



TAVR in a non-calcified valve

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Pt with Aortic stenosis with non-calcified valve

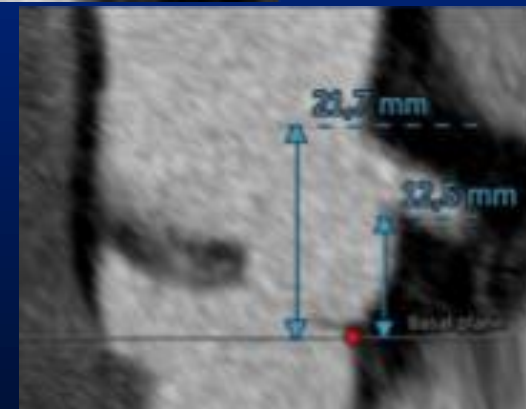
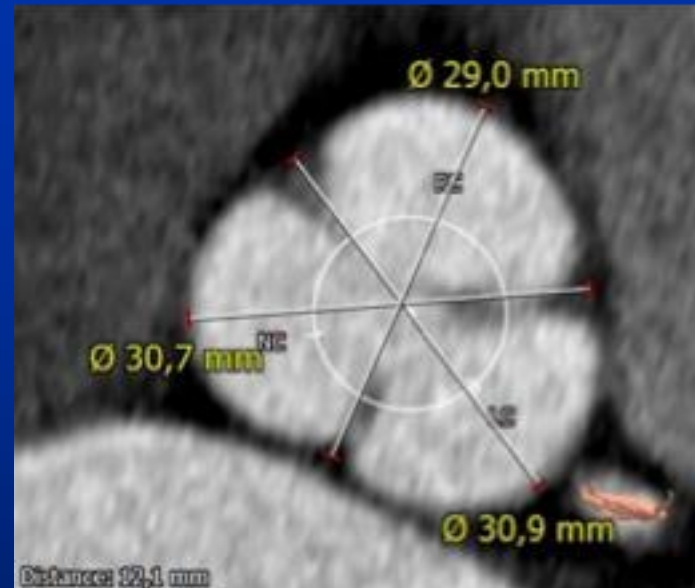
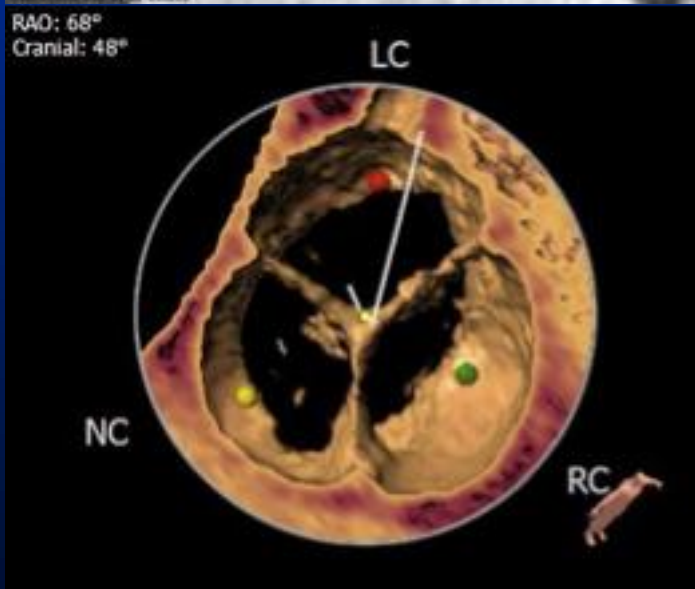
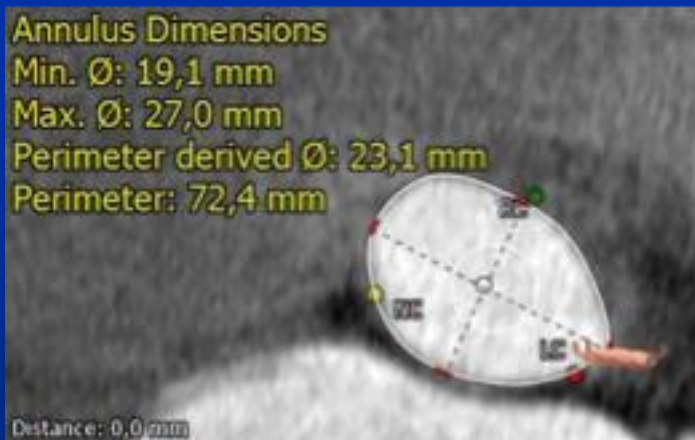


- 84 yr, female with syncope and worsening angina the last 3 mos
- Severe AS (V_{\max} : 5.2m/s, AVA: 04.45 cm², EF>55%)
- High surgical risk (Euroscore I: 24.5%)



Pt with Aortic stenosis with non-calcified valve

(Agatston score < 200 AU)





Incidence, timing, and predictors of valve dislodgment during TAVI with the medtronic corevalve system†



- 99 pts with TAVI
- A lower aortic root calcium score (Agatston score < 2359 AU) was the single independent predictor for valve dislodgment (OR 3.10, 1.09–8.84).



Potential procedural problems relating to the thickened and non-calcific leaflets

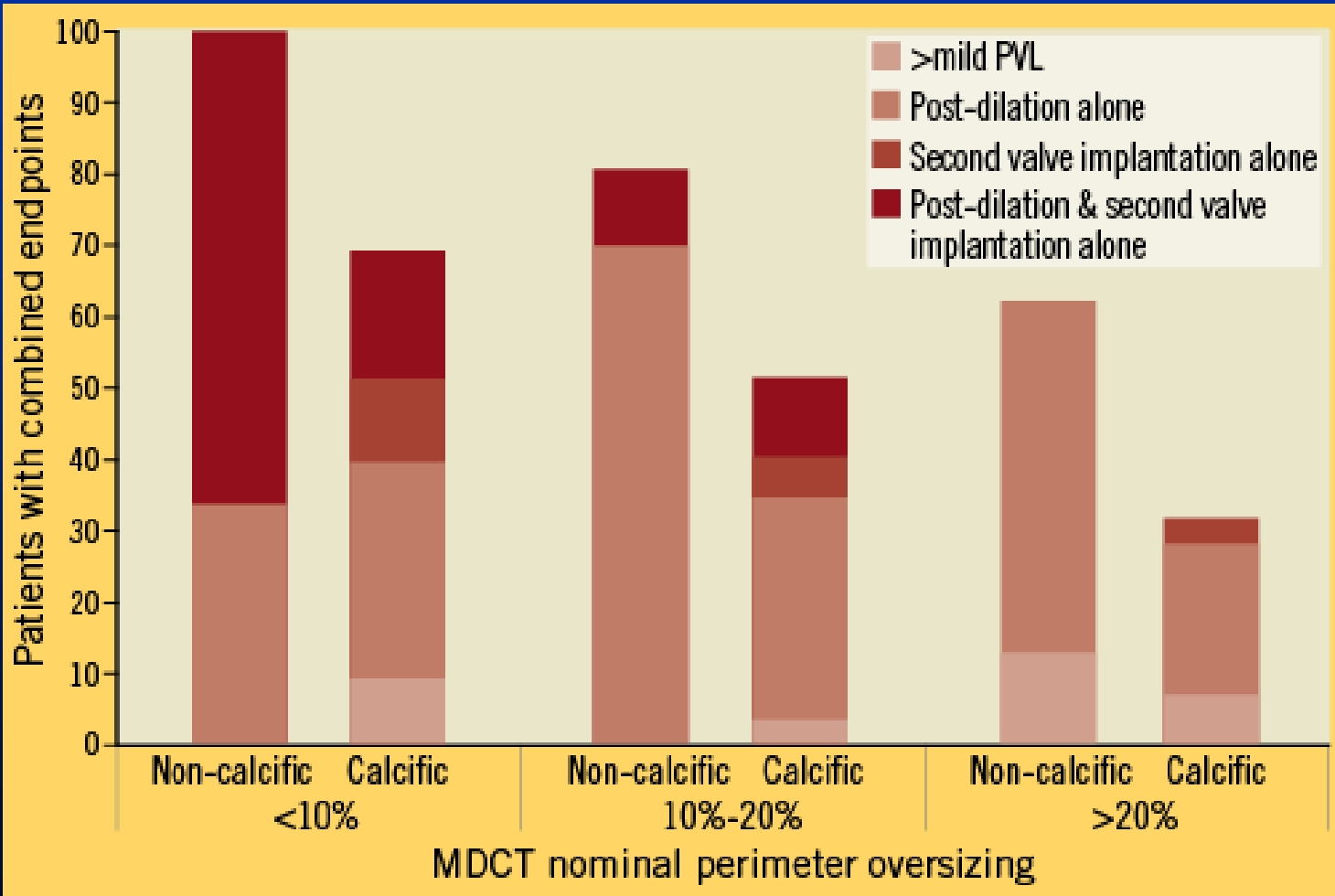


- ventricular movement of the THV due to non-compliant leaflet tissue;
- insufficient anchoring due to minimal calcium;
- challenging positioning in the absence of calcific markers;
- coronary occlusion by thick and elongated leaflets;
- high post-procedural gradients caused by frame mal-expansion;
- high pacemaker rates due to the direct transmission of expansion forces against the pacing tissue; and PVL.



Oversizing self expanding valves in non-calcific valves

US CoreValve Evolut R study revealed higher rates of \geq mild PVL with perimeter oversizing $<20\%$

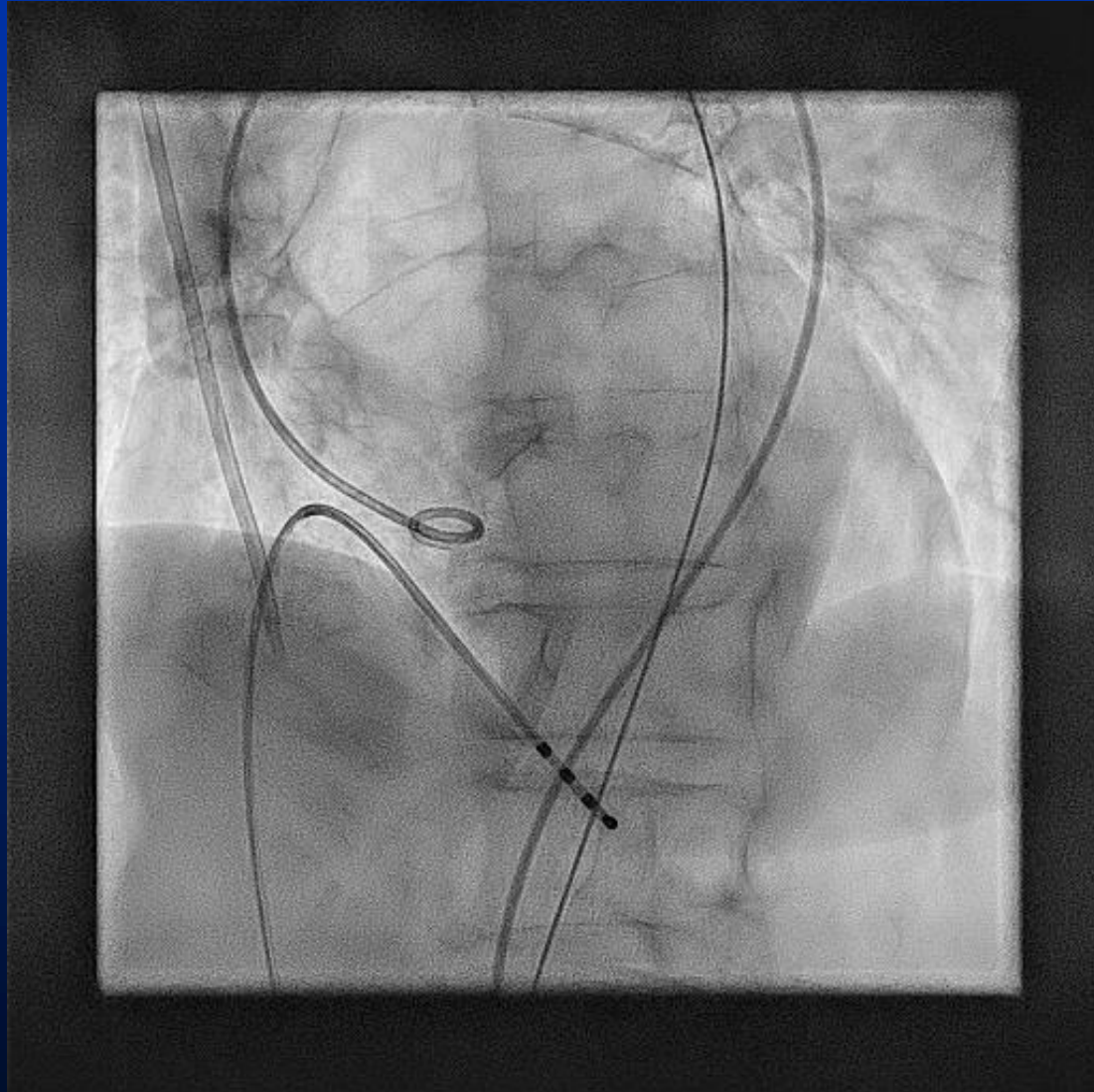




TAVR in a non-calcified valve



Baseline aortogram

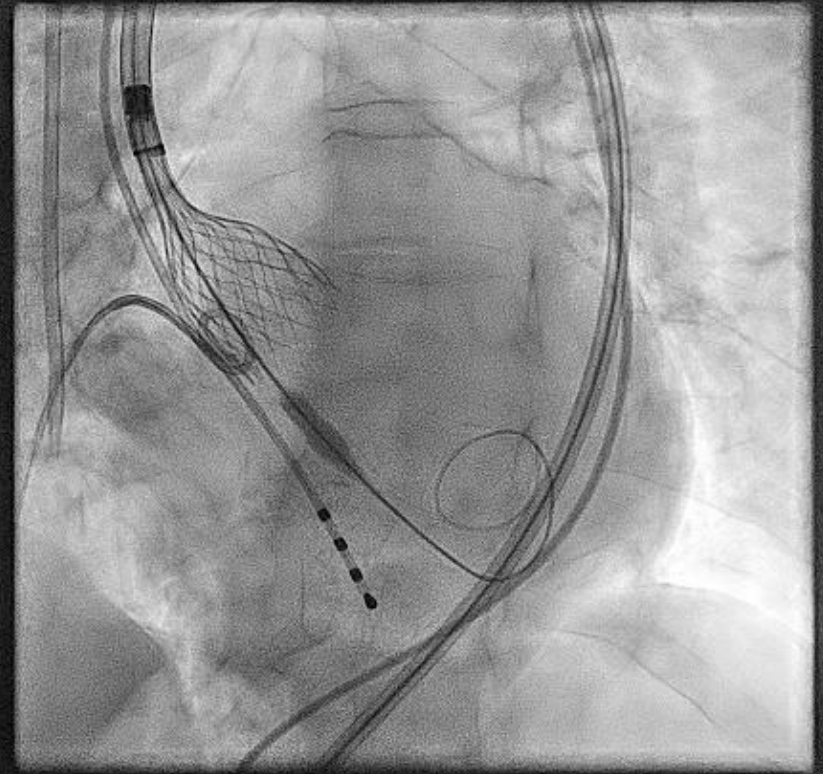
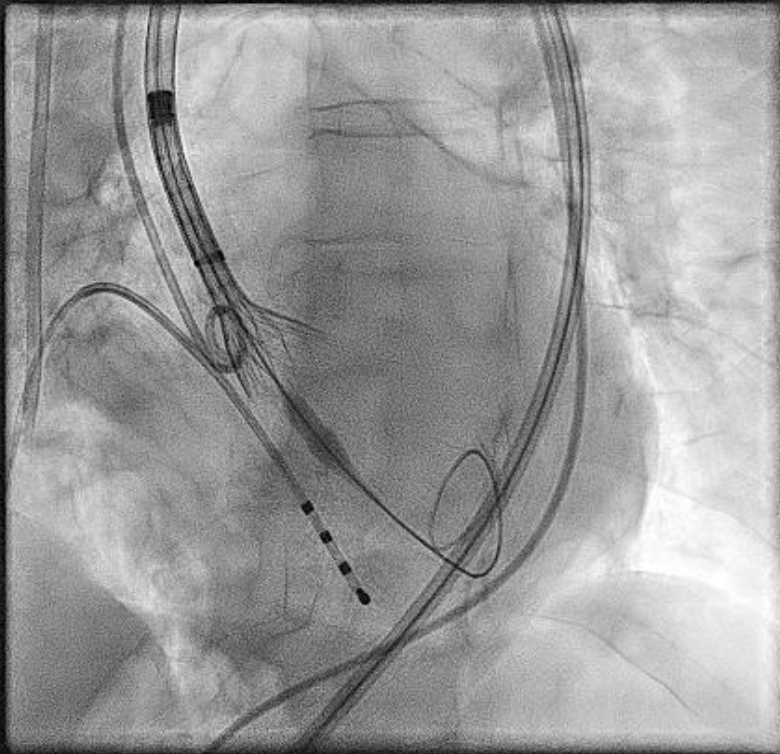




TAVR in a non-calcified valve



Evolut pro # 29

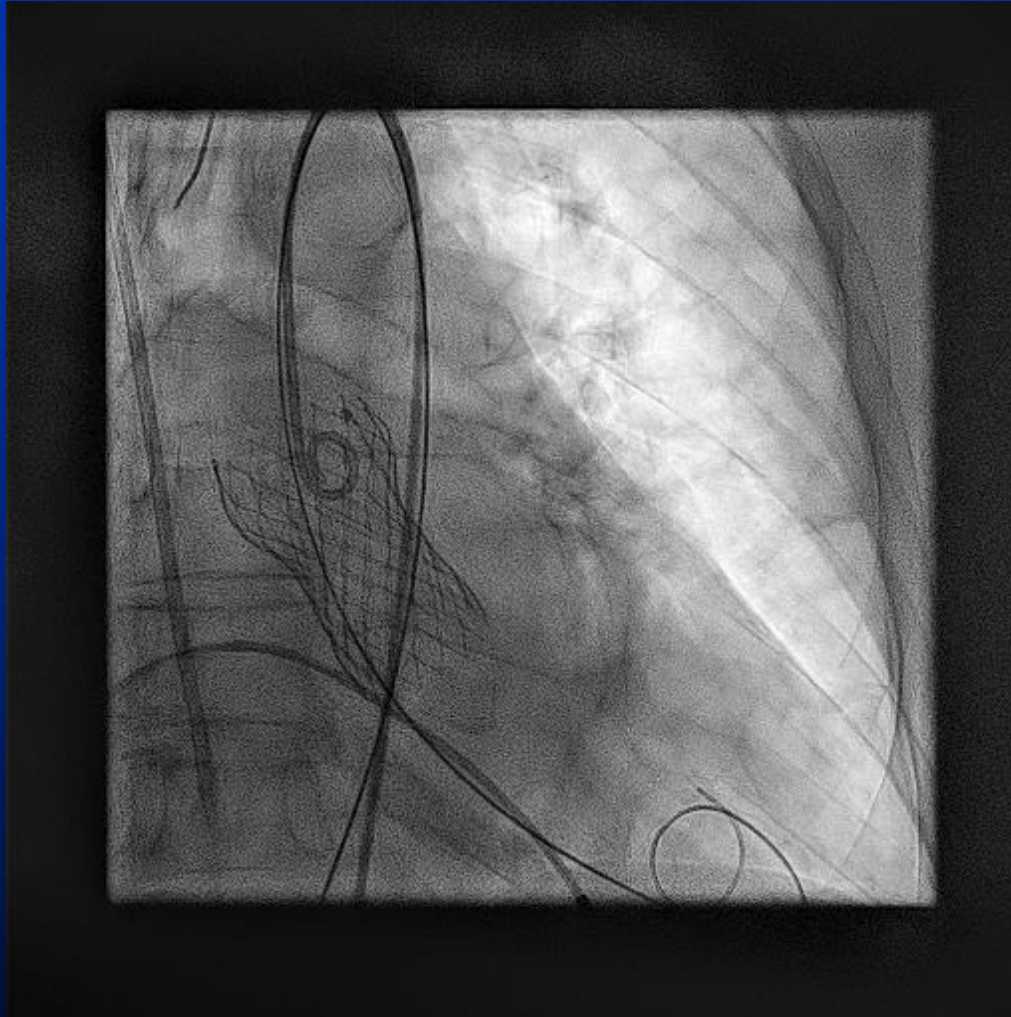




TAVR in a non-calcified valve



Severe aortic insufficiency and hemodynamic compromise



Pt on inotropes, TTE: paravalvular and central AI



Which of the following is true regarding transvalvular aortic regurgitation after TAVR (aetiology)?

- (A) Damage to leaflets
- (B) Overexpansion of prosthesis
- (C) Extensive calcification of aortic valve
- (D) Malposition of prosthesis



Post TAVR, the patient is hemodynamically unstable and the TTE shows significant central leak and paravalvular leak. Which is the least appropriate action?

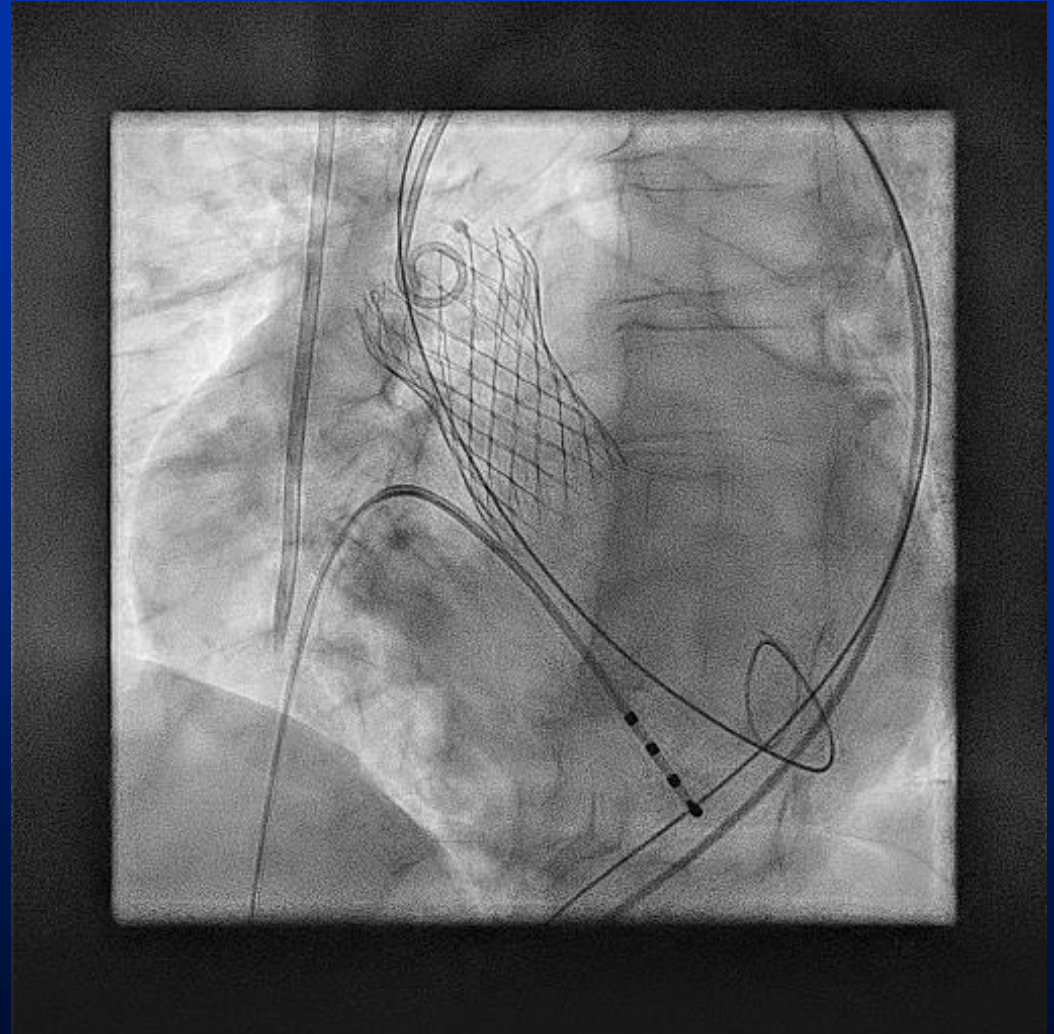
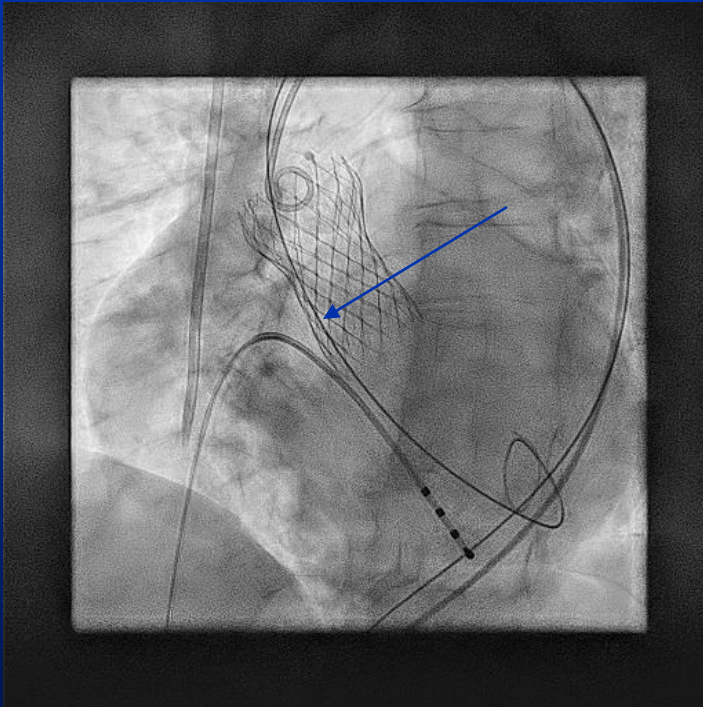
- (A) Remove the wire and deem the procedure a success
- (B) Upsize to a larger balloon for further dilation
- (C) Place an intra-aortic balloon pump (IABP) and obtain urgent surgery consultation
- (D) Hemodynamic support with phenylephrine and placement of a new valve



TAVR in a non-calcified valve



Wire removed and re-introduced but there is still AI



Pt on inotropes, TTE: paravalvular and central AI

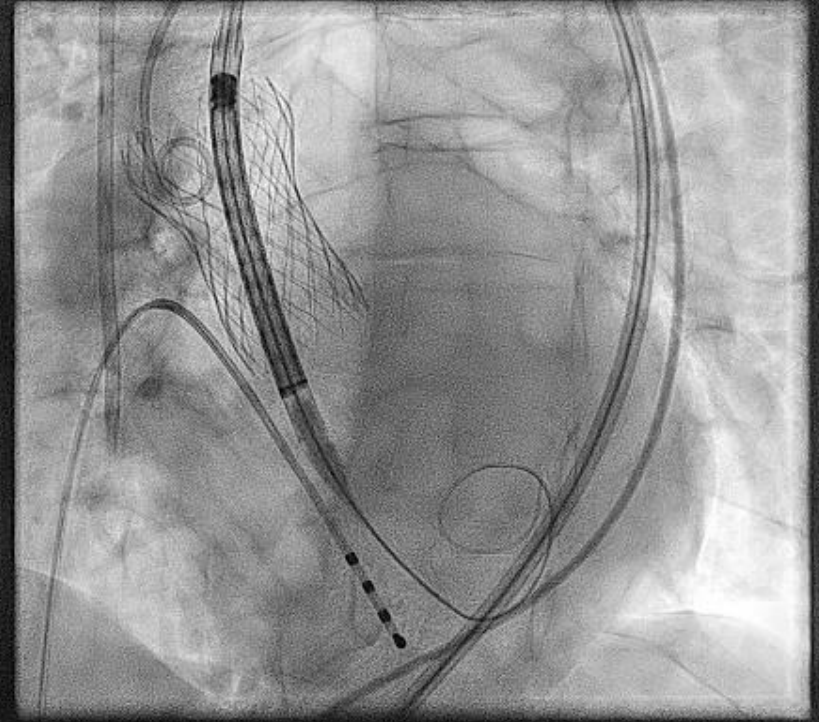
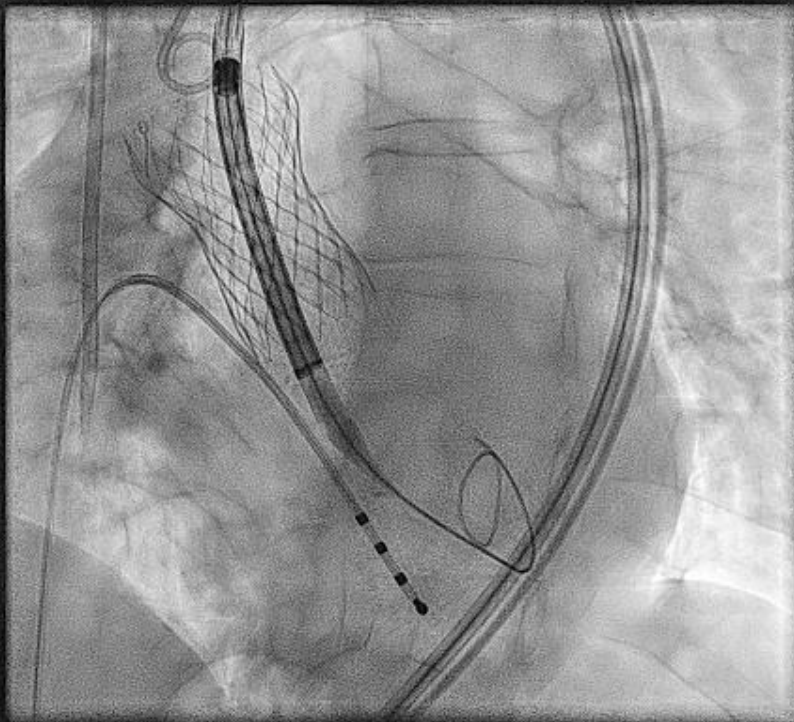


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Decision → new Evolut pro #29

While traversing the aortic arch pt improves

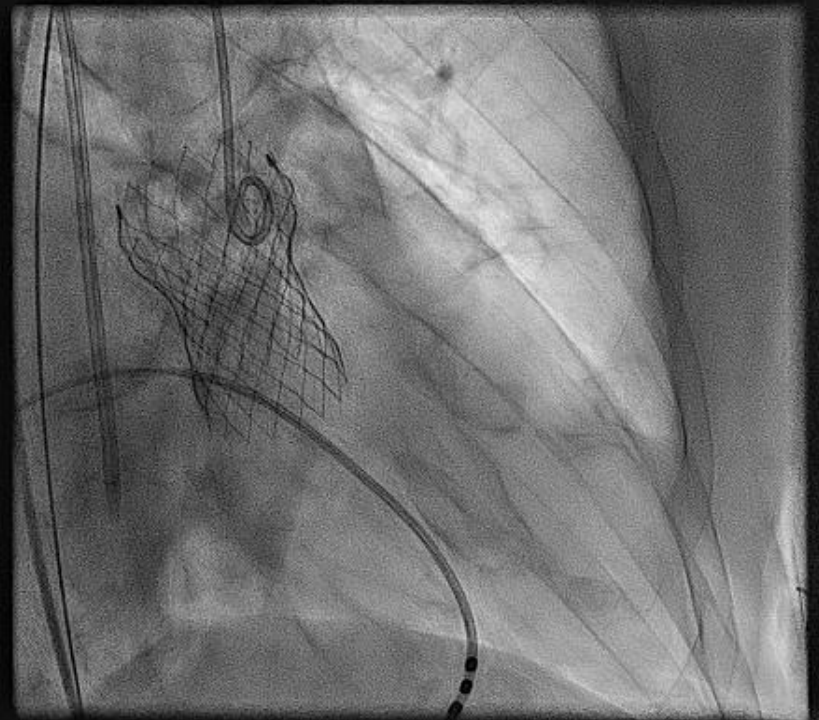
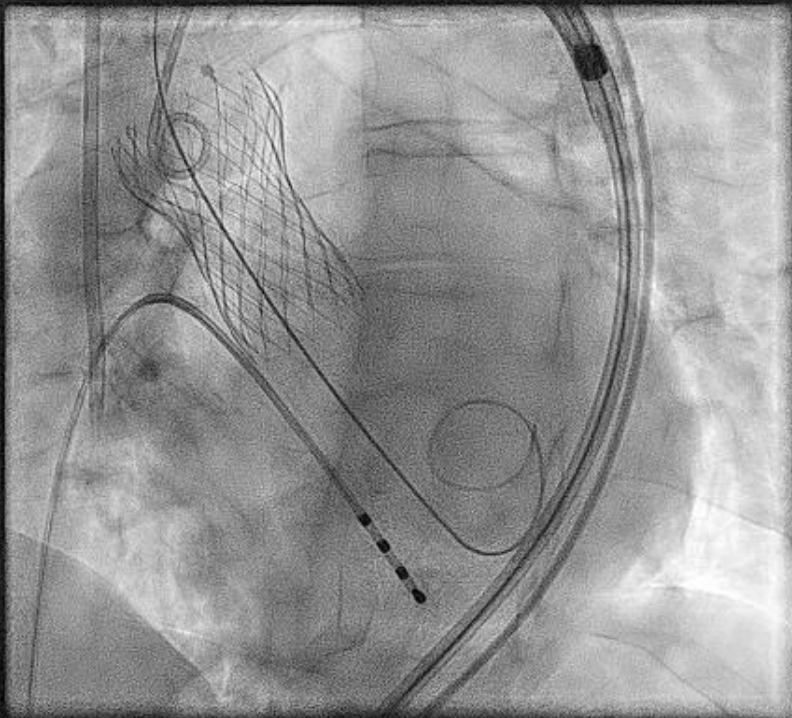




TAVR in a non-calcified valve



Time for a new Decision → Remove the new valve and deem the procedure a success





Summary

- In this case a pt with non calcified AS underwent TAVR.
- An oversized self-expanding valve was implanted in a high position resulting in severe AI and hemodynamic compromise which was retracted with inotropic support and wire repositioning and late leaflet tissue compliance (?)



Take home messages

- In pts with non calcified AS undergoing TAVR
 - Oversize
 - Wire repositioning
 - Hemodynamic support and 2nd Valve may be needed
 - Gentle predilatation (to assess THV sizing and the anchor plane and, most importantly, to open the commissures of the fibrotic leaflets creating space for THV expansion)



Thank you!

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