TEER: Challenging Case in Korea

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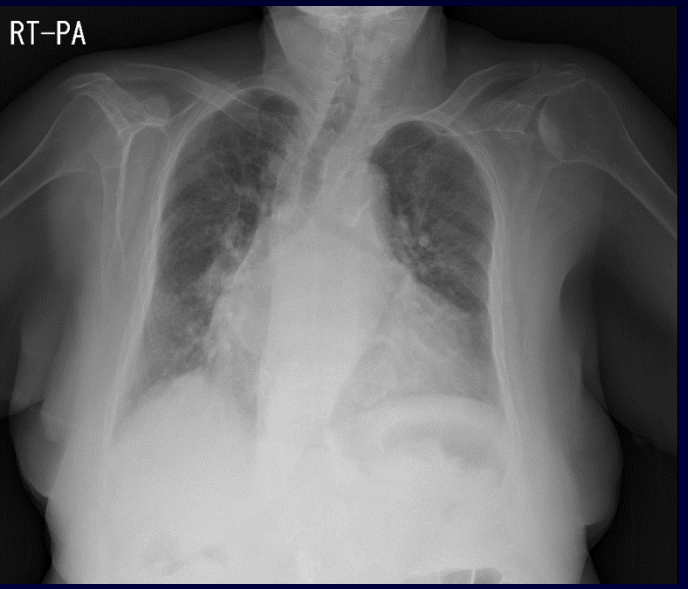
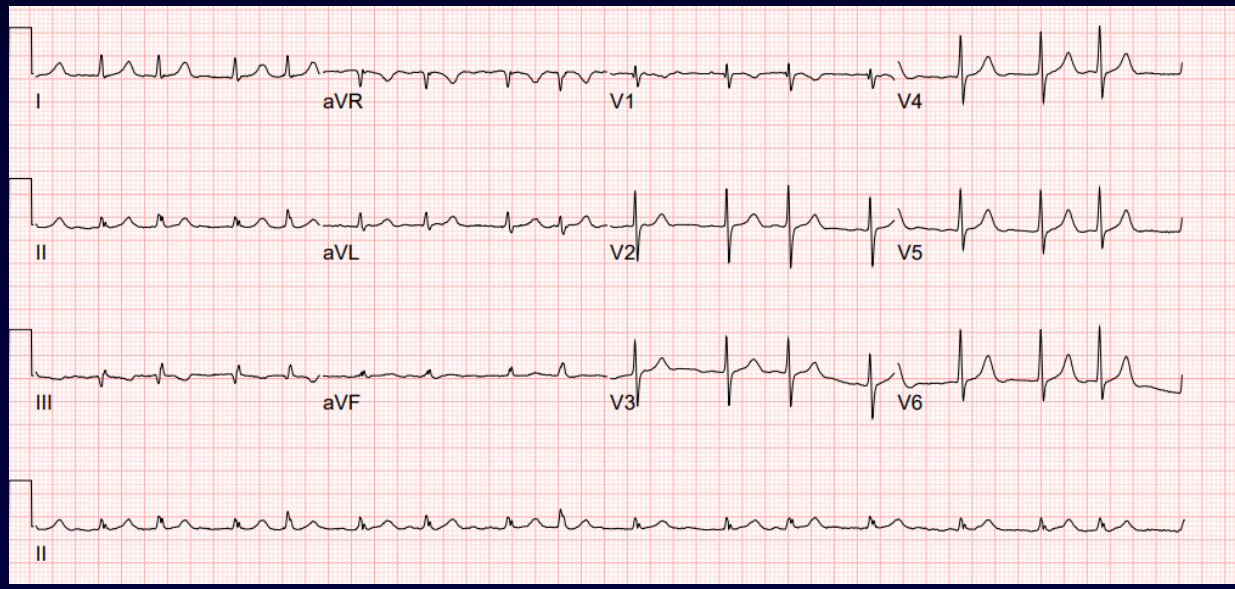
Case. 90 YO female with dyspnea

- Recurrent hospitalization within 1 month d/t decompensated HF
- Height: 146cm, Weight: 68kg, BP: 100/64mmHg, HR: 90bpm
- Past history

  : Persistent atrial fibrillation, Chronic kidney disease (eGFR 43 ml/min/1.73m2)
- Medication: Sacubitril/Vasalrtan 50mg bid, Torasemide 5mg, Spironolactone 12.5mg, dilatred 6.25mg, Edoxaban 15mg





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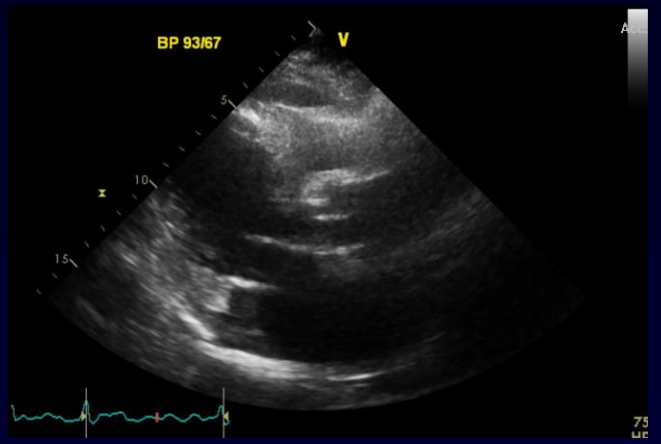
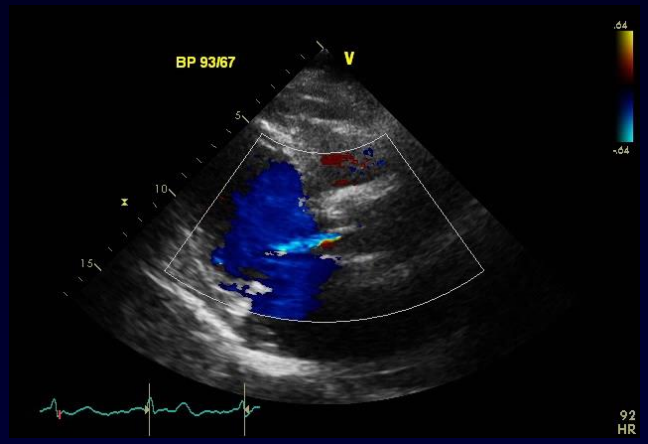
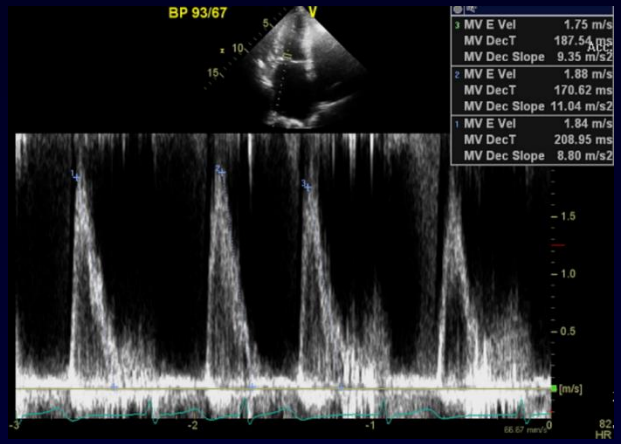
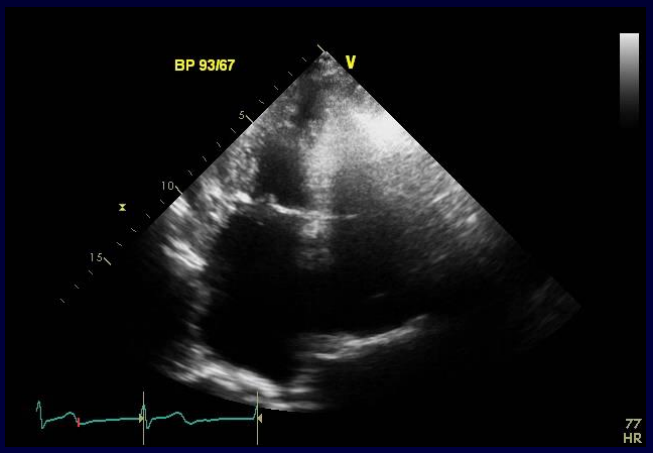
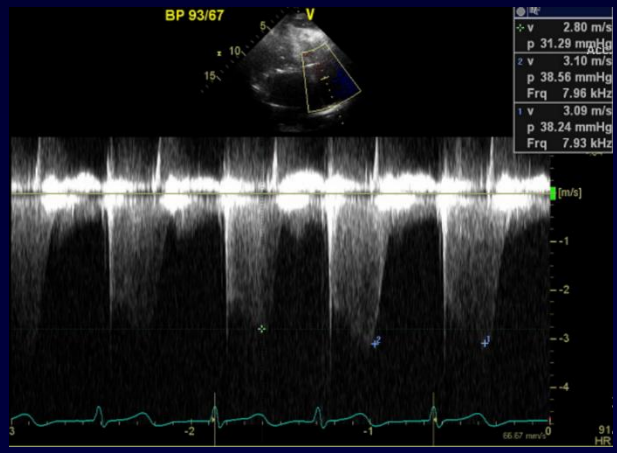




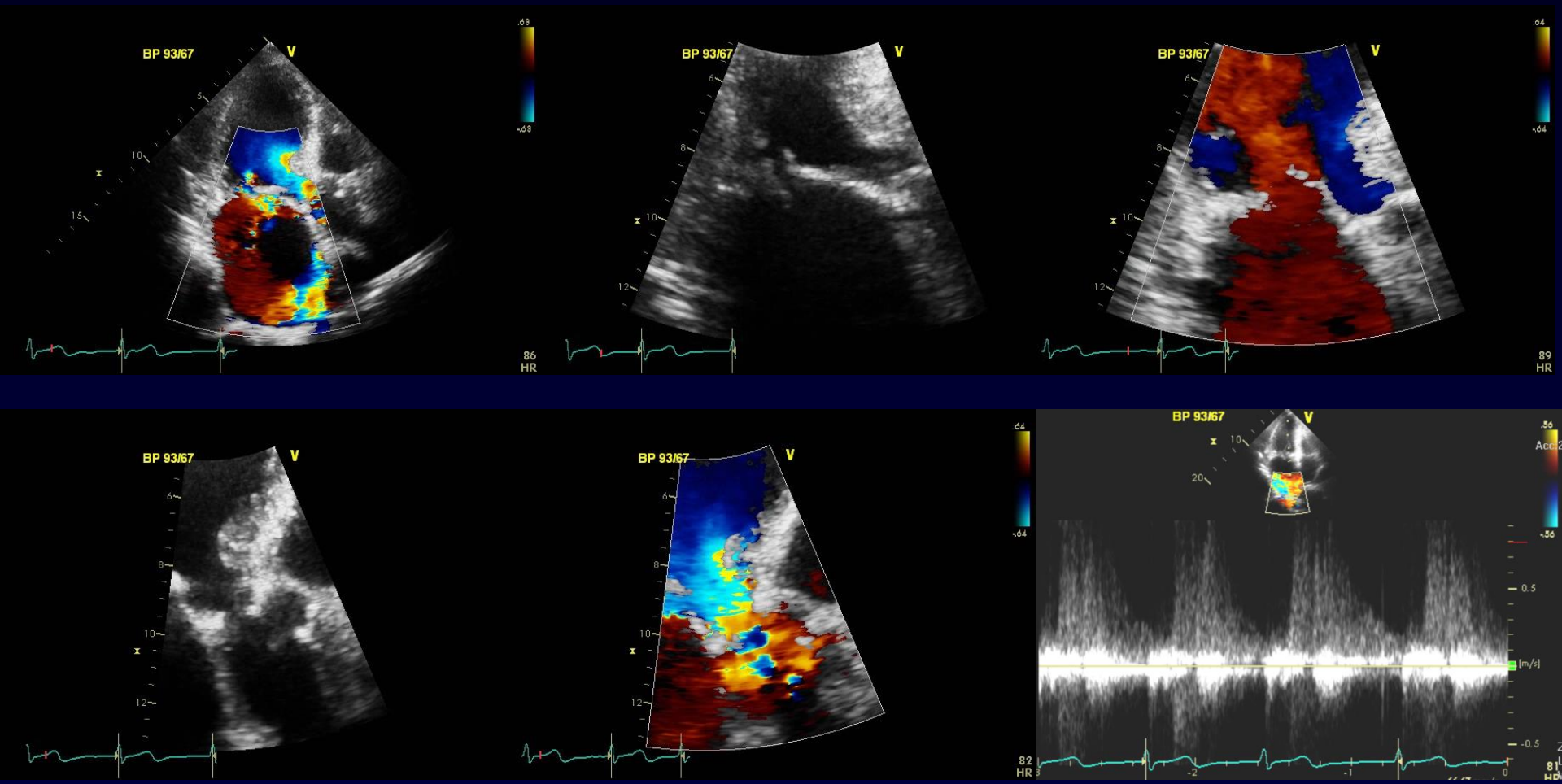






EF: 67%, LVEDD/ESD: 58/38mm,
LAVI: 100.8ml/m2, E/e': 34, RVSP: 43mmHg

TTE



Severe MR with PML prolapse
Degenerative change of AV with moderate AR

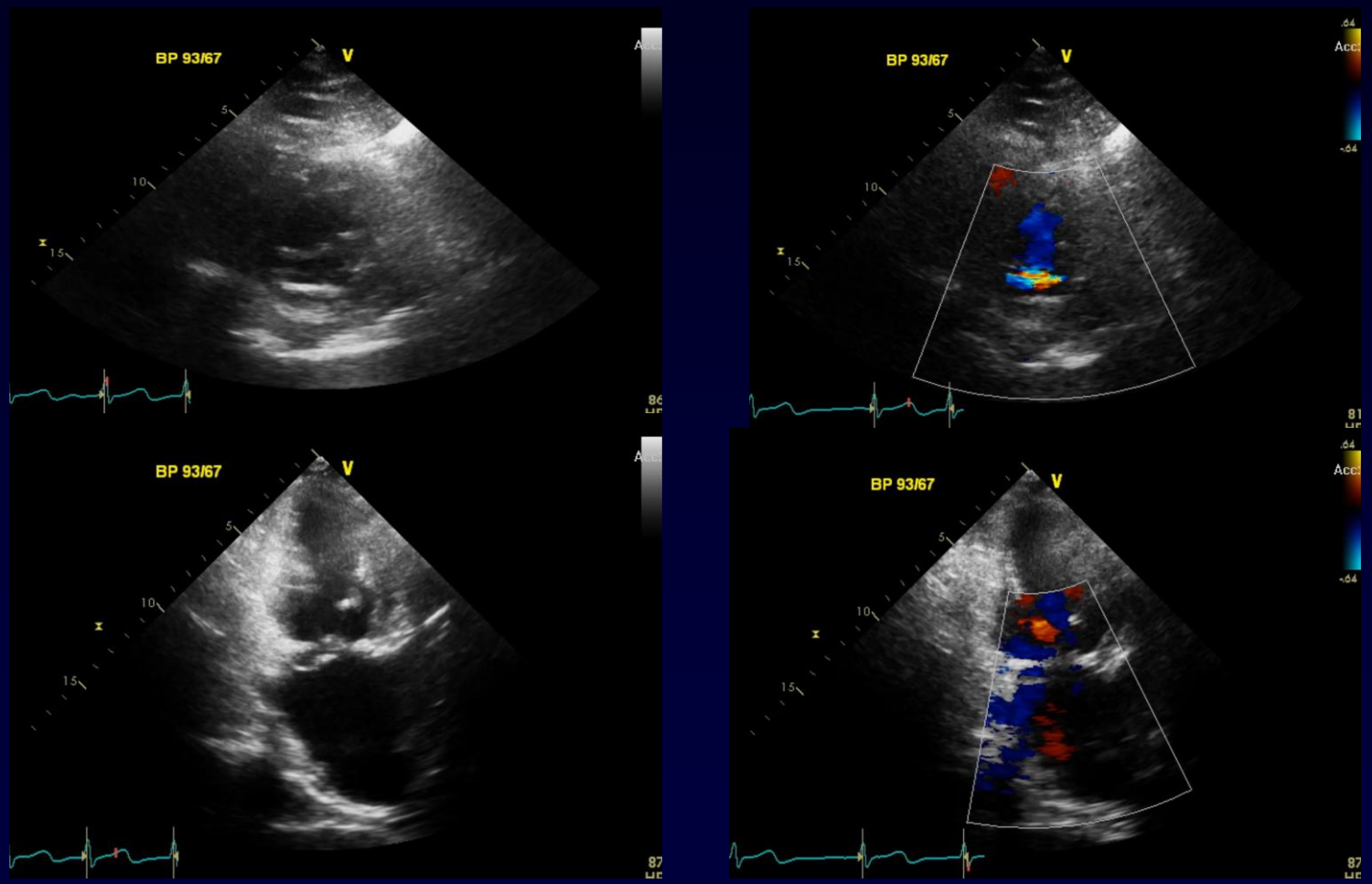
Case. 90 YO female with dyspnea

- **Current diagnosis**
  - Severe primary MR with high surgical risk (STS score: 18.4%)
  - Decompensated HF with preserved EF
  - Persistent atrial fibrillation
  - Chronic kidney disease, stage III
- **Treatment plan?**
  - Decompensated HF in old age women

    → Very old age with high surgical risk: MV repair / replacement

- **Transcatheter Mitral edge to edge repair with volume control**

TTE



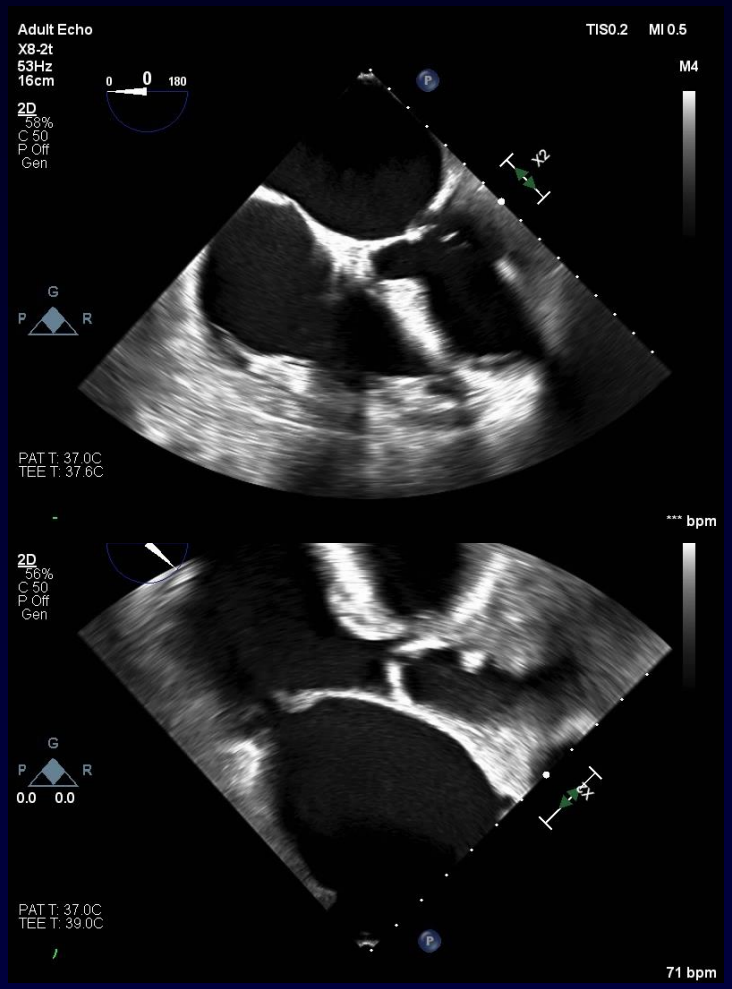
Poor TTE window, Mitral annular calcification

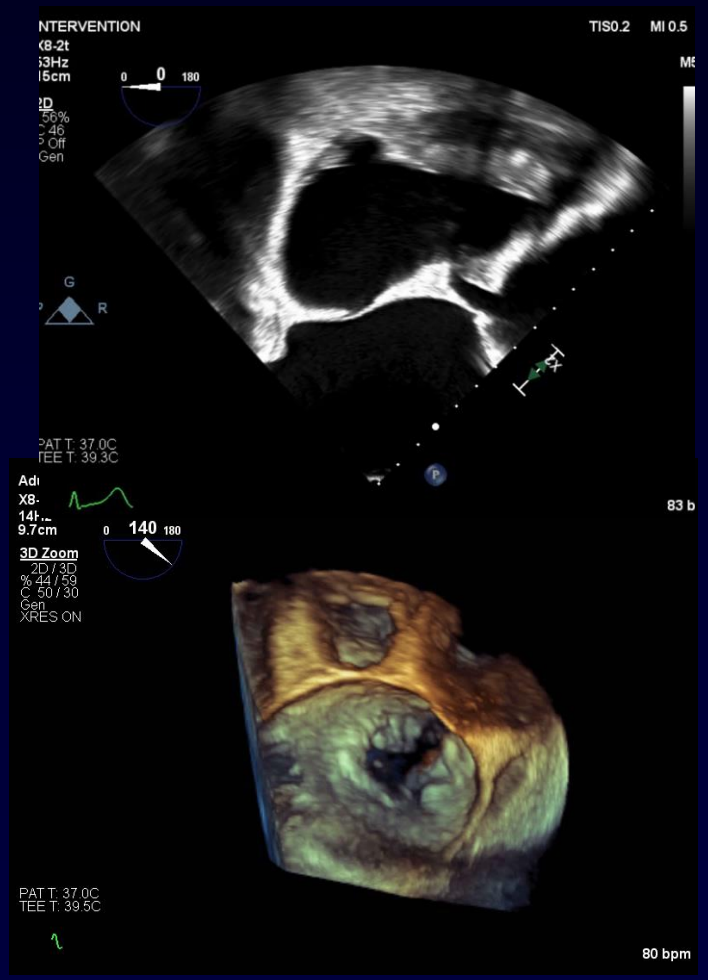
→ Feasible morphology for MitraClip?

TEE for planning MitraClip, but….

- Failed TEE because of short neck, obesity, and poor cooperation

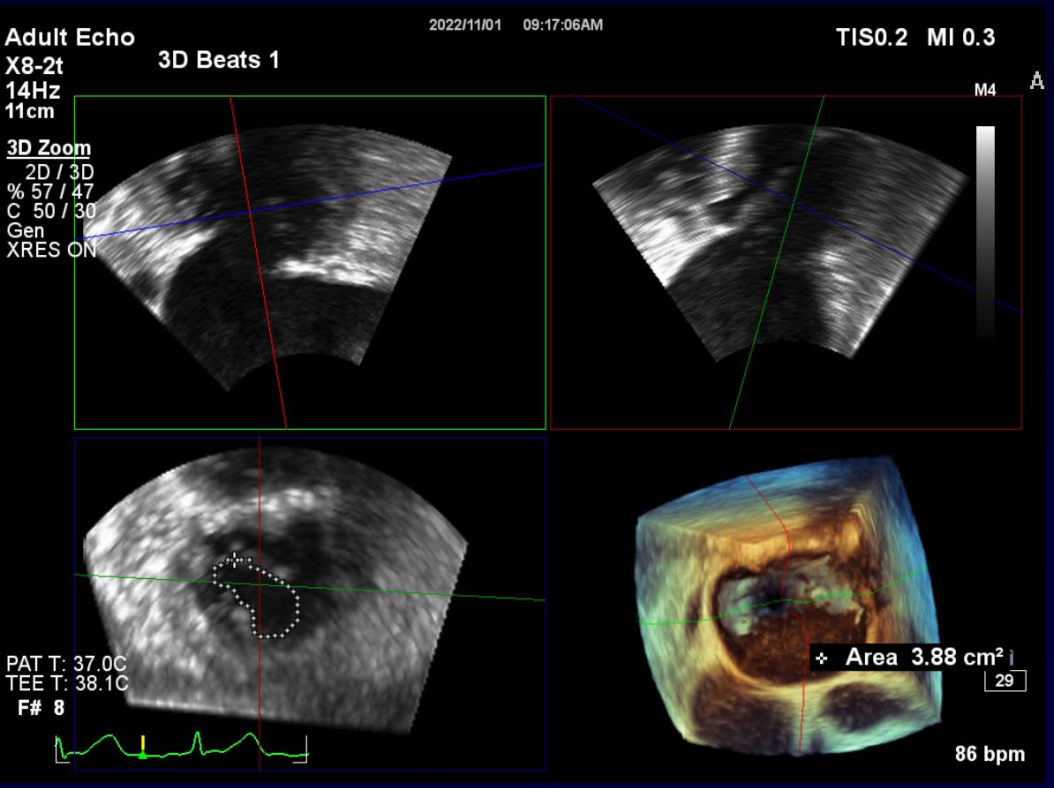
Intraprocedural TEE

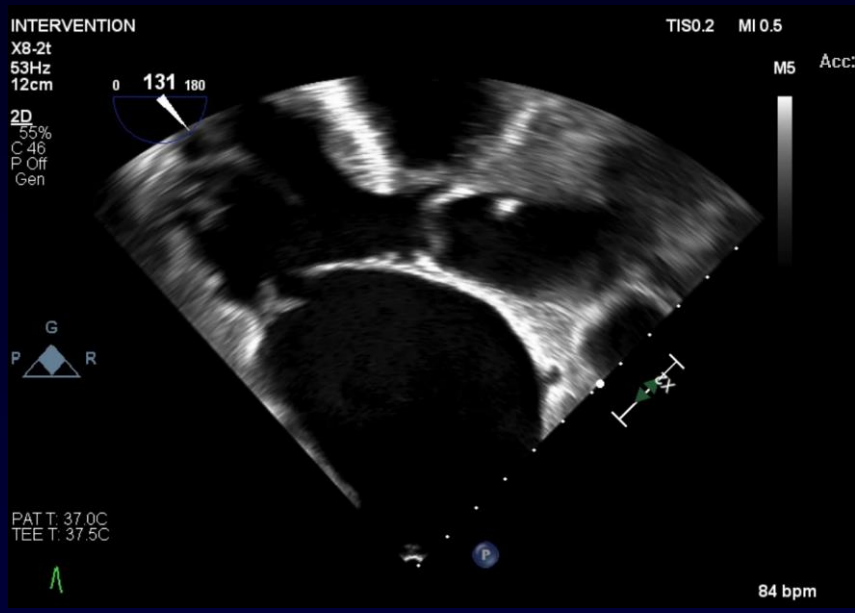




Severe MAC, small MVA, Large flail gap..
Small fossa ovalis, Lipomatous IAS hypertrophy

Intraprocedural TEE





- **Small MVA area (3.3-3.8cm^2)**
- **Relatively short PML (10mm)**
- **Large flail gap (12mm)**

→ Challenging case for MitraClip

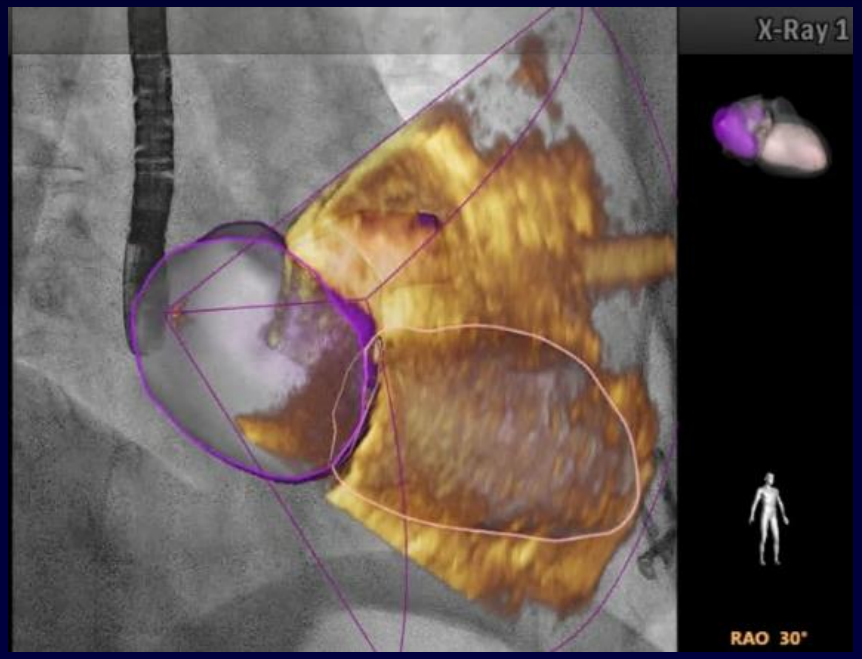
Next Plan?

- Decompensated HFpEF with Severe primary MR
- High surgical risk
- Unsuitable pre-procedural evaluation
- Challenging MV morphology
  - Small MVA:

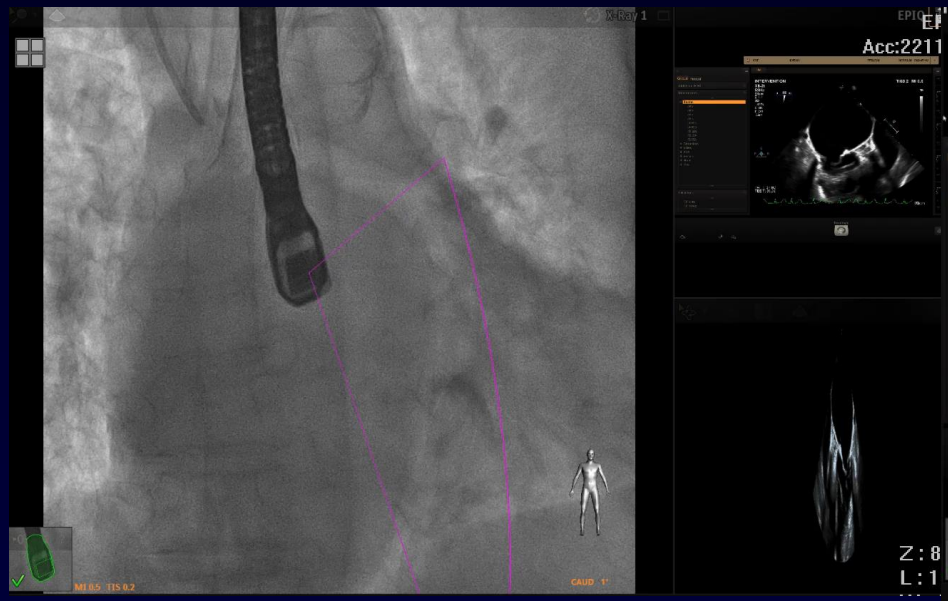
    Only one chance for Clip!!
  - Shortened PML, large flail gap,

    Mitral annular calcification
- The patient was already

  under general anesthesia…
- To Clip or not to Clip??



MitraClip with EchoNavigator



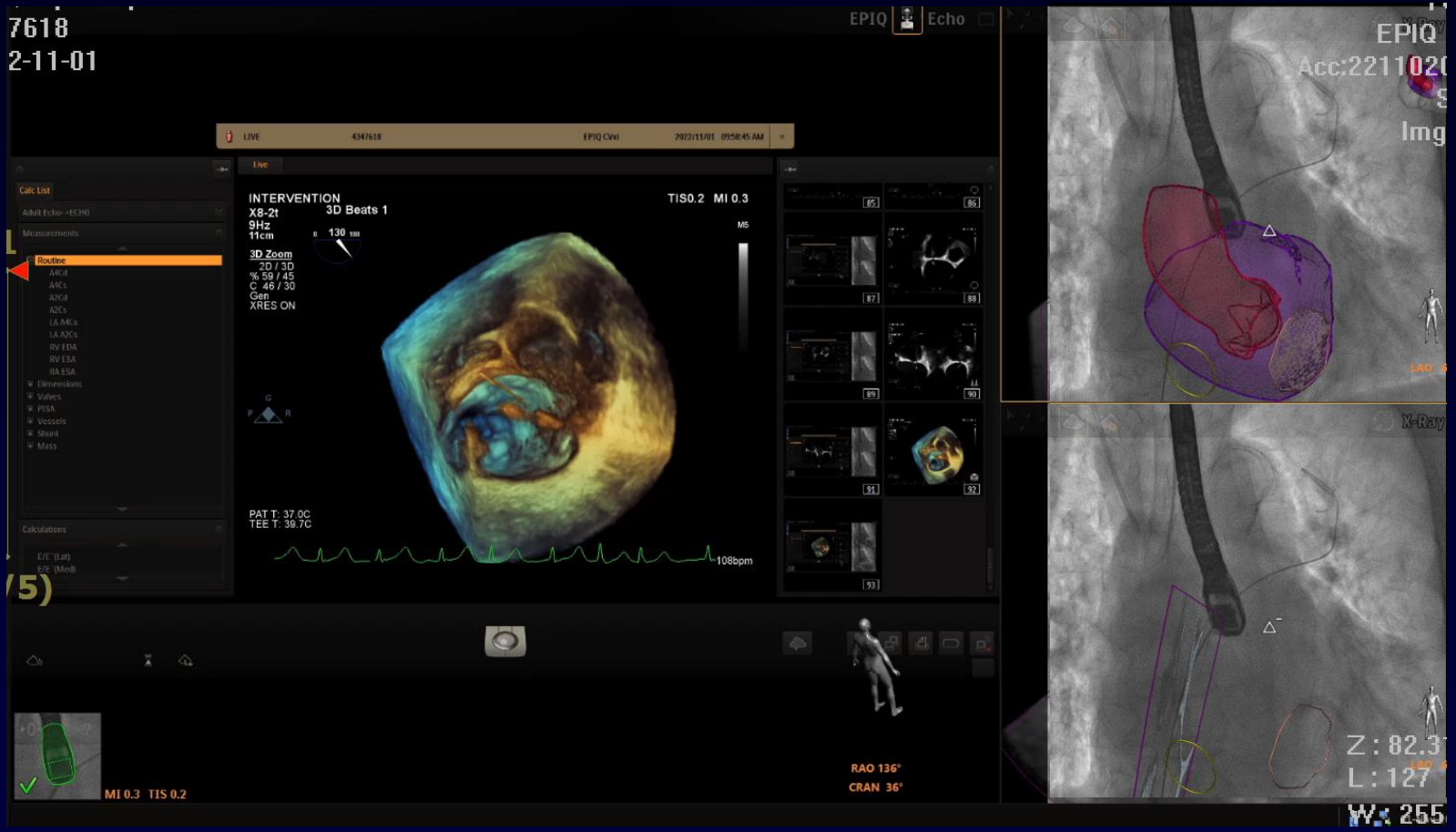
Baseline alignment between fluoroscope and TEE image

EchoNavigator guided interatrial septal puncture

MitraClip with EchoNavigator

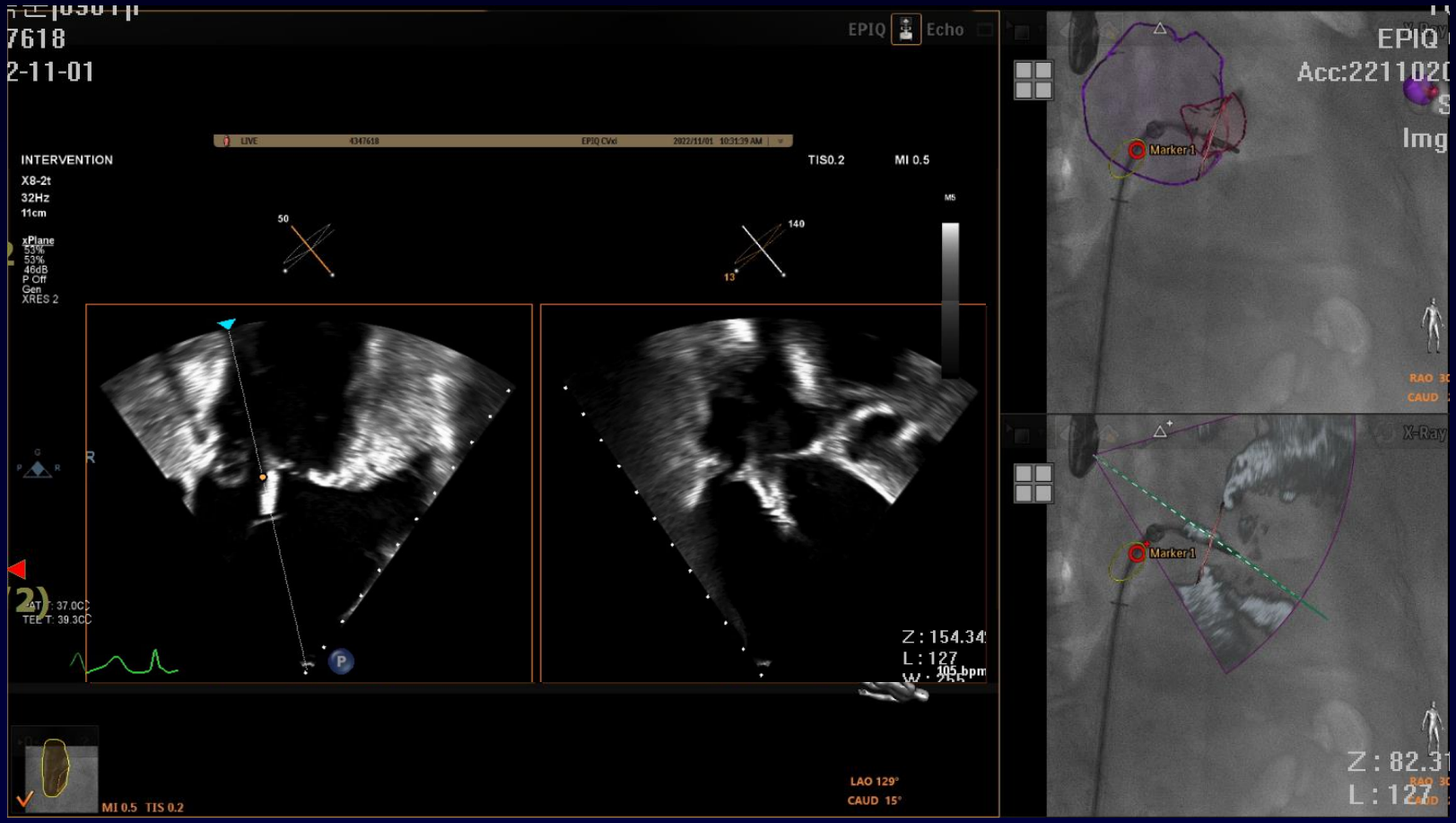
Successful septal puncture under EchoNavigator guidance

MitraClip with EchoNavigator



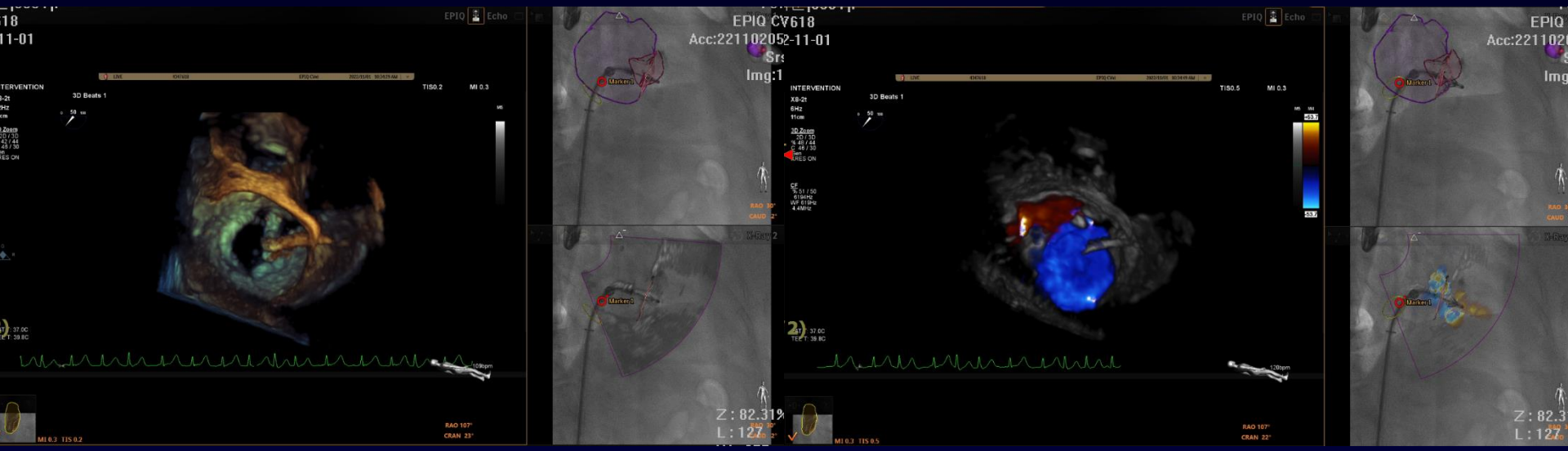
Planning procedure by EchoNavigator

MitraClip with EchoNavigator



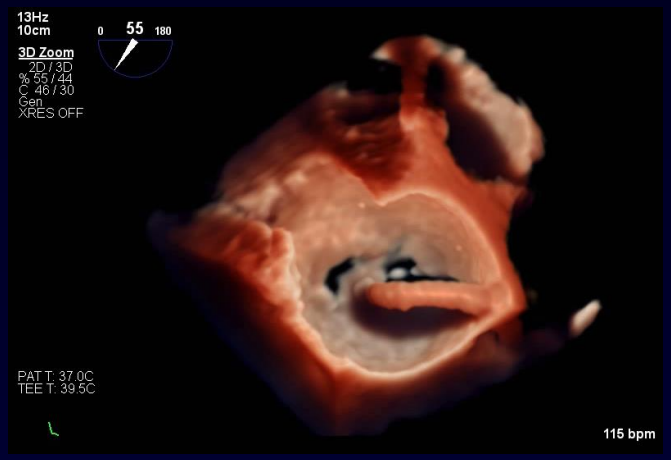
MitraClip procedure under EchoNavigator guidance

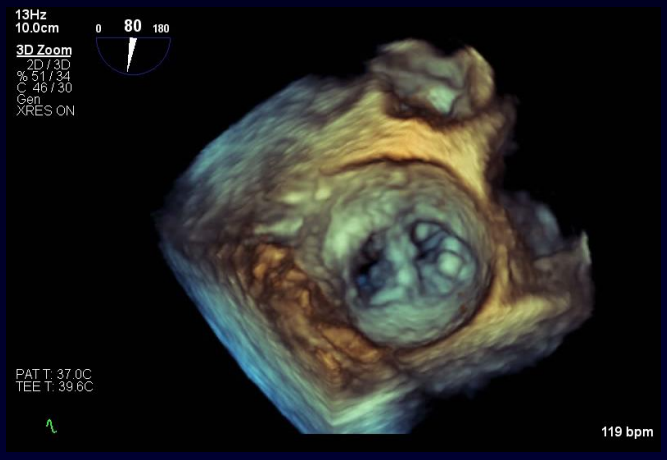
MitraClip with EchoNavigator

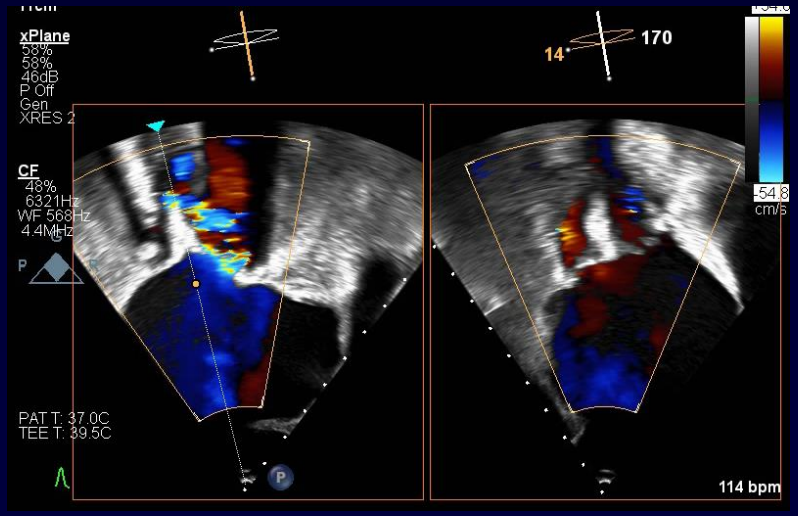


Fusion of 3D TEE + Fluoroscopy + Color image by EchoNavigator

Final image


13Hz
10cm
0 55 180
3D Zoom
2D / 3D
% 55 / 44
C 46 / 30
Gen
XRES OFF
PAT T: 37.0C
TEE T: 39.5C
115 bpm

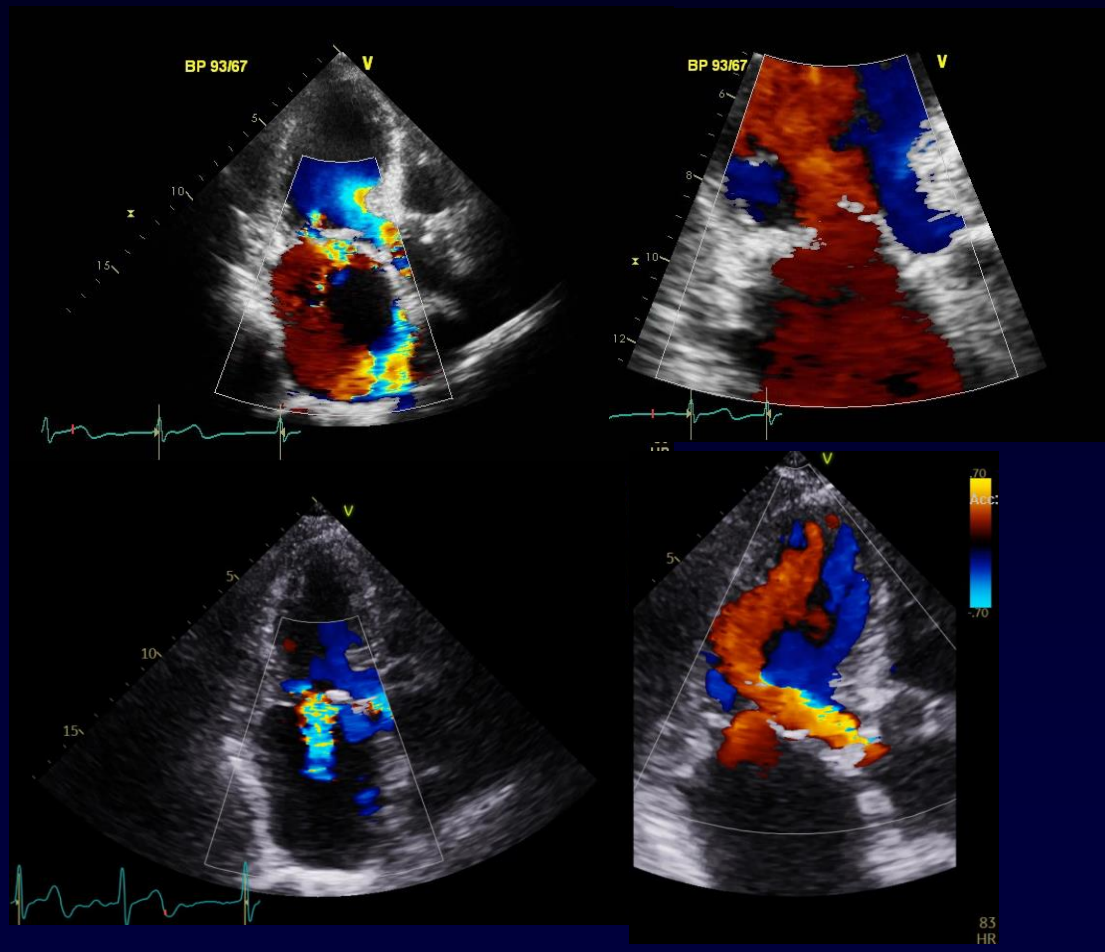

13Hz
10.0cm
0 80 180
3D Zoom
2D / 3D
% 51 / 34
C 46 / 30
Gen
XRES ON
PAT T: 37.0C
TEE T: 39.6C
119 bpm

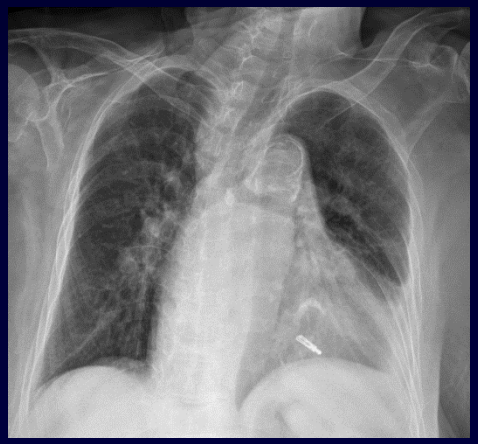

xPlane
58%
58%
46dB
P Off
Gen
XRES 2
CF
48%
632 1Hz
WF 568Hz
4.4MHz
14
170
54.8
cm/s
PAT T: 37.0C
TEE T: 39.5C
114 bpm

Postprocedural TTE

Pre-Clip

Post Clip





Current Trend of SHD Intervention

- Rapid developing
- Complex
- Expensive
- Dependent on imaging guidance

Current Trend of Interventional Imaging

- Less-invasive
- Simple / Easy
- Fusion / Hybrid
- Intuitive / Realistic

Interventional Imaging: Beyond Conventional Echo

- **Advanced 3D TEE Imaging**

  - MPR

  - Advanced photo realistic 3D rendering capabilities

- **3D, 4D ICE technology**
- **Echo-Hologram**
- **Echo-Fluoroscopic fusion**


CAUTION - Investigational device. Limited by Federal (or United States) law to investigational use
Demo
System
Help
PHILIPS
Select Layout
Select View
Free 1
Free 2
C-arm
Echo
Model
Annotation
Annotations
Tissues
Name
Marker 1
Aortic Valve
Mitral Valve
LAA Os
LAA Crista
Fossa Ovalis
LSPV Os
LV Apex
Show Names
X-Ray 2
X-Ray 1
CRAN 2°
LAO 42°
CRAN 2°
LAO 42°
Courtesy Dr Biaggi & Dr Corti Herz Klinik Hirslanden Zurich
Recording ... (00:05:18 | 01:00:00)

Successful intervention for SHD

Imaging Specialist

Interventionist

Communication

ART !!!

Fusion

Suitable Imaging