

Ο ΡΟΛΟΣ ΤΟΥ STRESS ΕCHO ΣΕ ΕΙΔΙΚΟΥΣ ΠΛΗΘΥΣΜΟΥΣ.
Σε ανεπάρκεια αορτικής βαλβίδας.



ΕΘΝΙΚΟ ΚΑΙ ΚΑΠΟΔΙΣΤΡΙΑΚΟ
ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ
ΙΑΤΡΙΚΗ ΣΧΟΛΗ



Α' ΚΑΡΔΙΟΛΟΓΙΚΗ ΚΛΙΝΙΚΗ
& ΟΜΟΝΥΜΟ (Α' ΚΑΡΔΙΟΛΟΓΙΚΟ -
ΑΙΜΟΔΥΝΑΜΙΚΟ) ΕΡΓΑΣΤΗΡΙΟ

21^η ΔΙΗΜΕΡΙΔΑ
«ΕΞΕΛΙΞΕΙΣ ΣΤΗΝ ΚΑΡΔΙΑΓΓΕΙΑΚΗ
ΑΠΕΙΚΟΝΙΣΗ 2024»

9-10 ΦΕΒΡΟΥΑΡΙΟΥ 2024
ΑΜΦΙΘΕΑΤΡΟ Γ.Ν.Α. ΙΠΠΟΚΡΑΤΕΙΟΥ / ΑΘΗΝΑ

ΠΡΟΕΔΡΟΙ ΟΡΓΑΝΩΤΙΚΗΣ ΕΠΙΤΡΟΠΗΣ: Κ. Τσιούφης, Κ. Αγγέλλη



ΗΛΙΑΣ ΤΟΛΗΣ ΚΑΡΔΙΟΛΟΓΟΣ

ΕΠΙΔΗΜΙΟΛΟΓΙΚΑ ΔΕΔΟΜΕΝΑ

Severity of AR	Prevalence of AR by age in men				
	26-29	40-49	50-59	60-69	70-83
No AR (%)	96.7	95.4	91.1	74.3	75.6
Trace (%)	3.3	2.9	4.7	13	10
Mild (%)	0	1.4	3.7	12.1	12.2
Moderate or severe (%)	0	0.3	0.5	0.6	2.2

Severity of AR	Prevalence of AR by age in women				
	26-29	40-49	50-59	60-69	70-83
No AR (%)	98.9	96.6	92.4	86.9	73
Trace (%)	1.1	2.7	5.5	6.3	10.1
Mild (%)	0	0.7	1.9	6	14.6
Moderate or severe (%)	0	0	0.2	0.8	2.3

ΑΙΤΙΟΛΟΓΙΑ ΑΝΕΠΑΡΚΕΙΑ ΑΟΡΤΙΚΗΣ

ΟΞΕΙΑ ΑΝΕΠΑΡΚΕΙΑ

- ▶ Ενδοκαρδίτιδα
- ▶ Διαχωρισμός αορτής
- ▶ Τραύμα κλειστού θώρακα

ΧΡΟΝΙΑ ΑΝΕΠΑΡΚΕΙΑ

ΔΕΥΤΕΡΟΠΑΘΗΣ







- ▶ Διάταση ανιούσας αορτής
 - Υπέρταση
 - Marfan
 - Αορτίτιδα

ΠΡΩΤΟΠΑΘΗΣ

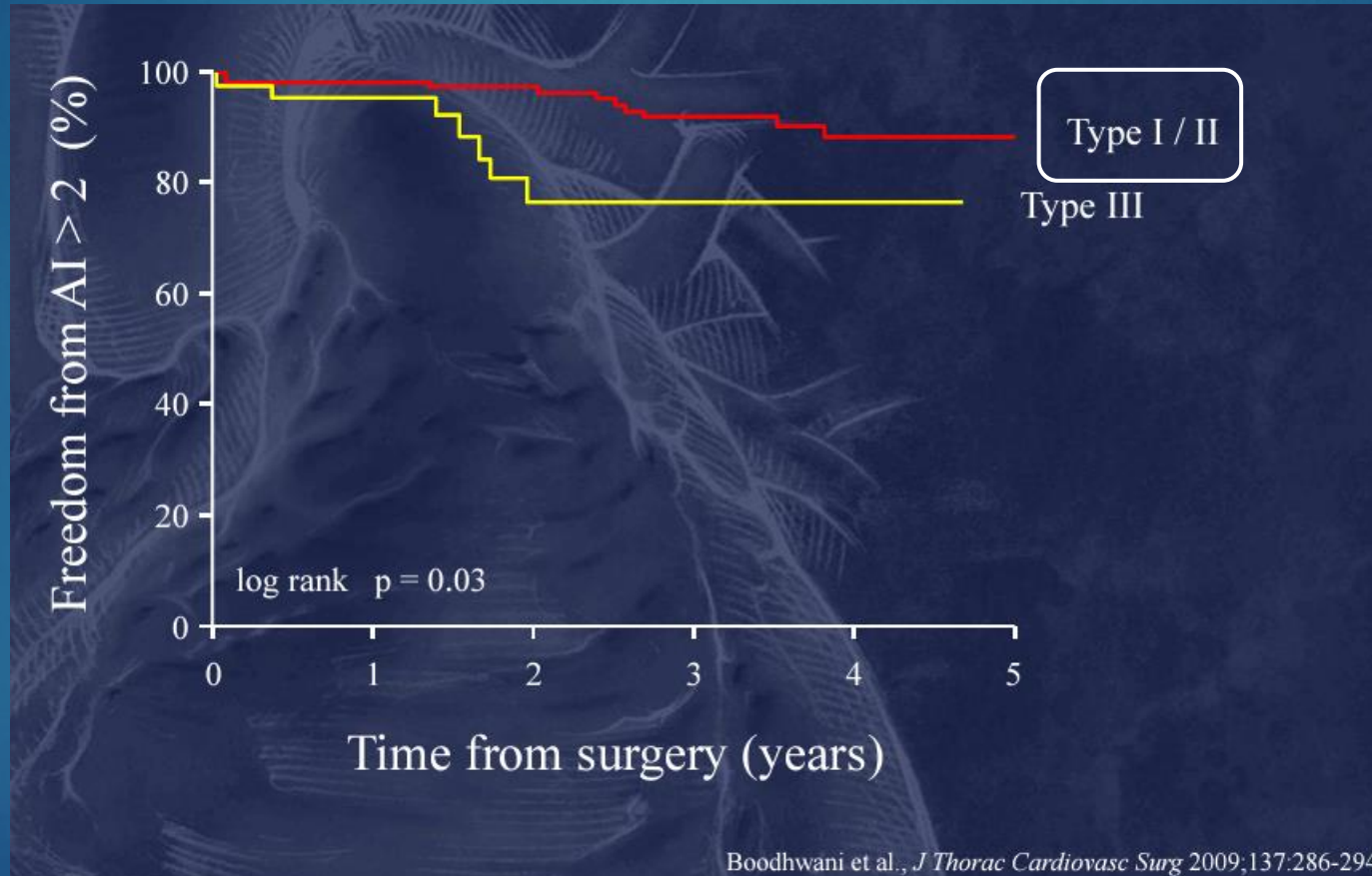
- ▶ Διαταραχές της αορτικής βαλβίδας
 - Δίπτυχη αορτική
 - Θεραπευμένη ενδοκαρδίτιδα
 - Ρευματικός πυρετός
 - Ασβέστωση/εκφύλιση της βαλβίδας

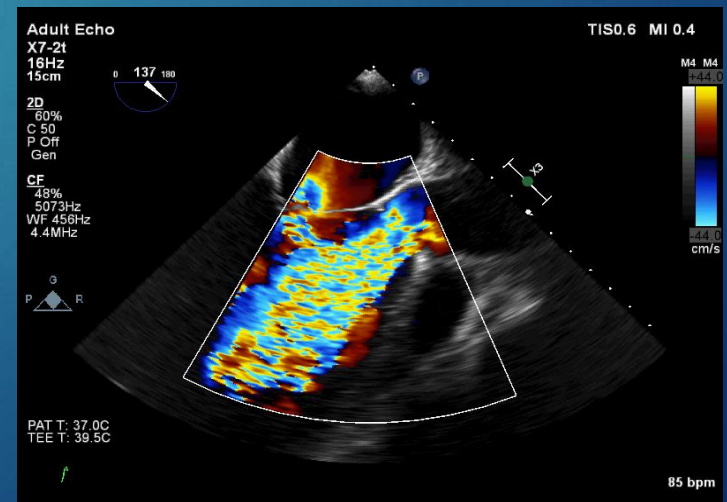
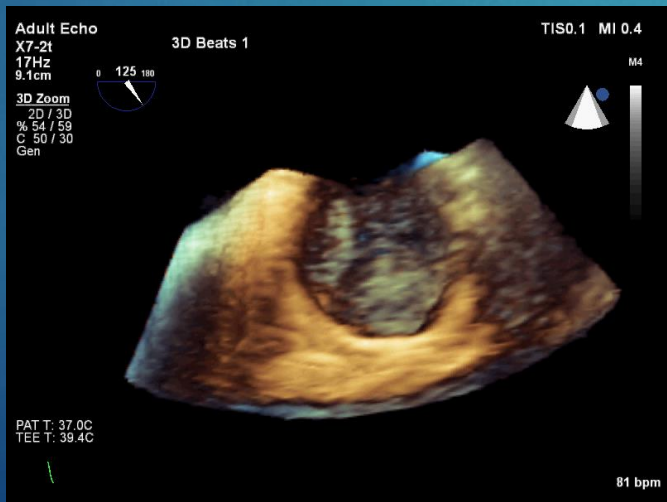
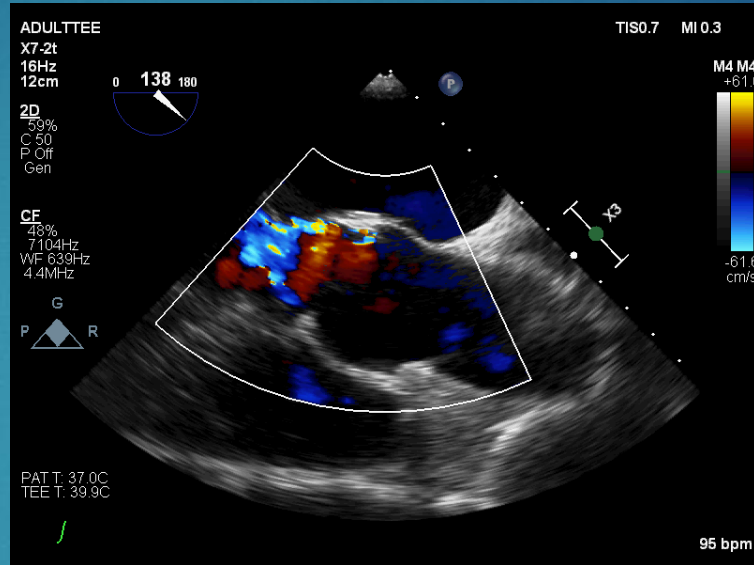
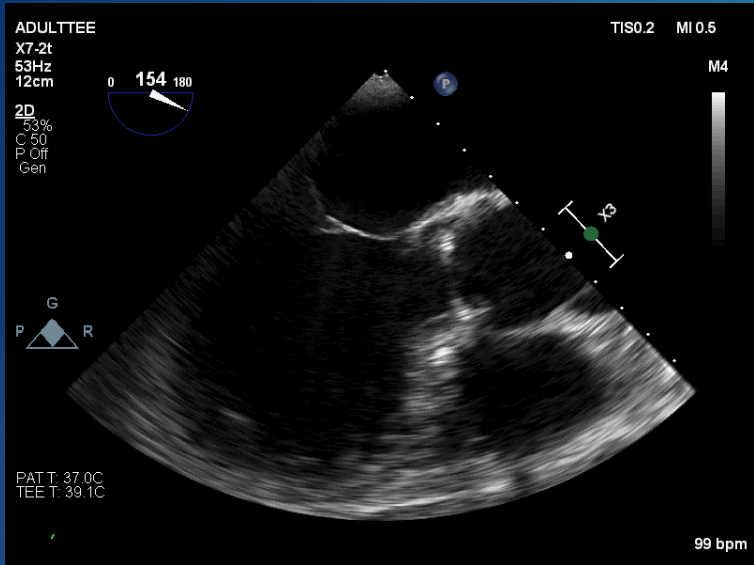
Λειτουργική ταξινόμηση βλαβών ανεπάρκειας αορτικής βαλβίδας

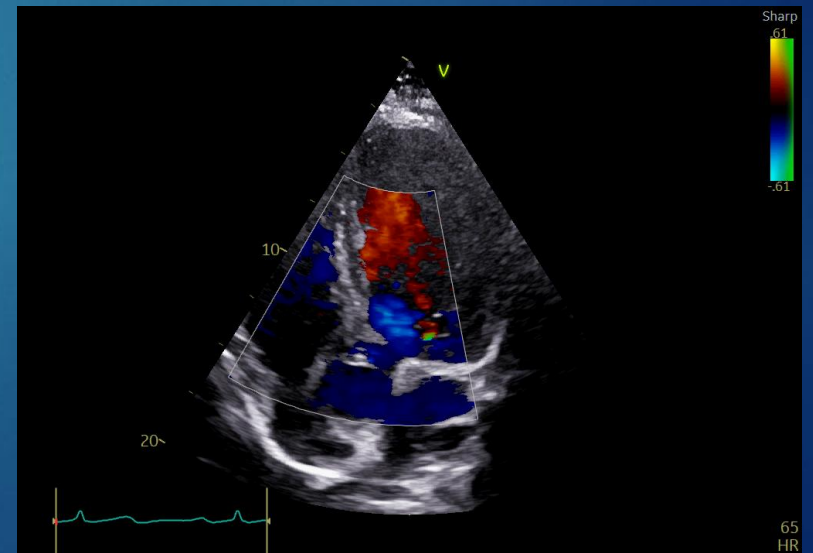
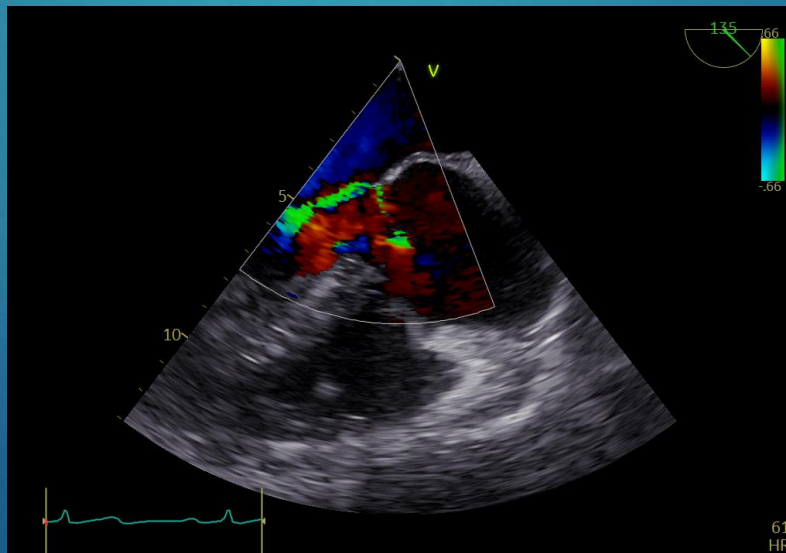
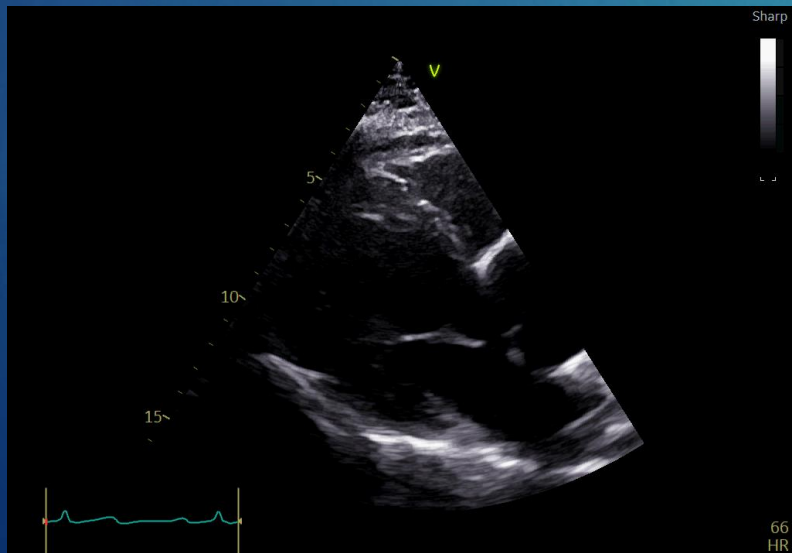
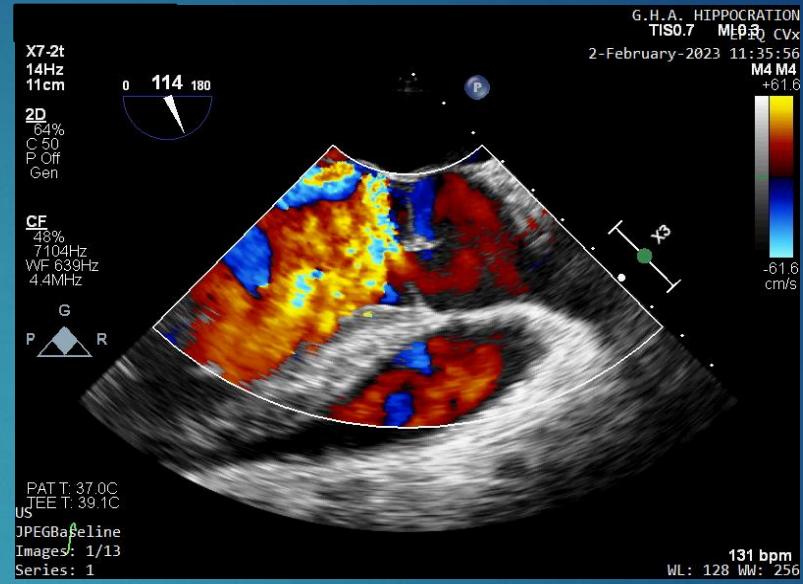
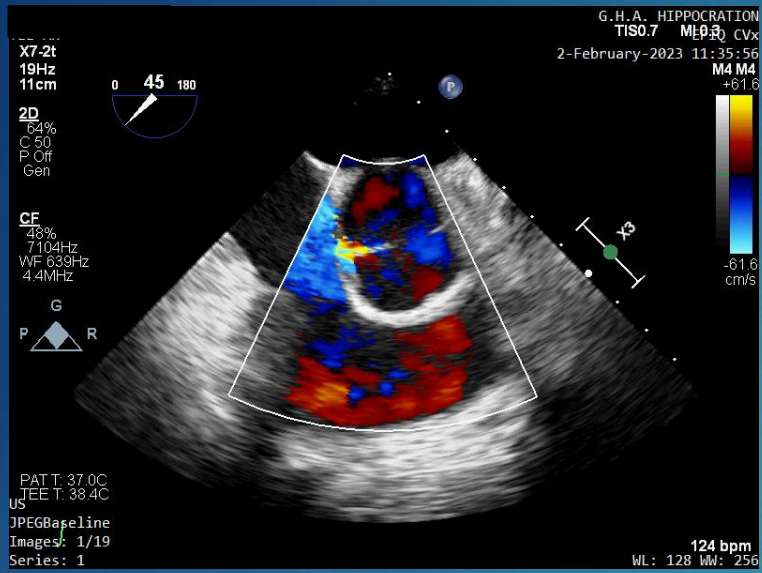
El Khoury's classification

AI Class	Type I Normal cusp motion with FAA dilatation or cusp perforation				Type II Cusp Prolapse	Type III Cusp Restriction
	Ia	Ib	Ic	Id		
Mechanism						
Repair Techniques (Primary)	STJ remodeling <i>Ascending aortic graft</i>	Aortic Valve sparing: <i>Reimplantation or Remodeling with SCA</i>	SCA	Patch Repair <i>Autologous or bovine pericardium</i>	Prolapse Repair <i>Plication</i> <i>Triangular resection</i> <i>Free margin Resuspension</i> <i>Patch</i>	Leaflet Repair <i>Shaving</i> <i>Decalcification</i> <i>Patch</i>
(Secondary)	SCA		STJ Annuloplasty	SCA	SCA	SCA

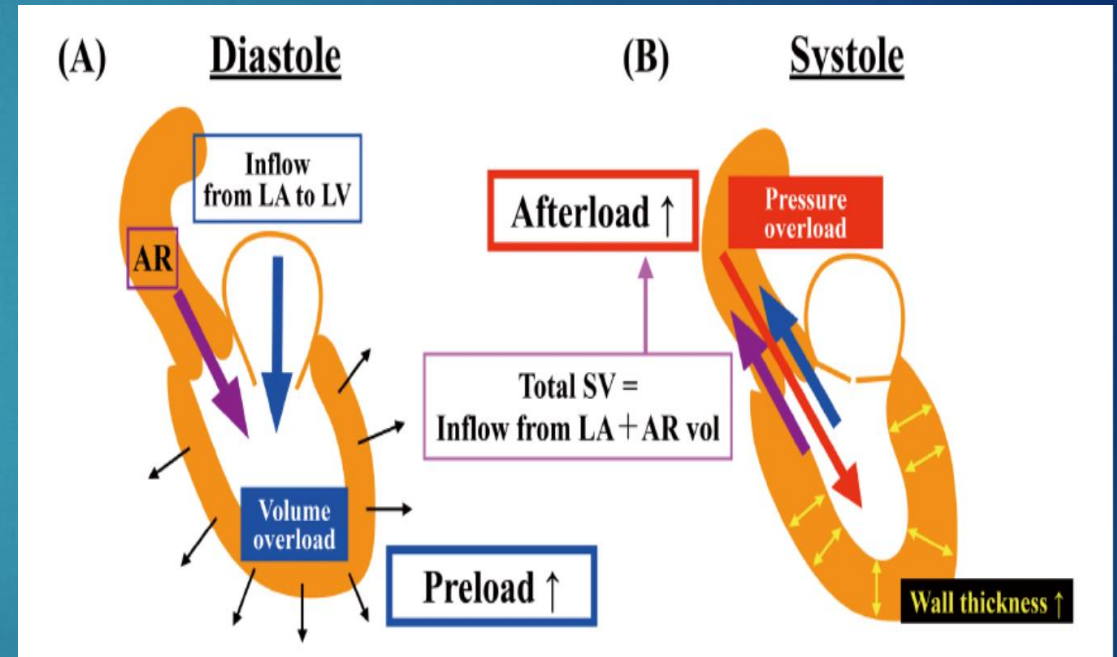
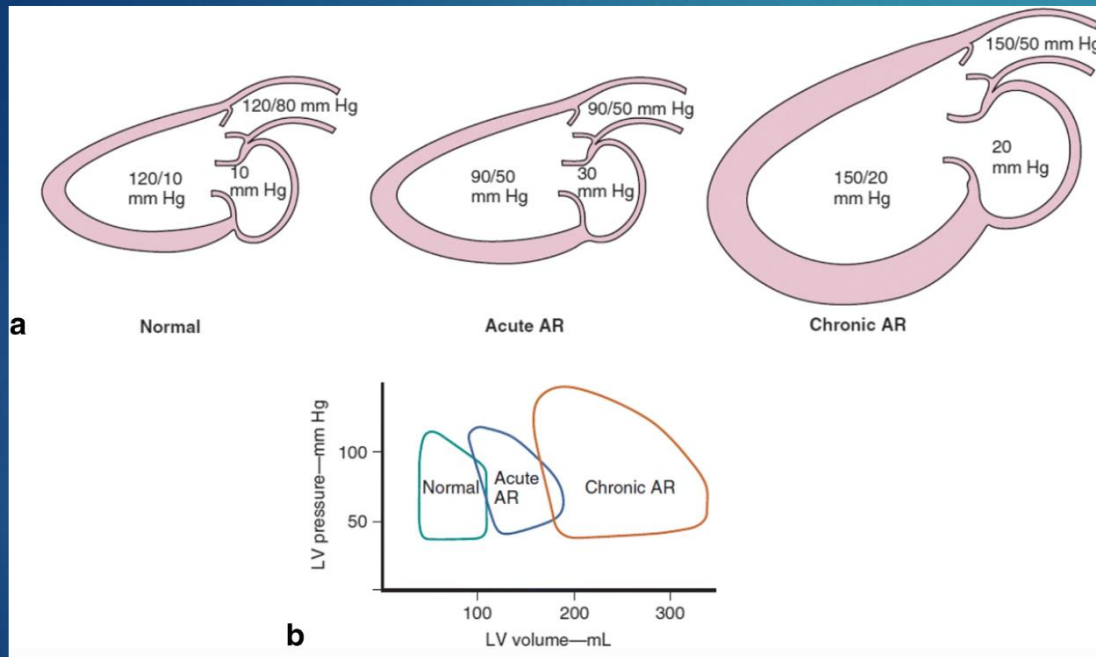
El Khoury's classification and surgery










Παθοφυσιολογία ανεπάρκειας αορτικής βαλβίδας



Ο ρόλος του stress echo σε ανεπάρκεια αορτικής βαλβίδας.

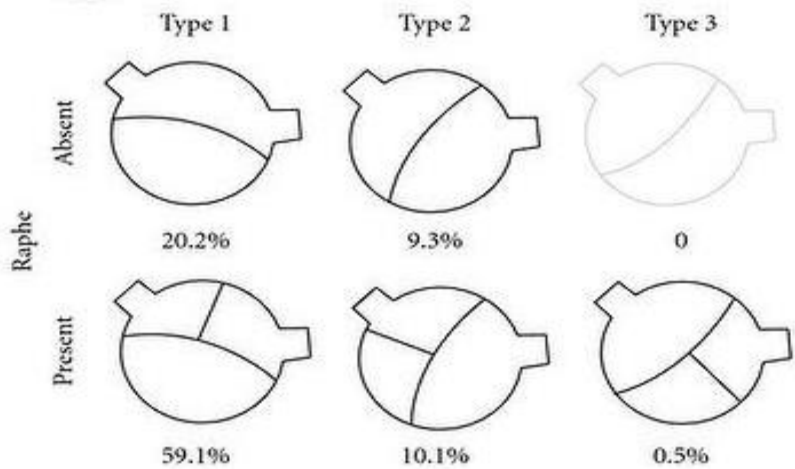
- ▶ Σε οξεία ανεπάρκεια 
- ▶ Σε εκσεσημασμένη διάταση ανιούσας αορτής 
- ▶ Σε συμπτωματική σοβαρή ανεπάρκεια αορτικής βαλβίδας 

- ▶ Σε χρονιά ασυμπτωματική μέτρια -σοβαρή ανεπάρκεια αορτικής βαλβίδας

Είναι μια ενιαία οντότητα ;;;

Ποιους ασθενείς παρακολουθώ;

Πότε τους παραπέμπω για χειρουργείο;



For clinical decision making, dimensions of the aorta should be confirmed by ECG-gated CCT.

Family history of aortic dissection (or personal history of spontaneous vascular dissection), severe aortic or mitral regurgitation, desire for pregnancy, uncontrolled systemic arterial hypertension and/or aortic size increase >3 mm/year (using serial echocardiography or CMR measurements at the same level of the aorta confirmed by ECG-gated CCT).

A lower threshold of 40 mm may be considered in women with low BSA, *TGFBR2* mutation and severe extra-aortic features.¹³⁰

B) Aortic root or tubular ascending aortic aneurysm^c (irrespective of the severity of aortic regurgitation)

Valve-sparing aortic root replacement is recommended in young patients with aortic root dilation, if performed in experienced centres and durable results are expected. ^{133–136,140}	I	B
Ascending aortic surgery is recommended in patients with Marfan syndrome who have aortic root disease with a maximal ascending aortic diameter ≥ 50 mm.	I	C
Ascending aortic surgery should be considered in patients who have aortic root disease with maximal ascending aortic diameter: <ul style="list-style-type: none"> ≥ 55 mm in all patients. ≥ 45 mm in the presence of Marfan syndrome and additional risk factors^d or patients with a <i>TGFBR1</i> or <i>TGFBR2</i> mutation (including Loays–Dietz syndrome).^e ≥ 50 mm in the presence of a bicuspid valve with additional risk factors^d or coarctation. 	IIa	C
When surgery is primarily indicated for the aortic valve, replacement of the aortic root or tubular ascending aorta should be considered when ≥ 45 mm. ^f	IIa	C

Stage	Definition	Valve anatomy	Valve hemodynamics	Hemodynamic consequences	Symptoms
A	At risk of AR	<ul style="list-style-type: none"> Bicuspid aortic valve (or other congenital valve anomaly) Aortic valve sclerosis Diseases of the aortic sinuses or ascending aorta History of rheumatic fever or known rheumatic heart disease IE 	<ul style="list-style-type: none"> AR severity: None or trace 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None
B	Progressive AR	<ul style="list-style-type: none"> Mild to moderate calcification of a trileaflet valve bicuspid aortic valve (or other congenital valve anomaly) Dilated aortic sinuses Rheumatic valve changes Previous IE 	<ul style="list-style-type: none"> Mild AR: <ul style="list-style-type: none"> Jet width <25% of LVOT; Vena contracta <0.3 cm; RVol <30 mL/beat; RF <30%; ERO <0.10 cm²; Angiography grade 1+ Moderate AR: <ul style="list-style-type: none"> Jet width 25 to 64% of LVOT; Vena contracta 0.3 to 0.6 cm; RVol 30 to 59 mL/beat; RF 30 to 49%; ERO 0.10 to 0.29 cm²; Angiography grade 2+ 	<ul style="list-style-type: none"> Normal LV systolic function Normal LV volume or mild LV dilation 	<ul style="list-style-type: none"> None
C	Asymptomatic severe AR	<ul style="list-style-type: none"> Calcific aortic valve disease Bicuspid valve (or other congenital abnormality) Dilated aortic sinuses or ascending aorta Rheumatic valve changes IE with abnormal leaflet closure or perforation 	<ul style="list-style-type: none"> Severe AR: <ul style="list-style-type: none"> Jet width ≥65% of LVOT; Vena contracta >0.6 cm; Holodiastolic flow reversal in the proximal abdominal aorta RVol ≥60 mL/beat; RF ≥50%; ERO ≥0.3 cm²; Angiography grade 3+ to 4+; In addition, diagnosis of chronic severe AR requires evidence of LV dilation 	<ul style="list-style-type: none"> C1: Normal LVEF (≥50%) and LVESD ≤50 mm C2: Abnormal LV systolic function with depressed LVEF (<50%), LVESD >50 mm, or indexed LVESD >25 mm/m² 	<ul style="list-style-type: none"> None; exercise testing is reasonable to confirm symptom status
D	Symptomatic severe AR	<ul style="list-style-type: none"> Calcific valve disease Bicuspid valve (or other congenital abnormality) Dilated aortic sinuses or ascending aorta Rheumatic valve changes Previous IE with abnormal leaflet closure or perforation 	<ul style="list-style-type: none"> Severe AR: <ul style="list-style-type: none"> Jet width ≥65% of LVOT; Vena contracta >0.6 cm; Holodiastolic flow reversal in the proximal abdominal aorta; RVol ≥60 mL/beat; RF ≥50%; ERO ≥0.3 cm²; Angiography grade 3+ to 4+; In addition, diagnosis of chronic severe AR requires evidence of LV dilation 	<ul style="list-style-type: none"> Symptomatic severe AR may occur with normal systolic function (LVEF ≥50%), mild to moderate LV dysfunction (LVEF 40 to 50%), or severe LV dysfunction (LVEF <40%) Moderate to severe LV dilation is present 	<ul style="list-style-type: none"> Exertional dyspnea or angina or more severe HF symptoms

Υπερηχοκαρδιογραφικοί δείκτες

Table 4 Grading the severity of AR

Parameters	Mild	Moderate	Severe
Qualitative			
Aortic valve morphology	Normal/abnormal	Normal/abnormal	Abnormal/flail/large coaptation defect
Colour flow AR jet width ^a	Small in central jets	Intermediate	Large in central jet, variable in eccentric jets
CW signal of AR jet	Incomplete/faint	Dense	Dense
Diastolic flow reversal in the descending aorta	Brief, protodiastolic flow reversal	Intermediate	Holodiastolic flow reversal (end-diastolic velocity > 20 cm/s)
Diastolic flow reversal in the abdominal aorta	Absent	Absent	Present
Semi-quantitative			
VC width (mm)	< 3	Intermediate	≥ 6
Pressure half-time (ms) ^b	> 500	Intermediate	< 200
Quantitative			
EROA (mm ²)	< 10	10–19; 20–29 ^d	≥ 30
R Vol (mL)	< 30	30–44; 45–59 ^d	≥ 60
+ LV size ^c			

AR, aortic regurgitation; CW, continuous wave; LA, left atrium; EROA, effective regurgitant orifice area; LV, left ventricle; R Vol, regurgitant volume; VC, vena contracta.

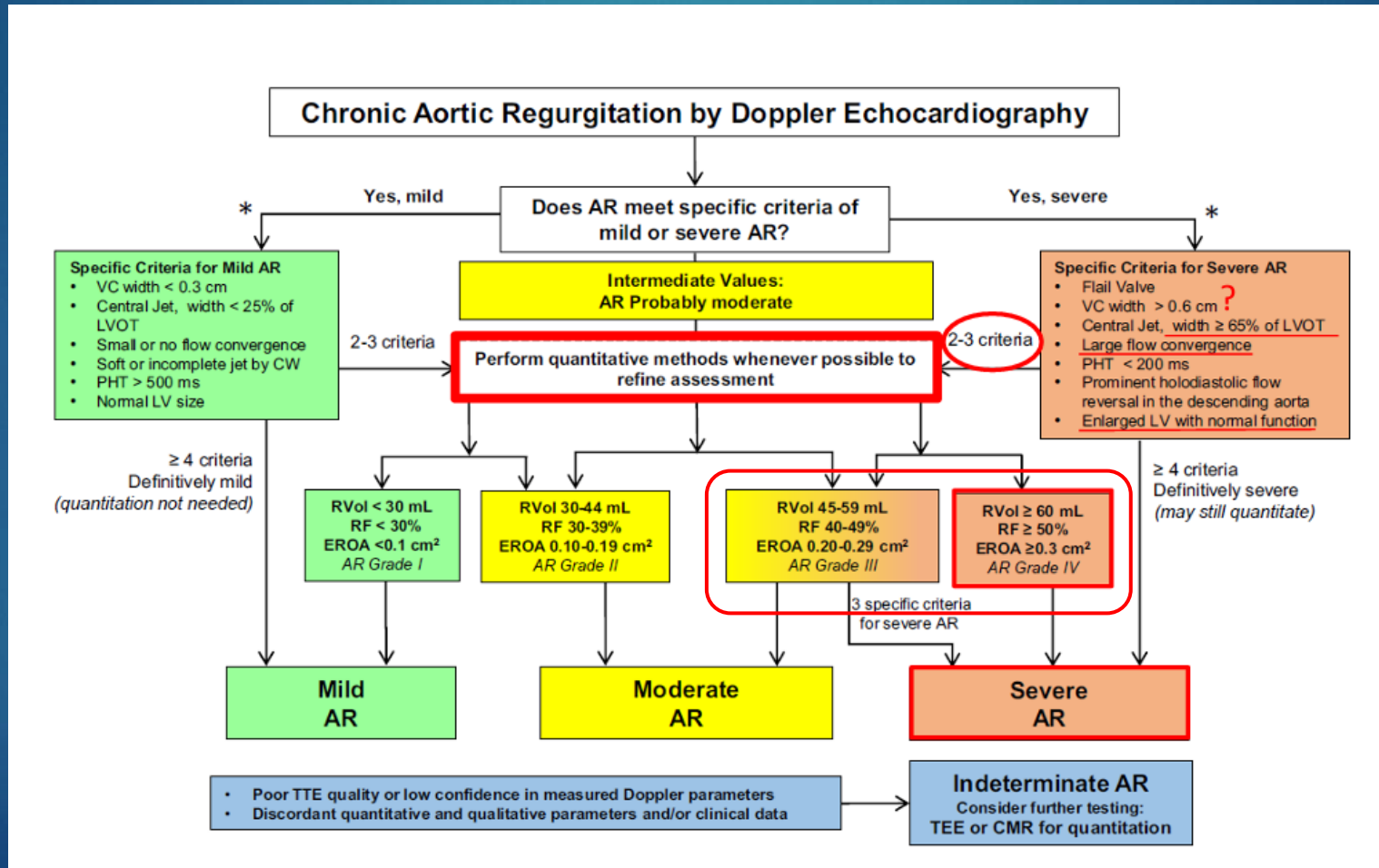
^aAt a Nyquist limit of 50–60 cm/s.

^bPressure half-time is shortened with increasing LV diastolic pressure, vasodilator therapy, and in patients with a dilated compliant aorta or lengthened in chronic AR.

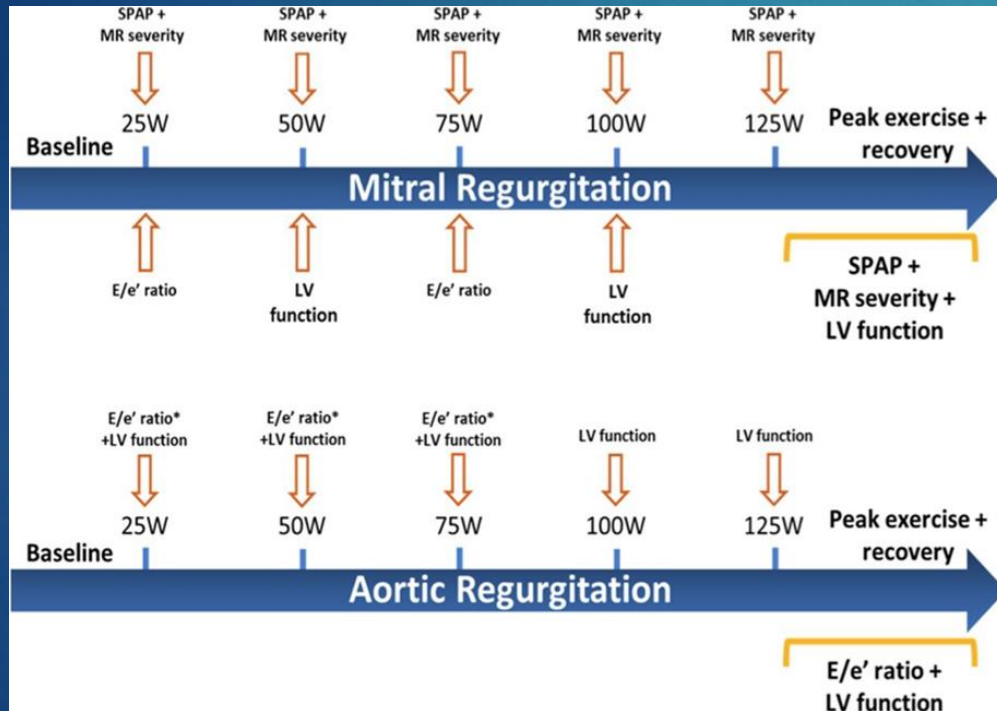
^cUnless for other reasons, the LV size is usually normal in patients with mild AR. In acute severe AR, the LV size is often normal. *Accepted cut-off values for non-significant LV enlargement:* LV end-diastolic diameter < 56 mm, LV end-diastolic volume < 82 mL/m², LV end-systolic diameter < 40 mm, LV end-systolic volume < 30 mL/m².

^dGrading of the severity of AR classifies regurgitation as mild, moderate, or severe, and subclassifies the moderate regurgitation group into 'mild-to-moderate' (EROA of 10–19 mm² or an R Vol of 20–44 mL) and 'moderate-to-severe' (EROA of 20–29 mm² or an R Vol of 45–59 mL).

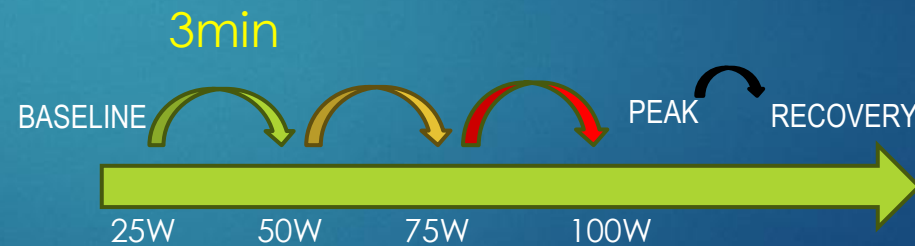
Υπερηχοκαρδιογραφικός αλγόριθμος ανεπάρκειας αορτικής



Εργομετρικό ποδήλατο για την εκτίμηση της ανεπάρκειας αορτικής

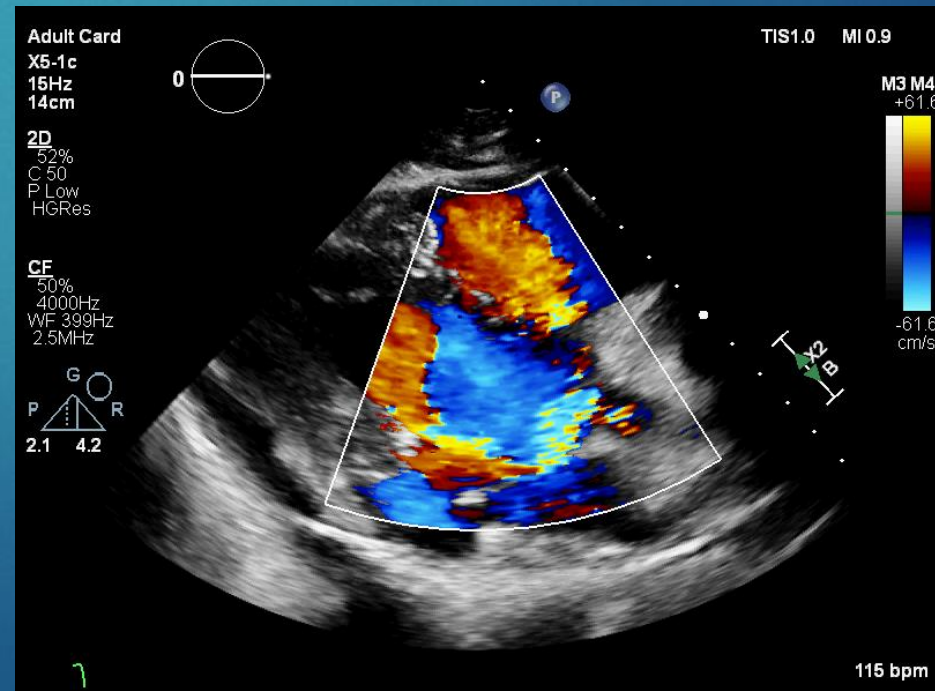
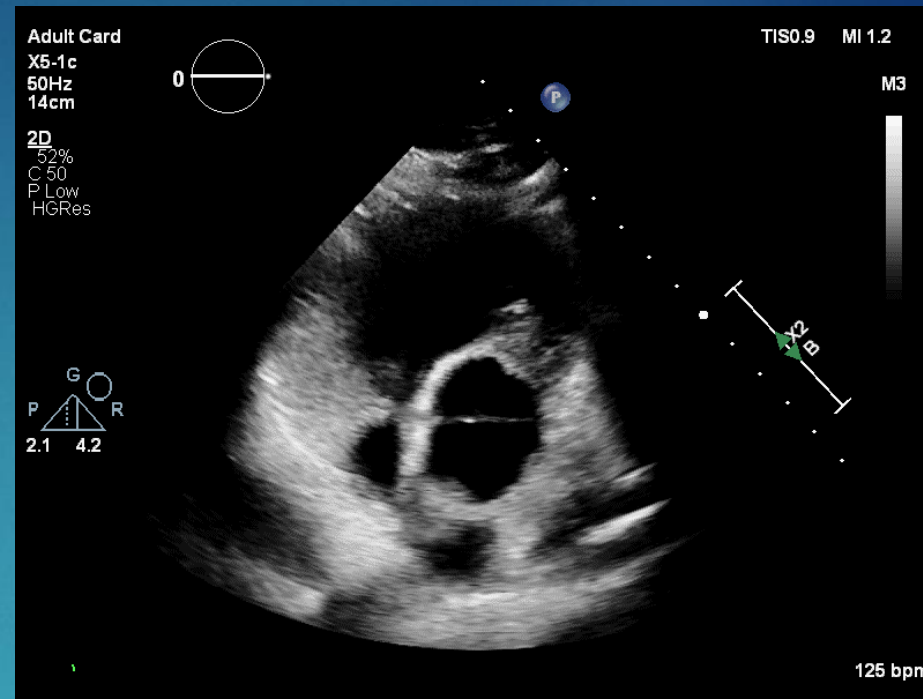


- ▶ Λειτουργικότητα αριστερής κοιλίας (LV Function)
- ▶ GIs-δGIs
- ▶ Νεοεμφανιζόμενη MR
- ▶ Επιδεινωση srap

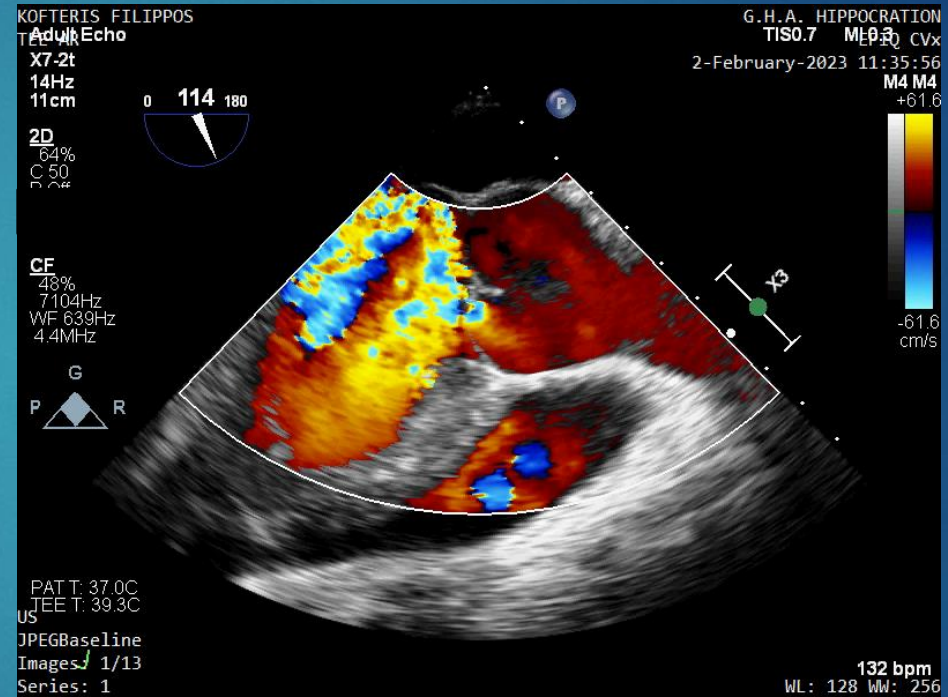
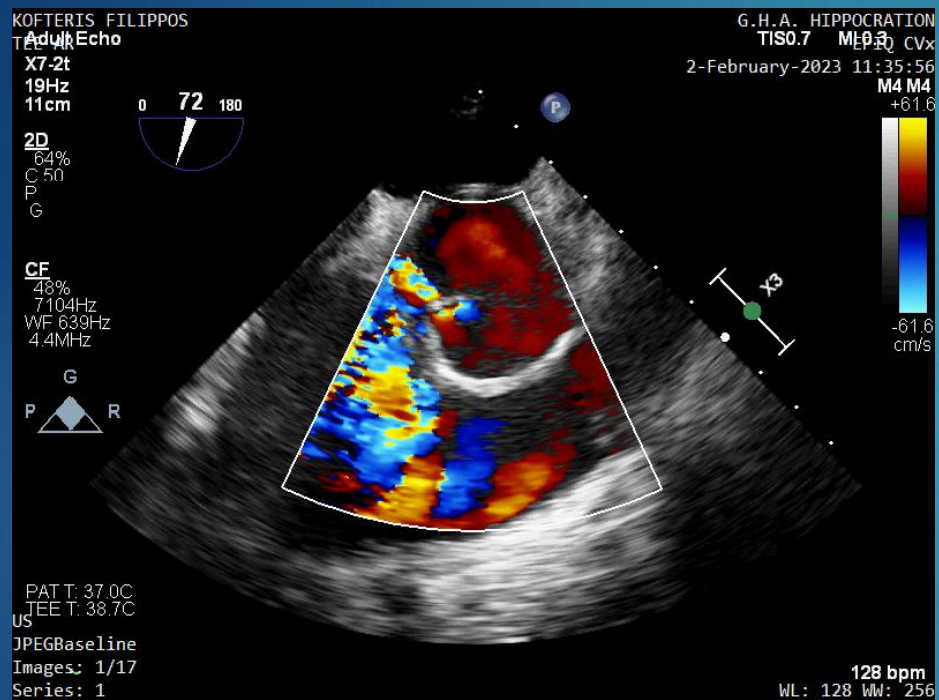


Περιστατικό 1^ο

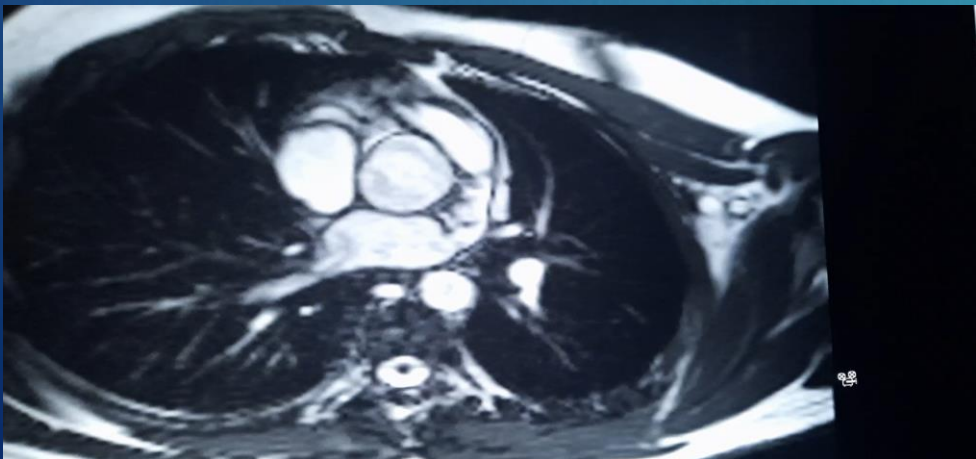
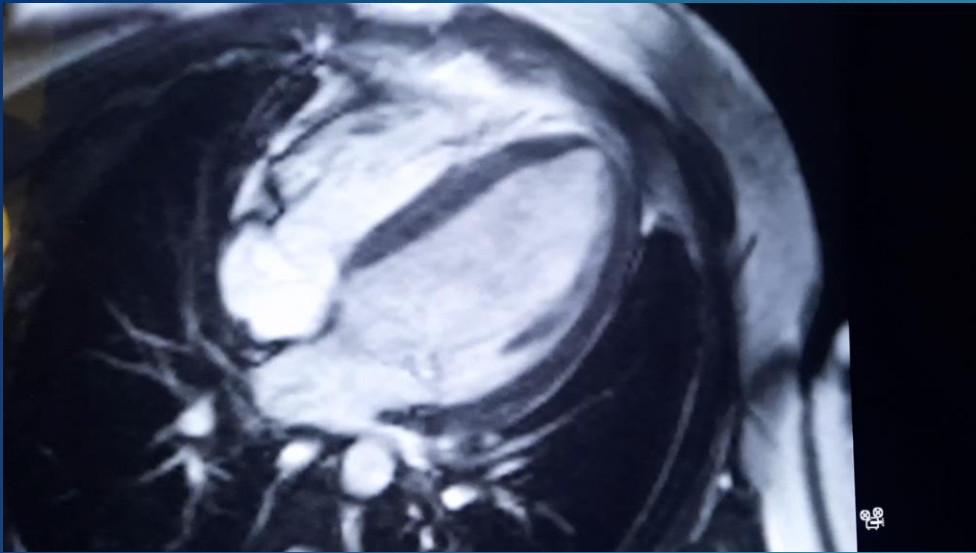
- Ασθενής ετών 17
- Φ.Α. (-)
- Ύψος 172 cm βάρος 74 kg
- BMI 25,01 kg/m²



Διοισοφάγειο υπερηχοκαρδιογράφημα



MRI καρδιάς



RF=21%

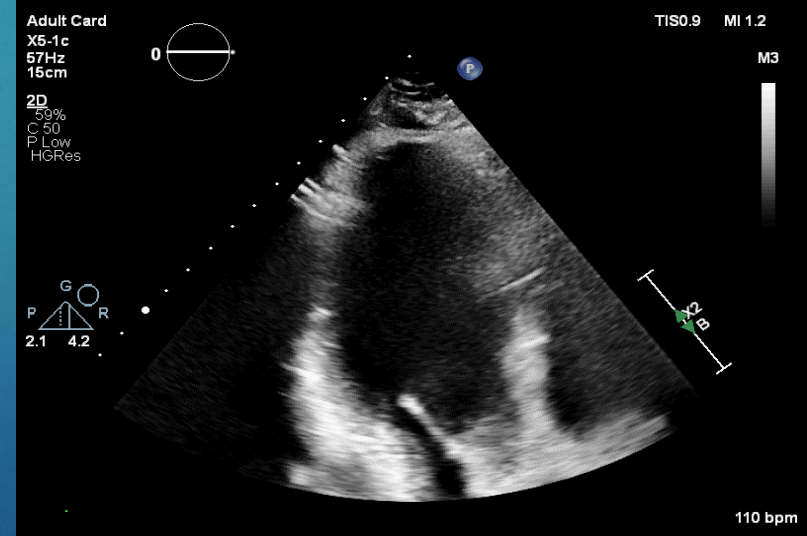
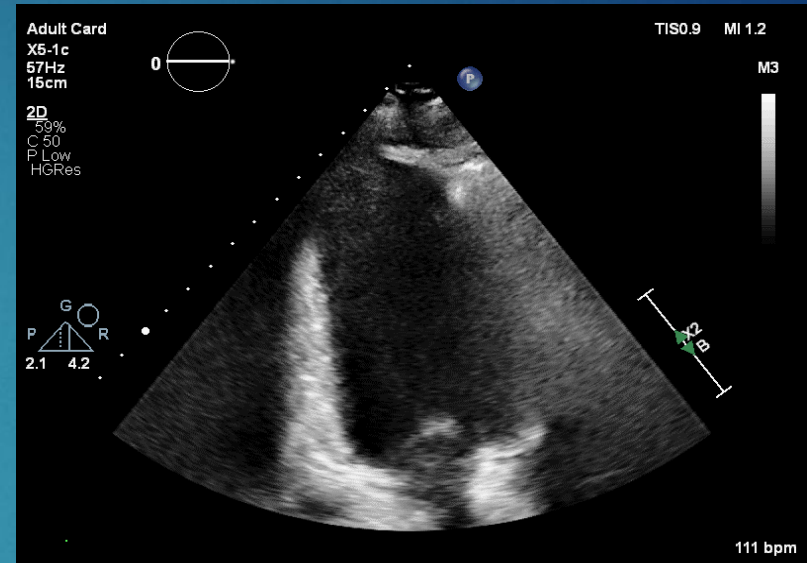
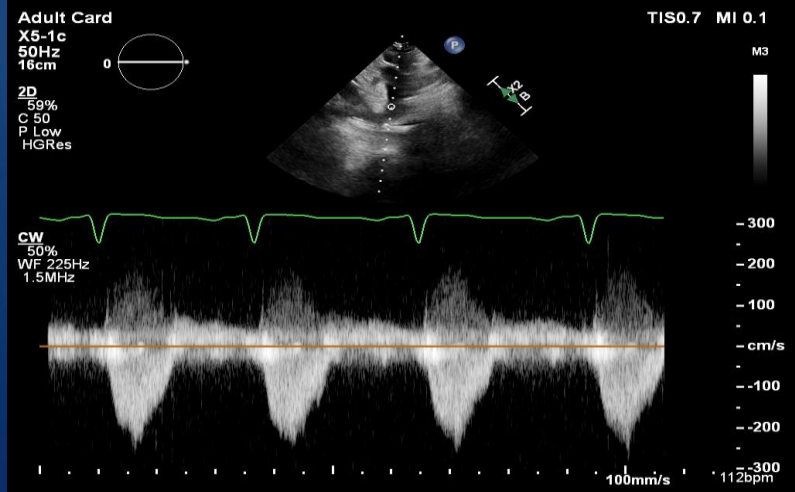
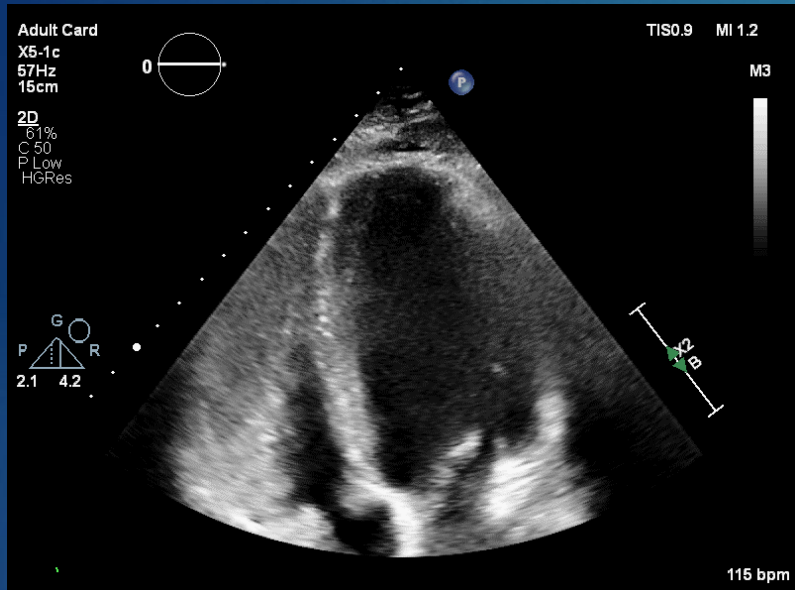
Πρωτόκολλο με εργομετρικό ποδήλατο

3 ΛΕΠΤΑ

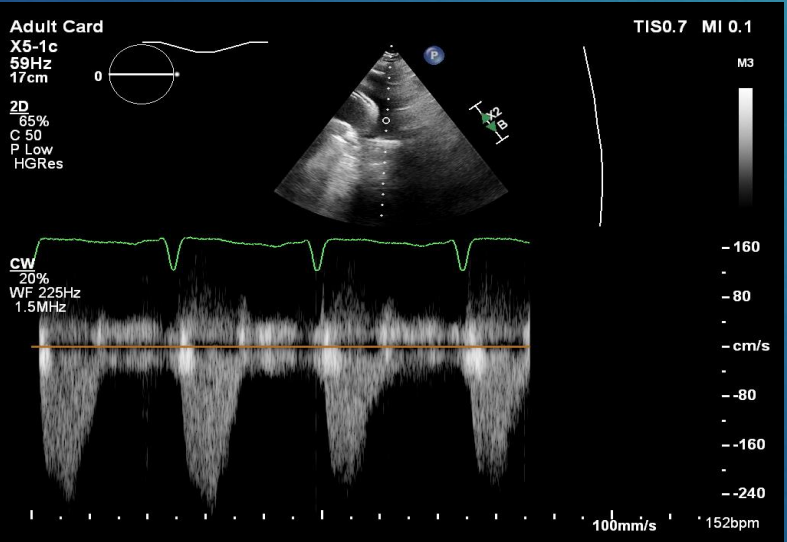
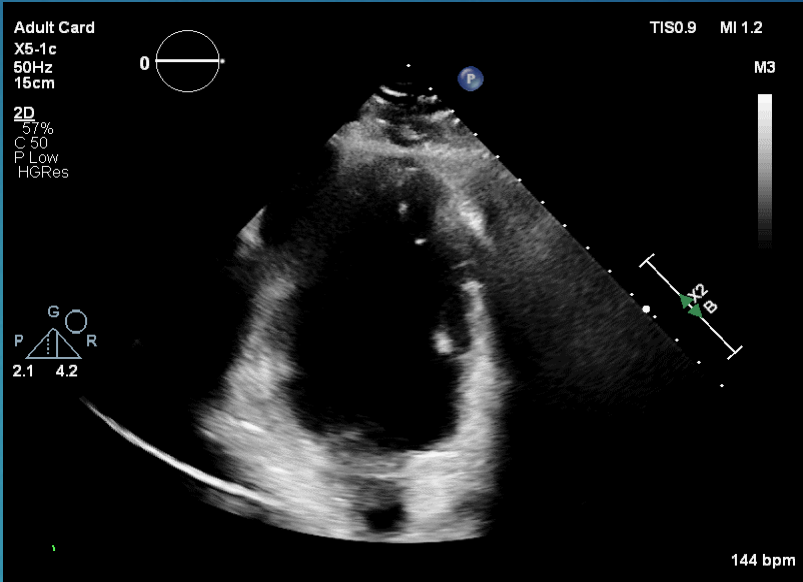
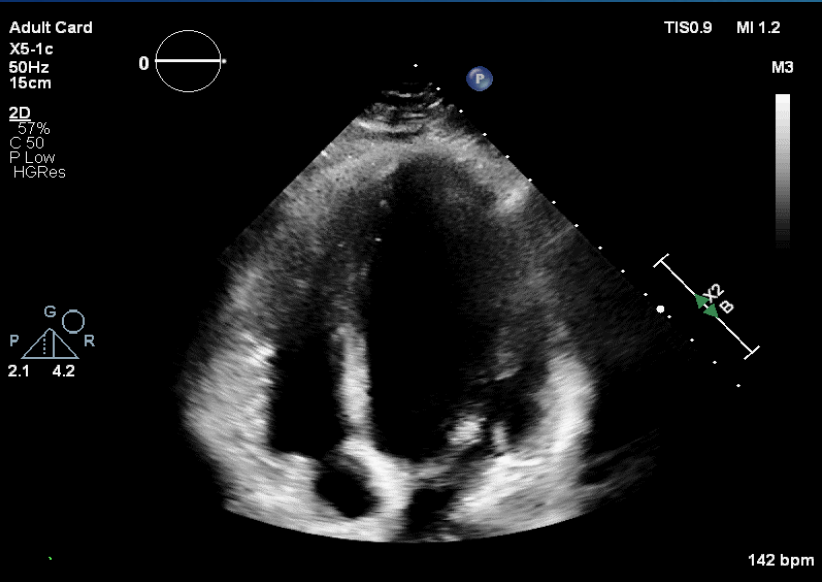


ΣΤΑΔΙΟ	Α/Π mmHg	ΣΦΥΞΕΙΣ/ΛΕΠΤΟ
ΗΡΕΜΙΑ	135/78	112
25W	152/85	122
50W	173/96	132
75W	186/102	142
100W	181/104	146
ΑΠΟΚΑΤΑΣΤΑΣΗ	142/86	117

US-ηρεμίας



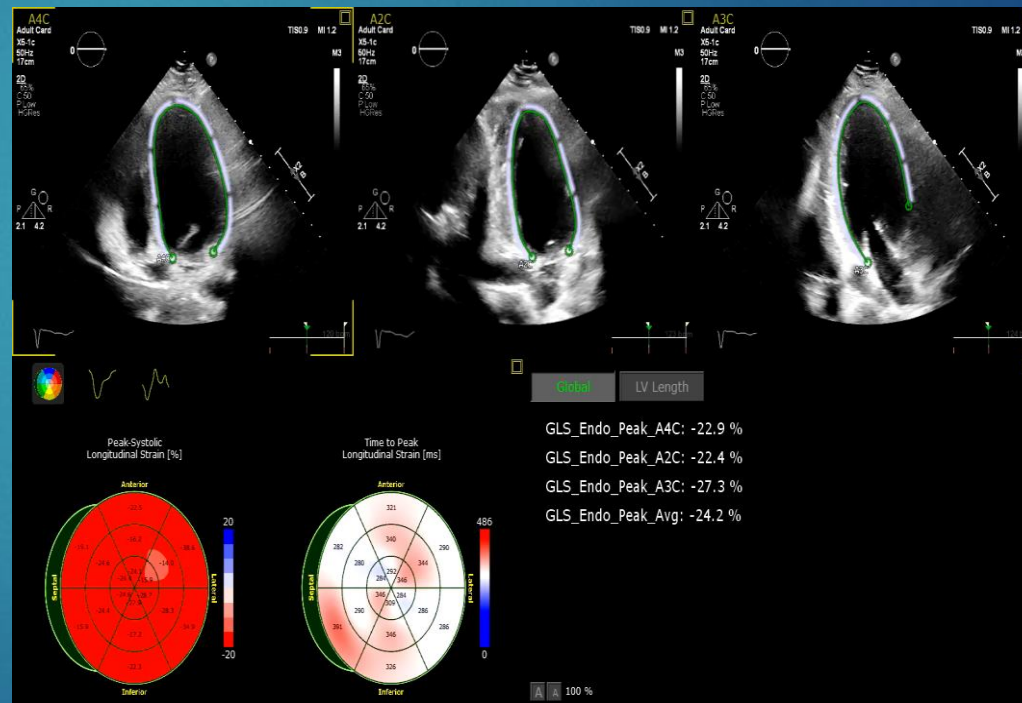
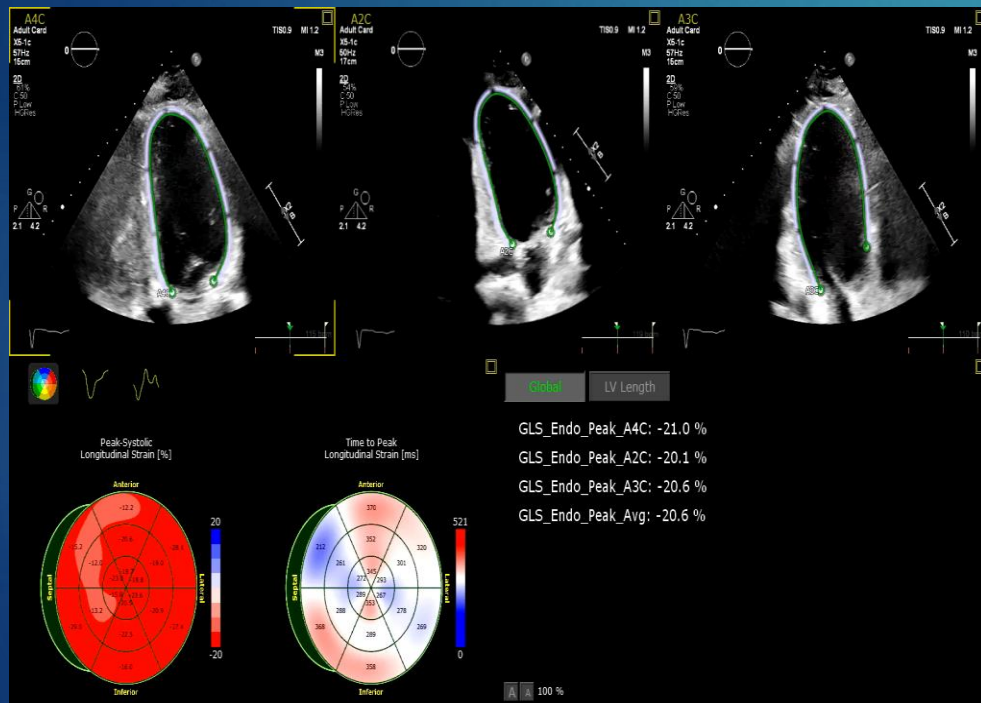
US-μέγιστο κόπωσης



GLS

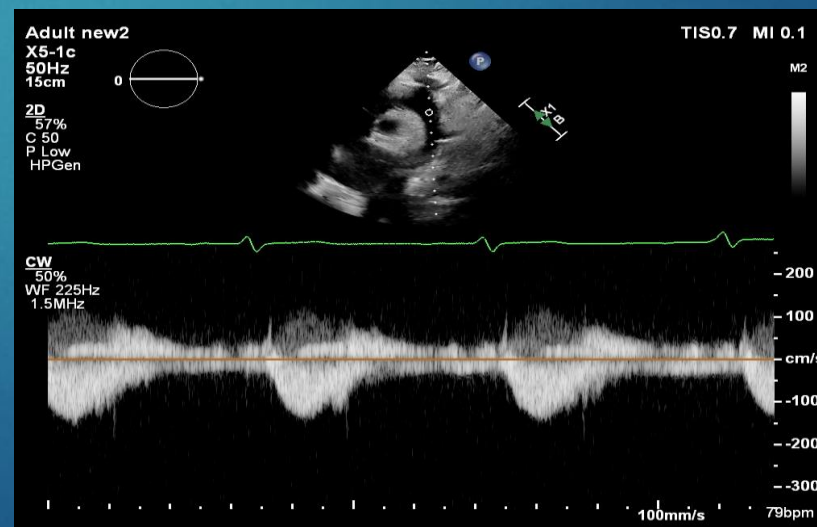
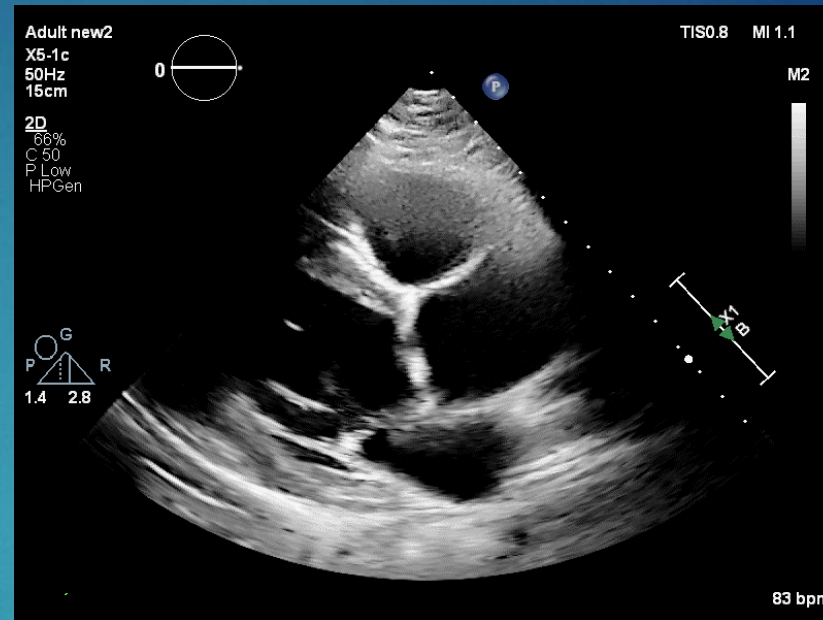
Ηρεμία

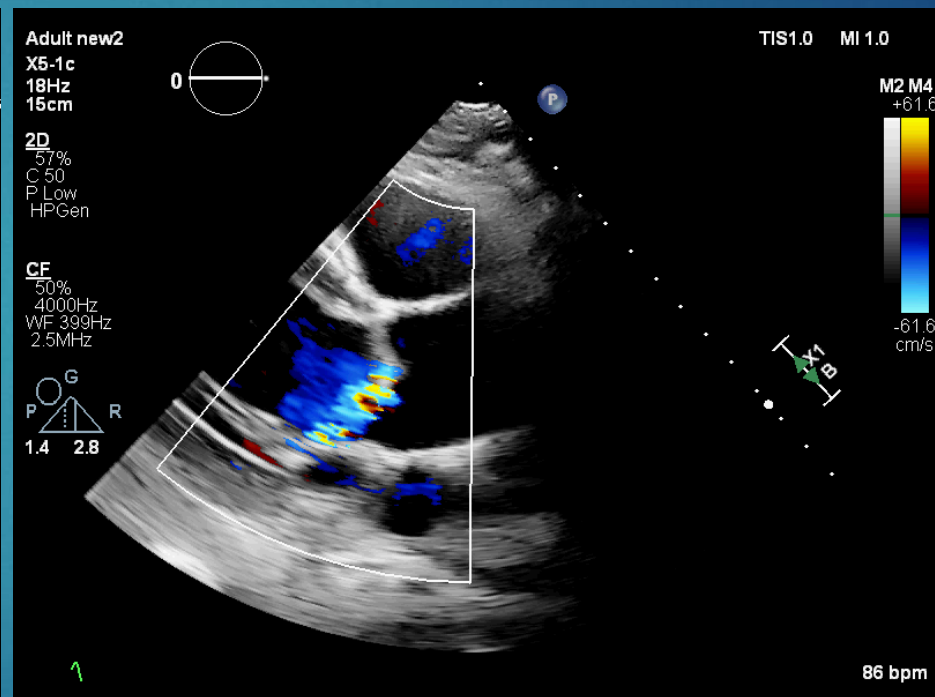
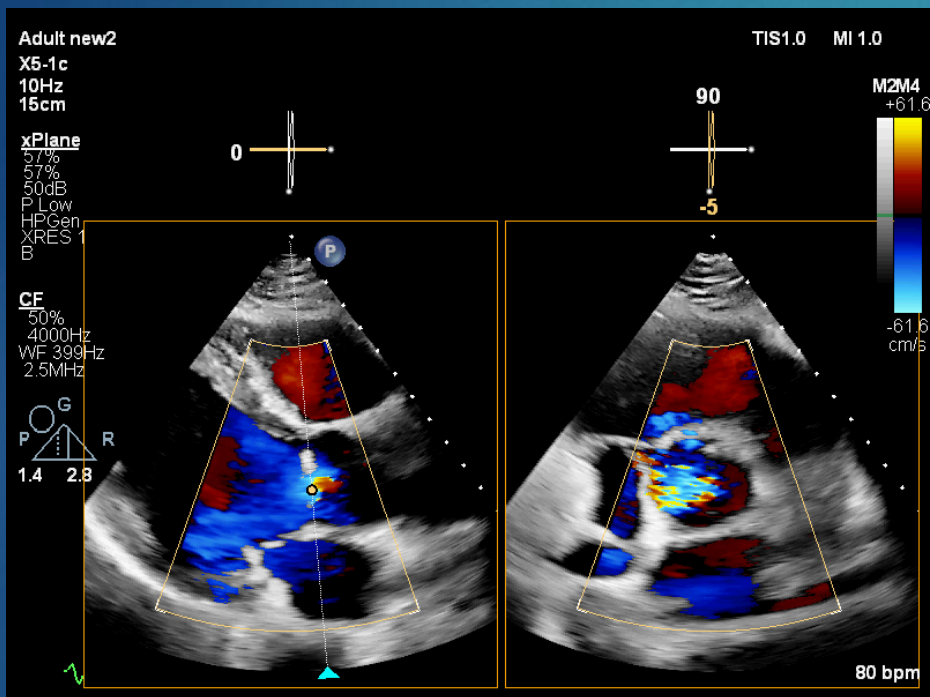
μέγιστο κόπωσης



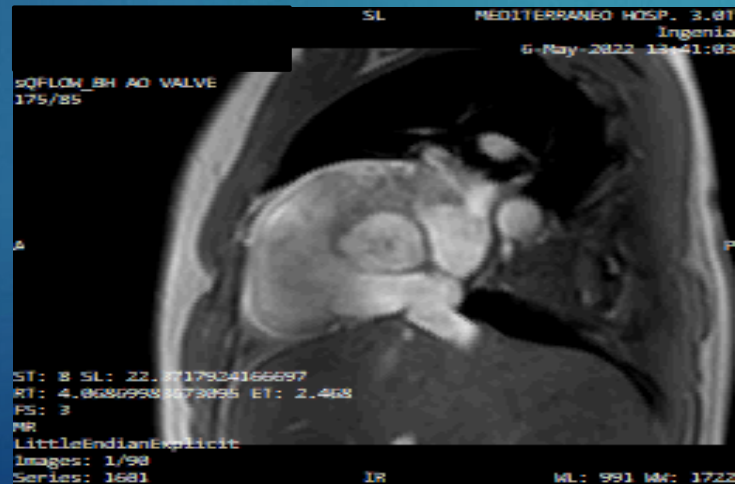
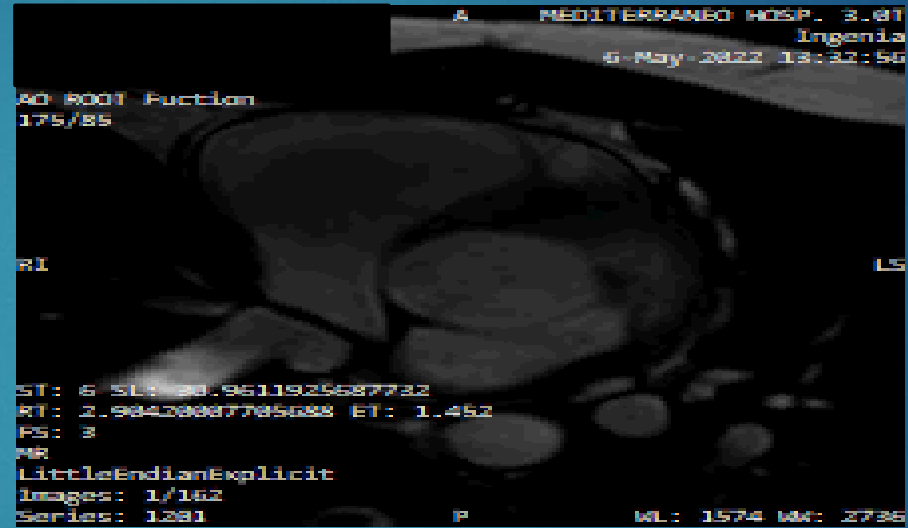
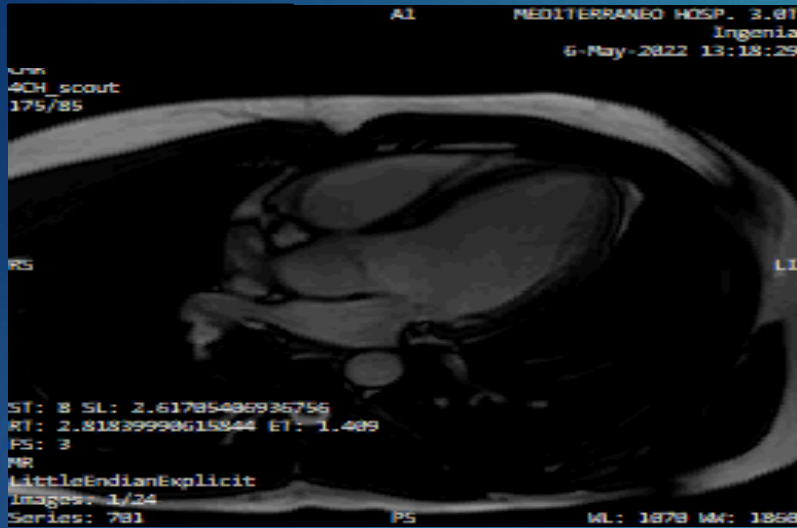
Περιστατικό 2^ο

- Ασθενής ετών 25
- Φ.Α.(-)
- Ύψος 175cm βαρος 87kg
BMI28.41kg/m²





MRI καρδιάς



RF=22%

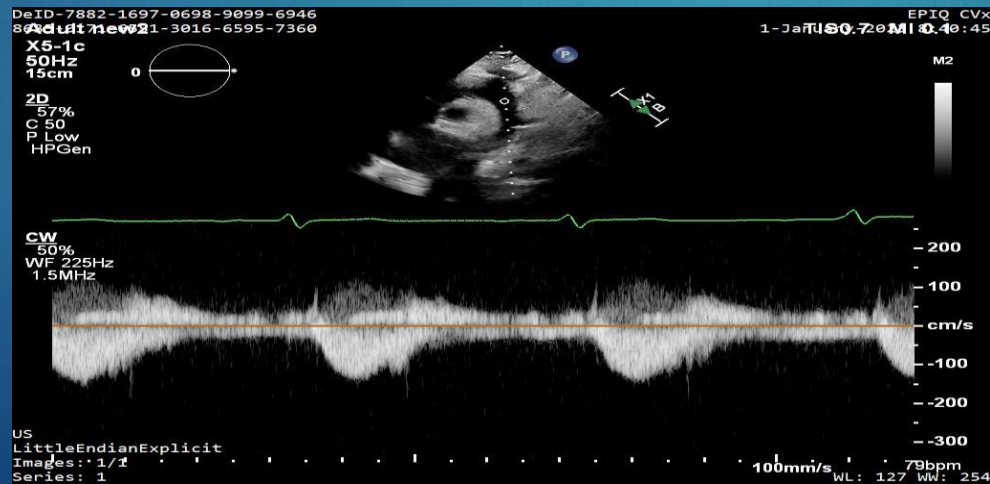
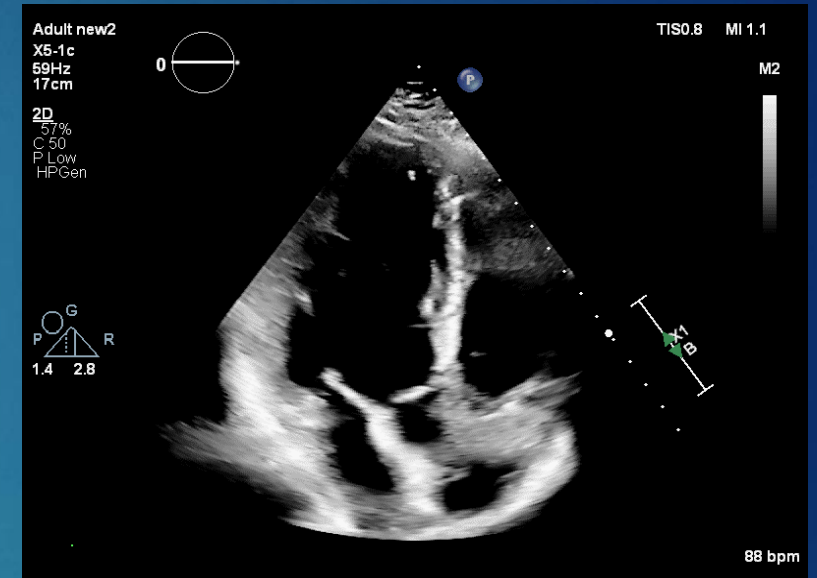
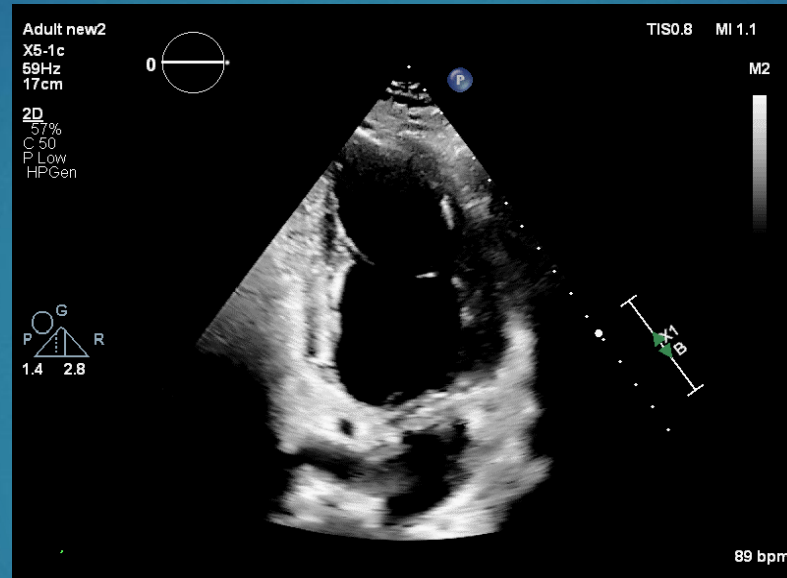
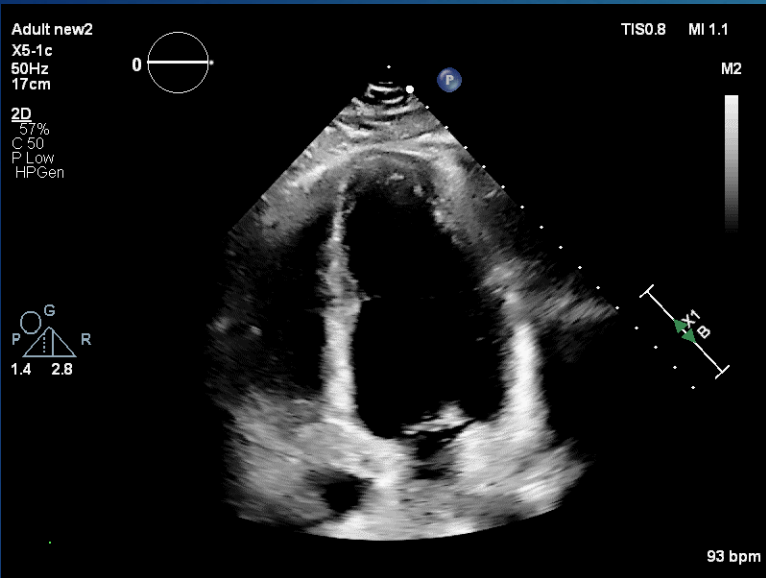
Πρωτόκολλο με εργομετρικό ποδήλατο

3 λεπτά

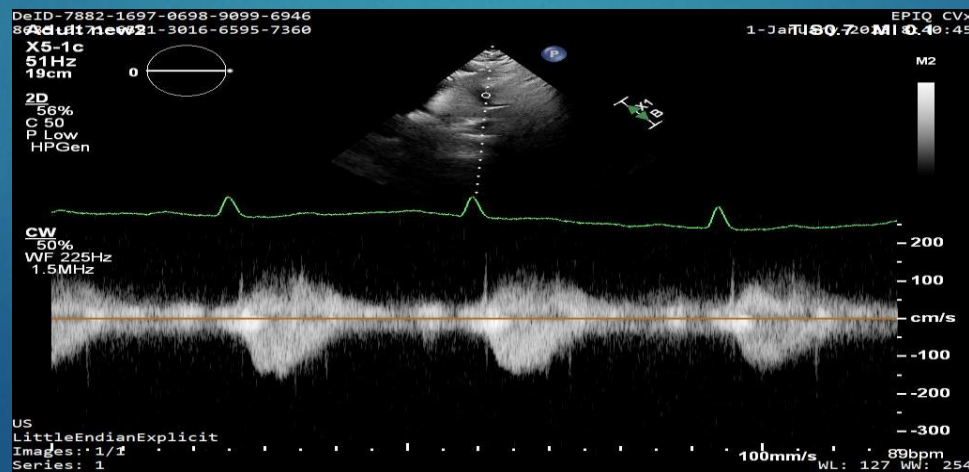
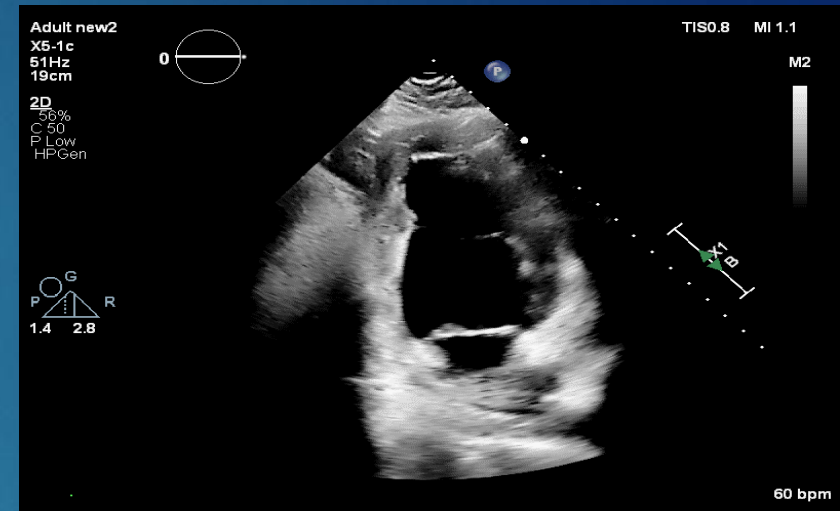
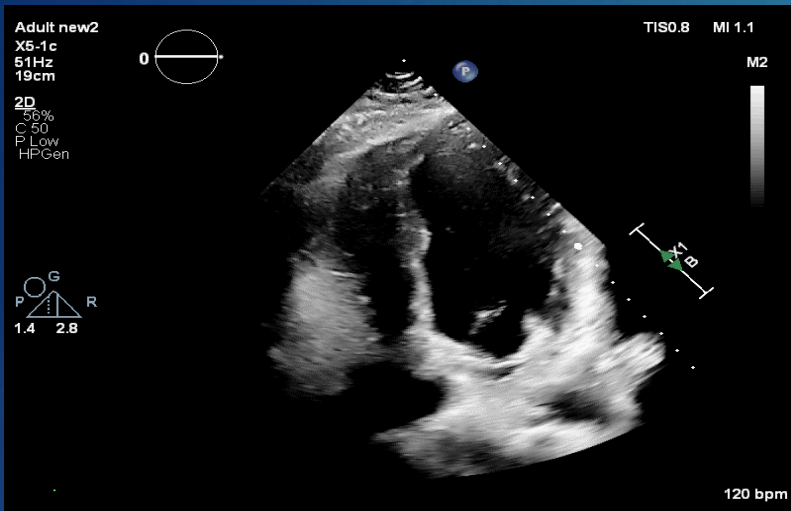


ΣΤΑΔΙΟ	Α/Π mmHg	ΣΦΥΞΕΙΣ/ΛΕΠΤΟ
ΗΡΕΜΙΑ	140/70	78
25W	162/94	100
50W	177/107	115
75W	197/103	130
100W	183/103	130
ΑΠΟΚΤΑΣΤΑΣΗ	146/81	98

US-ηρεμίας

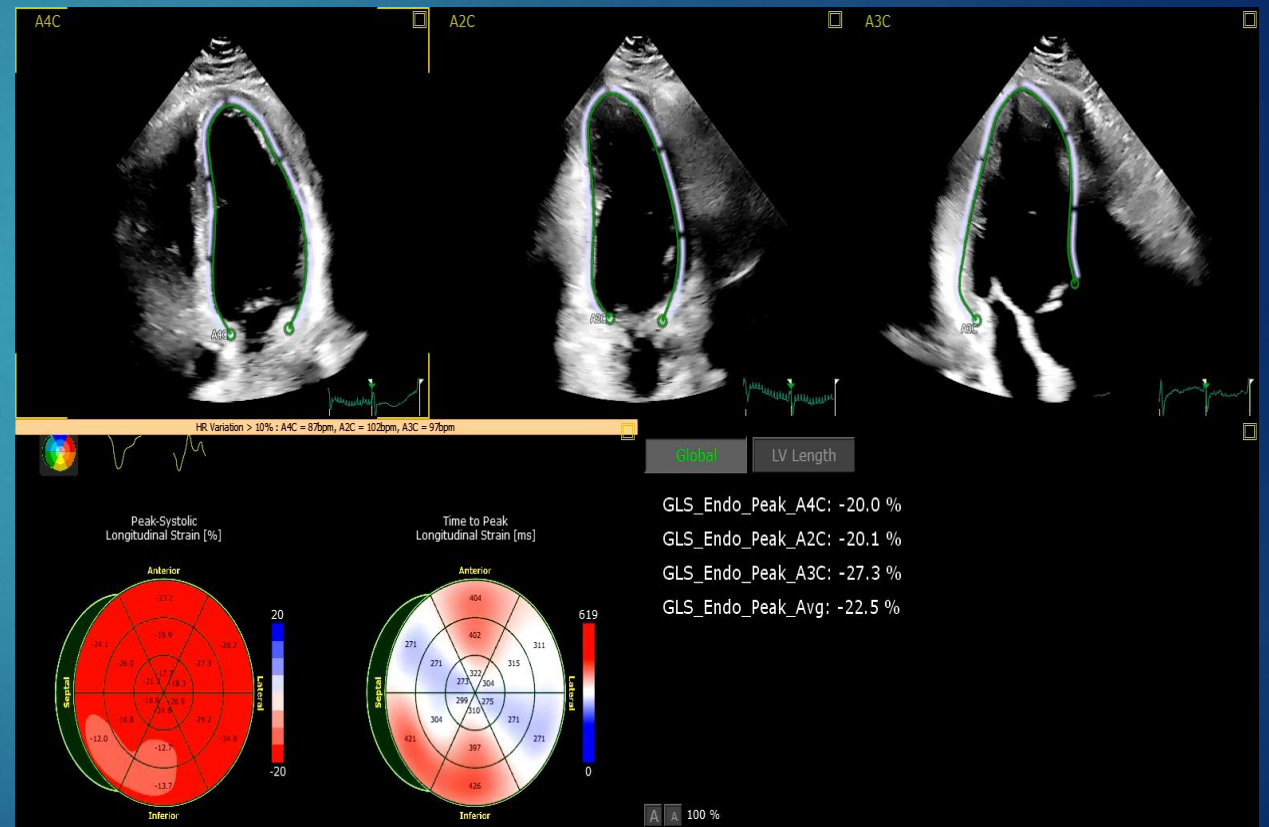


US-μέγιστο κόπωσης



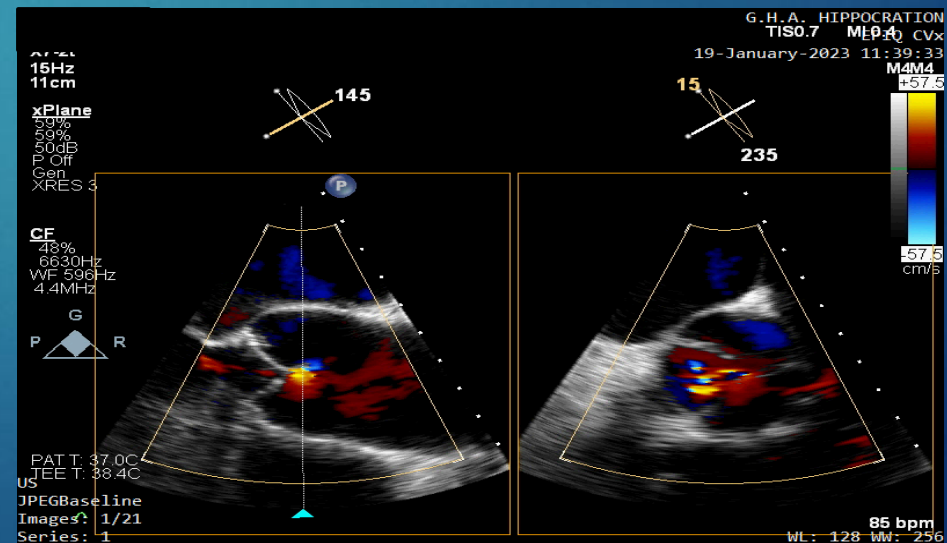
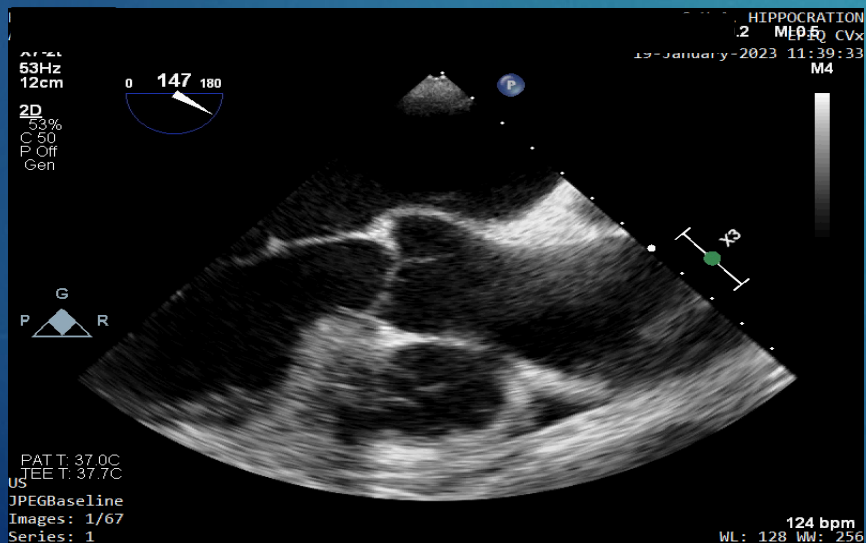
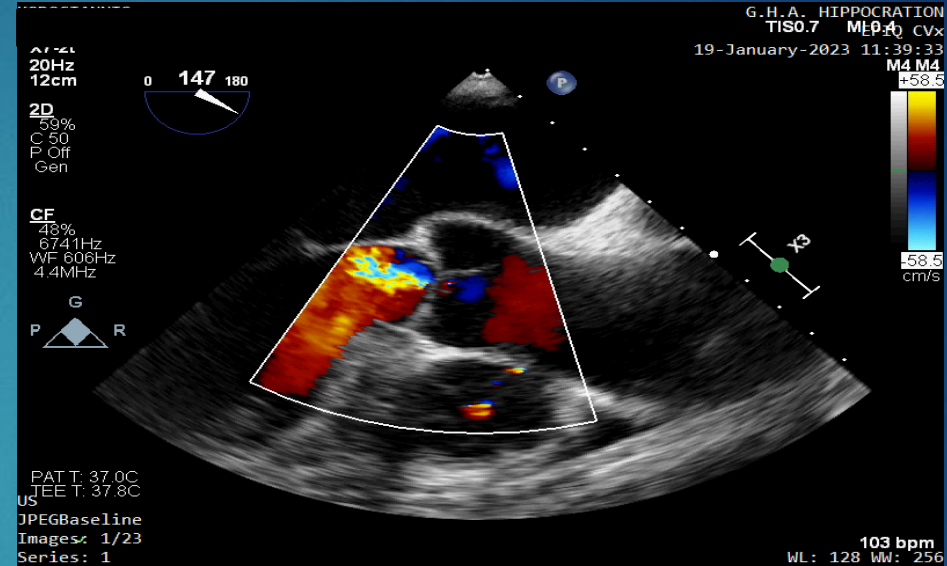
GLS

Ηρεμία — μέγιστο κόπωσης



Περιστατικό 3^ο

- Ασθενής 71 ετών
- ΑΥ υπό AT II/ CCB
- Δυσλιπιδαιμία υπό ατορβαστατίνη
- Ύψος 170 cm βάρος 79 kg BMI 27,02 kg/m²



Πρωτόκολλο με εργομετρικό ποδήλατο

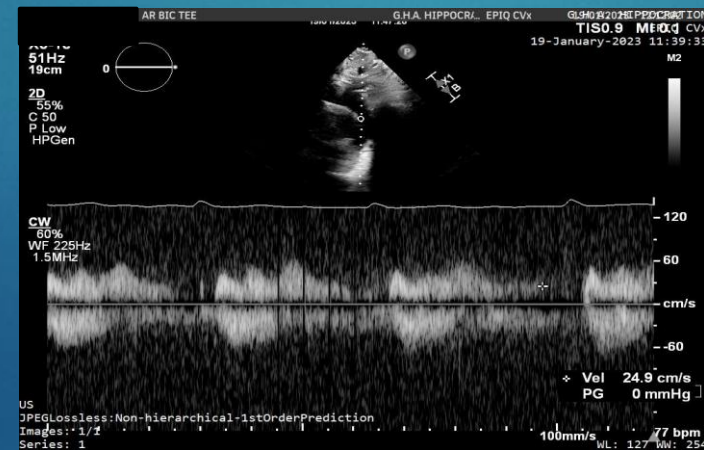
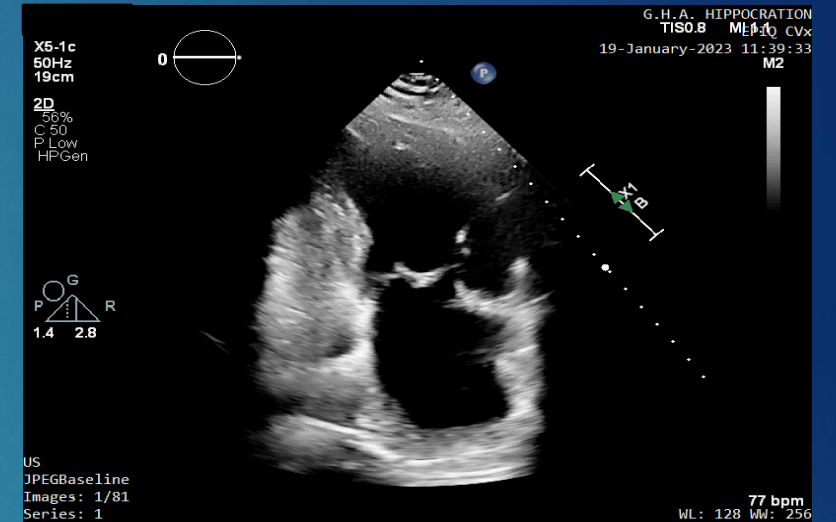
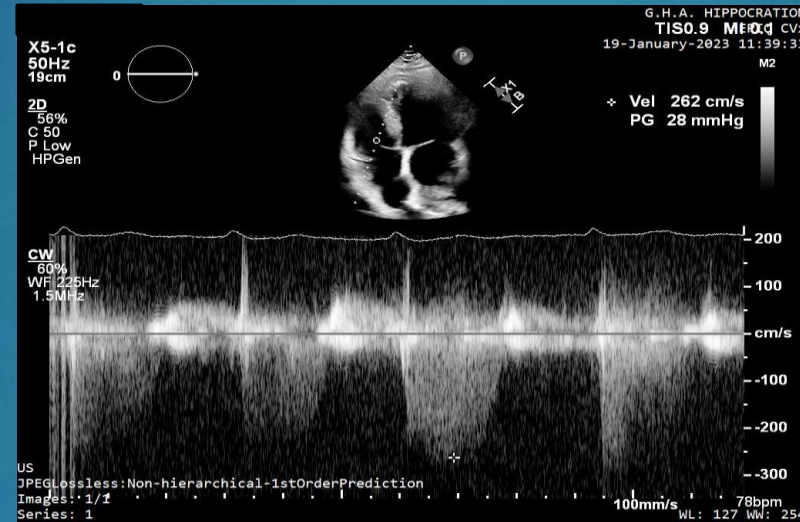
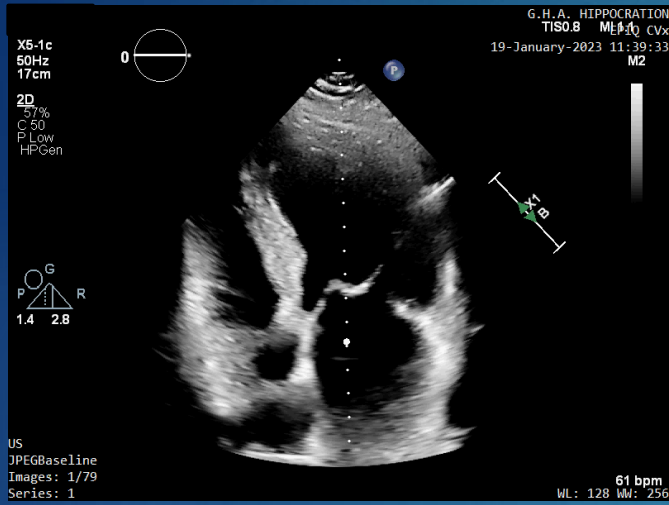
3 λεπτά

1 λεπτό

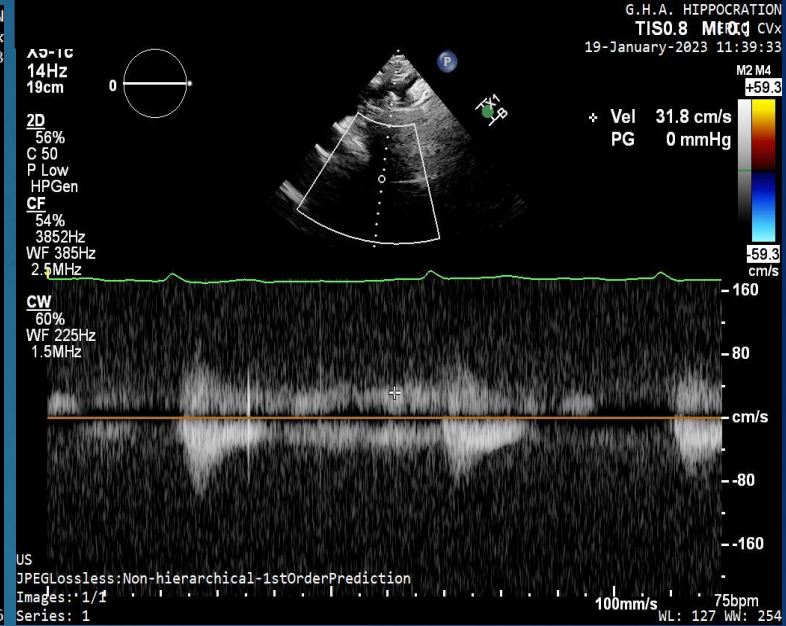
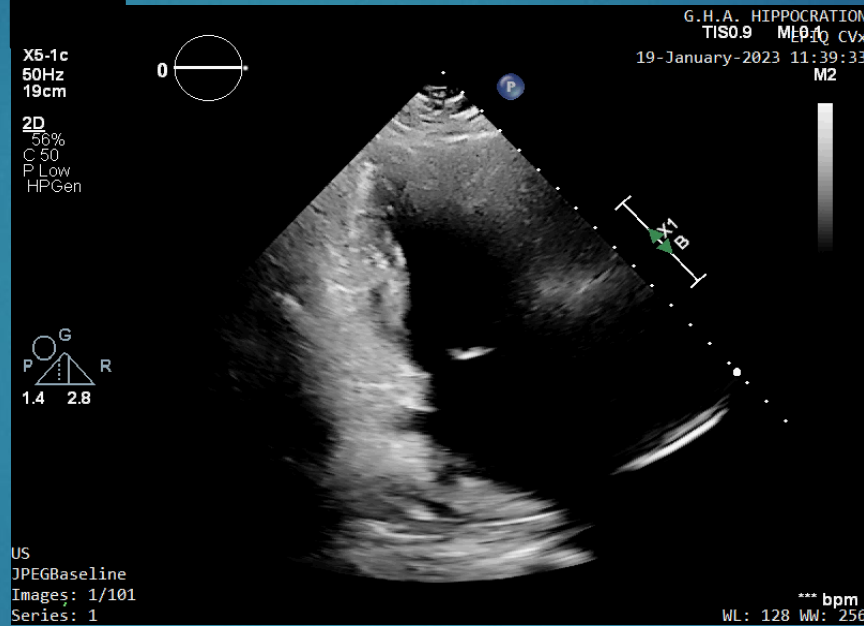
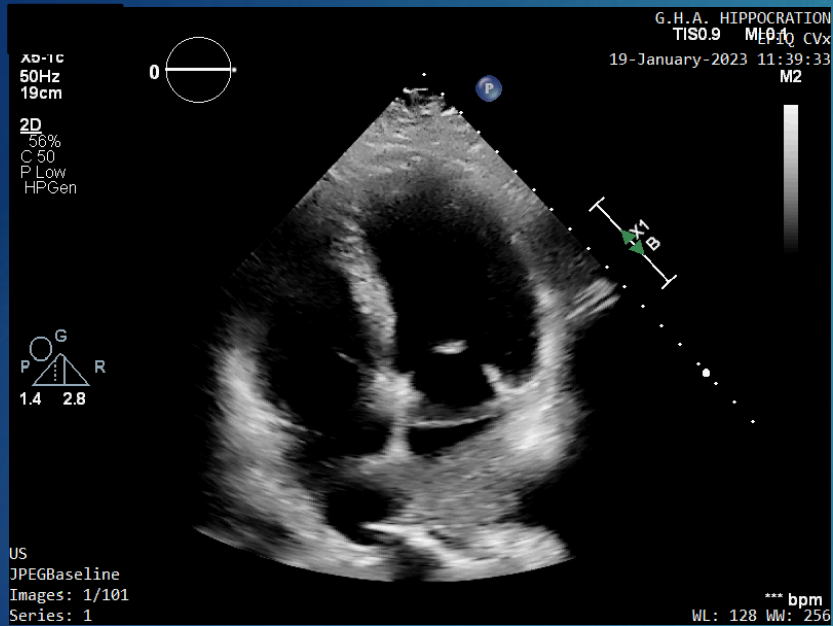


ΣΤΑΔΙΟ	Α/Π mmHg	ΣΦΥΞΕΙΣ/ΛΕΠΤΟ
ΗΡΕΜΙΑ	142/82	60
25W	167/98	111
50W	197/107	126
διακοπή		

US-ηρεμίας

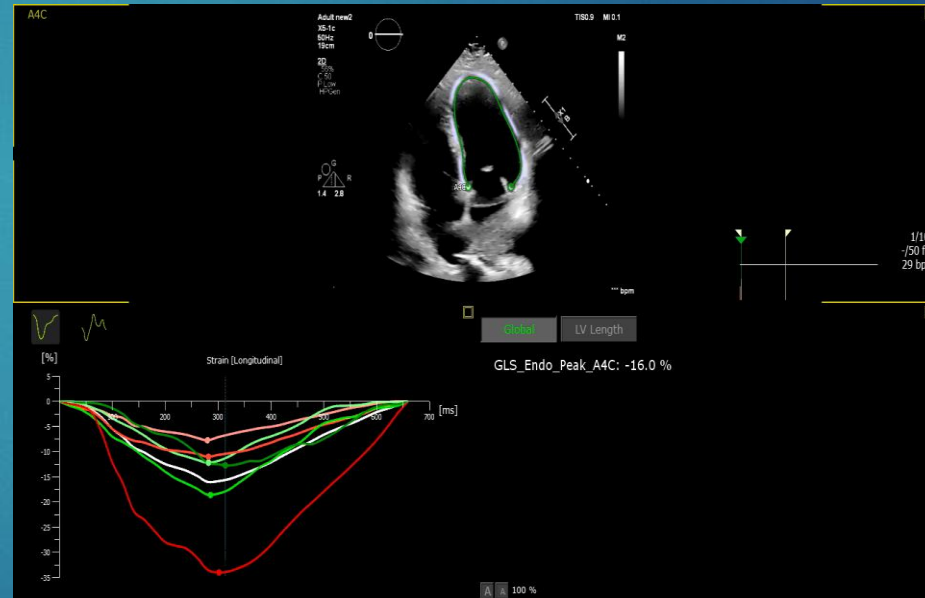
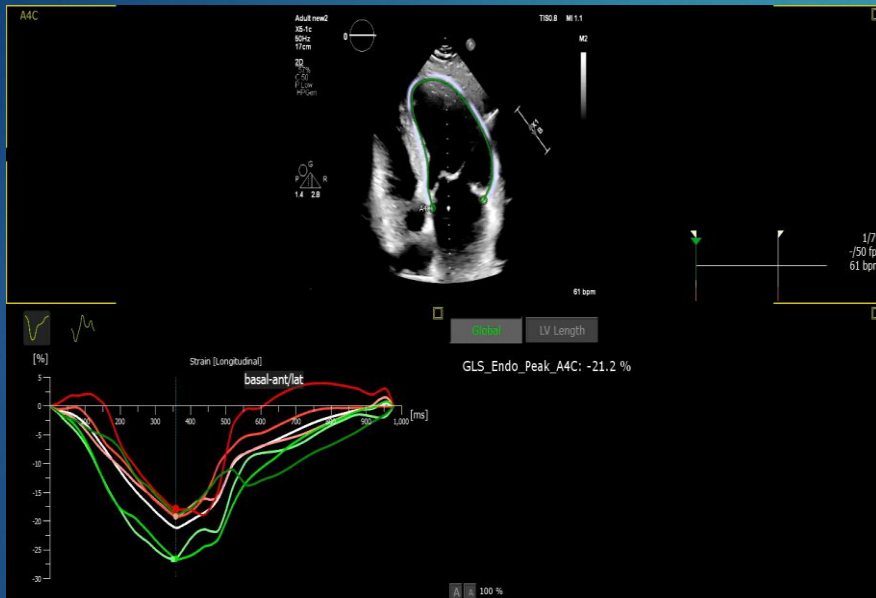


US-μέγιστο κόπωσης

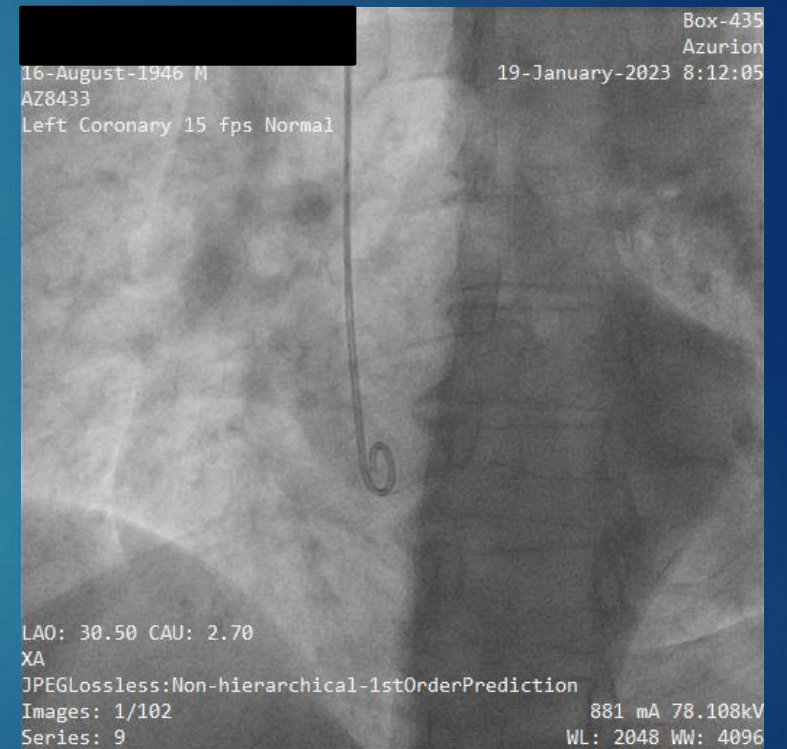
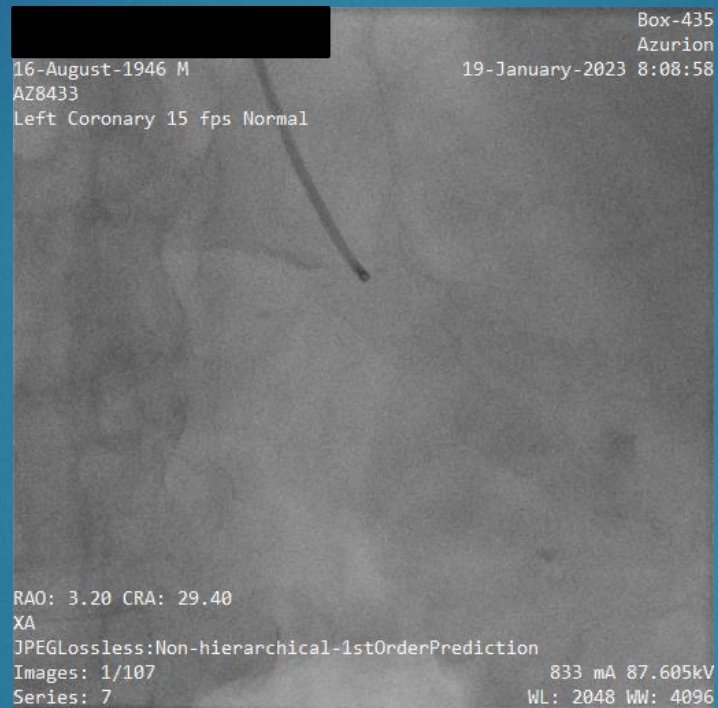
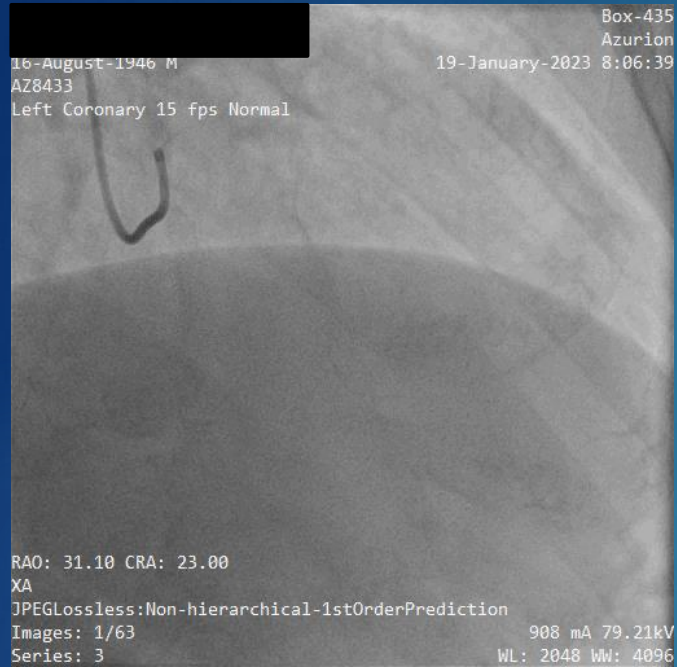


GLS

Ηρεμία – μέγιστο κόπωσης

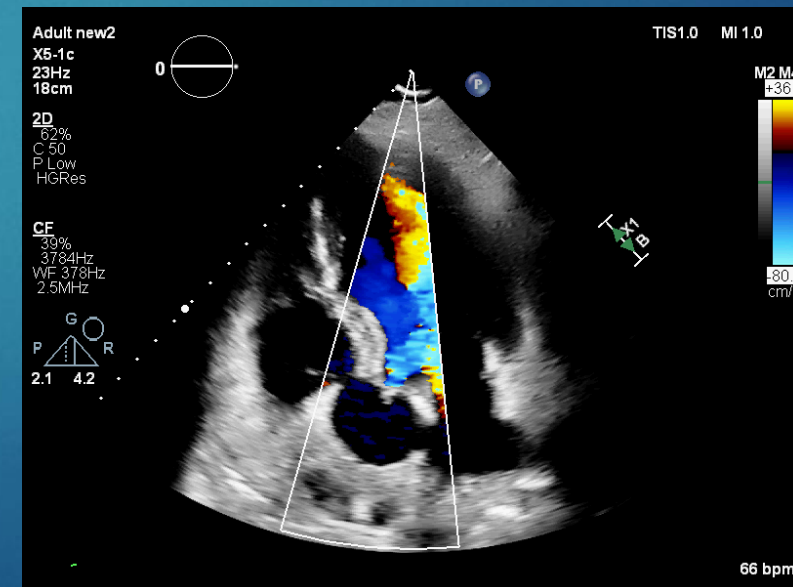
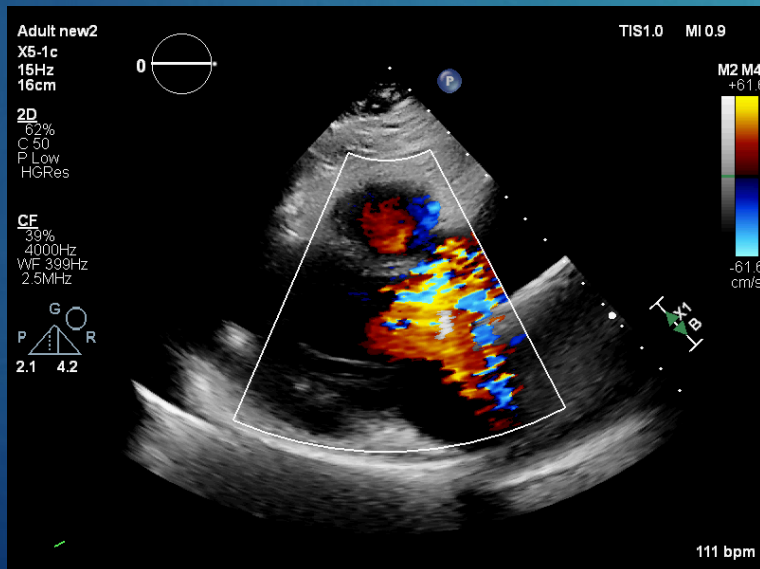
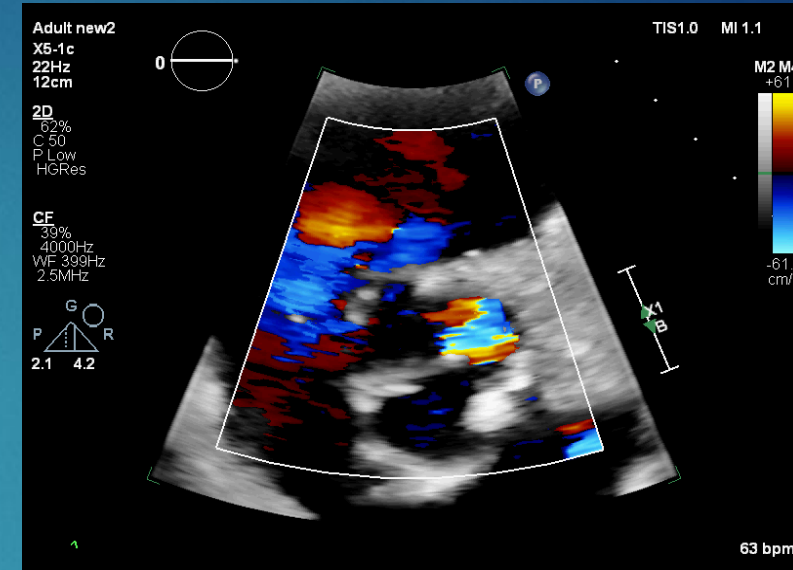


Στεφανιογραφία



Περιστατικό 4^ο

- Ασθενής 76 ετών
- ΑΥ υπό ΑΤ II
- Δυσλιπιδαιμία υπό ατορβαστατίνη
- Ύψος 168 cm βάρος 74 kg BMI 26,22 kg/m²



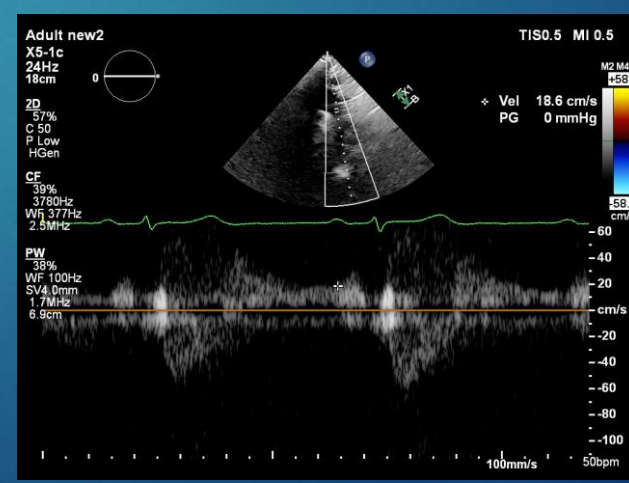
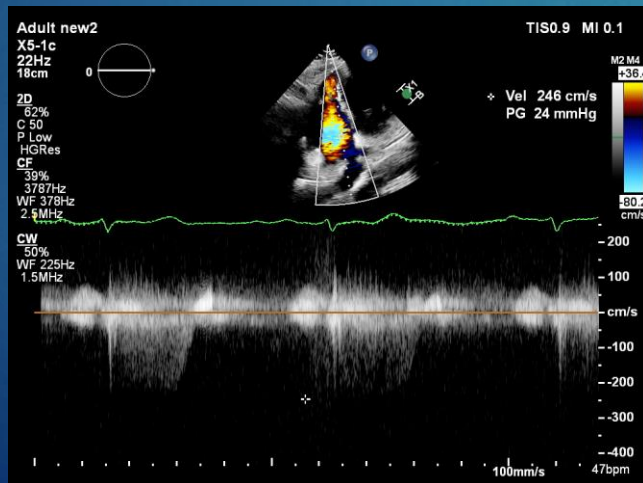
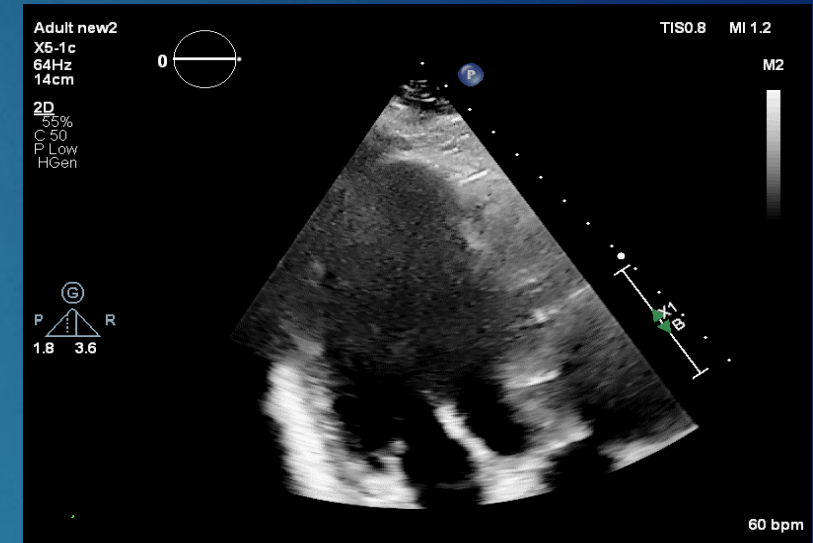
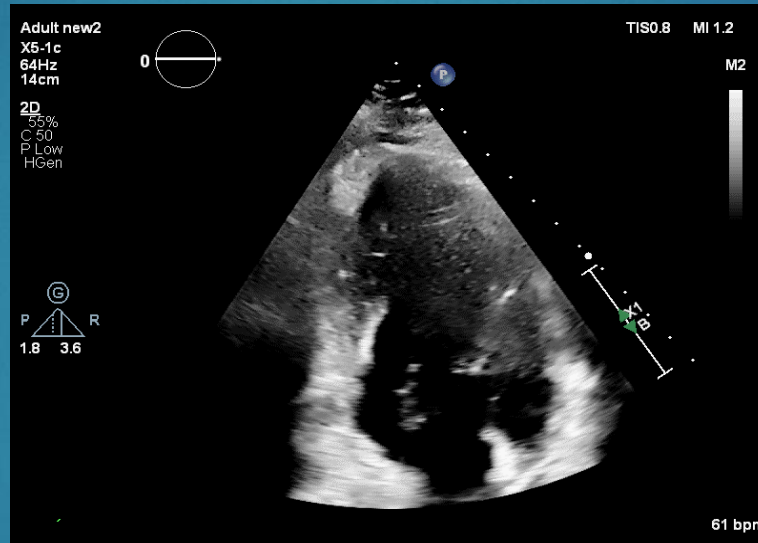
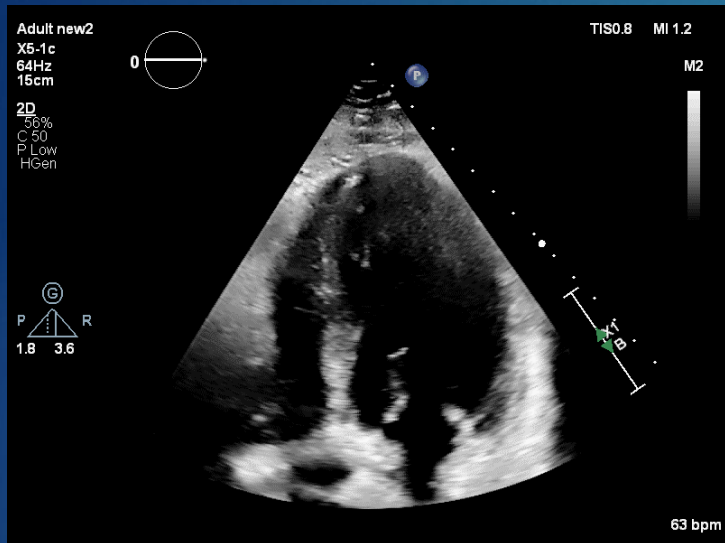
Πρωτόκολλο με εργομετρικό ποδήλατο

ΣΤΑΔΙΟ	Α/Π mmHg	ΣΦΥΞΕΙΣ/ΛΕΠΤΟ
ΗΡΕΜΙΑ	166/93	60
25W	180/88	96
50W	196/93	105
75W	208/90	126
100W	-	-
ΑΠΟΚΑΤΑΣΤΑΣΗ	152/108	82

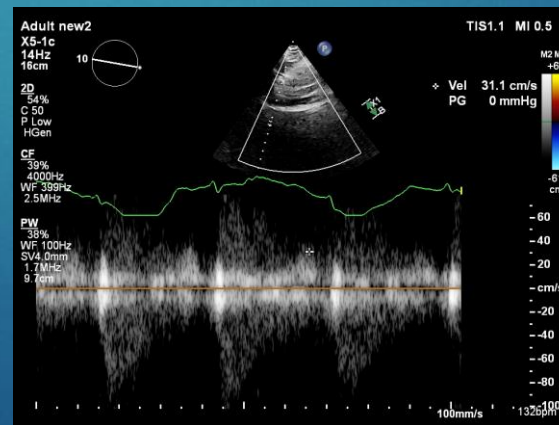
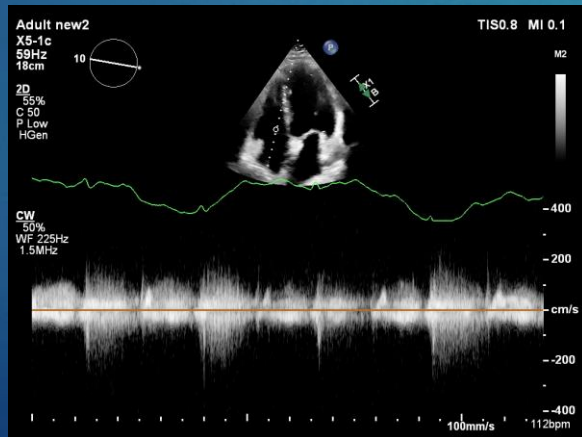
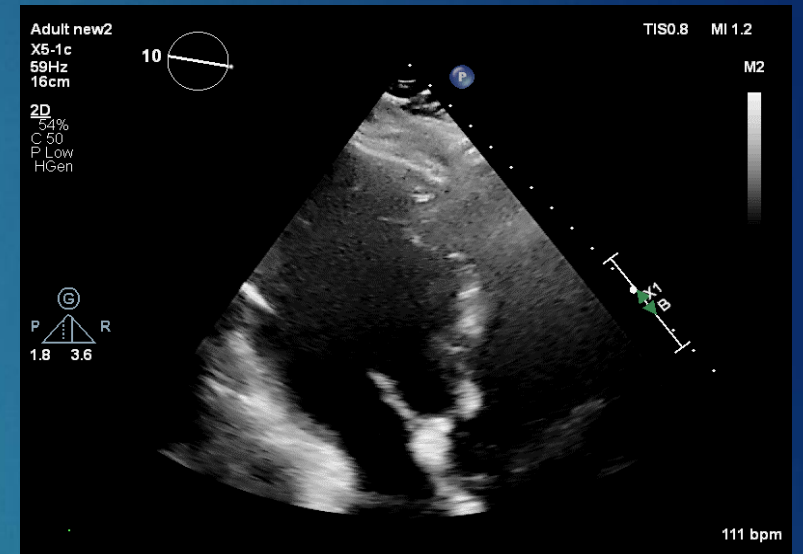
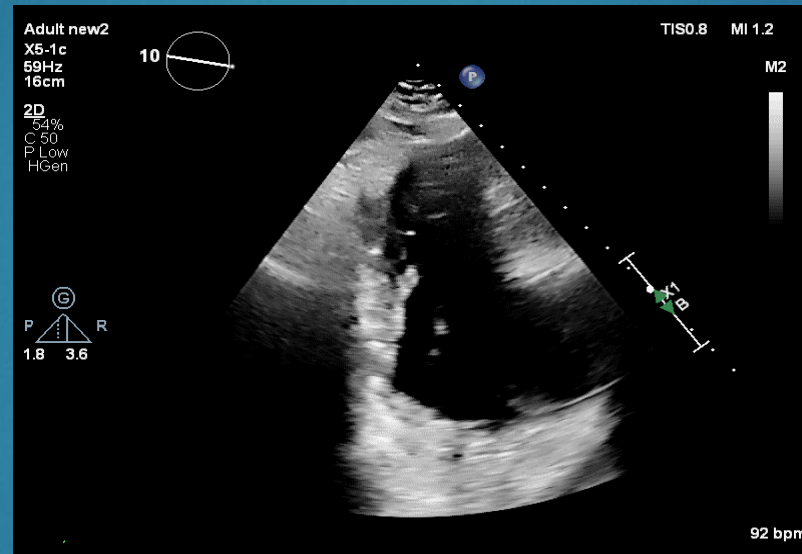
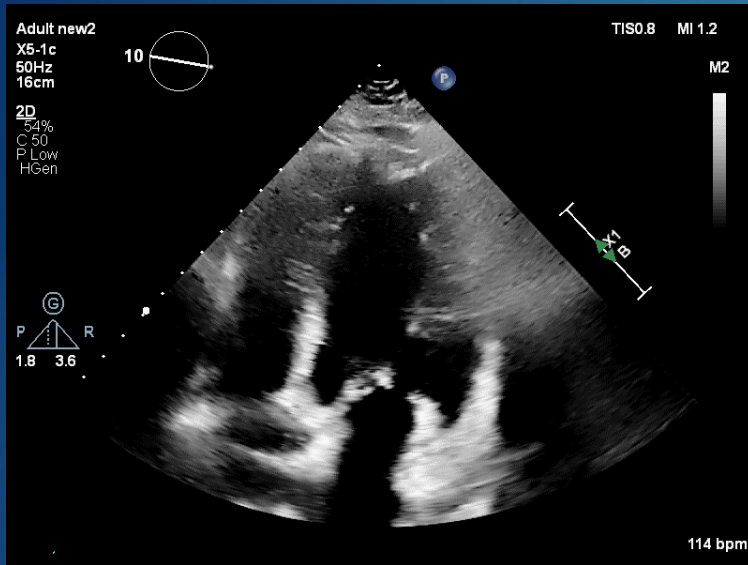
3 λεπτά



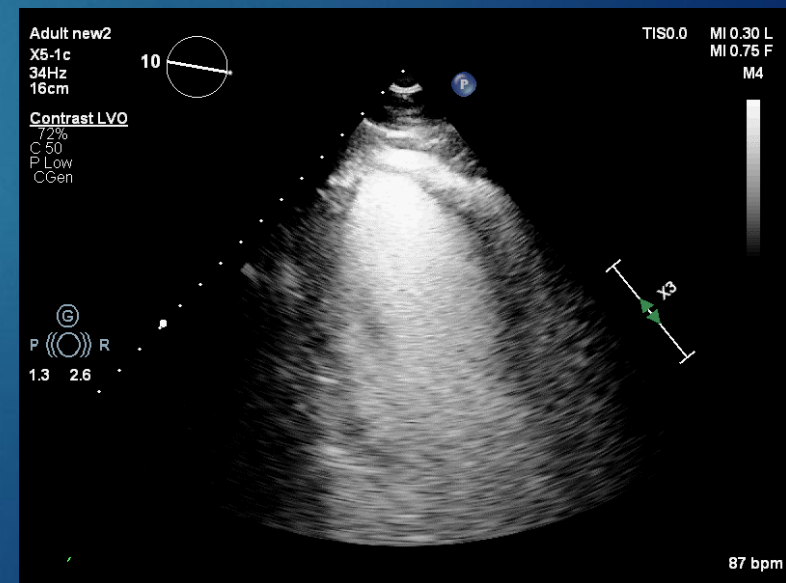
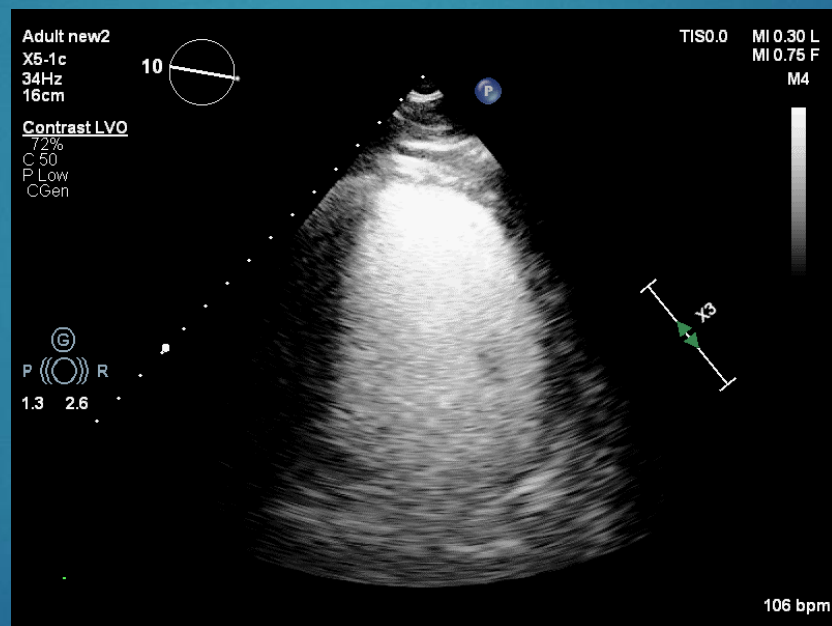
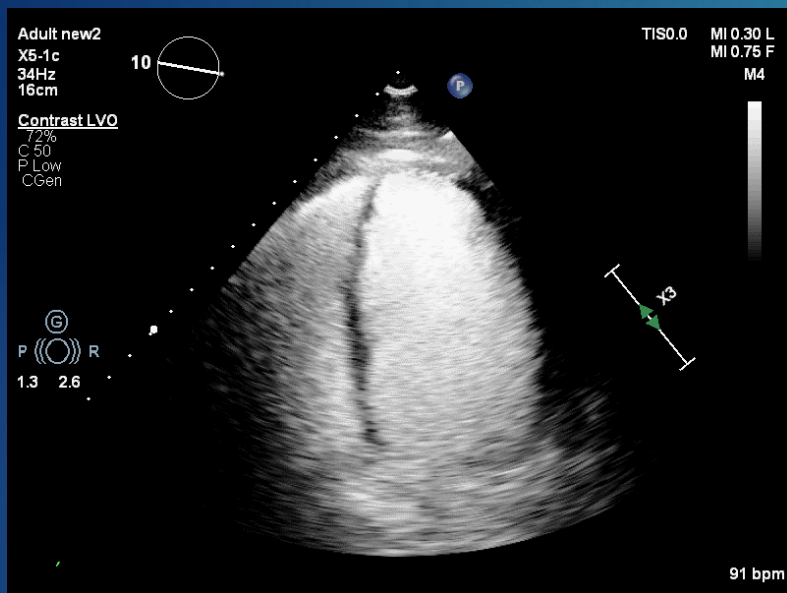
US-ηρεμίας



US-μέγιστο κόπωσης

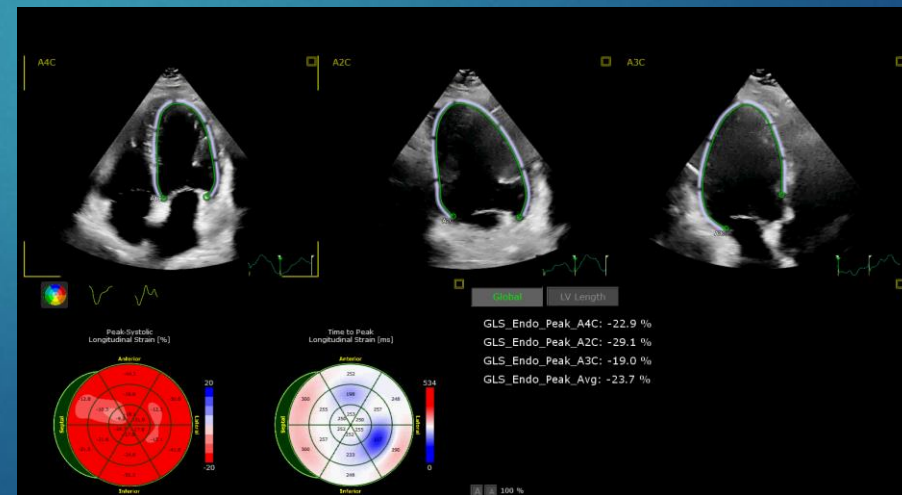
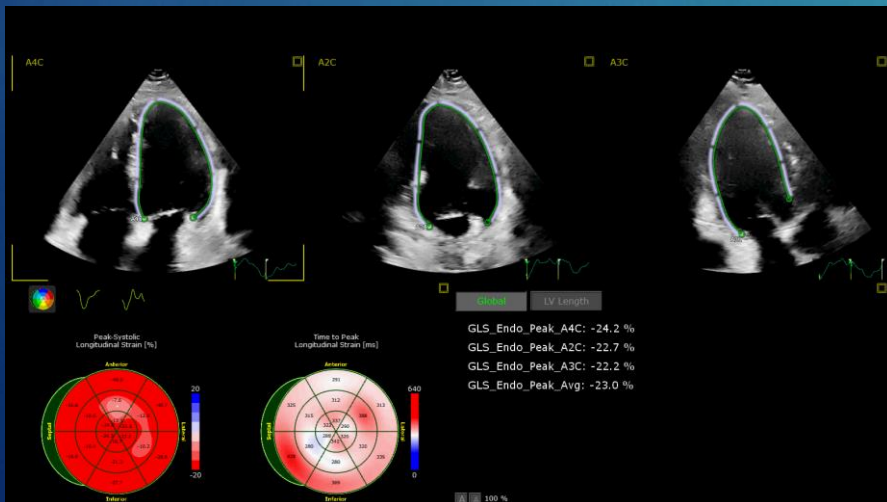
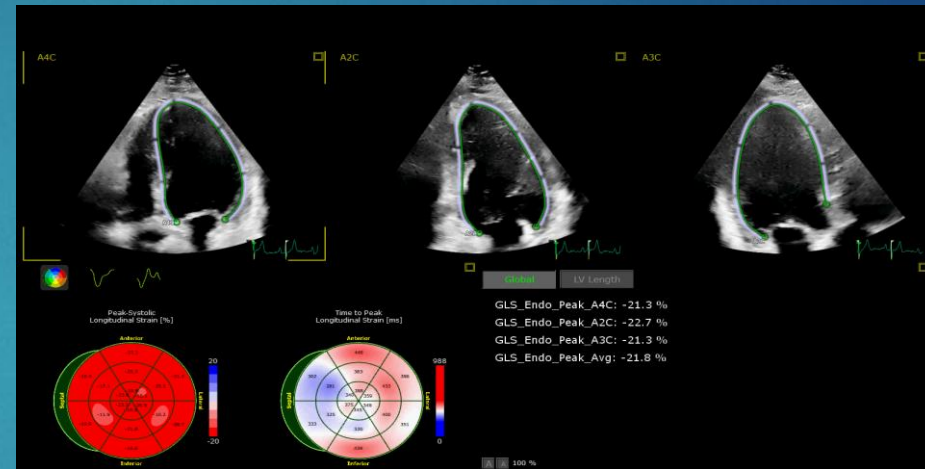
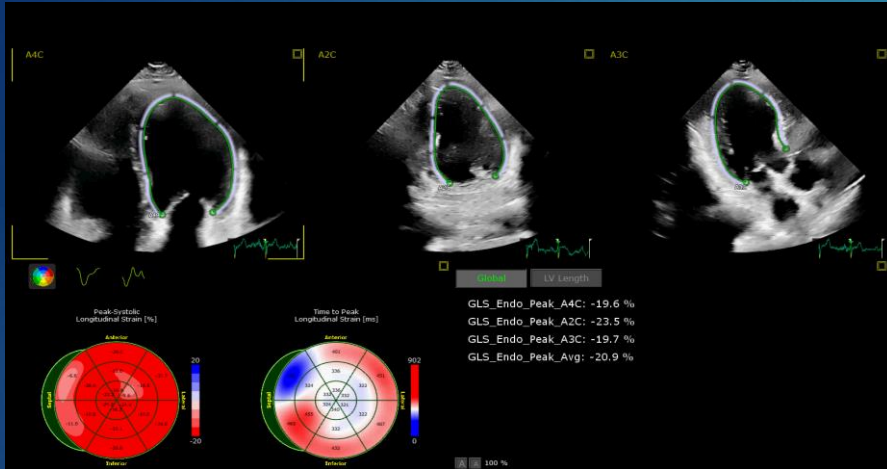


US-μέγιστο κόπωσης



GLS

Ηρεμία – μέγιστο κόπωσης



	EDV	ESV	SV	EF%
1o rest	152	48	104	68.4
1o peak	158	50	108	68.3
2o rest	167	78.9	88.1	52.8
2o peak	171	54.6	116	68.1
3o rest	136	61.2	74.8	55
3o peak	125	75.5	49.5	39.6
4o rest	136	58.5	77.5	57
4o peak	148	54.8	93.2	62

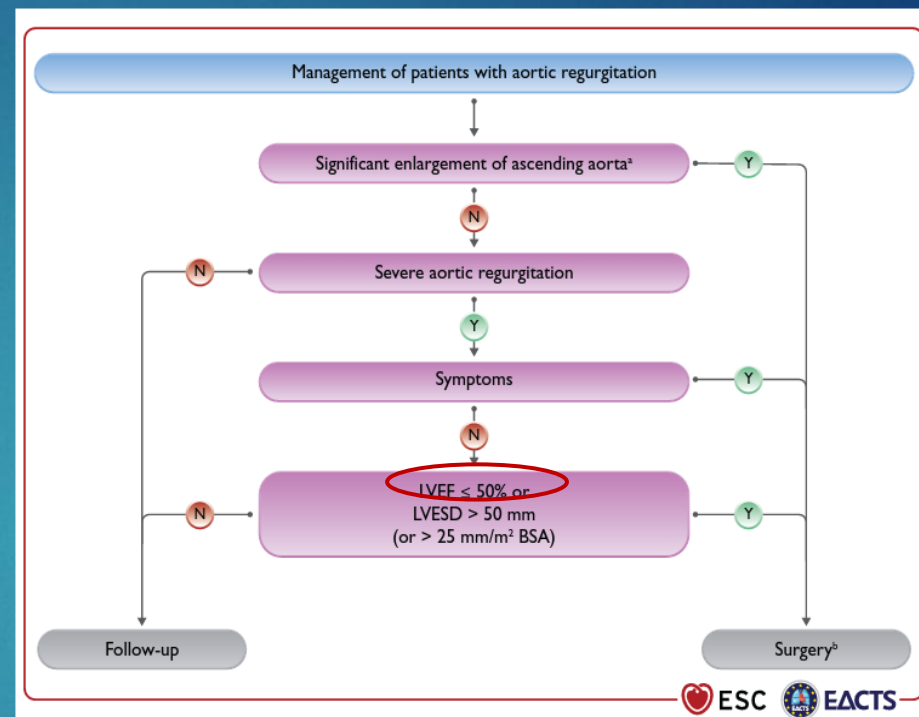
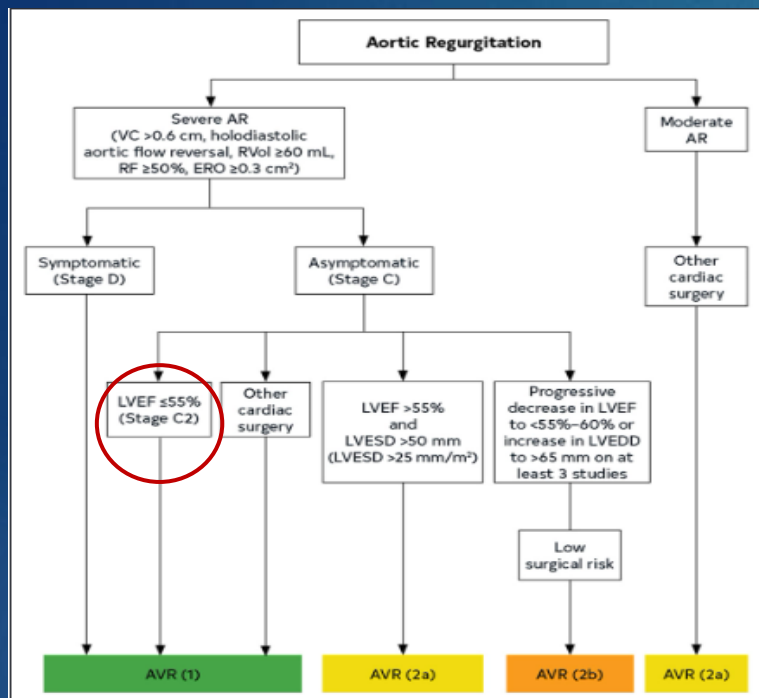
Πως αξιολογούμε τους ασθενείς ;

- ▶ Διαθωρακικό υπερηχοκαρδιογράφημα
- ▶ Διοισοφάγιο υπερηχοκαρδιογράφημα (ανάδειξη της αιτιολογίας και της ανατομίας της ανεπάρκειας της αορτικής βαλβίδας, **El Khoury's classification**)

Περιμένουμε το σύμπτωμα;

- ▶ Παρακολούθηση με stress test;
- ▶ CMR;

ESC VS AHA/ACC



2a	B-NR	4. In asymptomatic patients with severe AR and normal LV systolic function (LVEF >55%), aortic valve surgery is reasonable when the LV is severely enlarged (LVESD >50 mm or indexed LVESD >25 mm/m ²) (Stage C2). ^{10,11,13-24}
2a	C-EO	5. In patients with moderate AR (Stage B) who are undergoing cardiac or aortic surgery for other indications, aortic valve surgery is reasonable.
2b	B-NR	6. In asymptomatic patients with severe AR and normal LV systolic function at rest (LVEF >55%; Stage C1) and low surgical risk, aortic valve surgery may be considered when there is a progressive decline in LVEF on at least 3 serial studies to the low-normal range (LVEF 55% to 60%) or a progressive increase in LV dilation into the severe range (LV end diastolic dimension [LVESD] >65 mm). ^{12,16,17,20,25-28}

Surgery is recommended in asymptomatic patients with LVESD >50 mm or LVESD >25 mm/m ² BSA (in patients with small body size) or resting LVEF ≤50%. ^{107,108,112,114,115}	I	B
Surgery may be considered in asymptomatic patients with LVESD >20 mm/m ² BSA (especially in patients with small body size) or resting LVEF ≤55%, if surgery is at low risk.	IIb	C

2.3.5. Diagnostic Testing: Exercise Testing In a subset of patients, exercise stress testing will be of additional value in determining optimal therapy. Because of the slow, insidious rate of progression of many valve lesions, patients may deny symptoms as they gradually limit their activity level over several years to match the gradual limitations imposed by the valve lesion. In patients with an equivocal history of symptoms, exercise testing helps identify those who are truly symptomatic.^{1,2} Exercise stress testing (ie, examining the exercise capacity and blood pressure response) is of prognostic value in patients with asymptomatic valve disease and provides further information about the timing of a potential intervention.³⁻¹¹ It is important that exercise testing in patients with severe VHD always be performed by trained operators, with continuous monitoring of the ECG and blood pressure.

Υπερηχοκαρδιογραφικοί δείκτες πρώιμης δυσλειτουργίας της αριστερής κοιλίας στην ανεπάρκεια αορτικής

- ▶ Contractility reserve CR (βελτίωση του κλάσματος εξωθήσεως κατά την κόπωση)

Όταν **δεν** υπάρχει CR συνεπάγεται χειρότερη πρόγνωση, χειρότερη αναδιαμόρφωση της αριστερής κοιλίας, επιδείνωση των συμπτωμάτων

CR \geq 6% έχει προγνωστικό ρολό στην αναδιαμόρφωση της αρ. κοιλίας μετρά από χειρουργική αντικατάσταση της αορτικής βαλβίδας ακόμη και σε επηρεασμένα Κ.Ε.
~45%

Park et al. Circ J 2013

Lee et al. The International Journal of Cardiovascular Imaging (2019)

Chihiro et al. Echocardiography. 2022

GLS

- ▶ **GLS** μείωση του είναι προγνωστικός δείκτης δυσλειτουργίας της αριστερής κοιλίας πριν την μείωση του Κ.Ε. στην ανεπάρκεια αορτής
- ▶ Μειωμένο GLS κακός προγνωστικός δείκτης 5ετους επιβίωσης ακόμη και σε $ilvesd$ μεταξύ 20-25mm/m²
- ▶ rest GLS <-12 δηλώνει απουσία CR (SESAR PROTOCOL) με κακή ανταπόκριση στην κόπωση, χειρότερη πρόγνωση
- ▶ Ειδικά λογισμικά που υπολογίζουν το 'myocardial work' είναι δείκτης πρώιμης δυσλειτουργίας της αριστερής κοιλίας στην ανεπάρκεια αορτής

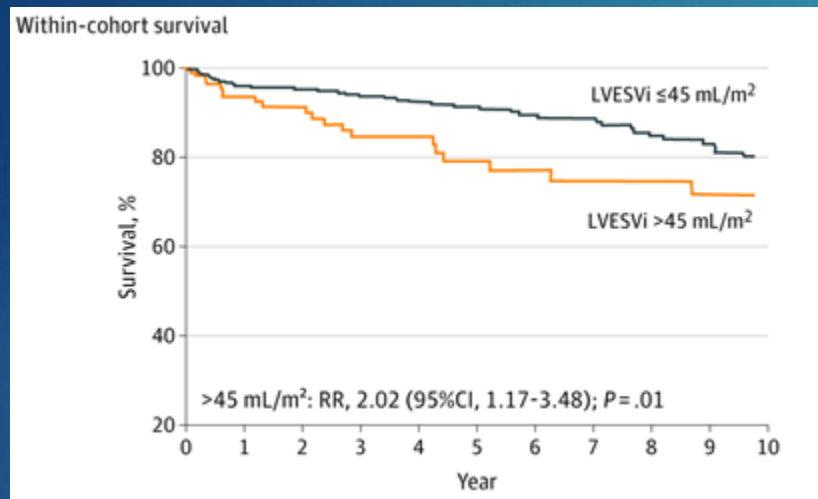
Verseckaitė et al. *Echocardiography*. 2018

Alashi et al. *JACC: CARDIOVASCULAR IMAGING* 2018

D'Andrea et al. *Echocardiography*. 2020

- ▶ Υποκινησίες της αριστερής κοιλίας στο STRESS ECHO σε ασθενείς με σοβαρή ανεπάρκεια αορτικής είναι δείκτης απουσίας της CR και έμμεσος δείκτης μη αντιρρόπησης της αρ. κοιλίας στην ανεπάρκεια αορτικής

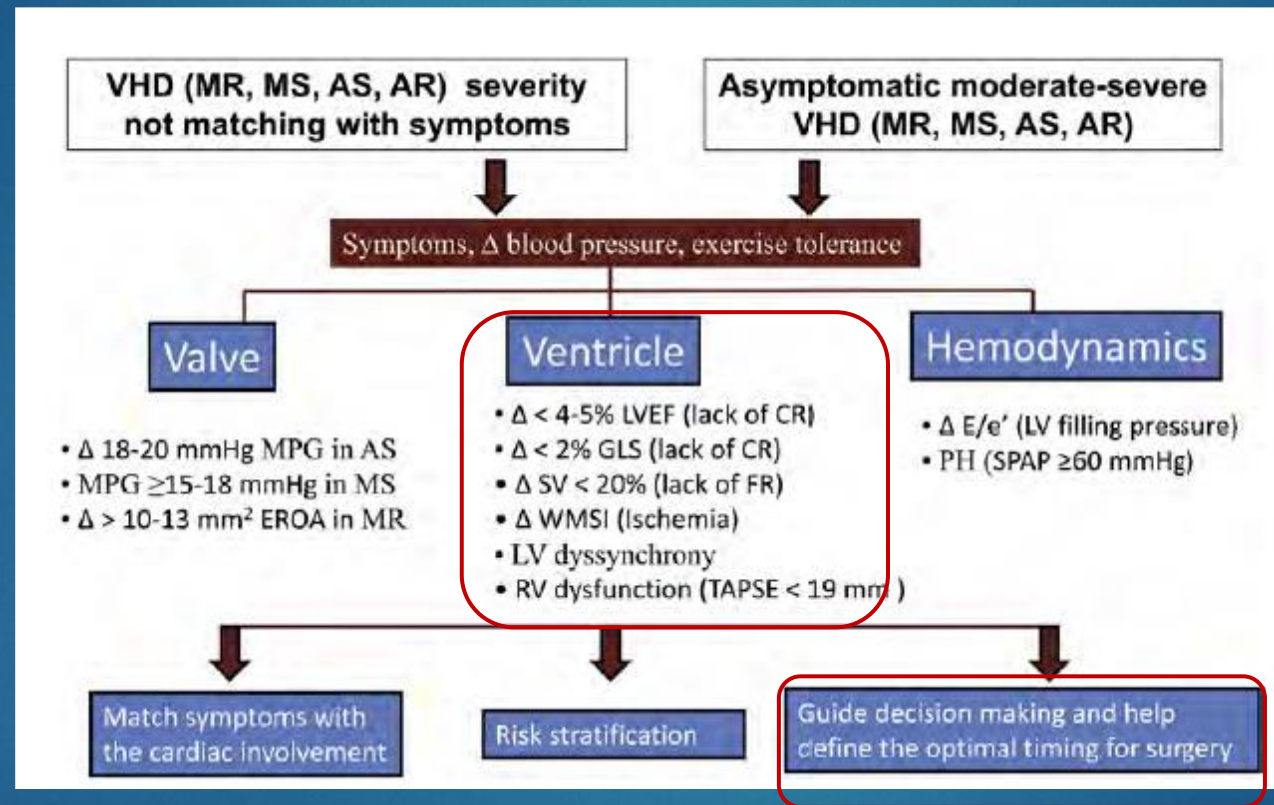
Volume-Δvol



- ▶ Volume-LVEF $< 60\%$
- ▶ LVesvi $> 40-45$ ml/m²
- ▶ LVesdi $> 21-22$ mm/m²

- ▶  θνησιμότητας

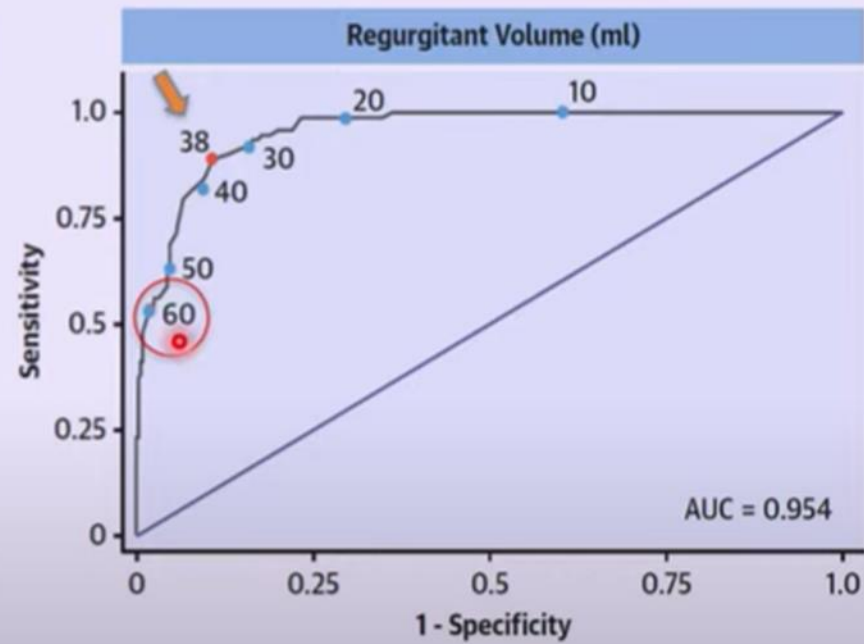
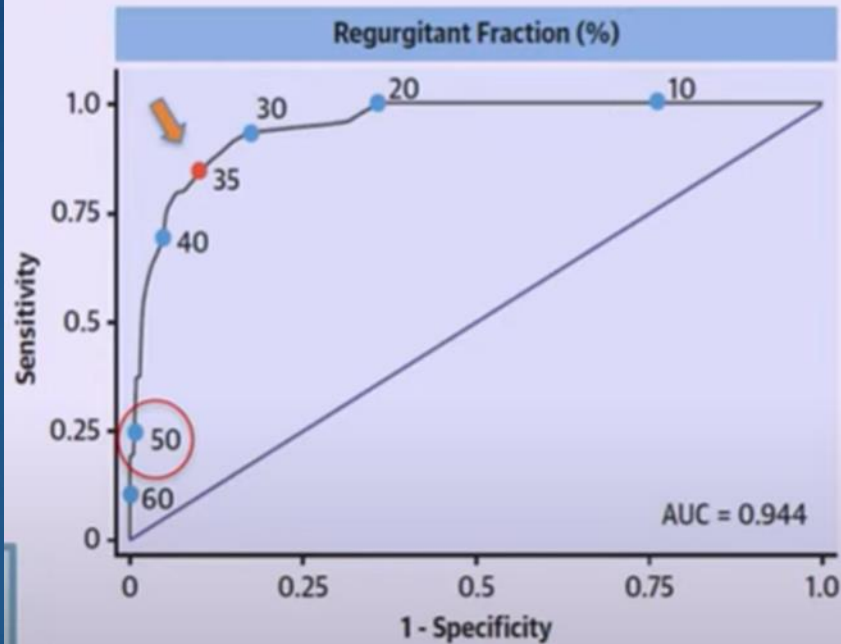
Ανεπάρκεια αορτικής



Μαγνητική καρδίας

- ▶ Καταλληλότερο μέσο ποσοτικοποίησης της ανεπάρκειας αορτικής λόγω ποσοτικοποίησης εξωθούντων και παλινδρομούντων όγκων
- ▶ **iECV** ≥ 24 mL/m² & AR RF $\geq 30\%$ παίζουν προγνωστικό ρολό στην ανεπάρκεια αορτικής
- ▶ Ασθενείς με μέτρια ή σοβαρή **ανεπάρκεια αορτικής και ίνωση** έχουν 2,5 φορές αύξηση της θνησιμότητας

Accuracy of Different Cut-Offs of AR Regurgitant Fraction and Volume in Predicting Subsequent AVR



Decision for Surgical Intervention

Nonsignificant AR:

- Optimize medical management
- Appropriate surveillance imaging and visits
- Patient counseling for relevant symptoms

Significant AR without symptoms:

Perform risk assessment and consider early surgical intervention

Established parameters to evaluate:

- LVEF
- LV end-systolic and -diastolic dimensions

Adjunctive parameters to evaluate:

- LV end-systolic and -diastolic volumes
- Global longitudinal strain
- Extracellular volume and/or fibrosis (CMR)

Significant AR with symptoms:

- Refer for surgery

Continue to Monitor

Established parameters:

- LVEF >60%
- LVESDi ≤ 20 mm/m²

Emerging parameters:

- LVESVi <45 mL/m²
- Absence of myocardial scar or diffuse interstitial fibrosis by CMR

Early Intervention

Established

- LVEF $\leq 55\%$
- LVESD >50 mm
- LVESDi >25 mm/m²
- Progressive increase in LVEDD to >65 mm

Emerging parameters:

- LVESVi ≥ 45 mL/m²
- GLS worse than -15% to -19% by echo and 16% by CMR
- Extracellular volume_i ≥ 24 mL/m² by CMR

Ανεπάρκεια αορτικής

- ▶ Πρέπει να γνωρίζουμε την ανατομία και αιτιολογία της ανεπάρκειας
- ▶ Πρέπει να διαχωρίζονται οι 'ελαστικές' και 'ανελαστικές' αρ. κοιλίες
- ▶ Πρέπει να δοθεί μεγαλύτερη βαρύτητα στους νέους υπερχογραφικούς δείκτες και στην ανάδειξη δυσλειτουργίας αρ. Κοιλίας (gls, vol.)
- ▶ Η συστηματική παρακολούθηση με δυναμική υπερηχογραφία να αναδεικνύει πρωιμότερα ασθενείς που πρέπει να οδηγηθούν στο χειρουργείο

ΕΥΧΑΡΙΣΤΩ