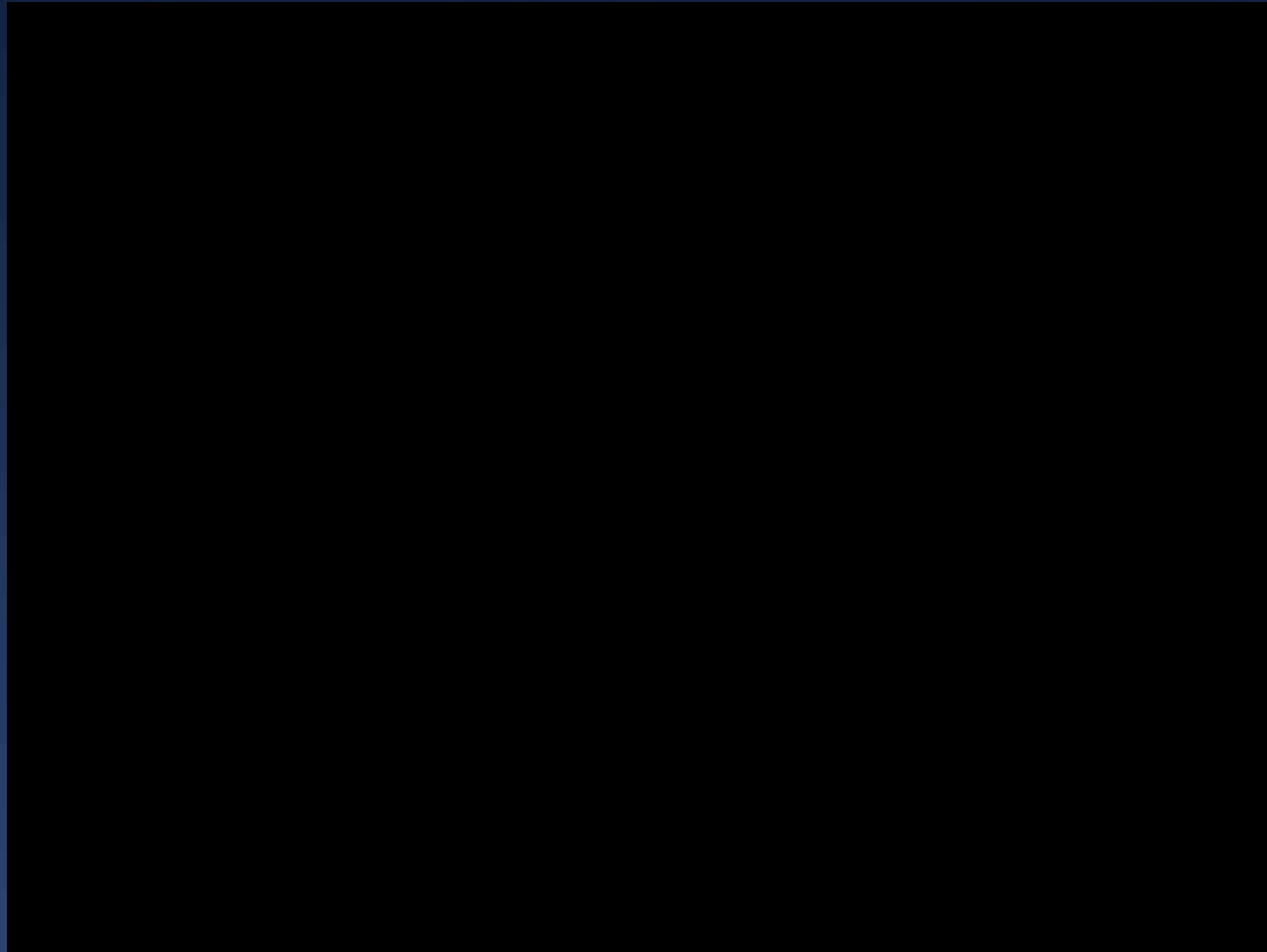


SAPIEN 3 Valve Diameter : 26mm

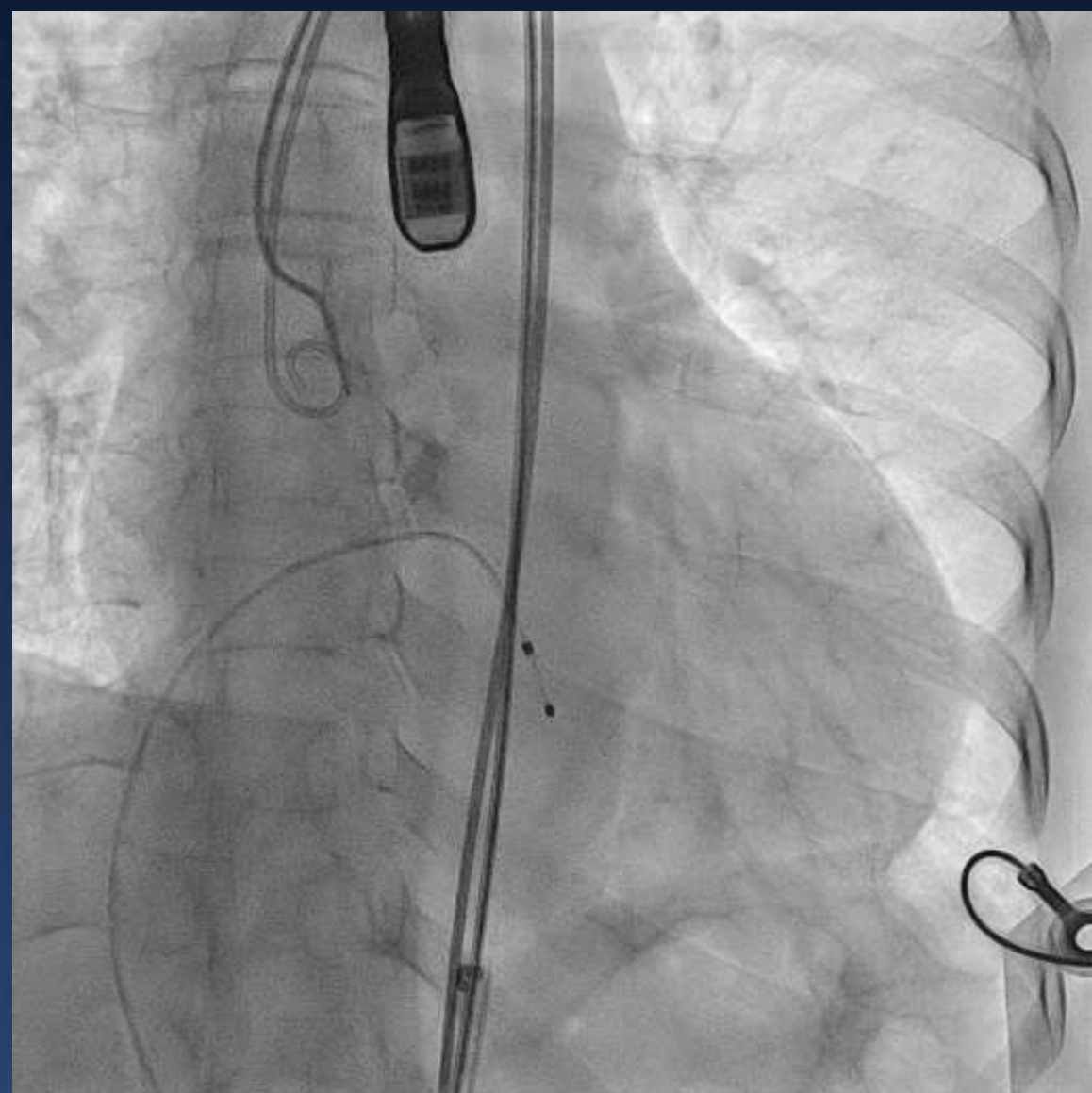
3D Area - derived Diameter (mm)	20.0	20.2	20.5	20.7	21.0	21.1	21.4	21.7	22.0	22.3	22.8	22.8	23.0	23.1	23.1	23.7	23.9	24.0	24.2	24.7
3D Annular Area (mm ²)	314	320	330	338	346	350	360	370	380	390	400	410	415	420	430	440	450	452	460	480
% Annular Area Over (+) or Under (-) Nominal by 3D CT	23mm	29.3	26.9	23.0	20.1	17.3	16.0	12.8	9.7	6.8	4.0	1.5	-1.8	-2.2	-3.3	-5.4	-7.7	-9.8		
	26mm										29.8	26.6	25.1	23.6	20.1	18.8	15.3	14.8	12.8	8.1
	29mm																			

3D Area - derived Diameter (mm)	25.0	25.2	25.5	25.7	26.0	26.2	26.4	26.5	26.7	26.9	27.2	27.4	27.6	27.9	28.0	28.1	28.3	28.5	28.8	29.0	29.2	29.4	29.5	29.6	29.9	30.1	30.3
3D Annular Area (mm ²)	490	500	510	520	530	540	546	550	560	570	580	590	600	610	615	620	630	640	650	660	670	680	683	690	700	710	720
% Annular Area Over (+) or Under (-) Nominal by 3D CT	23mm																										
	26mm	5.9	3.8	1.8	-0.2	-2.1	-3.9	-4.9	-5.6	-7.3	-8.9																
	29mm	29.8	27.3	24.6	22.5	20.2	18.9	18.0	15.9	13.9	11.9	10.0	8.2	6.4	5.5	4.7	3.0	1.4	-0.2	-1.7	-3.1	-4.6	-5.0	-5.9	-7.3	-8.6	-9.9

Aortic leaflet calcification

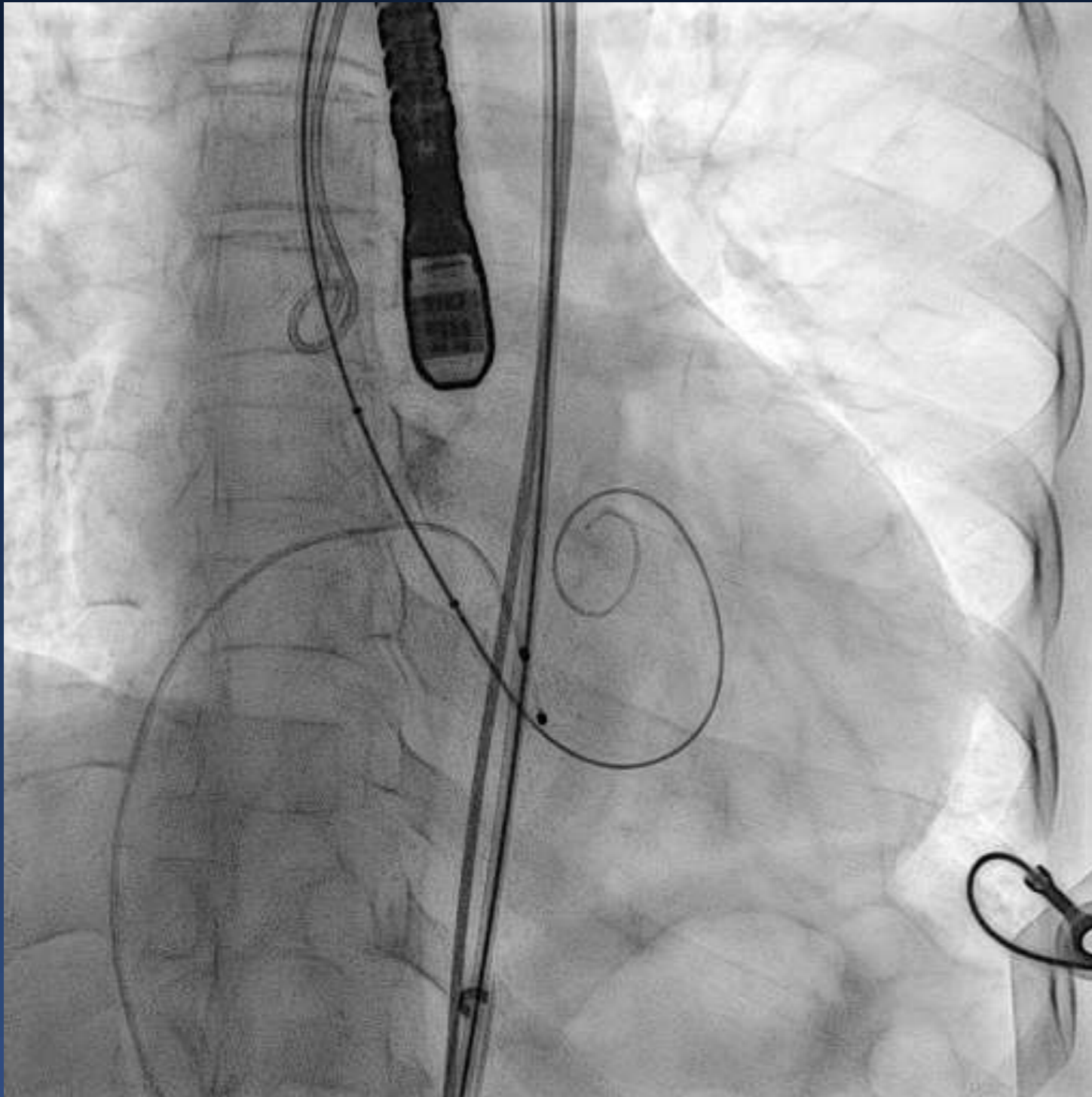


Aortic leaflet calcification



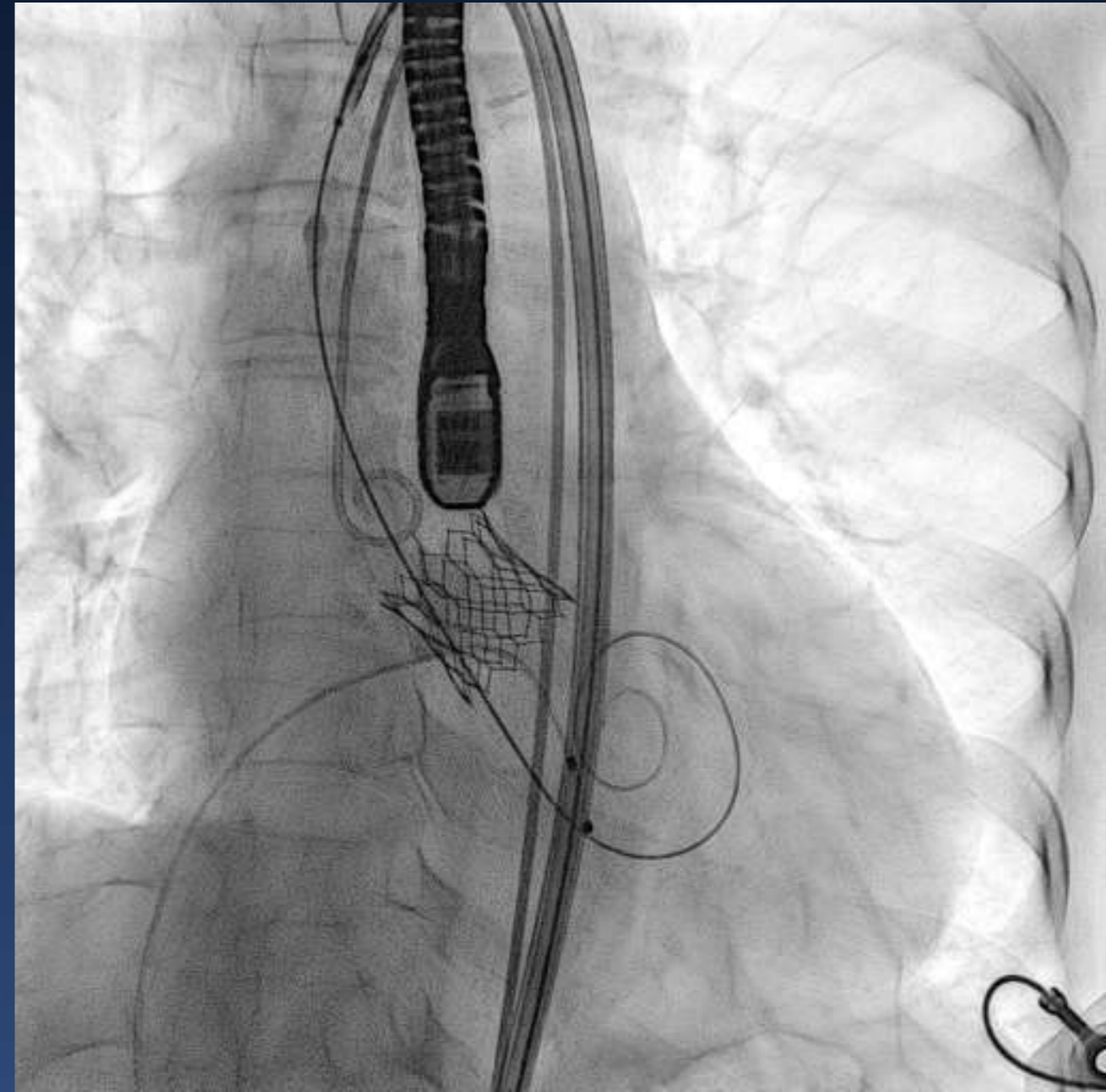
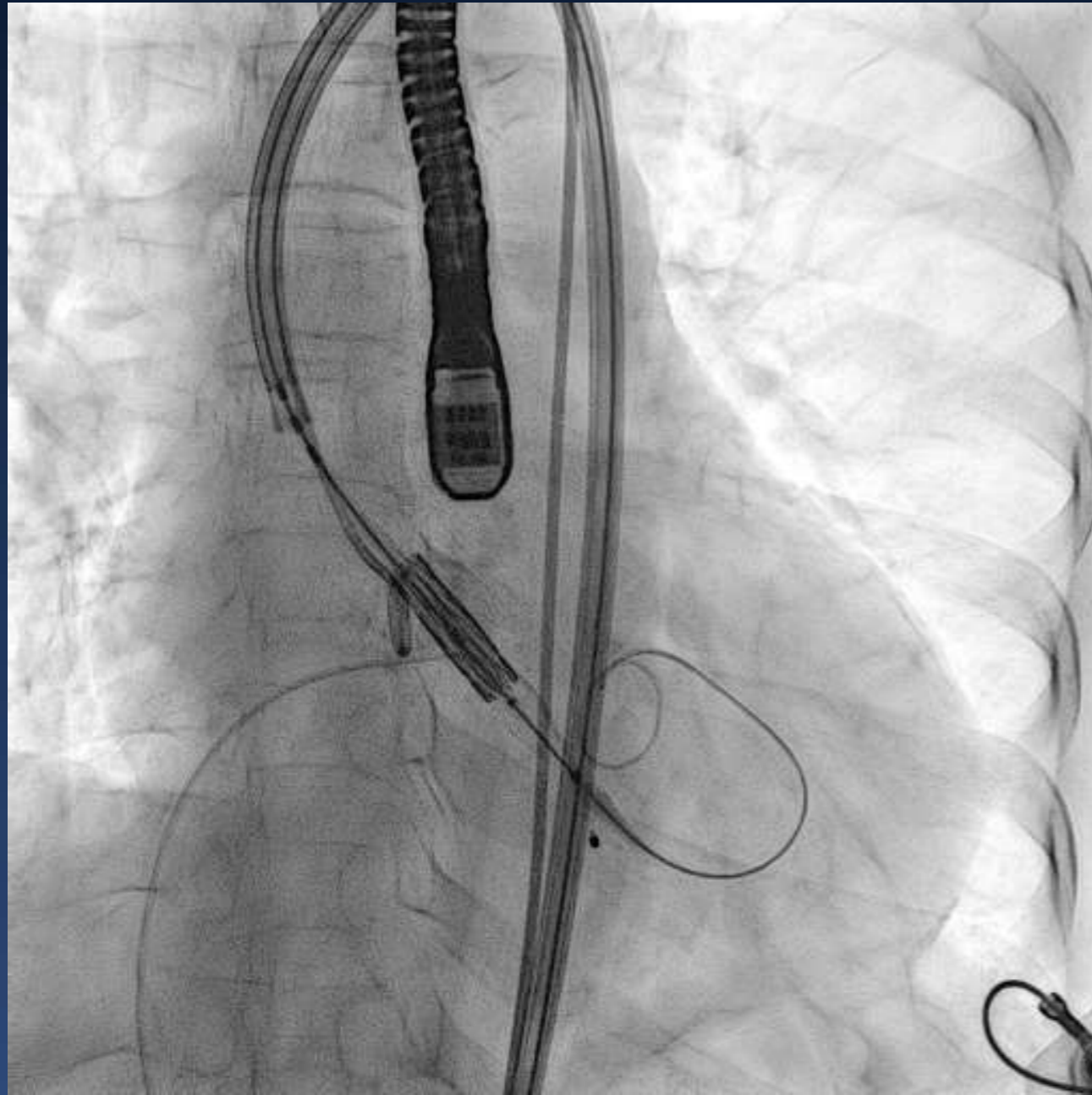
- Are you going to perform pre-balloonning before valve implantation or not?

I prefer preballooning in patients with severely calcified AV



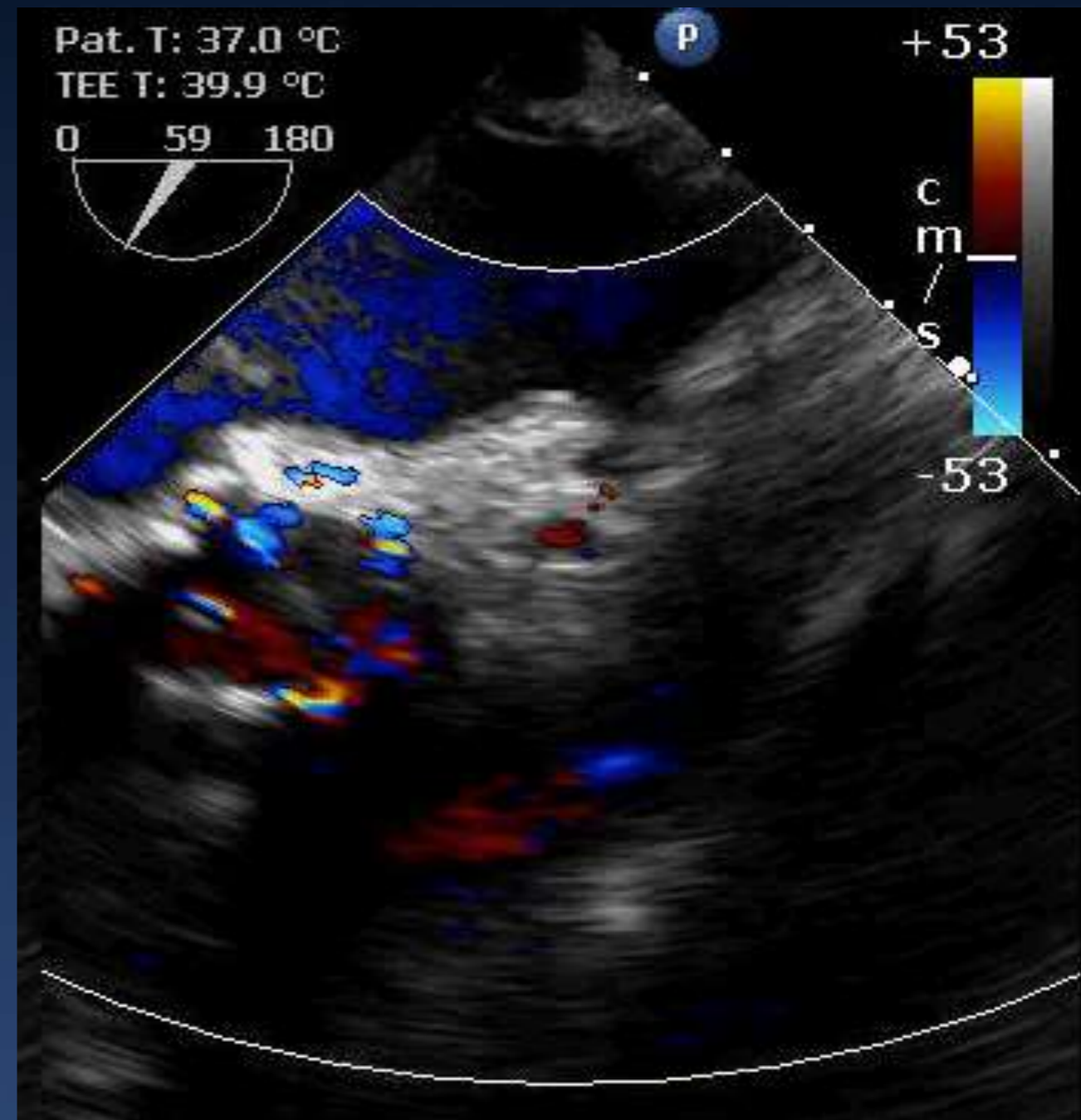
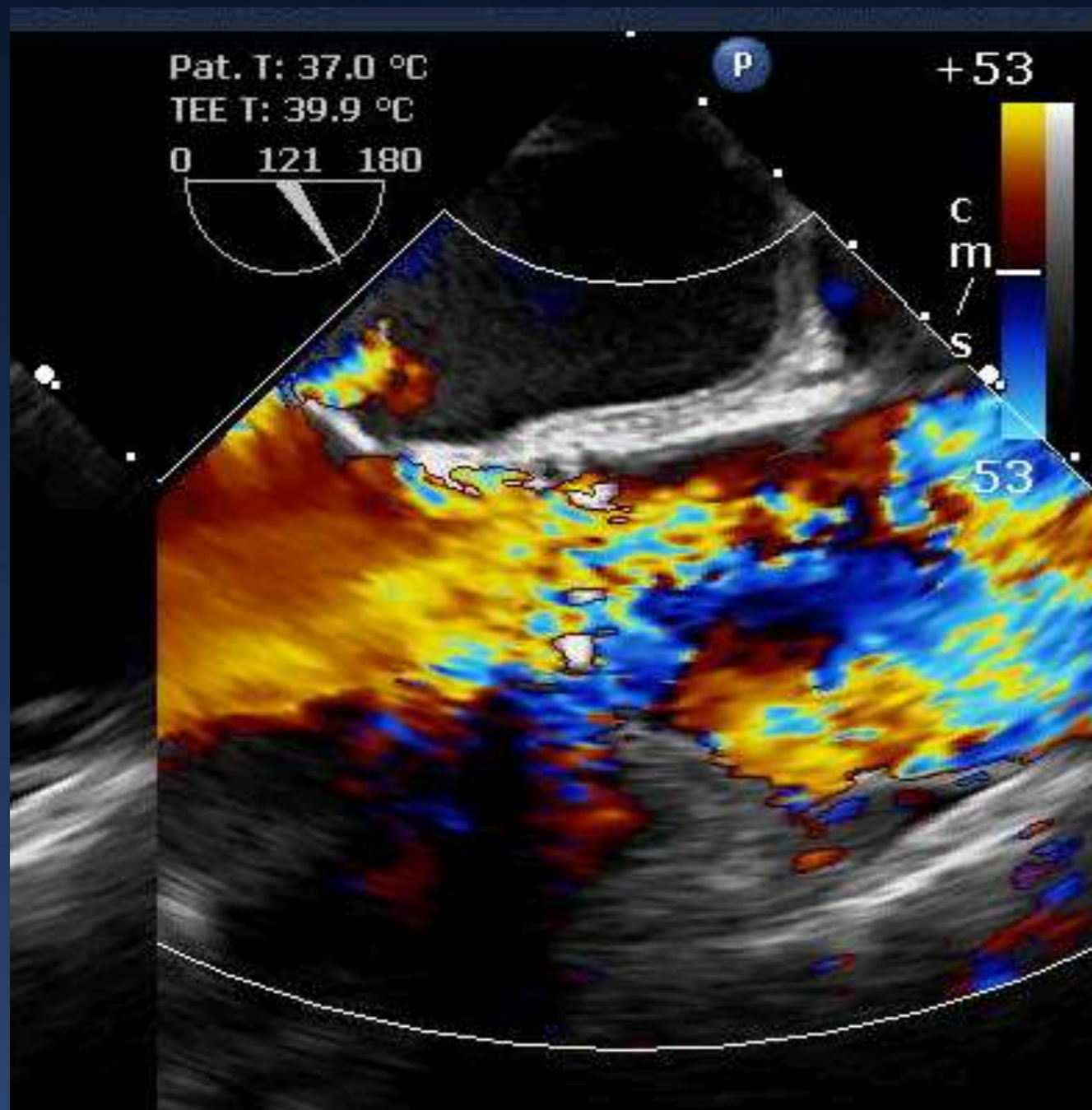
What criteria do you consider when you select balloon size?

TAVI & post-TAVI aortogram



➤ Icc off: from 15% oversizing to 6% oversizing

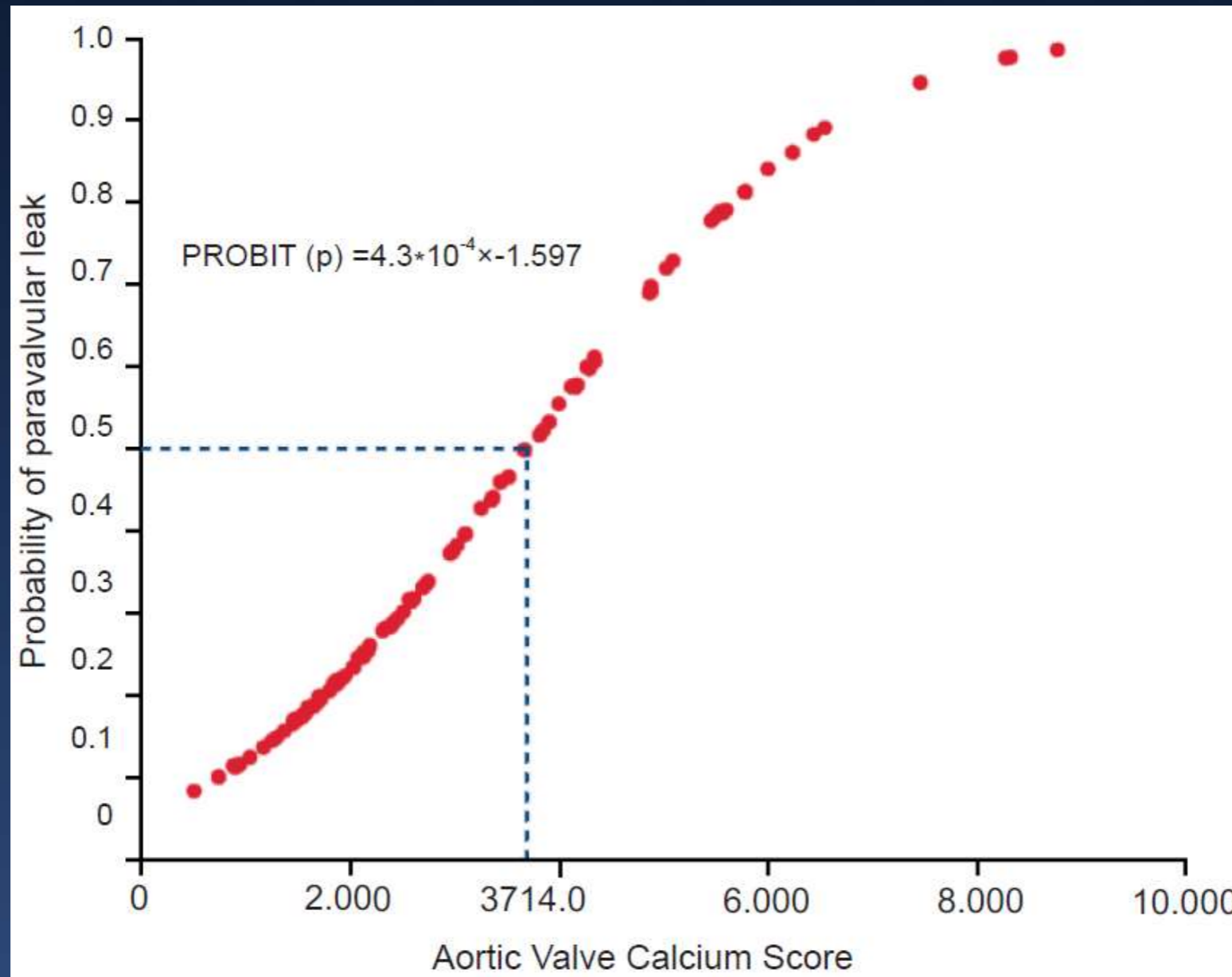
Post-TAVI TEE



- Are you going to perform hemodynamic assessment first or directly post-balloonning?

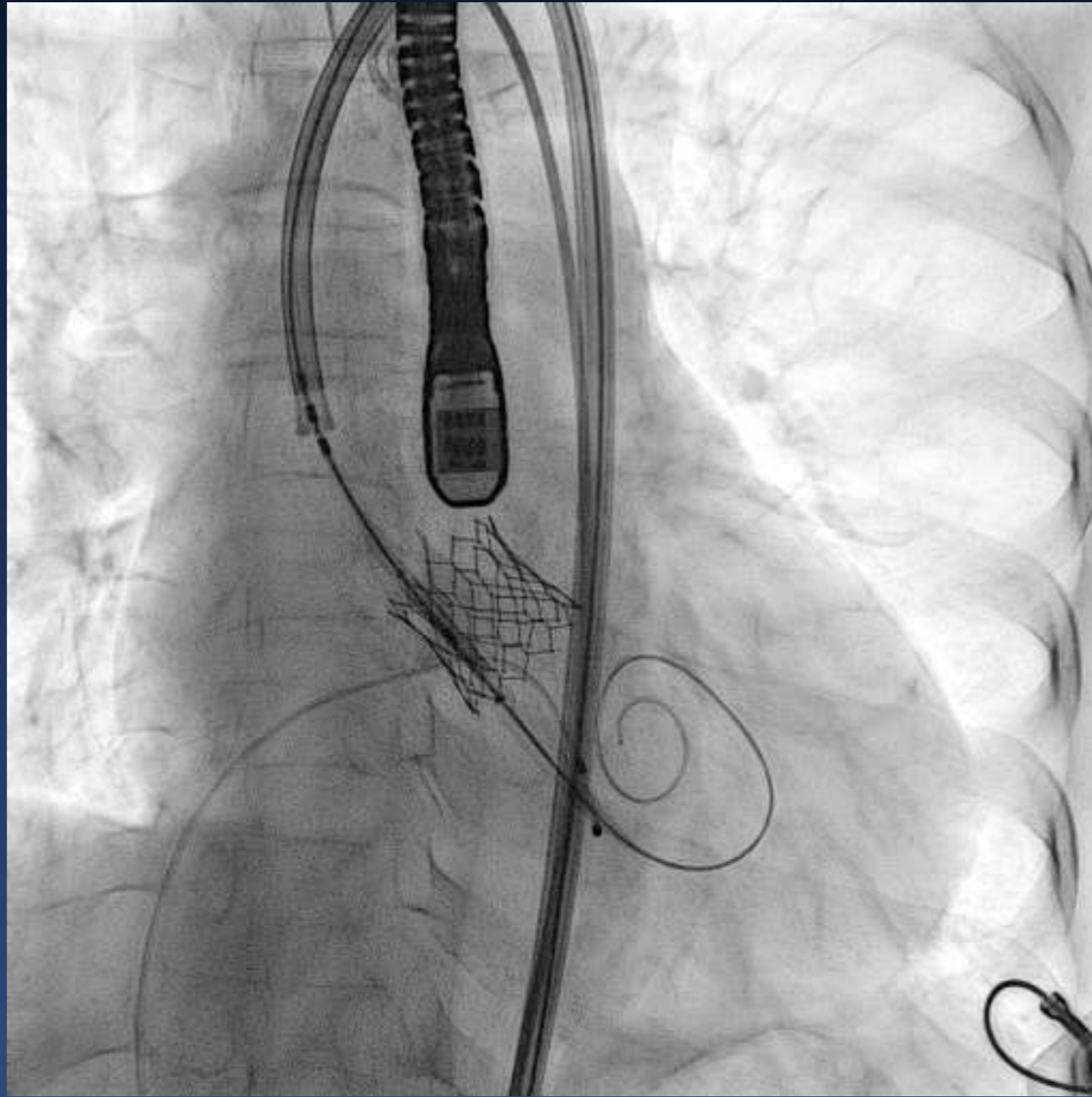
Impact of calcification in TAVI

Is incidence of PVL high in patients with high AV calcification?

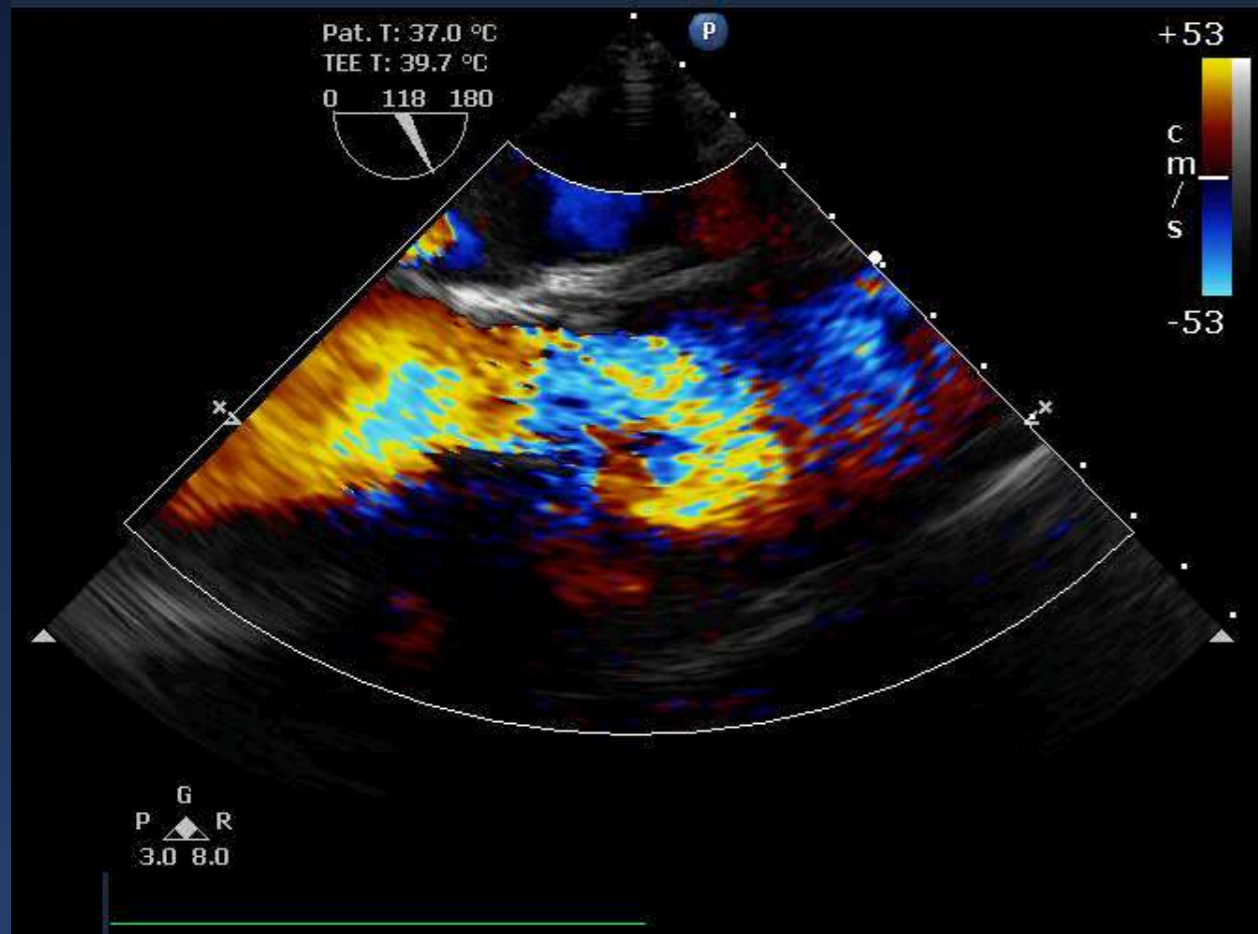


PVL depends on the degree of AV calcification.

Post-TAVI ballooning



Post-TAVI & ballooning TEE



Take home message

- The need for preballooning in patients with heavily calcified aortic stenosis
 - to identify the movement of calcium chunk, especially in patients with short coronary height from the annulus
 - to open the tightly stenosed valve opening to make the entrance of valve across annulus
 - by opening the tightly stenosed valve to some degree, the tension on the stenotic leaflet may be reduced at the time of Sapien3 implantation, which may decrease the chance of annular rupture

Take home message

- Annular rupture is very very rare in the era of Sapien3, dare to perform post-TAVI ballooning without hesitation in this kind of case

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Thank you for your attention