

Mitral and Tricuspid Valve Transcatheter Edge-to-Edge Repair

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Disclosures

I have no relevant financial relationships with commercial interests to disclose.



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Patient History

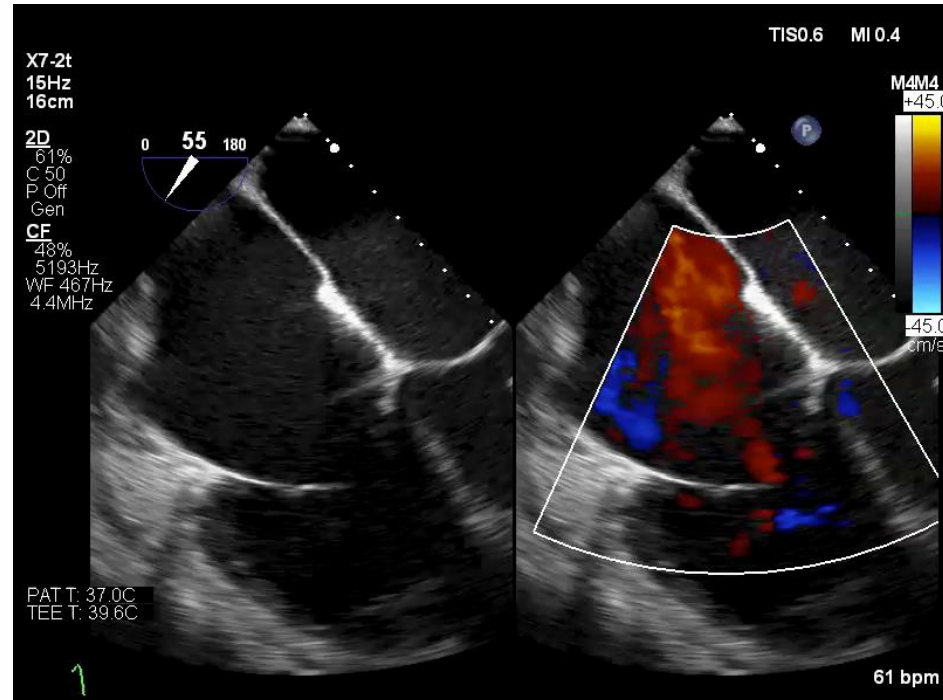
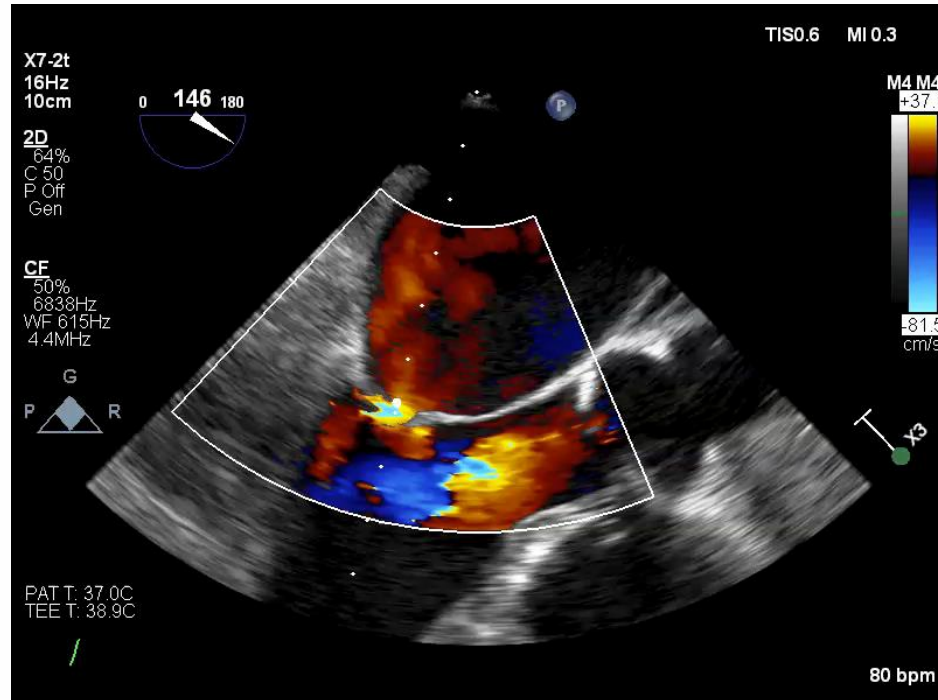
- 83-year-old female presented to another hospital for worsening dyspnea on exertion (from NYHA FC II to IV) and lower extremity edema.
- Medical history included atrial fibrillation on oral anticoagulation with Warfarin, and heart failure with reduced ejection fraction (LVEF 35-40%)/non-ischemic cardiomyopathy.
- Transthoracic echocardiogram showed moderate to severe secondary mitral regurgitation and severe tricuspid regurgitation and therefore she was referred for transcatheter therapy.
- Heart team approach, deemed high surgical risk, recommended transcatheter therapy.



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Evaluation: Transesophageal echocardiogram



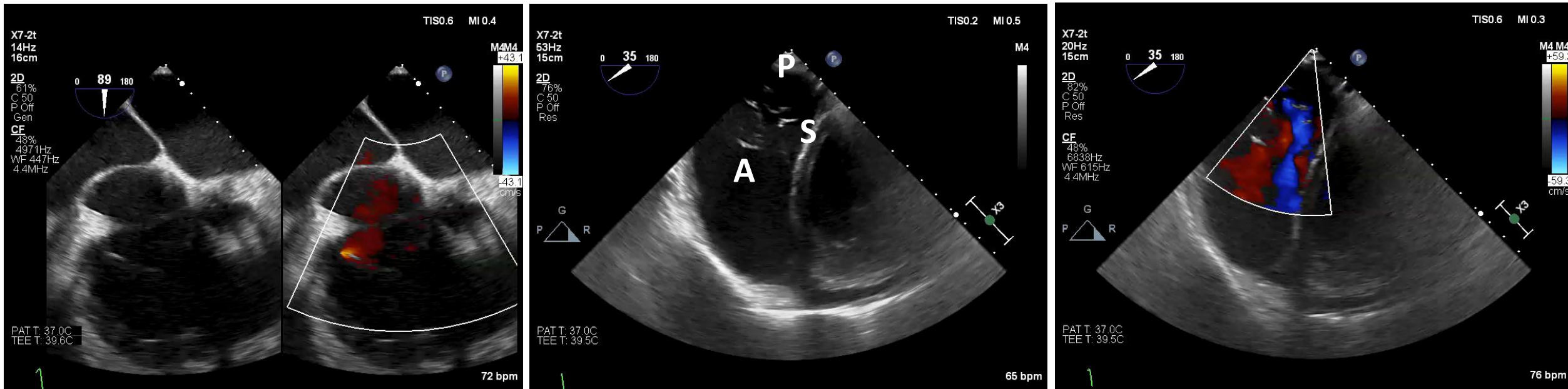
- Severe MR, MV gradient 1.5 mmHg, no leaflet calcium, good anatomy for MitraClip
- Severe TR, no pacemaker leads, coaptation gap <10mm



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Evaluation: Transesophageal echocardiogram



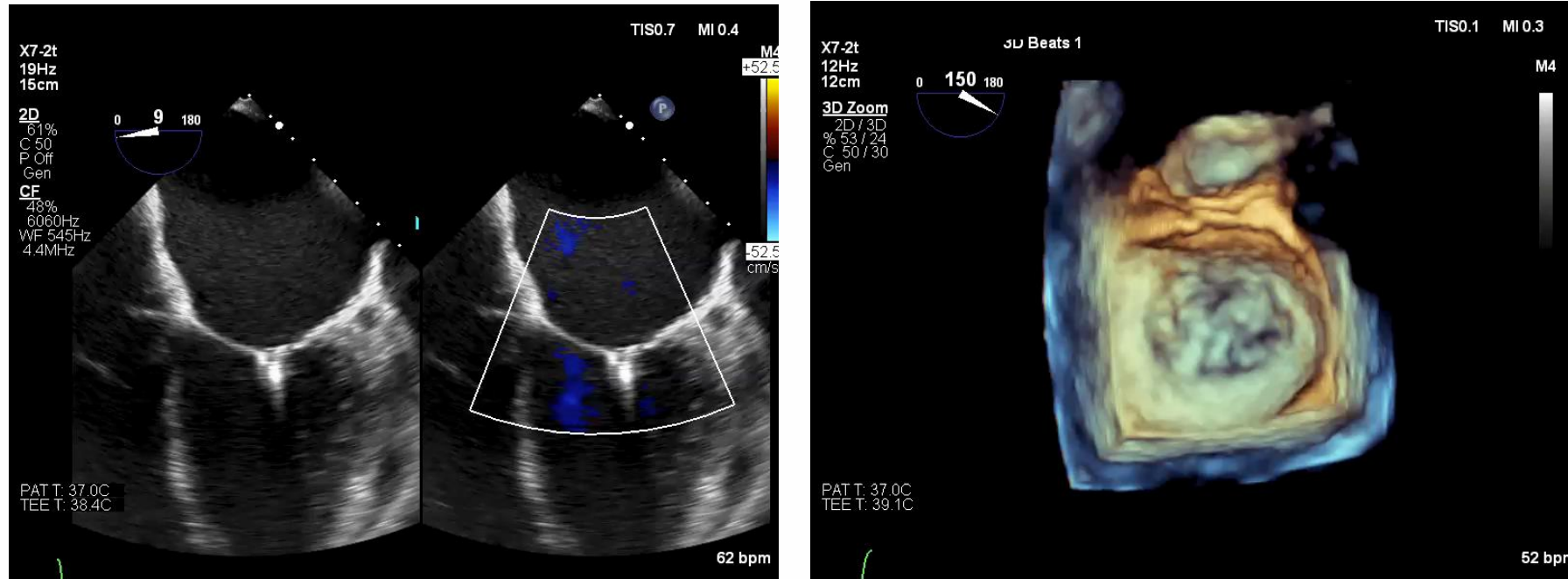
- Severe TR, most of the TR jet from anterior-septal commissure, coaptation gap <10mm.
- Good TEE image quality for possible Edge-to-Edge tricuspid repair with off label MitraClip.



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Transcatheter Edge-to-Edge MV Repair



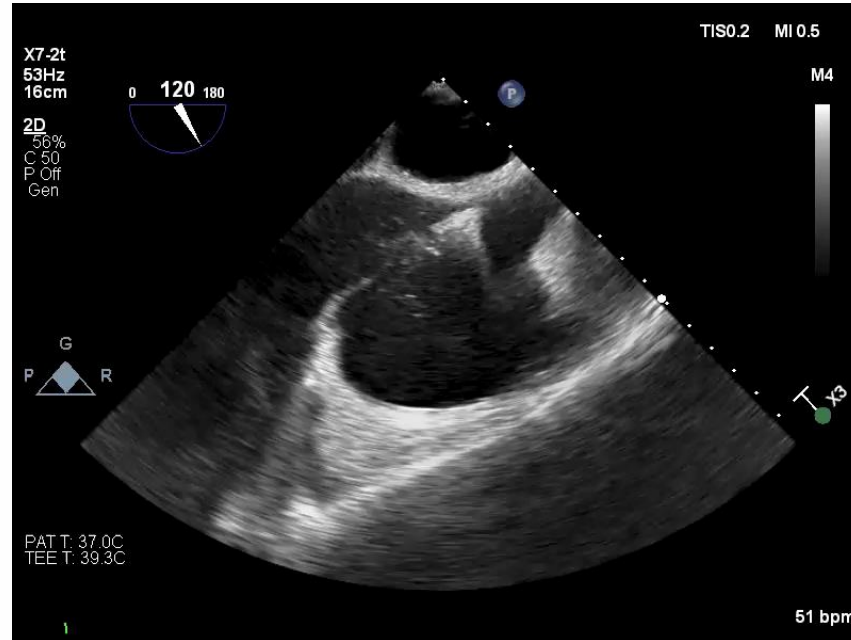
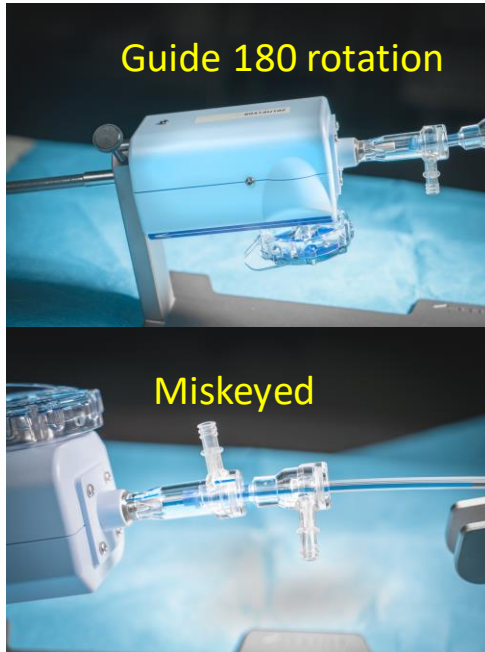
- Successful E2E mitral valve repair with 2 clips, trivial residual MR, MV gradient 5 mmHg



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Transcatheter Edge-to-Edge TV Repair



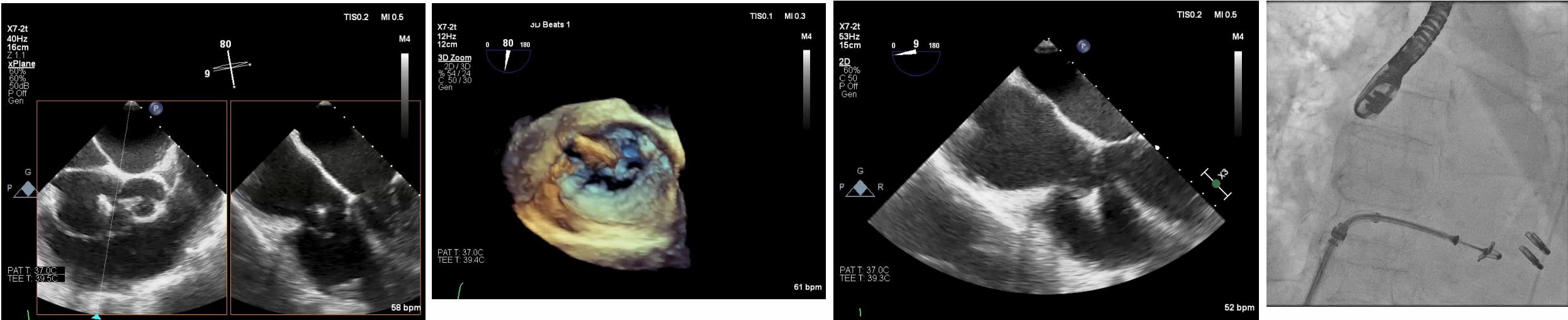
- Continued with tricuspid edge-to-edge repair. With the current technology, the guide needs to be rotated 180 degrees and the clip delivery system miskeyed to be able to reach the TV.



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Transcatheter Edge-to-Edge TV Repair



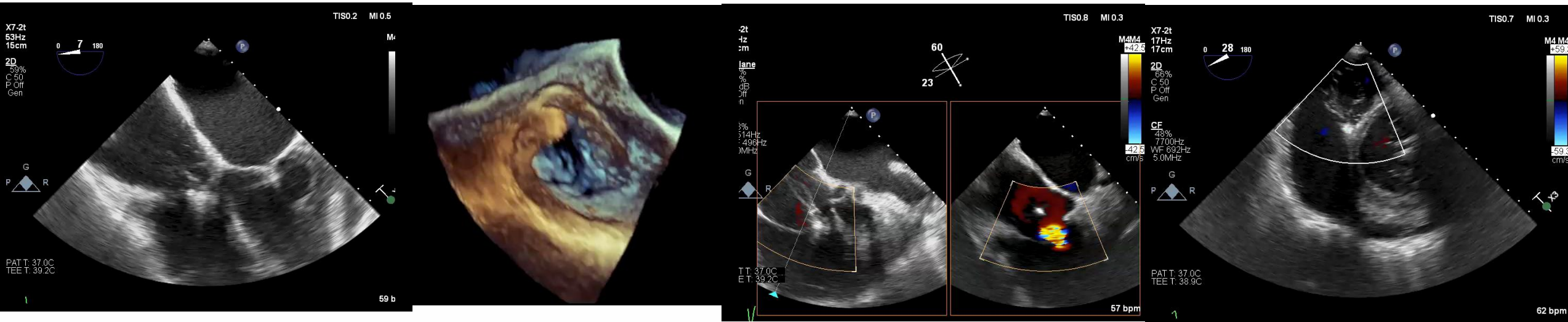
- Positioning the Clip towards the anteroseptal commissure and across the tricuspid valve
- Multiple 2D TEE views (mid esophageal using x-plane) and 3D TEE views are used to guide the steering of the Clip towards the desired TV commissure.



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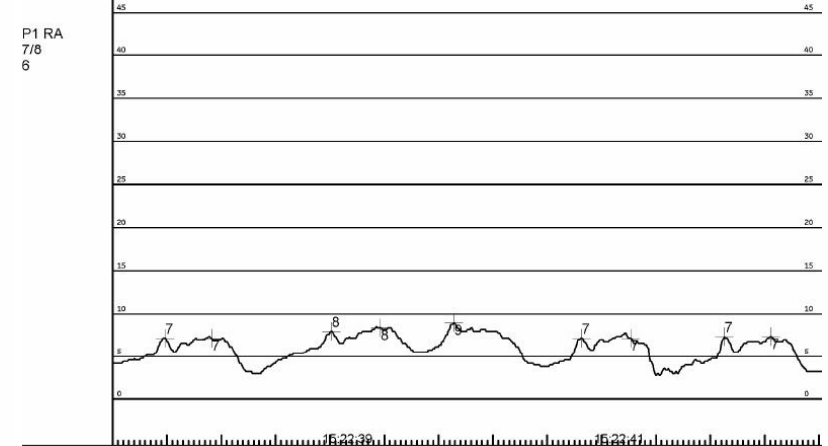
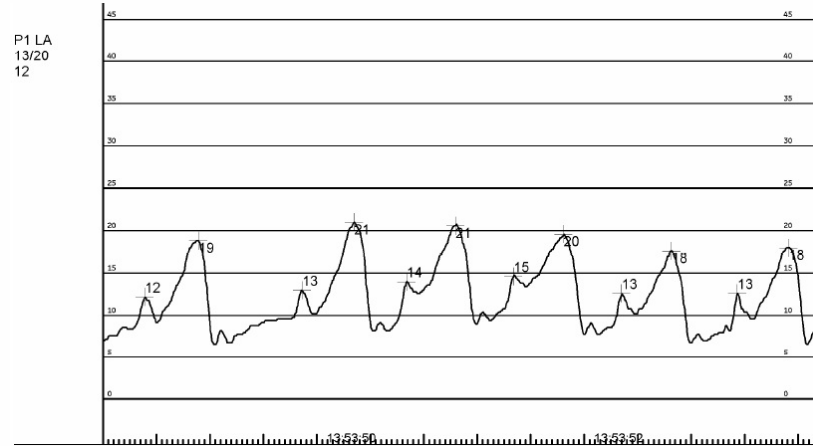
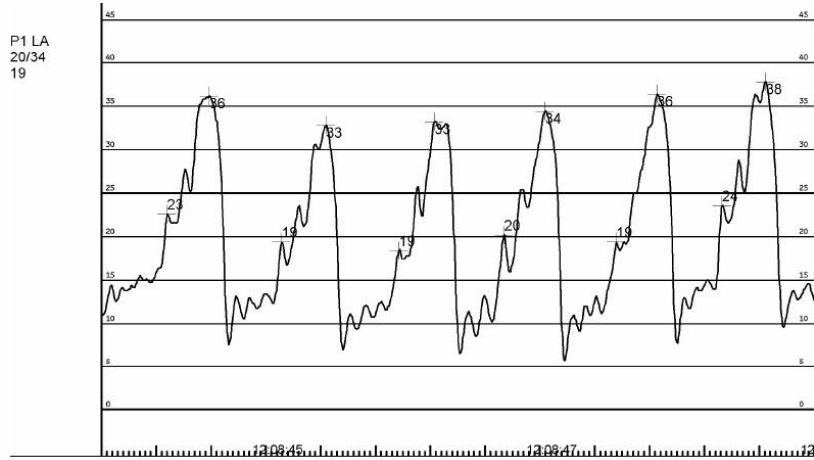
- Anterior and septal TV leaflets grasped, position assessed by 2D/3D
- Evaluation of TR reduction in multiple views, mild-moderate residual TR, clip released



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Baseline MitraClip V wave 38 mmHg, post MitraClip 20 mmHg

Baseline RA pressure recorded at 20 mmHg (waveform not available), post Tricuspid Clip 6 mmHg



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Hospital Course and Follow-Up



- Patient was discharged on POD#2.
- 30-day follow up: NYHA functional class I, trace bilateral edema.
- 30-day TTE: LVEF 35%, mild residual MR, mild residual TR.
- 6-month follow up: unchanged symptoms.



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Question

- Which statement about transcatheter treatment for tricuspid valve regurgitation is correct?
 - a. Remains off label and investigational therapy.
 - b. Effectively reduces tricuspid valve regurgitations in carefully selected patients.
 - c. It is associated with improvement in symptoms and quality of life when successful.
 - d. Multiple transcatheter devices for tricuspid valve repair and replacement are currently being evaluated in feasibility and early clinical trials.
 - e. All of the above



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Correct Answer/Rationale/Learning Point

- E. All of the above.

Dedicated transcatheter therapies for tricuspid valve regurgitation remain investigational at this time. The off-label use of devices to treat tricuspid valve regurgitation is becoming more frequent in current practice. Both investigational devices and off-label cases have demonstrated improved symptoms and quality of life when performed in appropriately selected cases. Multiple transcatheter devices for tricuspid valve repair and replacement are currently being evaluated in feasibility and early clinical trials.

Learning objective: become familiar with upcoming transcatheter therapies for tricuspid valve regurgitation



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