

Mitral Regurgitation - Different Approaches to the Same Problem

Dr. Anthony Yiu-tung Wong

Associate Consultant

Honorary Clinical Assistant Professor

Queen Mary Hospital

The University of Hong Kong



瑪麗醫院
Queen Mary Hospital



Disclosure

- Nothing to disclose

History

Case 1/

- M/70
- Paroxysmal AF on apixaban
- Hypertension, IHD with CABG 11/2/2015 (LIMA to mLAD, SVG to OM1, SVG to PL)
- Renal impairment with Cr 250
- NYHA II
- Severe Mitral Regurgitation secondary to P3 prolapse, LVEF 50%
- Recurrent GI Bleeding and Haemoptysis with CT showing lung nodules under evaluation

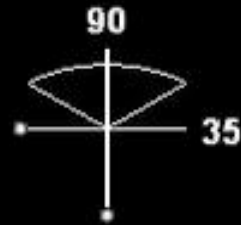
Heart Team Discussion

- HAD-BLED Score = 5
- CHA₂DS₂-VASc Score = 4
- EUROSCORE II = 9.34 (Logistic EUROSCORE 26.10)
- STS Score
 - Mortality = 6.13%
 - Mortality or Morbidity = 40.18%

- Left atrial appendage closure with 0 ml contrast
- Stage percutaneous mitral valve repair with MitraClip

FR 29Hz
12cm

xPlane
67%
67%
50dB
P Off
HGen



M4

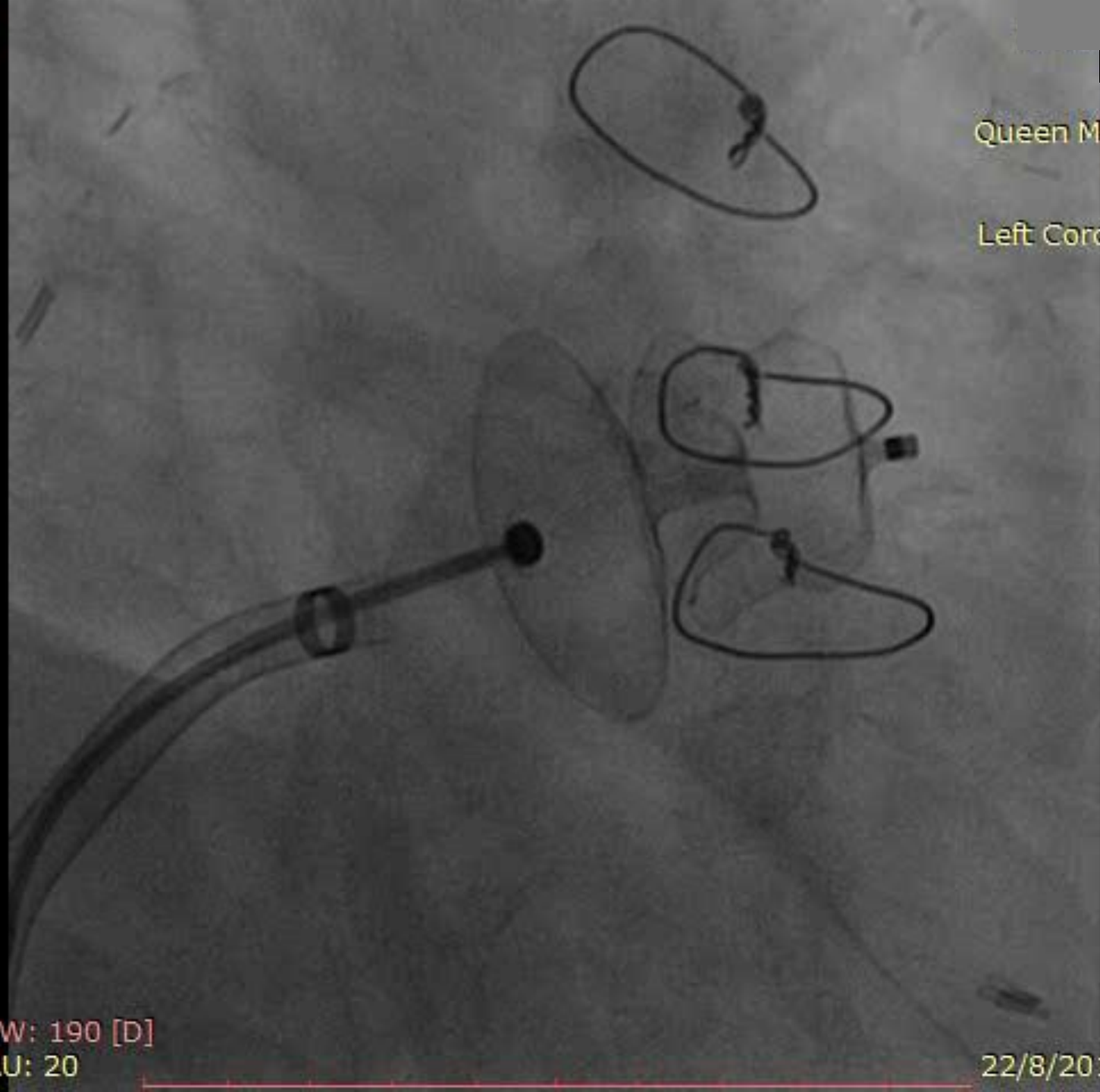


PAT T: 37.0C
TEE T: 39.3C

75 bpm

Im: 1/109
Se: 61

1/6/1949 M
Queen Mary Hospital
1089-2018
XA
Left Coronary 15 fps



WL: 129 WW: 190 [D]
RAO: 30 CAU: 20

22/8/2018 10:18:58

HN181157231

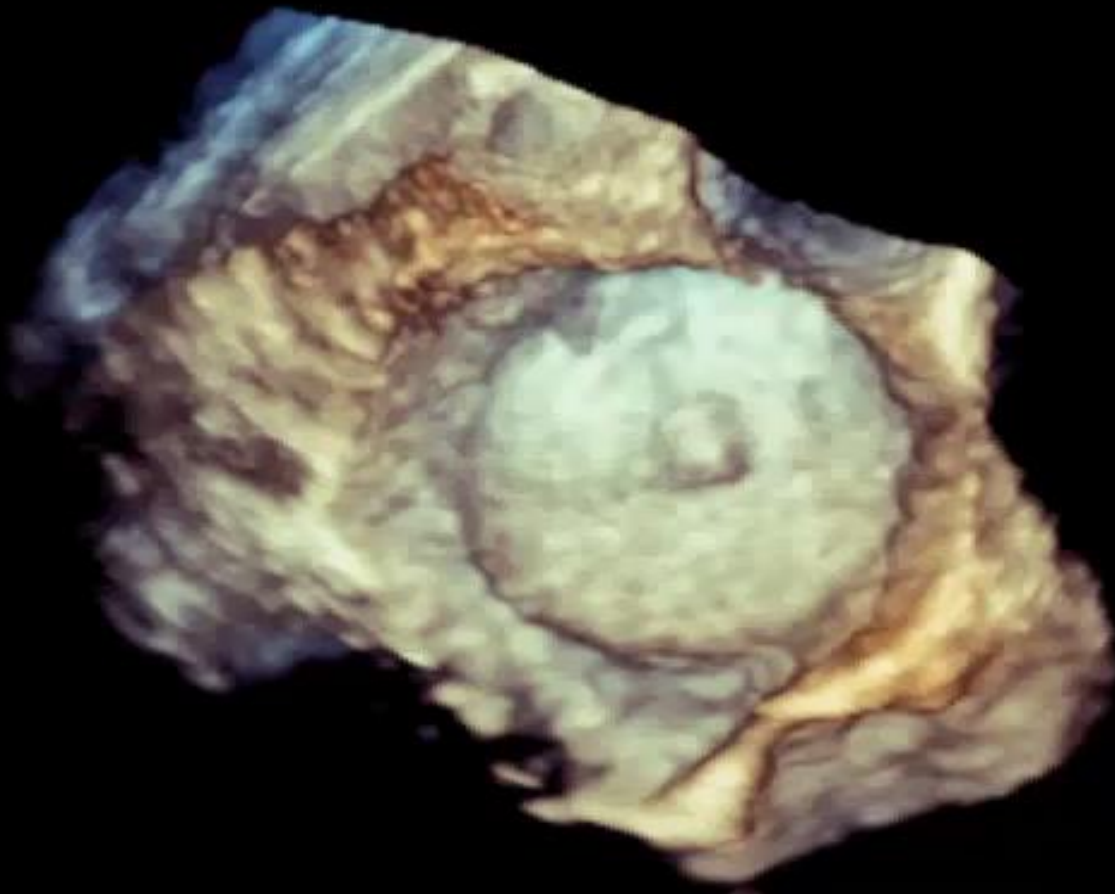
X7-2t/Adult

FR 6Hz
6.4cm

3D Beats 1

M4

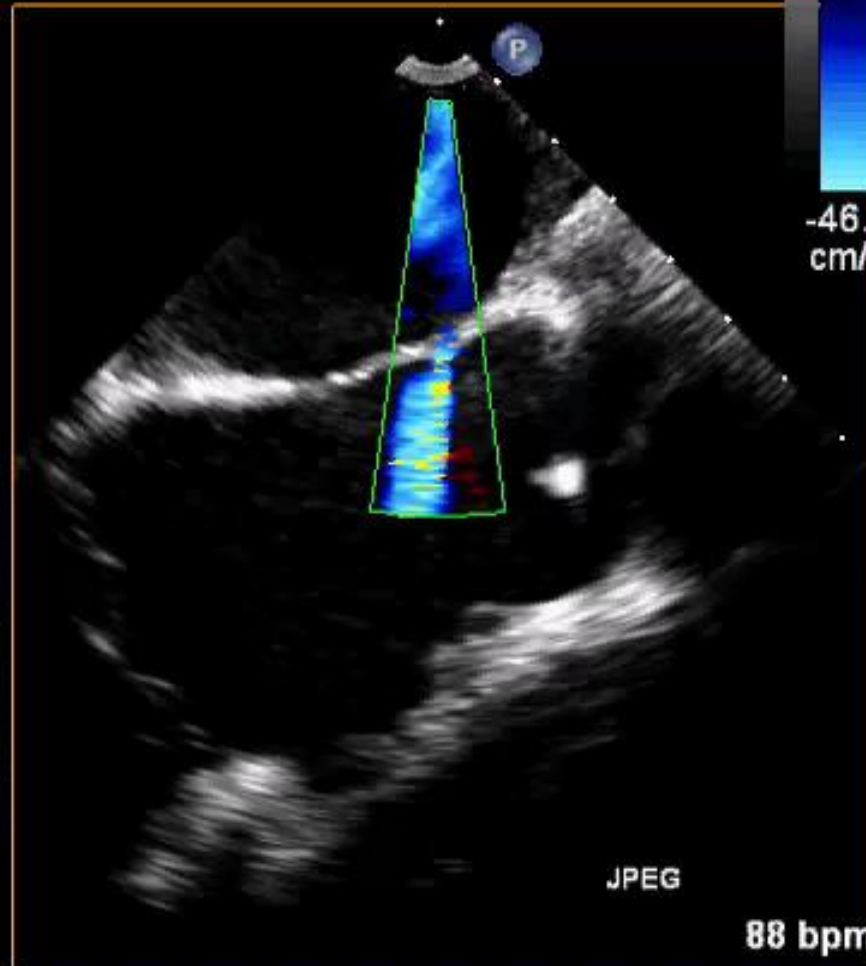
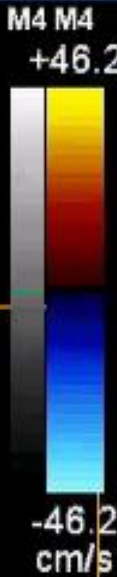
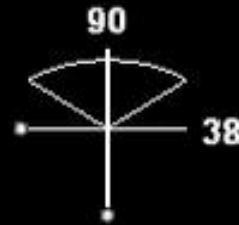
3D
3D 47%
3D 40dB



FR 15Hz
11cm

xPlane
65%
65%
50dB
P Off
HGen

CF
59%
4.4MHz
WF High
Med



JPEG
88 bpm

PAT T: 37.0C
TEE T: 38.9C



PHILIPS

15/09/2018

09:19:34

TISO.4 MI 1.0

HN181157231

QMH

X7-2t/Adult

FR 4Hz
6.9cm

3D Beats 1

M4

3D
3D 47%
3D 40dB

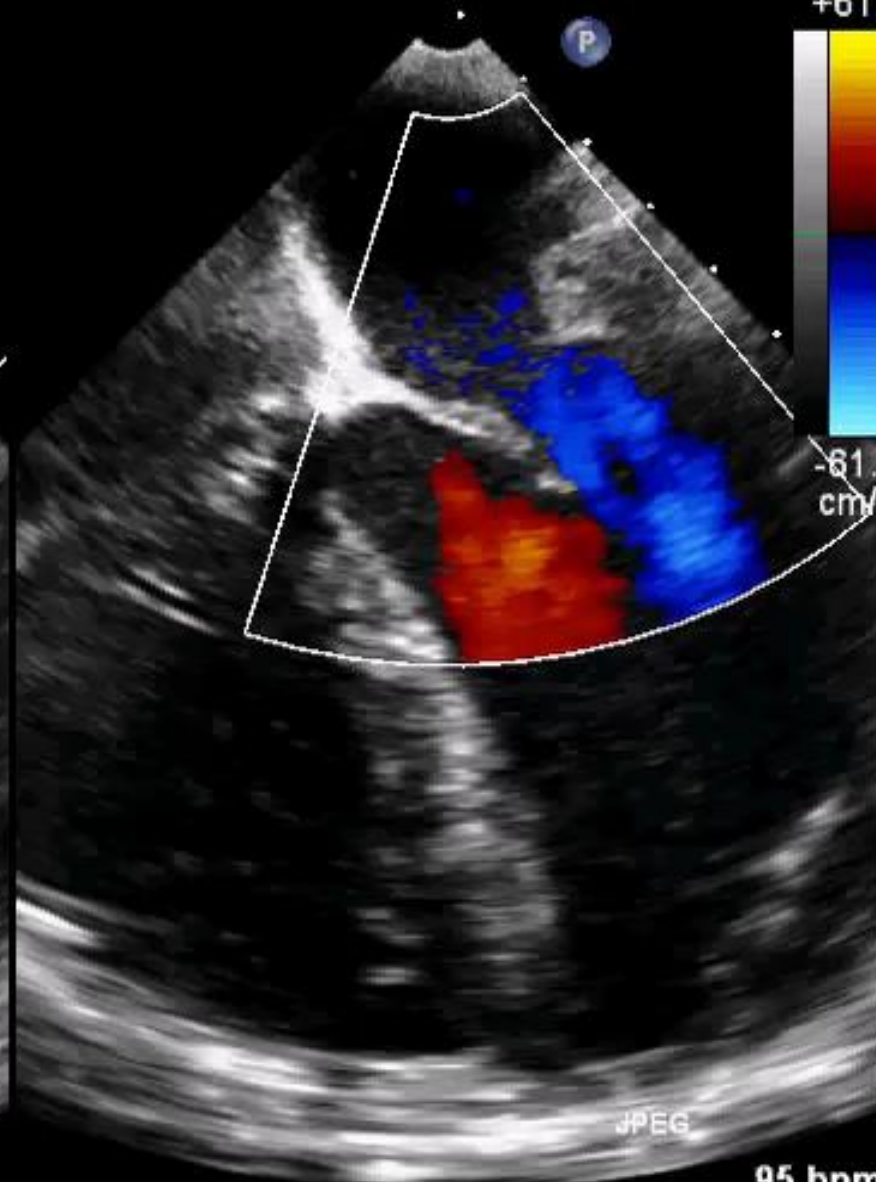
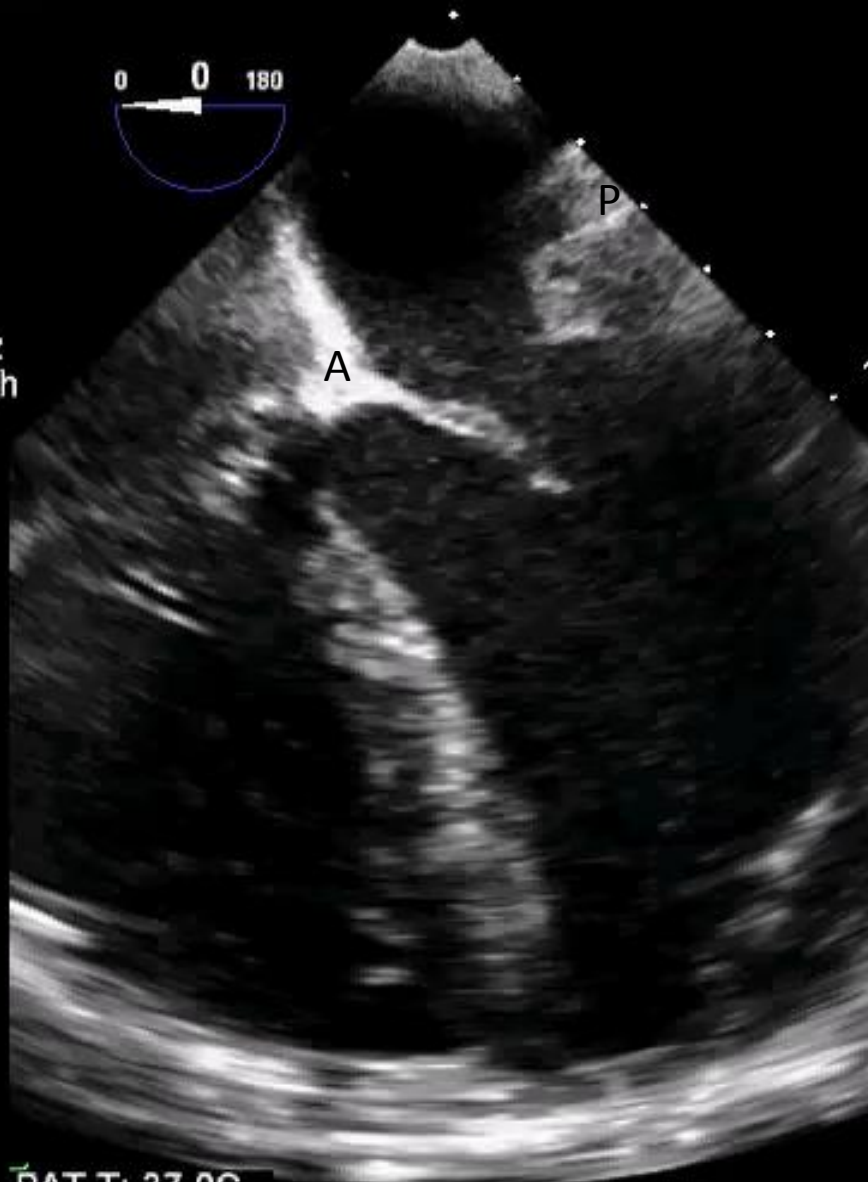


MitraClip - Strategy

- Initial target MitraClip at P3
- 8.5Fr SL1 SJM Transseptal Sheath
- 89cm Baylis NRG Radiofrequency needle C0/C1 curve (10W 2sec)
- Amplatz ExtraStiff GW
- RFV access – Preconditioning with Perclose X 1

FR 15Hz
13cm

2D
75%
C 50
P Off
HGen
CF
59%
4.4MHz
WF High
Med



M4 M4
+61.6
-61.6
cm/s

JPEG

PAT T: 37.0C
TEE T: 39.1C

95 bpm

FR 13Hz
13cm

2D

75%
C 50
P Off
HGen

CF

59%
4.4MHz
WF High
Med



P3

A2

P1

M4 M4
+61.6



61.6
cm/s

JPEG

PAT T: 37.0C
TEE T: 39.2C

103 bpm

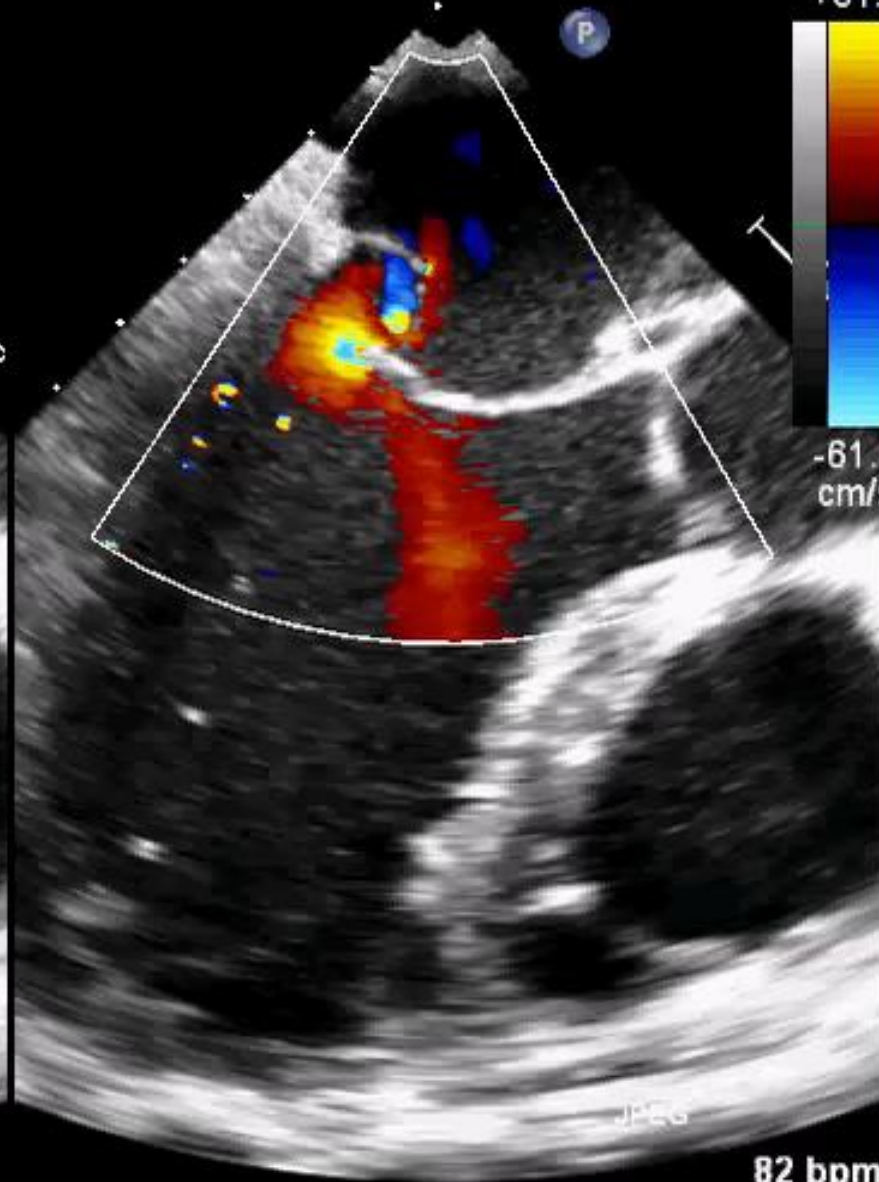
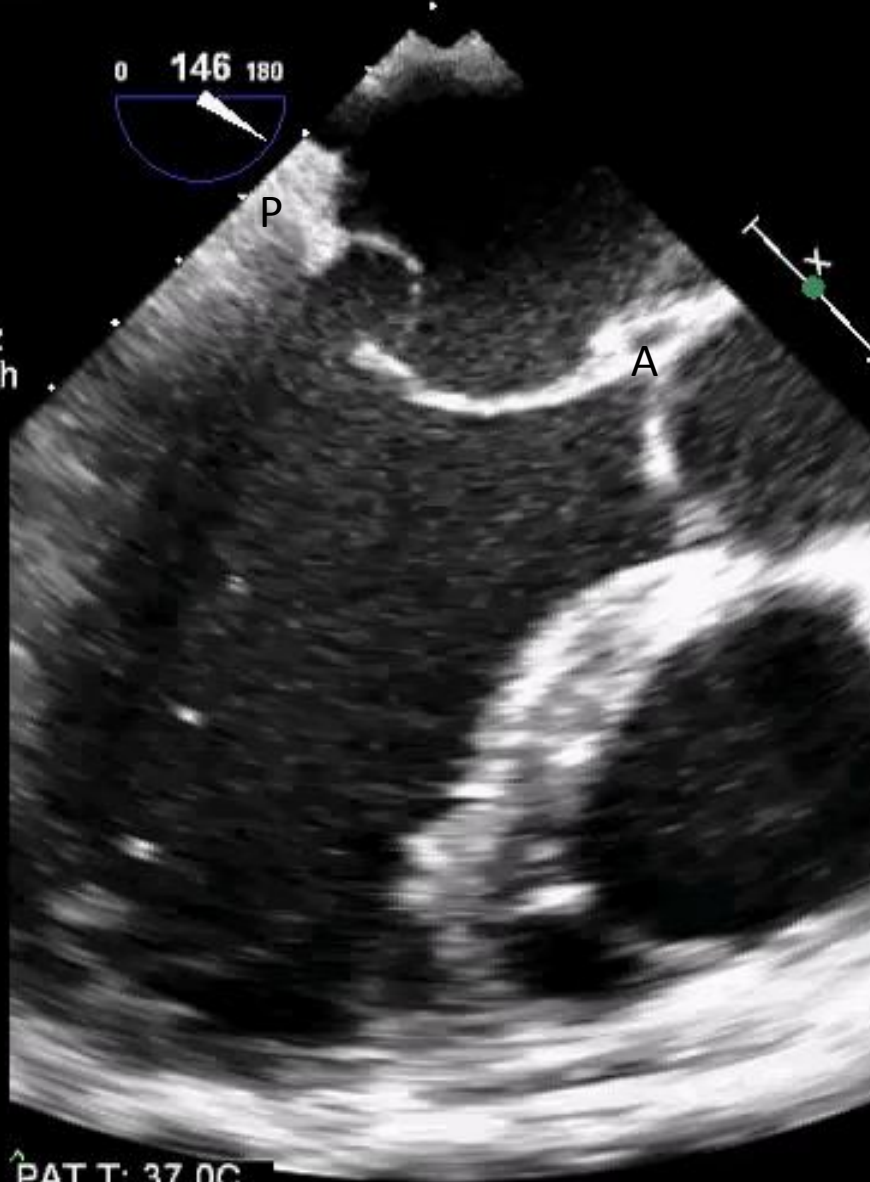
FR 14Hz
13cm

2D

75%
C 50
P Off
HGen

CF

59%
4.4MHz
WF High
Med



JPEG

PAT T: 37.0C
TEE T: 38.9C

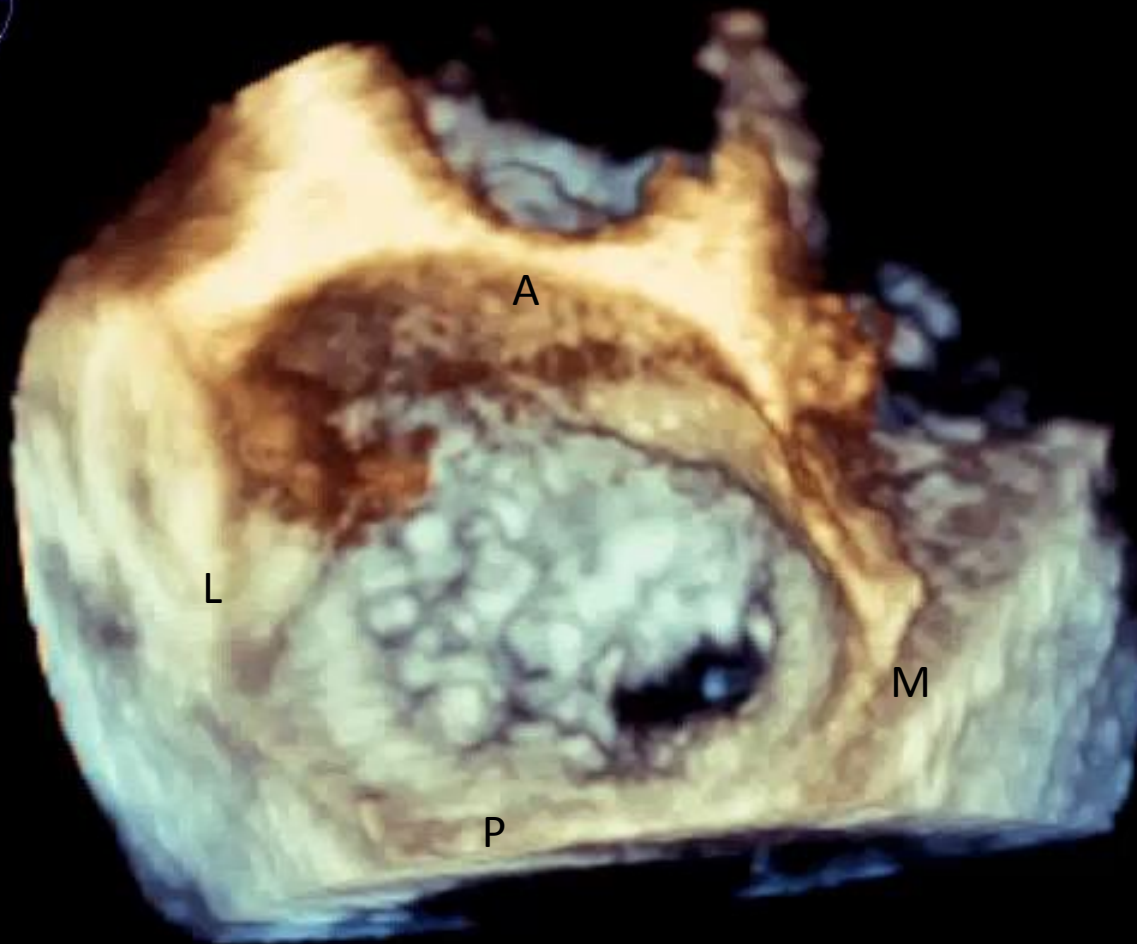
82 bpm

FR 4Hz
6.9cm

3D Beats 1

M4

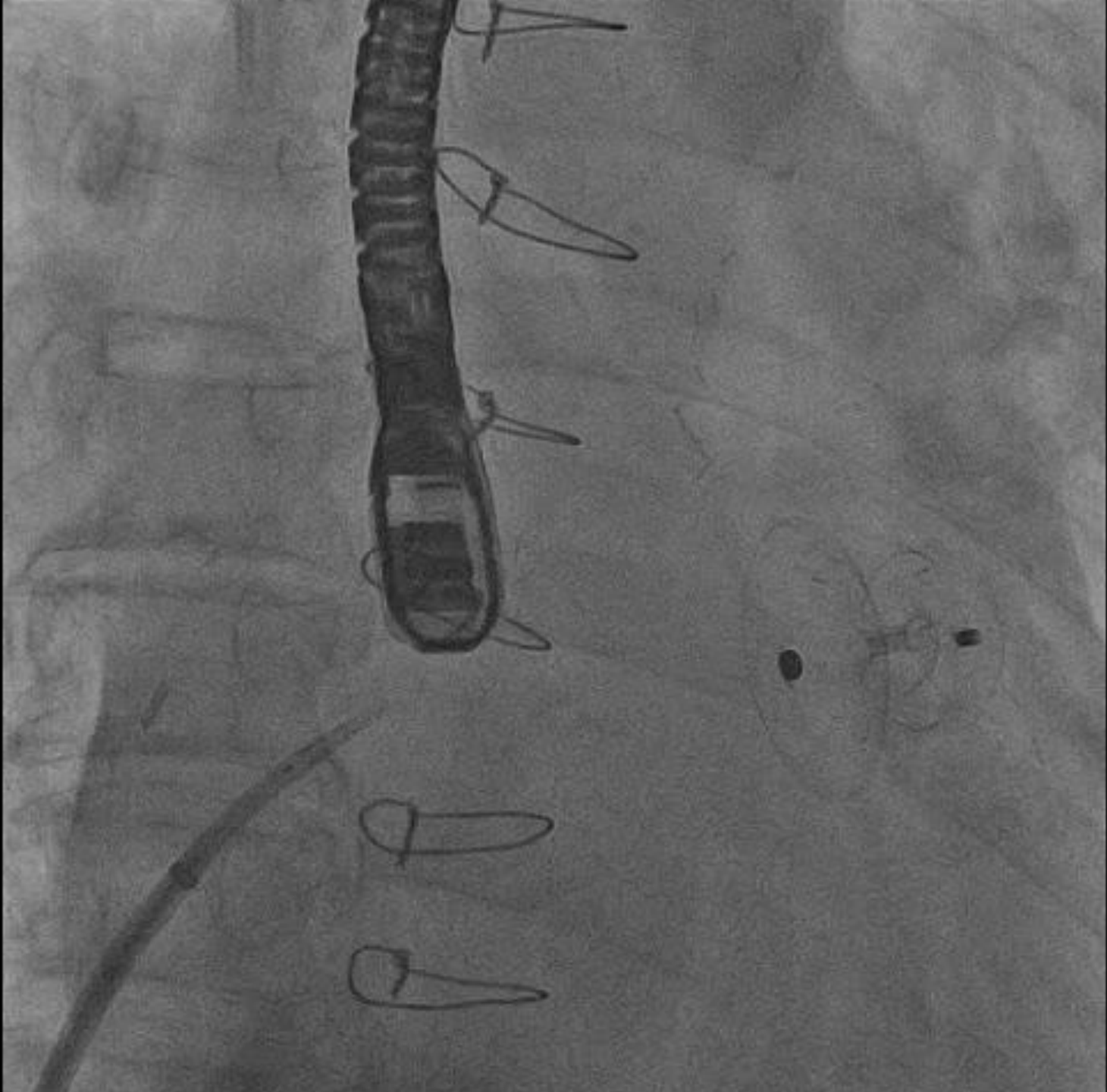
3D
3D 47%
3D 40dB



JPEG

PAT T: 37.0C
TEE T: 38.0C

80 bpm



FR 50Hz
12cm

2D
66%
C 50
P Off
HGen



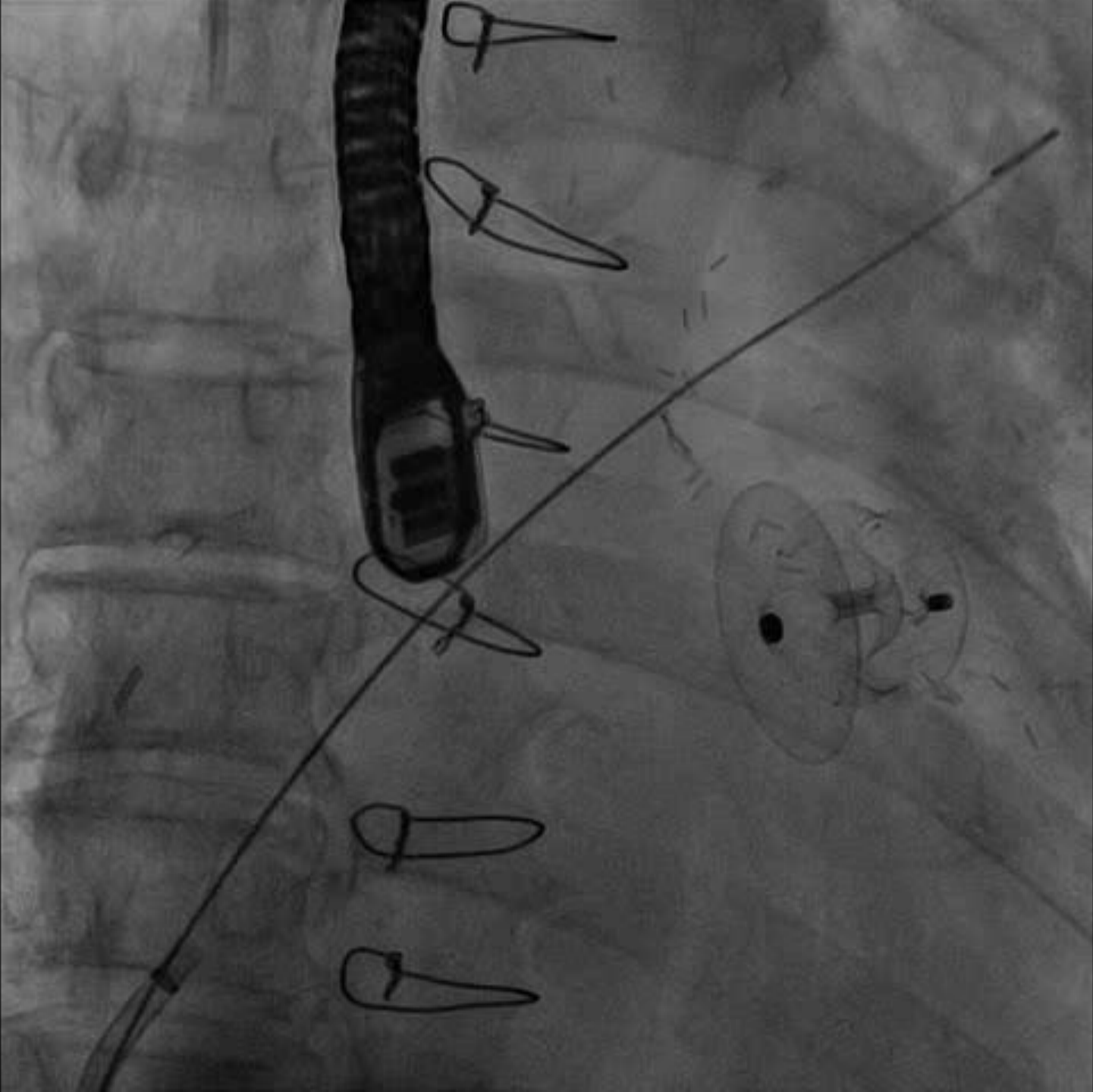
◇ Dist 4.37 cm

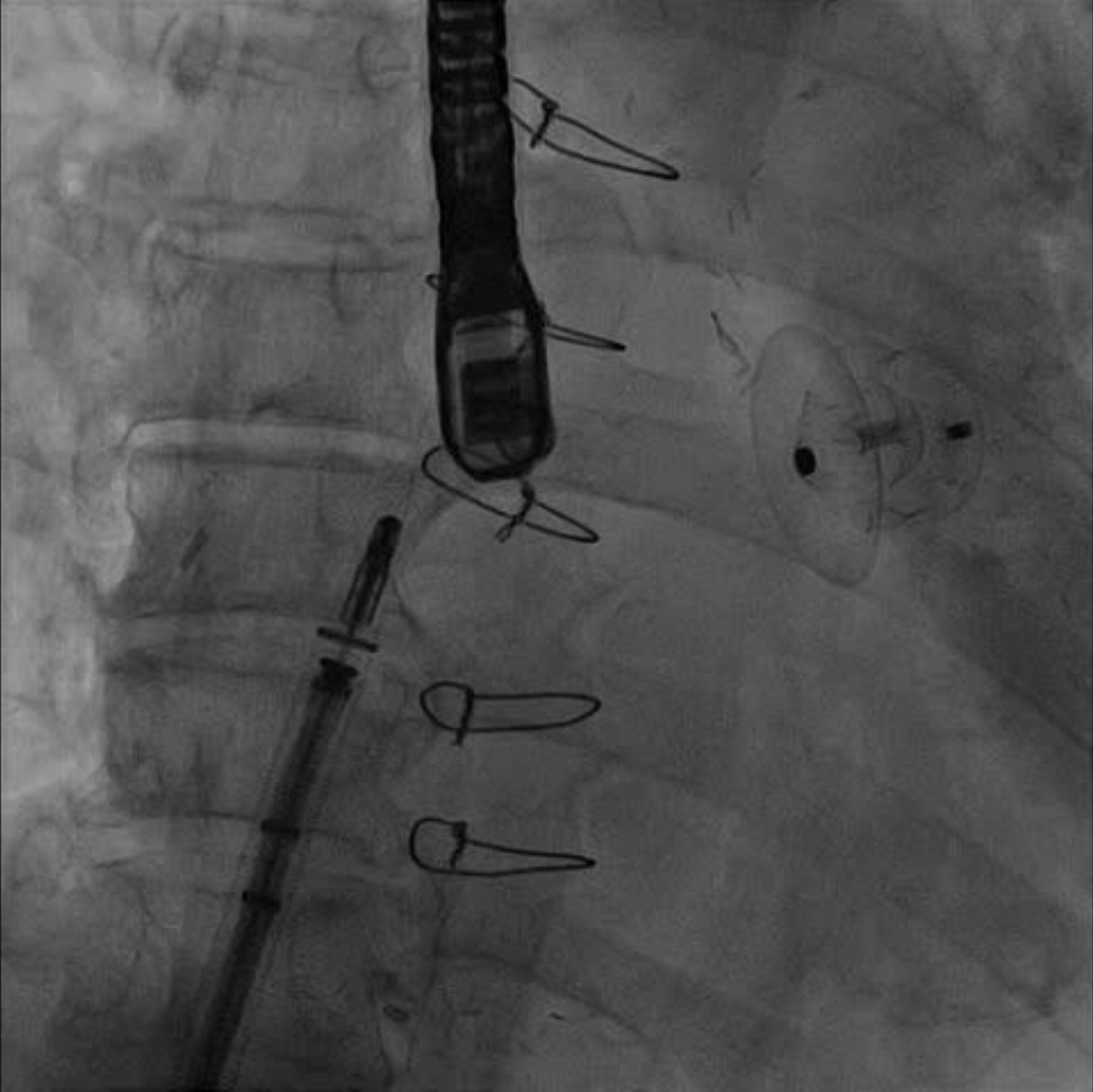
× Dist 5.30 cm

+ Dist 4.02 cm

JC
2C

63bpm



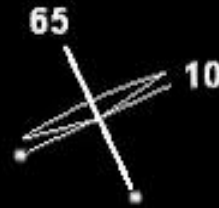




FR 29Hz
12cm

xPlane
68%
68%
50dB
P Off
HGen

M4



63 bpm

PAT T: 37.0C
TEE T: 39.9C



MH

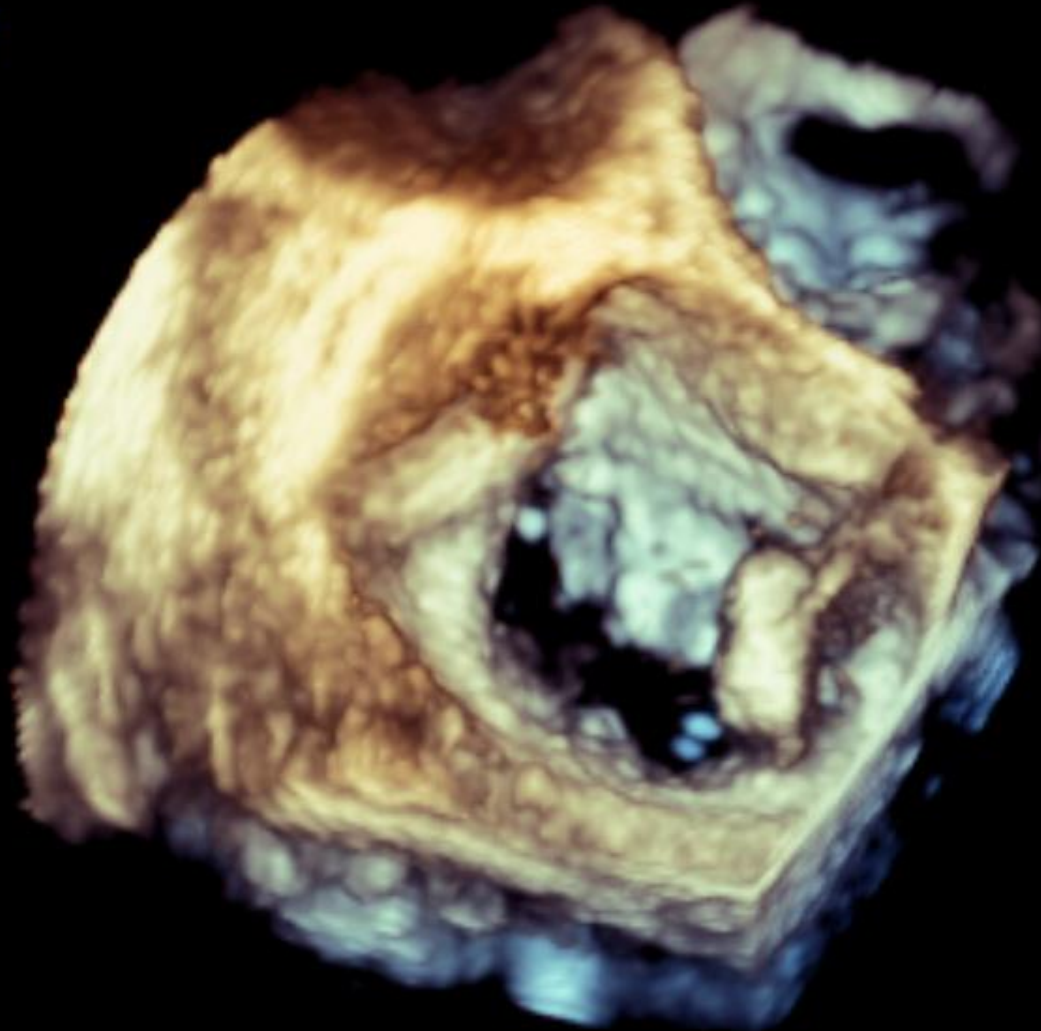
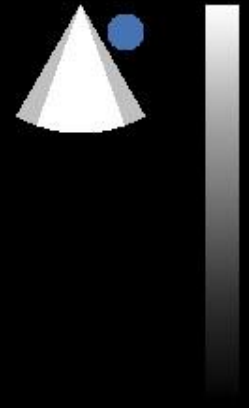
X7-2t/Adult

FR 4Hz
7.0cm

3D Beats 1

M4

3D
3D 47%
3D 40dB



PAT T: 37.0C
TEE T: 39.0C

55bpm



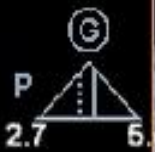


FR 29Hz
10cm

xPlane
63%
63%
50dB
P Off
HGen



M4



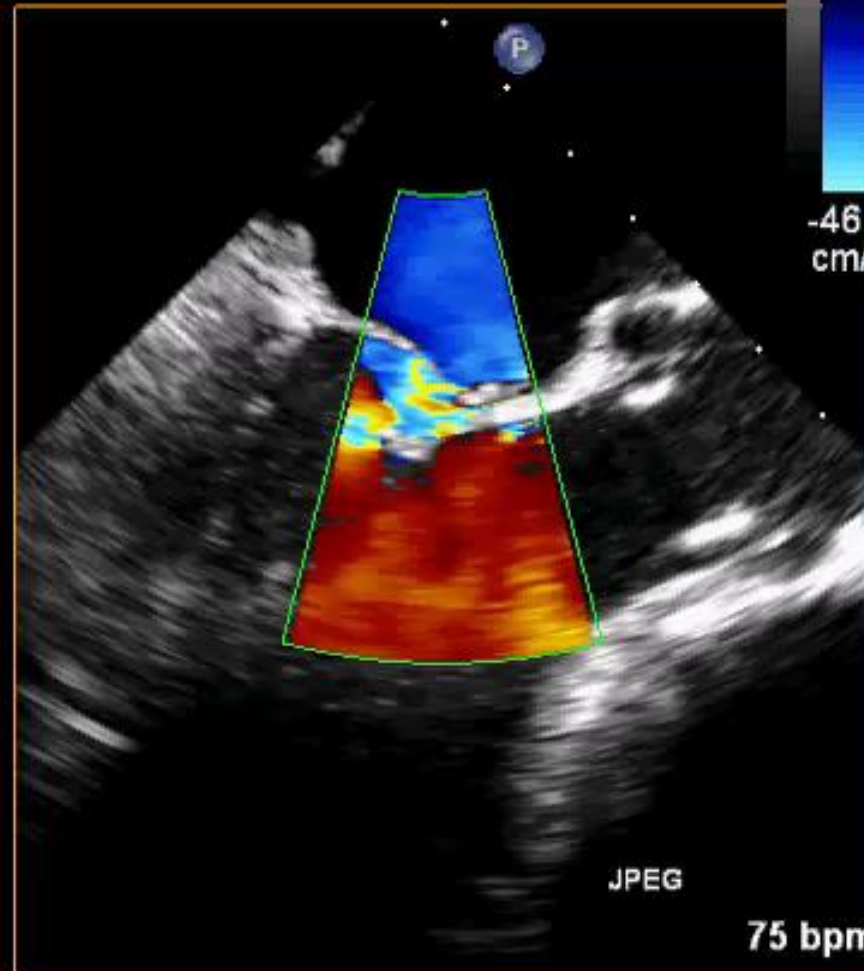
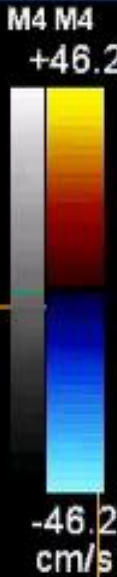
PAT T: 37.0C
TEE T: 38.7C

54 bpm

FR 10Hz
10cm

xPlane
65%
65%
50dB
P Off
HGen

CF
59%
4.4MHz
WF High
Med



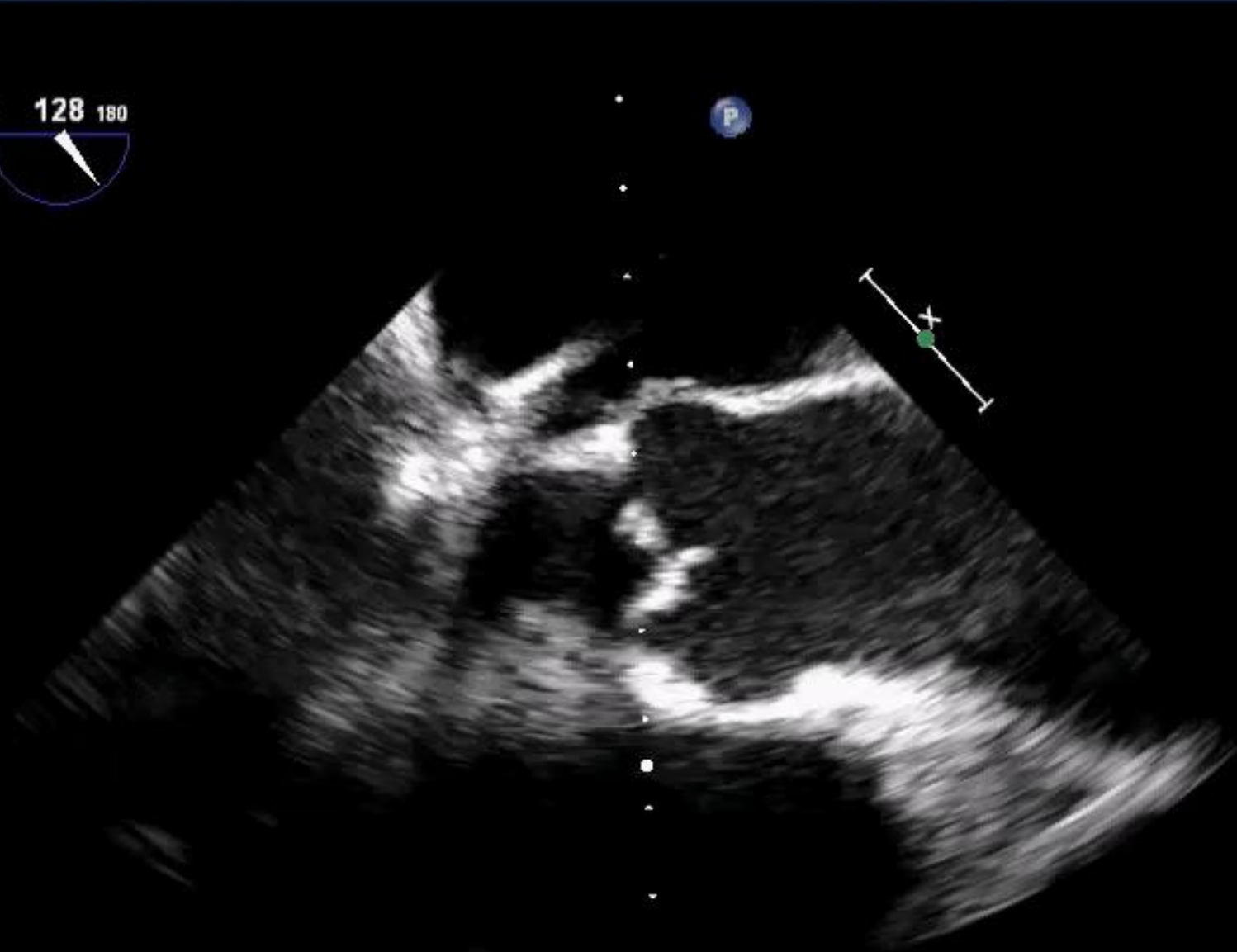
PAT T: 37.0C
TEE T: 39.1C

FR 50Hz
10cm

2D
62%
C 50
P Off
HGen



M4



JPEG

PAT T: 37.0C
TEE T: 39.0C

69 bpm

MH

X7-2t/Adult

FR 50Hz

10cm

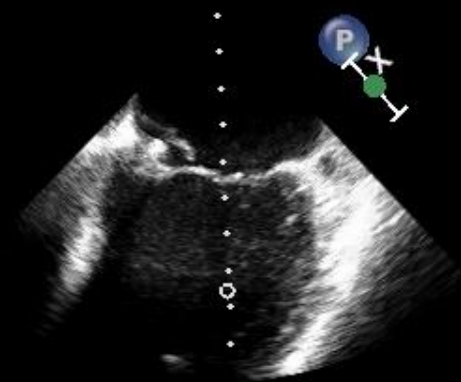
2D

62%

C 50

P Off

HGen



✦ MV VTI

M4

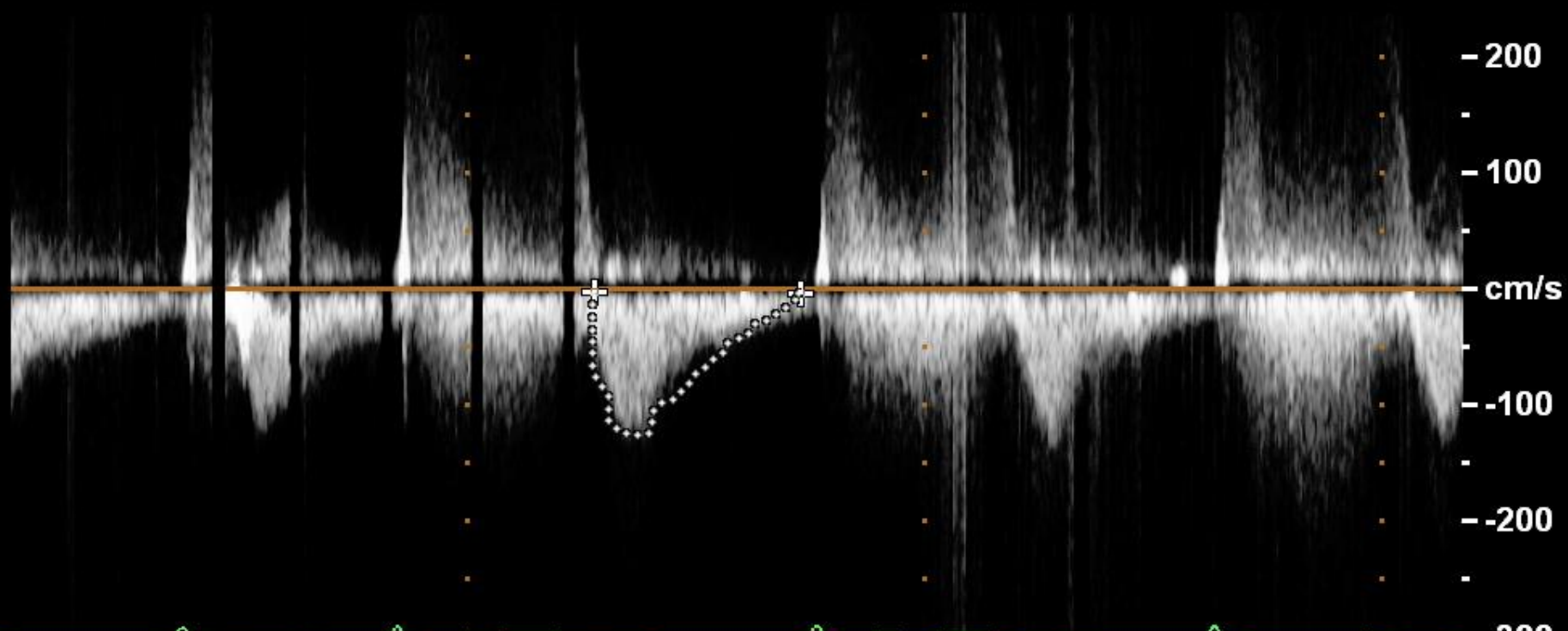
Vmax 126 cm/s

Vmean 70.8 cm/sHz

Max PG 6 mmHg^{25Hz}

Mean PG 3 mmHg

VTI 32.1 cm



PAT T: 37.0C

TEE T: 38.2C

75mm/s

71bpm



FR 29Hz
10cm

xPlane
62%
62%
50dB
P Off
HGen

M4



PAT T: 37.0C
TEE T: 39.7C

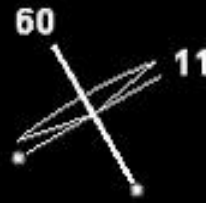
68 bpm



FR 9Hz
10cm

xPlane
65%
65%
50dB
P Off
HGen

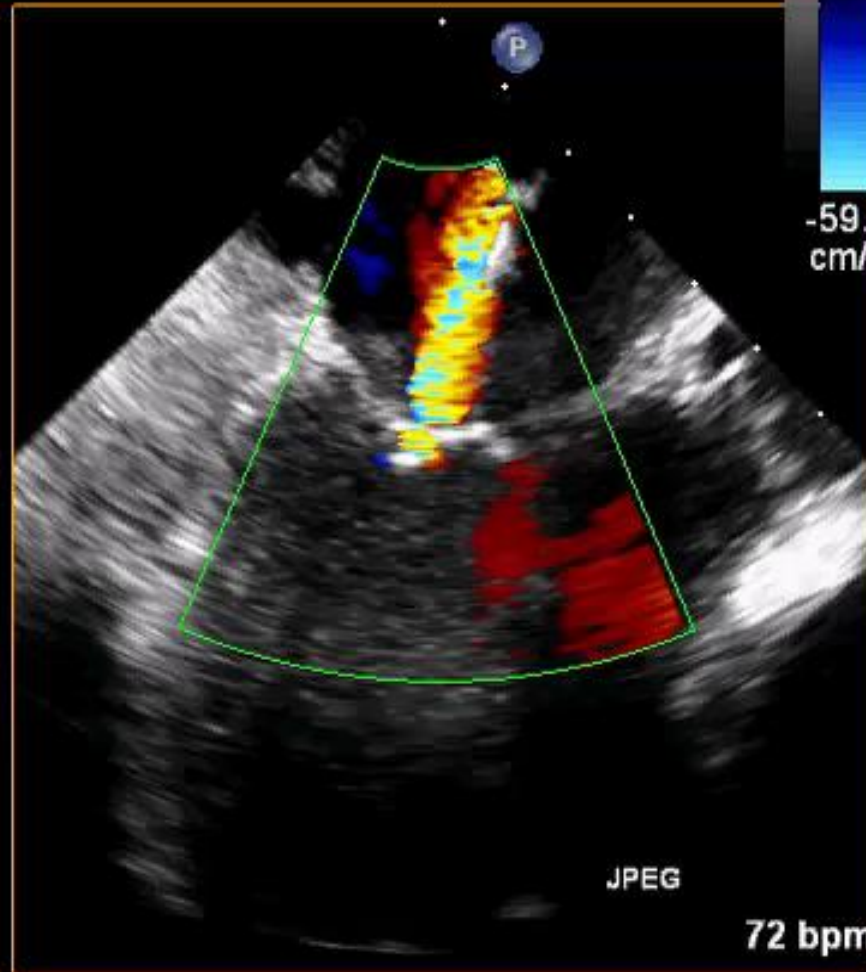
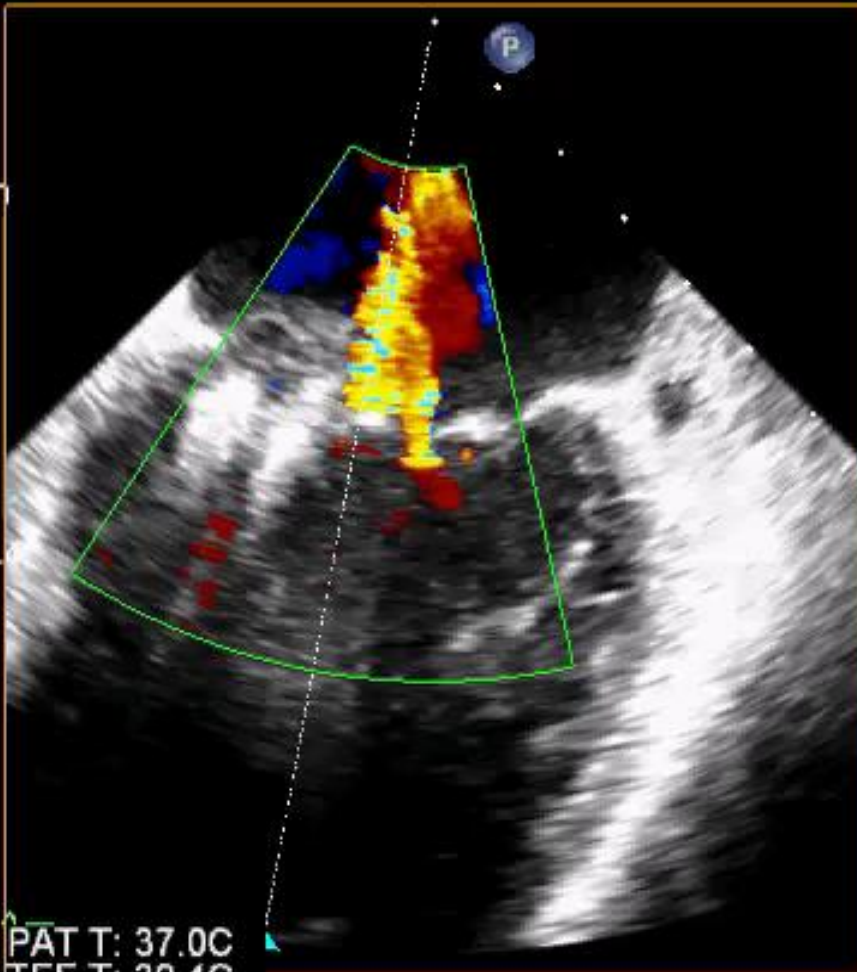
CF
59%
4.4MHz
WF High
Med



M4 M4
+59.3



-59.3
cm/s



JPEG

72 bpm

PAT T: 37.0C
TEE T: 39.4C



MH

X7-2t/Adult

FR 50Hz

10cm

✦ MV VTI

M4

Vmax 146 cm/s

Vmean 79.9 cm/sHz

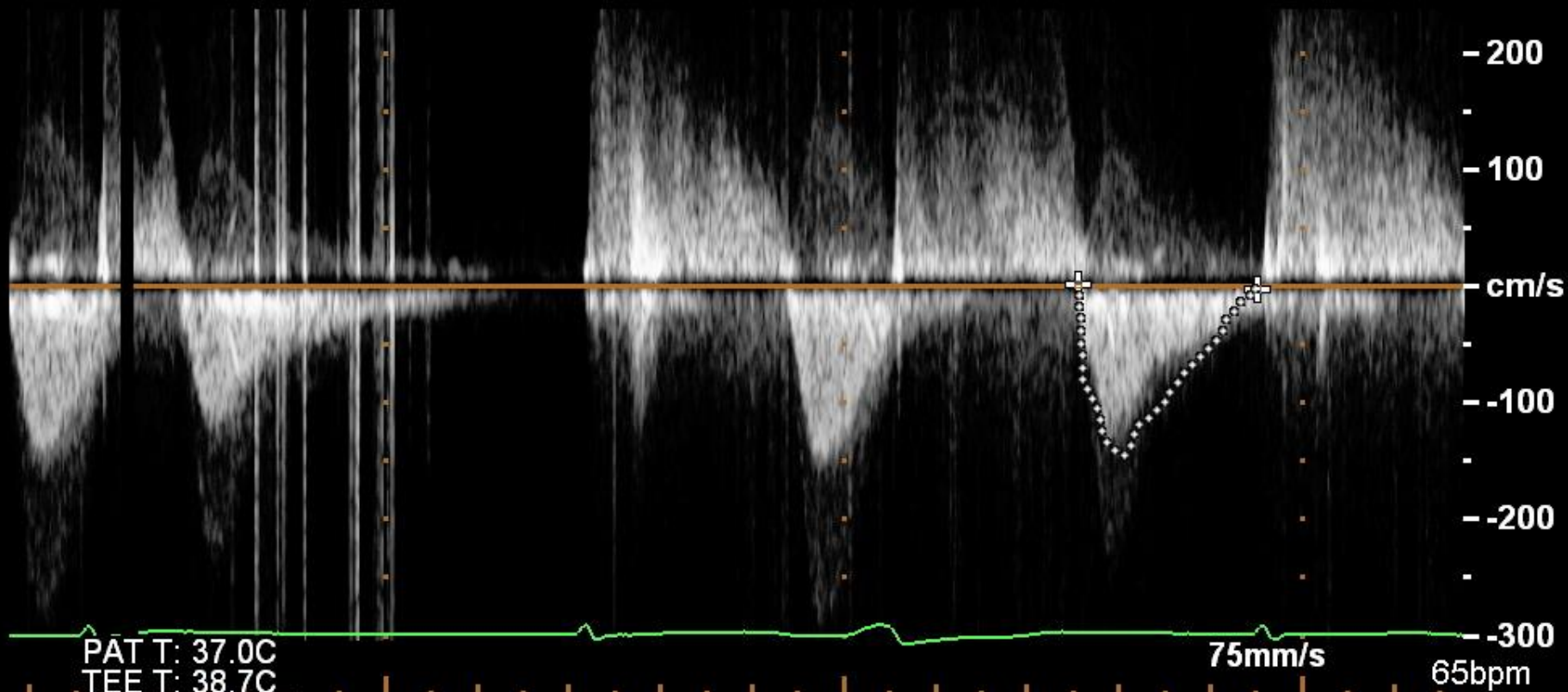
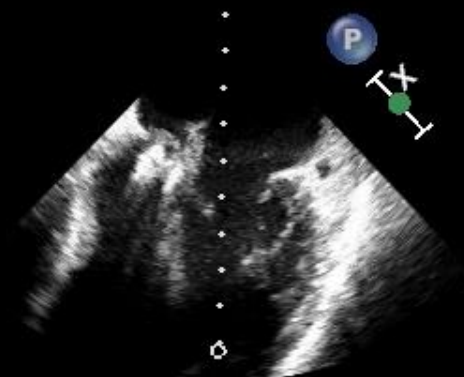
Max PG 9 mmHg^{25Hz}

Mean PG 3 mmHg

VTI 31.4 cm



2D
62%
C 50
P Off
HGen



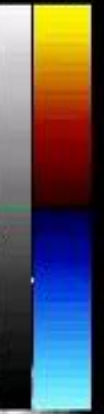


FR 15Hz
10cm

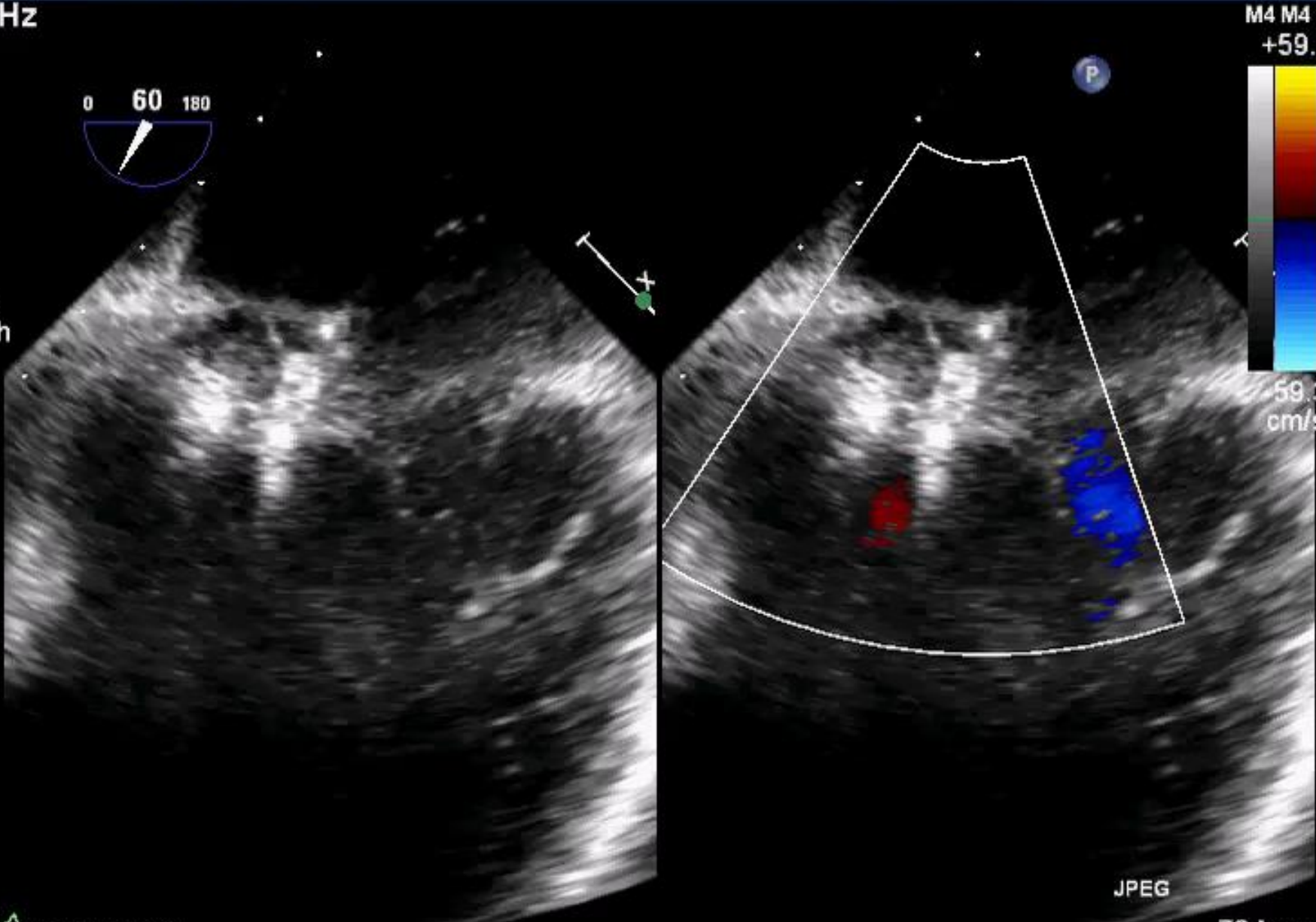
2D
68%
C 50
P Off
HGen
CF
59%
4.4MHz
WF High
Med



M4 M4
+59.3



P



JPEG

PAT T: 37.0C
TEE T: 38.5C

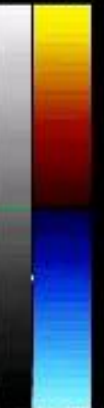
72 bpm

FR 15Hz
9.0cm

2D
68%
C 50
P Off
HGen
CF
59%
4.4MHz
WF High
Med



M4 M4
+59.3



59.3
cm/s

JPEG

PAT T: 37.0C
TEE T: 38.5C

60 bpm



Conclusion

- Case of degenerative MR, P3 prolapse
- Technically challenging to deploy MitraClip close to commissure
- LAA closure and MitraClip can be accomplished in same/separate setting

History

Case 2/

- M/79
- DM HT Hyperlipidemia
- NYHA II/III
- Echo – normal LVEF, mild LAE, prolapsed of P2 with severe MR

FR 15Hz
11cm

2D
74%
C 50
P Off
Pen
CF
59%
4.4MHz
WF High
Med



JPEG

PAT T: 37.0C
TEE T: 38.5C

66 bpm

FR 9Hz
10cm

xPlane
84%
84%
50dB
P Off
Pen

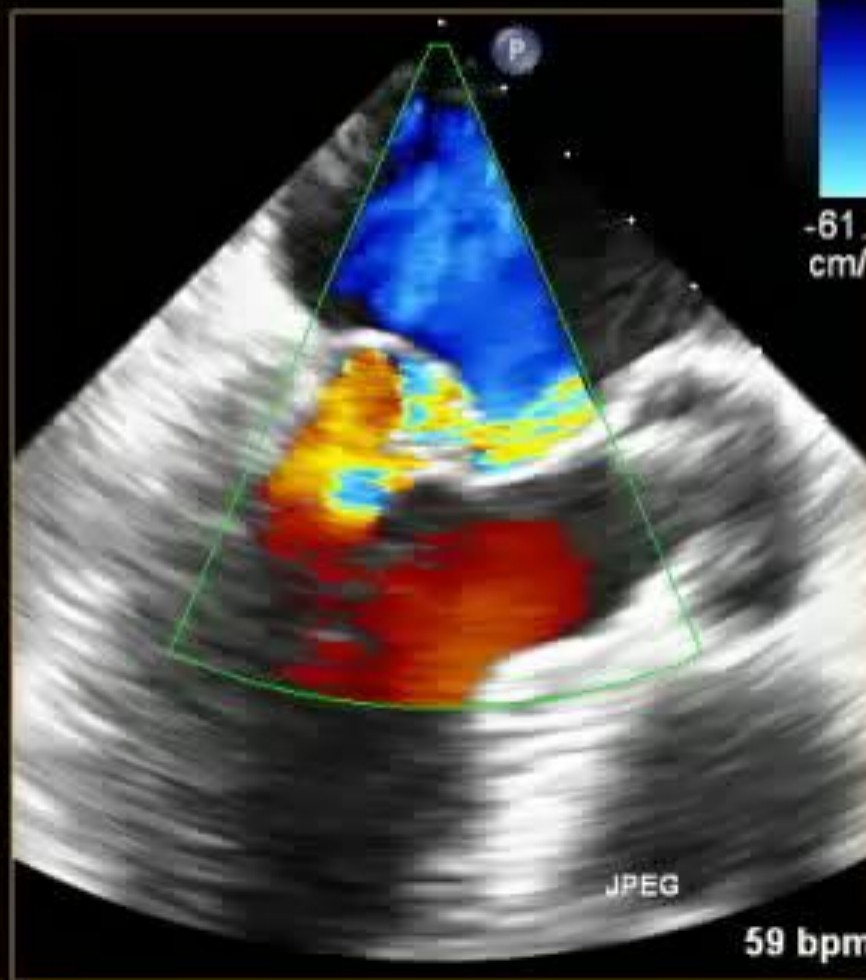
CF
59%
4.4MHz
WF High
Med



M4 M4
+61.6



-61.6
cm/s



PAT T: 37.0C
TEE T: 37.5C

59 bpm

FR 5Hz
6.5cm

3D Beats 1

M4

3D
3D 52%
3D 40dB
Pen

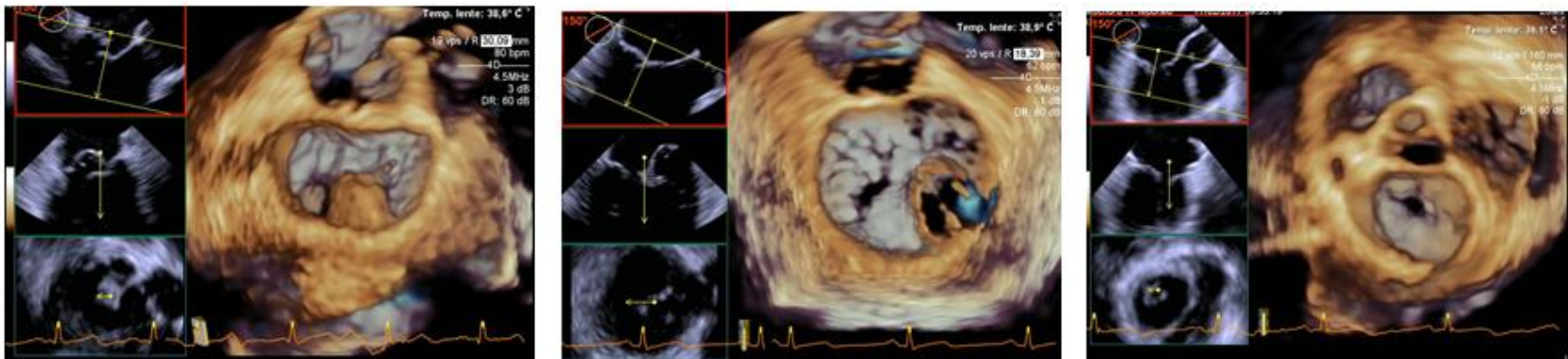


JPEG

PAT T: 37.0C
TEE T: 38.6C

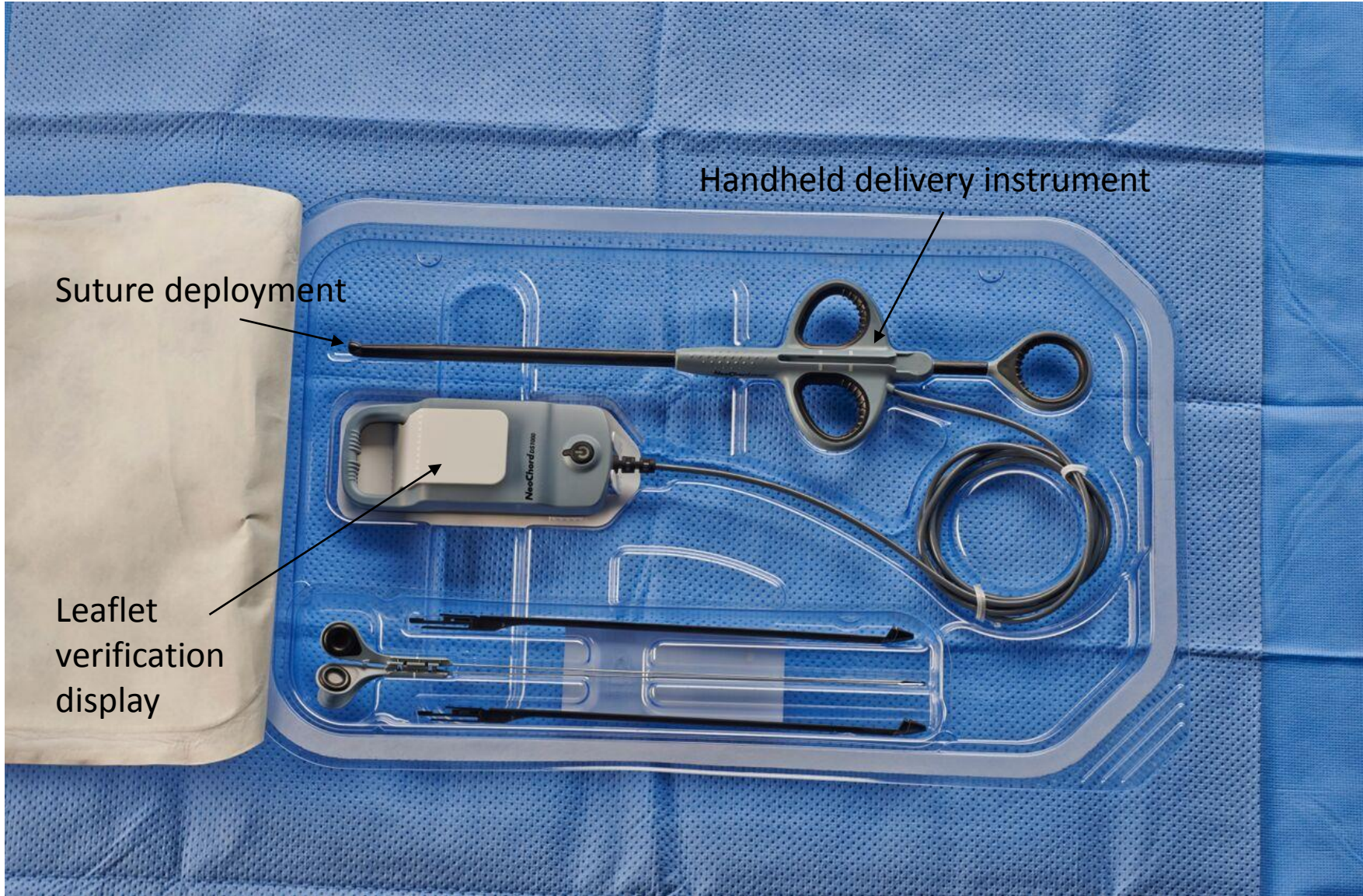
39 bpm

- **TYPE A:** Isolated central posterior leaflet prolapse/flail (P2)
- **TYPE B:** Posterior multisegment prolapse/flail
- **TYPE C:** anterior, bileaflet disease, presence of annular/leaflet calcifications and/or paracommissural



Heat Team Decision

- For Neochord implantation
 - Minimally invasive
 - Transapical
 - Off pump
 - Mimic open heart surgical chordal replacement technique
 - More physiological



Handheld delivery instrument

Suture deployment

Leaflet verification display

FR 29Hz
14cm

xPlane
79%
79%
50dB
P Off
Pen



M4



PAT T: 37.0C
TEE T: 38.3C

83 bpm

FR 35Hz
15cm

xPlane
80%
80%
50dB
P Off
Pen



M4



126 bpm

FR 35Hz
15cm

xPlane
80%
80%
50dB
P Off
Pen

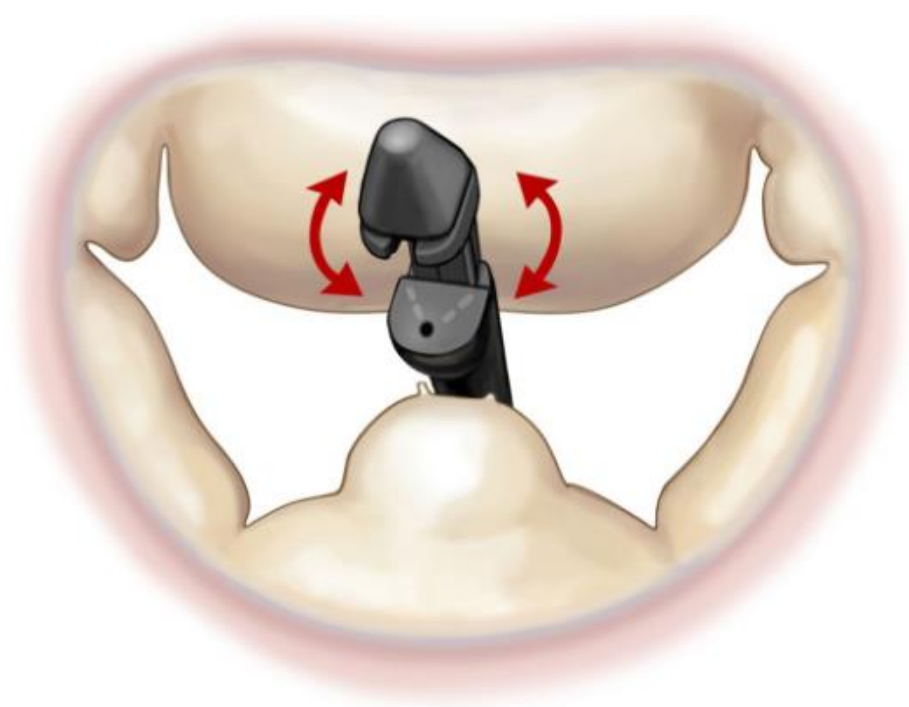


M4



PAT T: 37.0C
TEE T: 38.8C

169 bpm

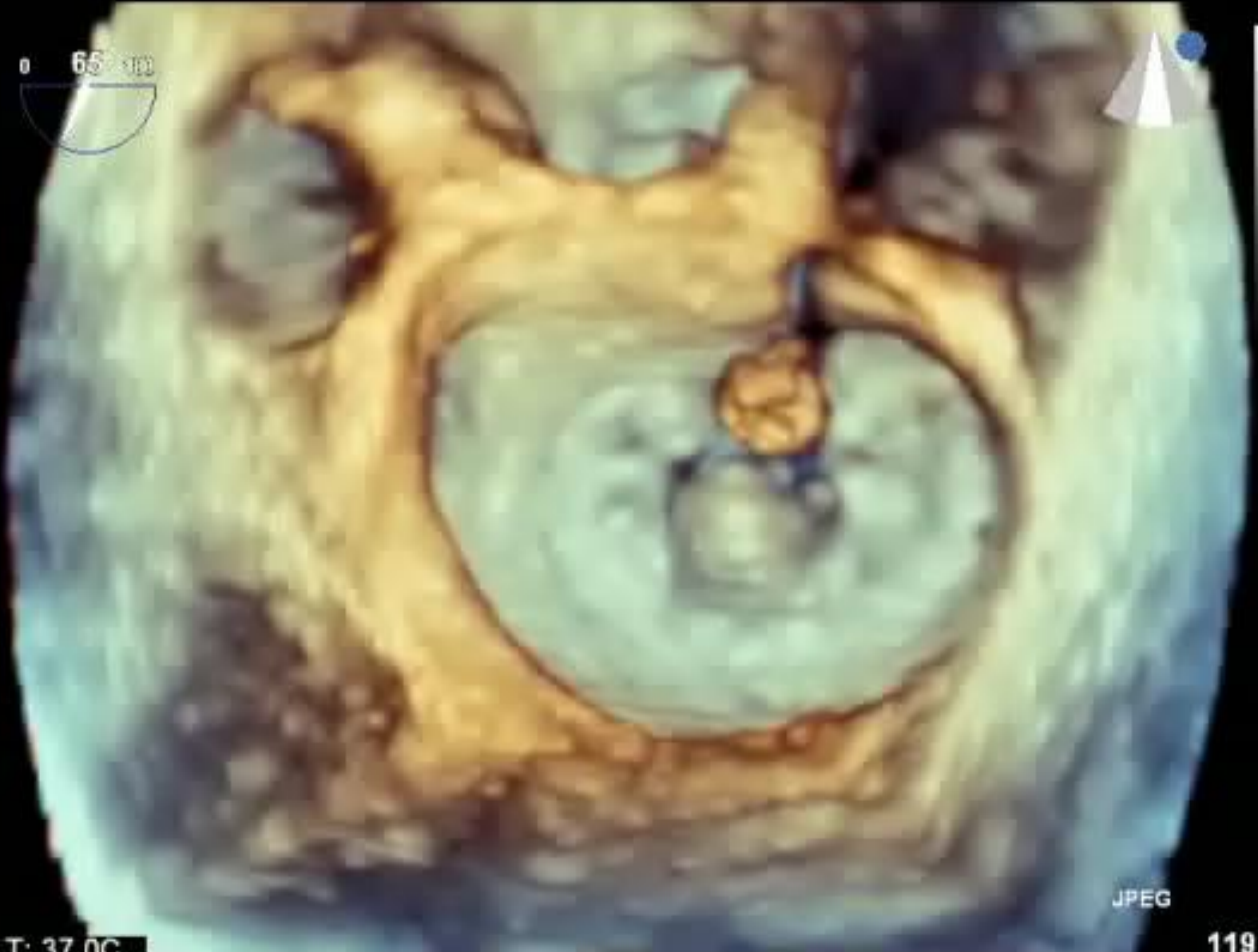


FR 7Hz
9.7cm

3D Beats 1

M4

3D
3D 52%
3D 40dB



JPEG

PAT T: 37.0C
TEE T: 39.2C

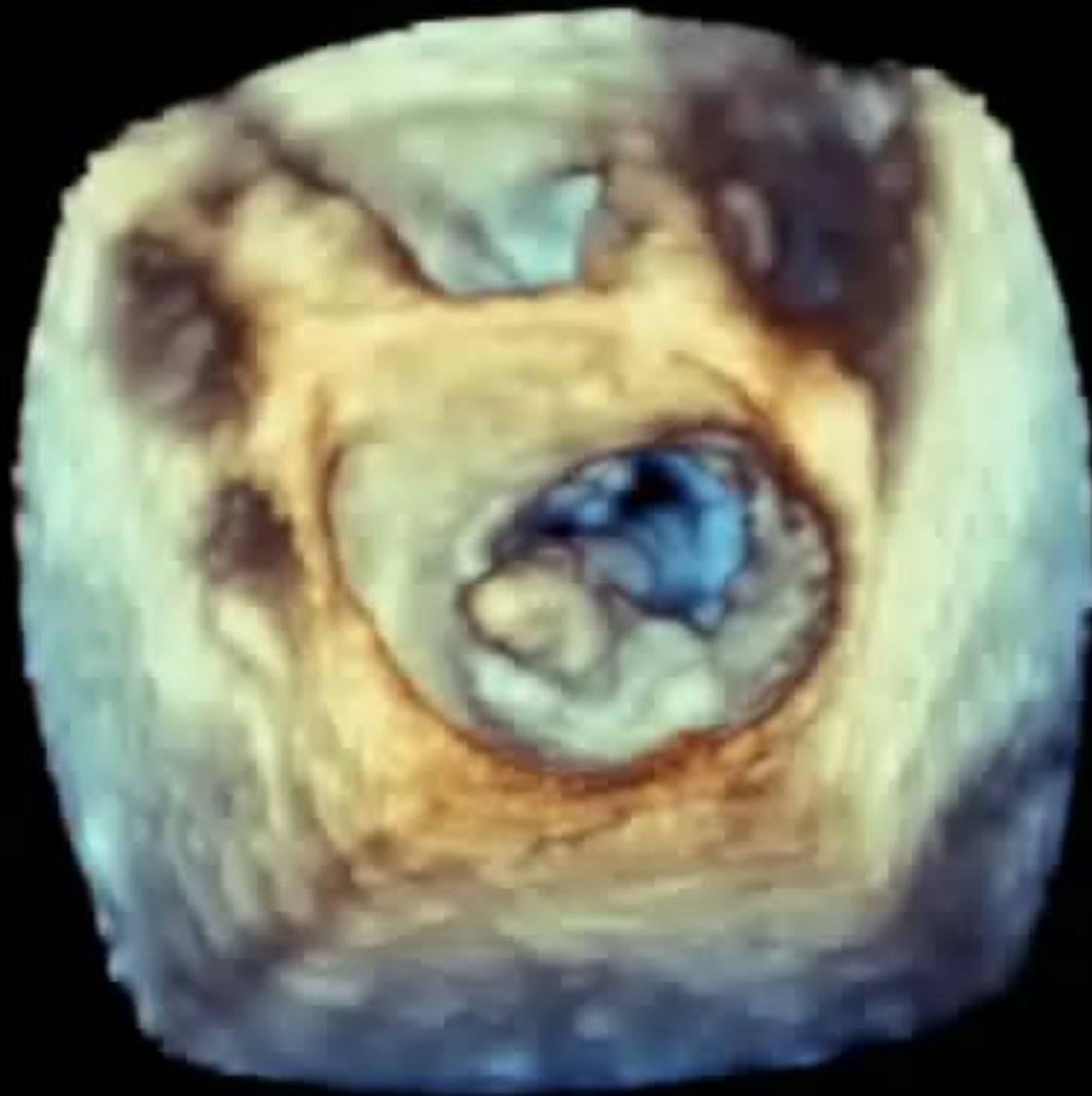
119 bpm

FR 7Hz
8.7cm

3D Beats 1

M4

3D
3D 52%
3D 40dB



JPEG

PAT T: 37.0C
TEE T: 38.4C

122 bpm

FR 29Hz
11cm

xPlane
76%
76%
50dB
P Off
Pen



M4



PAT T: 37.0C
TEE T: 38.1C

137 bpm

FR 7Hz
9.7cm

3D Beats 1

M4

3D
3D 52%
3D 40dB



JPEG

PAT T: 37.0C
TEE T: 39.2C

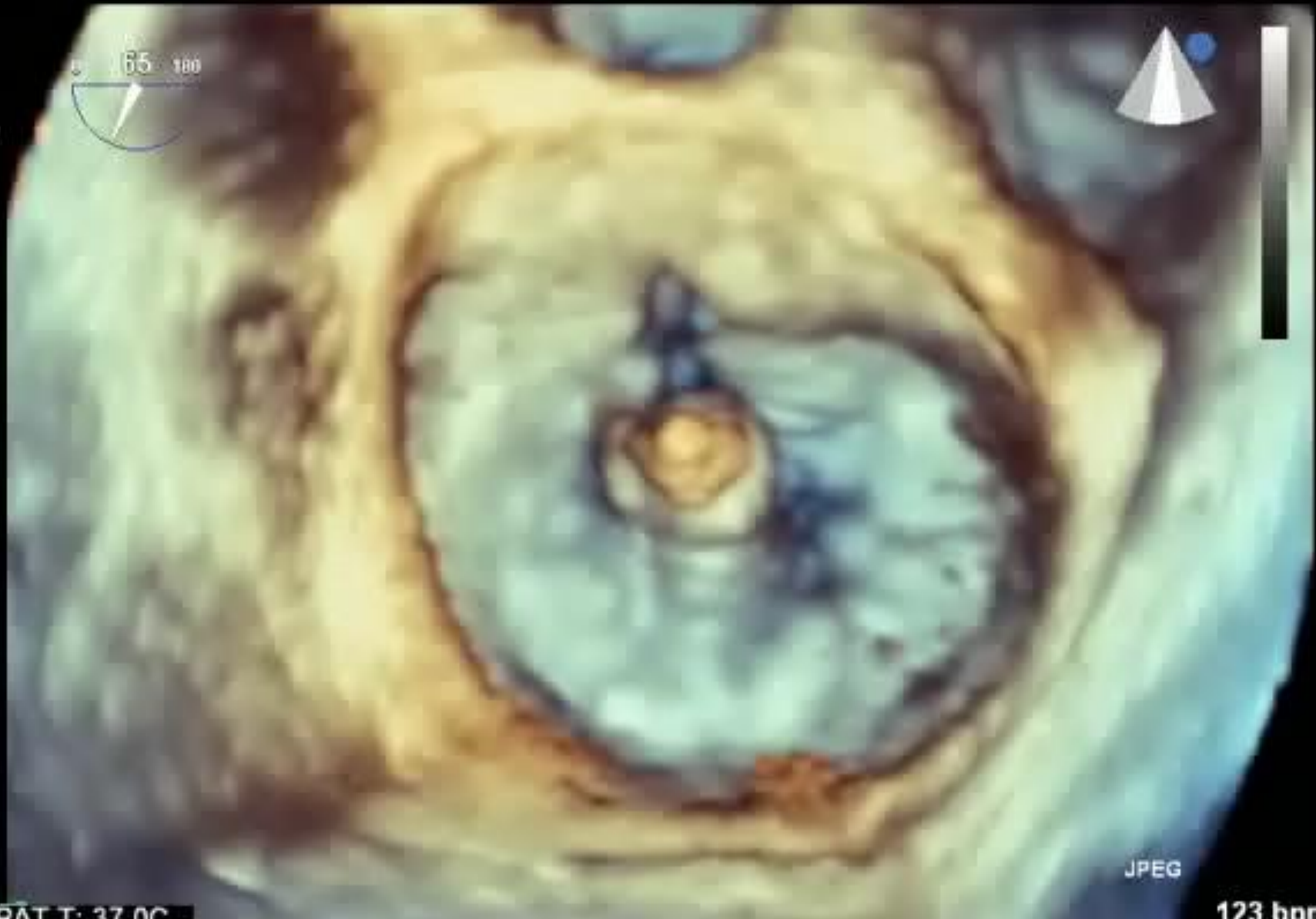
119 bpm

FR 7Hz
8.7cm

3D Beats 1

M4

3D
3D 52%
3D 40dB



JPEG

PAT T: 37.0C
TEE T: 38.5C

123 bpm

FR 7Hz
8.7cm

3D Beats 1

M4

3D
3D 52%
3D 40dB



JPEG

PAT T: 37.0C
TEE T: 39.8C

114 bpm

FR 10Hz
7.1cm

3D Beats 1

M4

3D
3D 52%
3D 40dB



JPEG

PAT T: 37.0C
TEE T: 38.7C

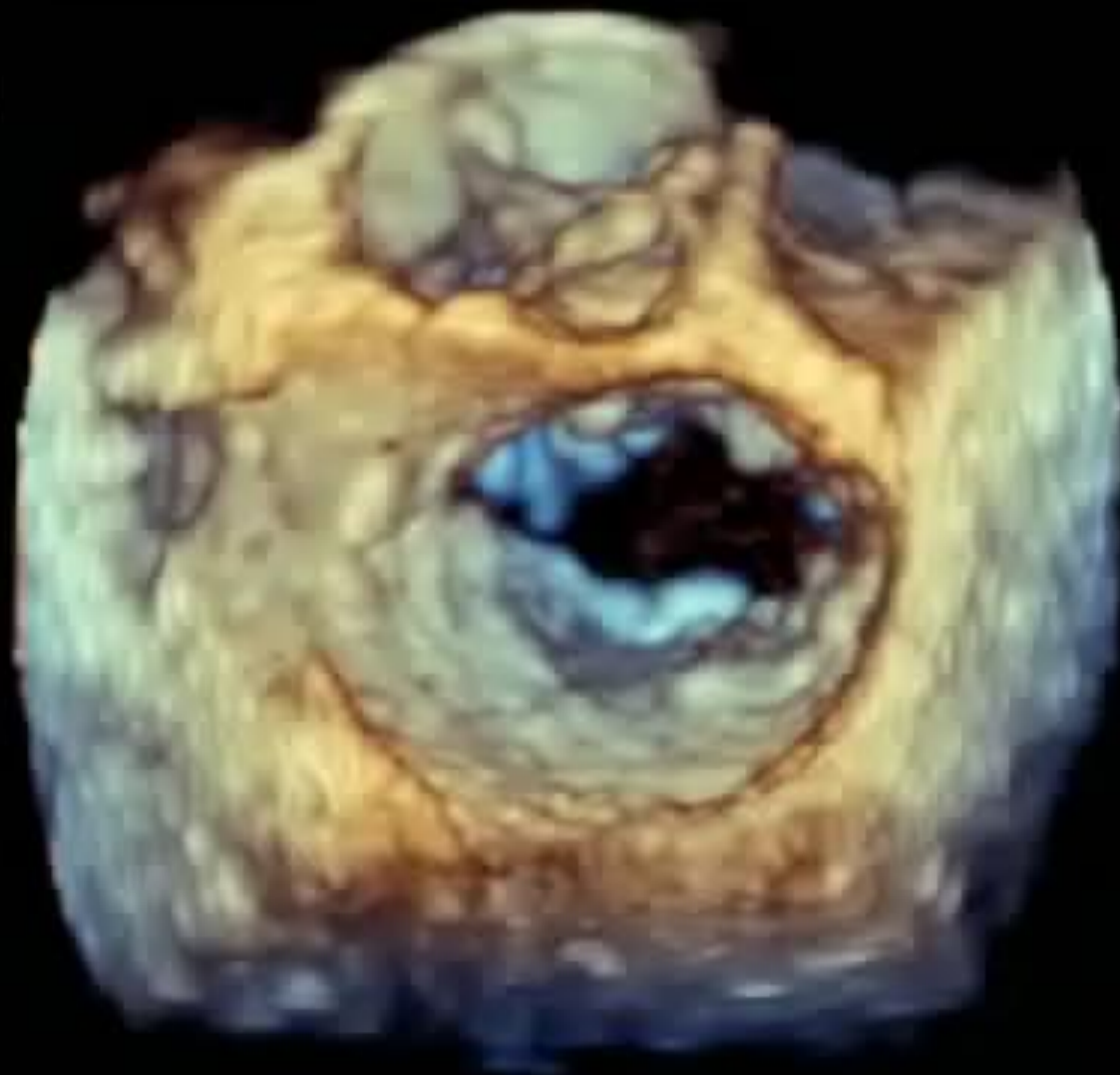
109 bpm

FR 8Hz
7.7cm

3D Beats 1

M4

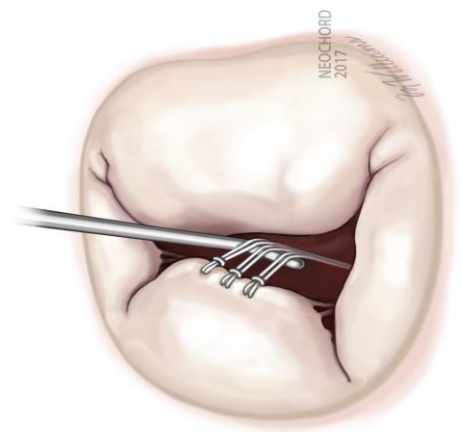
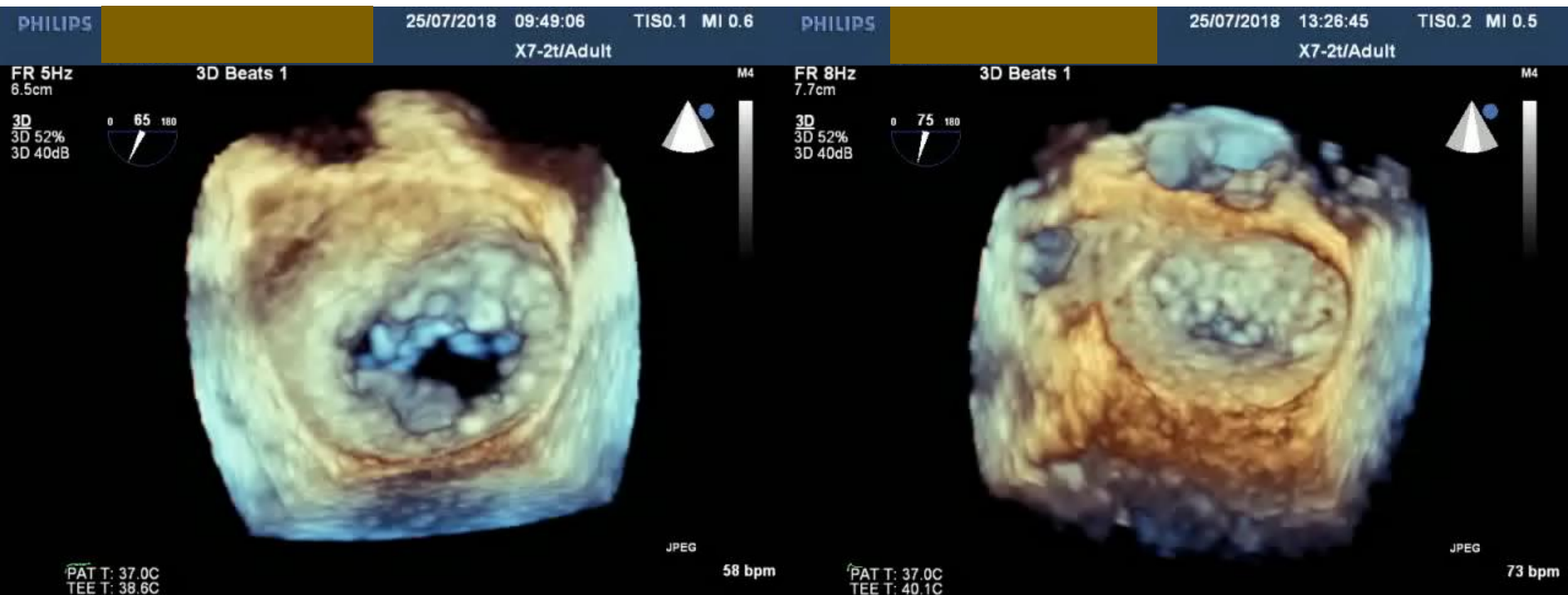
3D
3D 52%
3D 40dB



JPEG

PAT T: 37.0C
TEE T: 40.1C

73 bpm

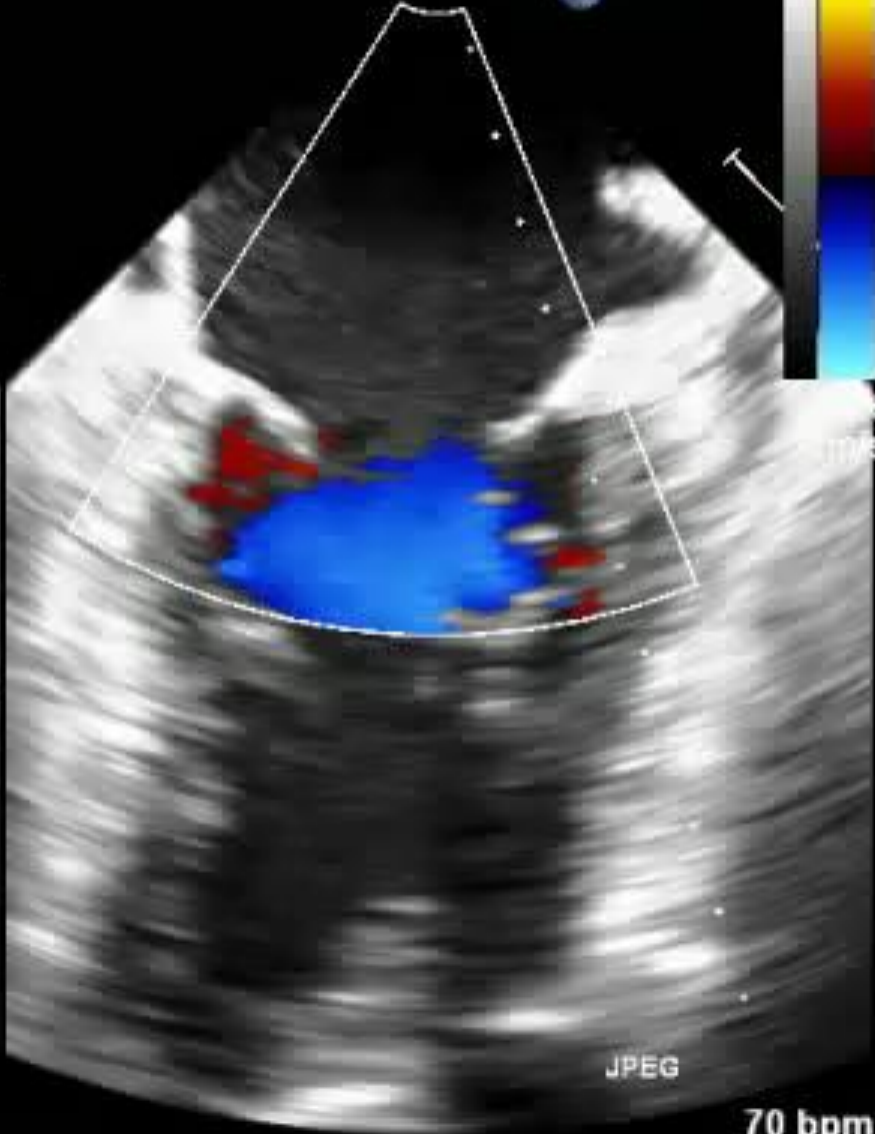


FR 15Hz
13cm

2D
78%
C 50
P Off
Pen
CF
59%
4.4MHz
WF High
Med



M4 M4
+61.6



JPEG

PAT T: 37.0C
TEE T: 40.2C

70 bpm

FR 9Hz
11cm

xPlane
75%
75%
50dB
P Off
Pen

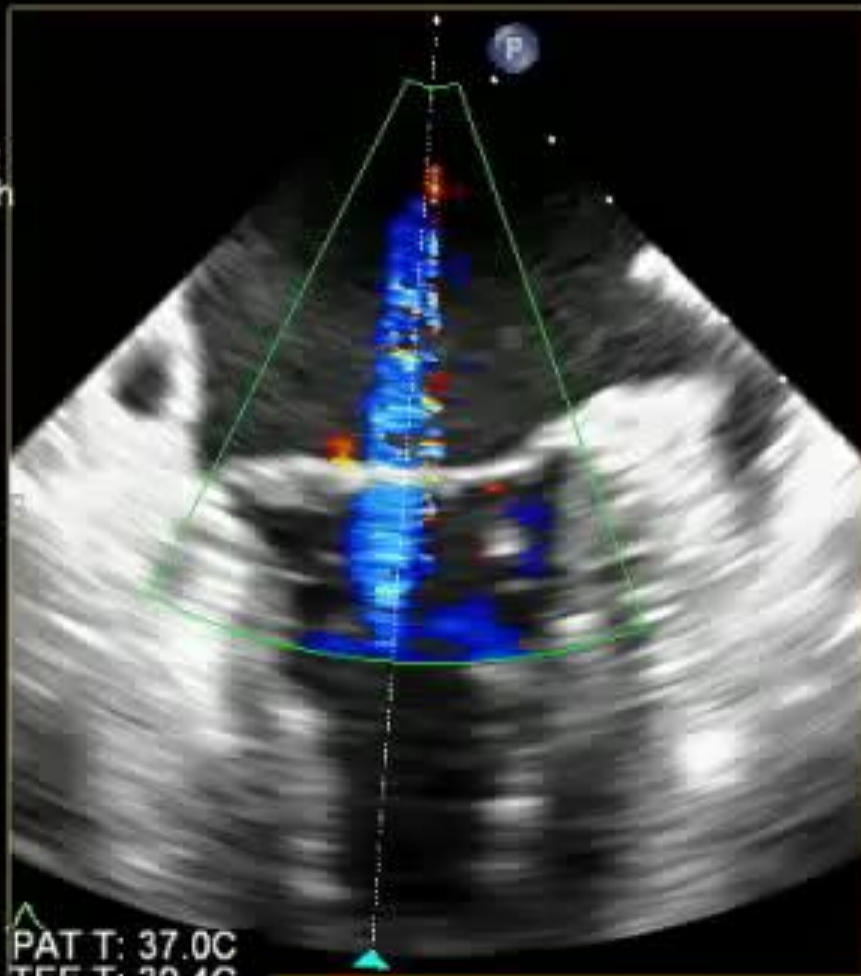
CF
59%
4.4MHz
WF High
Med



M4 M4
+61.6



-61.6
cm/s



77 bpm

PAT T: 37.0C
TEE T: 39.4C



Conclusion

- Alternative/Multimodality approach for degenerative MR
- Heart team evaluation
- Hybrid approaches



FIRST ANNOUNCEMENT

HONG KONG VALVE 2019

7-8th September 2019 (Sat & Sun)

**Cheung Kung Hai Lecture Theatre,
Faculty of Medicine Building,
Sassoon Road, Hong Kong**

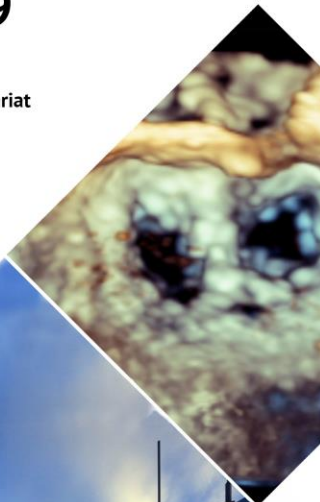
**Conference Secretariat
hkvalve@hku.hk
<http://hkvalve.org>**

- Live case demonstrations from Queen Mary Hospital
- Plenary lectures by overseas & local experts
- Hands-on, didactic workshops
 - Cardiac catheterization skills for cardiothoracic surgeons
 - Cardiac surgical basics for interventional cardiologists
 - Cardiothoracic anaesthesiology and TEE essentials for Hybrid Heart Valve Interventions
 - Transcatheter heart valve crimping and loading for nurses



Target Audience

- Cardiologists and Physicians
- Cardiothoracic Surgeons
- Cardiothoracic & General Anaesthetists
- Nurses & Allied Health



Thank You!



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Queen Mary Hospital**

