

PLACE

PLATFORM OF LABORATORIES FOR ADVANCES IN CARDIAC EXPERIENCE

ROMA

Centro Congressi
di Confindustria

Auditorium
della Tecnica

9^a Edizione

30 Settembre

1 Ottobre

2022



CARDIOMIOPATIA IPERTROFICA:UPDATE 2022

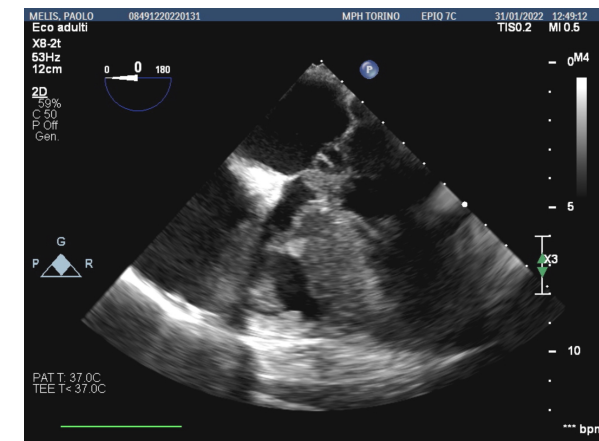
CMIO E MITRACLIP

Dr. E. BRSCIC



HCM with LVOTO

1. LVOTO either at rest or with provocation in 75% pts with HCM
2. Obstruction if outflow gradient ≥ 30 mmHg
3. Rest or provoked gradient ≥ 50 mmHg threshold for SRT in drug-refractory symptomatic pts
4. Septal Hypertrophy with narrowing of LVOT, abnormal blood flow vectors that dynamically displace MV leaflets anteriorly
5. Anatomic alterations M.Valve: longer leaflets, anterior displacement papillary muscles and mitral valve apparatus
6. MR from LVOTO + primary leaflets abnormalities
7. MR from LVOTO typically mid-late systolic and posterior or lateral orientated



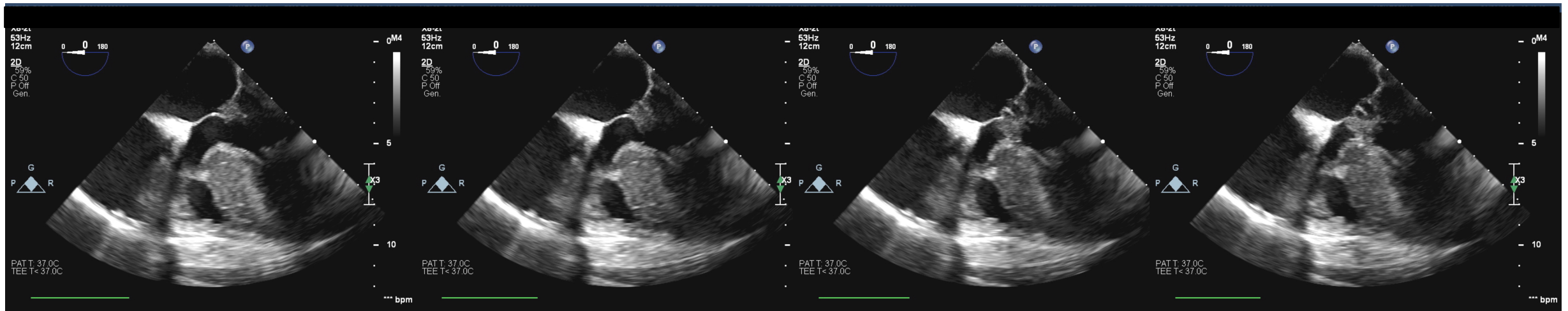


Mechanism for LVOTO

Systolic Anterior Movement MV



*High Intracavitary Pressure, M Regurgitation (coaptation loss),
Dynamic and sensitive to ventricular load and contractility*





2020 AHA/ACC Guideline for the Diagnosis and Treatment of Patients With Hypertrophic Cardiomyopathy

A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines

Recommendations for Pharmacologic Management of Patients With Obstructive HCM

1	1. In patients with obstructive HCM and symptoms* attributable to LVOTO, nonvasodilating <u>beta-blockers</u> , titrated to effectiveness or maximally tolerated doses, are recommended. ¹⁻³
1	2. In patients with obstructive HCM and symptoms* attributable to LVOTO, for whom beta-blockers are ineffective or not tolerated, substitution with non-dihydropyridine calcium channel blockers (eg, <u>verapamil</u> , <u>diltiazem</u>) is recommended. ⁴⁻⁶
1	3. For patients with obstructive HCM who have persistent severe symptoms* attributable to LVOTO despite beta-blockers or non-dihydropyridine calcium channel blockers, either adding <u>disopyramide</u> in combination with 1 or the other drugs, or SRT performed at experienced centers,† is recommended. ⁷⁻¹²
1	4. For patients with obstructive HCM and acute hypotension who do not respond to fluid administration, intravenous phenylephrine (or other vasoconstrictors without inotropic activity), alone or in combination with beta-blocking drugs, is recommended. ¹³



M. Therapy
Myectomy
Myectomy + M. Surgery
Atrial Septal Ablation

Recommendations for Invasive Treatment of Symptomatic Patients With Obstructive HCM

1	1. In patients with obstructive HCM who remain severely symptomatic despite GDMT, SRT in eligible patients,* performed at experienced centers,† is <u>recommended</u> for relieving LVOTO ¹⁻³ (Table 3 and Table 4).
1	2. In symptomatic patients with obstructive HCM who have <u>associated cardiac disease</u> requiring surgical treatment (eg, <u>associated anomalous papillary muscle</u> , markedly elongated anterior mitral leaflet, intrinsic mitral valve disease, multivessel CAD, valvular aortic stenosis), <u>surgical myectomy</u> , performed at experienced centers,† is recommended ⁴⁻⁷ (Table 3 and Table 4).
1	3. In adult patients with obstructive HCM who remain severely symptomatic, despite GDMT and in whom <u>surgery is contraindicated</u> or the risk is considered unacceptable because of serious comorbidities or advanced age, <u>alcohol septal ablation</u> in eligible patients,* performed at experienced centers,† is recommended ⁸⁻¹⁰ (Table 3 and Table 4).

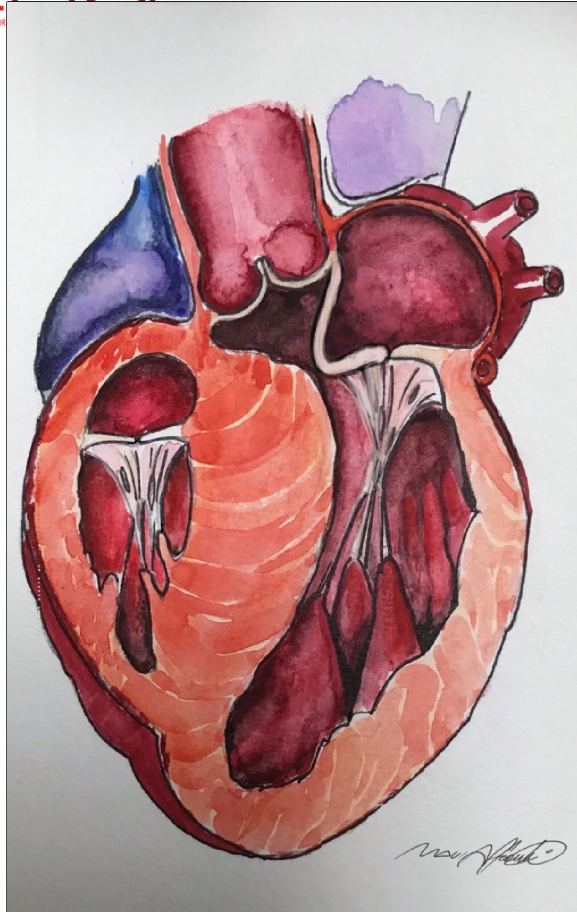


Recommendations for Invasive Treatment of Symptomatic Patients With Obstructive HCM

1	1. In patients with obstructive HCM who remain severely symptomatic <u>despite GDMT, SRT</u> in eligible patients,* performed at experienced centers,† is <u>recommended</u> for relieving LVOTO ¹⁻³ (Table 3 and Table 4).
1	2. In symptomatic patients with obstructive HCM who have <u>associated cardiac disease</u> requiring surgical treatment (eg, associated anomalous papillary muscle, markedly elongated anterior mitral leaflet, intrinsic mitral valve disease, multivessel CAD, valvular aortic stenosis), <u>surgical myectomy</u> , performed at experienced centers,† is recommended ⁴⁻⁷ (Table 3 and Table 4).
1	3. In adult patients with obstructive HCM who remain severely symptomatic, despite GDMT and in whom <u>surgery is contraindicated</u> or the risk is considered unacceptable because of serious comorbidities or advanced age, <u>alcohol septal ablation</u> in eligible patients,* performed at experienced centers,† is recommended ⁸⁻¹⁰ (Table 3 and Table 4).

Concern for

1. **Procedural risk**
2. **Pro-arrhythmic scar effect**
3. **Conduction disturbances**
4. **Need of re-operation**
5. **Anatomical limits (septal branch)**



Use of MitraClip in Symptomatic HCM with LVOTO pts

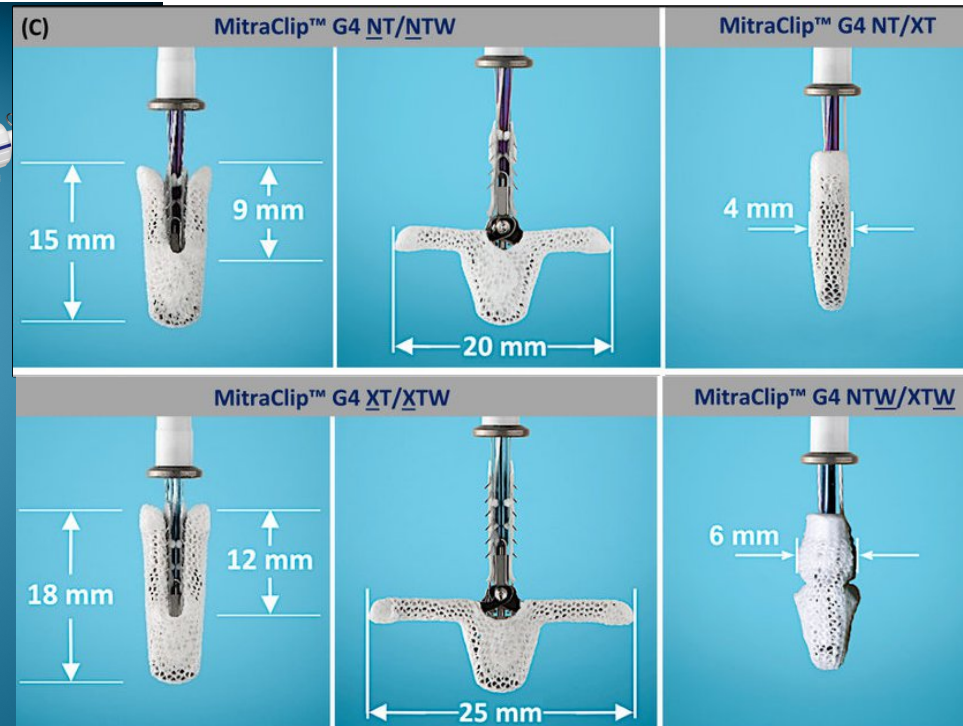
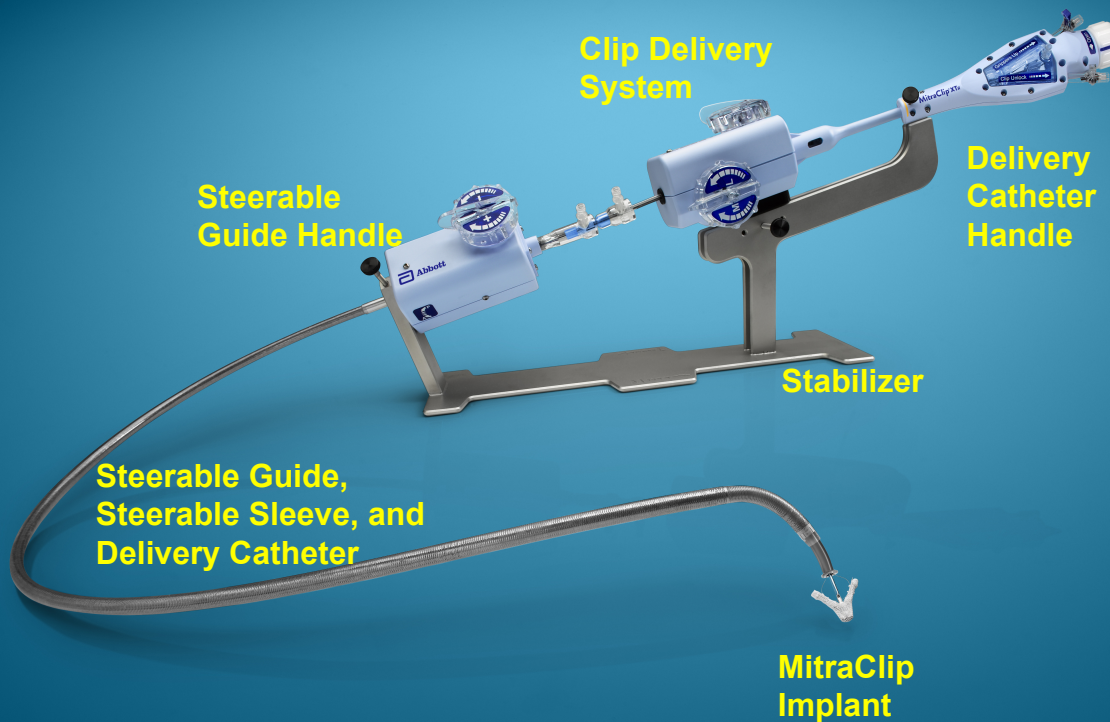
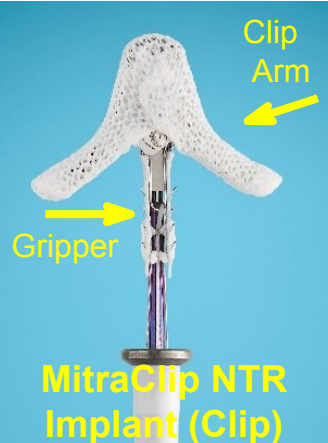
Anatomical Considerations

- ***AL anomalies in determining SAM***

Relative Low-Risk procedure



THE MITRACLIP[®] SYSTEM



G4 System



...loading catheters on the catheter and slowly
moving from the patient. Grain management and

PRE Vs POST

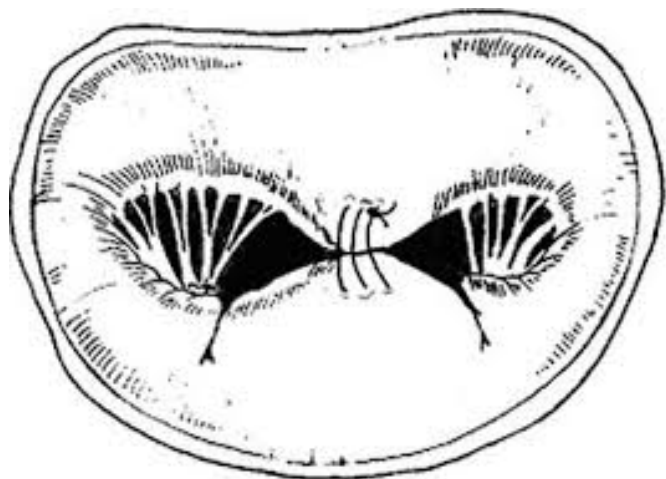
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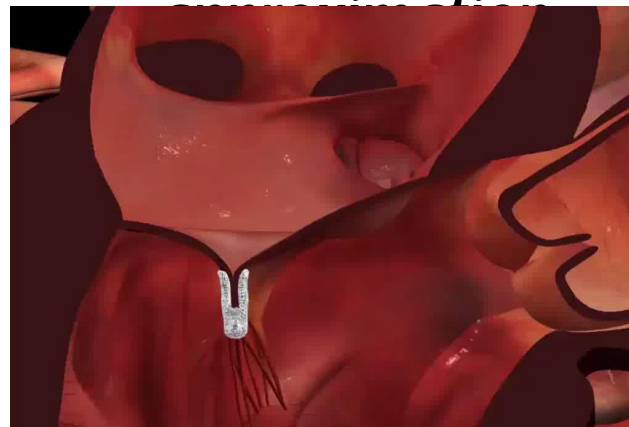
BACKGROUND MITRACLIP

“MECHANICAL VALVE REPAIR”

ALFIERI STITCH



MitraClip facilitates the reconstruction of an insufficient mitral valve through tissue



Repair creates a tissue bridge





Edge-to-Edge (Alfieri) Mitral Repair: Results in Diverse Clinical Settings

Sunil K. Bh
Buu-Khanh
Departments of T
Cleveland, Ohio

Background.
can make repair
augments the re
of this study w
ble to edge-to-e
structive potent

Methods. Fro
tients underwe
ischemic cardio
disease (n = 31
12%), and hyper
14, 6%). Concor
in 188 patients
down of an Alfie
tion. Preoperativ
in 65 (30%). Pos
and return of MR were assessed using 3D transthoracic
echocardiograms and longitudinal analyses.

J Card Surg. 2016 Aug;31(8):503-6. doi: 10.1111/jocs.12804. Epub 2016 Jul 11.

Trans-aortic Alfieri stitch at the time of septal myectomy for hypertrophic obstructive cardiomyopathy

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Affiliations
PMID: 27401021

Abstract

Background: Systolic anterior motion (SAM) of the mitral valve, left ventricular outflow tract (LVOT) obstruction, and mitral regurgitation (MR) are known adverse outcomes that can occur after septal myectomy for hypertrophic obstructive cardiomyopathy. The objective of this study was to describe outcomes of a surgical technique to prevent these complications.

Conclusions: Trans-aortic Alfieri stitch placement during septal myectomy is feasible in most cases as an additional tool to improve MR and minimize SAM. This technique may have a role in addressing mitral disease, such as a long anterior leaflet or fibrotic mitral valve, at the time of myectomy without the need for left atriotomy for mitral exposure.

Repair of M itral

ason for Reoperation

ngation of chordae
sistent HOCM

ular dilatation
g dehiscence
ular dilatation
ngation of chordae
ular dilatation

¹ HOCM = hypertrophic obstructive cardiomyopathy.

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ACC.16™

1516
JACC April 5, 2016
Volume 67, Issue 13

83



CARDIOLOGY

Cardiology 2017;137:58–61
DOI: 10.1159/000454800Received: October 24, 2016
Accepted after revision: November 28, 2016
Published online: January 18, 2017**Mitra-Clip in 15 symptomatic HOCM pts with SAM**

- Resolution of SAM
- Reduction of MR
- Gradient from a mean 75 to 11 mmHg
- NYHA improvement
- No procedural complications

Mitra-Clip

The Use of Mitra-Clip in 15 symptomatic HOCM Patients with Hypertrophic Cardiomyopathy

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demonstrated continued reduction of SAM and significant reduction in MR in the treated patients, though high systolic LVOT velocities (i.e., >4 m/s) were observed in 3 of the 5 treated patients.

Conclusions: This is the first experience of percutaneous mitral valve plication as primary therapy in the management of obstructive HCM. This initial experience suggests that percutaneous mitral valve plication may be effective for symptom relief in these patients through reduction of SAM and MR, though the significance of persistent elevated velocities across the LVOT requires further study.g
edID, ^{a, b}
MD, ^{a, b}

MR

on



60 years old man

Hypertension, dyslipidemia

HCOM with LVOT gradient < 3 m/sec

Paroxysmal AF in NAO

NYHA I without other clinical events

***Verapamil + Disopyramide + Apixaban
(BB intolerance)***

Clinical Case

***From Gen/2022 clinical worsening
NYHA III***

Severe MR

LVOT Gradient > 5 m/sec

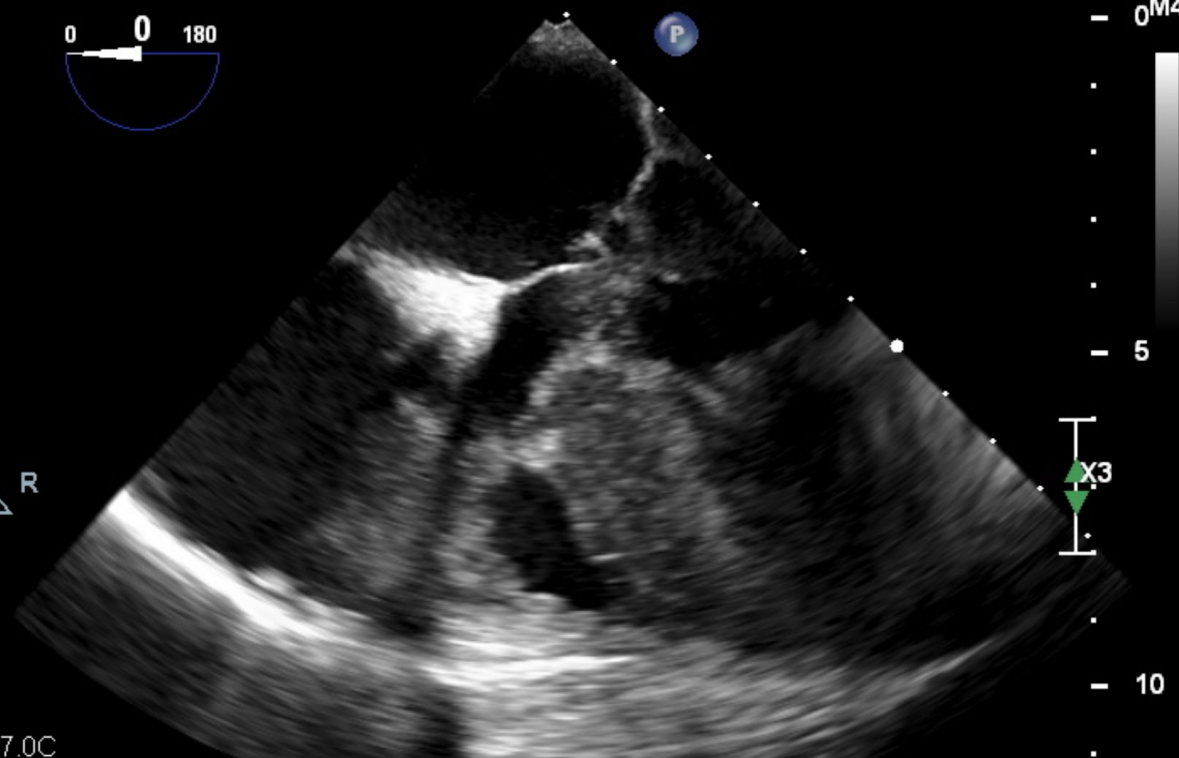
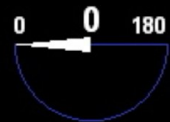
***Proposed surgical myectomy that
patient refused***



SAM

X8-2t
 53Hz
 12cm

2D
 59%
 C 50
 P Off
 Gen.



PAT T: 37.0C

X8-2t
 53Hz
 12cm

2D
 59%
 C 50
 P Off
 Gen.



PAT T: 37.0C
 TEE T: 37.0C

X8-2t
 53Hz
 12cm

2D
 59%
 C 50
 P Off
 Gen.



PAT T: 37.0C
 TEE T: 37.0C

*** bpm

X8-2t
 53Hz
 12cm

2D
 59%
 C 50
 P Off
 Gen.



PAT T: 37.0C
 TEE T: 37.0C

X8-2t
 53Hz
 12cm

2D
 59%
 C 50
 P Off
 Gen.

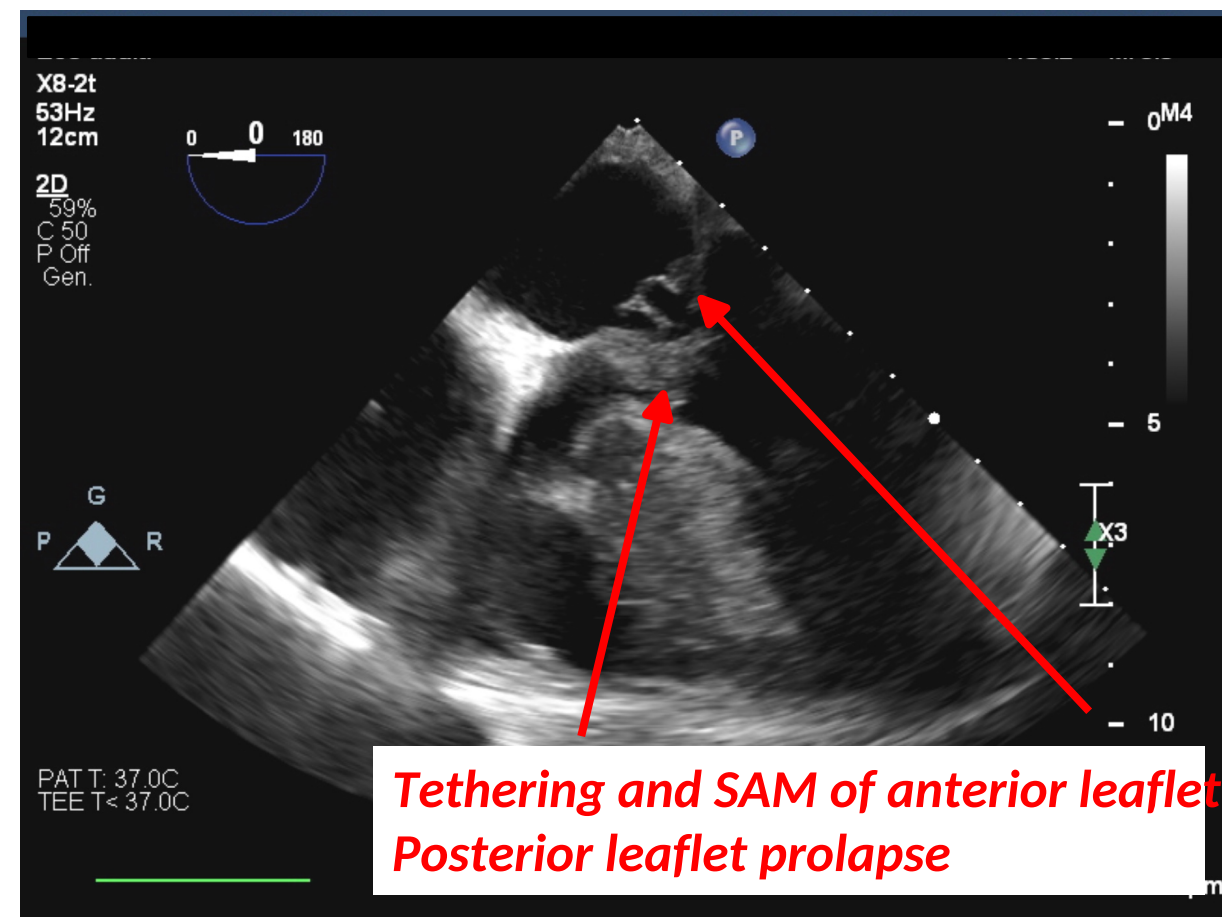
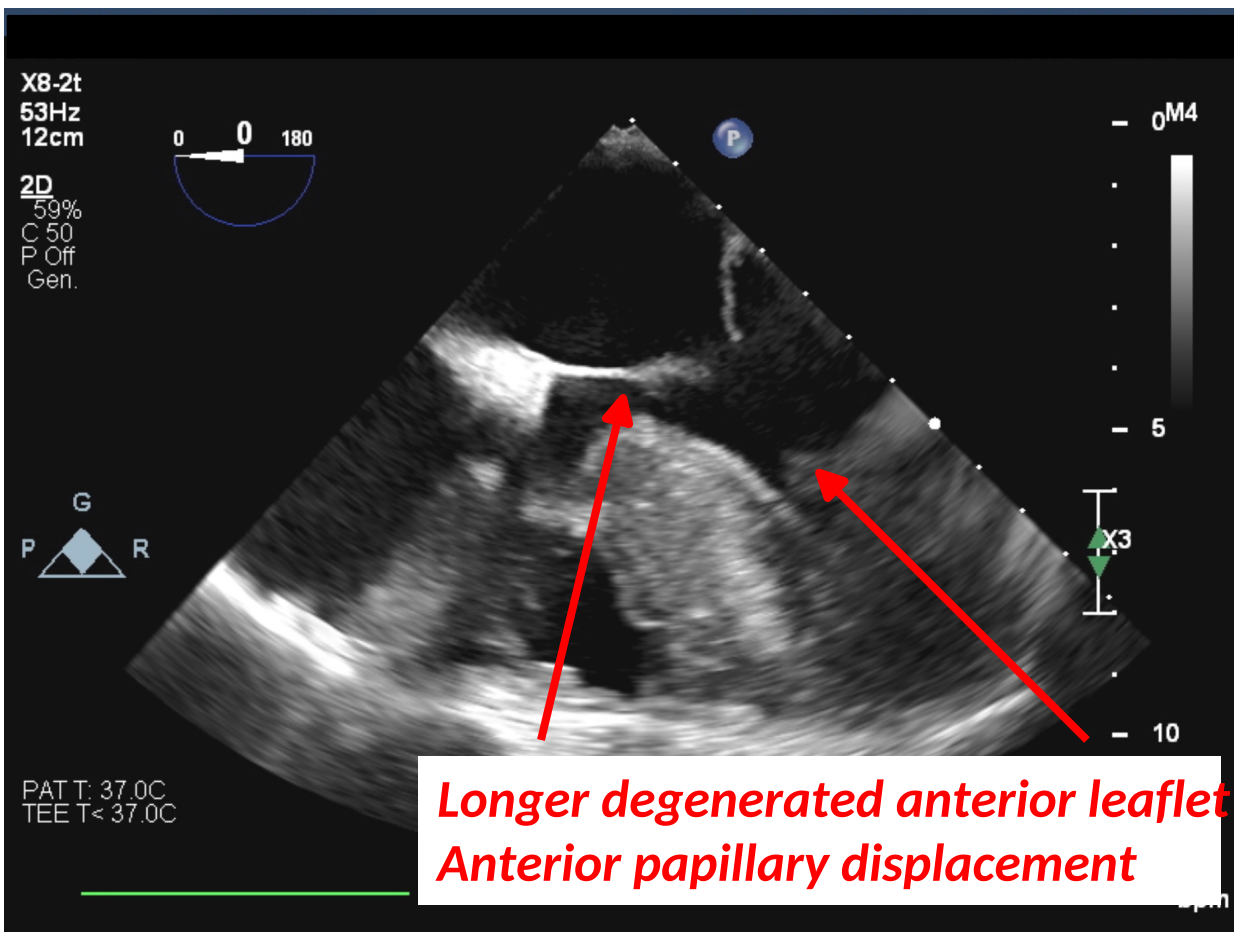


PAT T: 37.0C
 TEE T: 37.0C

*** bpm

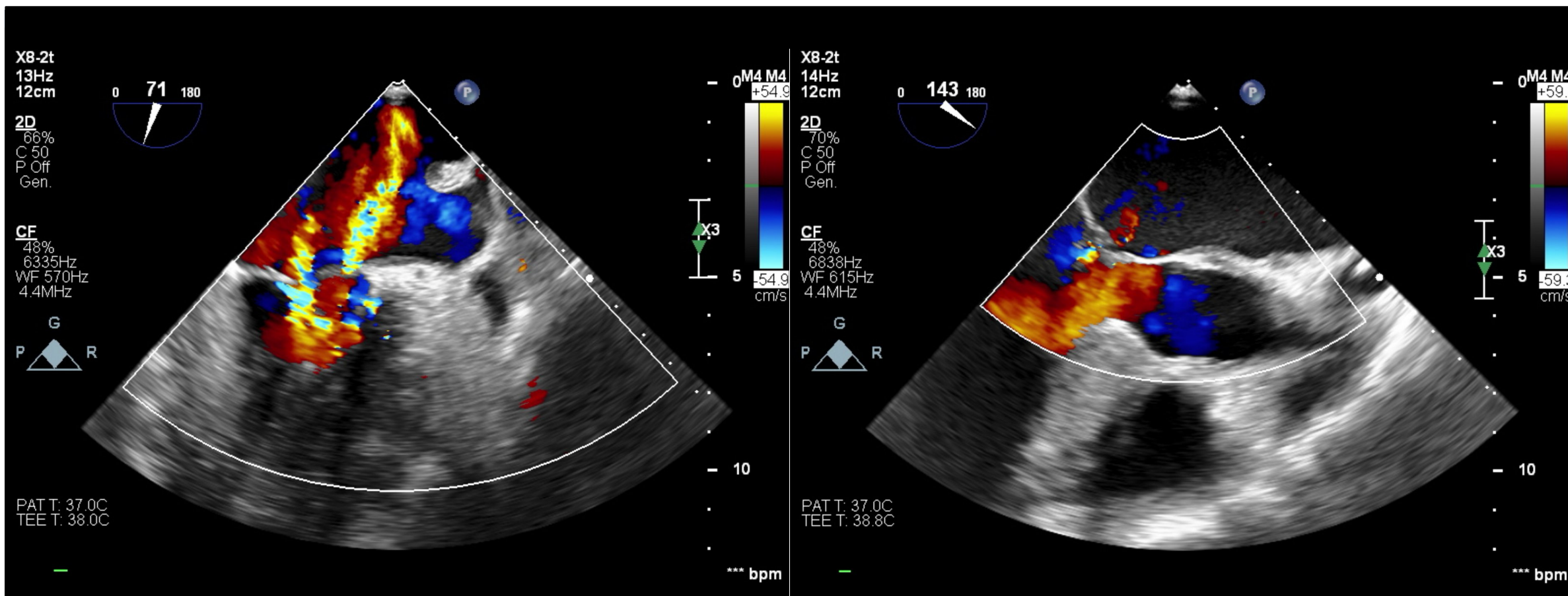


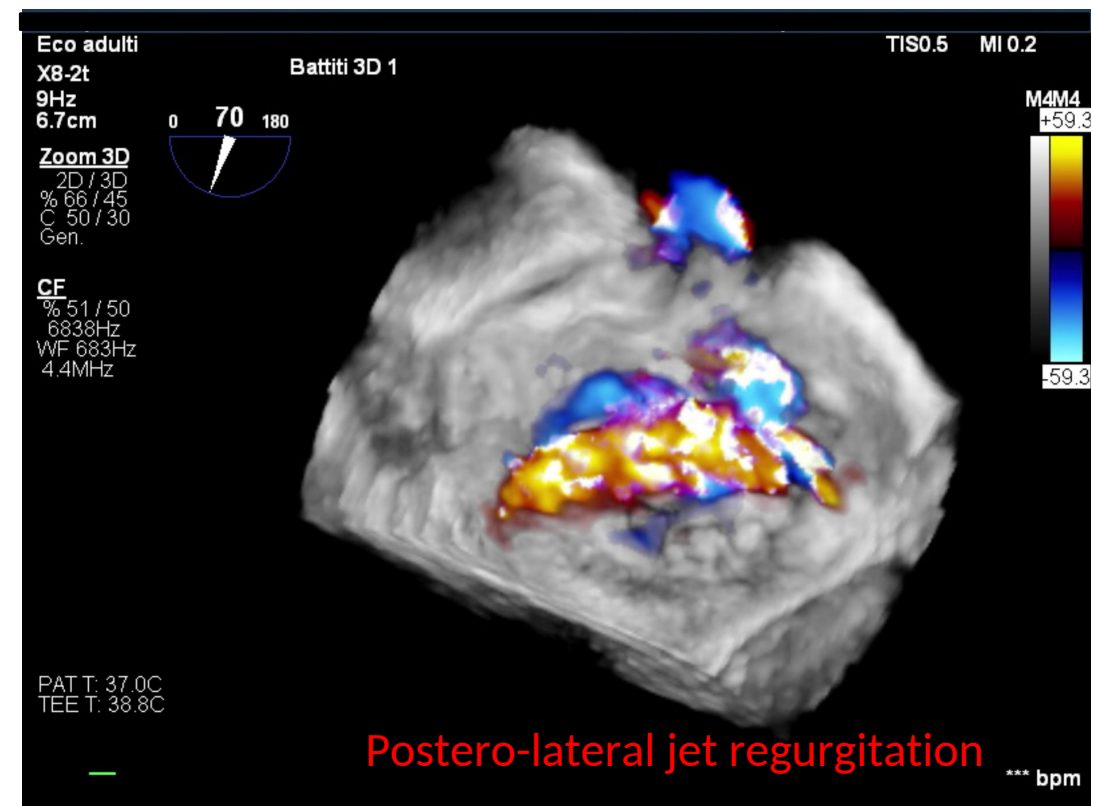
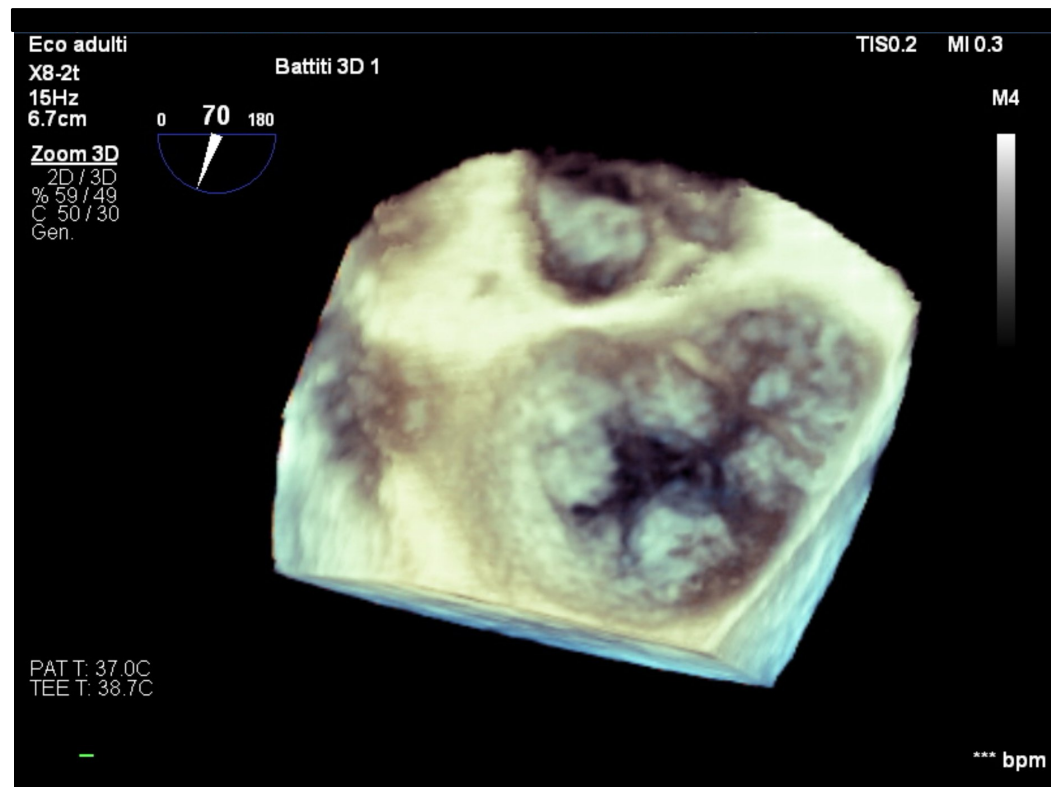
Anatomical Details





Mitral Regurgitation





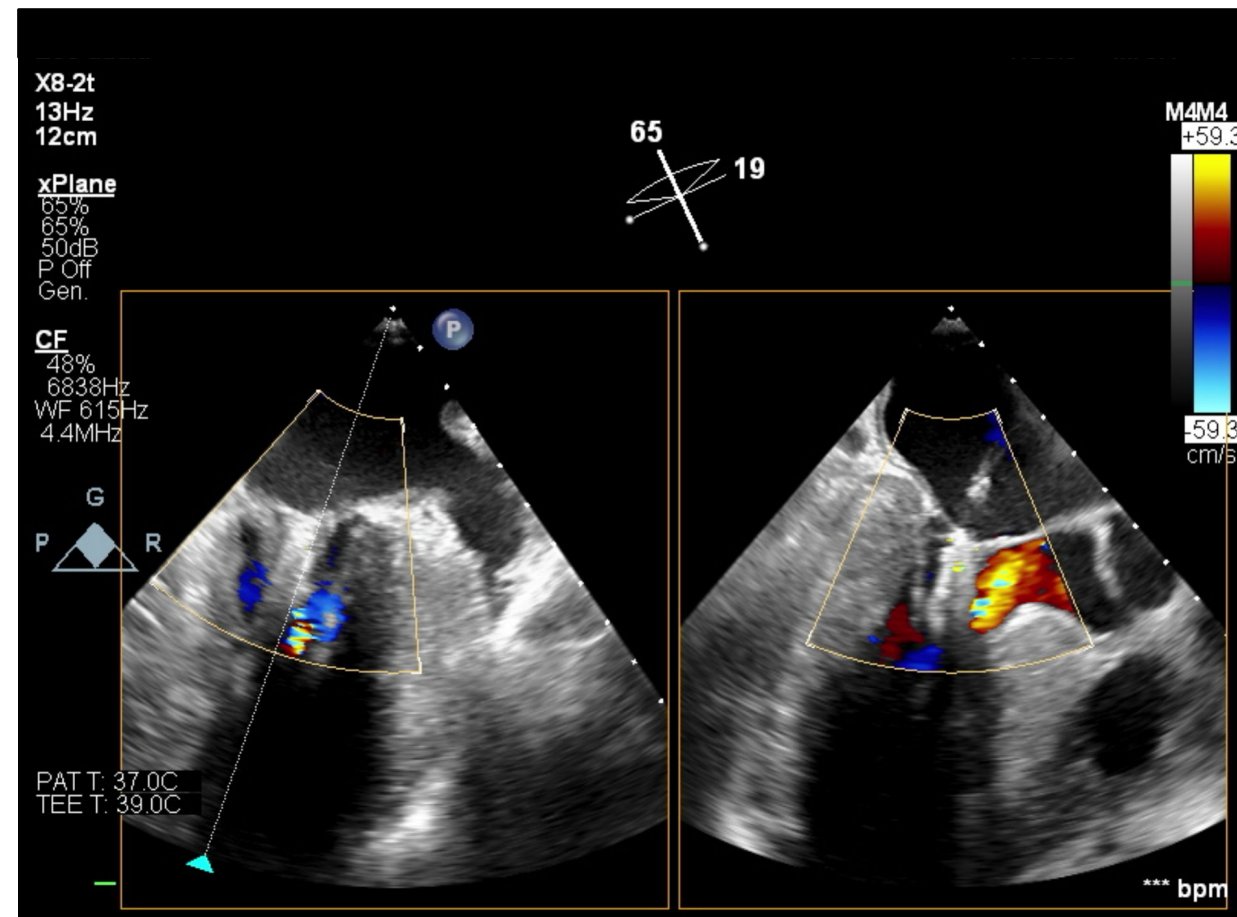


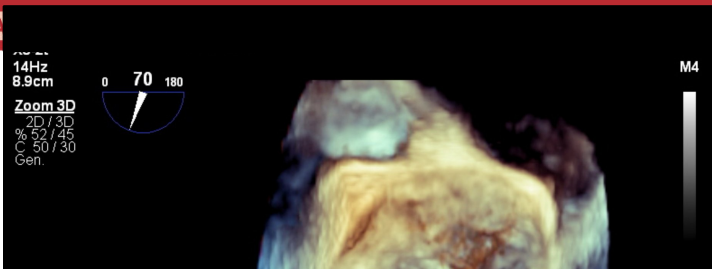
Scheduled for MitraClip Procedure





XTW G4 MitraClip ***Implant***





XTW G4 MitraClip Final Result

X8-2t
33Hz
13cm

xPlane
56%
56%
50dB
P Off
Gen.



PAT T: 37.0C
Temp. TEE: 38.5C

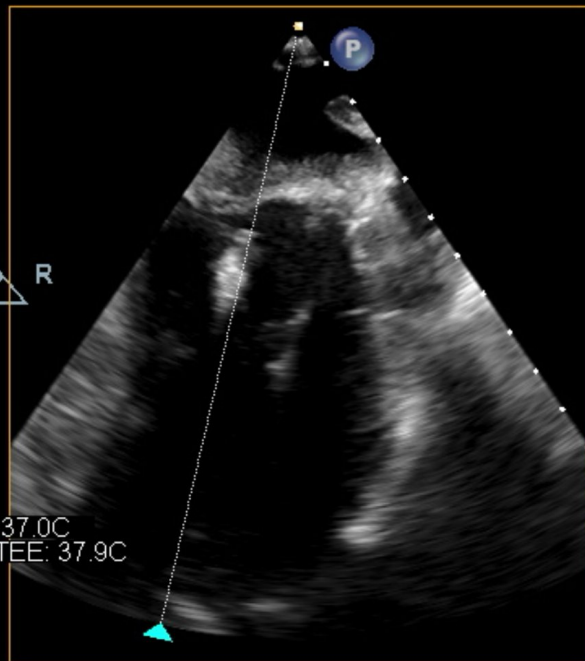


M4M4
+59.3



P G R

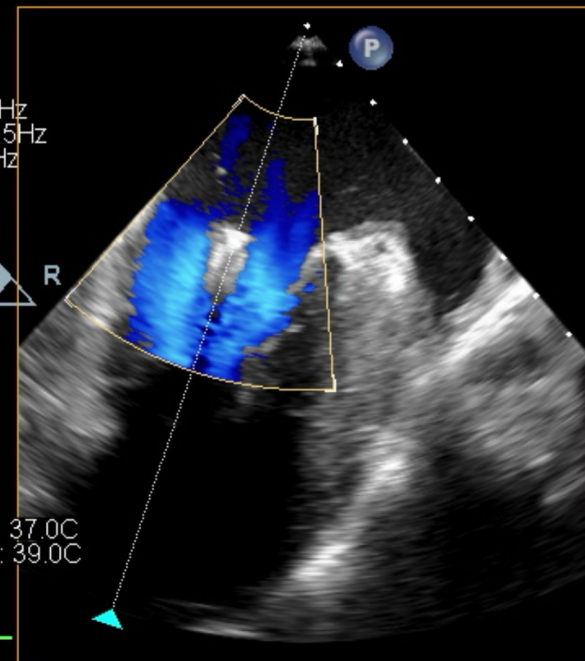
PAT T: 37.0C
Temp. TEE: 37.9C



P Off
Gen.
CF
48%
6838Hz
WF 615Hz
4.4MHz

P G R

PAT T: 37.0C
TEE T: 39.0C



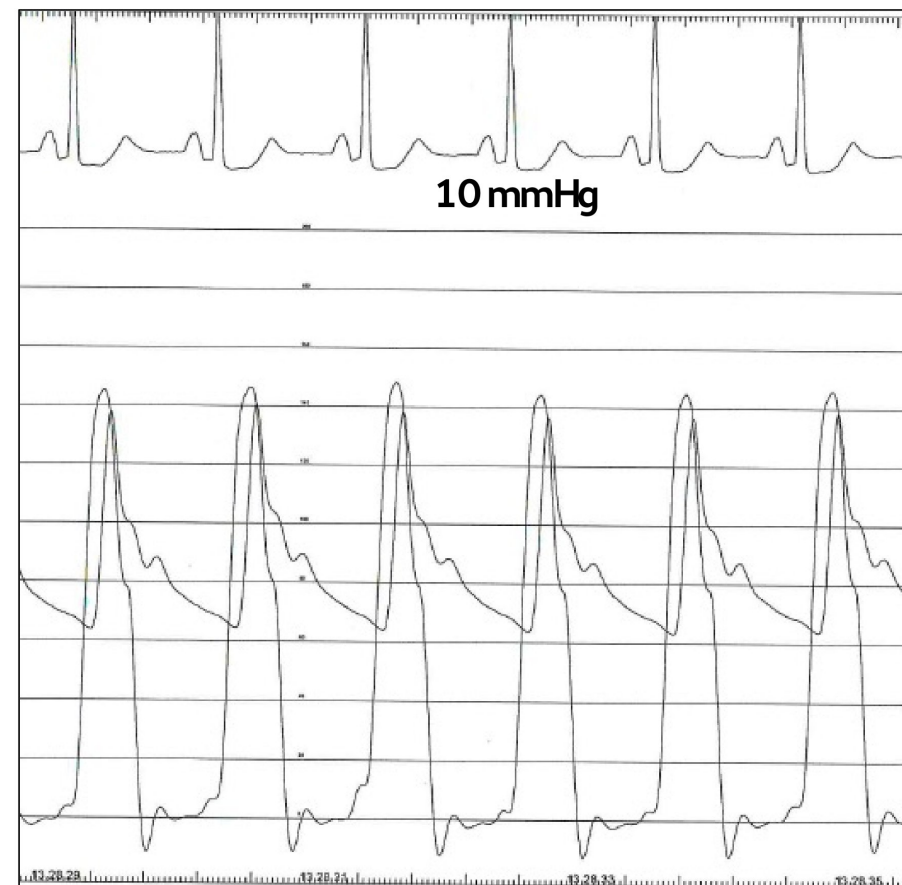
*** bpm



Pre-Clip Gradient



Post-Clip Gradient





Follow-Up 8 months

NYHA I

Mild MR

LVOT Gradient < 3 m/sec



Potential Role of Mitraclip Therapy

In obstructive HCM patients symptomatic despite MT:

- ***If suitable anatomy (AL morphology, Septum thickness)***
- ***If high surgical risk***
- ***If failure of standard STR therapy with need of re-operation***



Grazie per l'attenzione

