

ΠΑΘΗΣΕΙΣ ΜΙΤΡΟΕΙΔΟΥΣ ΒΑΛΒΙΔΑΣ
ΚΑΙ ΑΝΕΠΑΡΚΕΙΑ ΤΡΓΛΩΧΙΝΟΣ
ΒΑΛΒΙΔΑΣ

Ε. Χαμοδρακα

Καρδιολόγος - Επιμελήτρια Α

Καρδιολογική Κλινική

Νοσ. Ασκληπειο Βούλας

Case 1

Female - 73yo
Mitral stenosis
Chronic AF
No CAD
Dyspnea – Leg edema

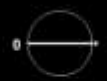
27/10/2017 09:40:00
ACE



PHILIPS TIS0.5 JPCS 08 12/11
M1 1.4
X5-1/Adult M3

FR 50Hz
15cm

2D
80%
C 50
P Low
HGen

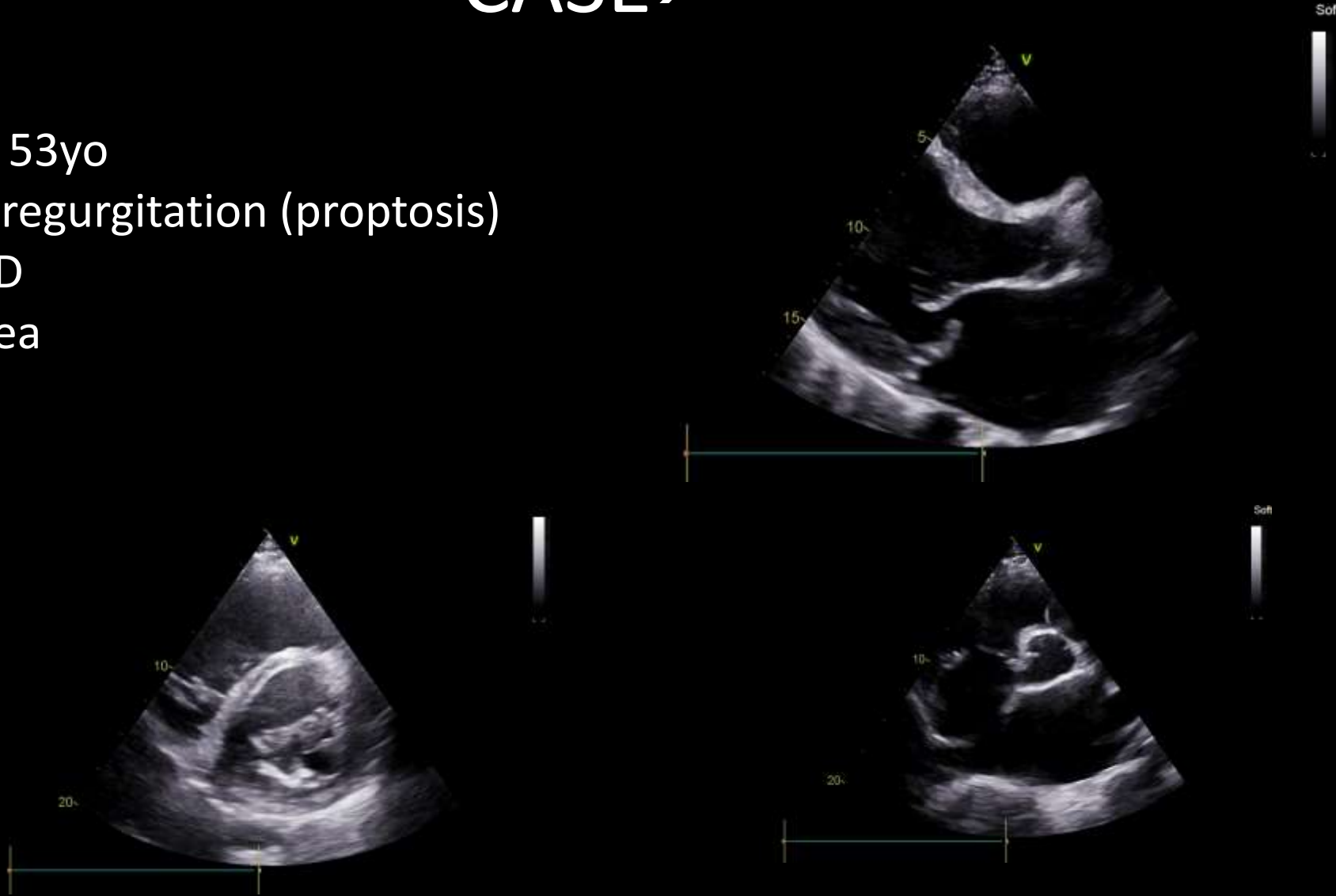


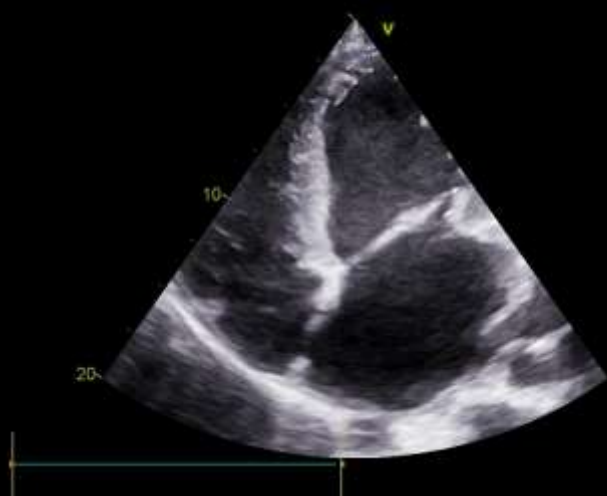
JPE0
*** bpm



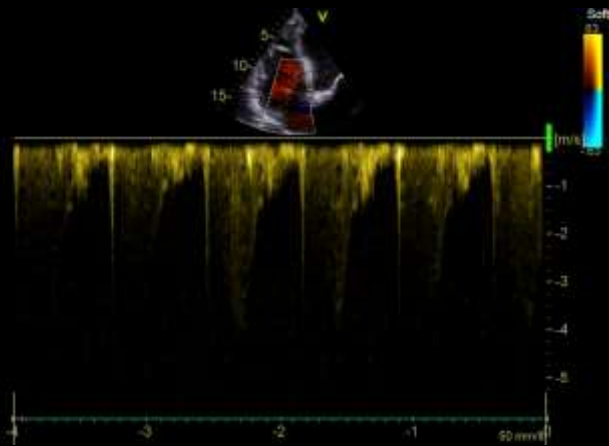
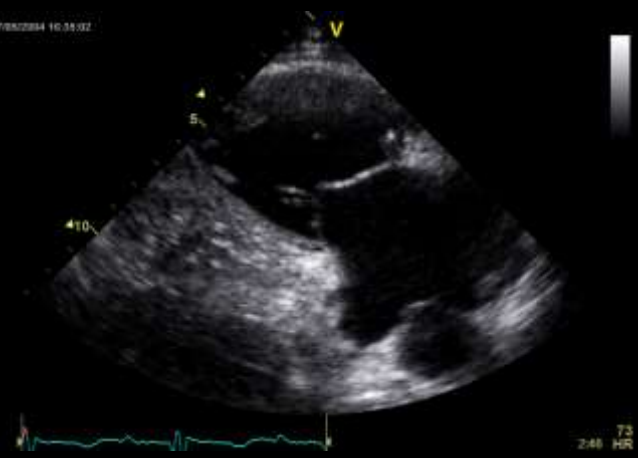
CASE 2

Male - 53yo
Mitral regurgitation (proptosis)
No CAD
Dyspnea

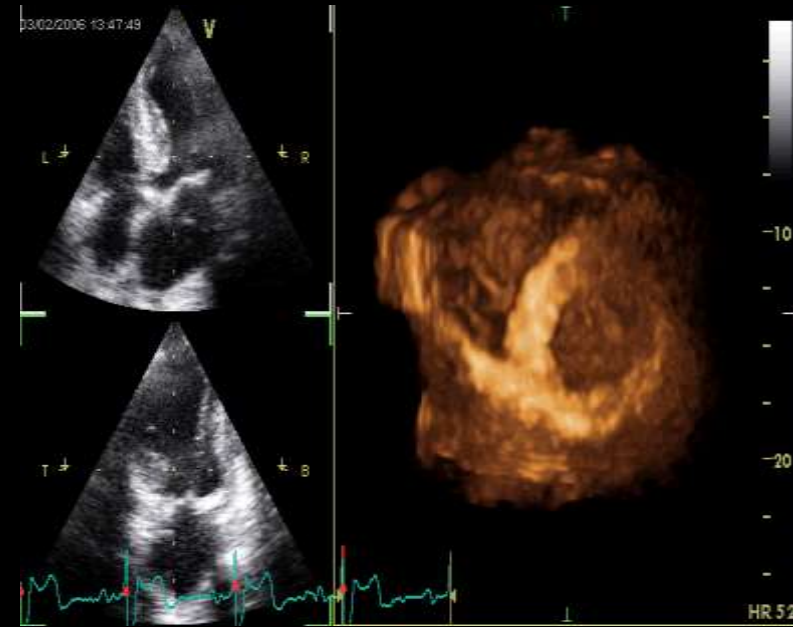
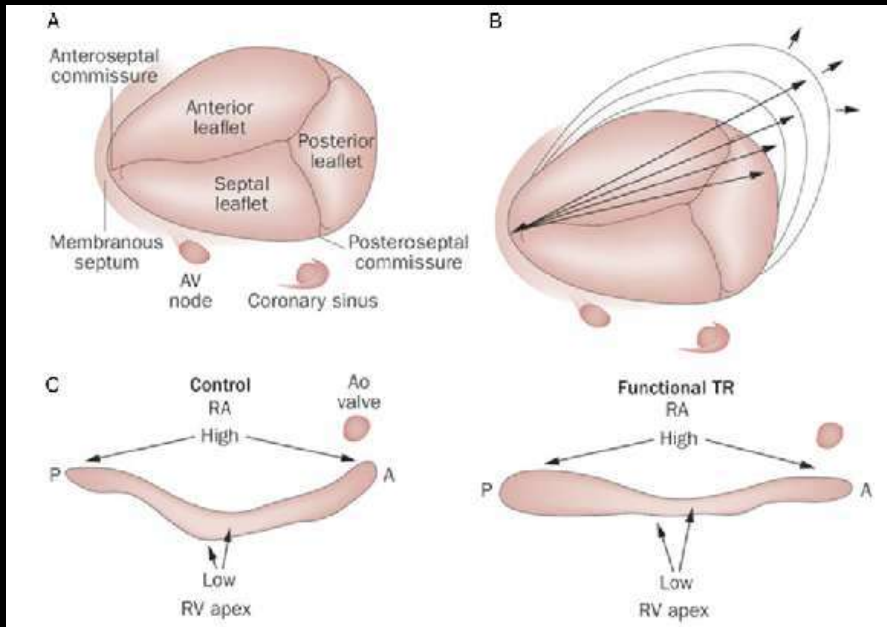




07/04/2004 10:33:02



ANATOMY OF TRICUSPID VALVE

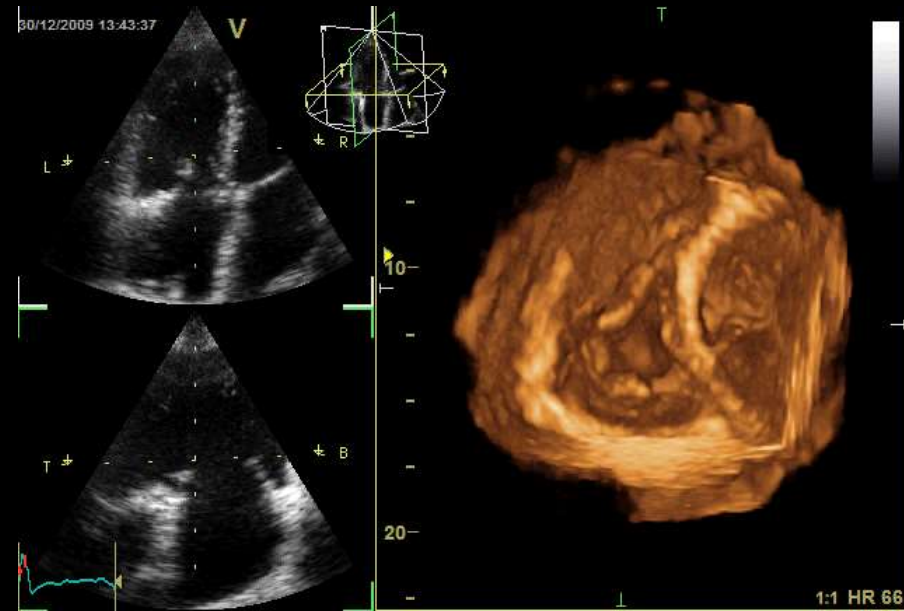
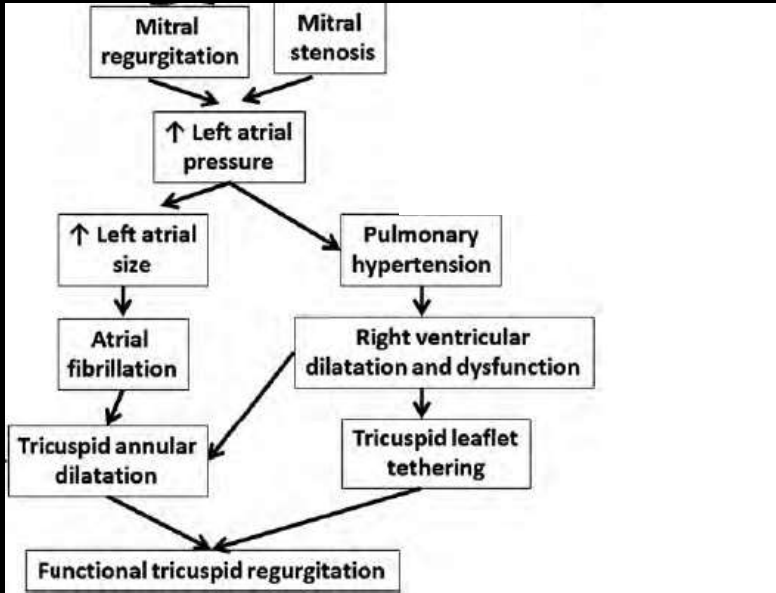


Morphology of TA : Non-planar with highest points in the anteroposterior direction and the lowest in the mediolateral.

Functional tricuspid regurgitation TA: more planar and dilated in the anteroposterior diameter

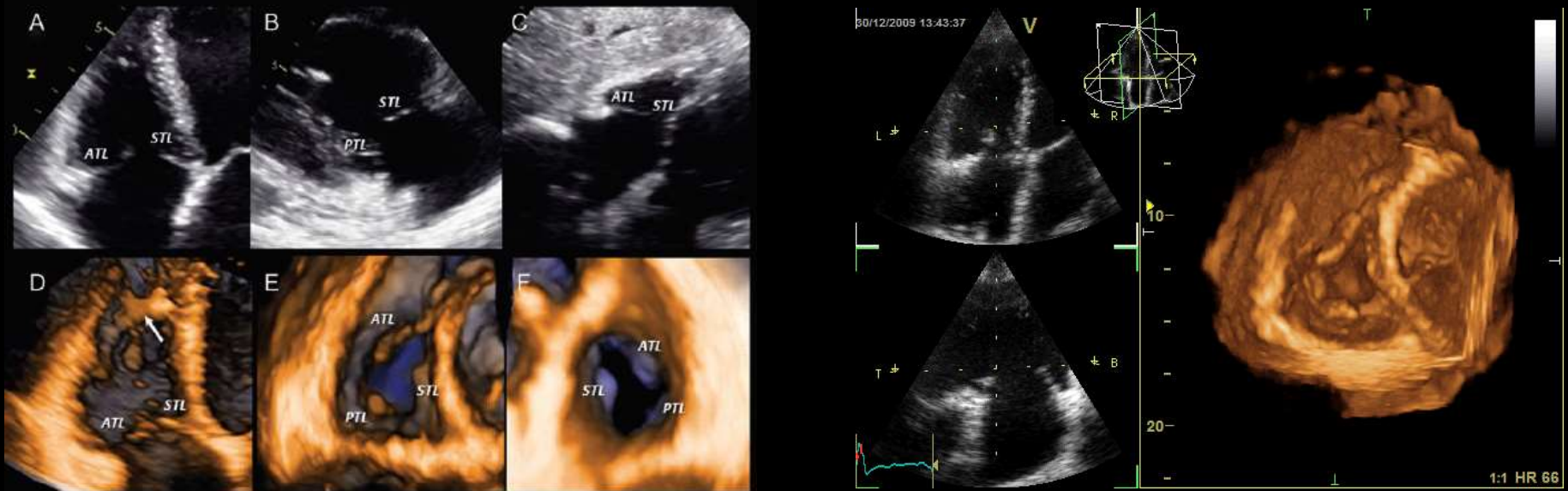
Tornos Mas P, et al. Heart 2015;101:1840–1848

Mechanisms of tricuspid regurgitation in mitral valve disease



Badano L. European Heart Journal (2013) 34, 1875–1884

Studying the tricuspid



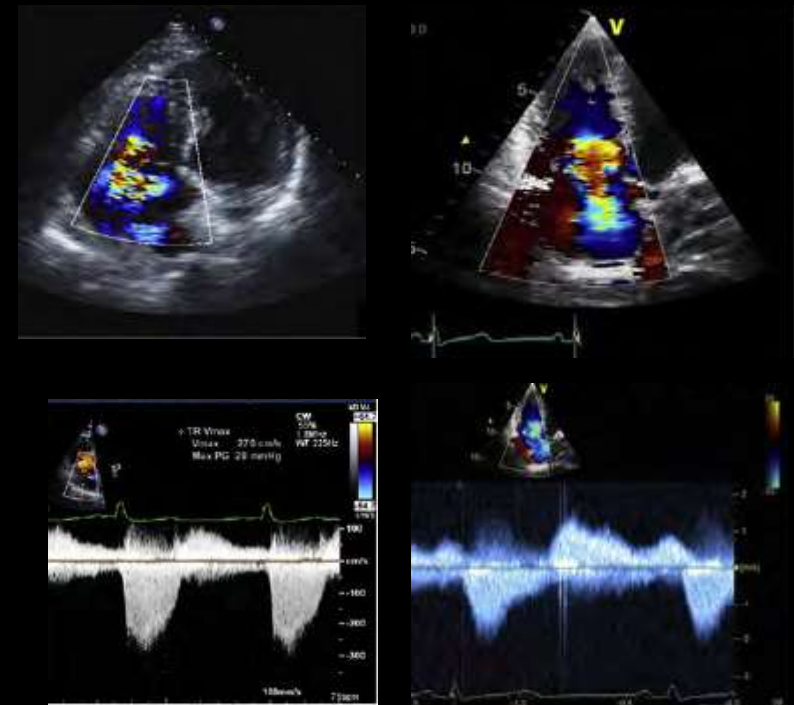
Assessment of functional tricuspid regurgitation

Luigi P. Badano^{1*}, Denisa Muraru¹, and Maurice Enriquez-Sarano²

European Heart Journal (2013) 34, 1875–1884

Grading the severity of chronic TR by echocardiography

Parameters	Severe
Structural	
TV morphology	Severe valve lesions (e.g., flail leaflet, severe retraction, large perforation)
RV and RA size	Usually dilated*
Inferior vena cava diameter	Dilated > 2.5 cm
Qualitative Doppler	
Color flow jet area†	Large central jet or eccentric wall-impinging jet of variable size
Flow convergence zone	Large throughout systole
CWD jet	Dense, often triangular
Semiquantitative	
Color flow jet area (cm ²)†	>10
VCW (cm)‡	≧0.7
PISA radius (cm)‡	>0.9
Hepatic vein flow§	Systolic flow reversal
Tricuspid inflow§	E-wave >1.0 m/sec
Quantitative	
EROA (cm ²)	≧0.40
RVol (2D PISA) (mL)	≧45



European Heart Journal – Cardiovascular Imaging (2013)

Journal of the American Society of Echocardiography 2017

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European Heart Journal – Cardiovascular Imaging (2013)

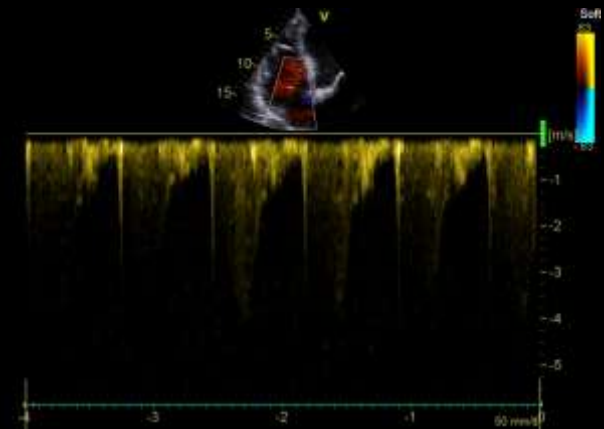
Journal of the American Society of Echocardiography 2017

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PISA: 0,95

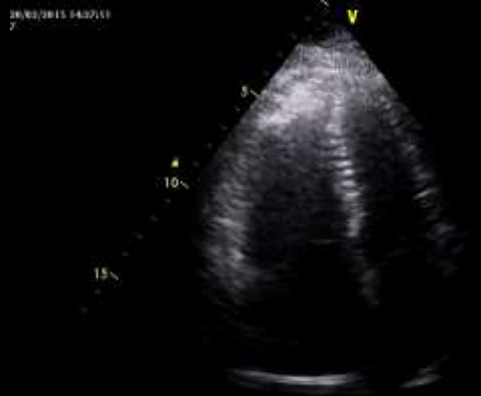


EROA: 0,4cm²
Rvol=45ml

European Heart Journal – Cardiovascular Imaging (2013)

Journal of the American Society of Echocardiography 2017

DON'T FORGET RV-RA

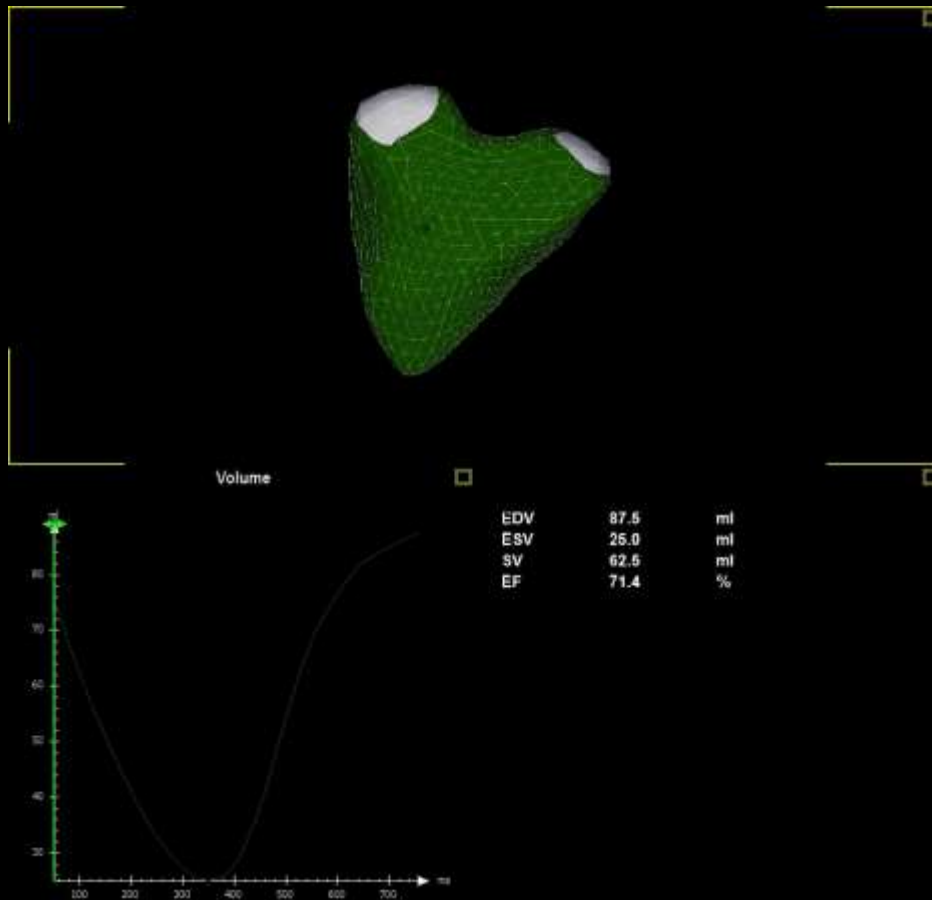


TAPSE

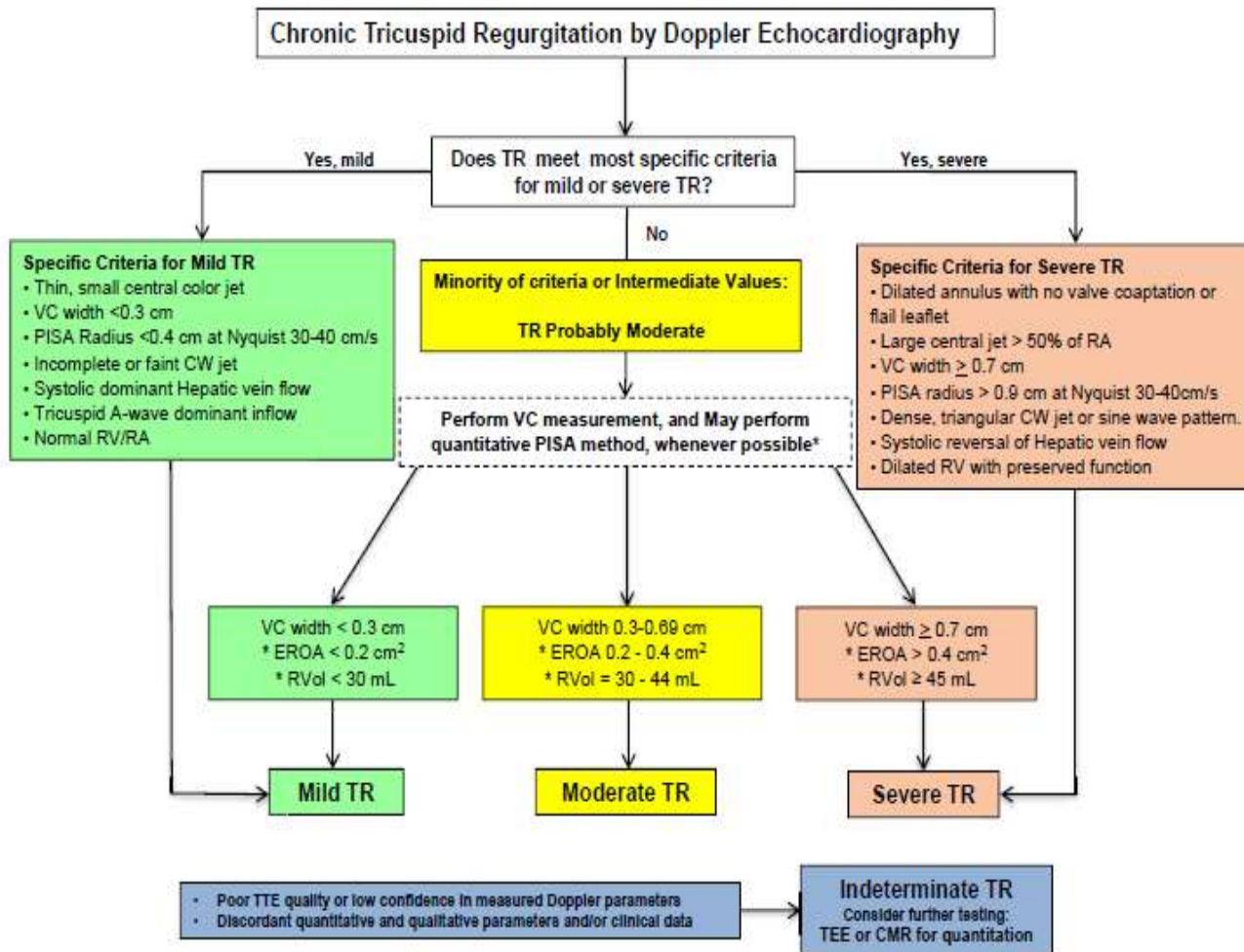


S' RV

DON'T FORGET RV- 3D ECHOCARDIOGRAPHY

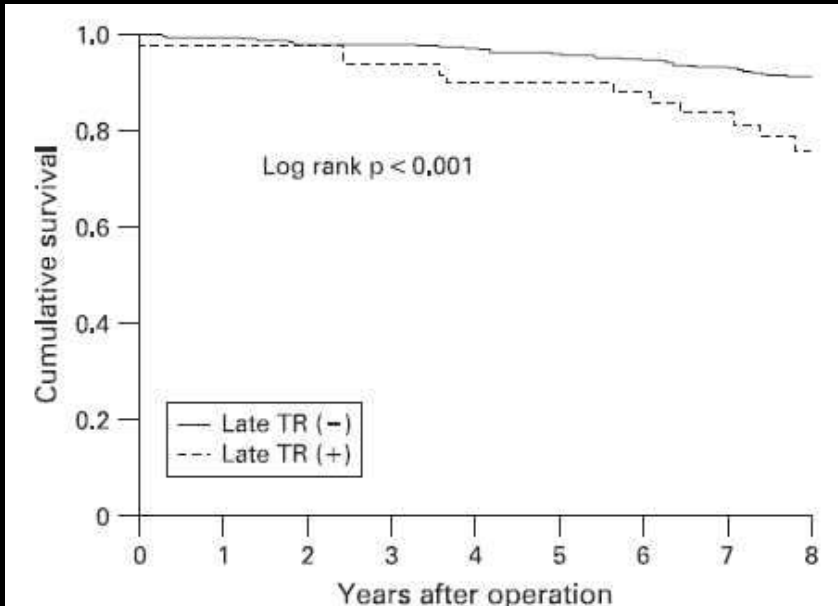


ALGORITHM OF ASSESSMENT

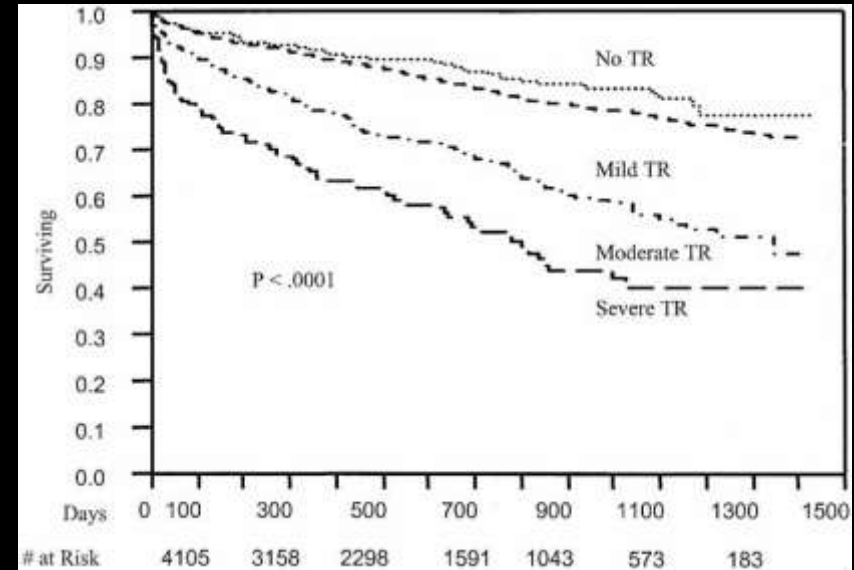


WHY BOTHER ?

Prognosis after left-sided valve surgery



Song H, et al. Heart 2009;95:931–6.



*Nath J et al. J Am Coll Cardiol
2004;43:405–409*

the more the worse....

Tricuspid Regurgitation: Intervention

Recommendations

AHA 2017

COR

LOE

Tricuspid valve surgery is recommended for patients with severe TR (stages C and D) undergoing left-sided valve surgery

I	C	

ESC 2017

Surgery is indicated in patients with severe secondary tricuspid regurgitation undergoing left-sided valve surgery.

I	C	

Tricuspid Regurgitation: Intervention

Recommendations

AHA 2017

COR

LOE

Tricuspid valve repair can be beneficial for patients with mild, moderate, or greater functional TR (stage B) at the time of left-sided valve surgery with either 1) **tricuspid annular dilation** or 2) **prior evidence of right HF**

Ila	C

ESC 2017

Surgery should be considered in patients with mild or moderate secondary tricuspid regurgitation with **a dilated annulus (>_40mm or > 21 mm/m² by 2D echocardiography)** undergoing left-sided valve surgery

Ila	C
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Tricuspid Regurgitation: Intervention (cont.)

Recommendations

AHA 2017

COR

LOE

Tricuspid valve repair may be considered for patients with moderate functional TR (stage B) and **pulmonary artery hypertension** at the time of left-sided valve surgery

IIb

C

ESC 2017

Surgery may be considered in patients undergoing left-sided valve surgery with mild or moderate secondary tricuspid regurgitation even in the absence of annular dilatation when **previous recent right-heart failure has been documented.**

IIb

C

Tricuspid Regurgitation: Intervention

Recommendations

AHA 2017

COR

LOE

Reoperation for isolated tricuspid valve repair or replacement may be considered **for persistent symptoms due to severe TR** (stage D) in patients who have undergone previous left-sided valve surgery and who **do not have severe pulmonary hypertension or significant RV systolic dysfunction**

IIb

C

After previous left-sided surgery and in absence of recurrent left-sided valve dysfunction, surgery should be considered in patients with severe tricuspid regurgitation who are **symptomatic or have progressive RV dilatation/dysfunction**, in the **absence of severe RV or LV dysfunction and severe pulmonary vascular disease/hypertension**.

ESC 2017

IIa

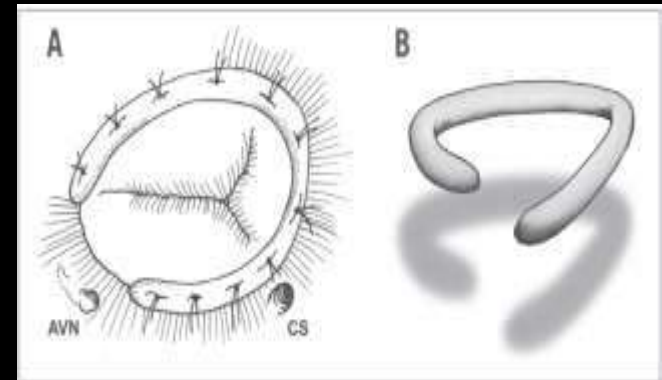
C

What type of surgery?

a) If FTR is due to annular enlargement and RV function is normal



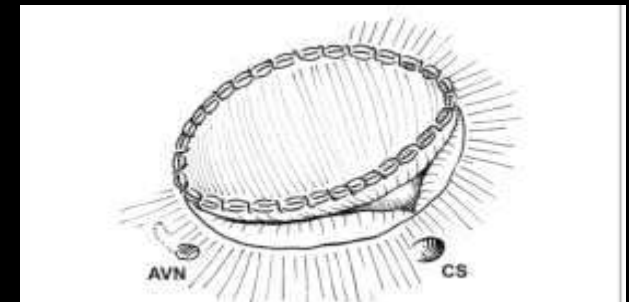
Annuloplasty techniques



b) If tenting is the main mechanism of FTR and/or RV dysfunction may not be reversible postoperatively

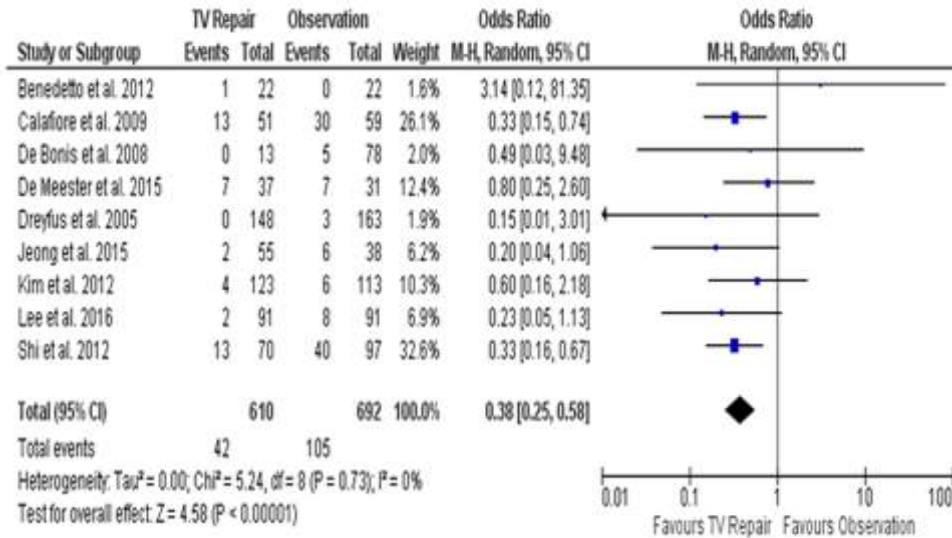


Leaflet elongation Techniques or valve replacement

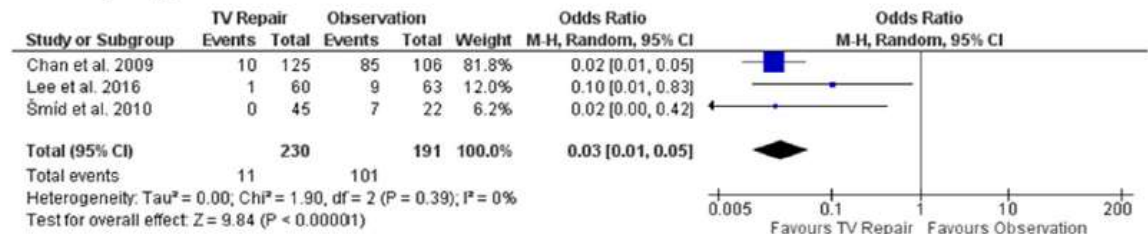


Tricuspid annuloplasty versus a conservative approach in patients with functional tricuspid regurgitation undergoing left-sided heart valve surgery: A study-level meta-analysis

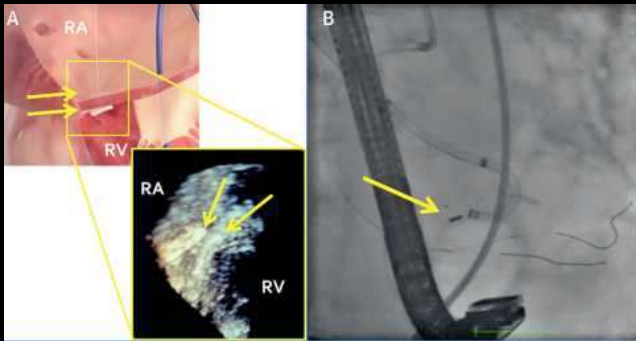
B Cardiac death



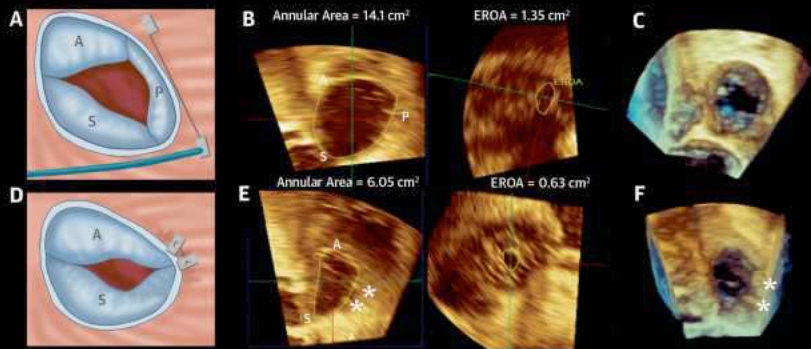
B TR progression



Transcatheter Tricuspid Valve Therapies



Mitralign Percutaneous Annuloplasty System



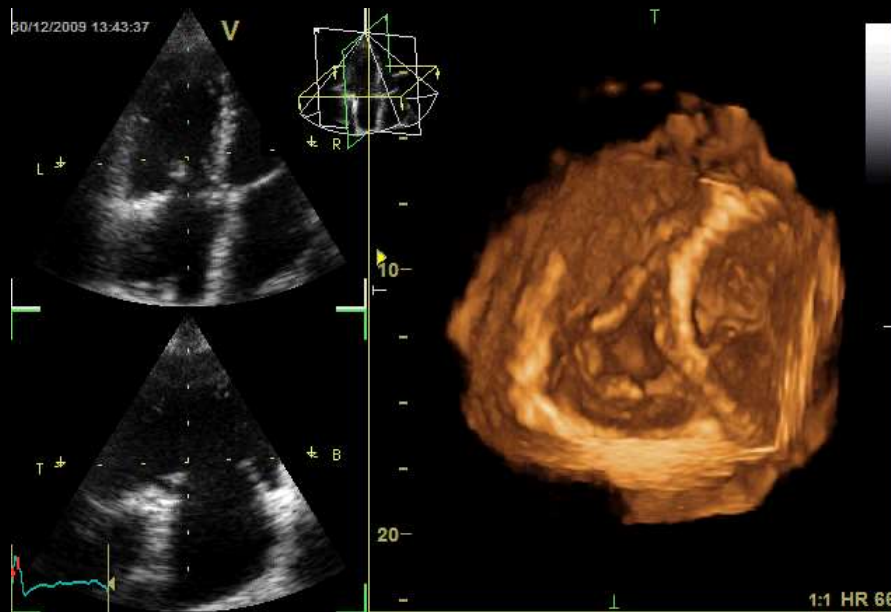
TriCinch System™ (4Tech Cardio Ltd, Galway, Ireland)

Through the efforts of many, hopefully The tricuspid valve can truly go from forgotten to found.

TAKE HOME MESSAGE

- Functional TR is a serious and progressive condition.
- Assessment of TR in mitral valve disease is obligatory
- Tricuspid repair should be considered at the time of surgery for left-valve disease in 1) tricuspid annular dilation or 2) prior evidence of right HF
- Close follow-up of the RV function is needed in patients with previous surgery with severe TR.

DON'T FORGET TRICUSPID



THANKS FOR YOUR
ATTENTION!