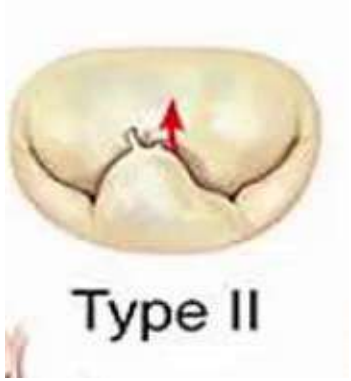
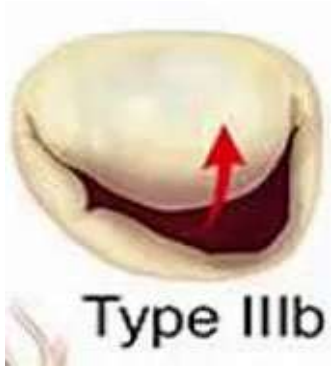
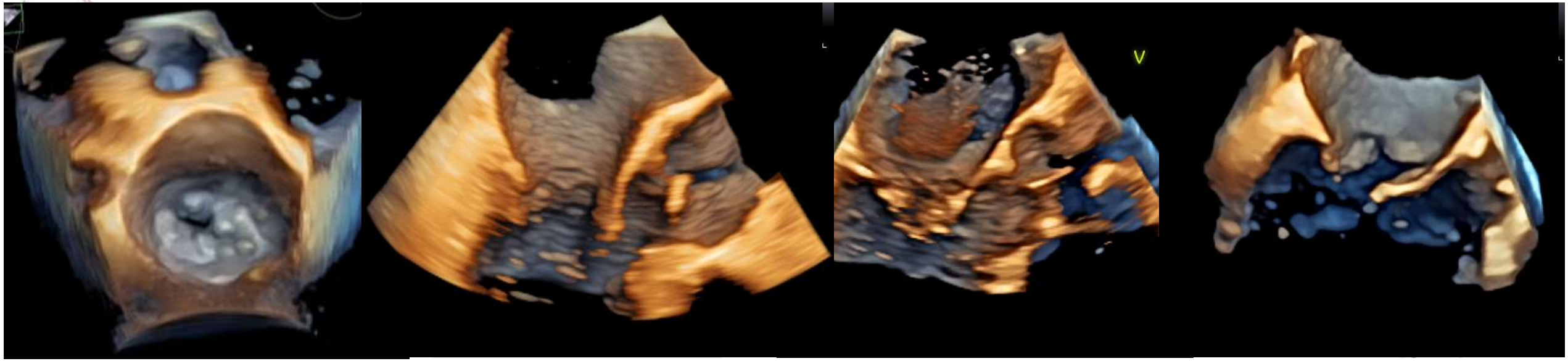
Mitral qapaq anatomiyası: pre-prosedural/prosedural müayinə və görüntüləmə üsulları.

Dr. Şəfəq Mustafayeva
Universal Hospital

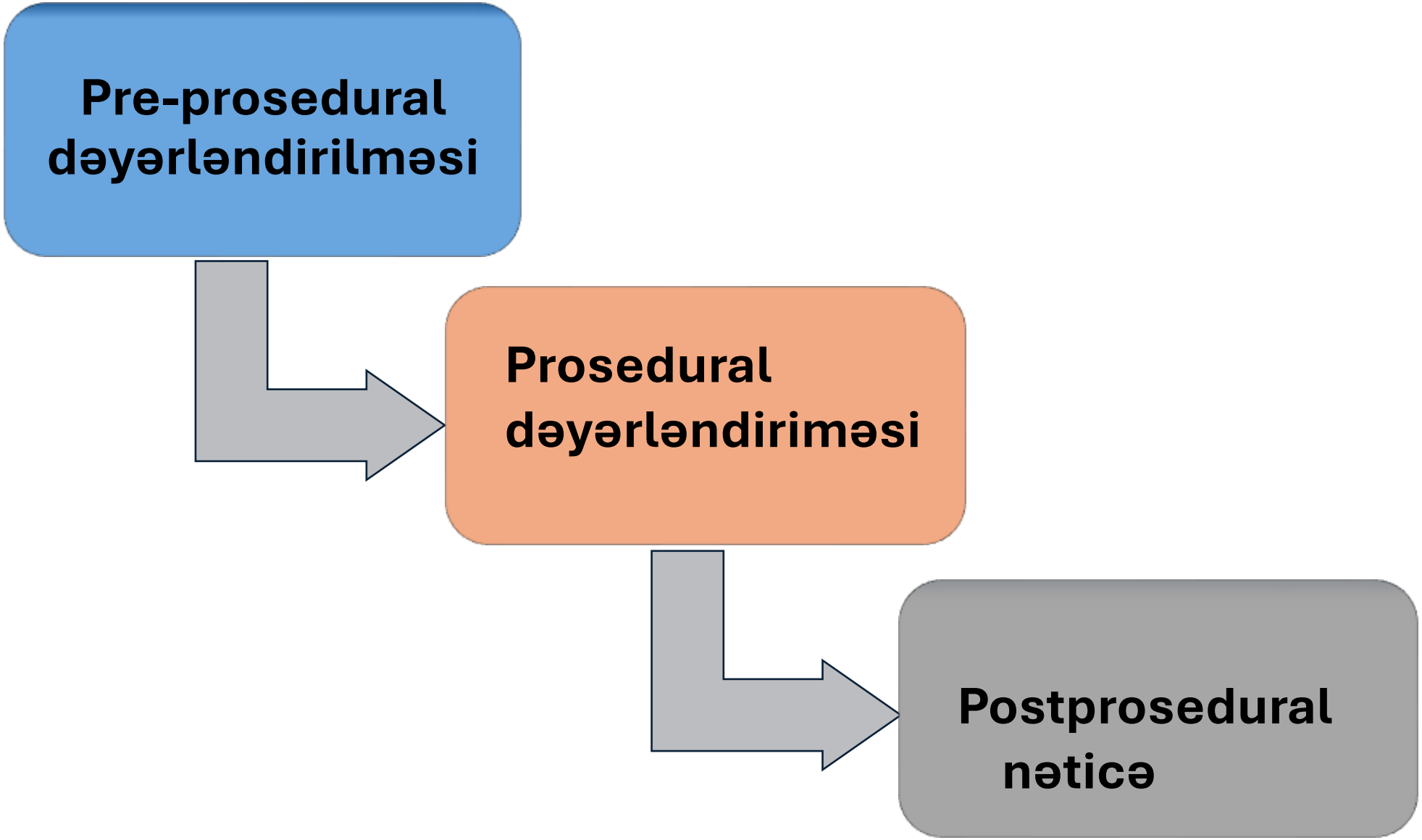
Carpentier Təsnifatı







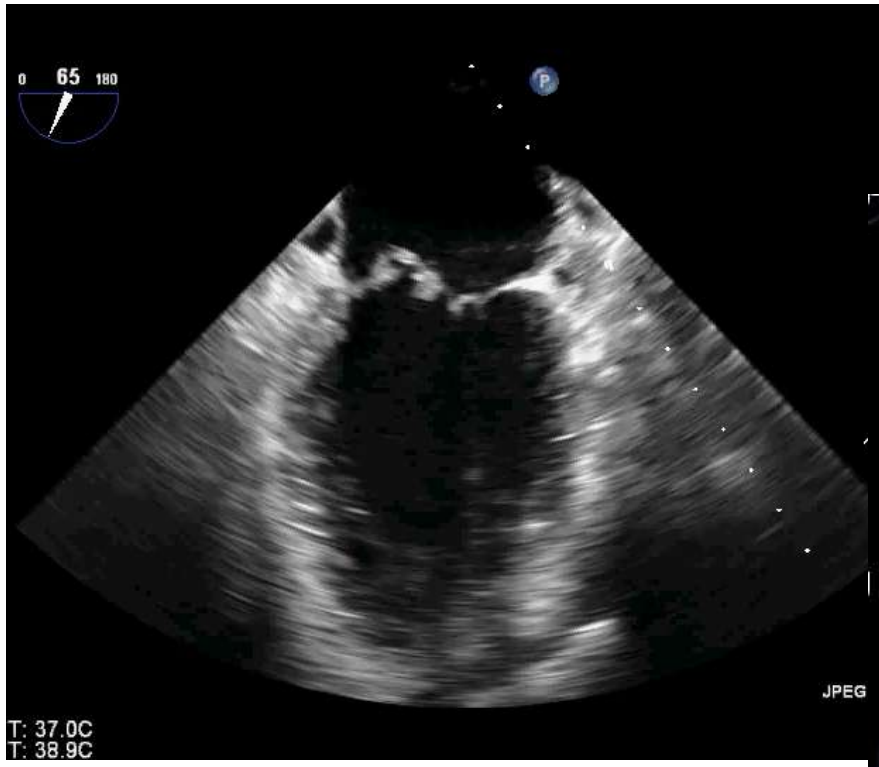
ƏSAS EXOKARDİOQRAFİK PRİNSİPLƏR

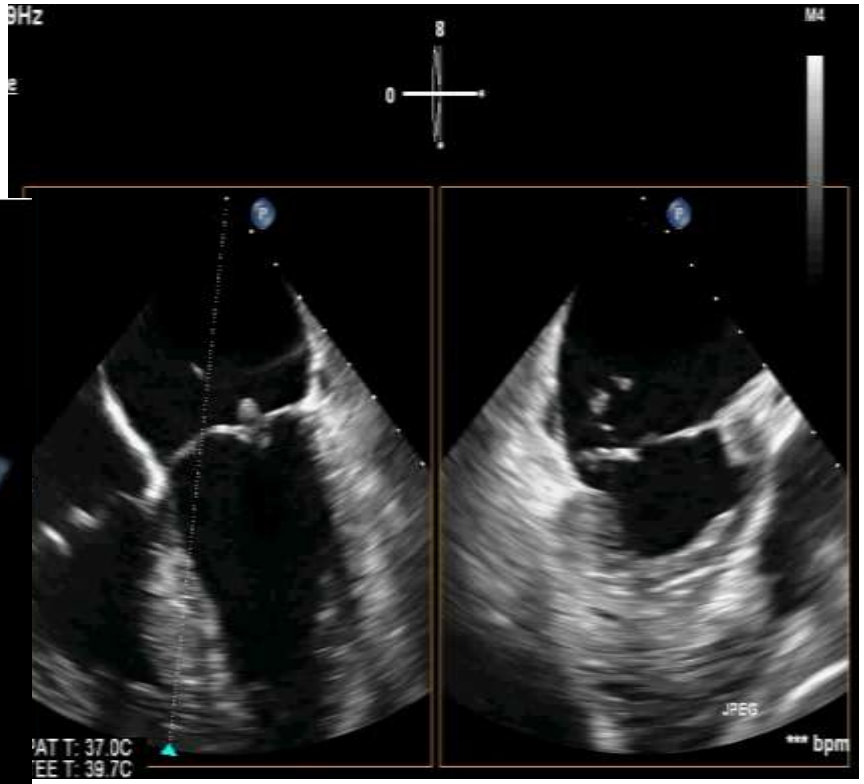


Pre – prosedural dəyərləndirilməsi

Qapağın struktural quruluşu

FIBROELASTIC DEFICIENCY

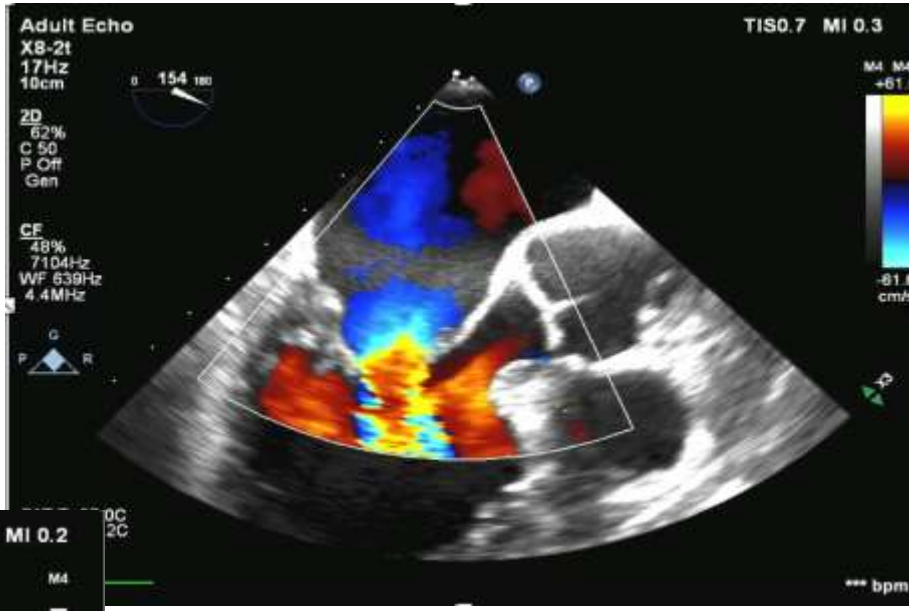




- 70 yaşlı kişi
- Son 10 gün tengnəfəslik
- AT+ ŞD+

Qapağın struktural quruluşu

BARLOW DISEASE



- 34 yaşlı qadın
- Son aylar tez yorulma
- AT- ŞD-

Fenotiplər

	Fibroelastic deficiency	Barlow disease
		
Age at diagnosis	> 60 y old	< 60 y old
History of mitral regurgitation	< 5 y	> 10 y
Annular dilation	↑(≤ 32 mm)	↑↑↑(≥36 mm)
Leaflet tissue	Thin translucent with some excess tissue	Thickened with diffuse excess tissue
Segmental distribution	Usually single segment (P2)	Multisegmental
Chordae tendinae	Thin and ruptured	Irregular and elongated
Calcification	+	+++

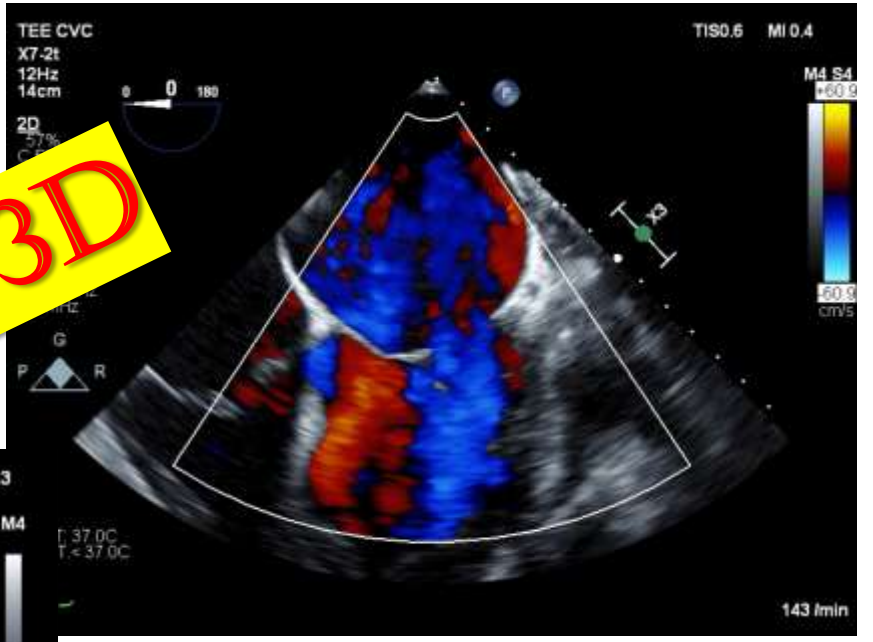
Source: Fuster V, Walsh RA, Harrington RA: *Hurst's The Heart, 13th Edition:* www.accessmedicine.com

Qapağın struktural quruluşu

CLEFT

?

NEVER WITHOUT 3D

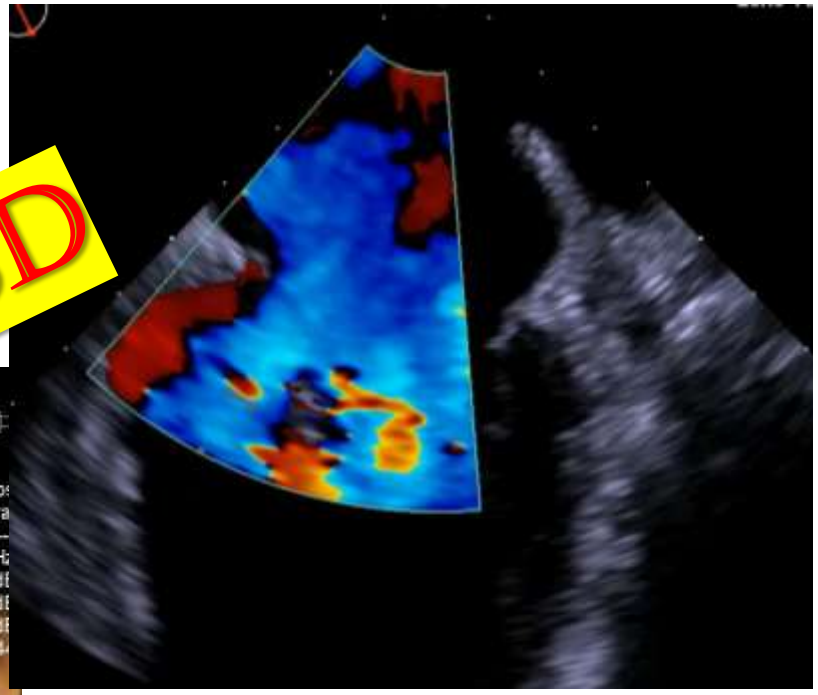


75 yaşlı qadın
AT+ ŞD + AF + XBÇ+
TEER planlaşır

Qapağın struktural quruluşu

POSTERO-MEDİAL COMMISSURE PROLAPSE

?



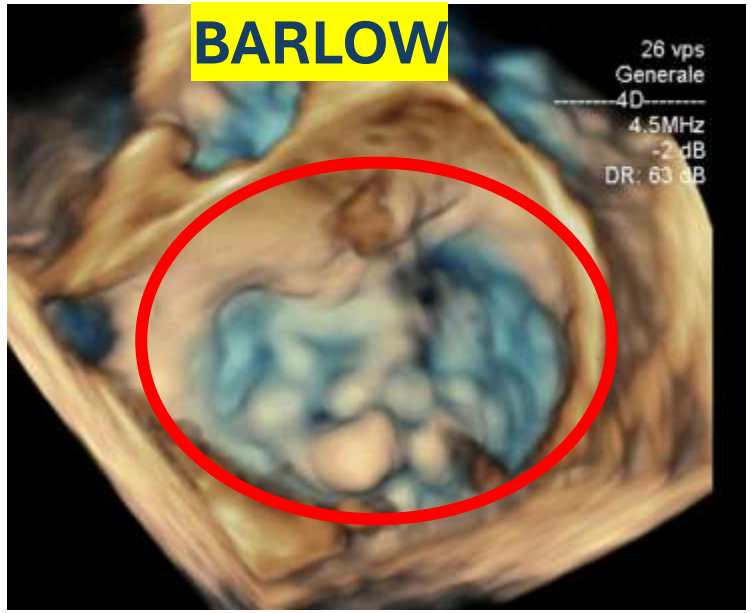
NEVER WITHOUT 3D

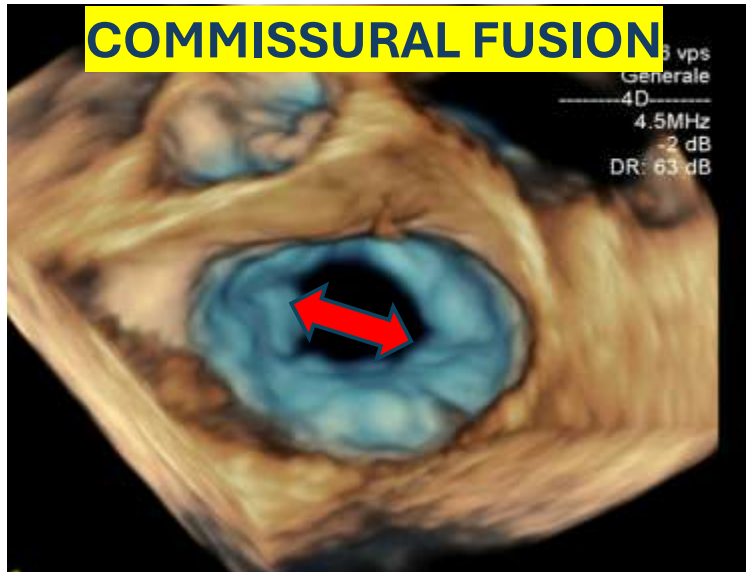
58 yaşlı qadın
Təngnəfəslik son aylarda
AT+ ŞD + XBÇ+

Qapağın struktural quruluşu

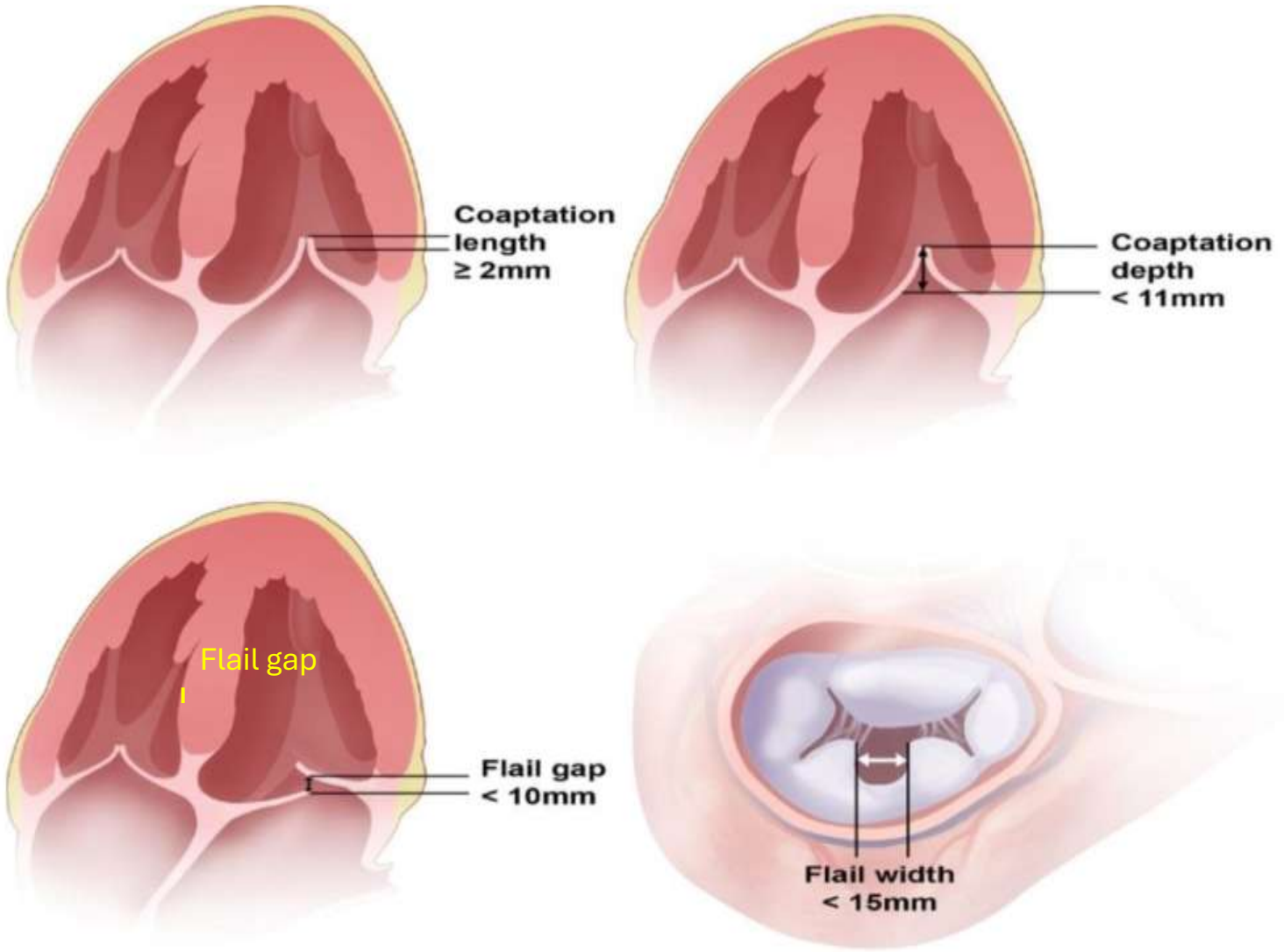
MIX etiologiya: *DEGENERATIV + REVMATIK*

NEVER WITHOUT 3D

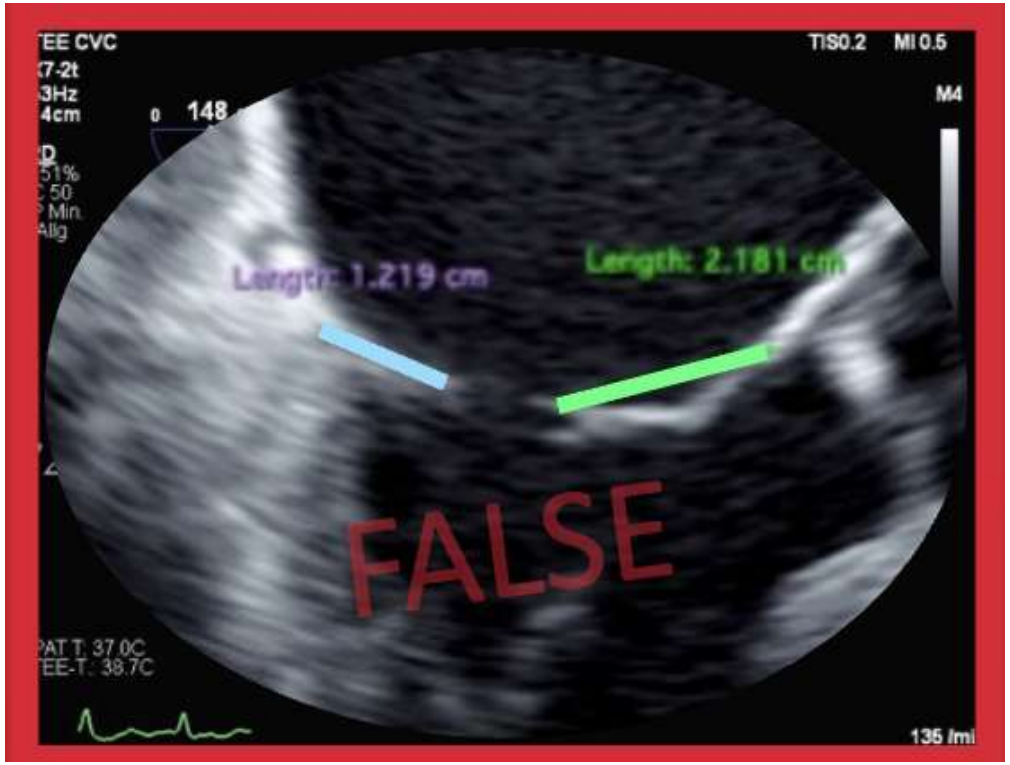


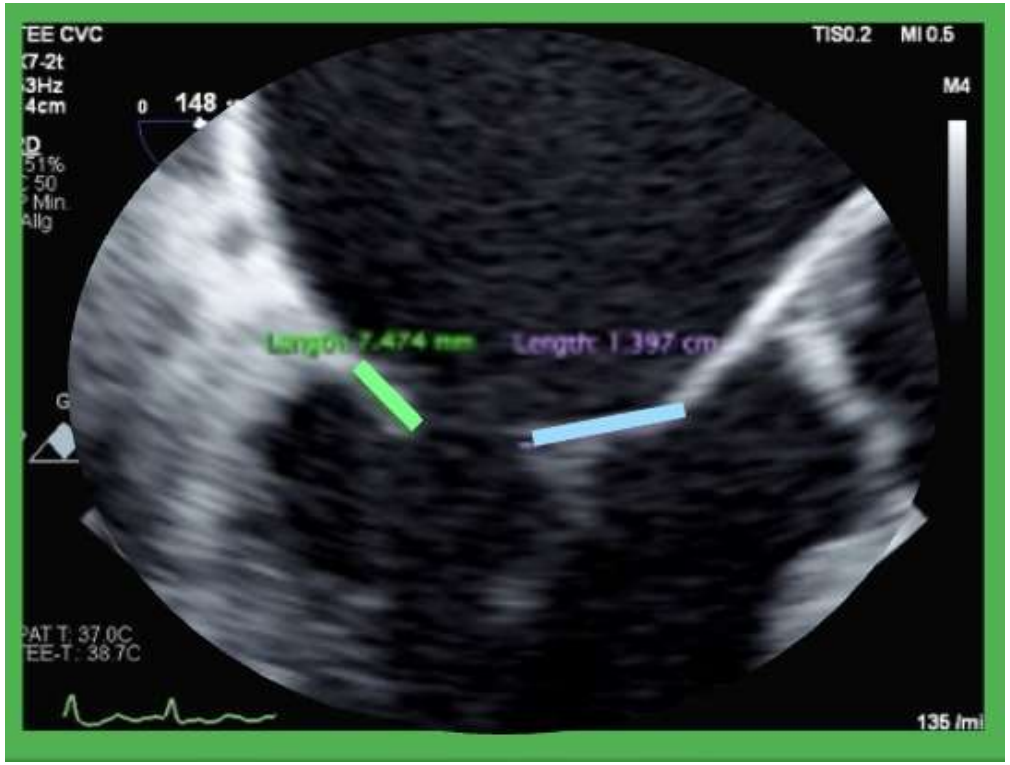


Qapaq tayların dəyərləndirilməsi (PMR)



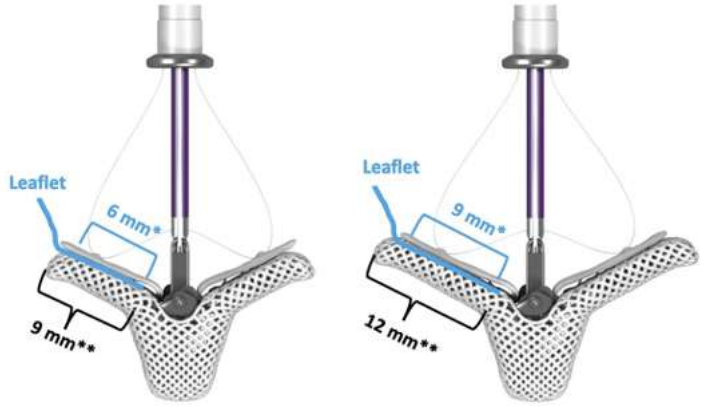
Feldman T and Cilingiroglu M. JACC 2011; 57:529-537





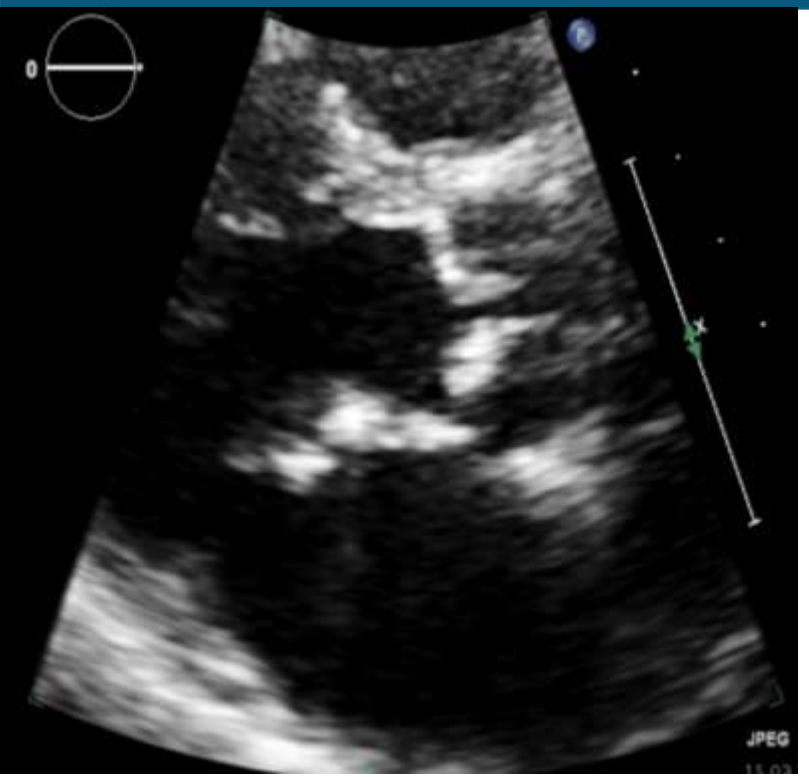
- Posterior lifletin hərəkətli hissəsini yəni uc qismini ölçməliyik. Anulus daxil edilməməlidir.

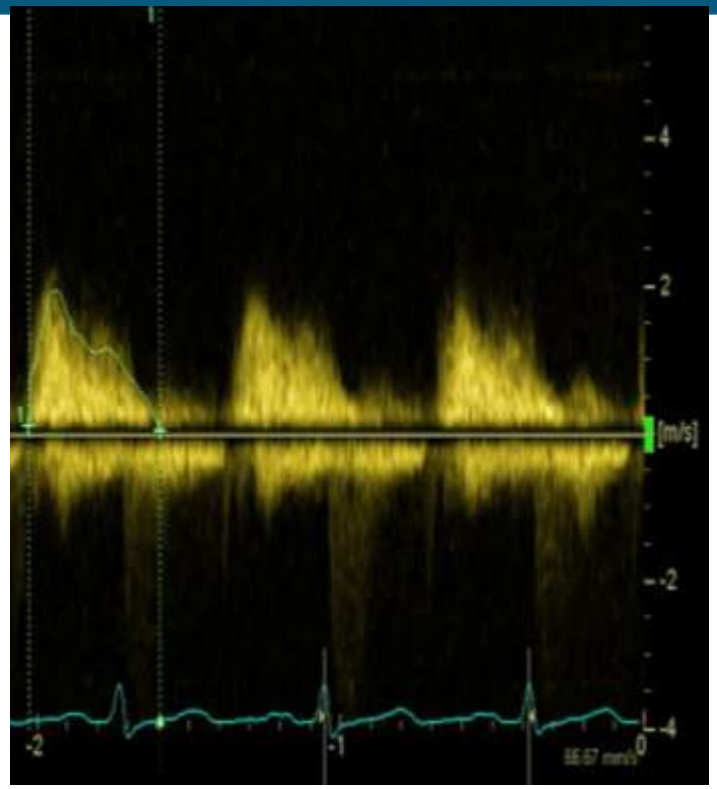
- AML də isə LVOT un bir hissəsi daxil edildiyinə görə ölçüm xətalıdır.

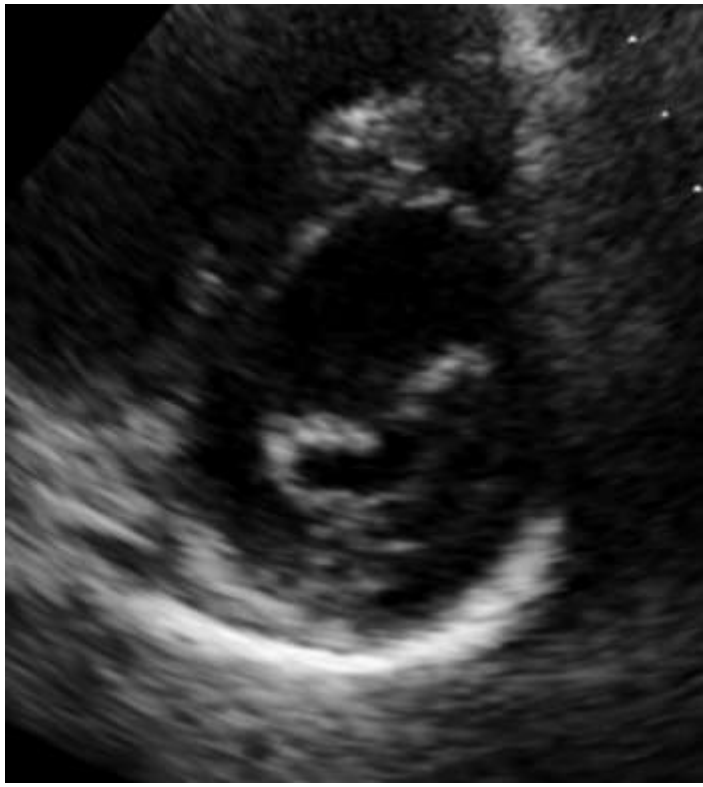


G4 NT & NTW G4 XT & XTW

Mitral annular kalsifikasiya, transmitral gradient və MVA







MAK olmaması və ya minimal olması

Pmean < 3mmHg

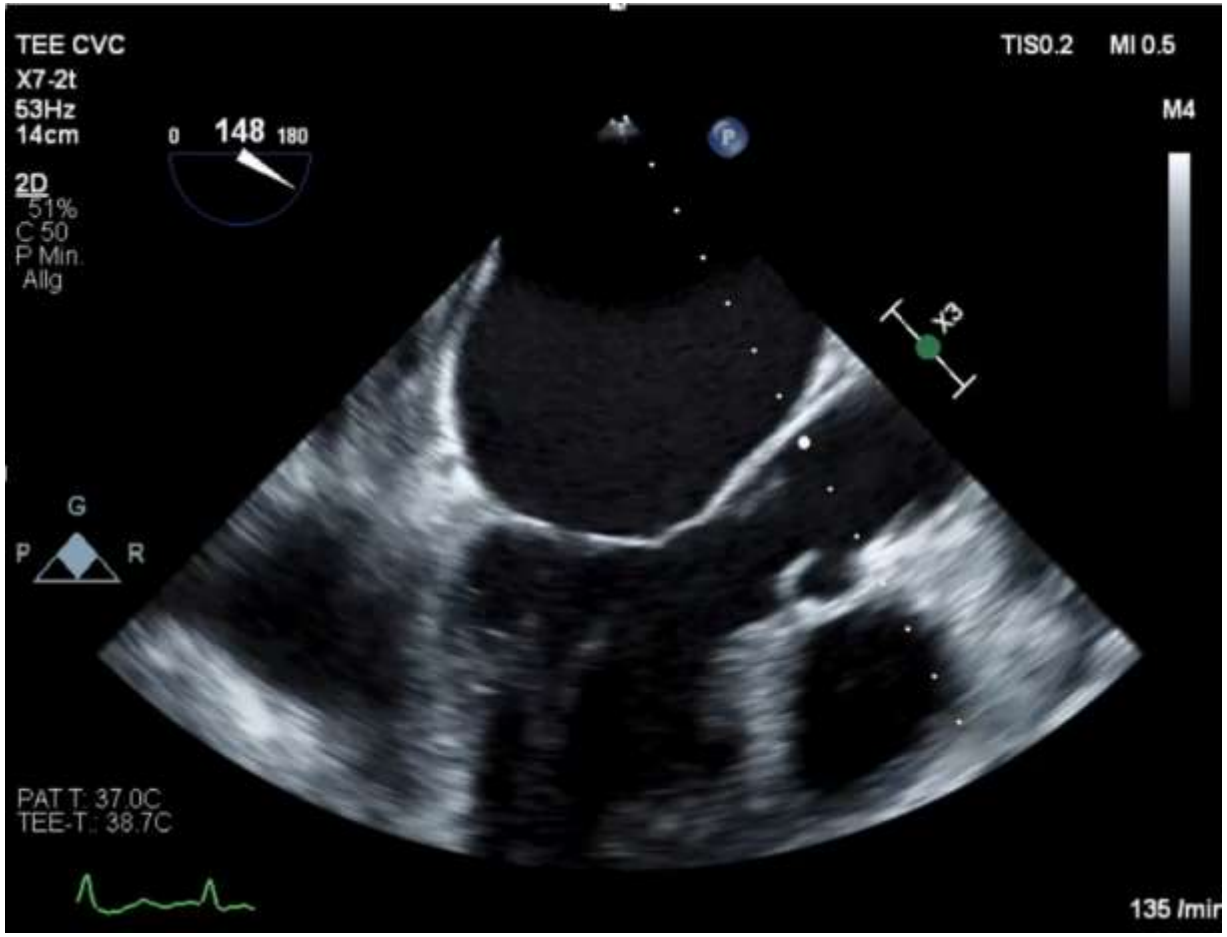
MVA >4cm2

Ciddi posterior və ya anterior mitral annular kalsifikasiyanın liftlet uclarına yayılması.

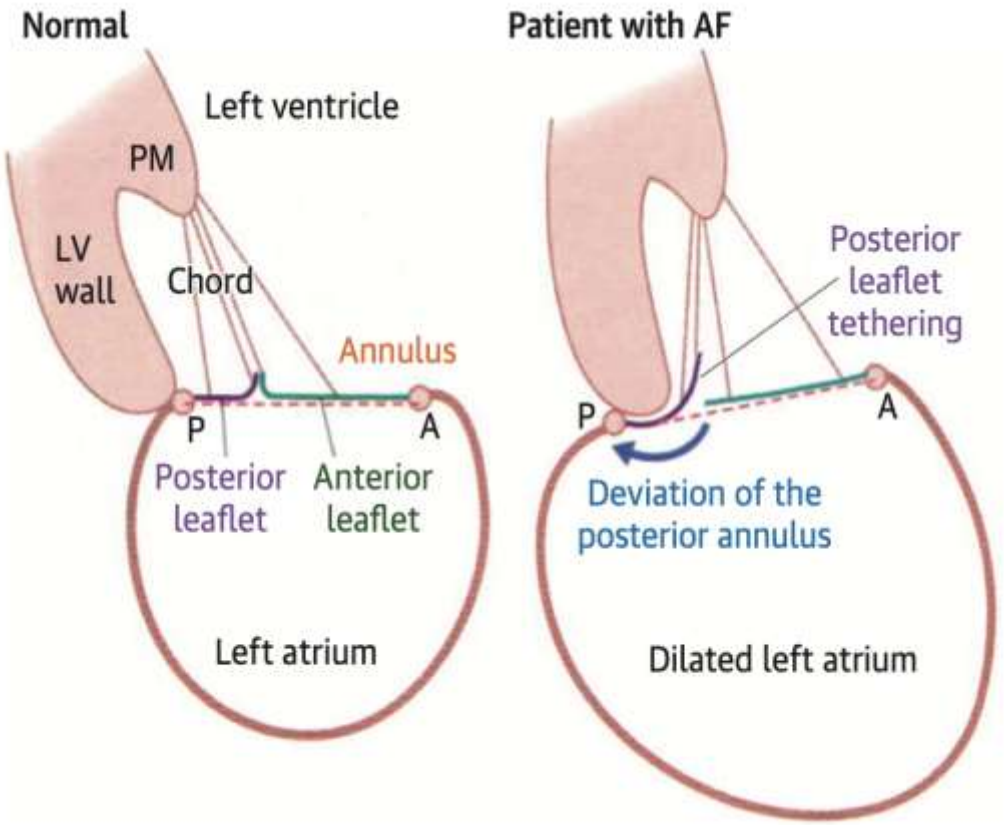
Pmean >5 mmHg

MVA <3cm2

Sol boşluqlari dəyərləndirilməsi



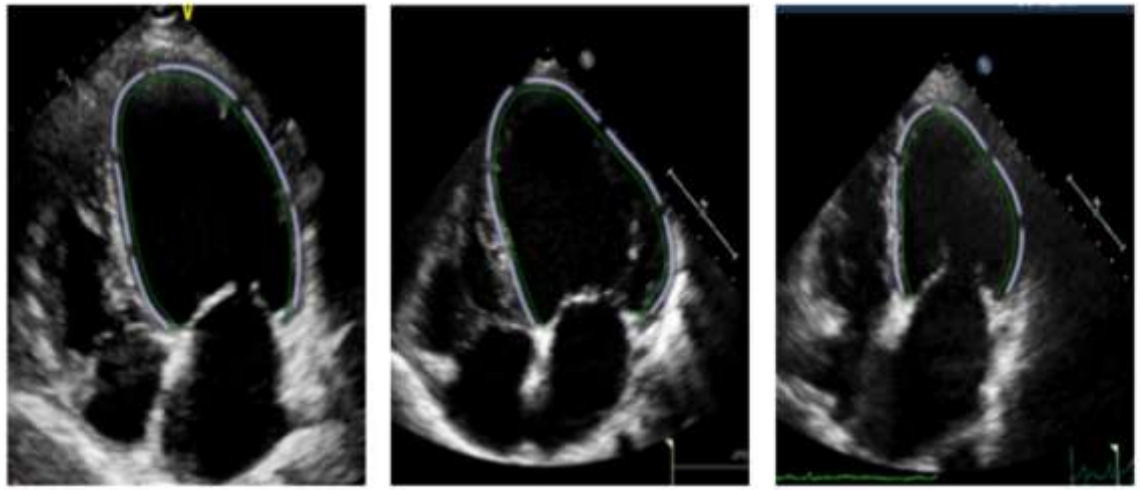
Atrial MR



Ciddi annular dilatasiya

Sol boşluqları dəyərləndirilməsi

Ventrikulyar MR



LVEF 22%
LVEDV 310 mL
GLS -6.8%

LVEF 36%
LVEDV 197 mL
GLS -8.4%

LVEF 60%
LVEDV 140 mL
GLS -20.3%

Futile *Helpful*

Transplant, LVAD, Hospice

Spectrum of LV dysfunction

MR correction may be beneficial

LVEF, LV size, LV geometry
Severely abnormal

LVEF, LV size, LV geometry
Mild-to-moderately abnormal

LVEF, LV size, LV geometry
Normal

Courtesy of Dr. Paul Grayburn

Table 7 Clinical and echocardiographic criteria predicting outcome improvement in patients with severe ventricular secondary mitral regurgitation undergoing mitral transcatheter edge-to-edge repair

Anatomy deemed suitable for M-TEER
NYHA class ≥II
LVEF 20%–50%
LVESD ≤70 mm
At least one HF hospitalization within the previous year or increased natriuretic peptide levels (BNP ≥300 pg/mL or NT-proBNP ≥1000 pg/mL)
SPAP ≤70 mmHg
No severe RV dysfunction
No Stage D or advanced HF
No CAD requiring revascularization
No severe AV and/or TV disease
No hypertrophic, restrictive, or infiltrative cardiomyopathies

Repair!

Anatomical suitability for M-TEER

Centre experience

Replacement?

Non-complex Ideal for M-TEER	Complex Suitable for M-TEER	Very complex Challenging for M-TEER	Criteria favouring replacement M-TEER hard or impossible
- Central pathology - No calcification - MVA >4.0 cm^2 - Posterior leaflet >10 mm - Tenting height <10 mm - Flail gap <10 mm - Flail width <15 mm	- Isolated commissural lesion (A1/P1 or A3/P3) - Annular calcification without leaflet involvement - MVA 3.5-4.0 cm^2 - Posterior leaflet length 7-10 mm - Tenting height >10 mm - Asymmetric tethering[26] - Coaptation reserve <3 mm[24] - Leaflet-to-anulus index <1.2[25] - Flail width >15 mm - Flail gap >10 mm - Two jets from leaflet indentations	- Commissural lesion with multiple jets - Annular calcification with leaflet involvement - Fibrotic leaflets - Wide jet involving the whole coaptation - MVA 3.0-3.5 cm^2 - Posterior leaflet length 5-7 mm - Barlow's disease - Cleft - Failed surgical annuloplasty	- Concentric MAC with stenosis - MVA <3.0 cm^2 - Relevant mitral valve stenosis (mean gradient >5 mmHg) - Posterior leaflet <5 mm - Calcification in the grasping zone - Deep regurgitant cleft - Leaflet perforation - Multiple/wide jets - Rheumatic mitral stenosis

Non-complex
Ideal for M-TEER

- Central pathology
- No calcification
- MVA >4.0 cm^2
- Posterior leaflet >10 mm
- Tenting height <10 mm
- Flail gap <10 mm
- Flail width <15 mm

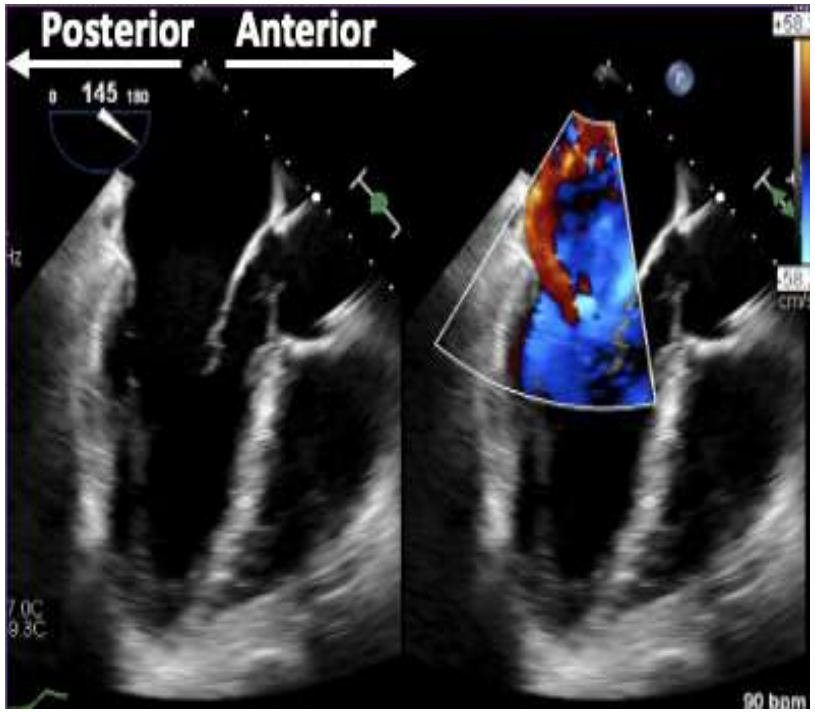
Criteria favouring replacement
M-TEER hard or impossible

- Concentric MAC with stenosis
- MVA <3.0 cm^2
- Relevant mitral valve stenosis (mean gradient >5 mmHg)
- Posterior leaflet <5 mm
- Calcification in the grasping zone
- Deep regurgitant cleft
- Leaflet perforation
- Multiple/wide jets
- Rheumatic mitral stenosis

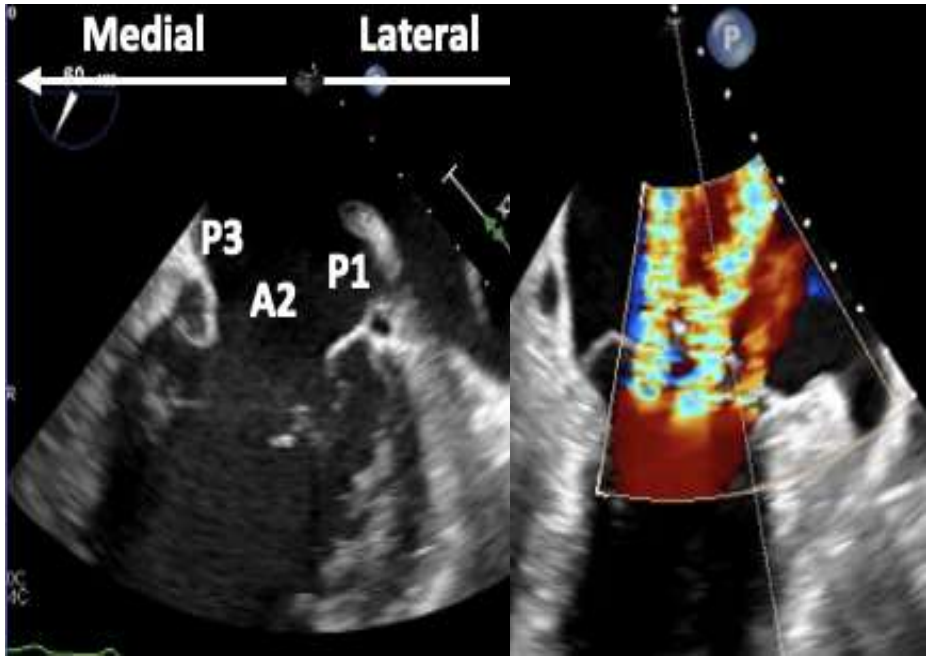
Prosedural dəyərləndirilməsi

Əsəs EXO pəncələr

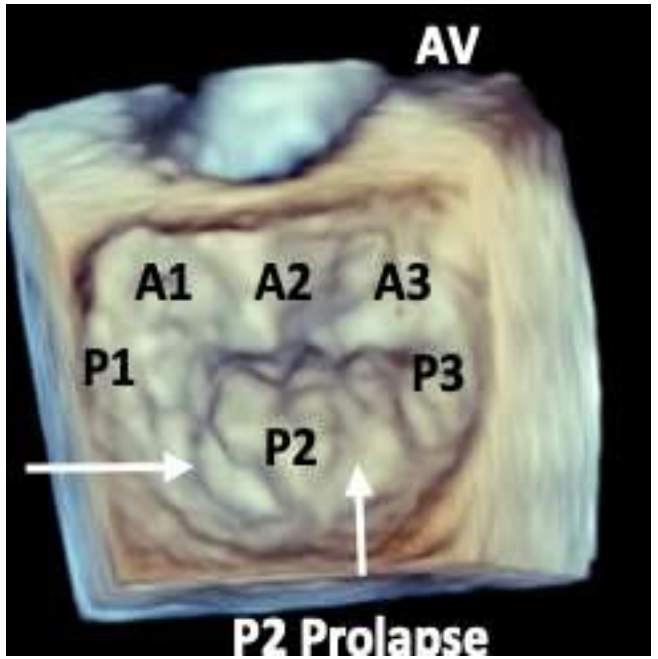
Long – Axis



Bikommissural



3D



IAS PUNKSIYA

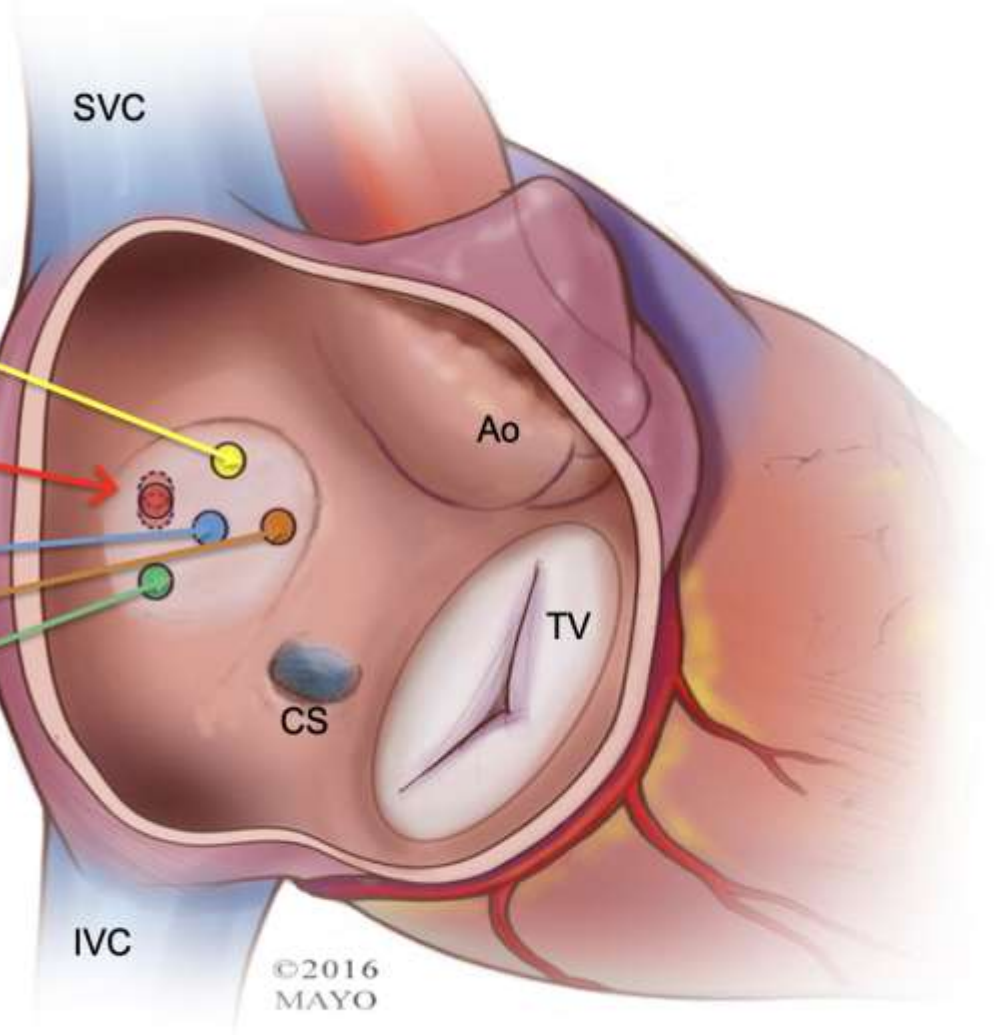
Current (Evolving) Targets:

PFO Closure

MitraClip™, PVL, TMVR

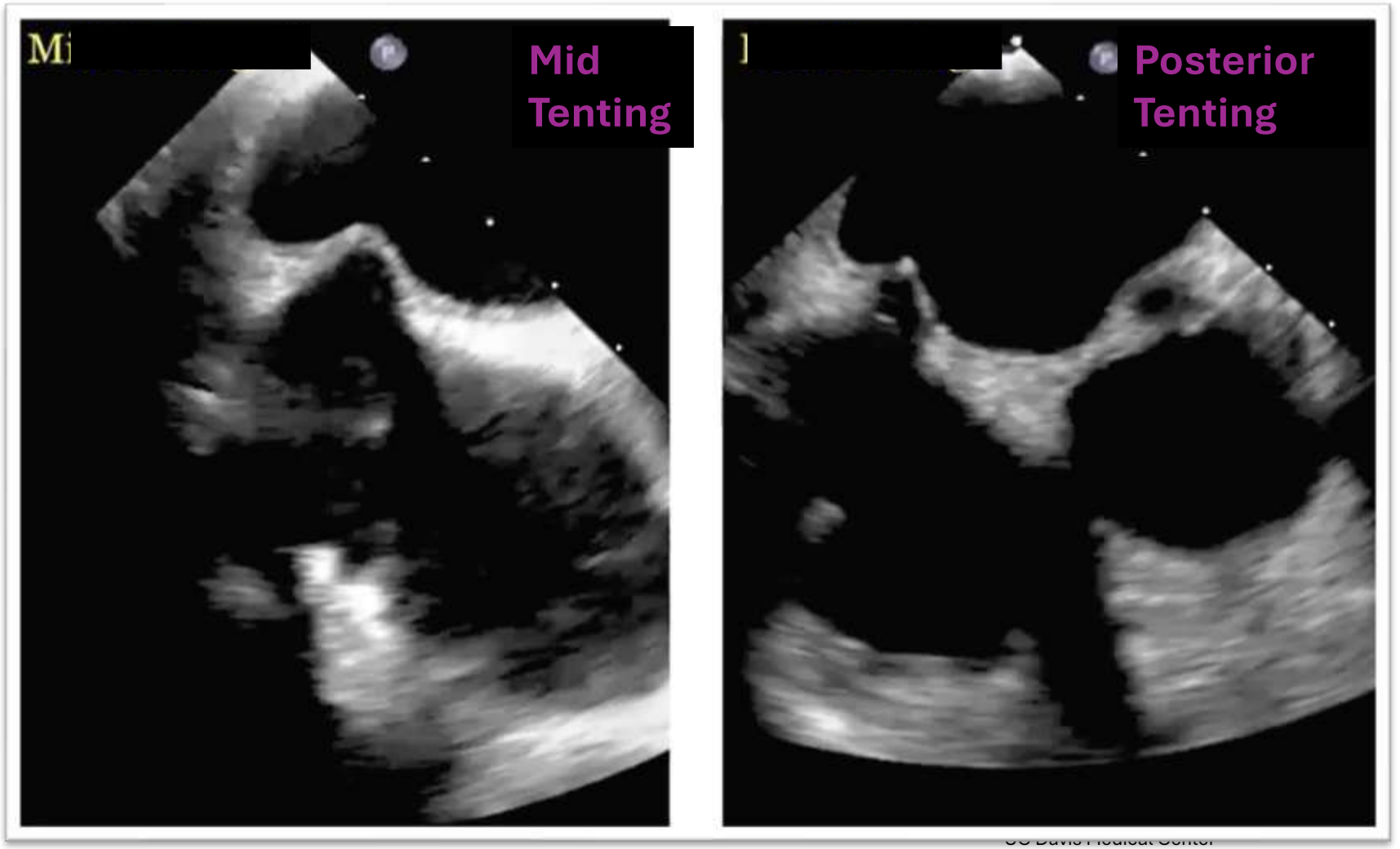
pLVAD, Septostomy PVI Procedures

LAA Closure

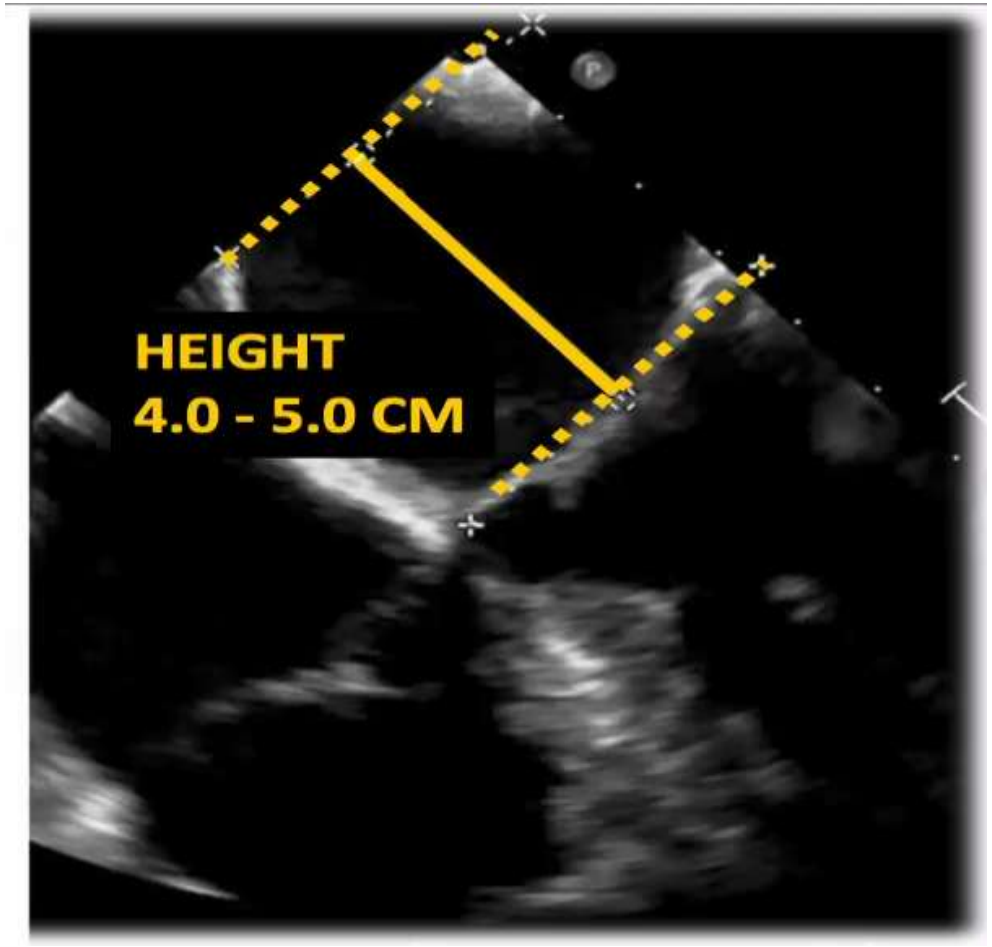


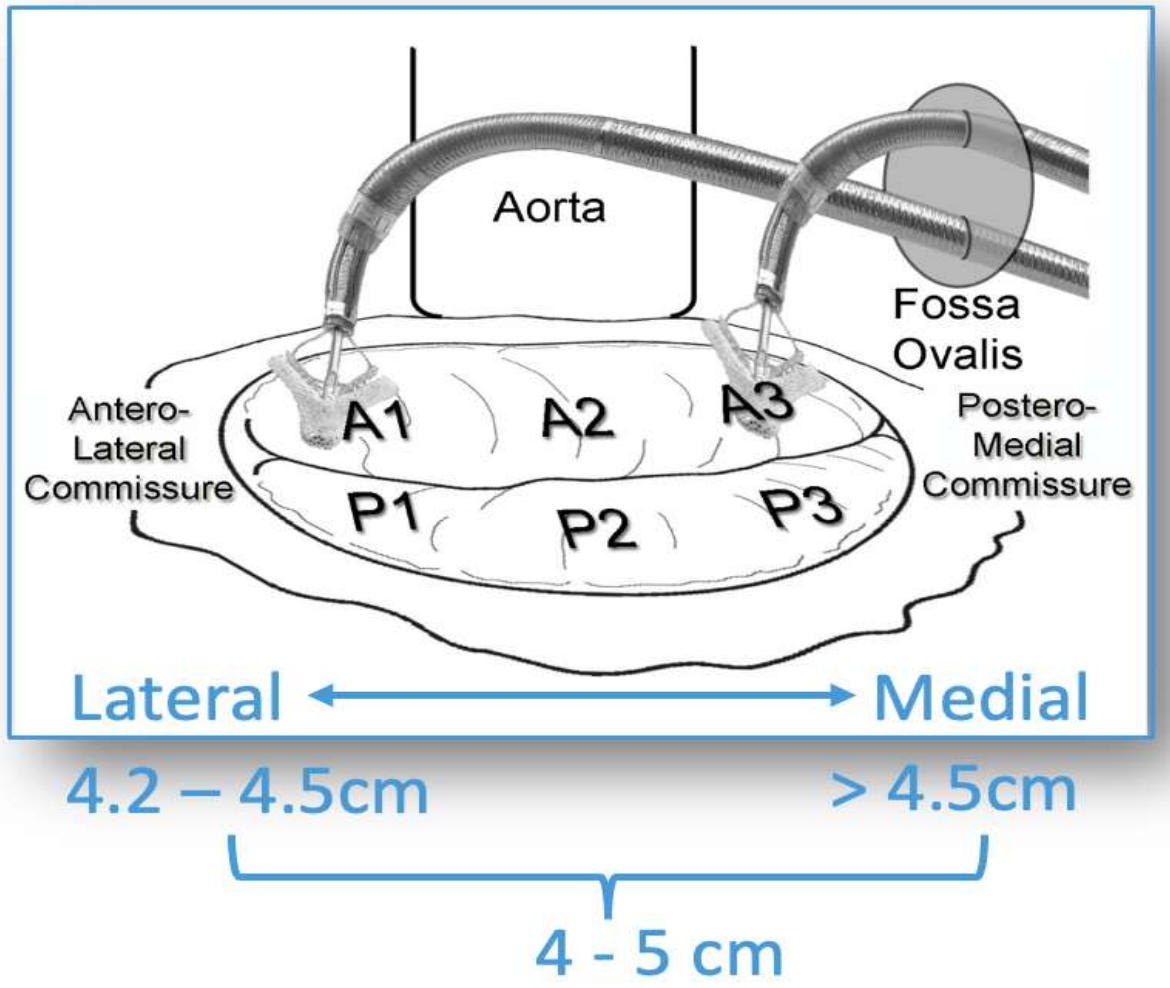
Alkhouli, M. et al. J Am Coll Cardiol Intv. 2016;9(24):2465-80.

TENTING: “POSTERIOR-MID” ASPECT OF FOSSA



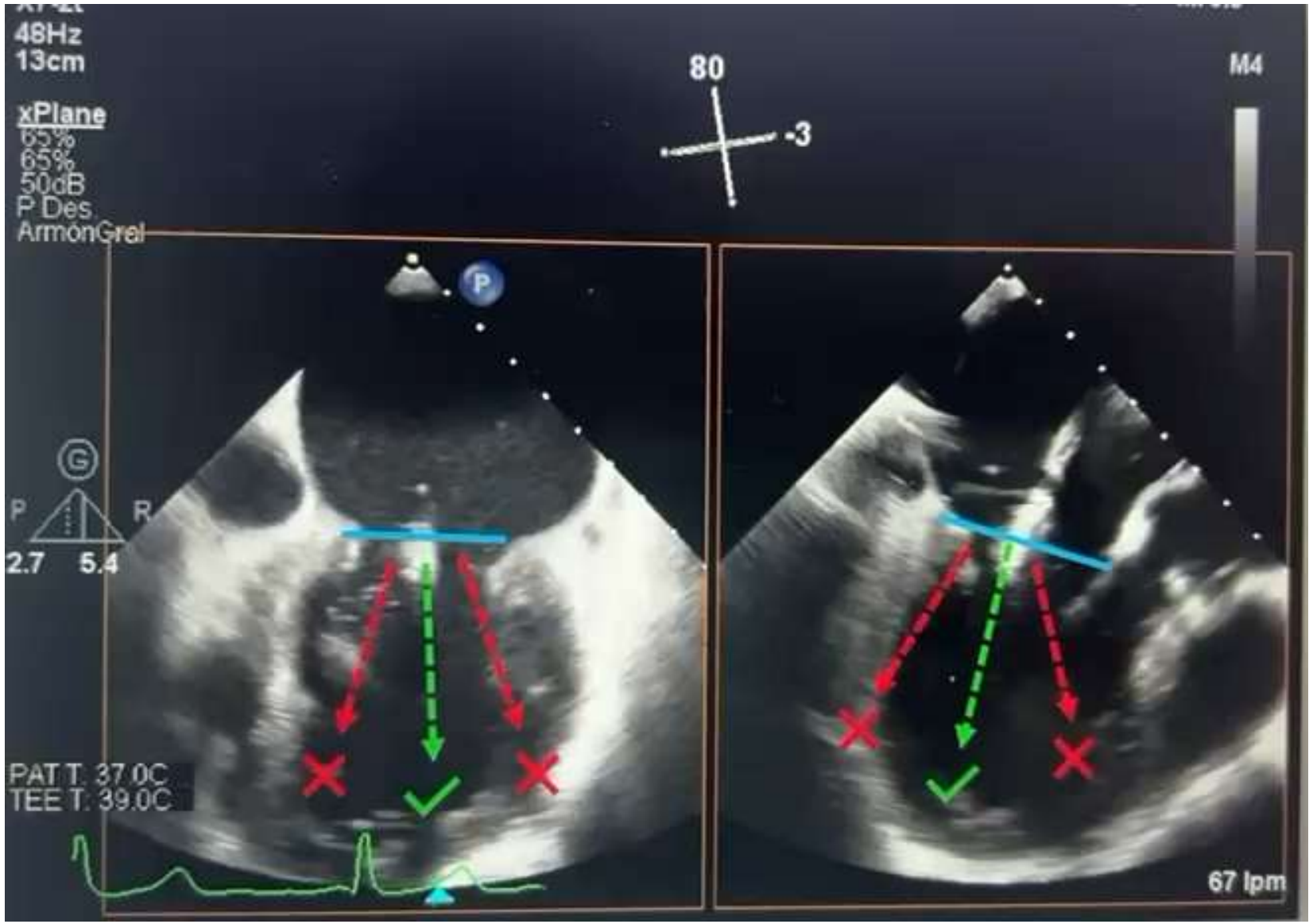
MÇ yerinə görə punksiya yüksəkliyi



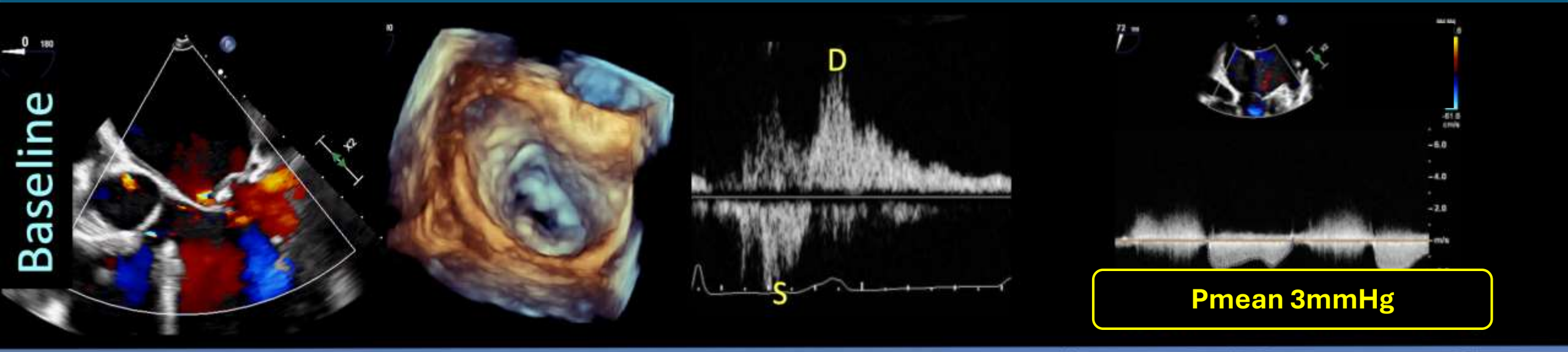


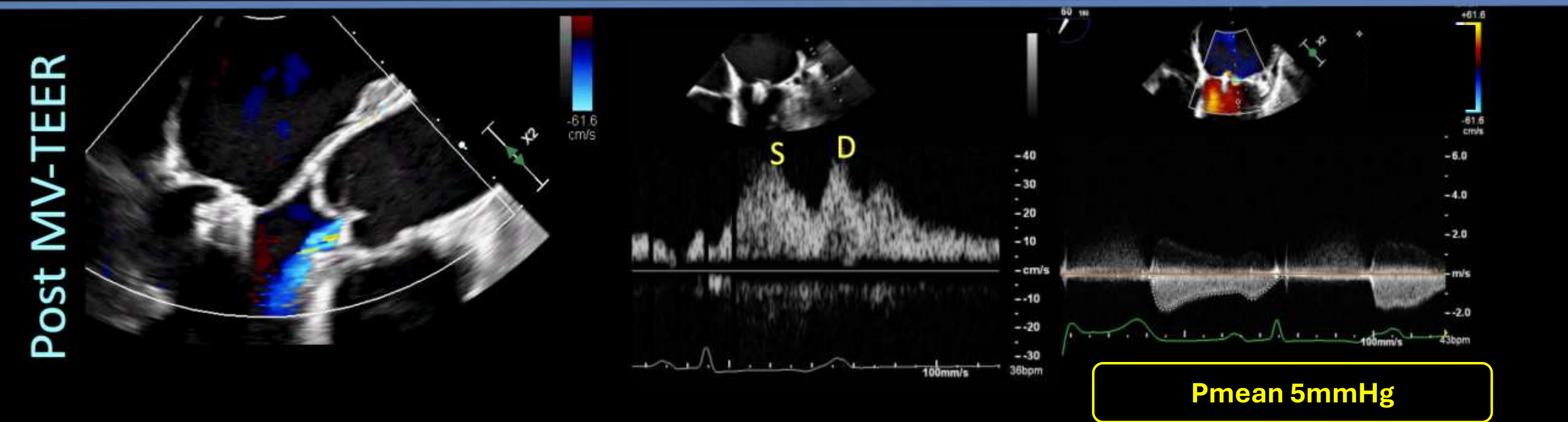
Targeted Transseptal Access for MitraClip Percutaneous Mitral Valve Repair Gagan D. Singh, MD, Thomas W. Smith, MD, Jason H. Rogers, MD Interventional Cardiology Clinics, 2016-01-01, Volume 5, Issue 1
Data are provided for informational purposes only..

Qapaq taylarına tutunmasının dəyərləndirilməsi



NƏTİCƏ


Baseline
D
S
Pmean 3mmHg


Post MV-TEER
-61.6
cm/s
S
D
-40
-30
-20
-10
cm/s
-10
-20
-30
100mm/s
36bpm
+61.6
-61.6
cm/s
-6.0
-4.0
-2.0
m/s
-2.0
100mm/s
43bpm
Pmean 5mmHg


תודה
Dankie
Gracias
Спасибо
شكراً
Merci
Takk
Köszönjük
Terima kasih
Grazie
Dziękujemy
Dėkojame
Ďakujeme
Vielen Dank
Paldies
Täname teid
Kiitos
谢谢
Təşəkkür edirəm
Tak
感謝您
Obrigado
Teşekkür Ederiz
감사합니다
Σας ευχαριστούμε
ขอบคุณ
Bedankt
Děkujeme vám
ありがとうございます
Tack