

# Embolization after TAVR

Mao-Shin Lin, MD, PhD

Division of Cardiology, Department of Internal Medicine

National Taiwan University Hospital

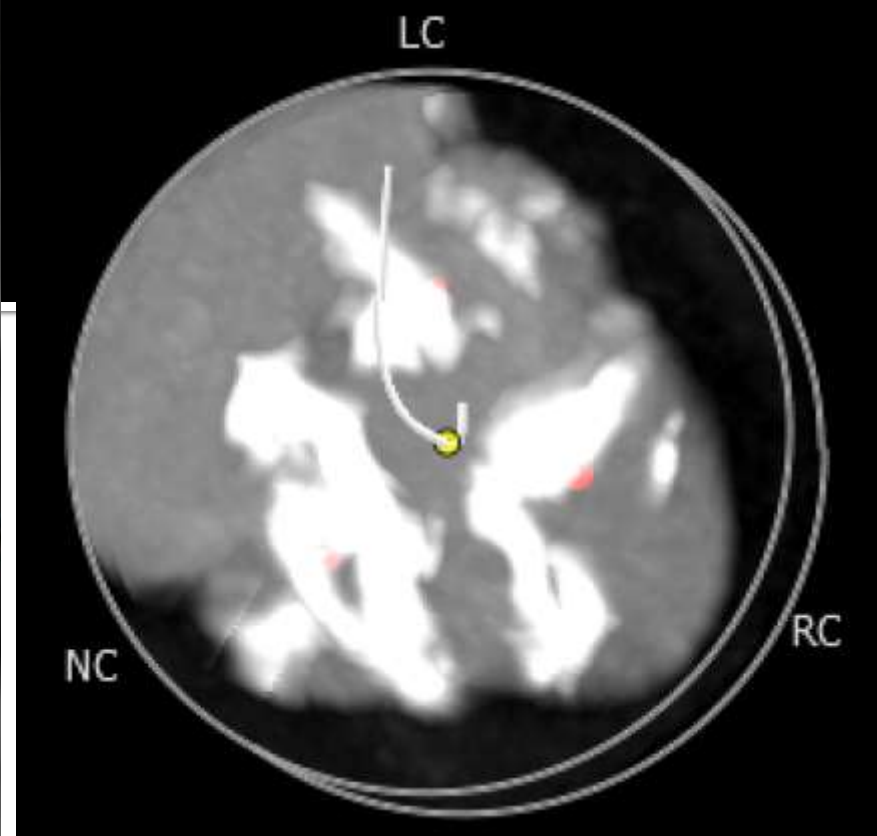
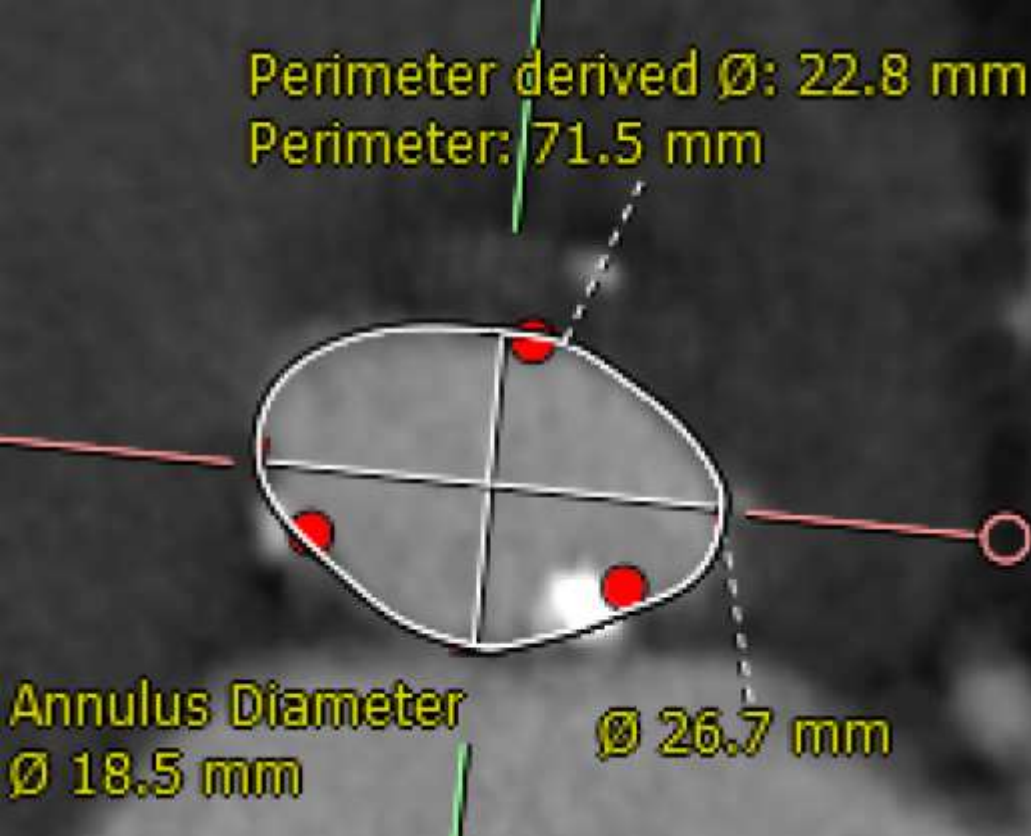


# Brief History

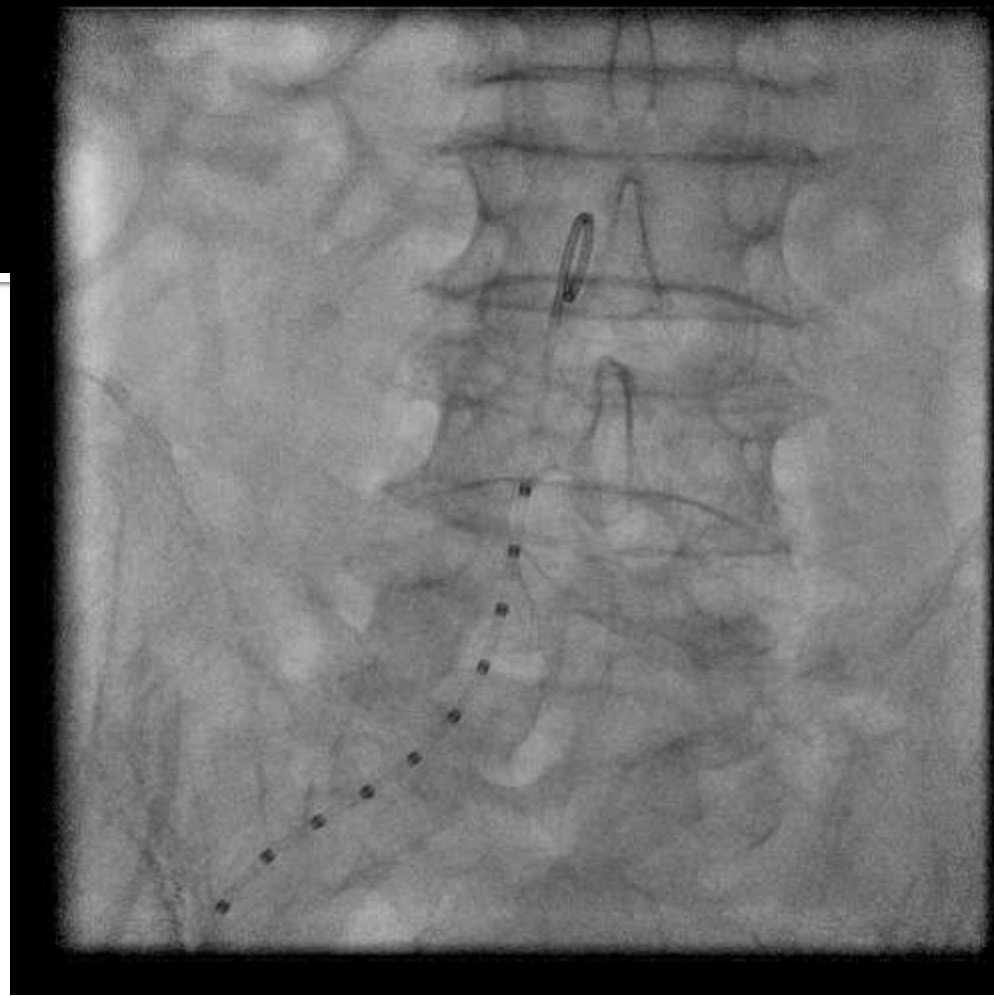
93 y/o man

Underlying disease: CKD, BPH, COPD grade 4, group D

- 2008~           Dyspnea on exertion  
                  Aortic stenosis was diagnosed in other hospital
- 2013~           Exercise capacity went down significantly  
                  S.O.B at rest
- 2013/6/30      Visit NTUH for evaluation  
                  Echo: Severe AS; AVA: 0.56 cm<sup>2</sup>  
                  Mean PG: 60.2 mmHg  
                  AR, MR, mild-moderate  
                  Heart team decided TAVR due to very old age
- 2013/8/5      Admitted for TAVR (28<sup>th</sup> TAVR in NTUH)



Annulus Diameter	<b>perimeter 71.5 mm</b> <b>18.5 x 26.7mm</b>
Sinus of Valsalva Diameter	33.7 x 35.9 mm
Sinotubular Junction Diameter	32.7 mm
Ascending Aorta Diameter	35.2 mm
LVOT Diameter	14.7 x 25.5 mm



	CT		XA	
	Left	Right	Left	Right
Iliac	9** mm	10 mm	10 mm	12 mm
Femoral	<b>5.5 x 7.5 mm*</b>	6 x 8.5 mm*	6.5 - 9mm	8.5 mm
Subclavian/Axillary				

# Plan for TAVR

- Anesthesia: general anesthesia
- Approach: Right femoral approach
- Pre-dilate with 20mm balloon
- Valve choice: CoreValve (only one choice in 2013 in Taiwan)

## Step 5: Device Size Selection

### Aortic Annulus Ranges

	Diameter Range (mm)	Perimeter Range (mm)	Area Range (mm <sup>2</sup> )
23	18 - 20	56.5 - 62.8	254.5 - 314.2
26	20 - 23	62.8 - 72.3	314.2 - 415.5
29	23 - 27	72.3 - 84.8	415.5 - 572.6
31	26 - 29	81.7 - 91.1	530.9 - 660.5

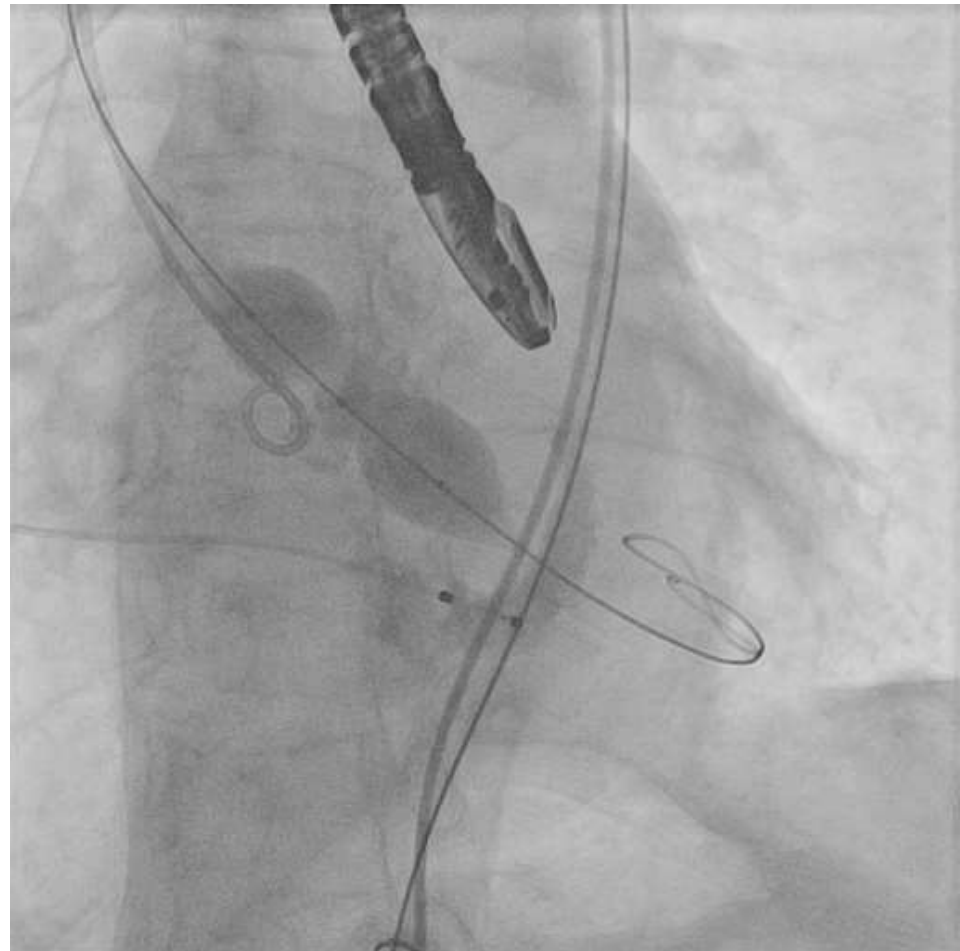
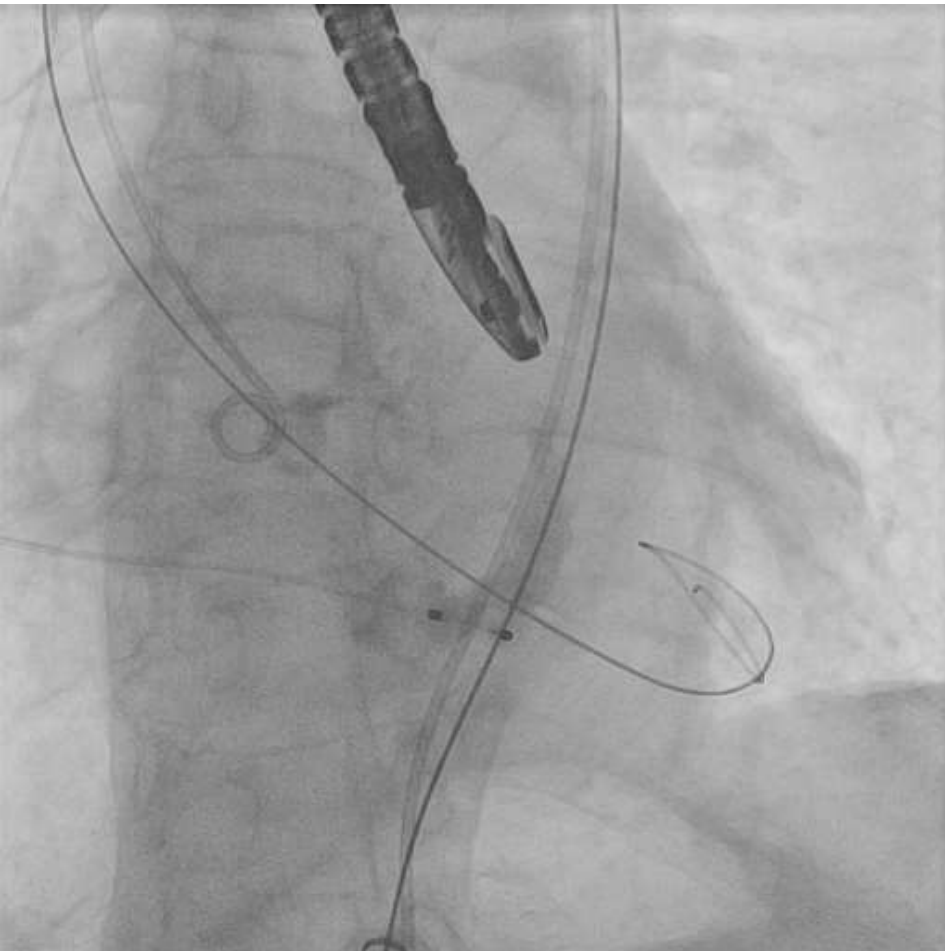
Recent evidence supports  
perimeter as the recommended  
method for TAVI sizing

# Plan for TAVR

- Anesthesia: general anesthesia
- Approach: Right femoral approach
- Pre-dilate with 20mm balloon
- Valve choice: CoreValve **26** mm

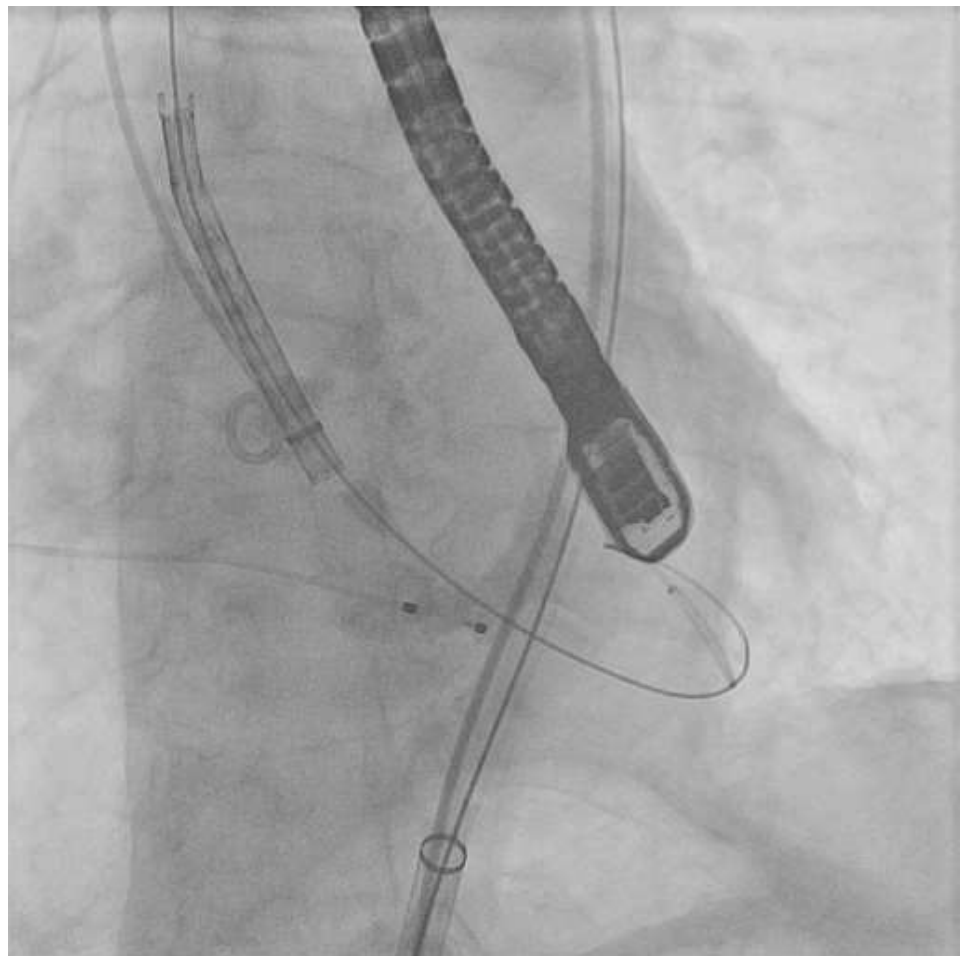
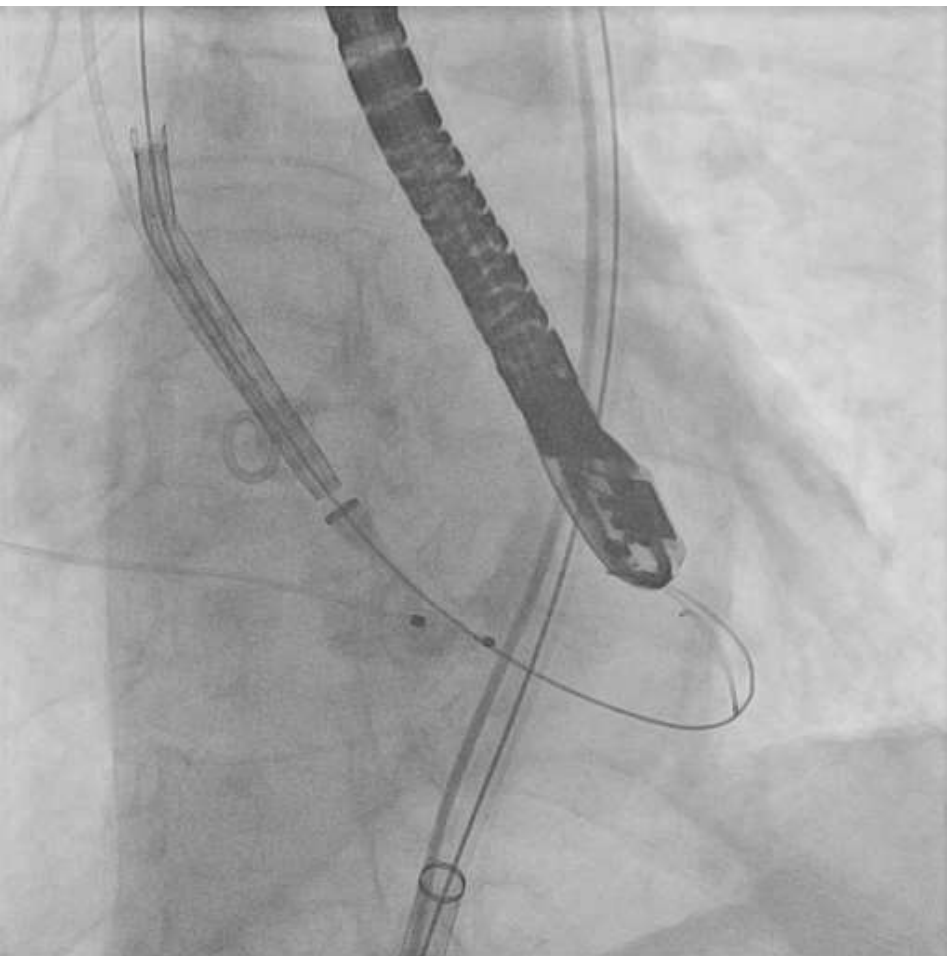
# TAVR (2013-8-6)

## Balloon Valvuloplasty

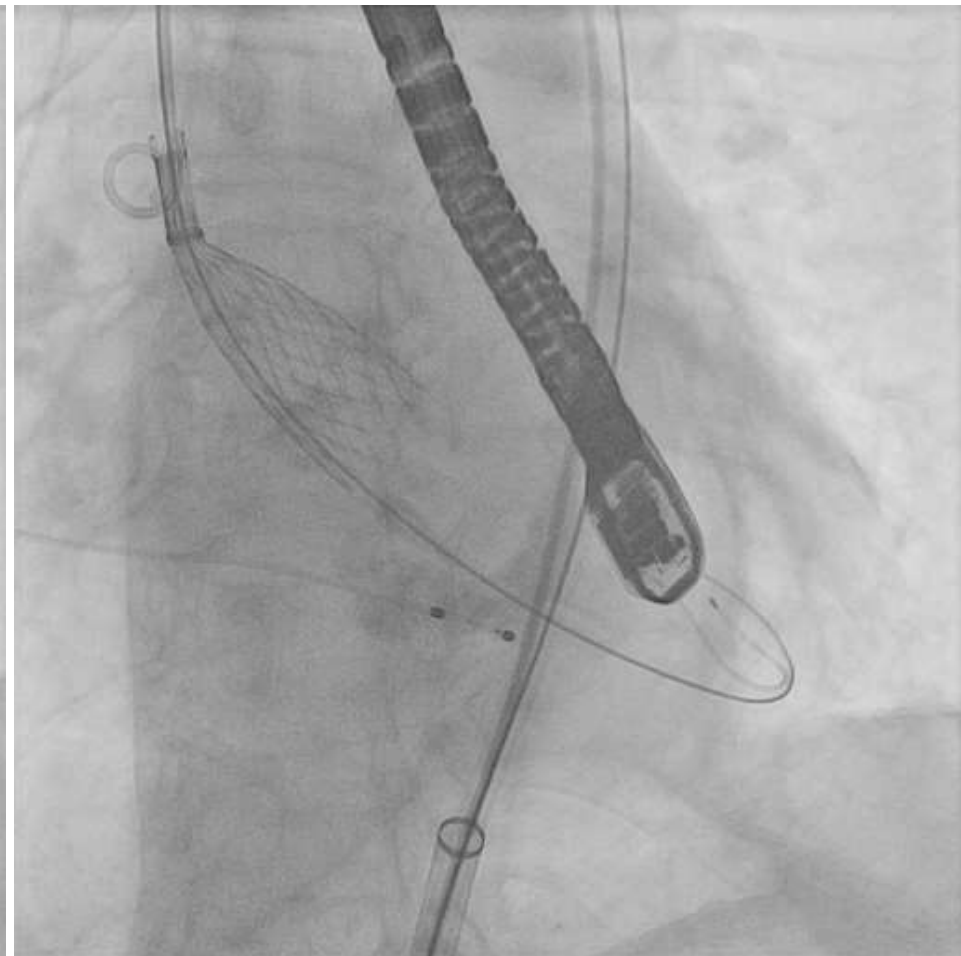
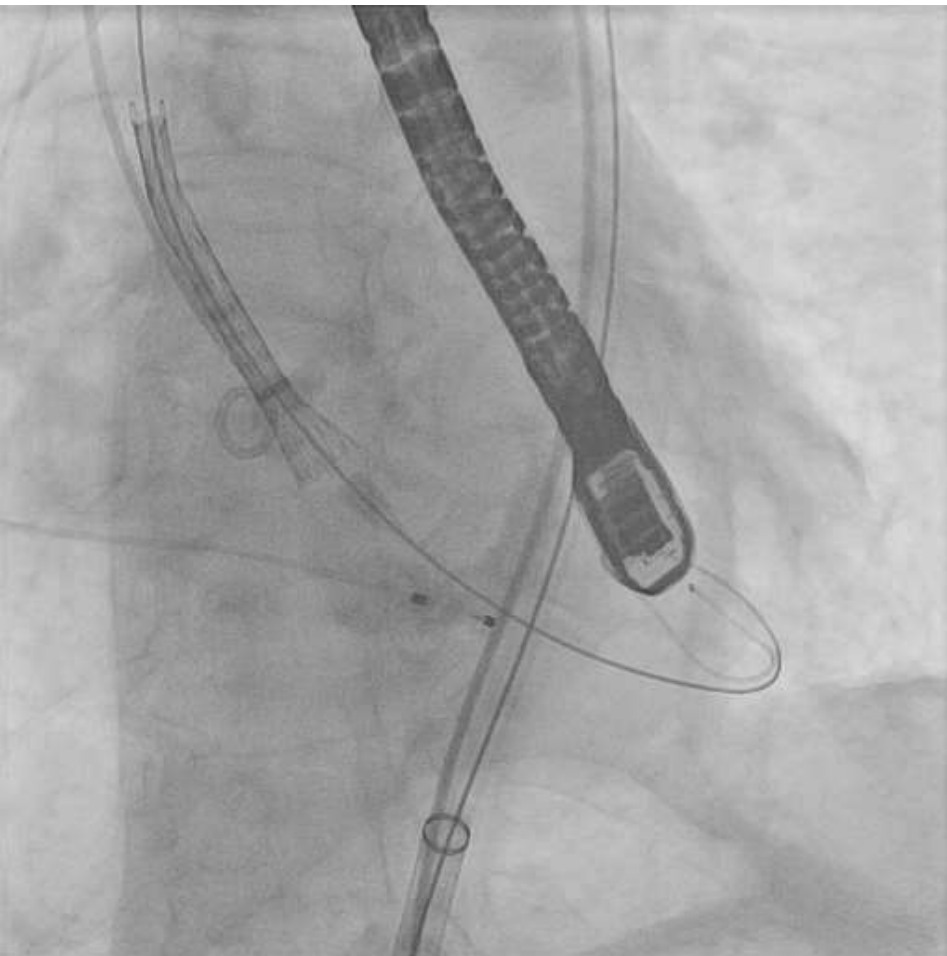




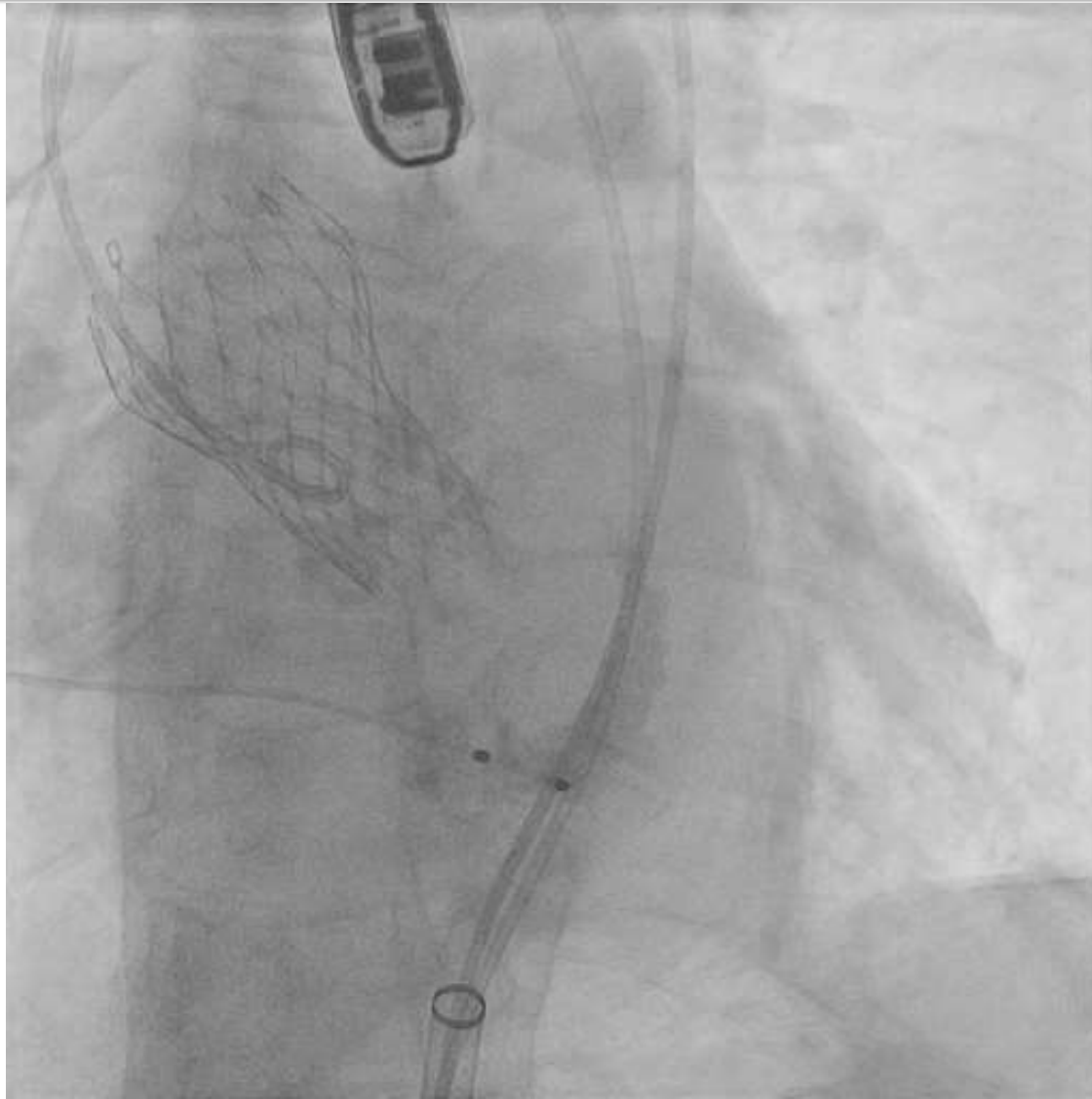
# TAVR with 26 mm CoreValve



# TAVR with 26 mm CoreValve

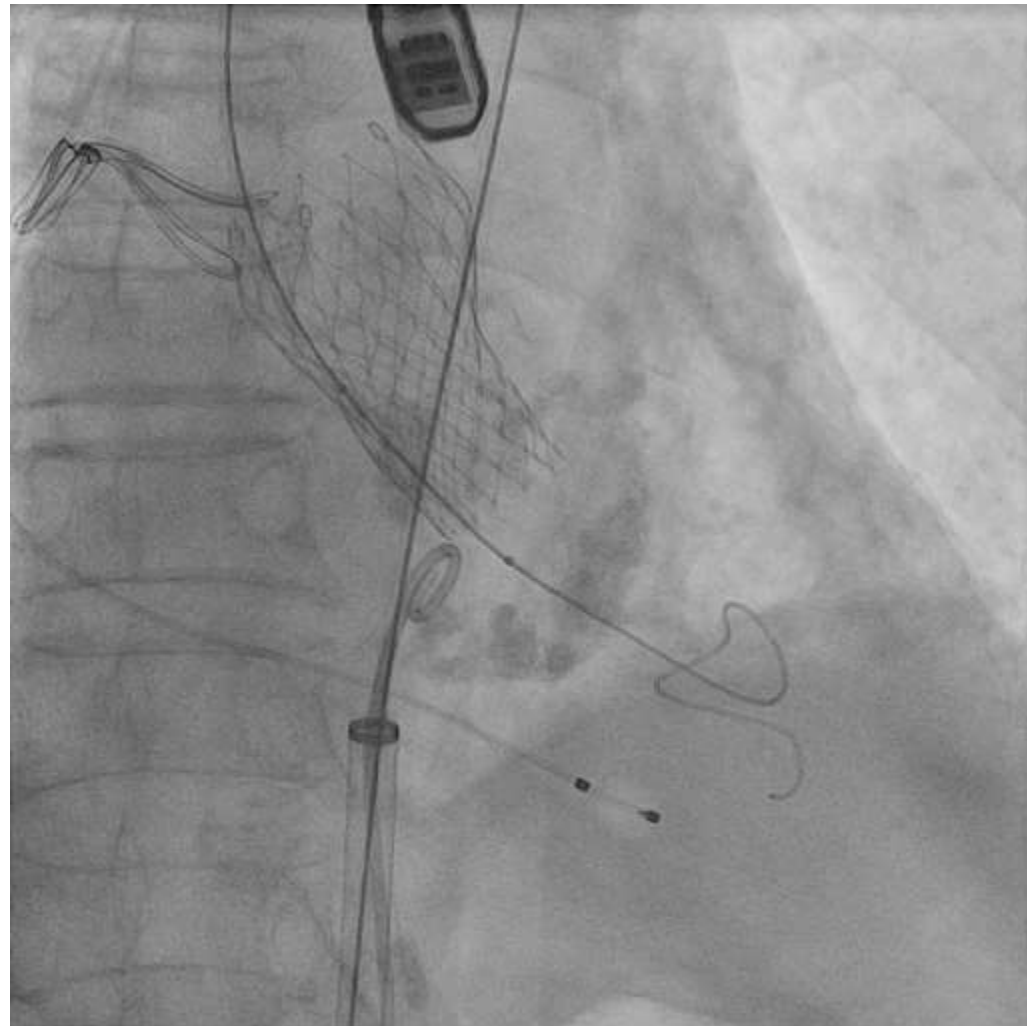


# TAVR with 26 mm CoreValve



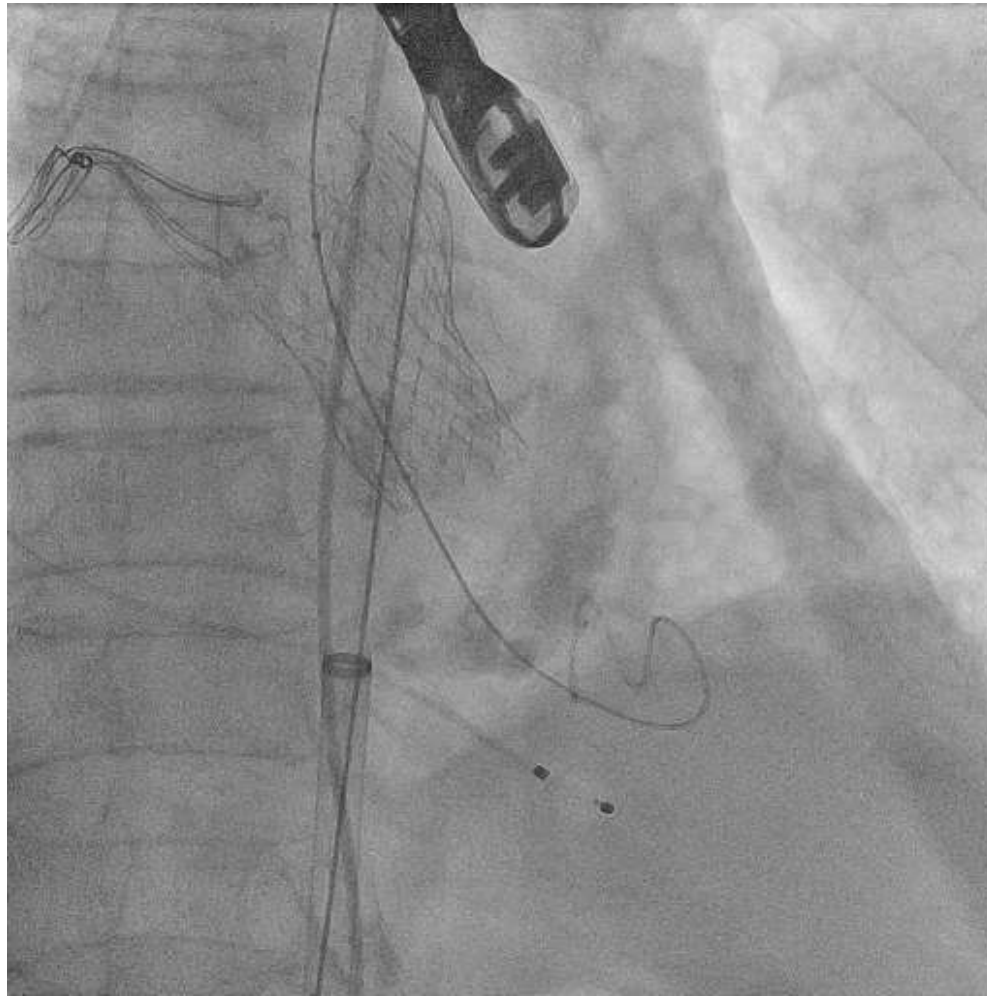
# Post-dilatation with 23mm Balloon

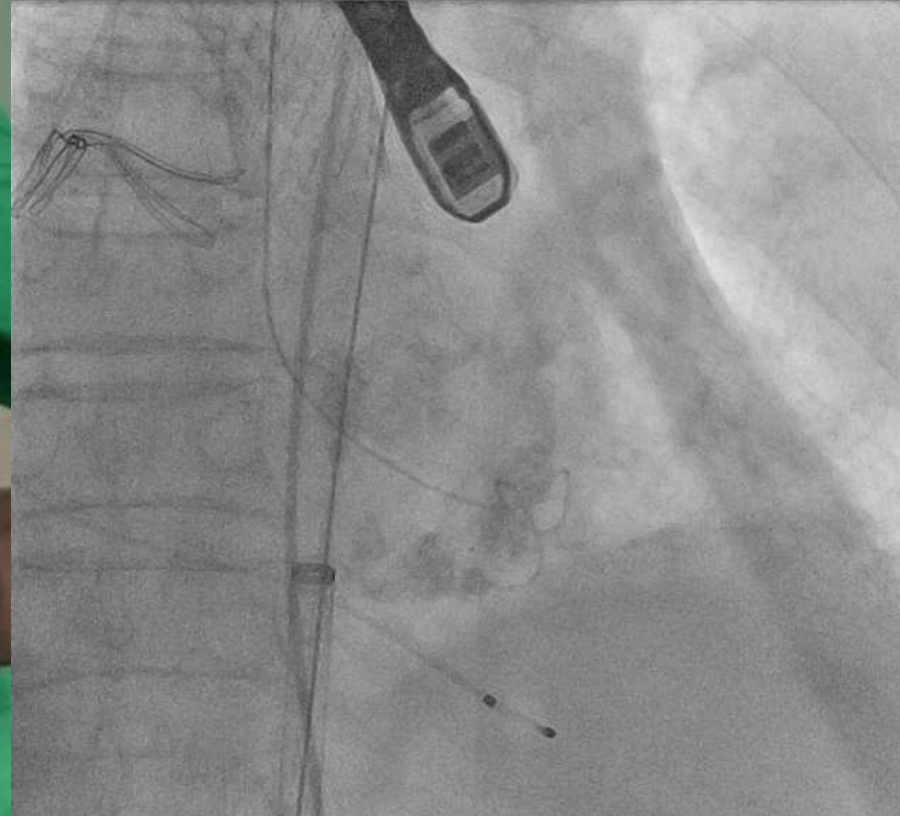
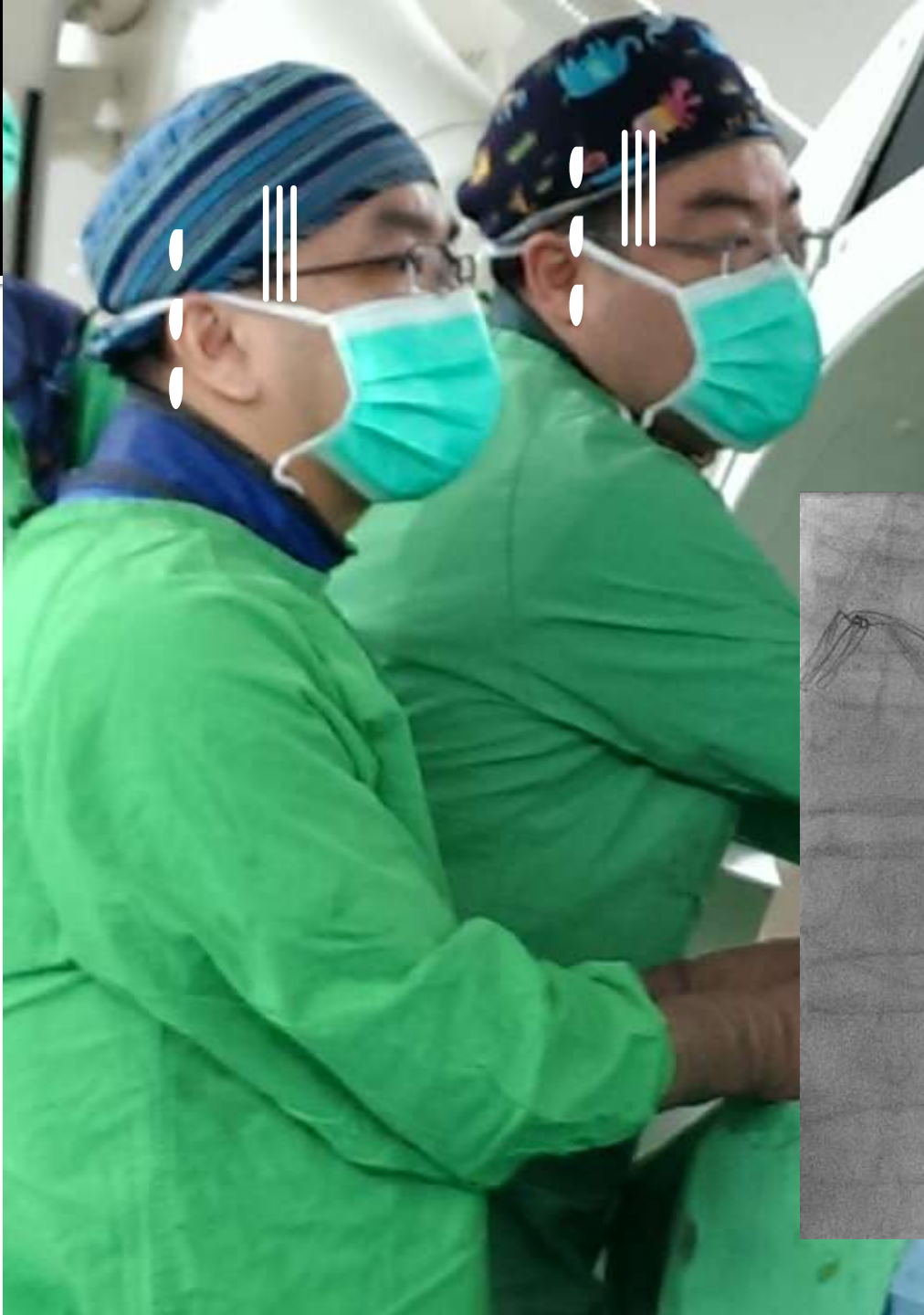
- Under-expanded CoreValve frame in other projection
- Moderate paravalvular leakage
- AR index  $< 25\%$



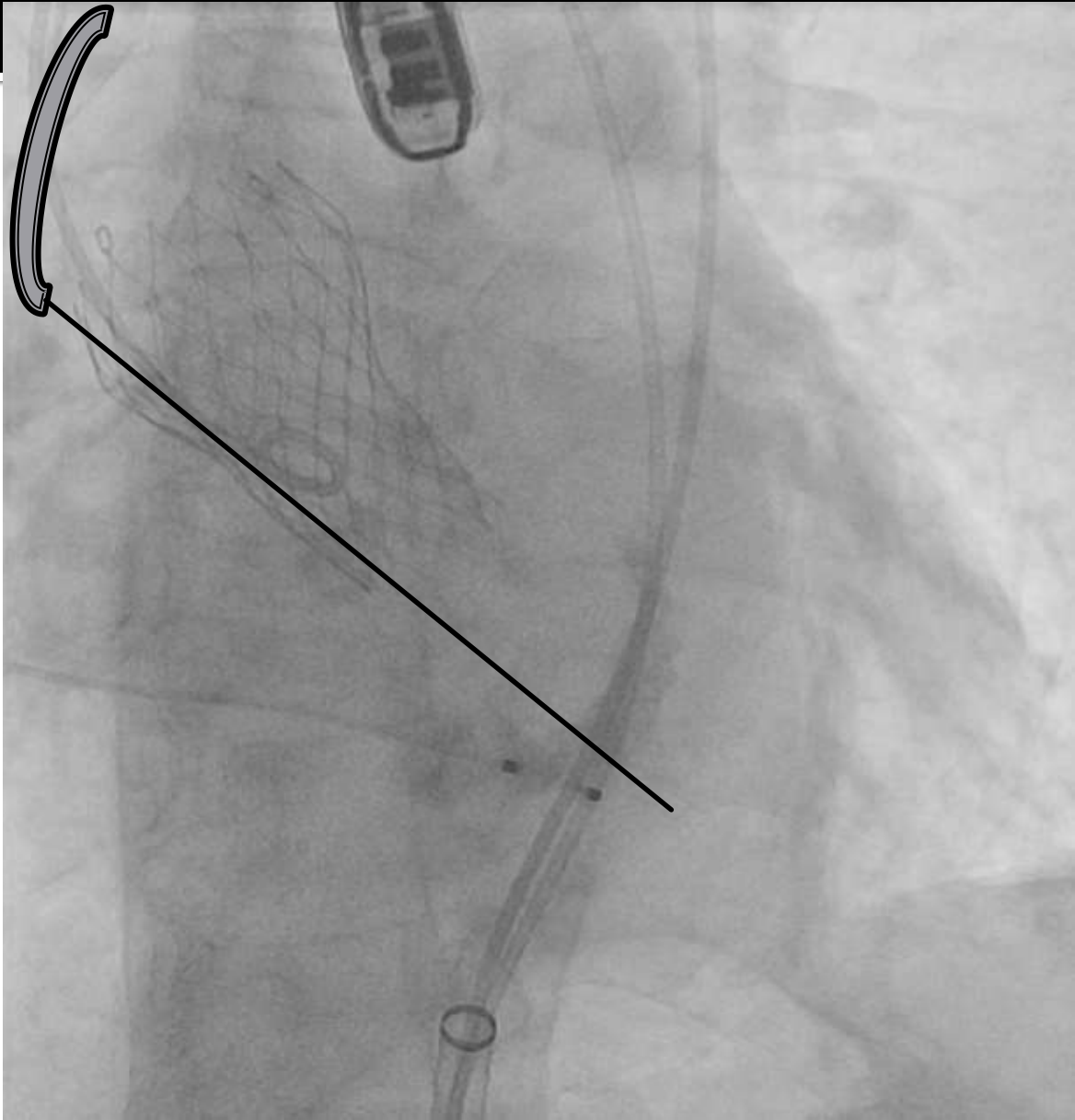
**But .....**

We could not retrieve balloon.....

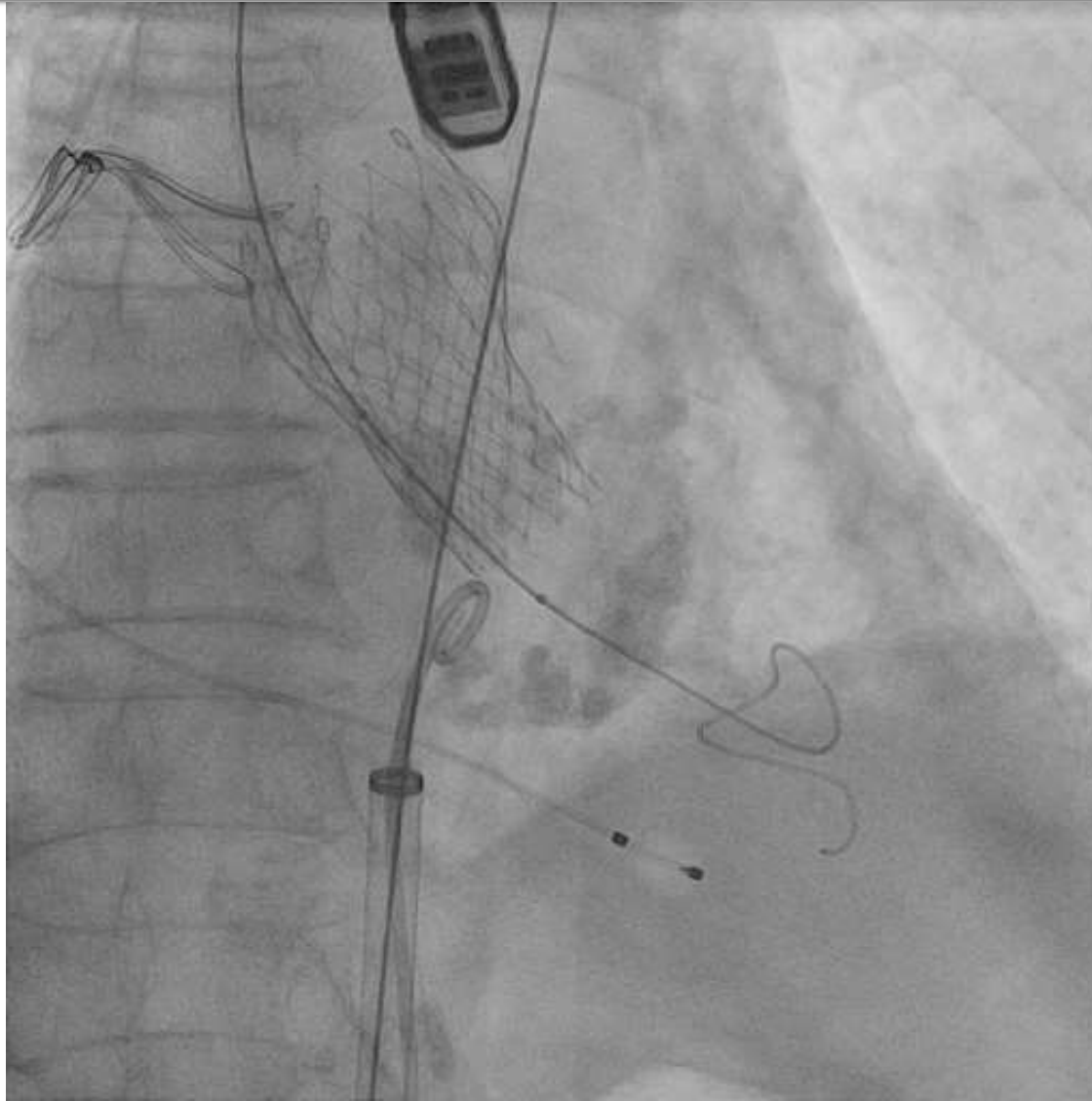




Why ????????

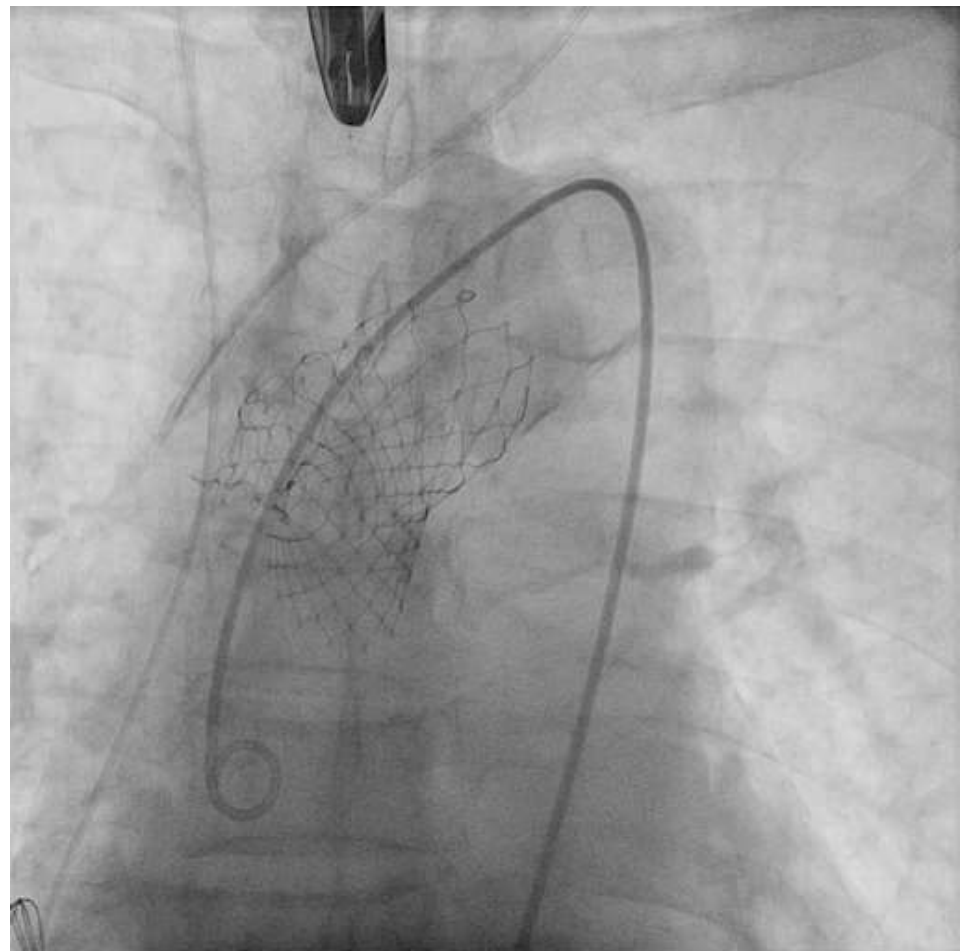
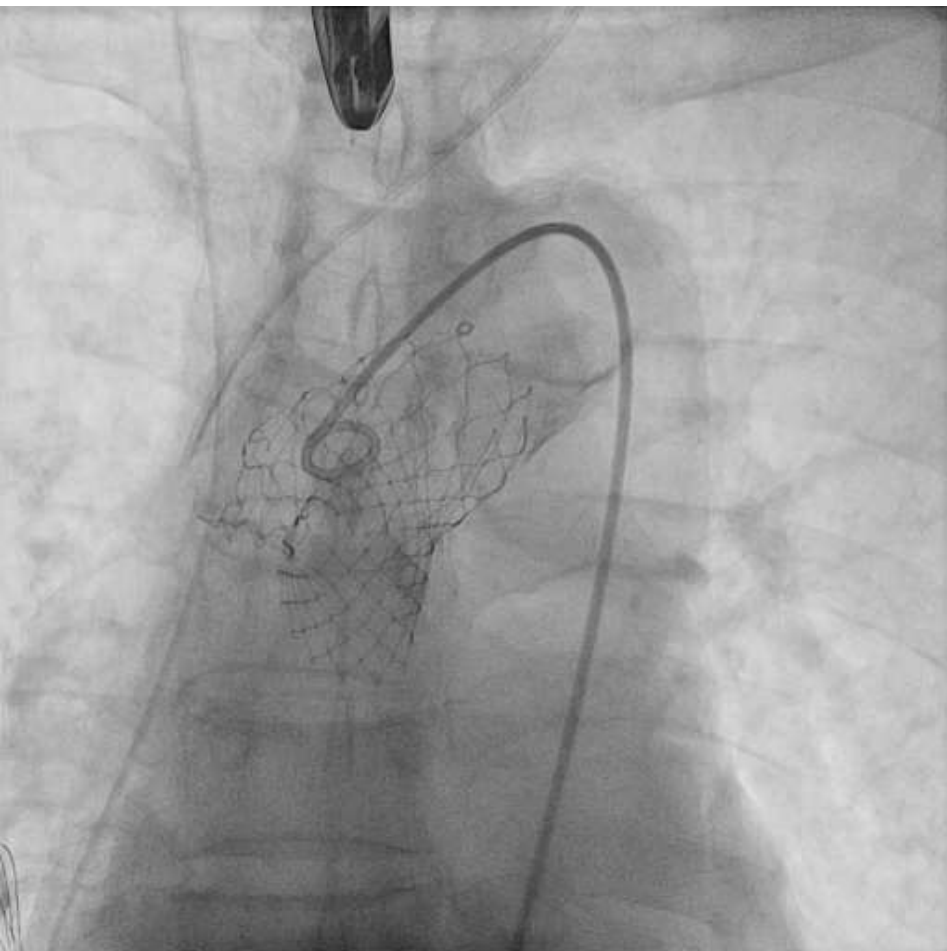


**Answer is in the imaging !!!!!**





# After Pop-out



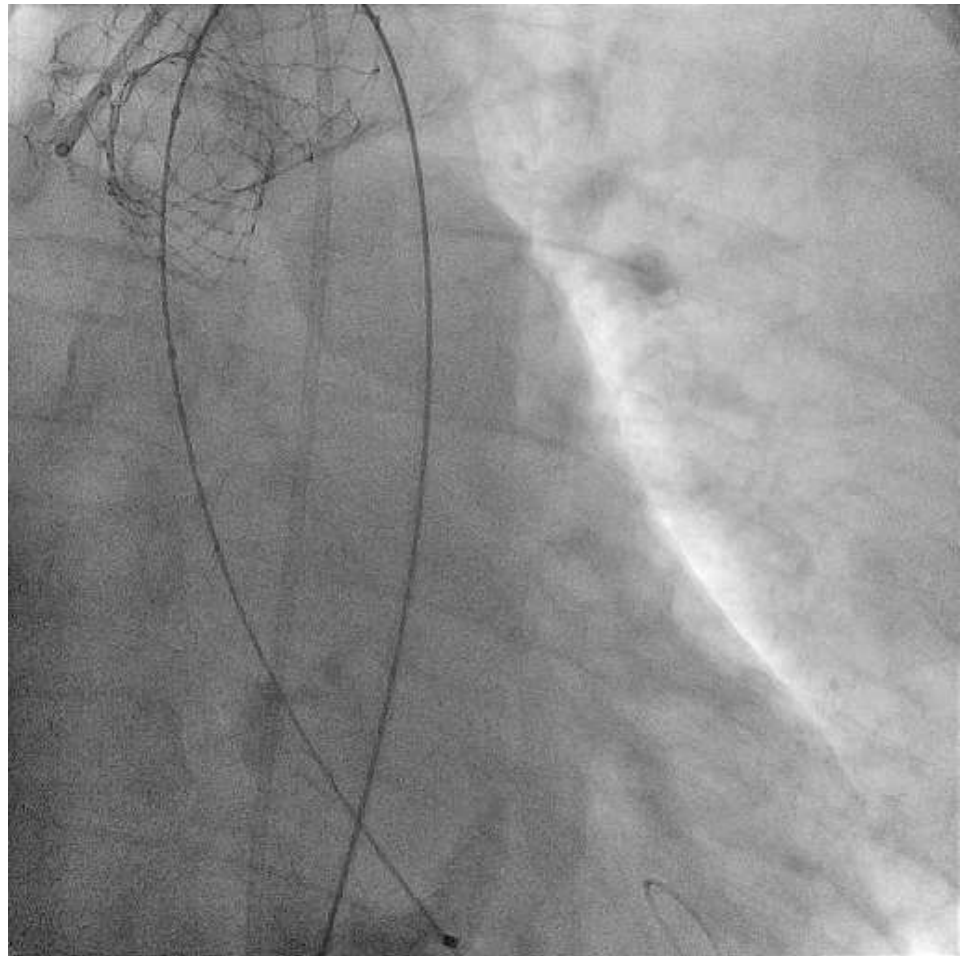
# How to deal with this complication ?!



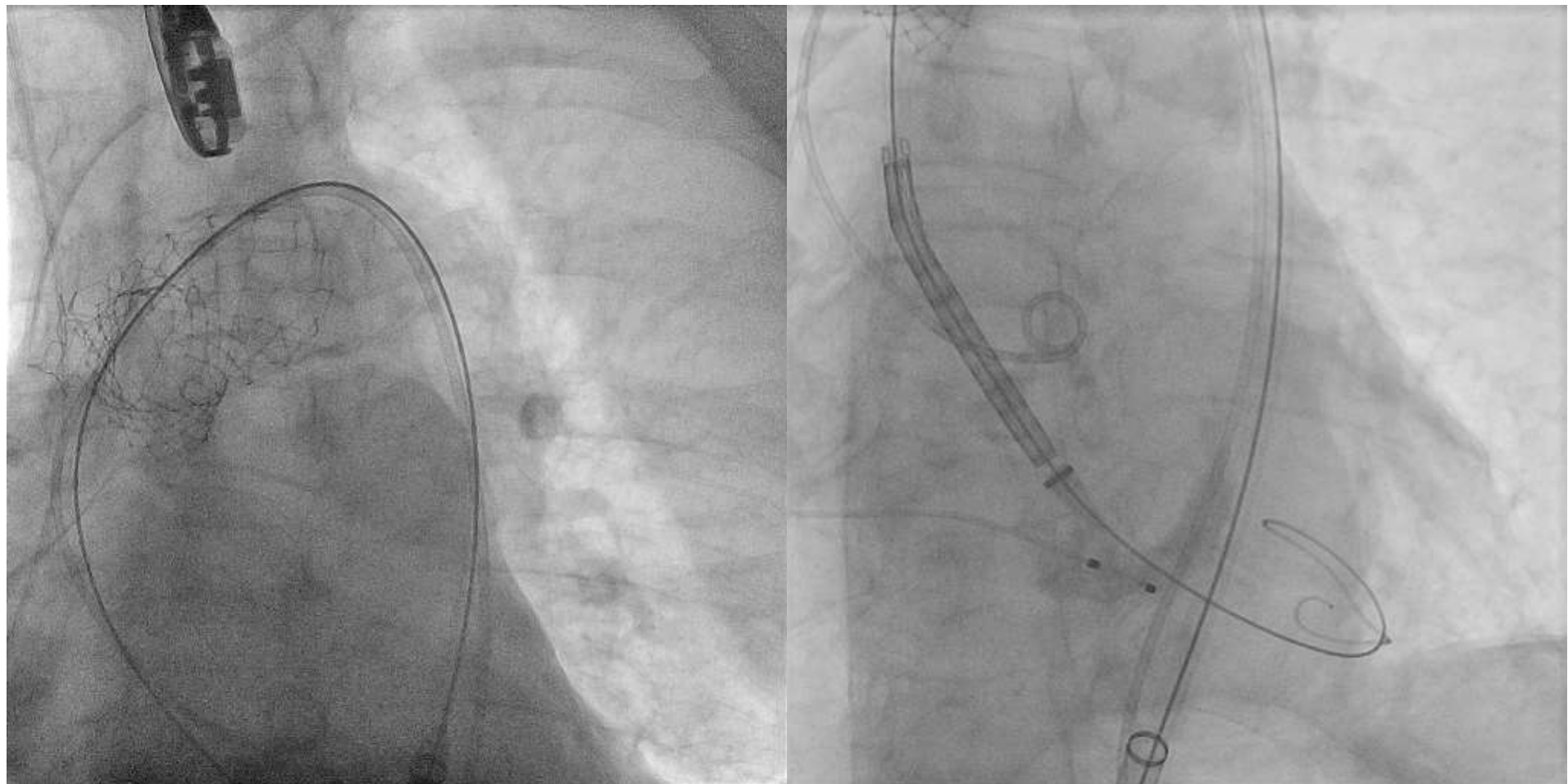
# How to deal with this complication ?!

- Switch to surgical AVR
- Leave the 1<sup>st</sup> Valve, try to deploy 2<sup>nd</sup> CoreValve

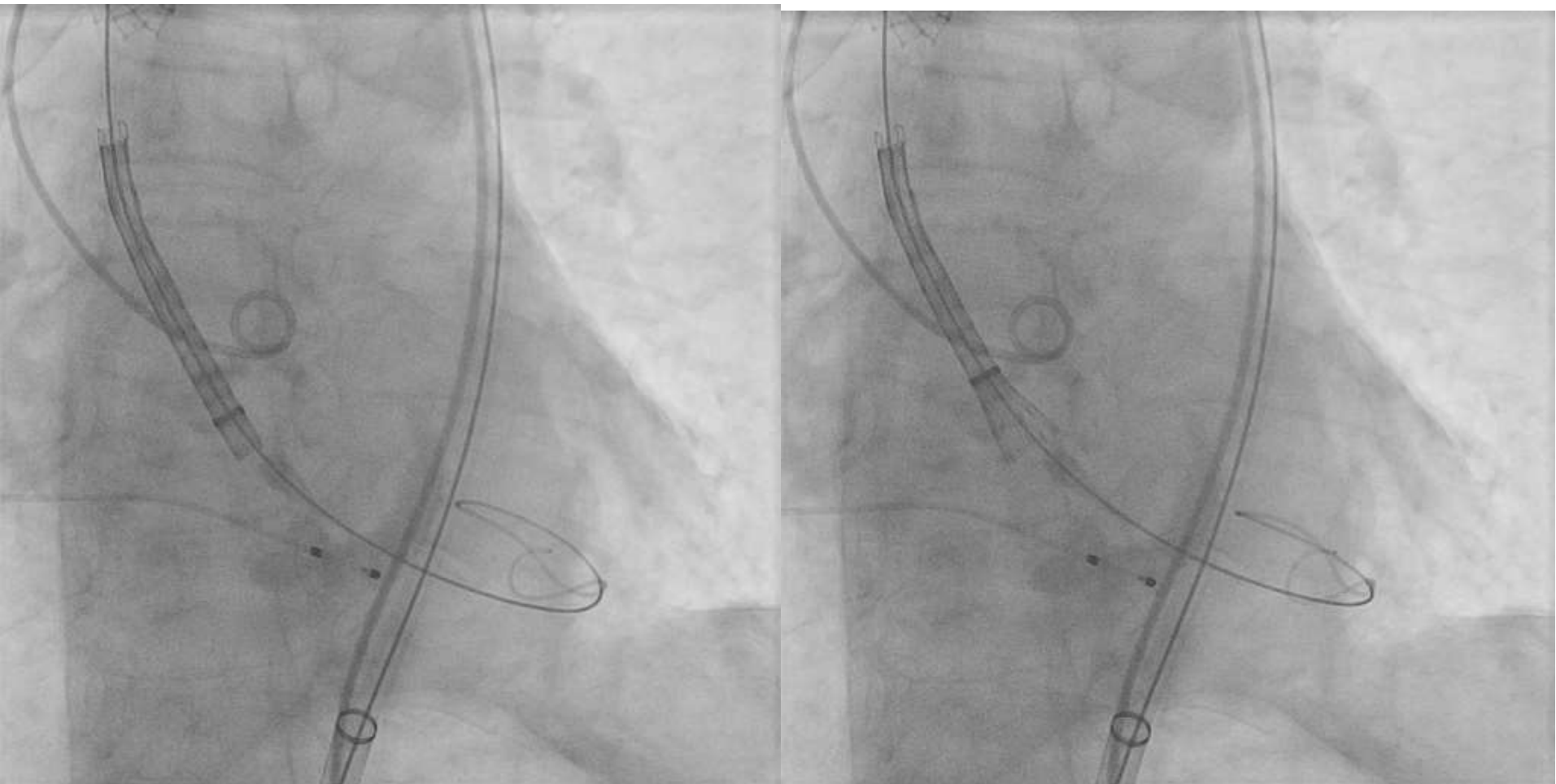
# 2<sup>nd</sup> attempt for trans-femoral approach



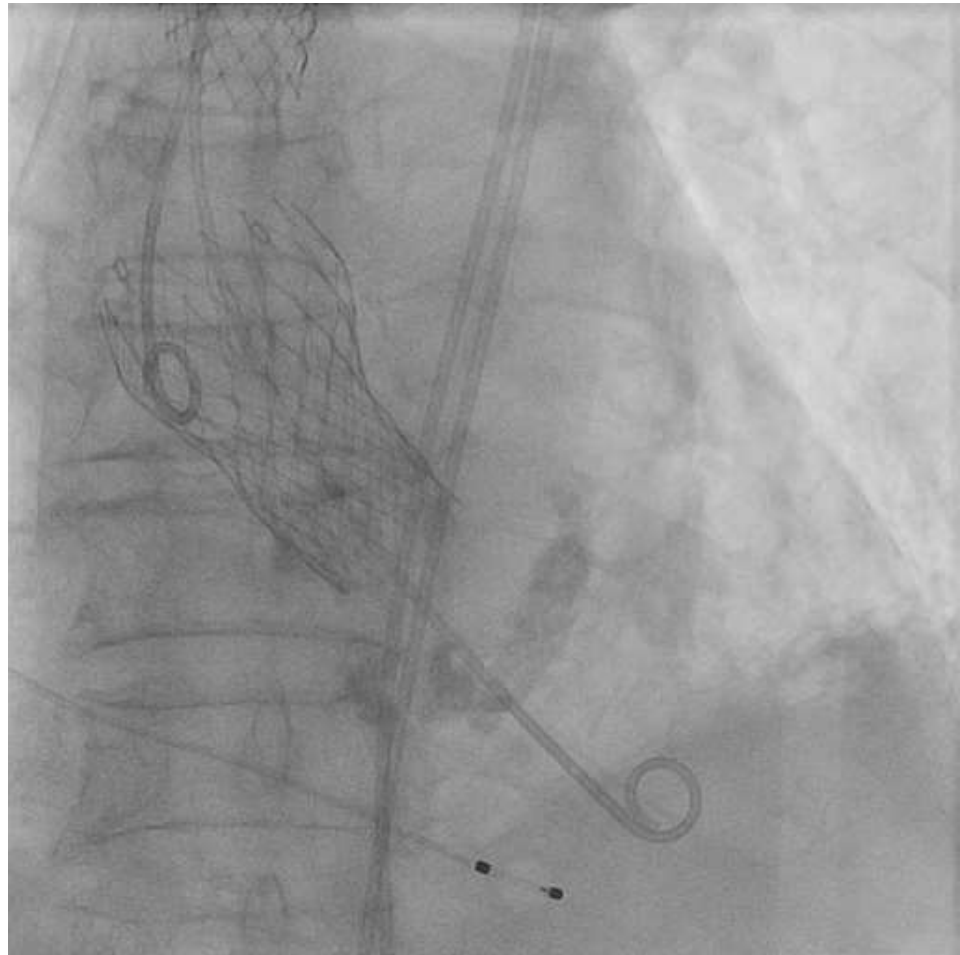
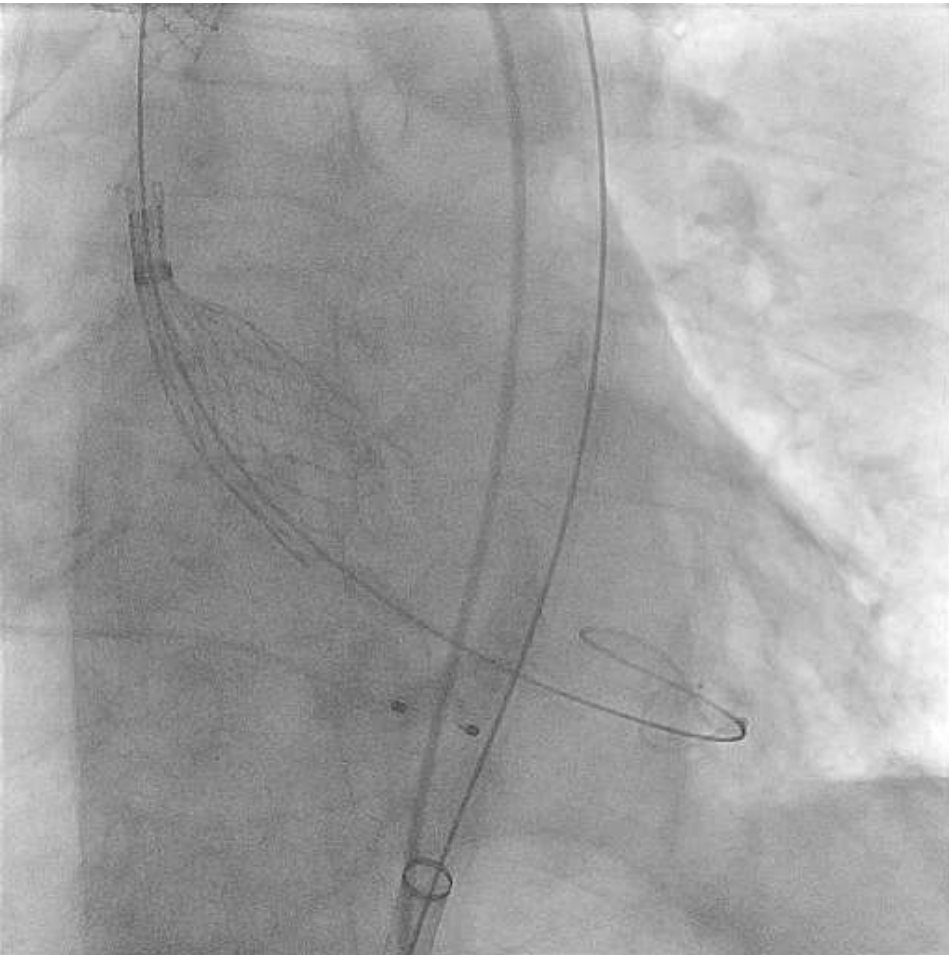
# 2<sup>nd</sup> CoreValve



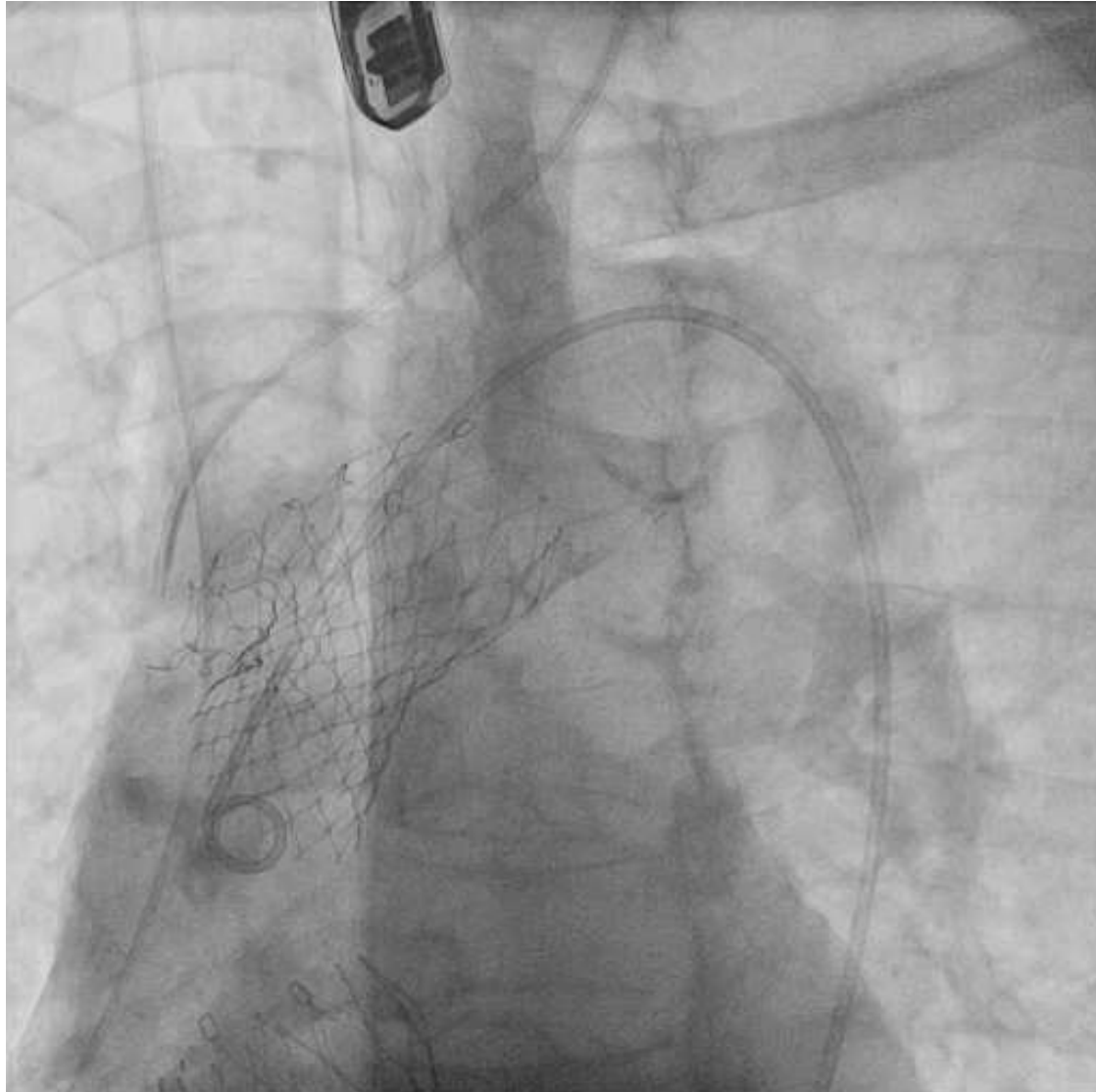
# 2<sup>nd</sup> CoreValve



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# Final

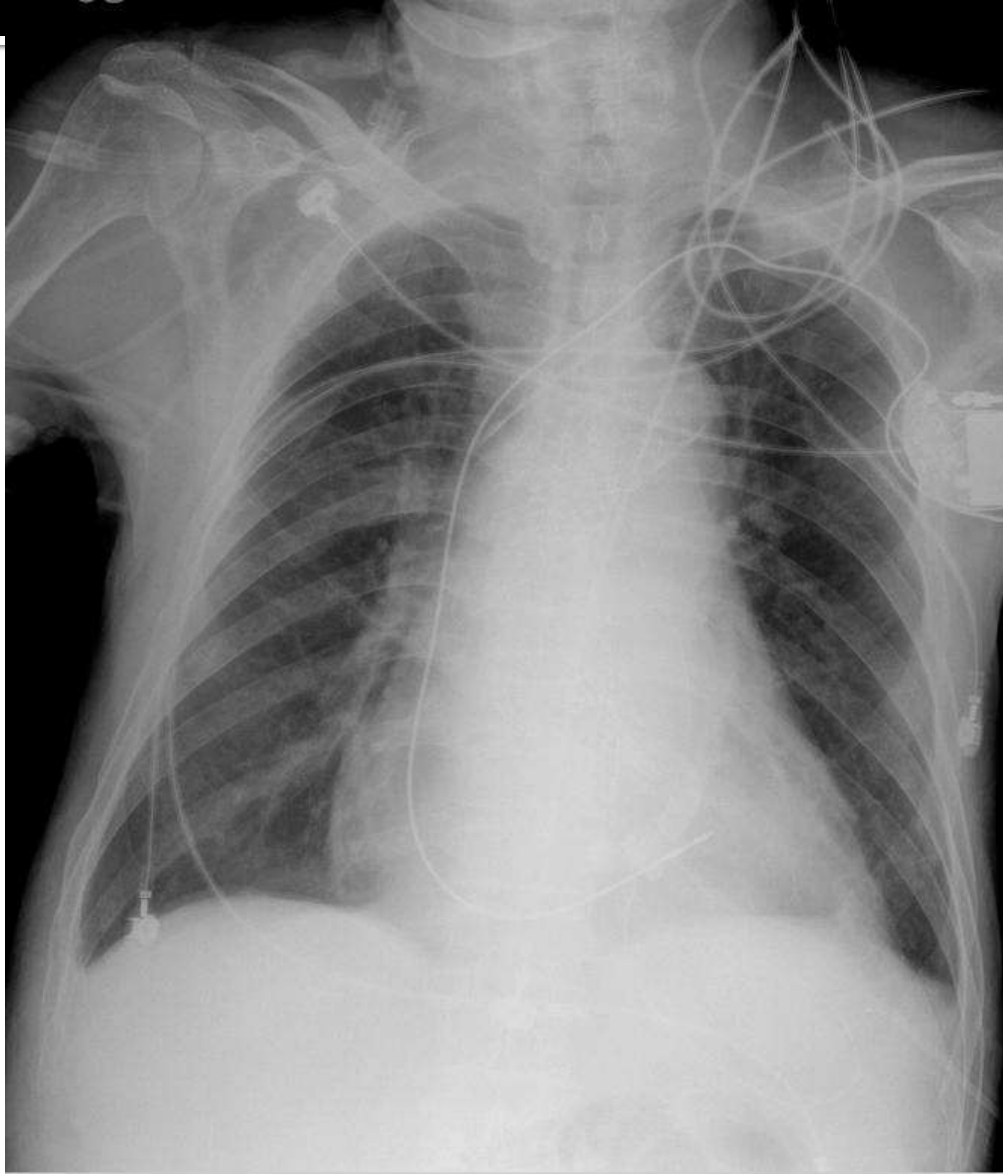




# Post-TAVR course

- Extubated on same day
- On anti-coagulant after TAVR (heparin switch to warfarin )
- On Plavix only
- ICU stay : 2 nights
- No stroke , symmetric BP measurement in both arm, no pericardial effusion
- Chest CT: no aortic dissection
- Junctional bradycardia → PPM implantation
- Discharged 7 days after TAVR

# CXR (3 days after TAVR)



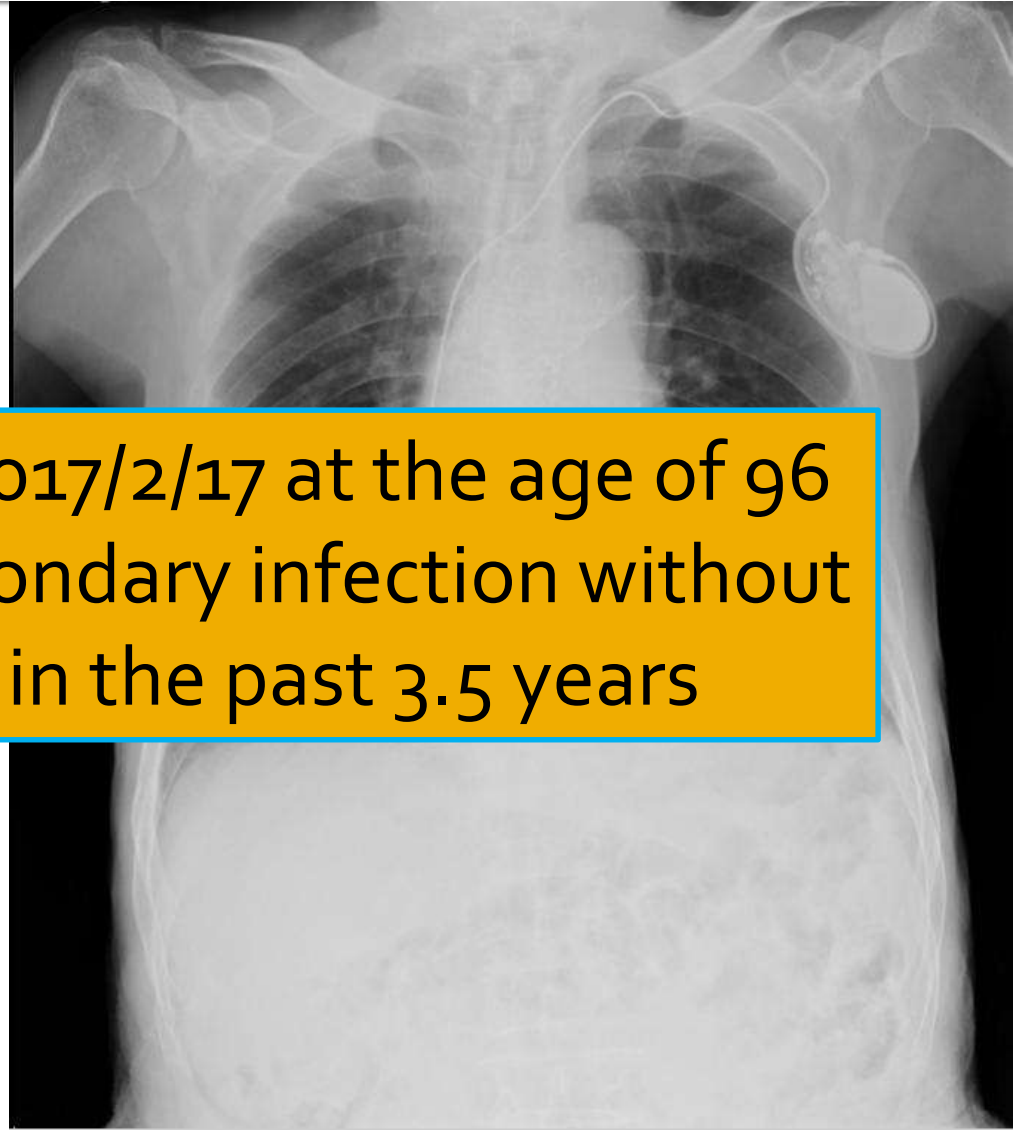
# Post-TAVR Follow Up (1 year)

- NYHA Fc: II
- Could do light labor work in the farm
- No stroke or limb ischemia
- Bilateral BP: symmetric

# Post-TAVR Follow Up (3 years)

- NYHA Fc: II
- No stroke or limb ischemia

The patient died on 2017/2/17 at the age of 96 due to COPD with secondary infection without any cardiac event in the past 3.5 years



# Lessons from this complication

- Don't retrieve stiff wire if you still want to post-dilate
- If you want to re-enter the CoreValve, do not use straight-tip wire
- Take care of the cine
- Team work , team decision in TAVR

**Thank for Your Attention !!**