

My Worst Transseptal Puncture Case

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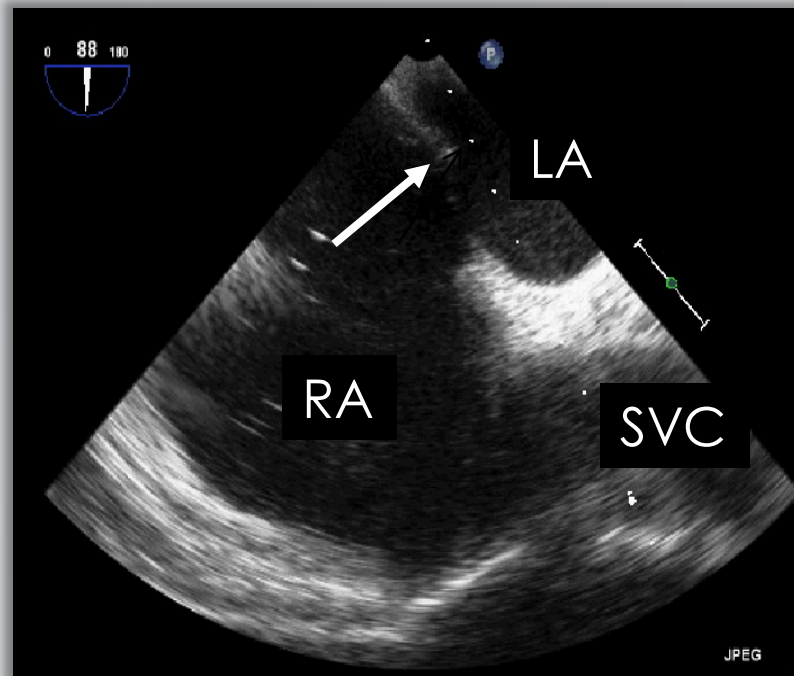
Introduction

- Transseptal puncture is one of the most important critical steps of transfemoral transseptal intervention (MitraClip procedure, LAA closure).
- Safe and appropriate access into LA ensures success and reduces the time of the procedure.

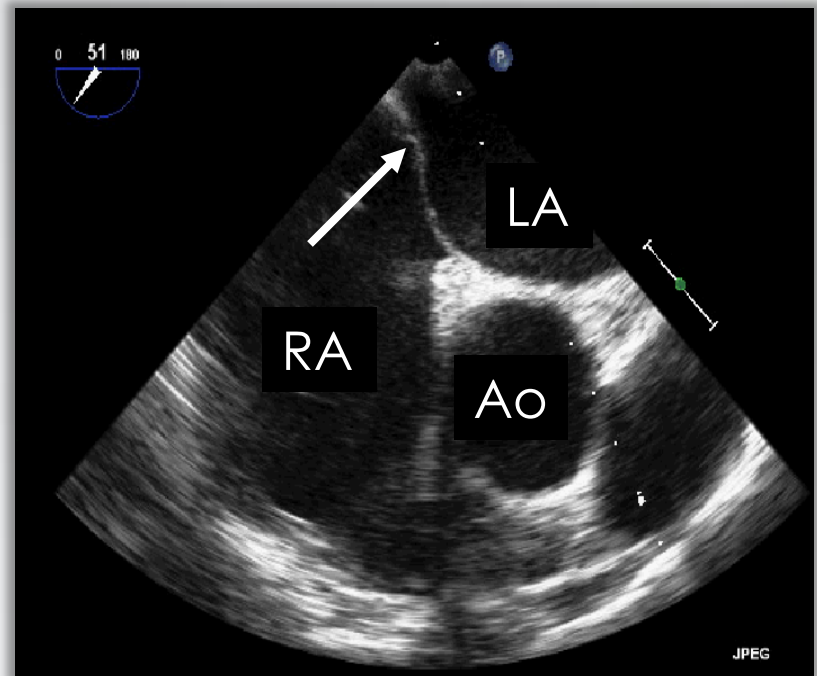
***“During Transseptal Puncture,
TEE is essential.”***

Use of TEE for Transseptal puncture

Bicaval view (90 to 100°)



Short axis view (35 to 50°)



Reasons to Use TEE Guidance

- Safety prior to puncture to confirm location.
- Preciseness of puncture location (important in LAA Occlusive devices, MitraClip).
- Early identification of complications.

Case presentation

Patient: 85-year-old man

Clinical Presentation:

Shortness of breath (NYHA functional class III)

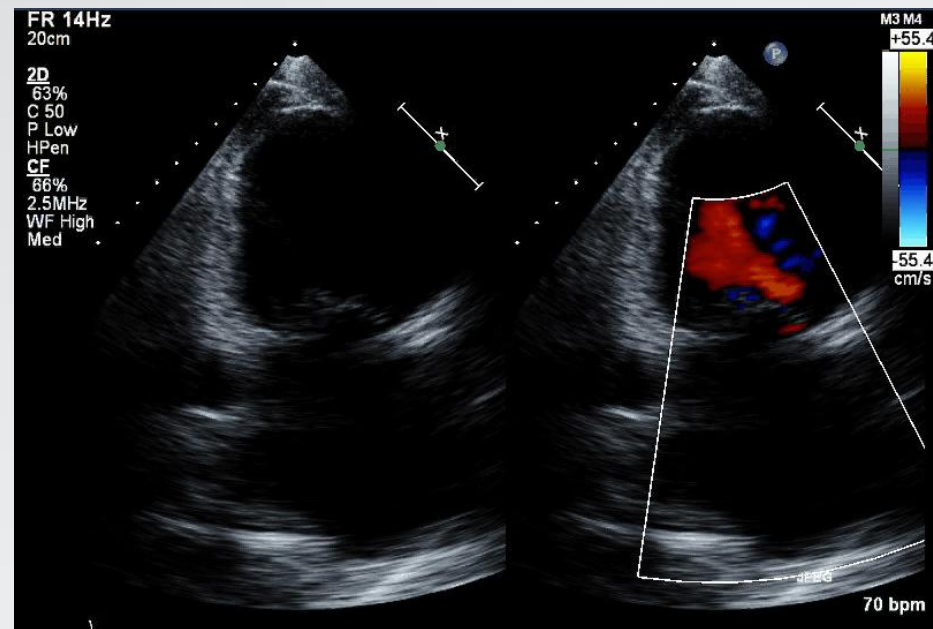
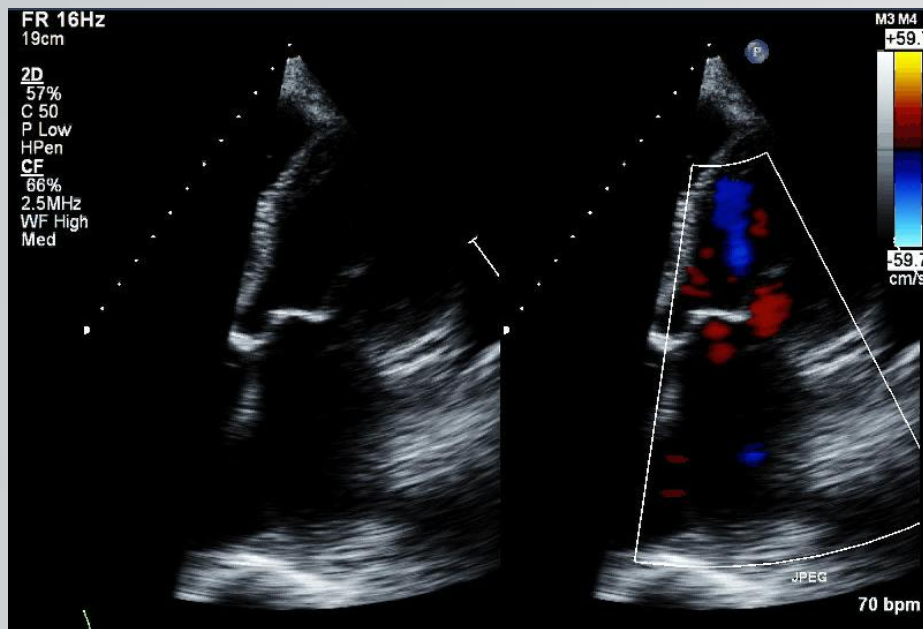
Past Medical History:

- ✓ Coronary artery disease (s.p. PCI for LAD & RCA)
- ✓ Peripheral artery disease
- ✓ Hypertension
- ✓ Paroxysmal atrial fibrillation
- ✓ Sick sinus syndrome (s.p. pacemaker implantation)

STS score: 11.9%

Baseline TTE

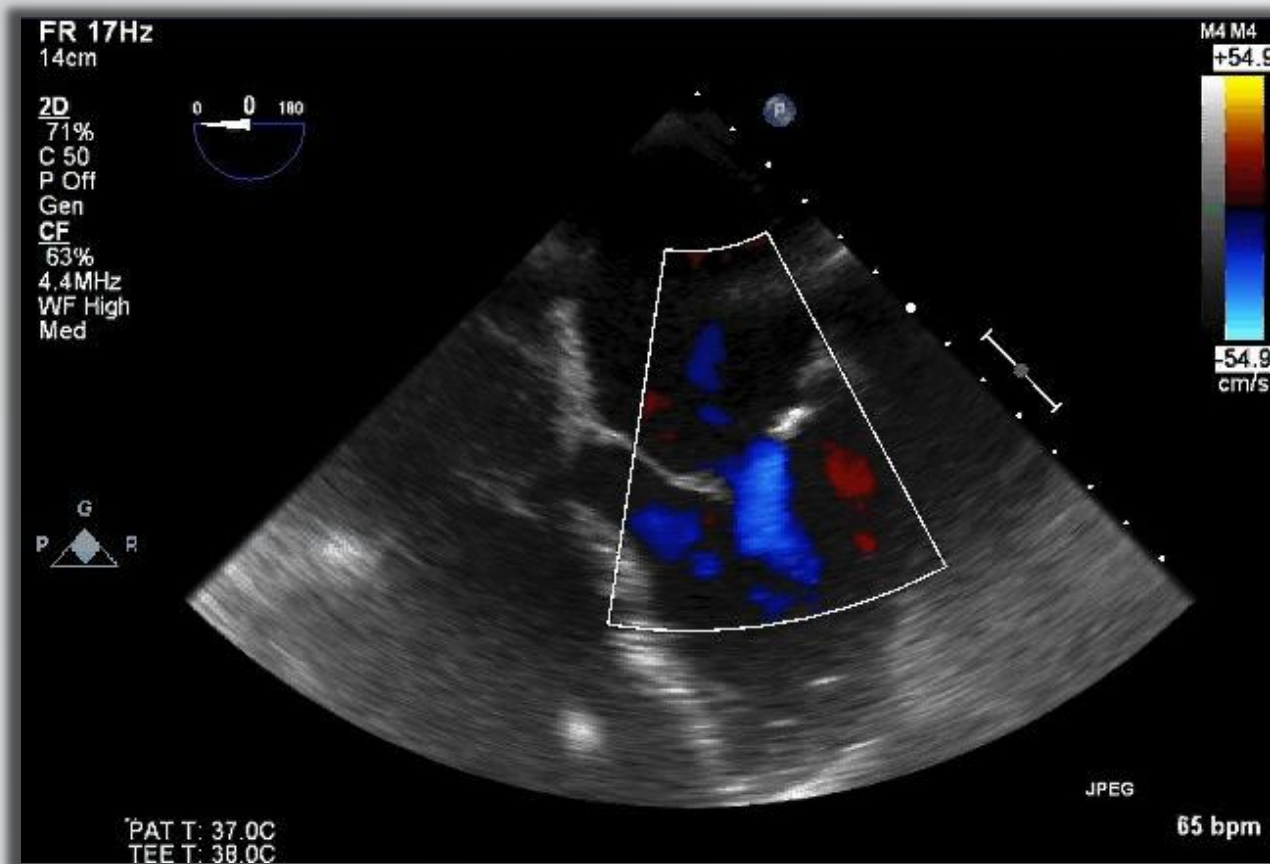
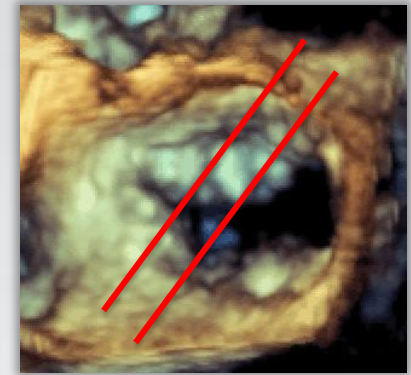
- 4ch & 2ch view -



- ✓ LVID d/s = 5.0/3.8 cm, LVEF = 54%
- ✓ LA diameter = 5.3 cm, LA area = 43.9 cm²
- ✓ EROA = 0.43 cm²
- ✓ Systolic PA pressure = 35.0 mmHg

Baseline TEE

- 4ch view -



Procedural Strategy

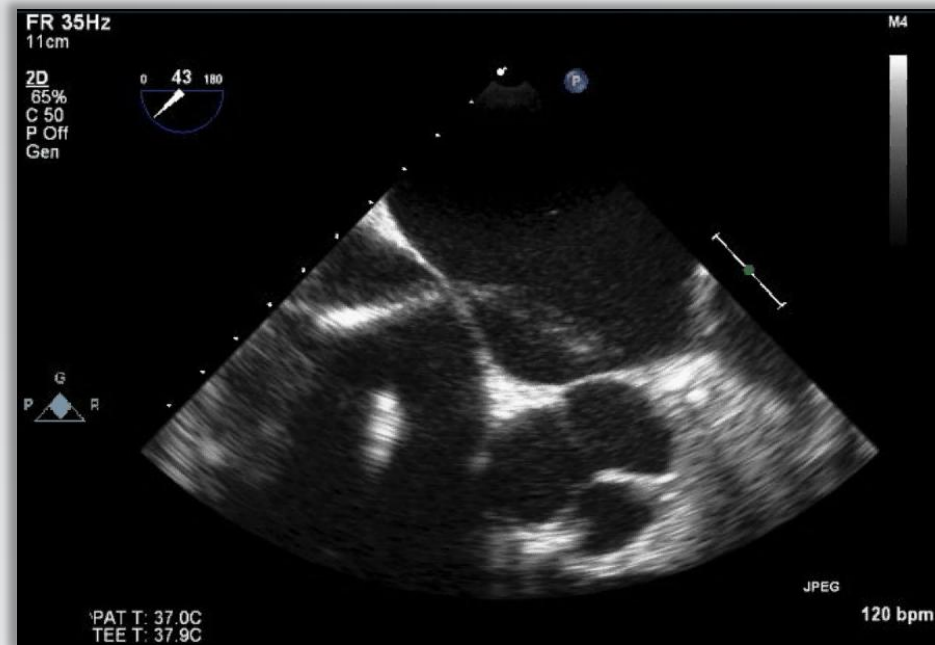
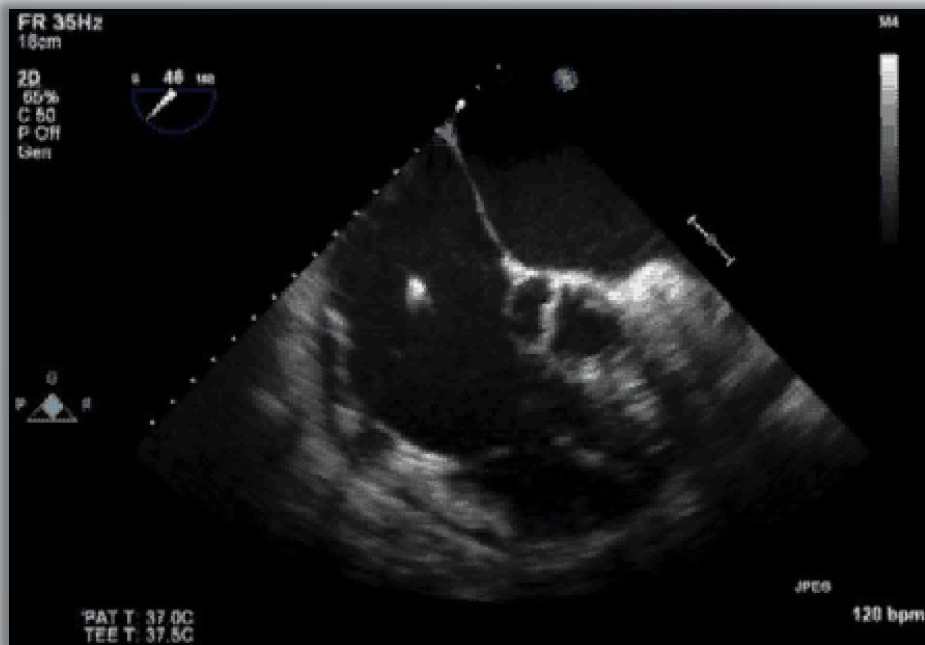
Percutaneous mitral valve repair with the MitraClip system

Clinical Indication

Severe functional MR with NYHA class III

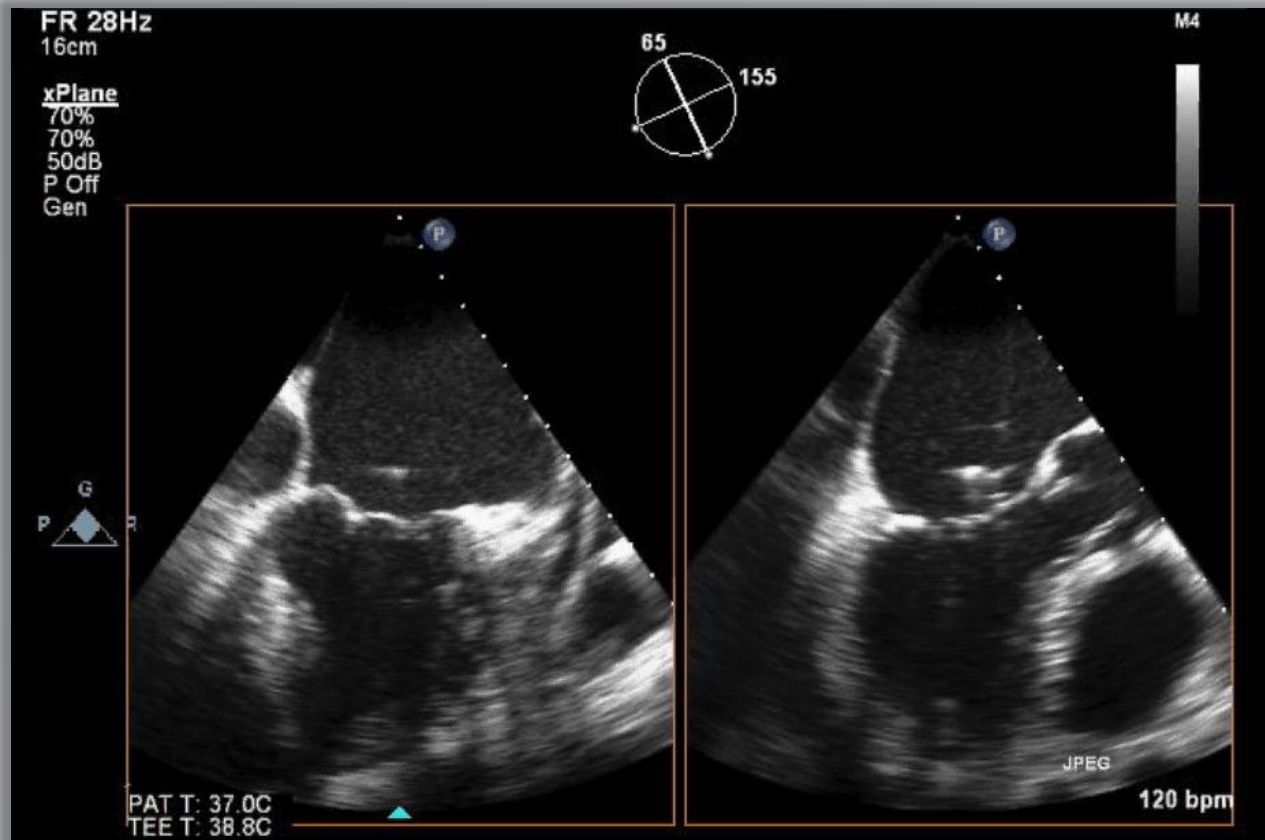
MitraClip procedure

- Transseptal puncture -



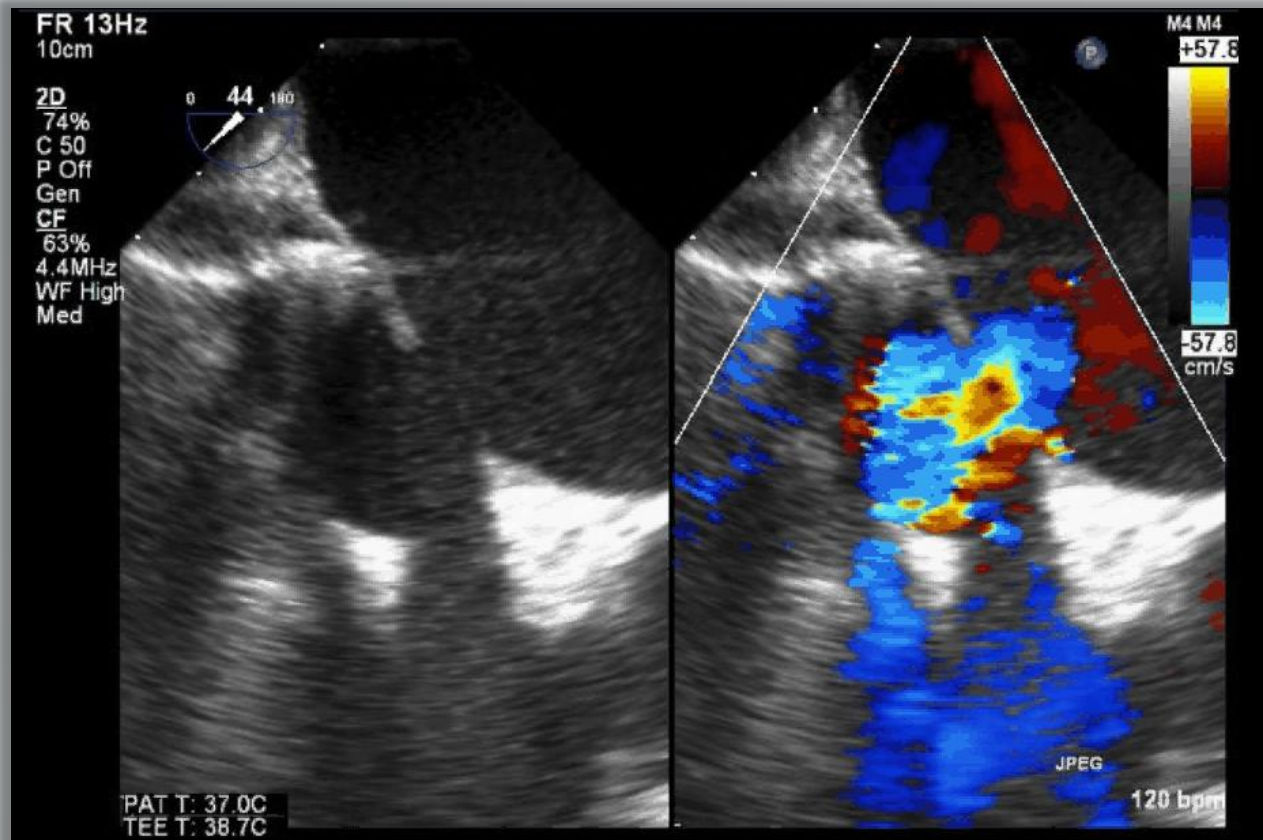
MitraClip procedure

- Lost height above mitral valve -



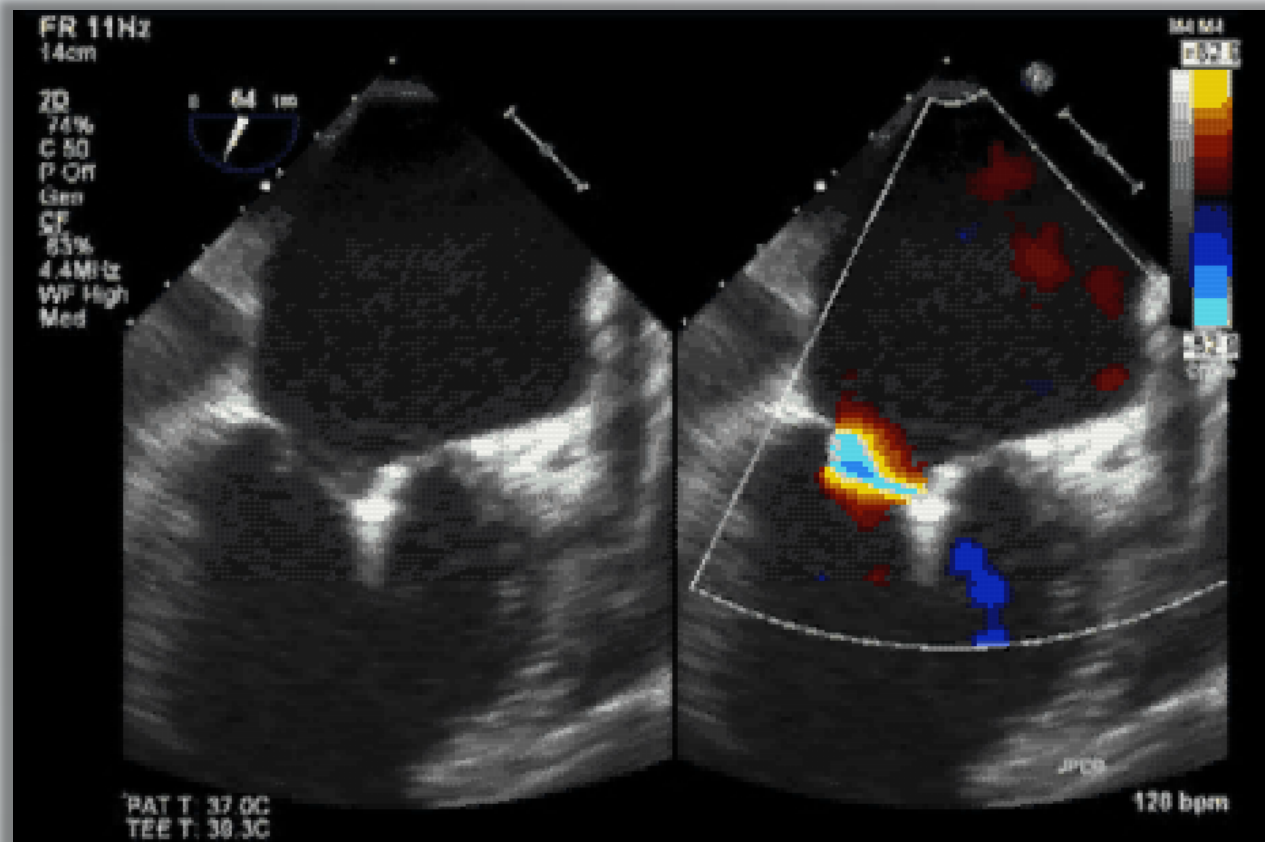
MitraClip procedure

- Atrial septum tear -



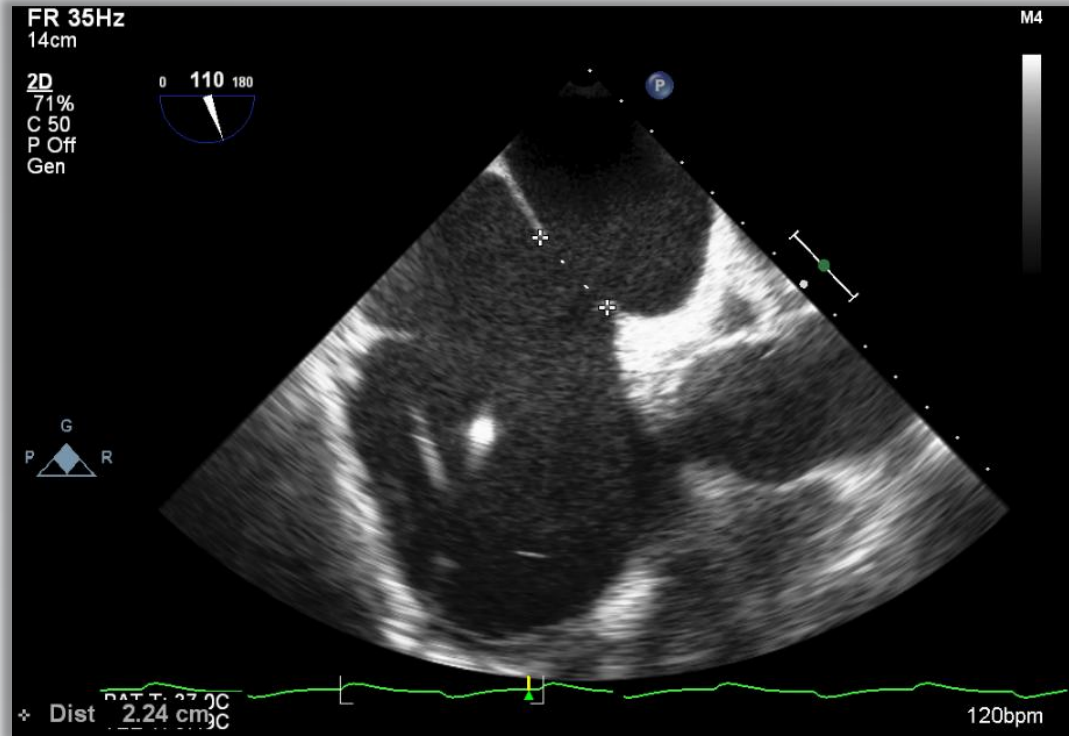
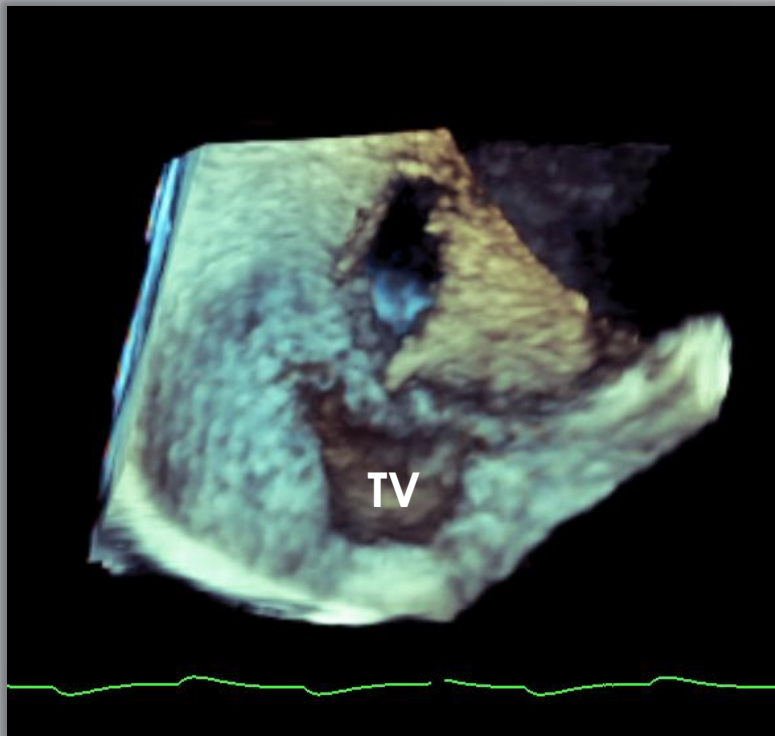
MitraClip procedure

- Clip deployment -



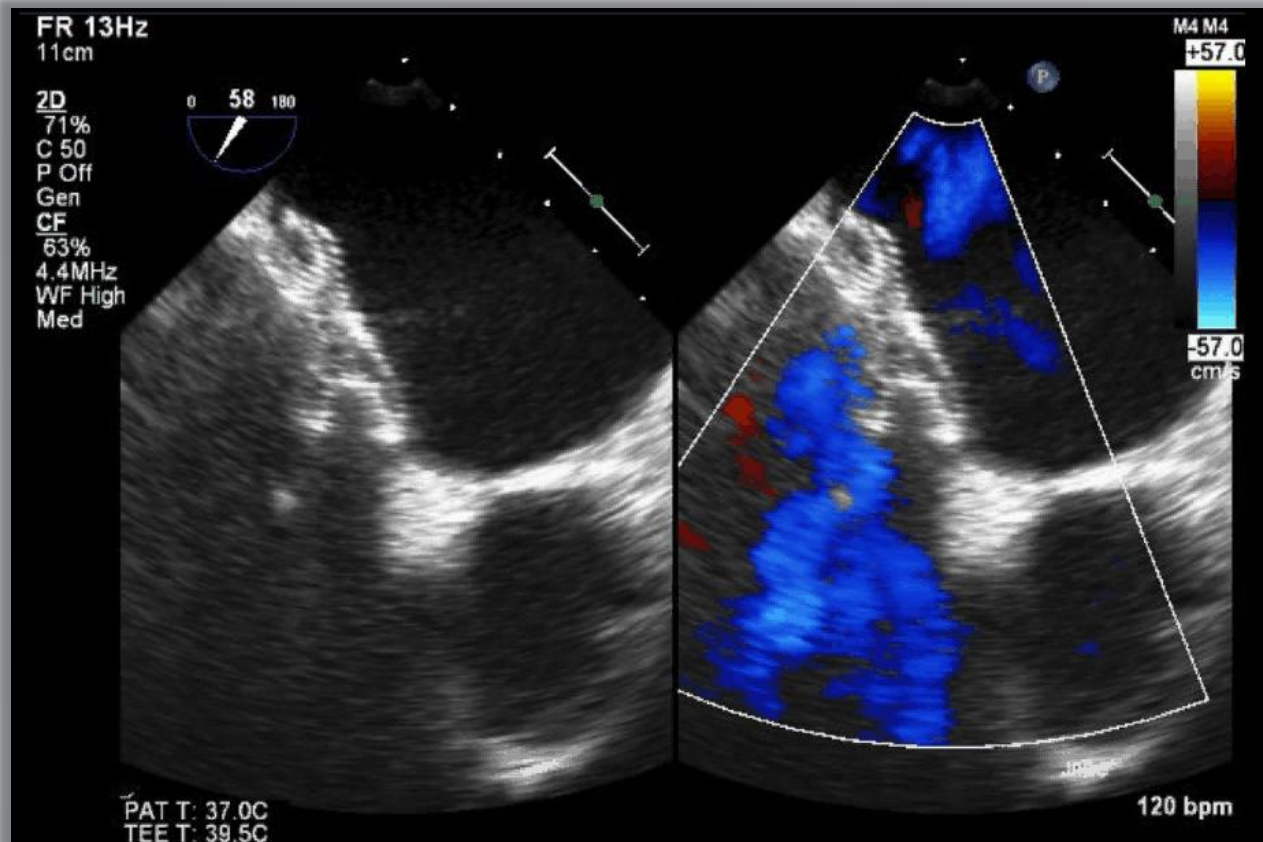
MitraClip procedure

- Atrial septum tear -



MitraClip procedure

- Atrial septum tear closure -



Iatrogenic ASD

- Which defects should we close? -

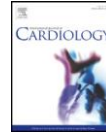
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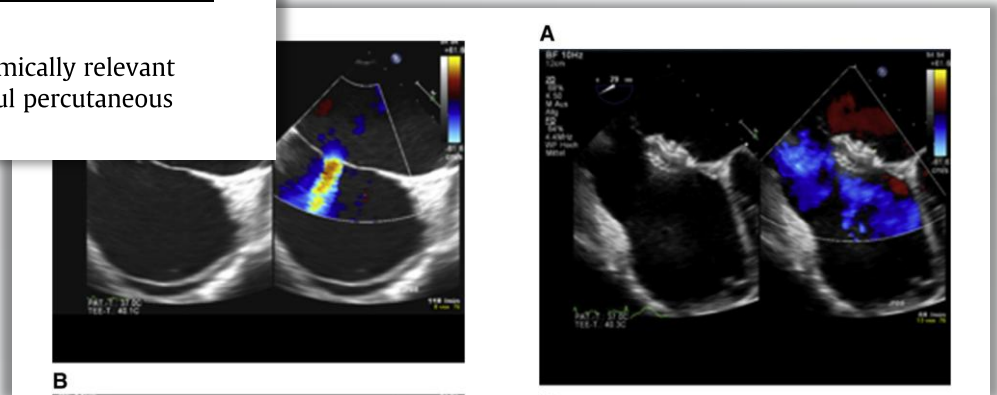
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Letter to the Editor

Postinterventional iatrogenic atrial septal defect with hemodynamically relevant left-to-right and right-to-left shunt as a complication of successful percutaneous mitral valve repair with the MitraClip[☆]

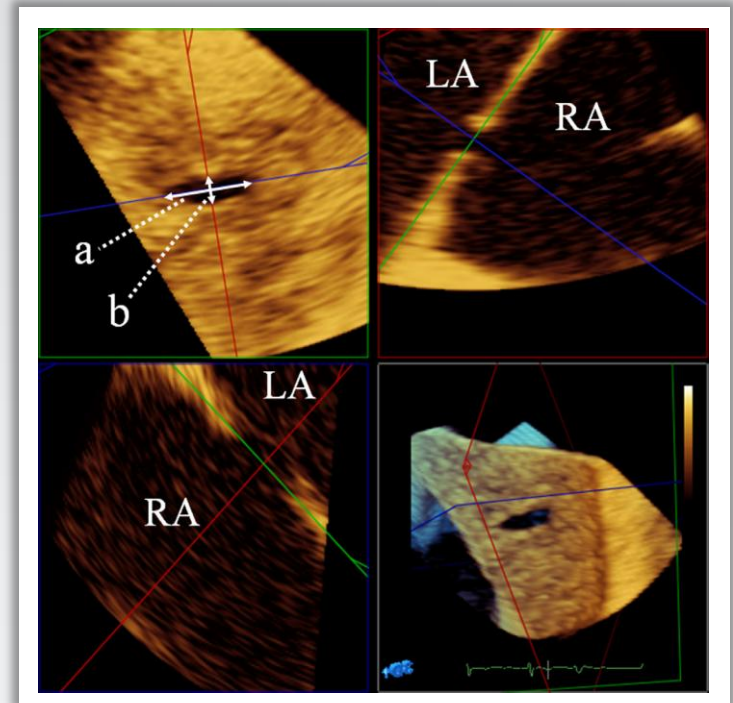
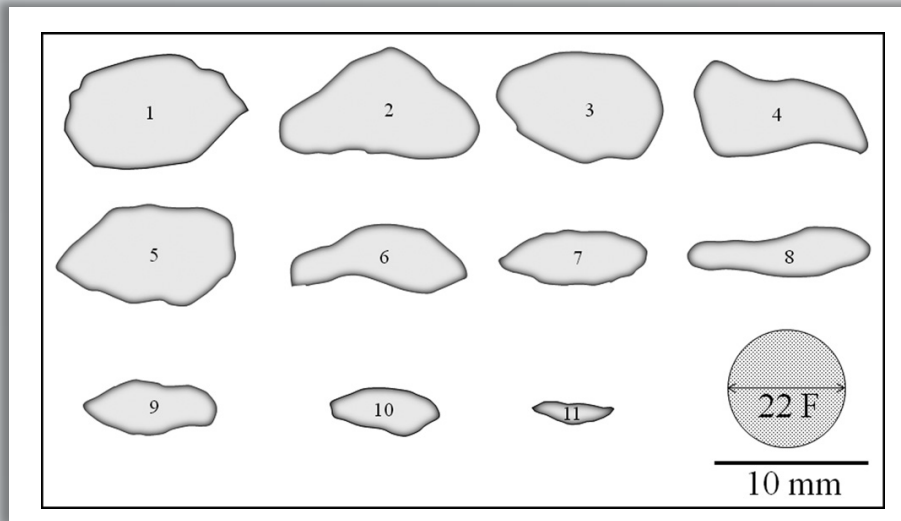


Defects, which cause hemodynamic deterioration, should be closed in the index procedure

- ✓ Large ASD or tear causing hypotension
- ✓ Right to left shunt causing hypoxia

Iatrogenic ASD

- Variety of shapes -



3D echocardiogram is helpful for accurate measurement of the defect and selection of device size.

Take home message

- TEE guide is mandatory when guide catheter of the MitraClip system is advanced into LA.
 - The guide catheter is bulky, therefore it is difficult to feel resistance of atrial septum.
- Hemodynamically significant defect needs to be closed in the indexed procedure.
- Iatrogenic ASDs, including a tear, can be treated with percutaneous technique.
 - Selection of device size is important
 - Balloon sizing is not recommended

Conclusions

- Transseptal puncture is one of the most important critical steps of transfemoral transseptal intervention.
- Safe and appropriate access into LA ensures success and reduces the time of the procedure.