CLEVE-UNICORN Technique to Prevent Coronary Obstruction After TAVR in Native Valves: A Word of Caution

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Disclosure of Relevant Financial Relationships

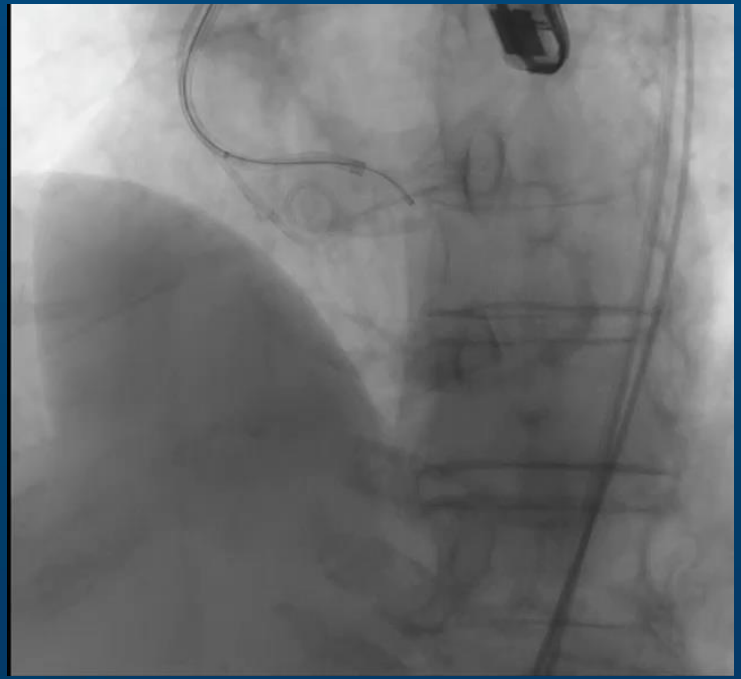
I, Jean-Benoît Veillette, DO NOT have any financial relationships to disclose.

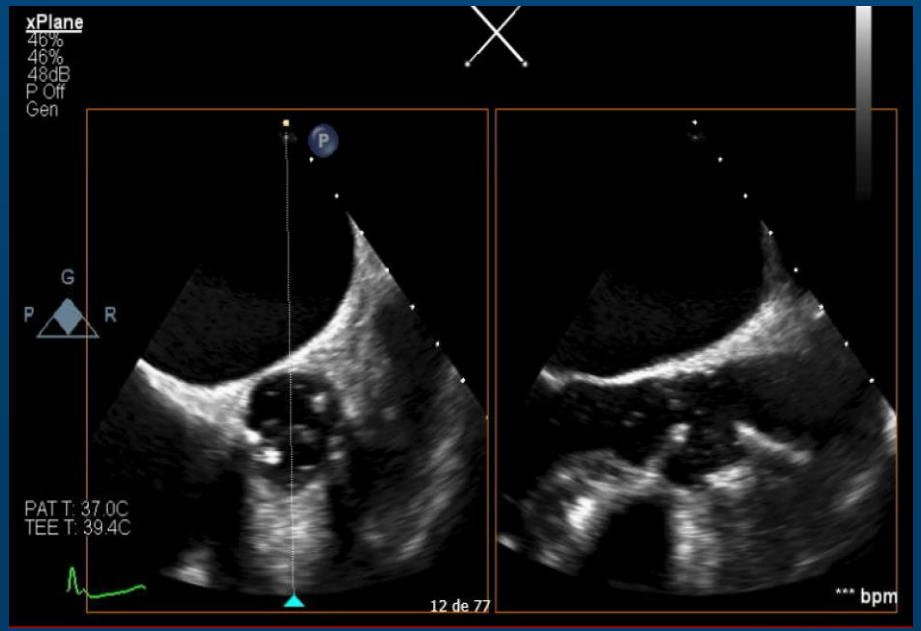
Case Summary

- 84-year-old woman with known severe native aortic stenosis
- Previous history: AF, HTN, DLP, Rheumathoid arthritis and CKD (IIIa)
- Hospitalized for acute decompensated heart failure
- Echocardiography
  - Preserved Ejection Fraction.
  - AVA 0.87 cm^2 and aortic mean gradient of 40 mmHg.
  - Moderate AR, mild MR and TR.
- Cardiac CT Scan
  - Coronary heights: 14 mm for the right coronary and 10 mm for the left.
  - Virtual valve-to-coronary distance: 2 mm for the LM.

CLEVE-UNICORN Technique

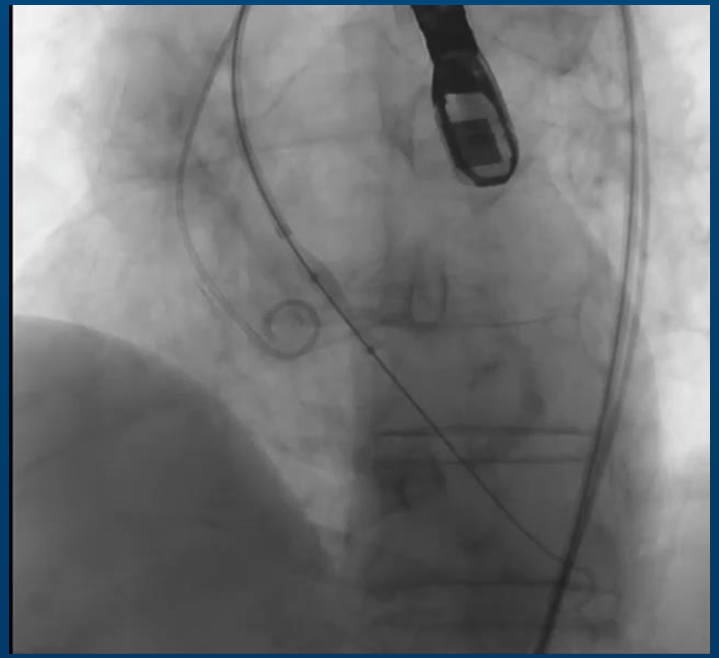
- Leaflet traversal with an Astato 20

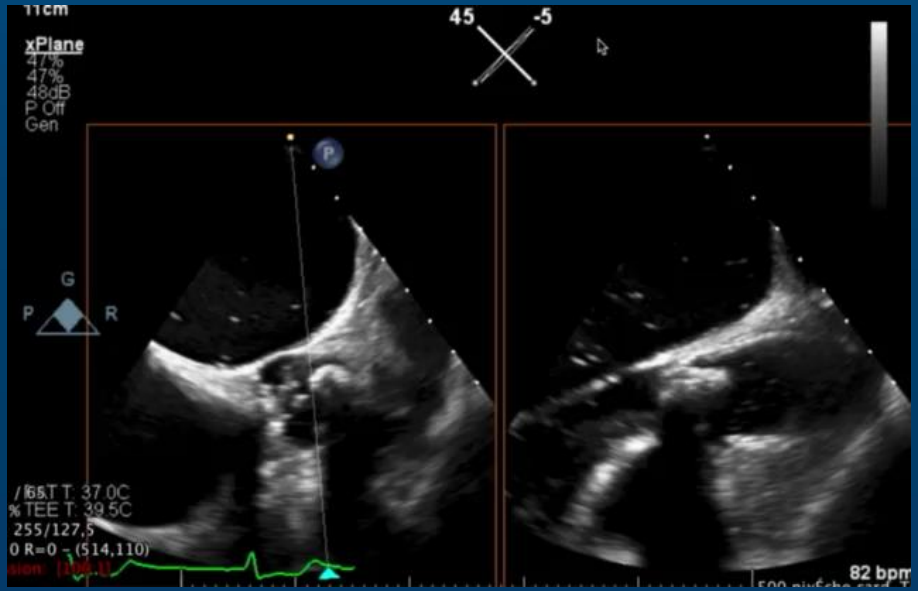




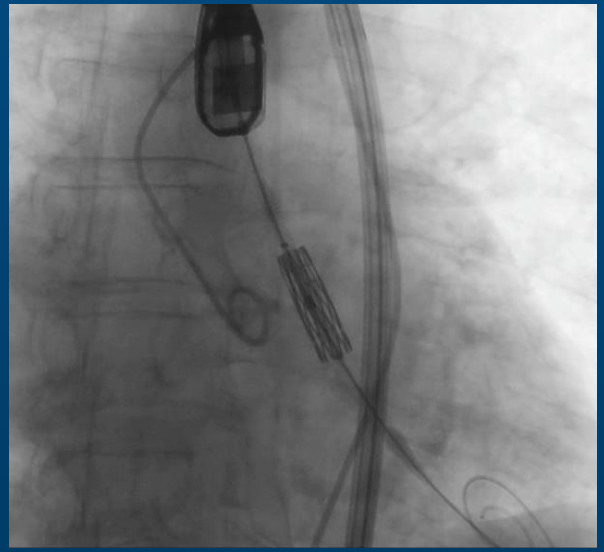
CLEVE-UNICORN Technique

- Dilatation of the leaflet with a 3 mm then a 10 mm balloon

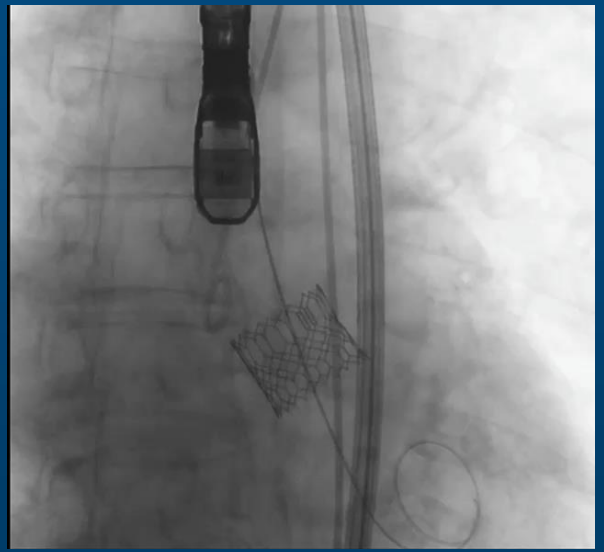




First Valve Deployment

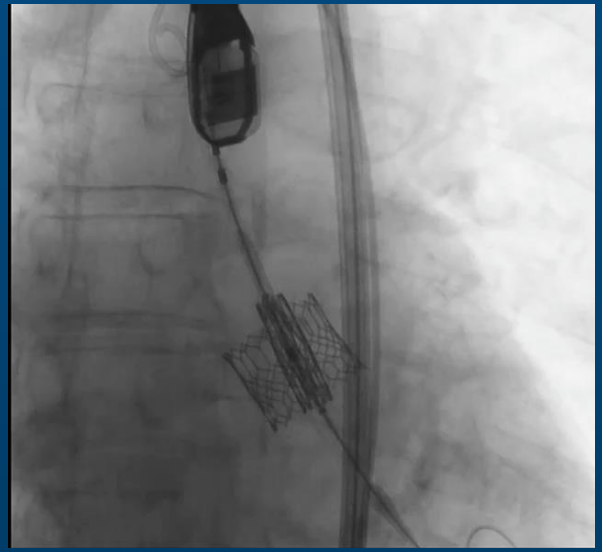


Despite efforts to move the THV more aortic during deployment, we were not able to reposition the THV as in a standard TAVR procedure

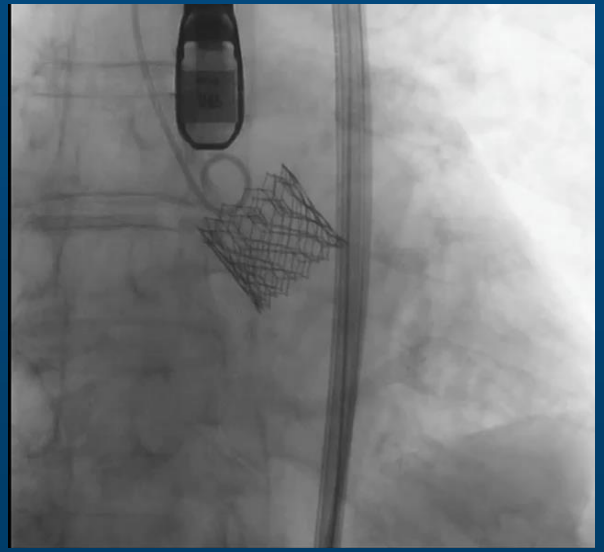


Aortogram demonstrating severe aortic regurgitation

Second Valve Deployment

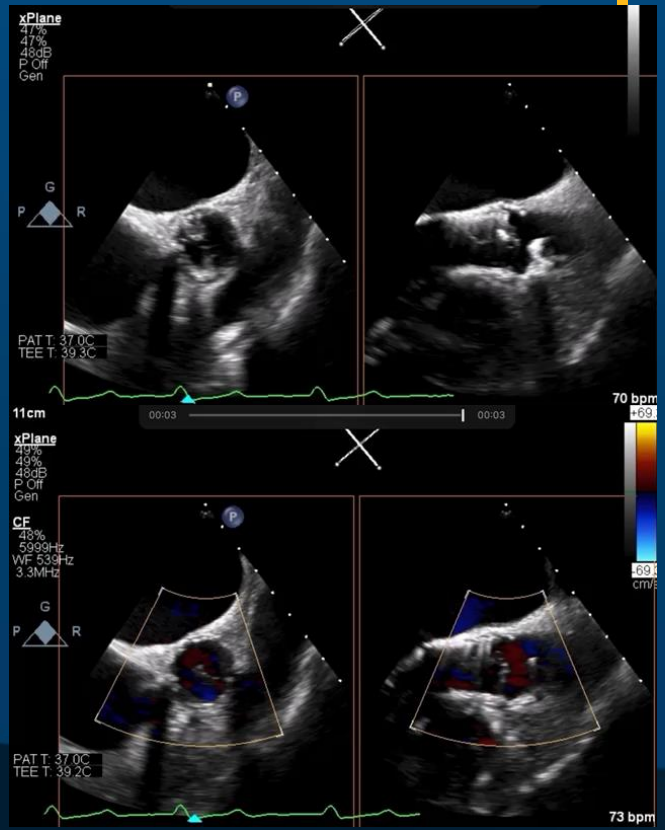


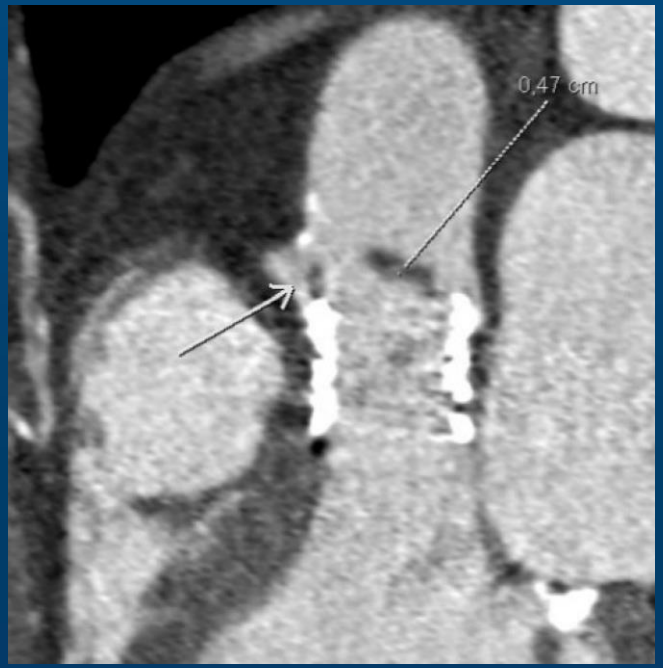
Again, despite a very slow inflation, the THV was always pushed toward the ventricle during deployment



Aortogram after the second THV showing mild AR

Perivalvular Tissue Reaction Post-Deployment





Conclusion

- The patient had a favorable clinical course.
- She developed an isolated left bundle branch block post-procedure.
- Echocardiography demonstrated a mean aortic gradient of 12 mmHg, with minimal regurgitation, and no pericardial effusion.
- Discharged home 2 days after the procedure.

Take-Home Messages

- The CLEVE-UNICORN technique may alter valve deployment behavior, making positioning more challenging.
- Perivalvular tissue reaction can be unpredictable, posing a challenge for the operator during THV deployment, who must readjust in real time.
- The risk of creating an aortic dissection with the CLEVE-UNICORN technique in native aortic valve must be considered in the decision-making process of the heart team.