Trans-Apical Implantation of a Sapien™ Mitral Valve-in-Valve

Minimal invasive solution for a patient with recurrent failure of a biologic mitral valve

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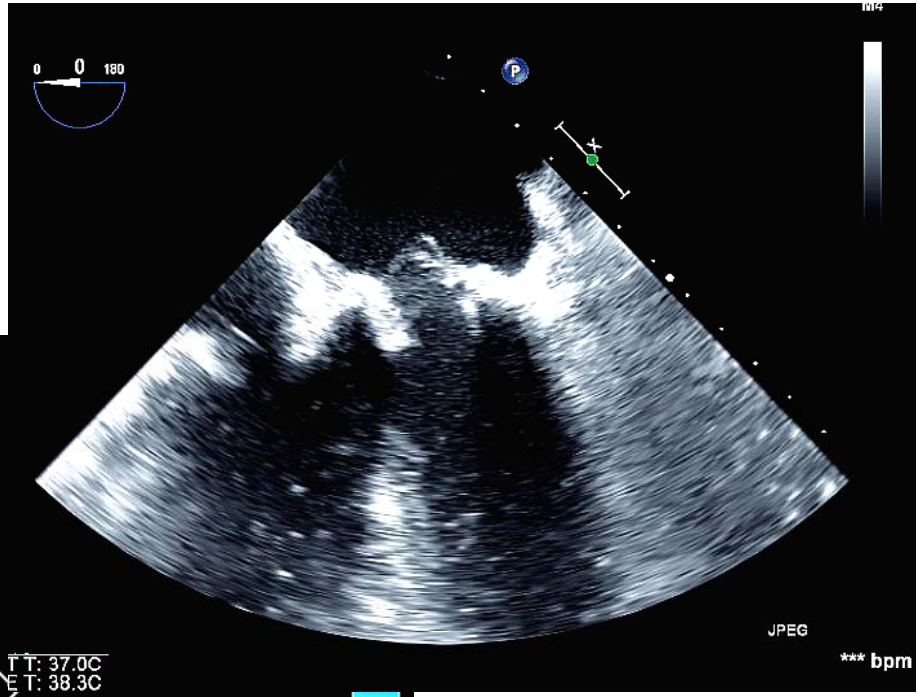
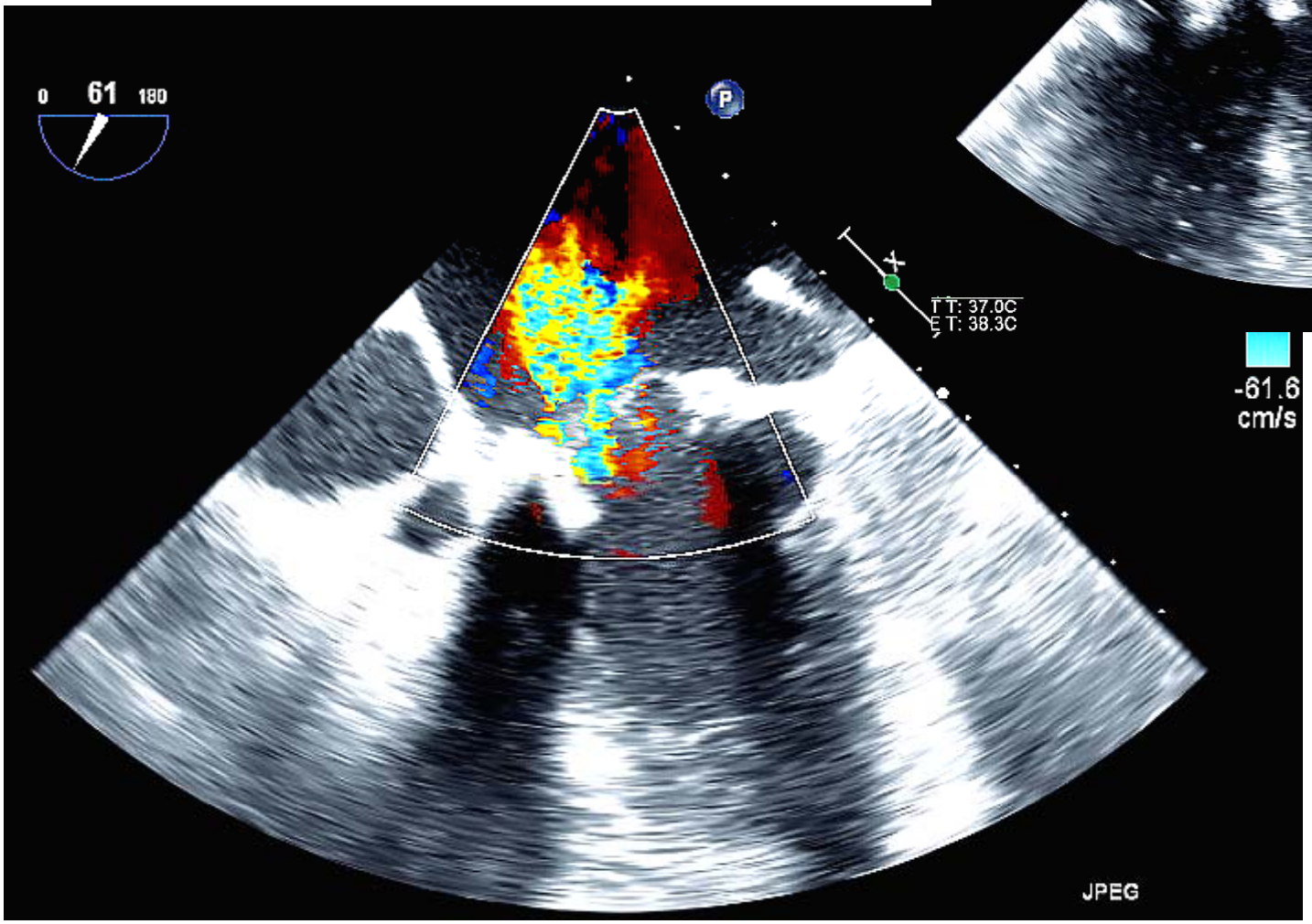
Clinical History

- A 51 y/o lady with severe mitral insufficiency and NYHC FC II due to a degenerated prosthetic biologic valve (Carpentier-Edwards 27 mm) placed during her 4th Redo-MVR+TVR surgery in 1998 (first time MVR in 1974 and 3 additional operations afterwards) with medical history of rheumatic heart disease, chronic atrial fibrillation on coumadin treatment.
- Treatment strategy:
  - Extremely high risk for repeat (5th time) MVR with poor predicted long-term valve durability
  - Alternative treatment strategy → MVR using trans-apical insertion and implantation of the Edwards-Sapien™ trileaflet 26 mm valve in the mitral position.
  - Mitral prosthesis dimension:
    - outer diameter 27mm/inner diameter 23 mm

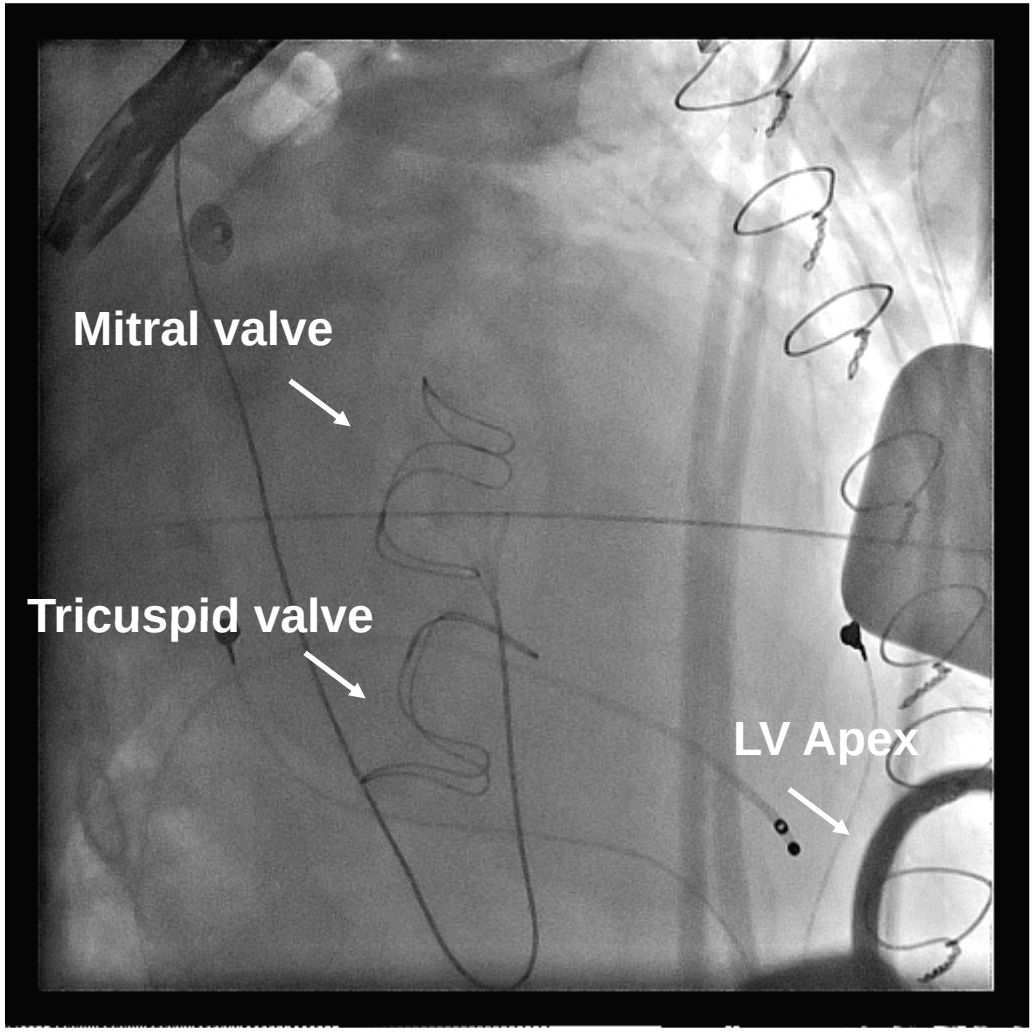
•TEE Findings

Degenerated prosthesis
Severe MR

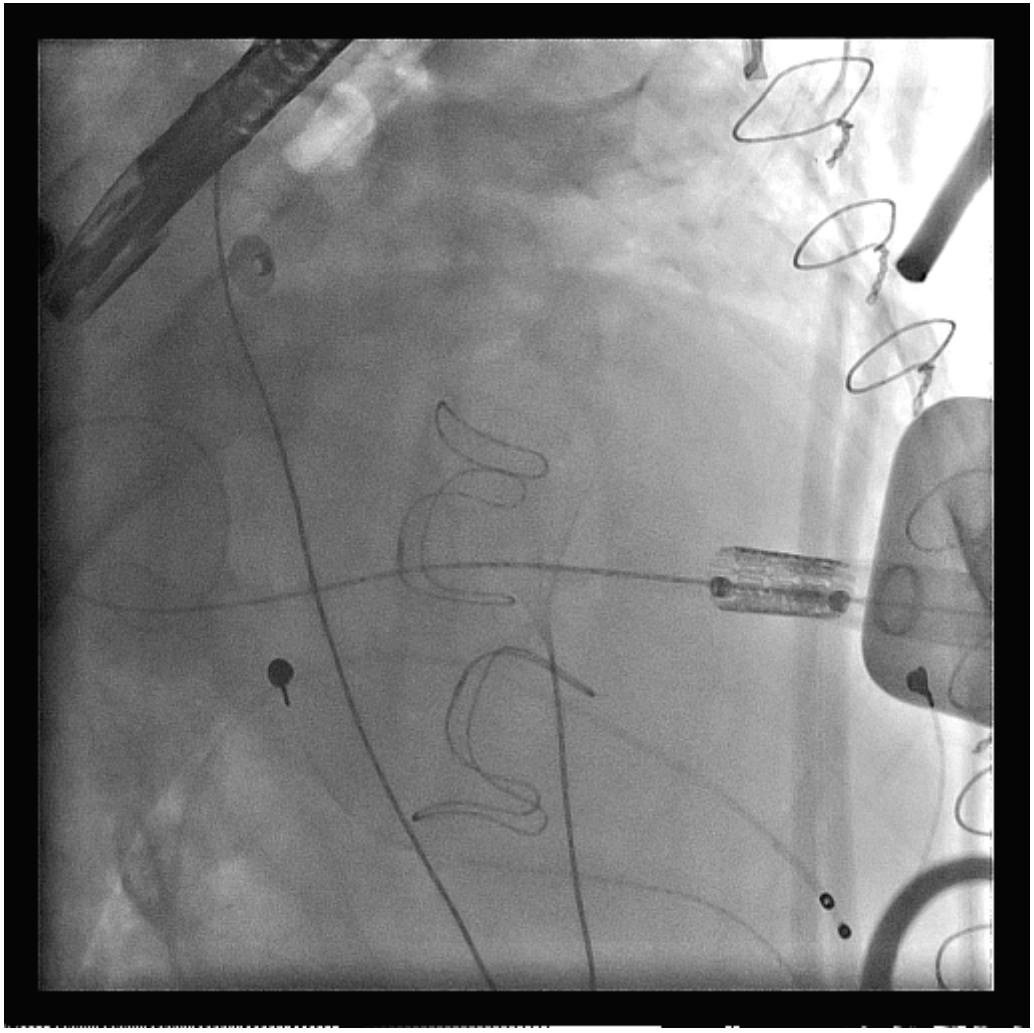




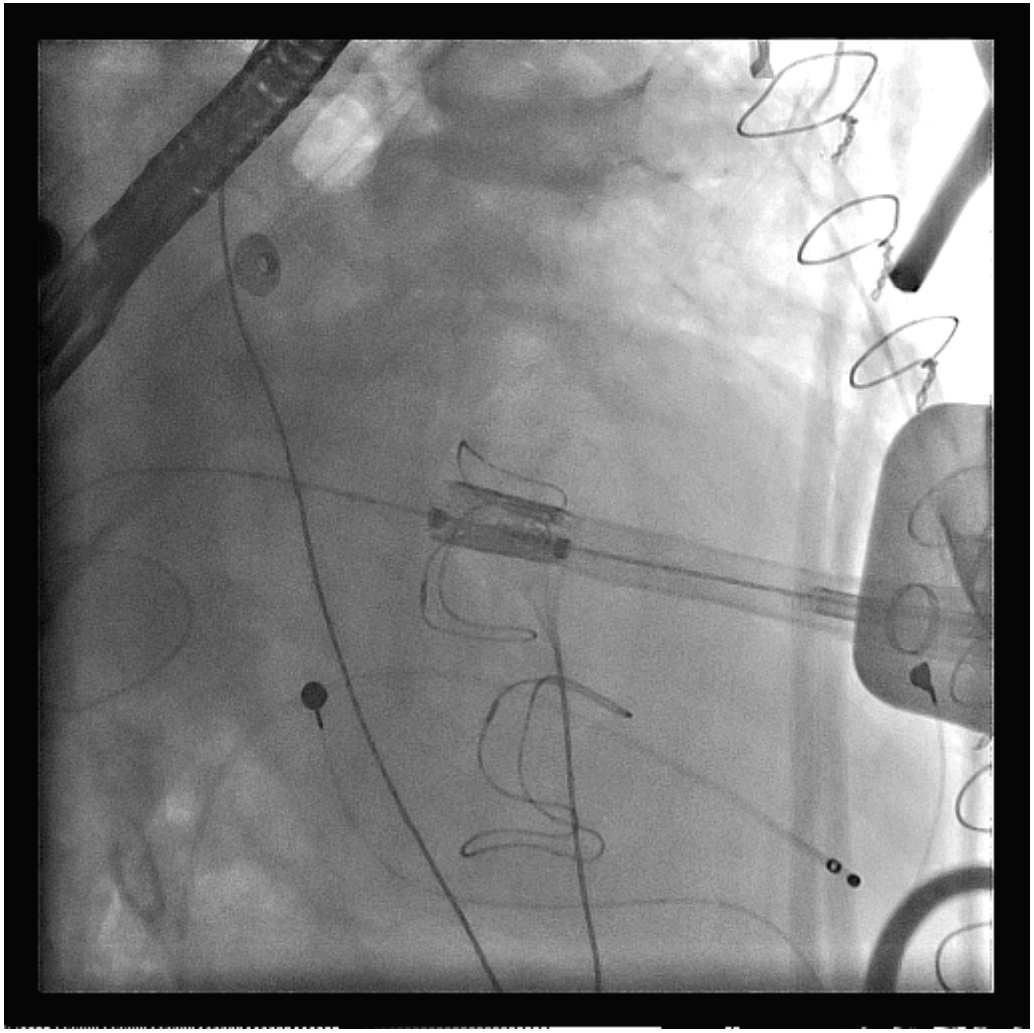
Fluouroscopic image (RAO)



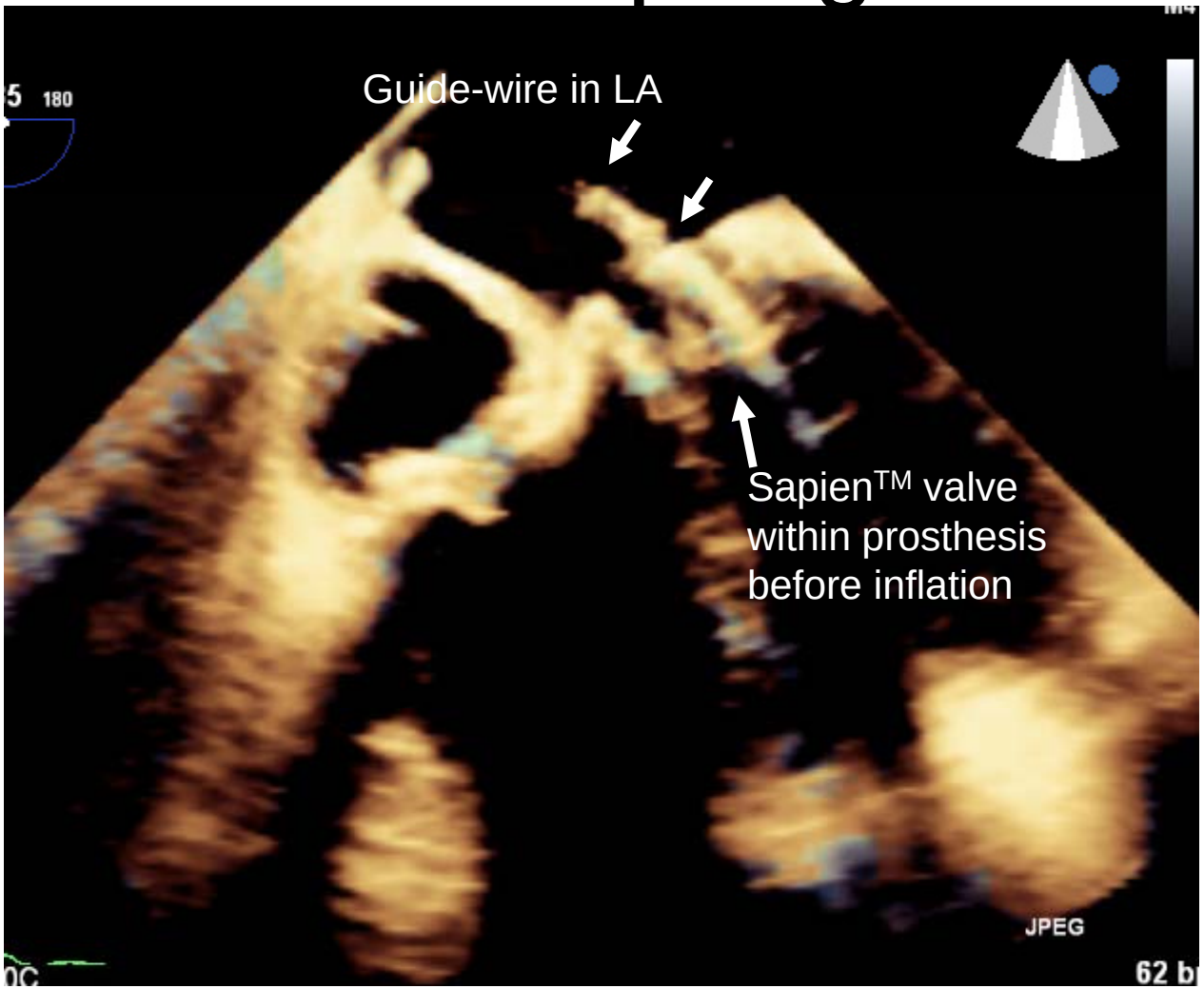
Valve insertion via apical cannula



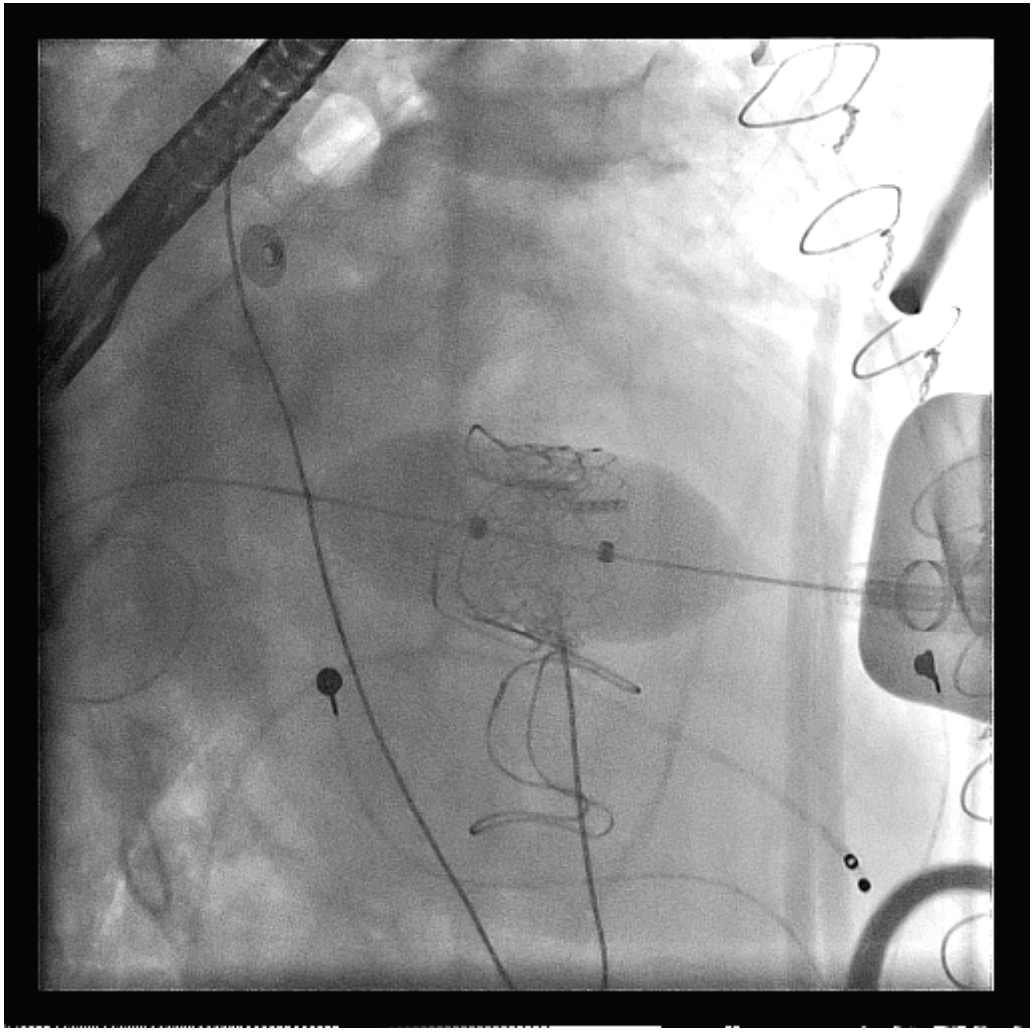
Valve-in-valve positioning



Valve-in-valve positioning (3D trans-esophageal echo)

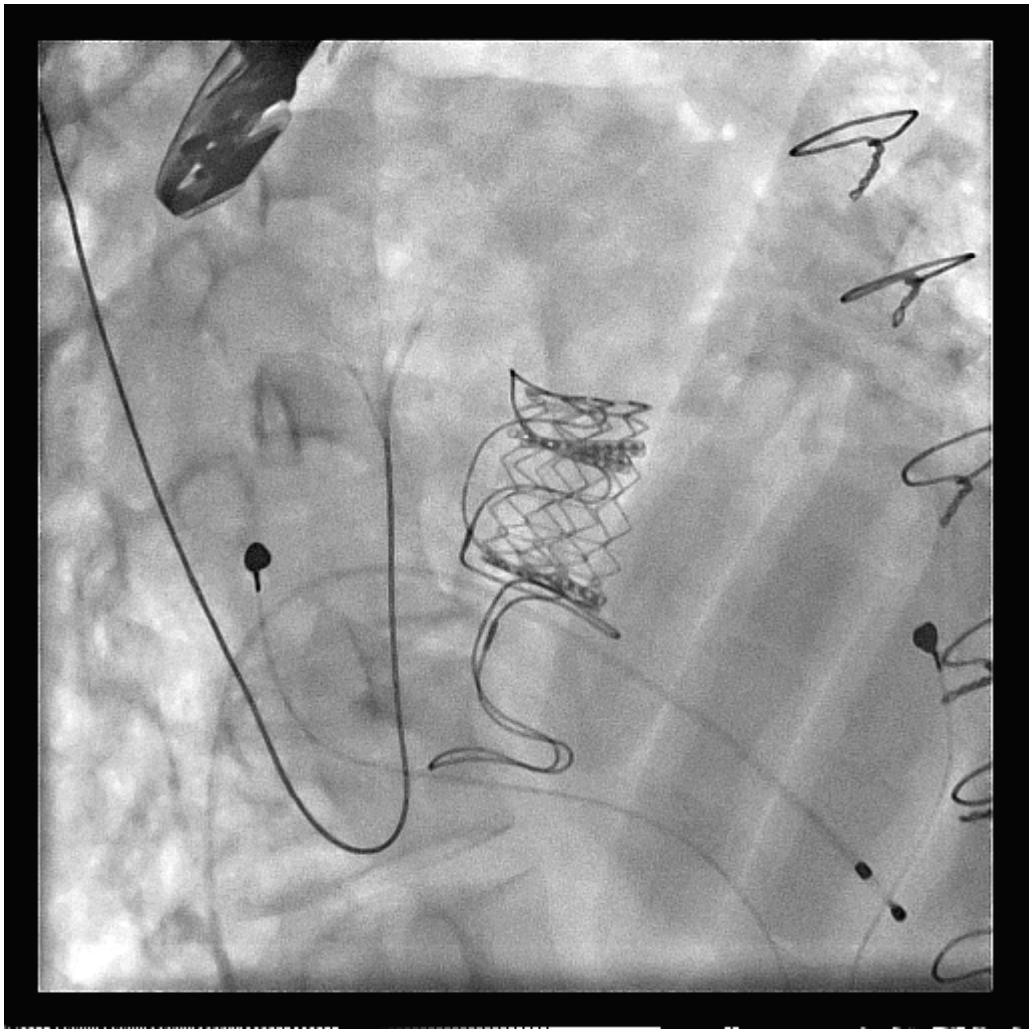


Valve-in-valve implantation



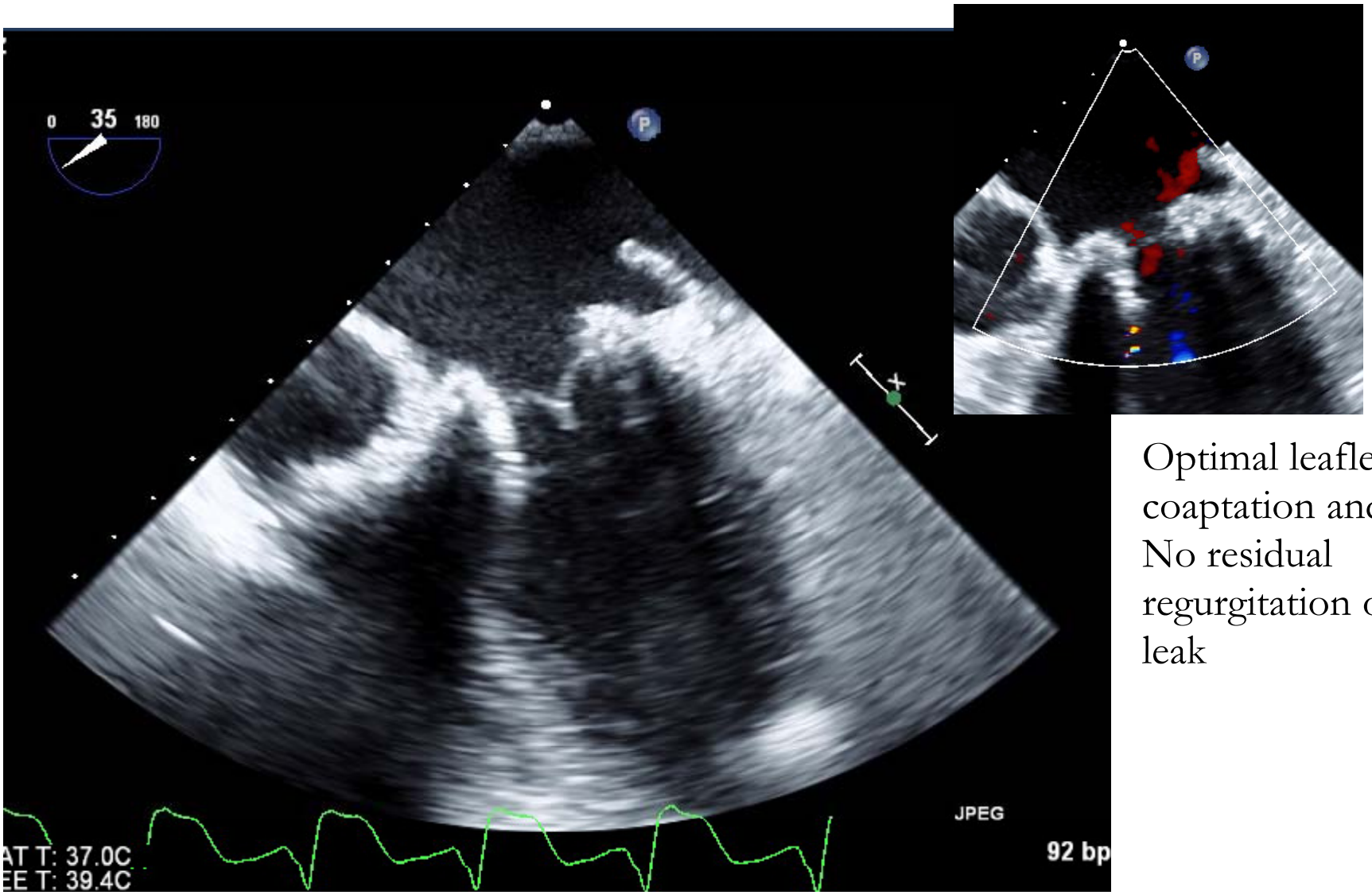
Sapien inflated over 26mm balloon during rapid pacing

Final result per angio



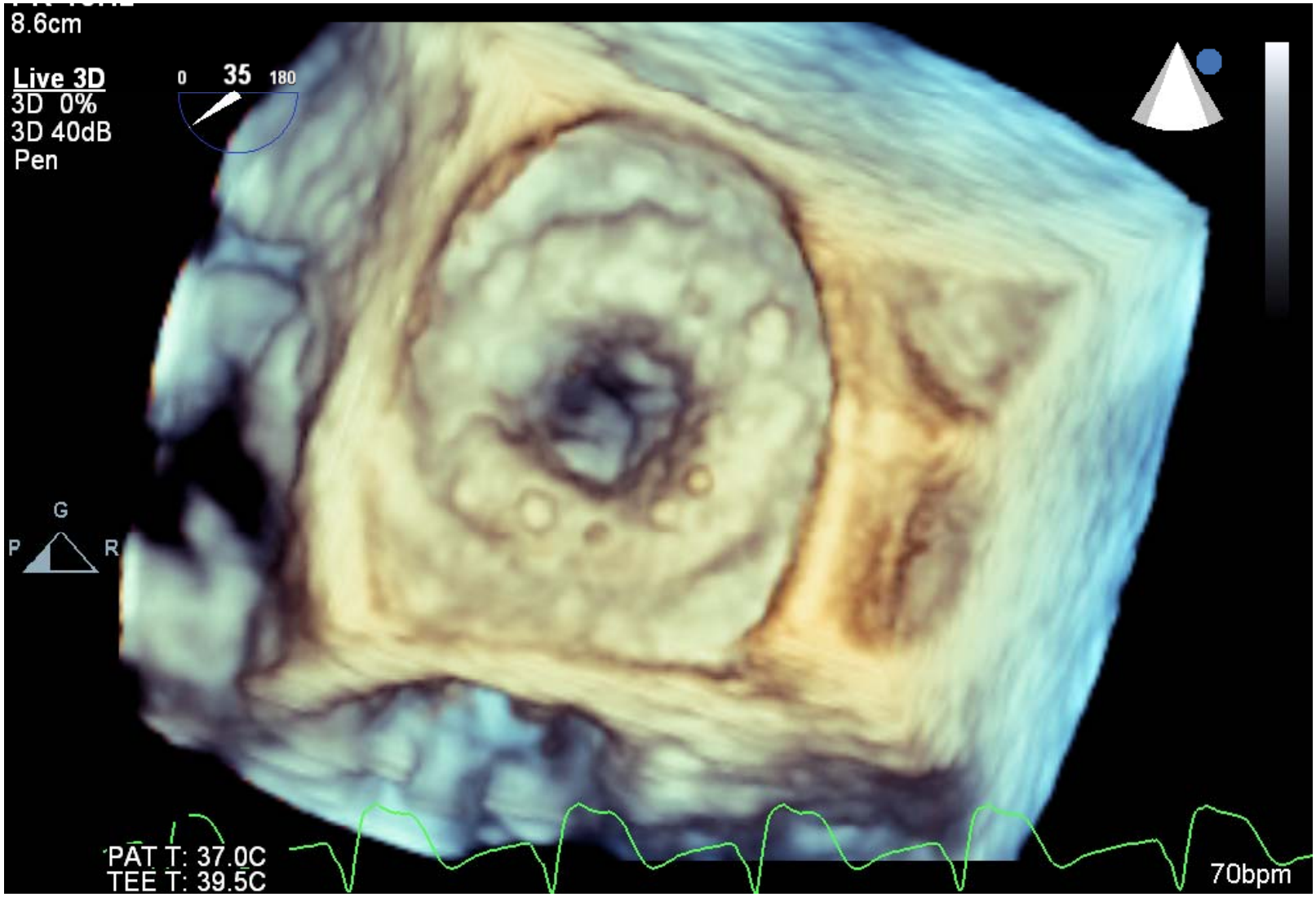
Optimal mitral valve-in-valve result

Final TEE findings



Optimal leaflets coaptation and No residual regurgitation or leak

Final 3D echo findings



Conclusions

- Patient was discharged on day 4 without complications.
- In this case, valve-in-valve implantation in the mitral position using the trarns-apical approach for delivering the Sapien^{TM} valve within a failed biologic valve was shown to be feasible and safe with excellent procedural result and valve functioning.
- The procedure, done as "off label" indication obviated the need of performing 5th time conventional MVR with excessive associated risks and questionable long-term valve durability.
- It remains to be explored the generalized value of this approach among selected group of patients with failed mitral and aortic biologic valve prosthesis.