



PLATFORM OF LABORATORIES FOR ADVANCES IN CARDIAC EXPERIENCE

ROMA

Centro Congressi
di Confindustria

Auditorium
della Tecnica

9^a Edizione

30 Settembre

1 Ottobre

2022



HEART TEAM NELLA GESTIONE TERAPEUTICA DEL PAZIENTE CON SCOMPENSO CARDIACO AVANZATO: QUANDO IL CUORE HA BISOGNO DI SUPPORTO

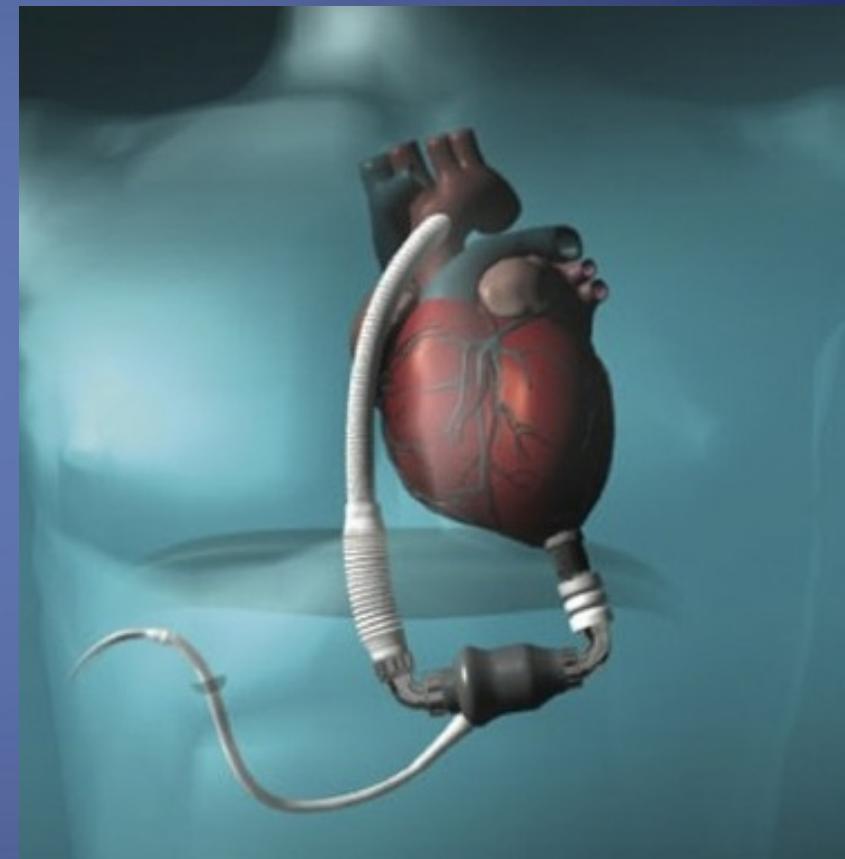
**Valutazione ecocardiografica del paziente con assistenza
ventricolare meccanica e/o trapiantato**

VINCENZO POLIZZI

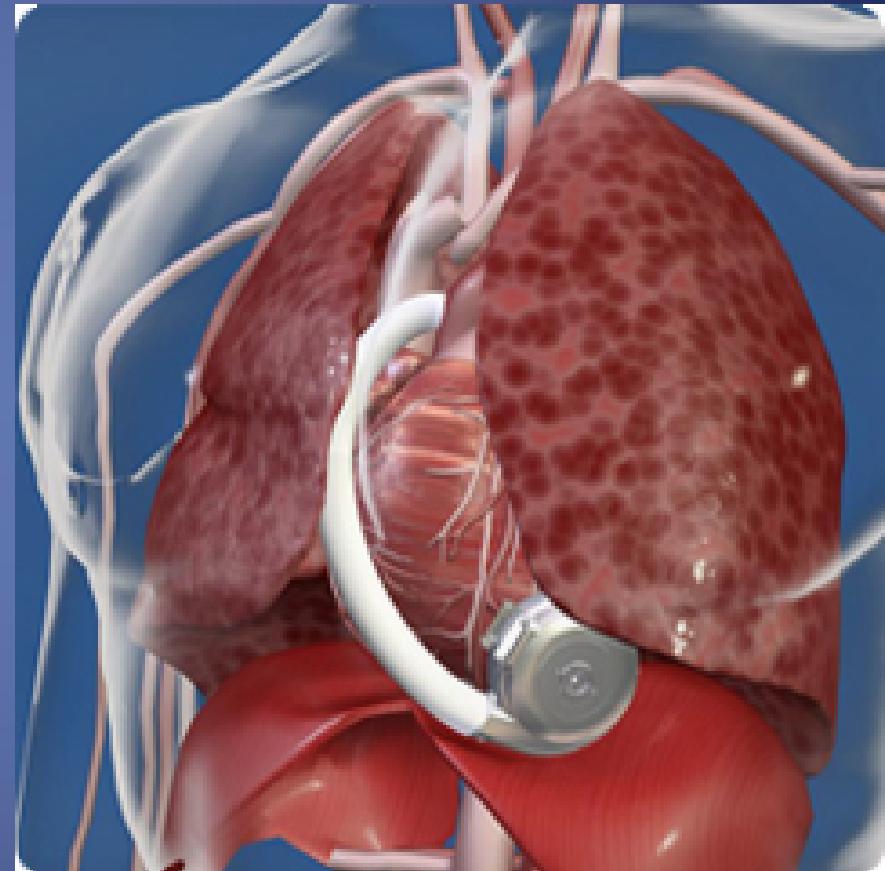
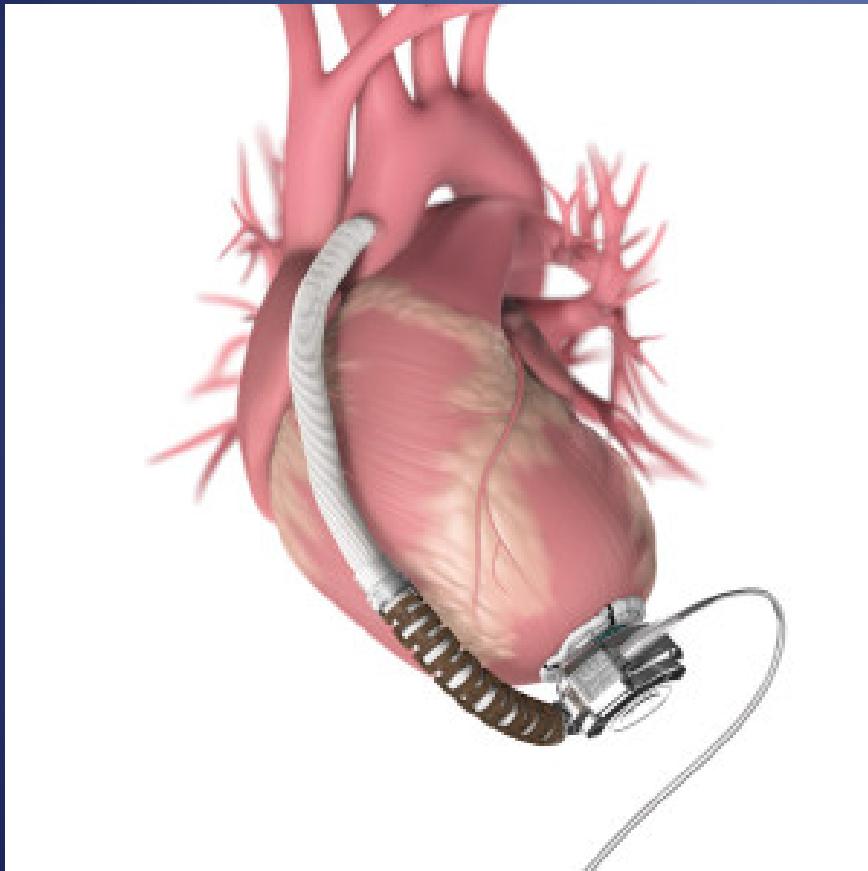
DIRETTORE U.O.C. Cardiologia, Ospedale V.Cervello

AOOR Villa Sofia - Cervello, Palermo

HeartMate II



HeartWare



ECOCARDIOGRAFIA E LVAD

- ✓ Pre-operative assessment
- ✓ Guidance during VAD insertion
- ✓ Post-operative assessment
- ✓ Detection of complications

ECOCARDIOGRAFIA E LVAD

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✓ Pre-operative assessment

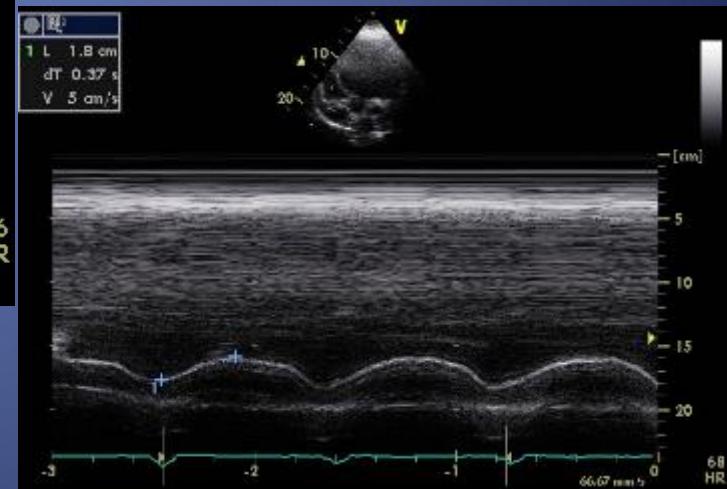
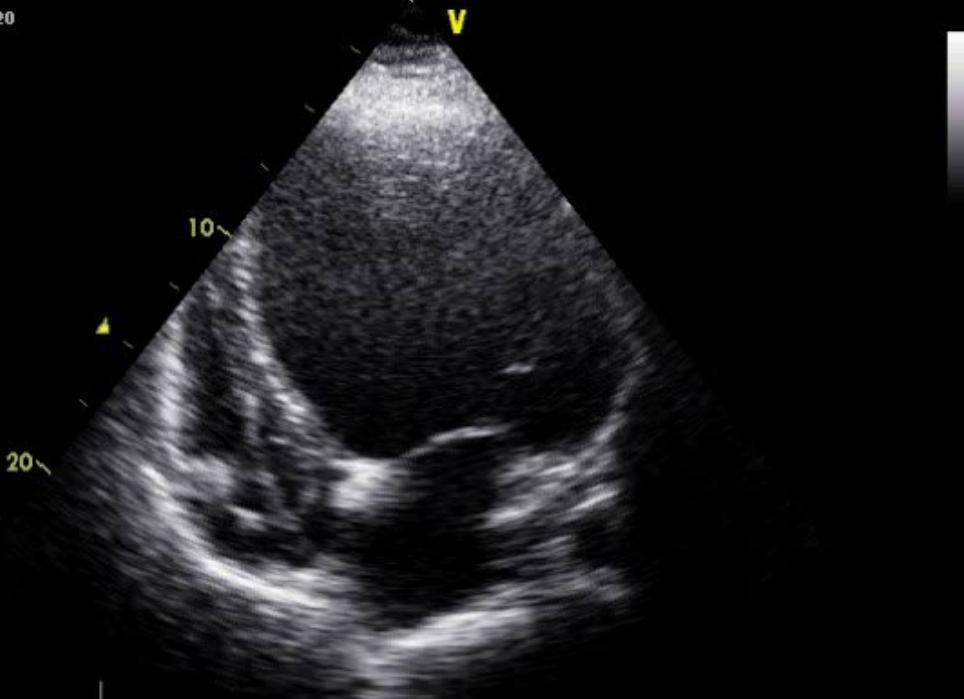
- ✓ Ventricular function
- ✓ Cardiac shunts
- ✓ Ascending aorta
- ✓ Native/prosthetic cardiac valves

✓ Pre-operative assessment

- ✓ Ventricular function
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- ✓ Ascending aorta
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Ventricular function

17/12/2013 14:09:20
17



✓ Pre-operative assessment

- ✓ Ventricular function
- ✓ Cardiac shunts
- ✓ Ascending aorta
- ✓ Native/prosthetic cardiac valves

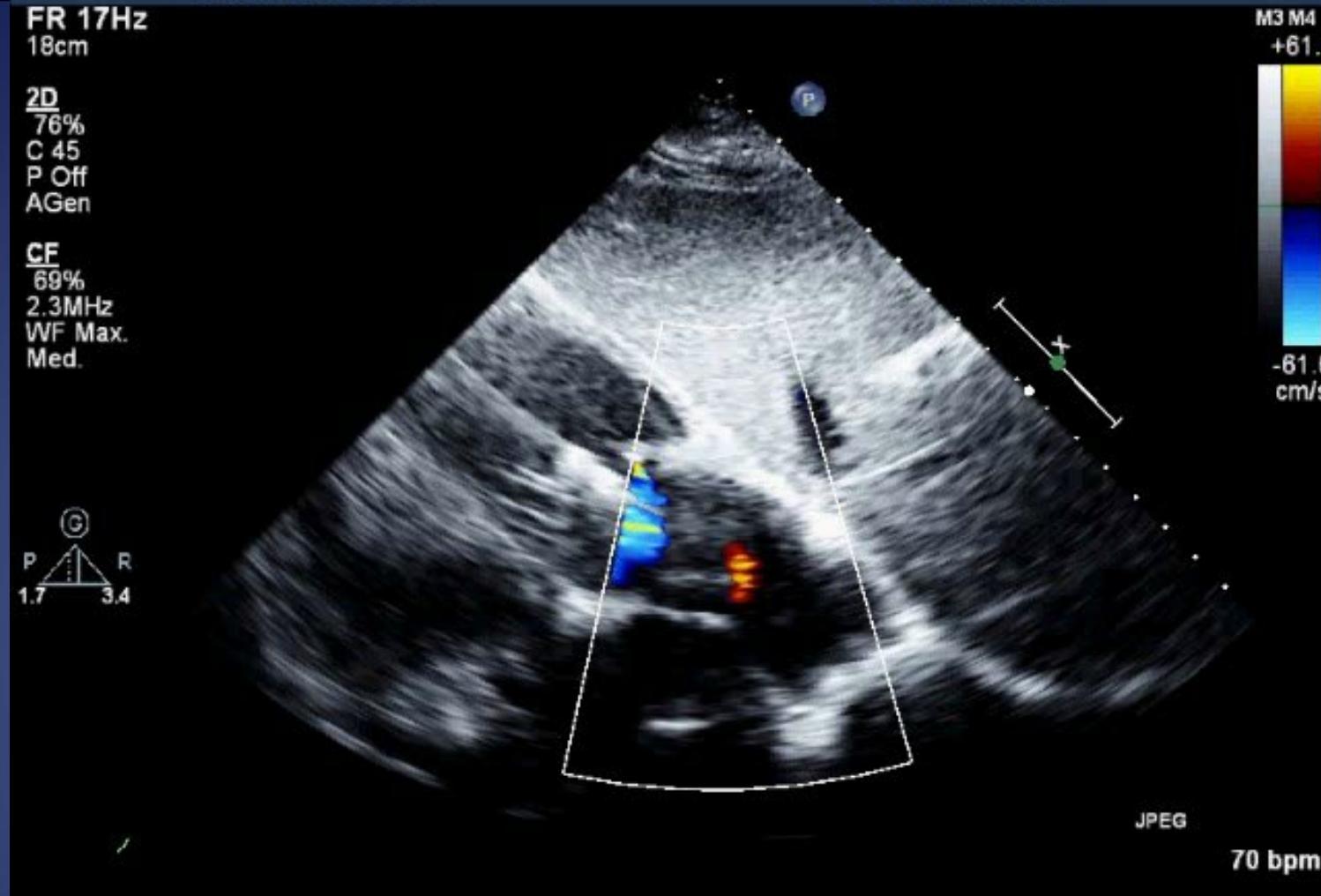
FR 17Hz
18cm

2D
76%
C 45
P Off
AGen

CF
69%
2.3MHz
WF Max.
Med.

G
P 1.7 R 3.4

M3 M4
+61.6
-61.6
cm/s



✓ Cardiac shunts

✓ Pre-operative assessment

- ✓ Ventricular function
- ✓ Cardiac shunts
- ✓ Ascending aorta
- ✓ Native/prosthetic cardiac valves

FR 17Hz

17cm

2D

75%

C 45

P Off

AGen

CF

69%

2.3MHz

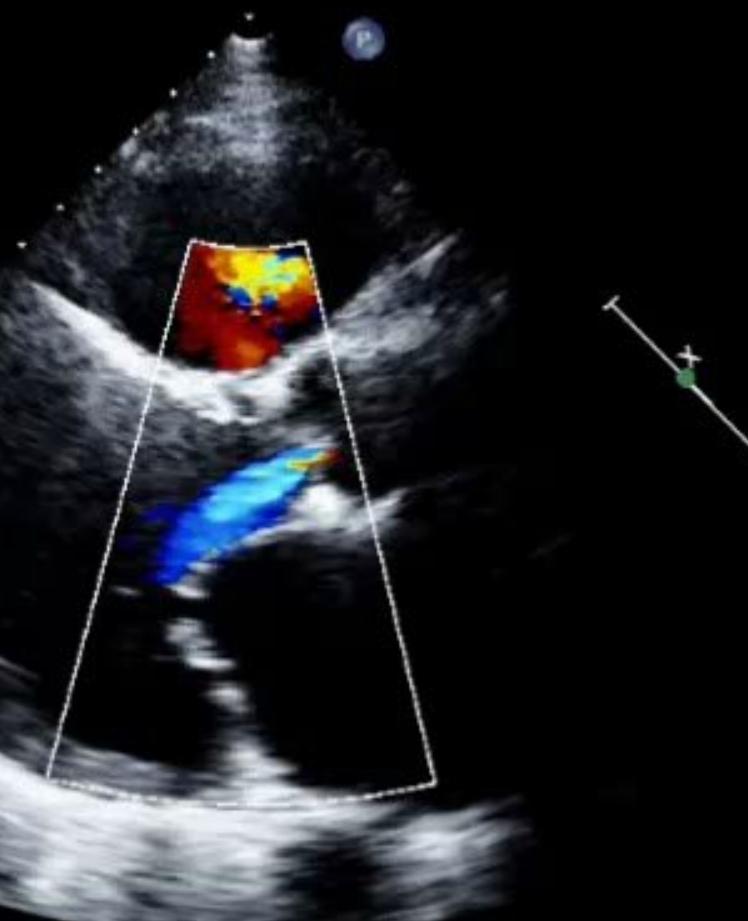
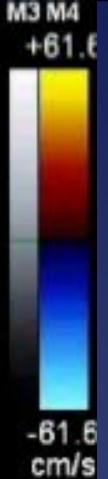
WF Max.

Med.

G
P 1.7 R 3.4

h

h



JPEG

70 bpm

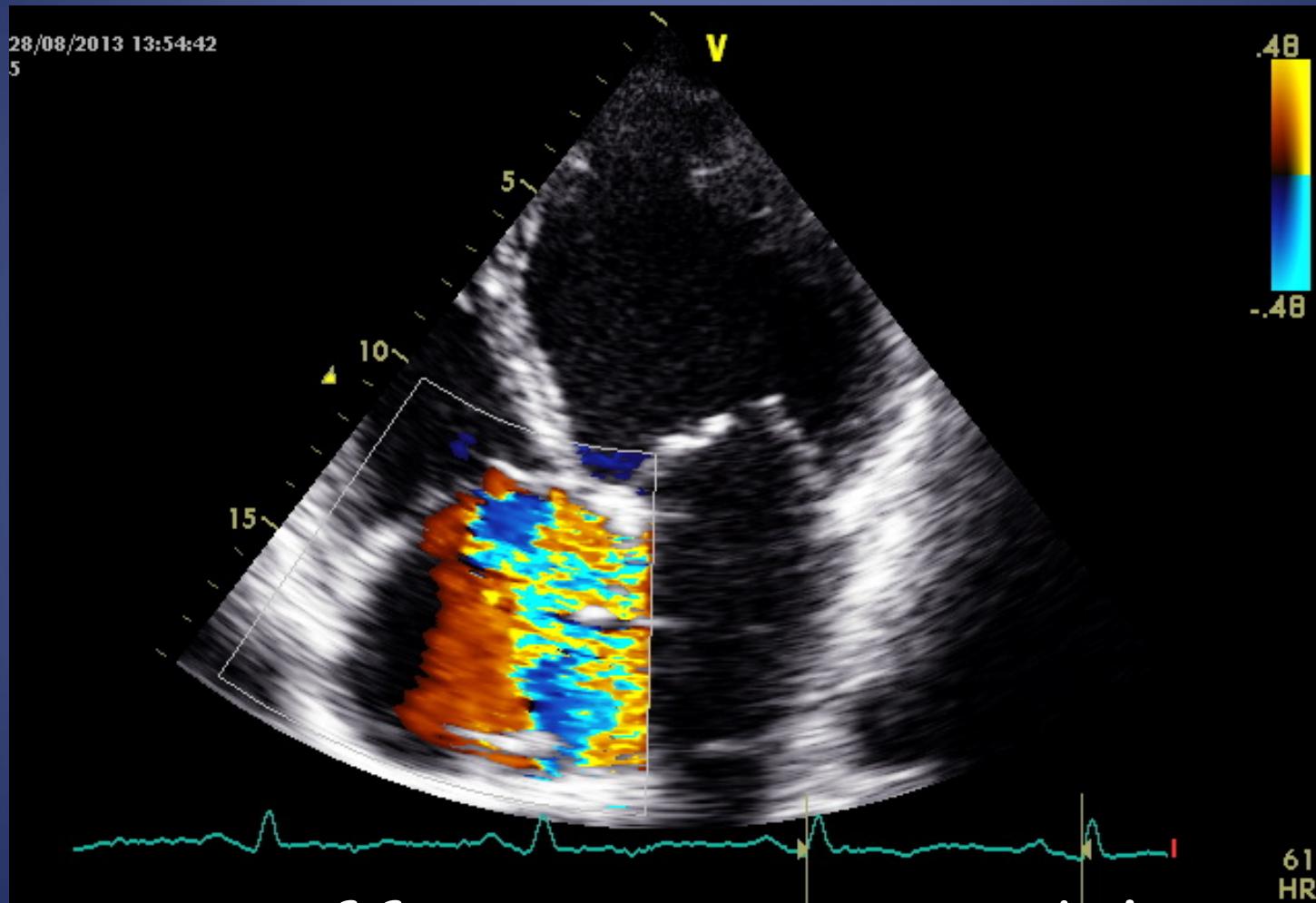
Insufficienza aortica



Native/prosthetic cardiac valves



Native/prosthetic cardiac valves



Insufficienza tricuspide

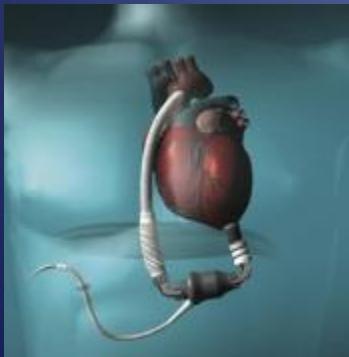
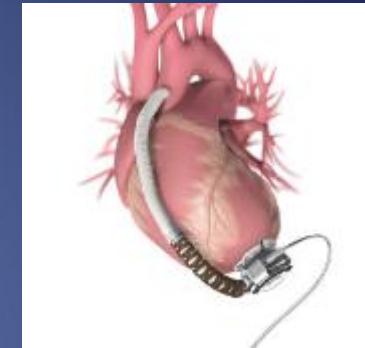
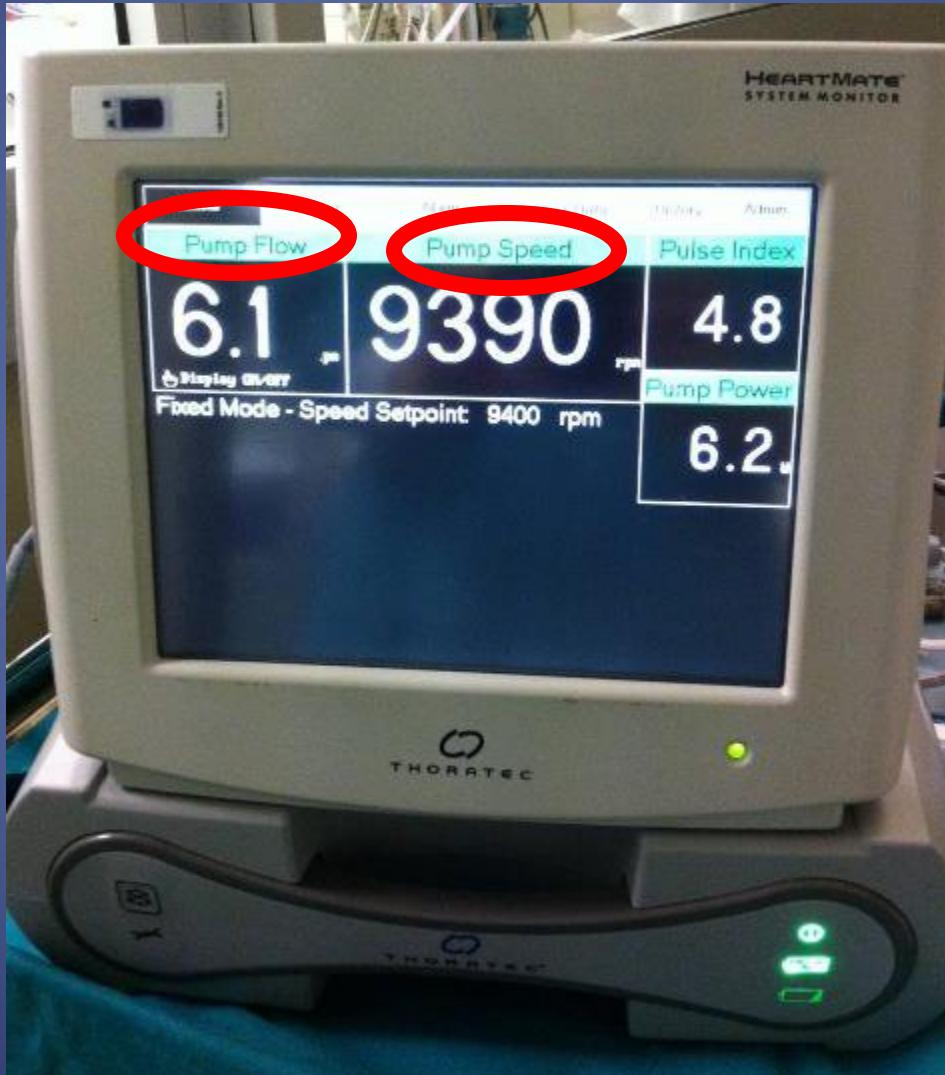


Post-operative

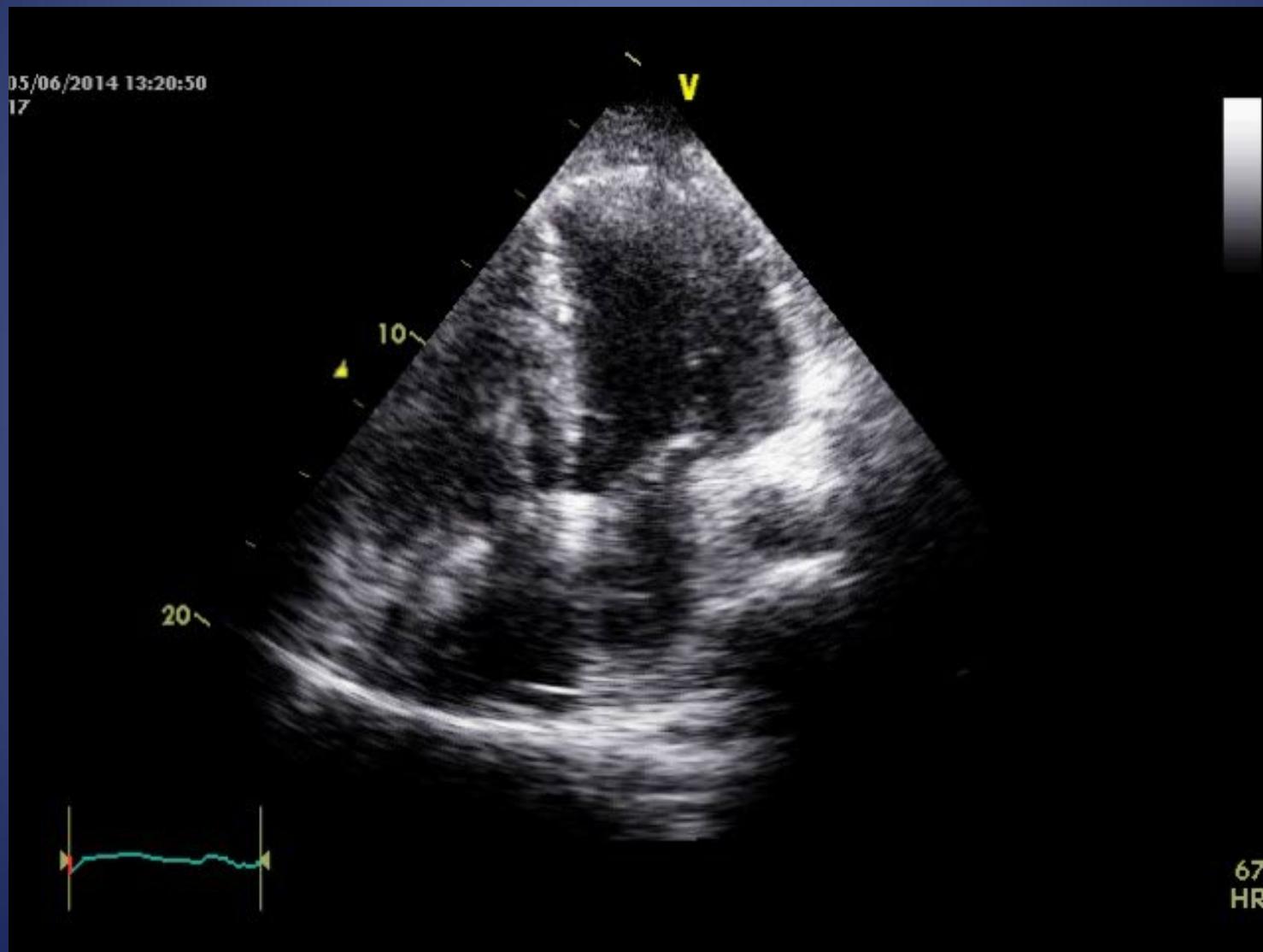
assessment
7

ASPETTI DA
RICORDARE...

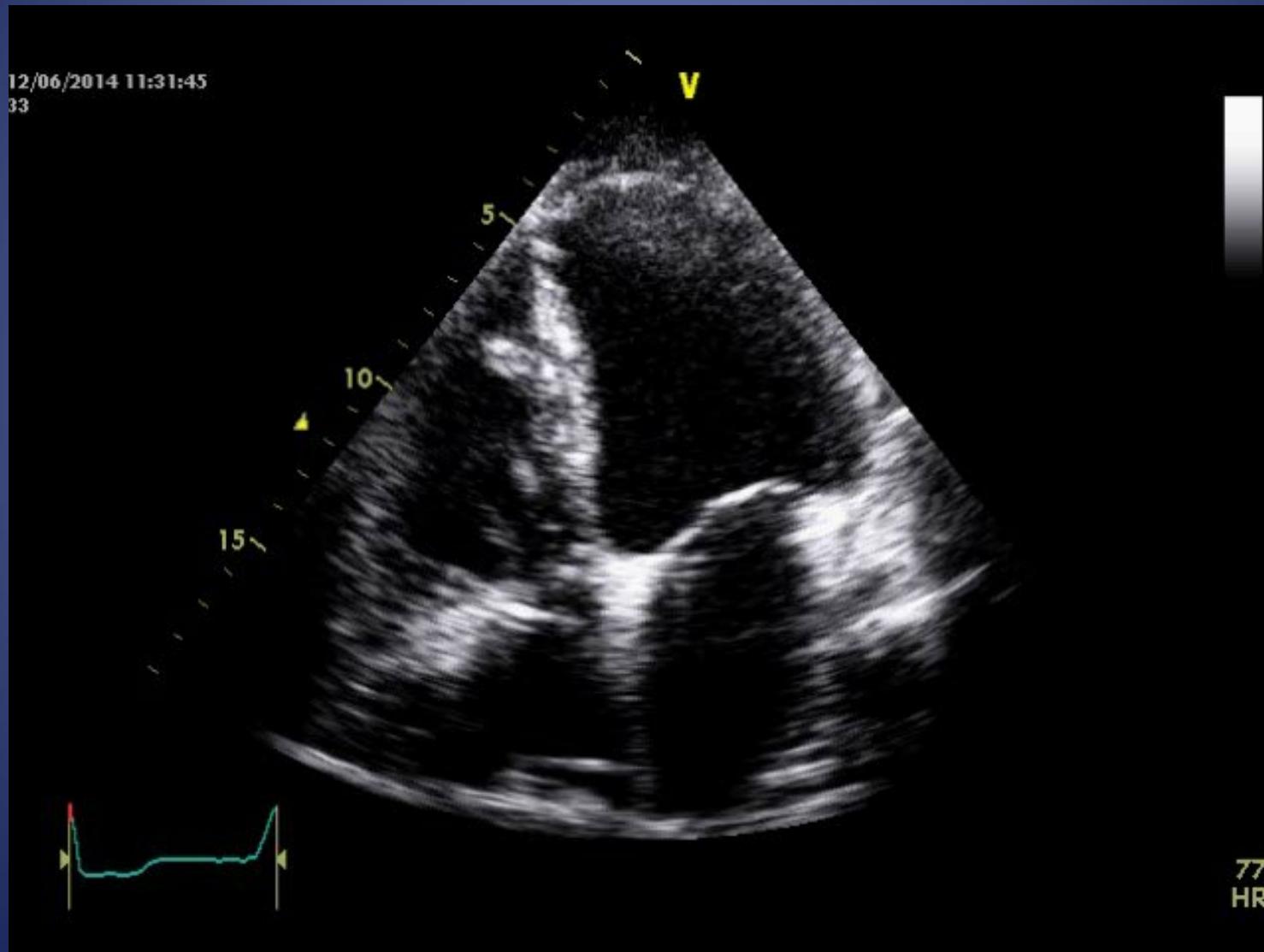
PREMESSA



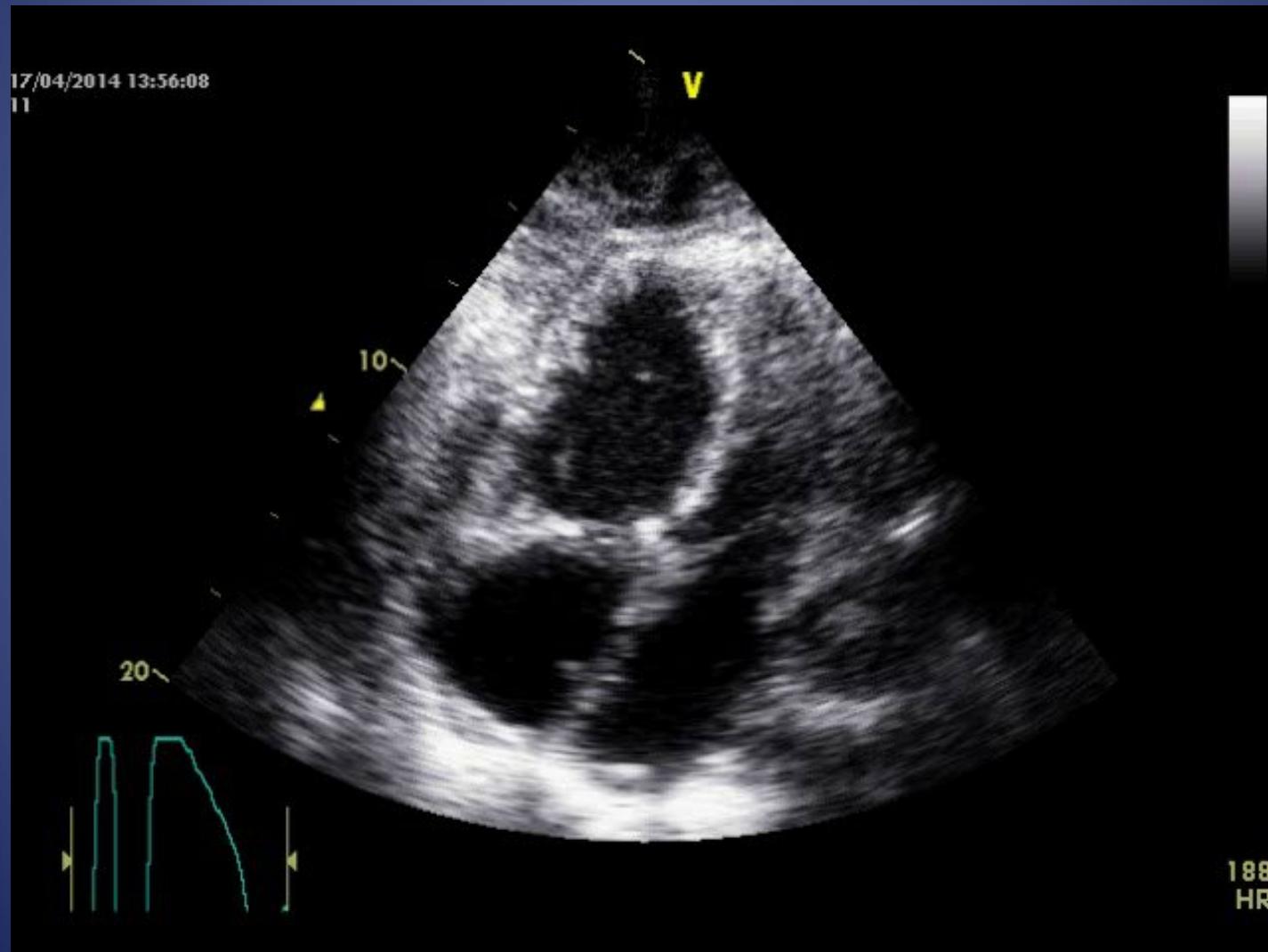
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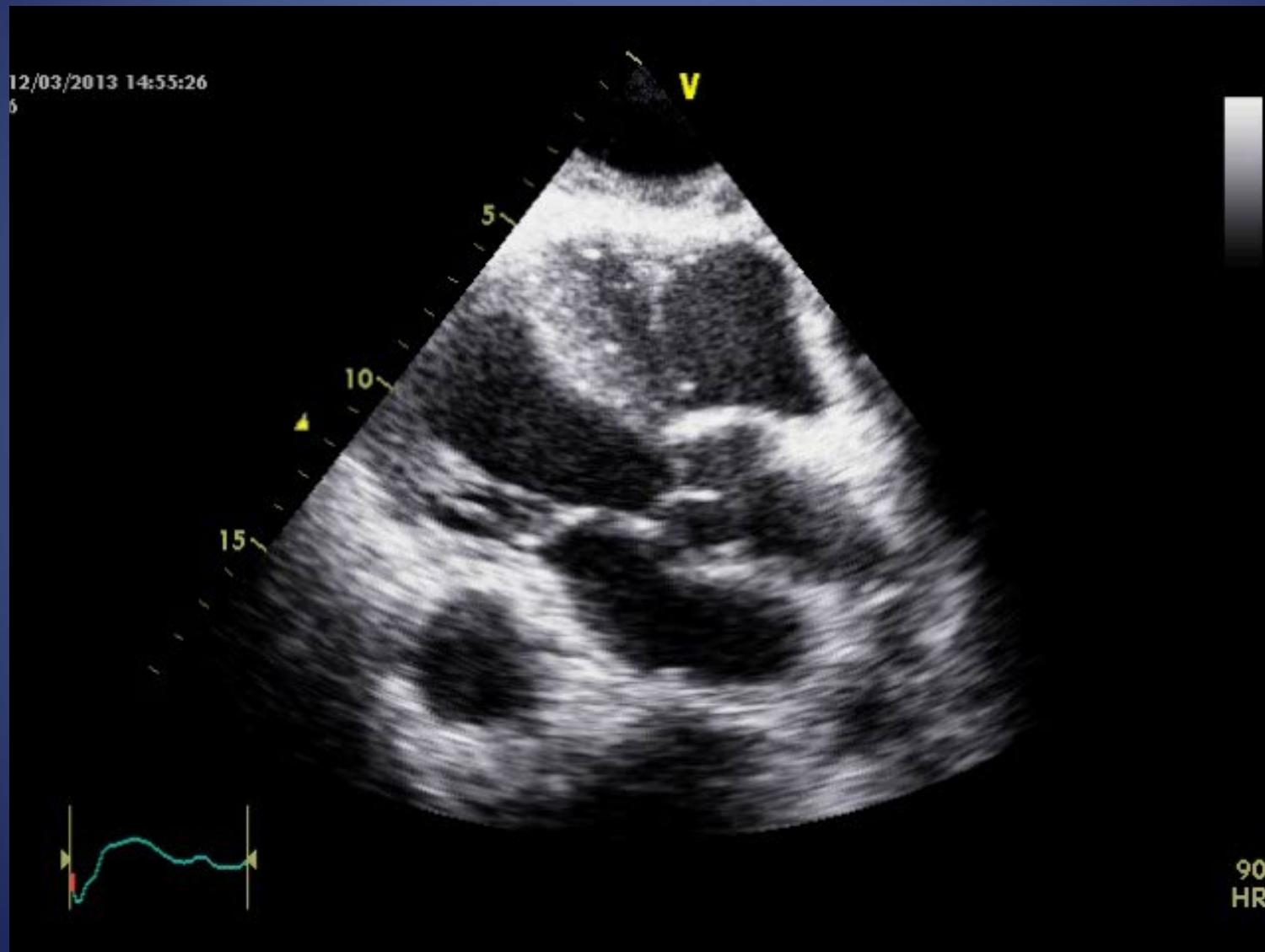
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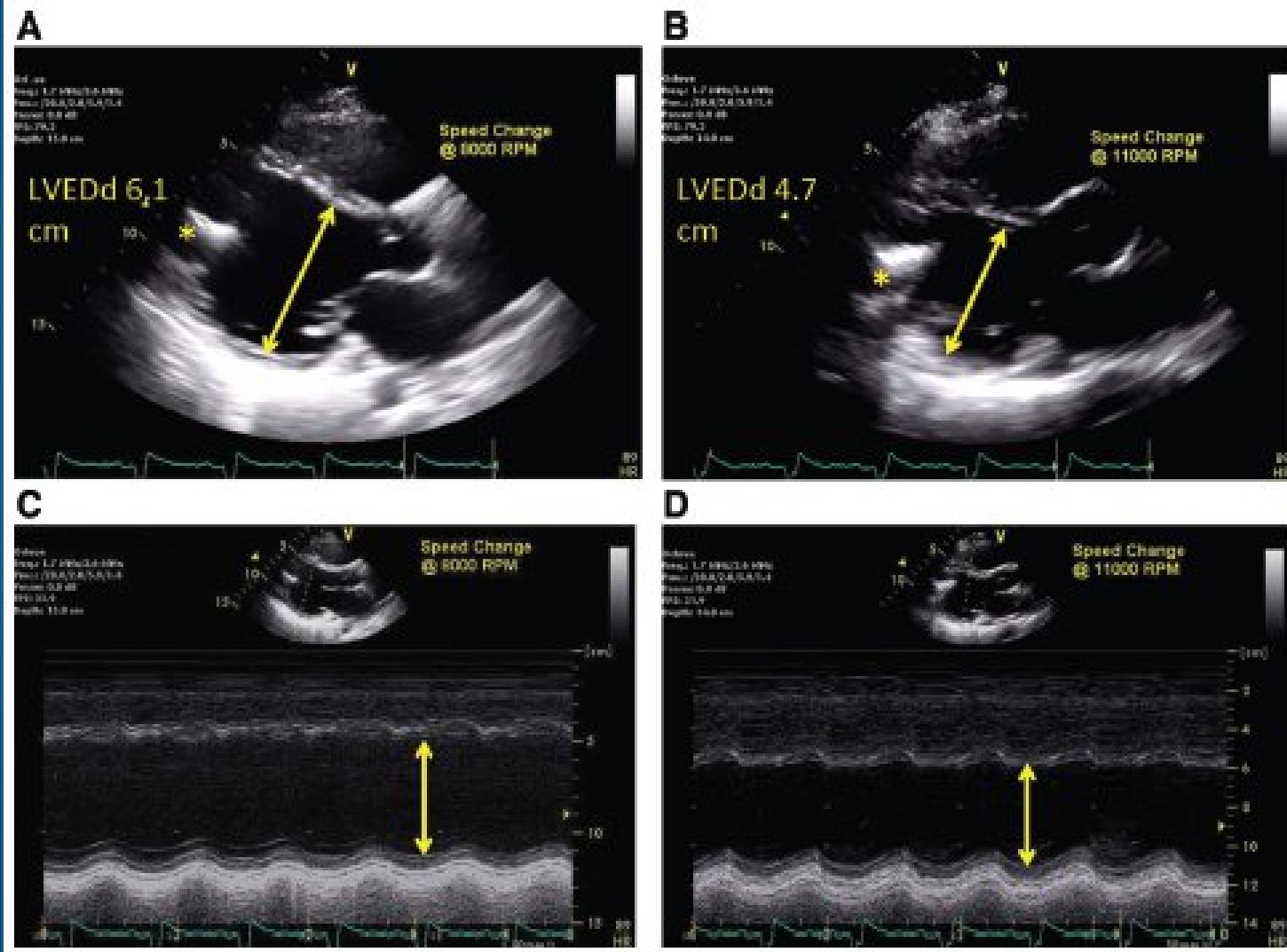
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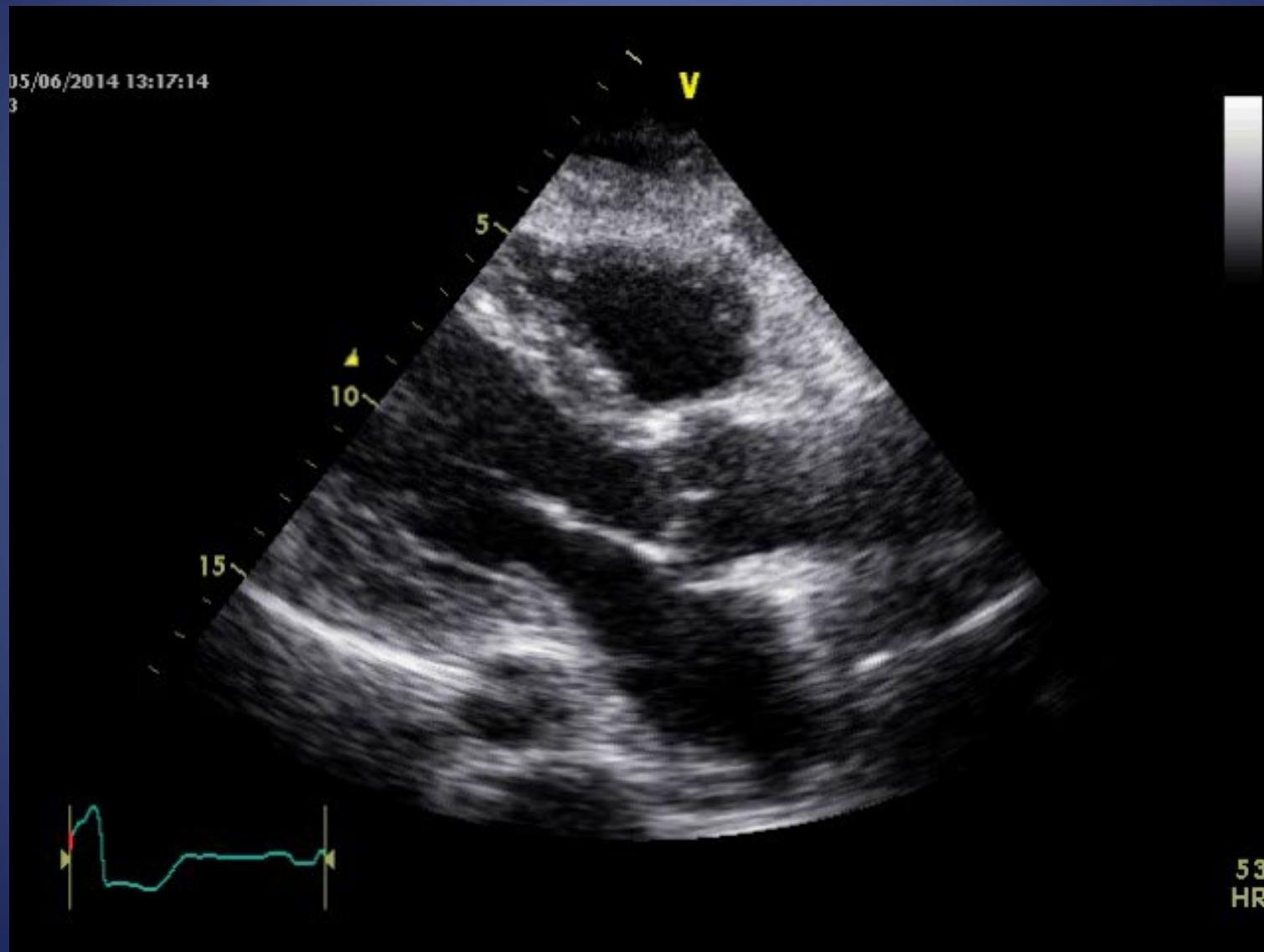


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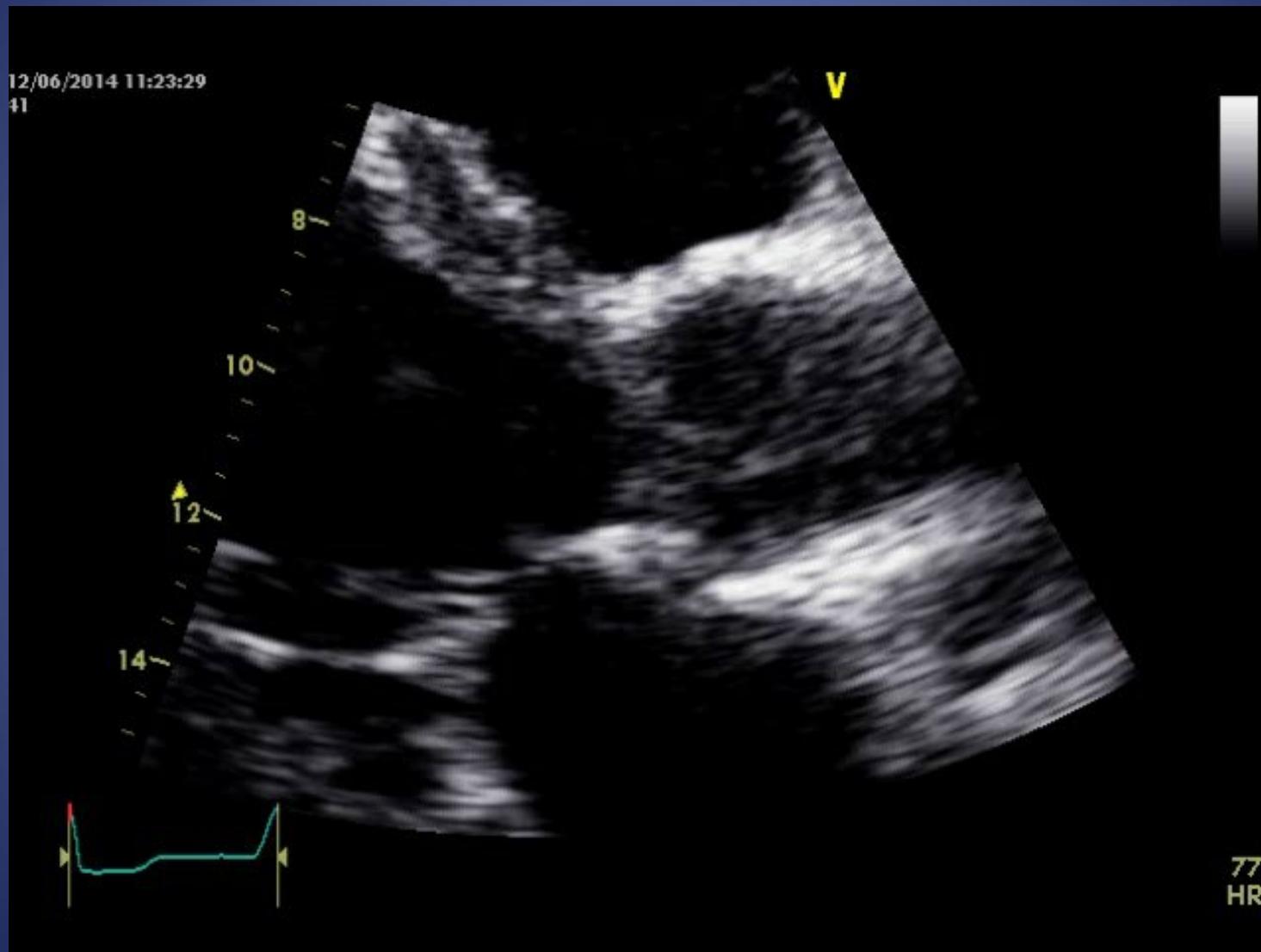


Imaging for Ventricular Function and Myocardial Recovery on Nonpulsatile Ventricular Assist Device, Circulation 2012

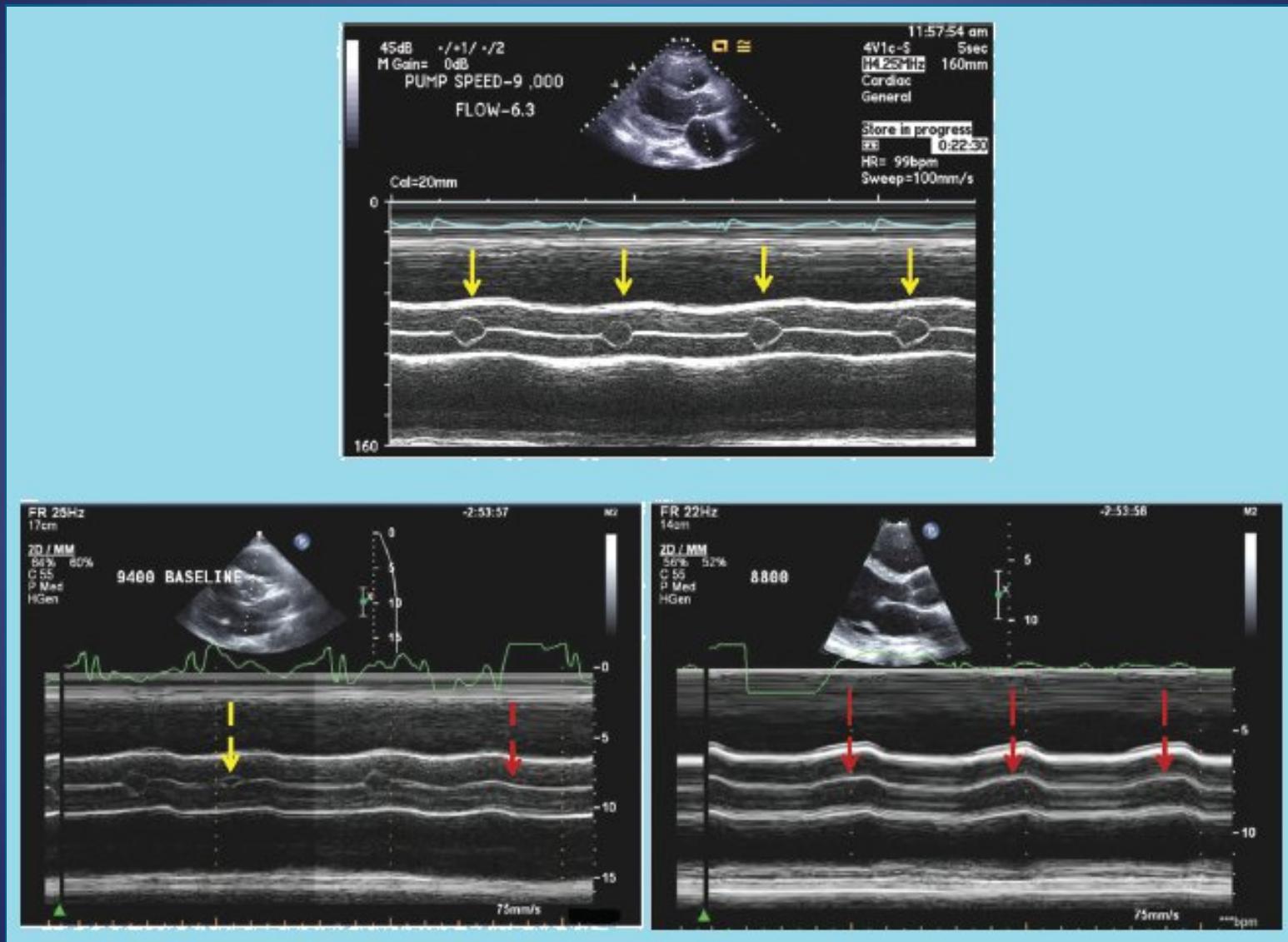
2 - LA VALVOLA AORTICA



3 - VALVOLA AORTICA



2 - LA VALVOLA AORTICA



Imaging for Ventricular Function and Myocardial Recovery on Nonpulsatile Ventricular Assist Device, Circulation 2012

FR 55Hz
17cm

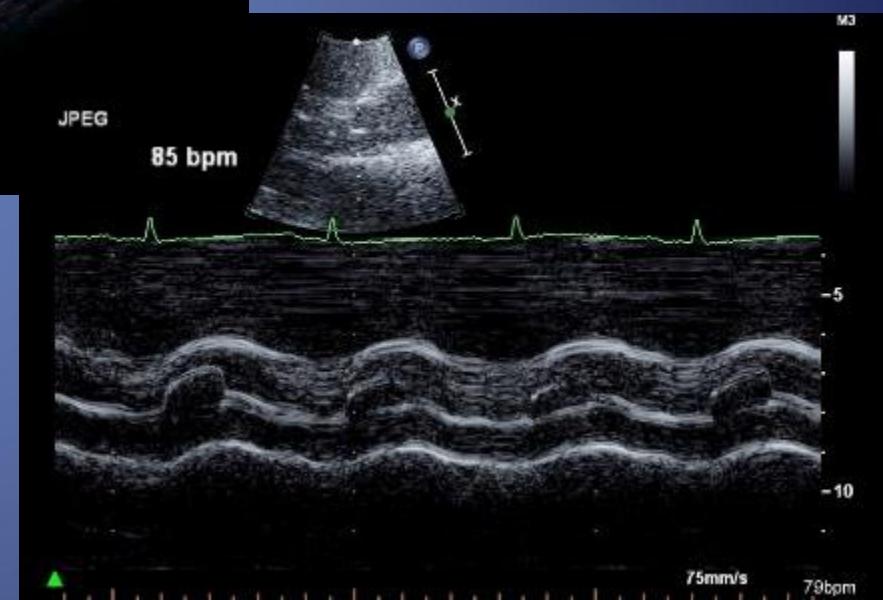
2D
76%
C 45
P Off
APen

G
P 1.4 R 2.8



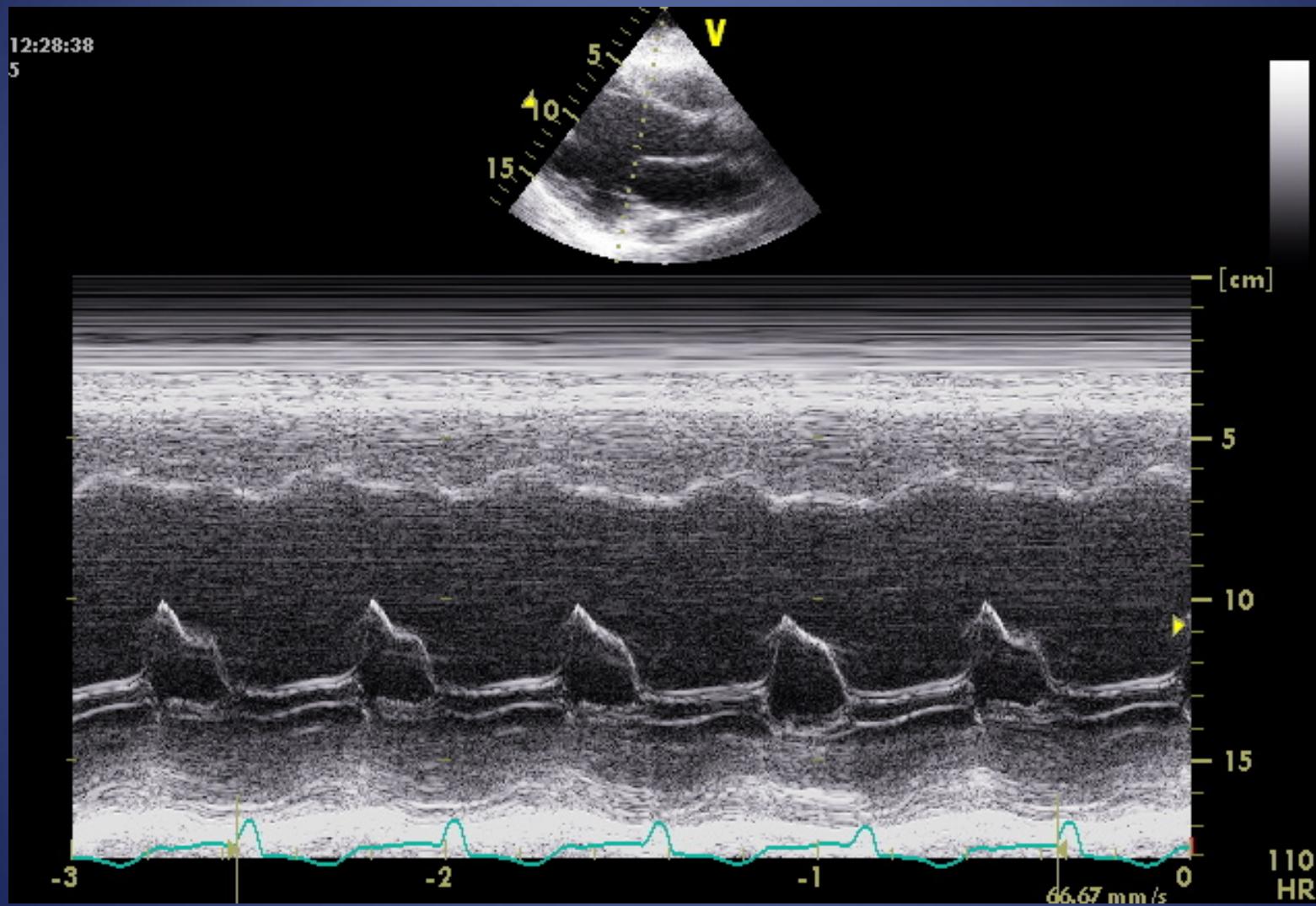
JPEG

85 bpm

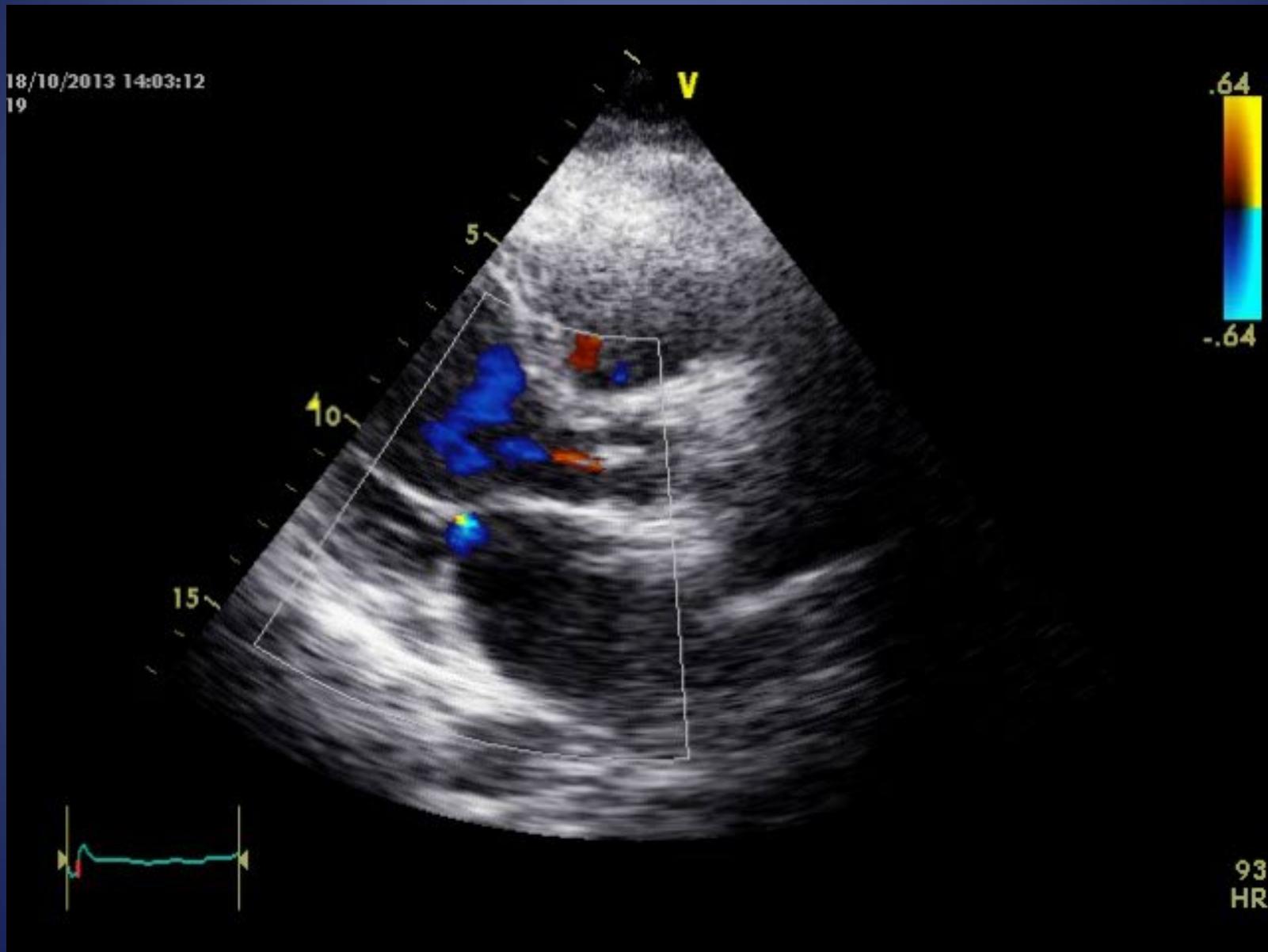


2 - LA VALVOLA AORTICA

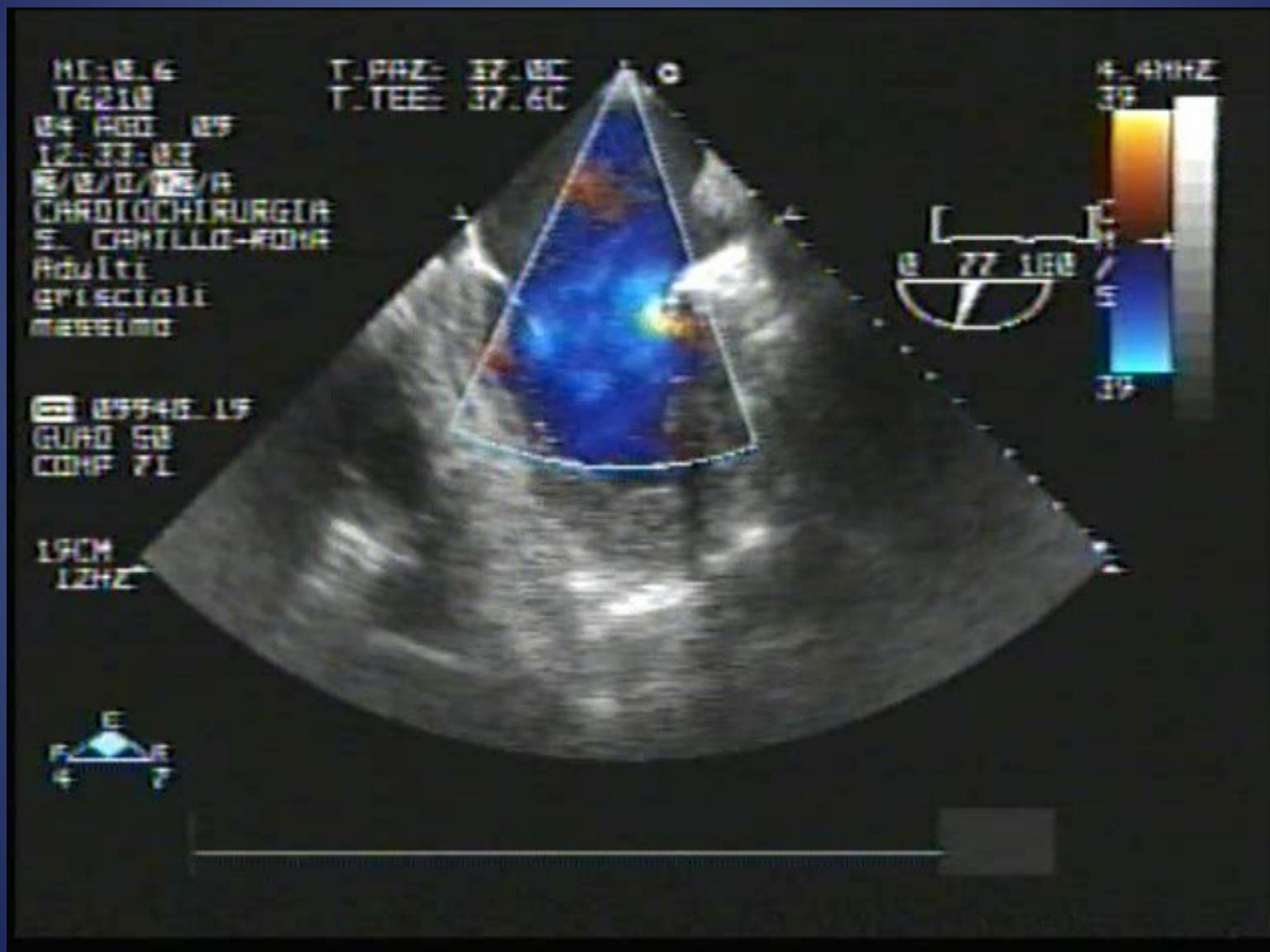
3 - LA VALVOLA MITRALE



3 - LA VALVOLA MITRALE



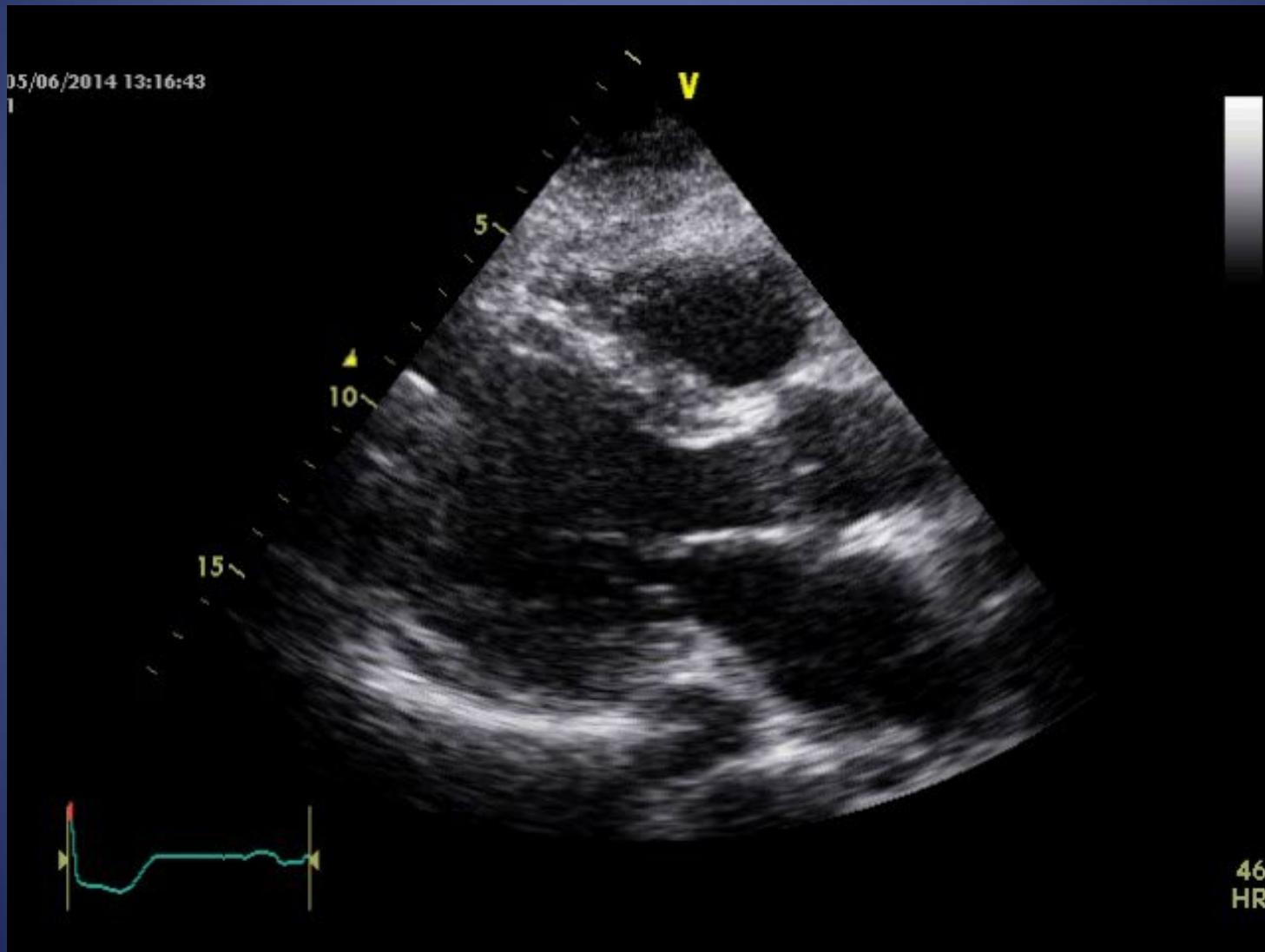
3 - LA VALVOLA MITRALE



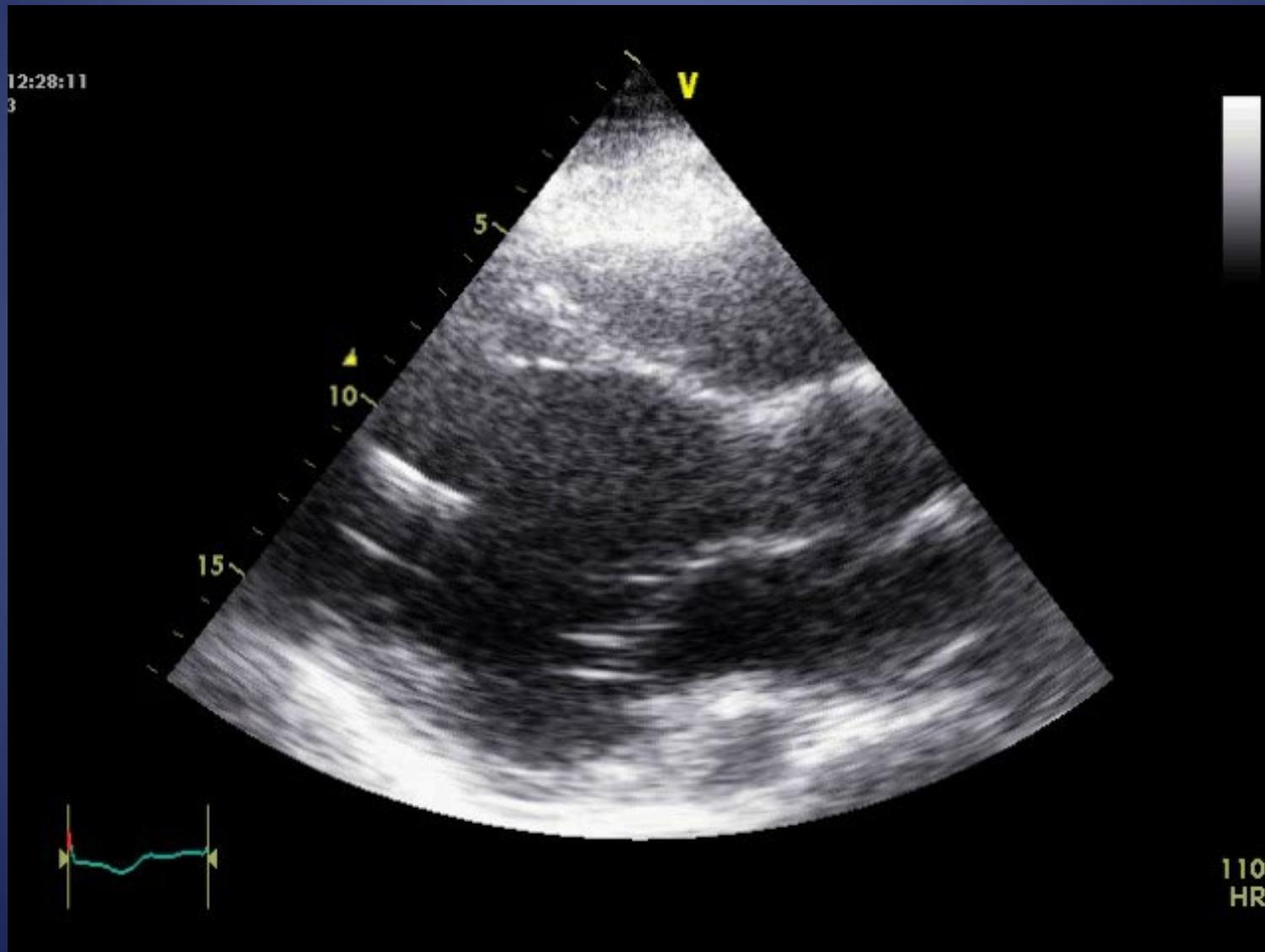
4 - LA VALUTAZIONE DELLE CANNULE

- ✓ Verificare il corretto posizionamento
- ✓ Campionare le velocità di flusso

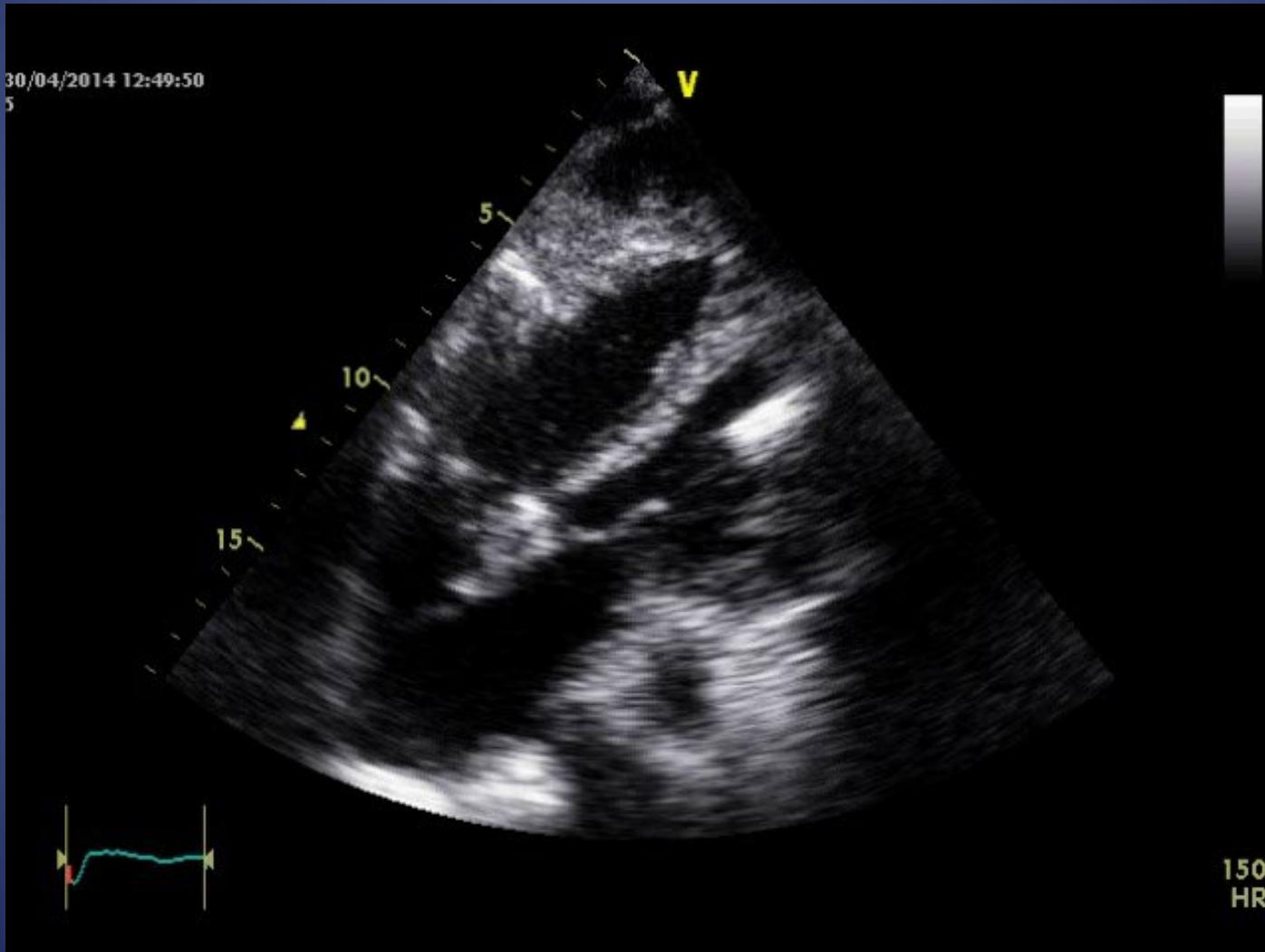
4 - LA VALUTAZIONE DELLE Cannula di inflow **CANNULE**



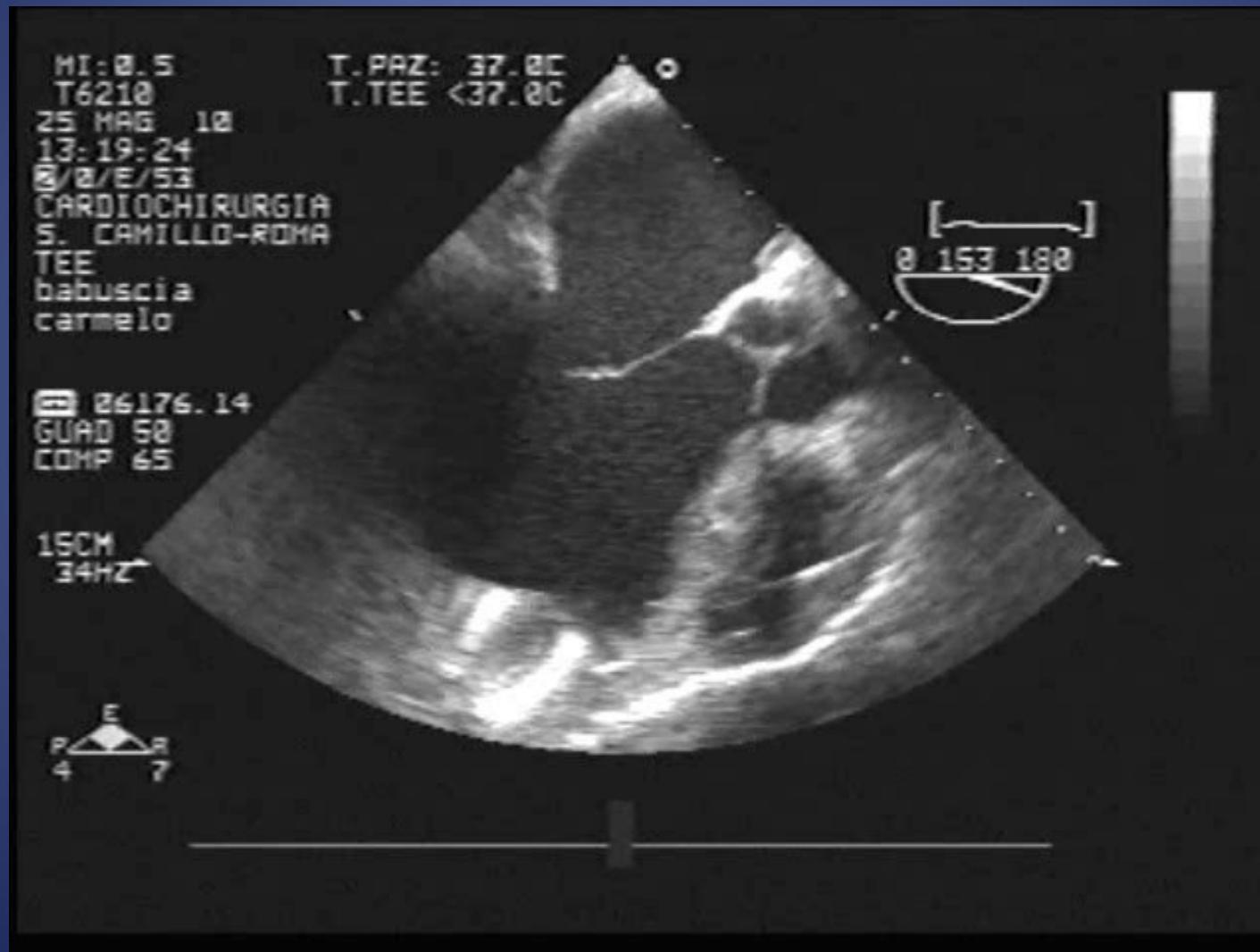
4 - LA VALUTAZIONE DELLE Cannula di inflow **CANNULE**



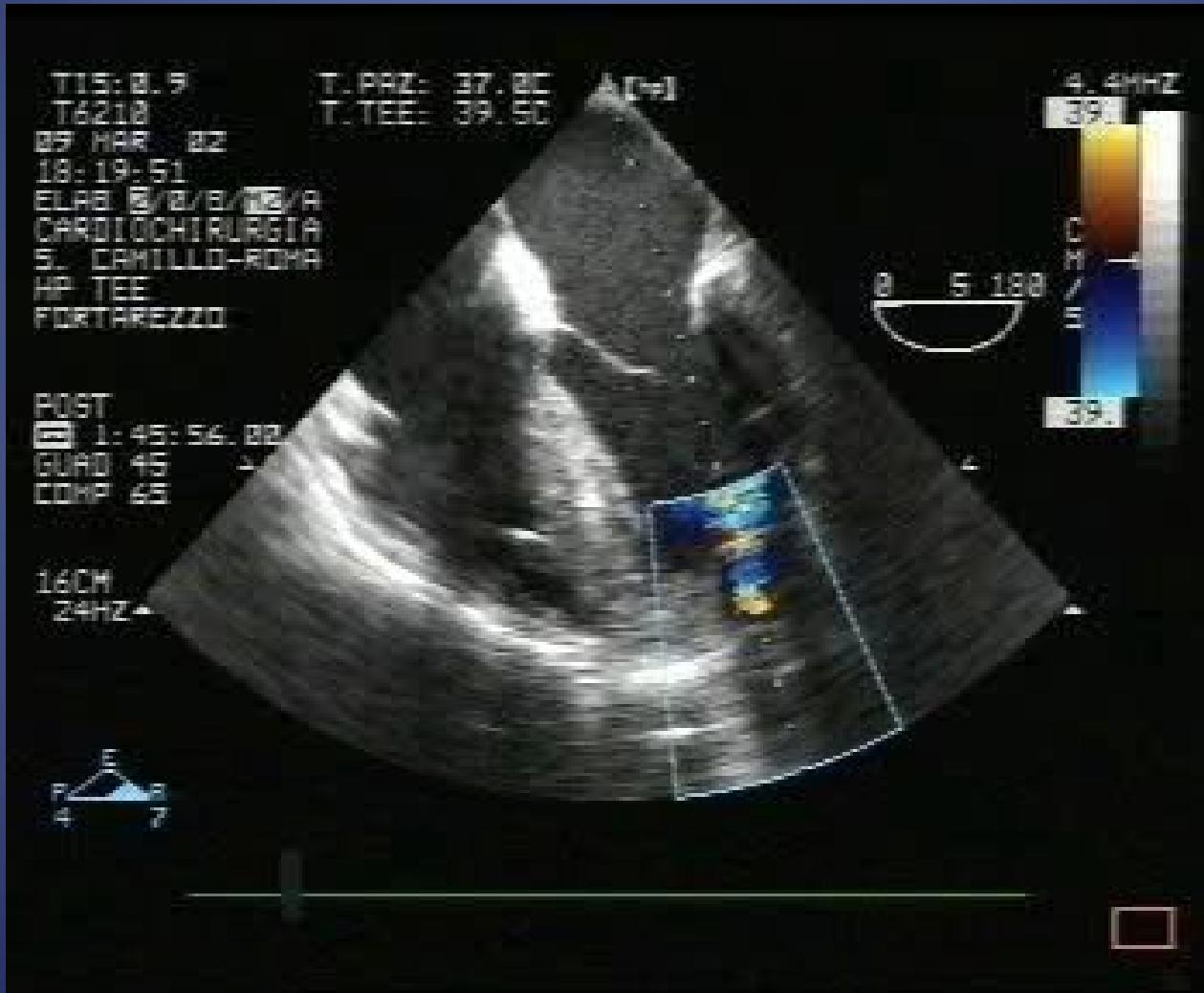
4 - LA VALUTAZIONE DELLE Cannula di inflow **CANNULE**



4 - LA VALUTAZIONE DELLE Cannula di inflow **CANNULE**



4 - LA VALUTAZIONE DELLE Cannula di inflow **CANNULE**



FR 9Hz

14cm

xPlane

74%

74%

45dB

P Off

Gen

CF

60%

4.4MHz

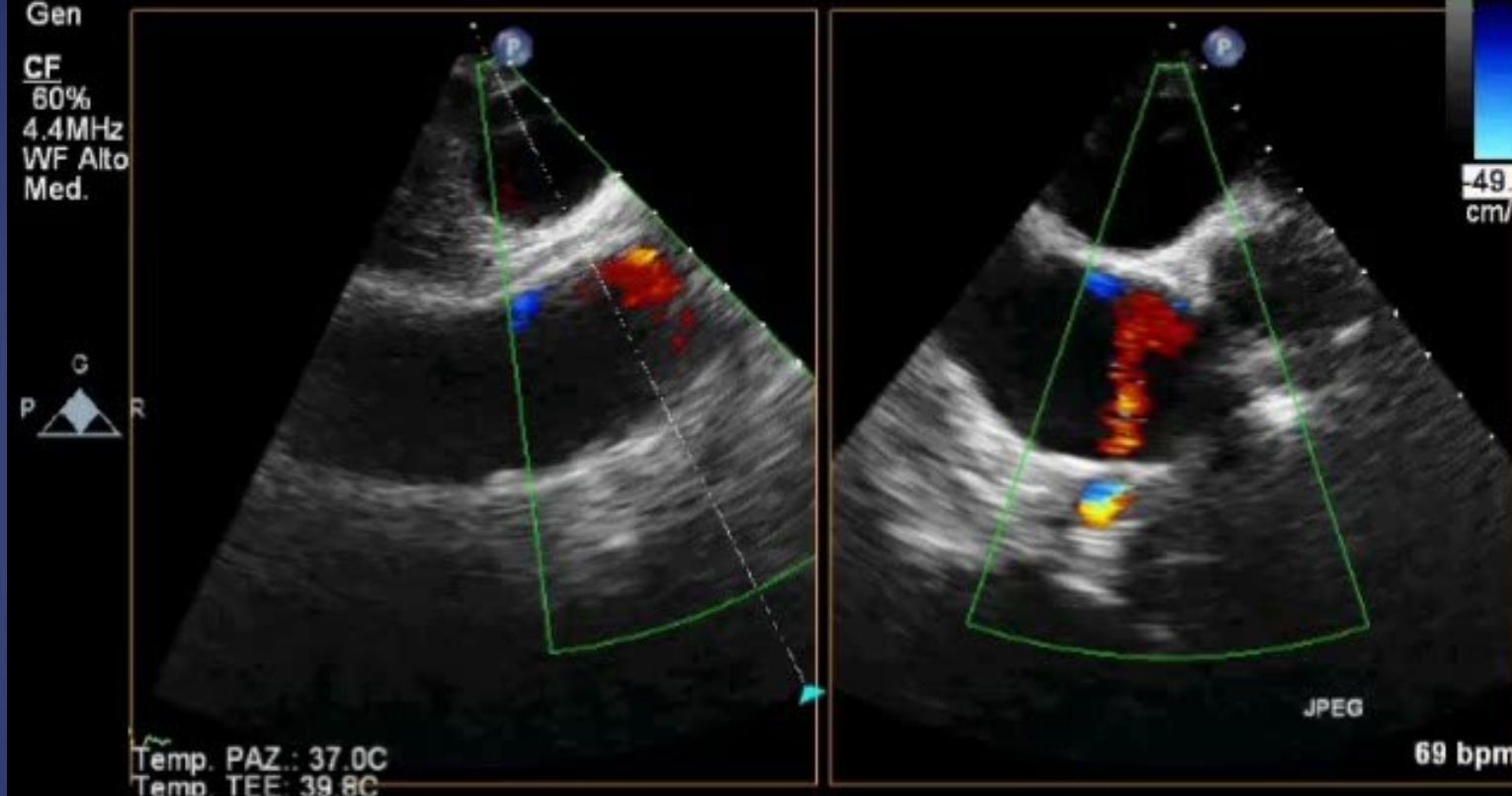
WF Alto

Med.

140
-27

M3 M4
+49.3

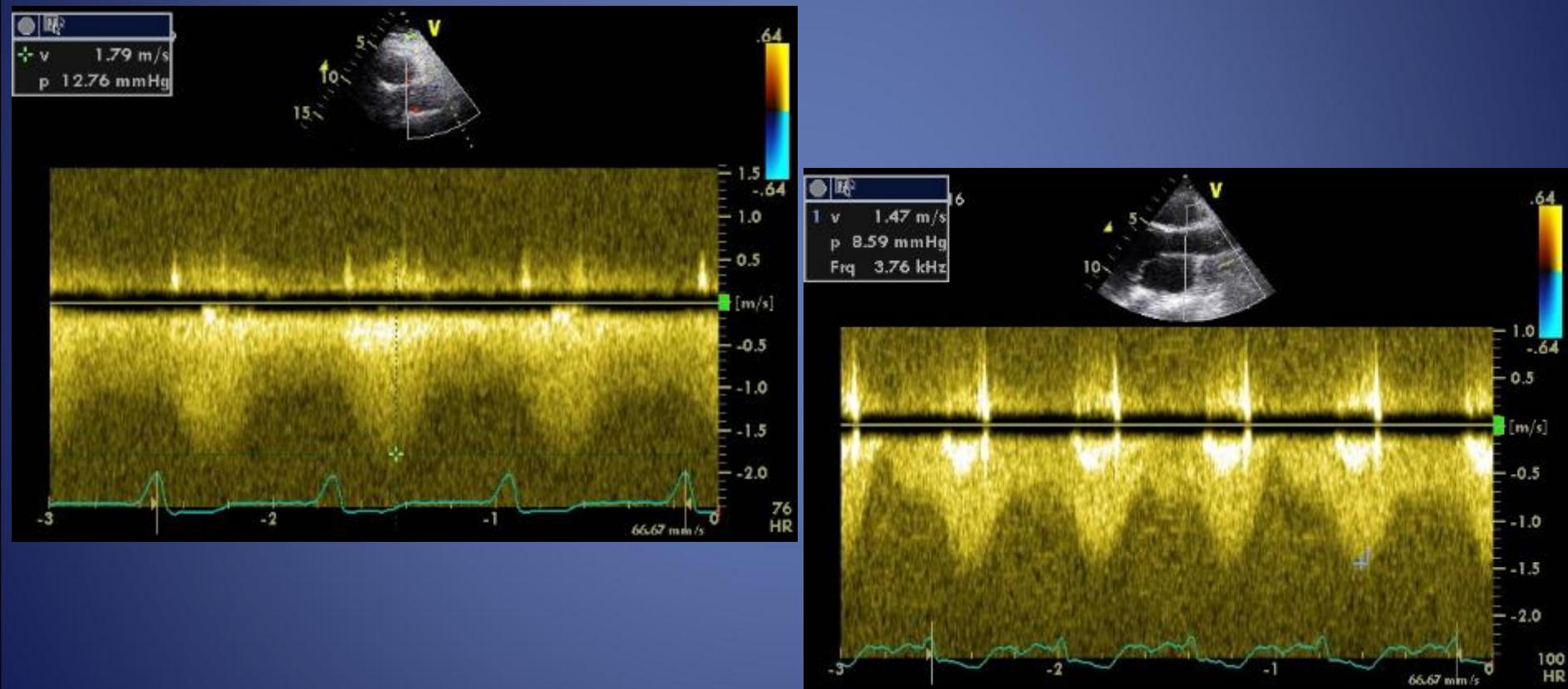
-49.3
cm/s



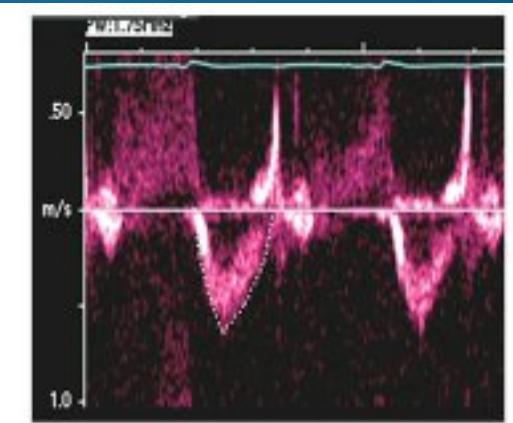
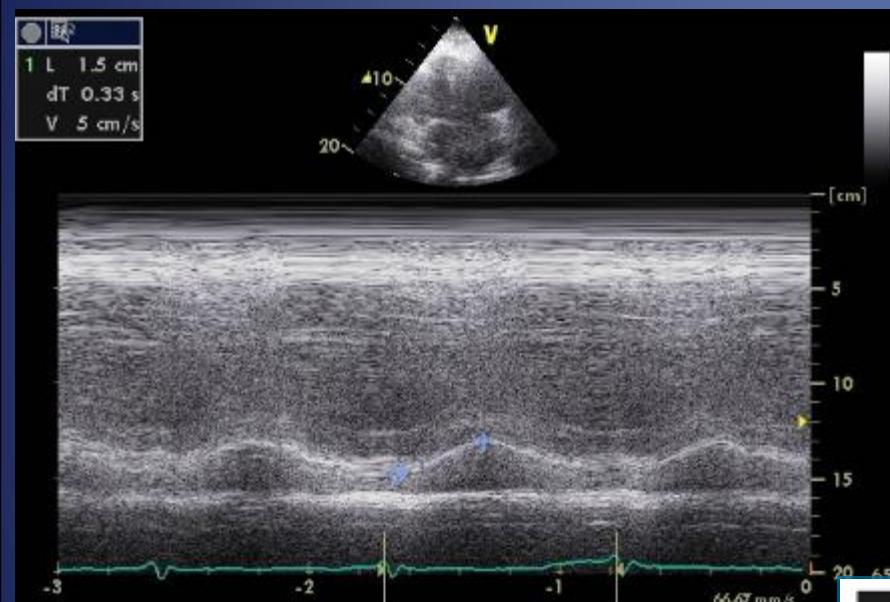
4 - LA VALUTAZIONE DELLE Cannula di outflow **CANNULE**

4 - LA VALUTAZIONE DELLE CANNULE

Cannula di outflow



5 - LA FUNZIONE VENTRICOLARE DESTRA



FR 71Hz
18cm

M3

2D
75%
C 45
P Off
Gen



P



JPEG

Temp. PAZ.: 37.0C
Temp. TEE: 39.5C

68 bpm

6 - LA VALVOLA TRICUSPIDE

FR 17Hz
15cm

2D

72%

C 45

P Off

AGen

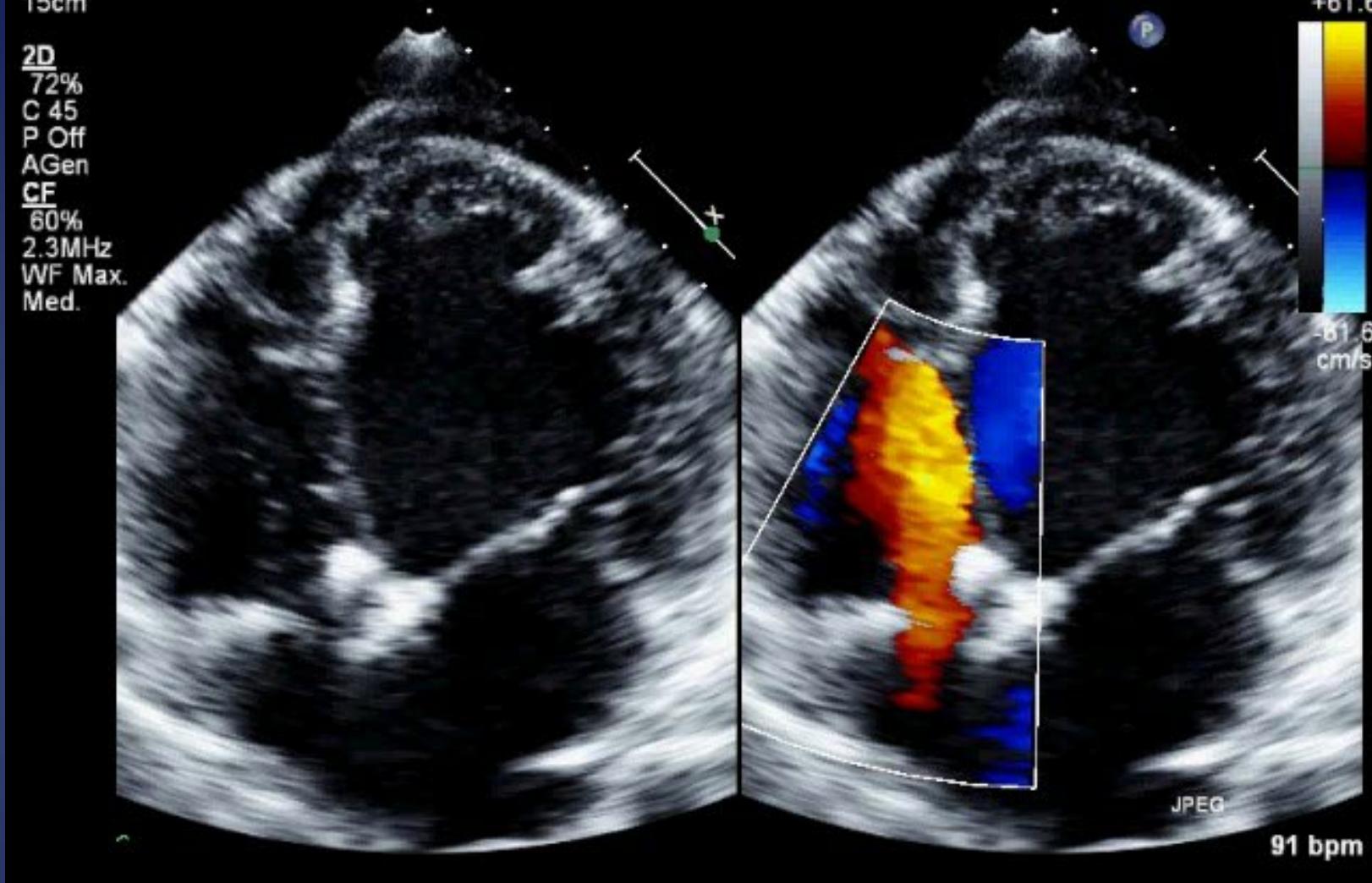
CF

60%

2.3MHz

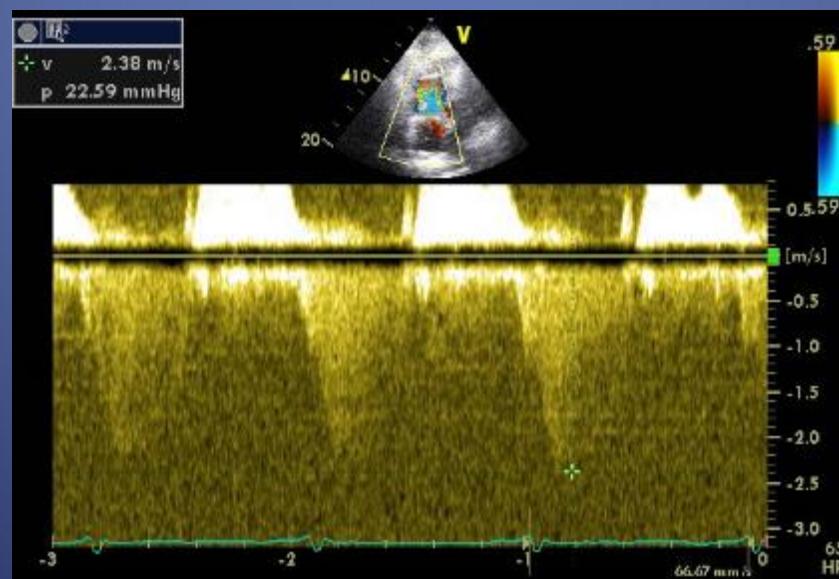
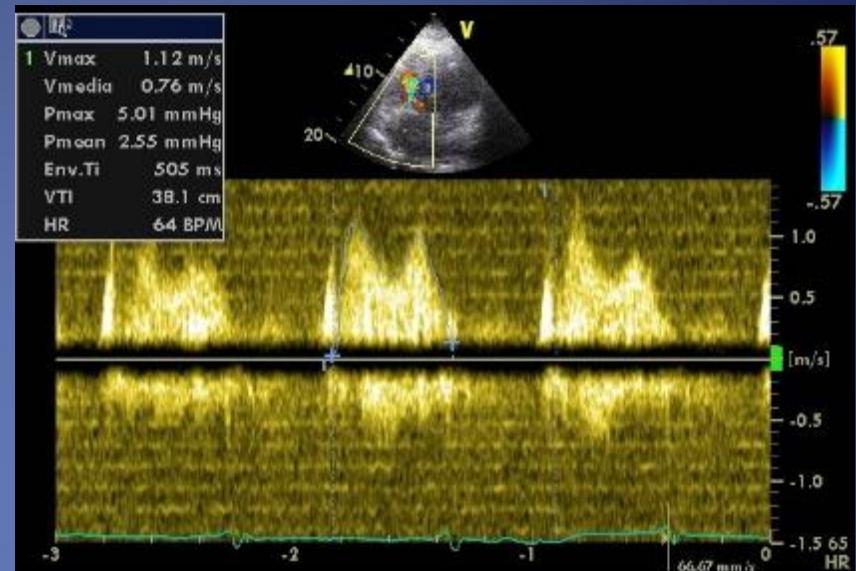
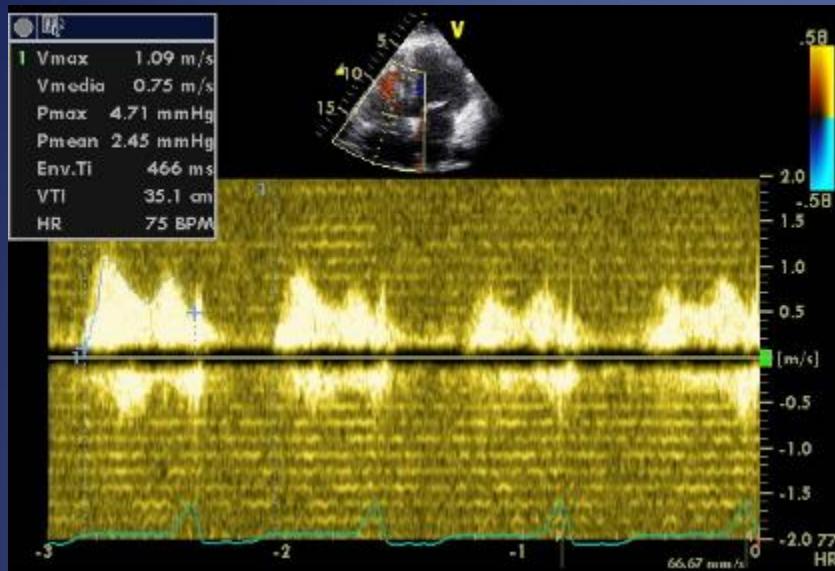
WF Max.

Med.

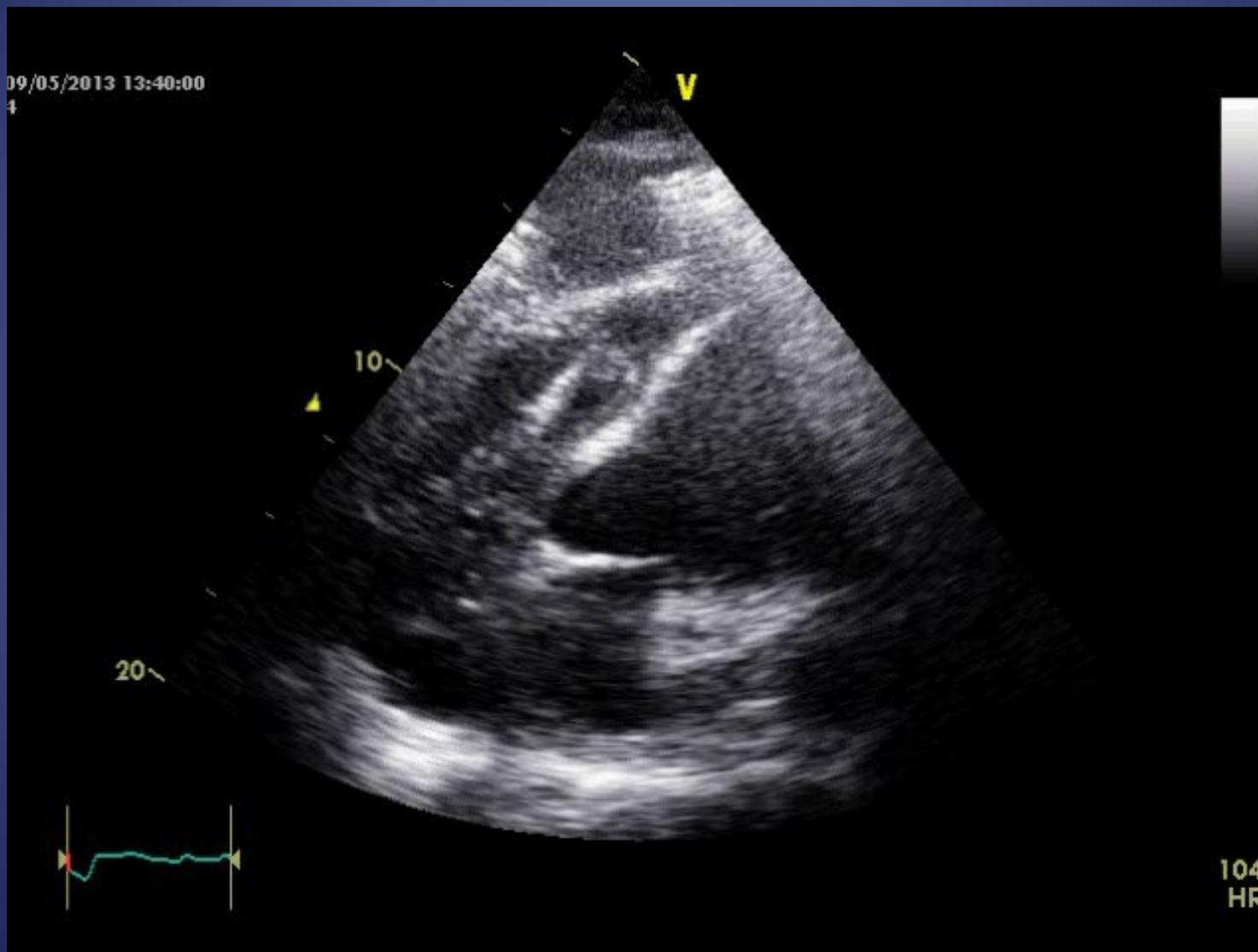


6 - LA VALVOLA TRICUSPIDE

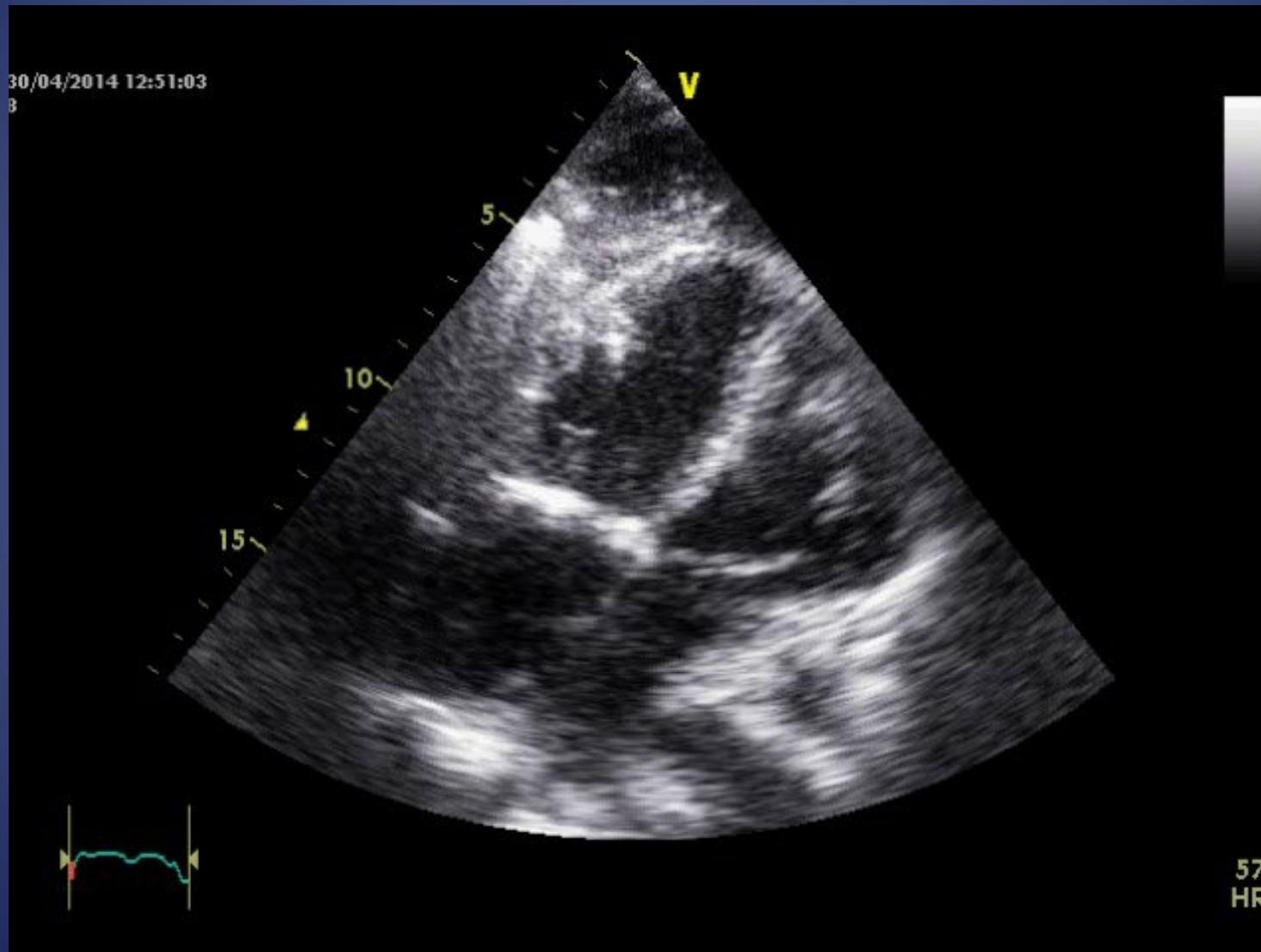
6 - LA VALVOLA TRICUSPIDE



7 - LE RACCOLTE MEDIASTINICHE



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ECOCARDIOGRAFIA E LVAD

- ✓ Pre-operative assessment
- ✓ Guidance during VAD insertion
- ✓ Post-operative assessment
- ✓ Detection of complications



Detection of



Bleeding (cardiac tamponade)
complications

✓ Anomalous flows into and out of the cannulae

✓ Thrombus formation (intra-cardiac and intra-device
cannulae)

✓ Infection (cannulae endocarditis)



Aortic dissection



Detection of



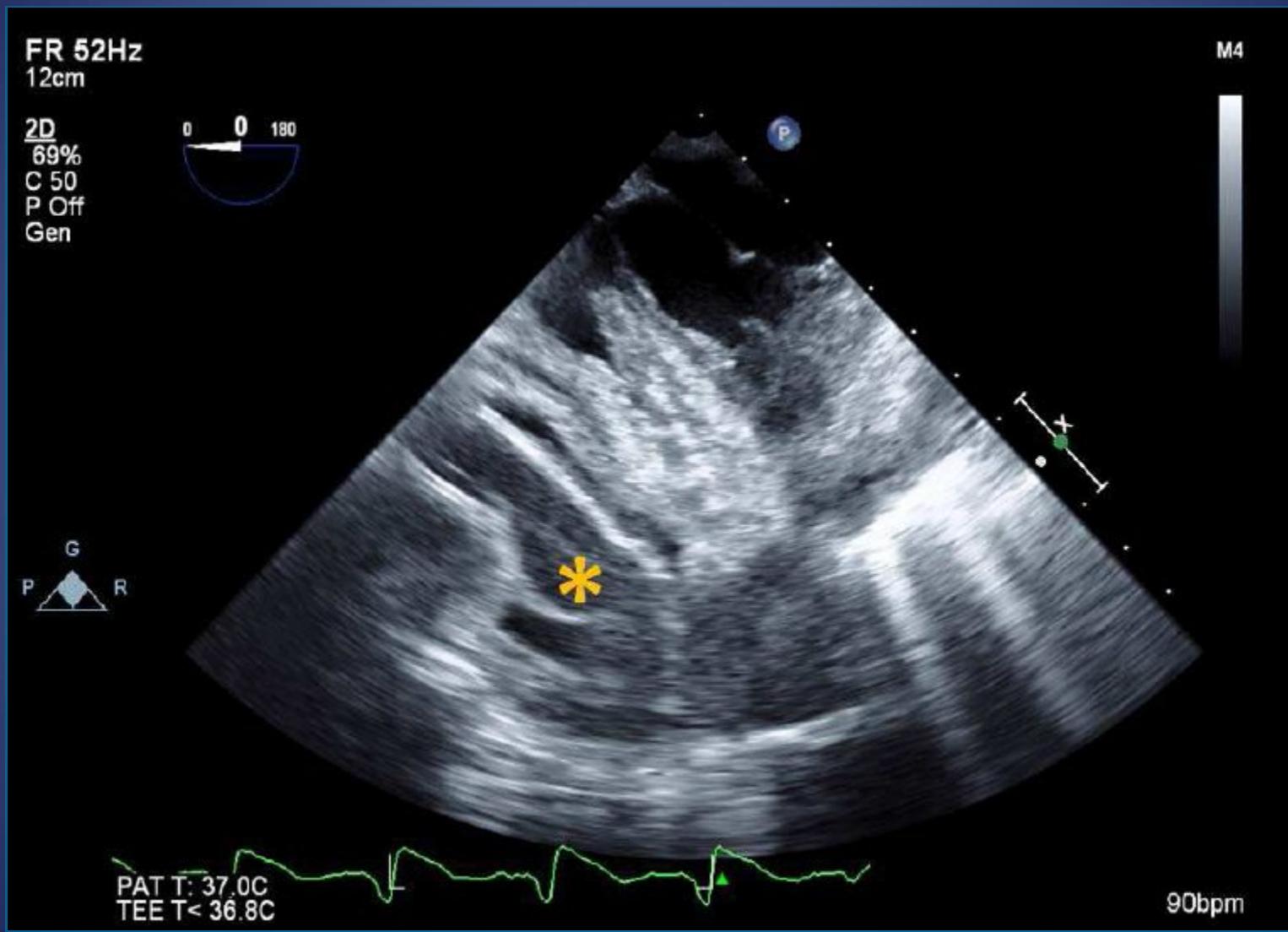
Bleeding complications
(bleeding complications)

- ✓ Anomalous flows into and out of the cannulae
- ✓ Thrombus formation (intra-cardiac and intra-device cannulae)
- ✓ Infection (cannulae endocarditis)
- ✓ Aortic dissection

✓ Bleeding (cardiac tamponade)



✓ Bleeding (cardiac tamponade)





Detection of



Bleeding (cardiac tamponade)
Complications

✓ Anomalous flows into and out of the cannulae

✓ Thrombus formation (intra-cardiac and intra-device
cannulae)

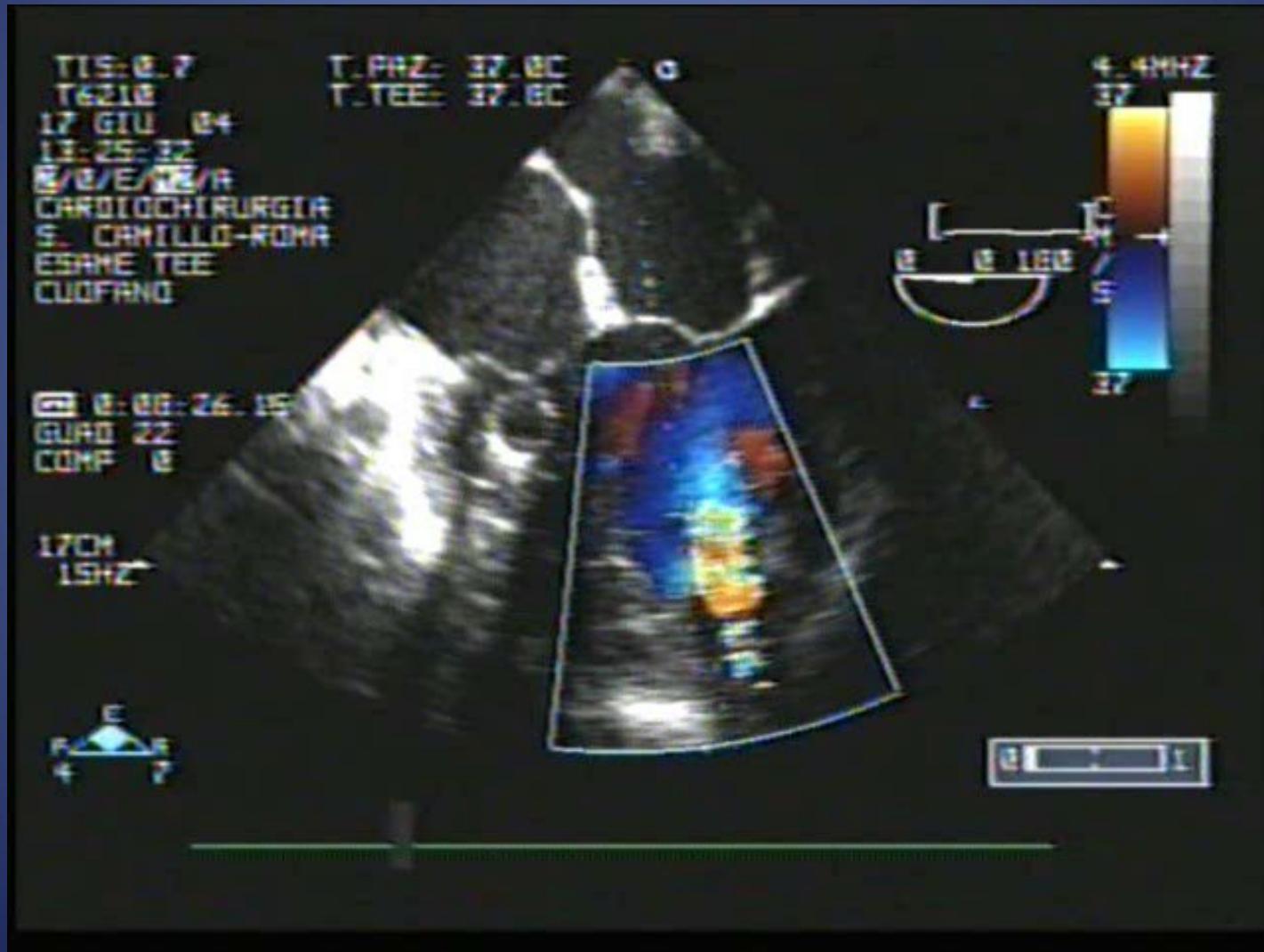
✓ Infection (cannulae endocarditis)



Aortic dissection

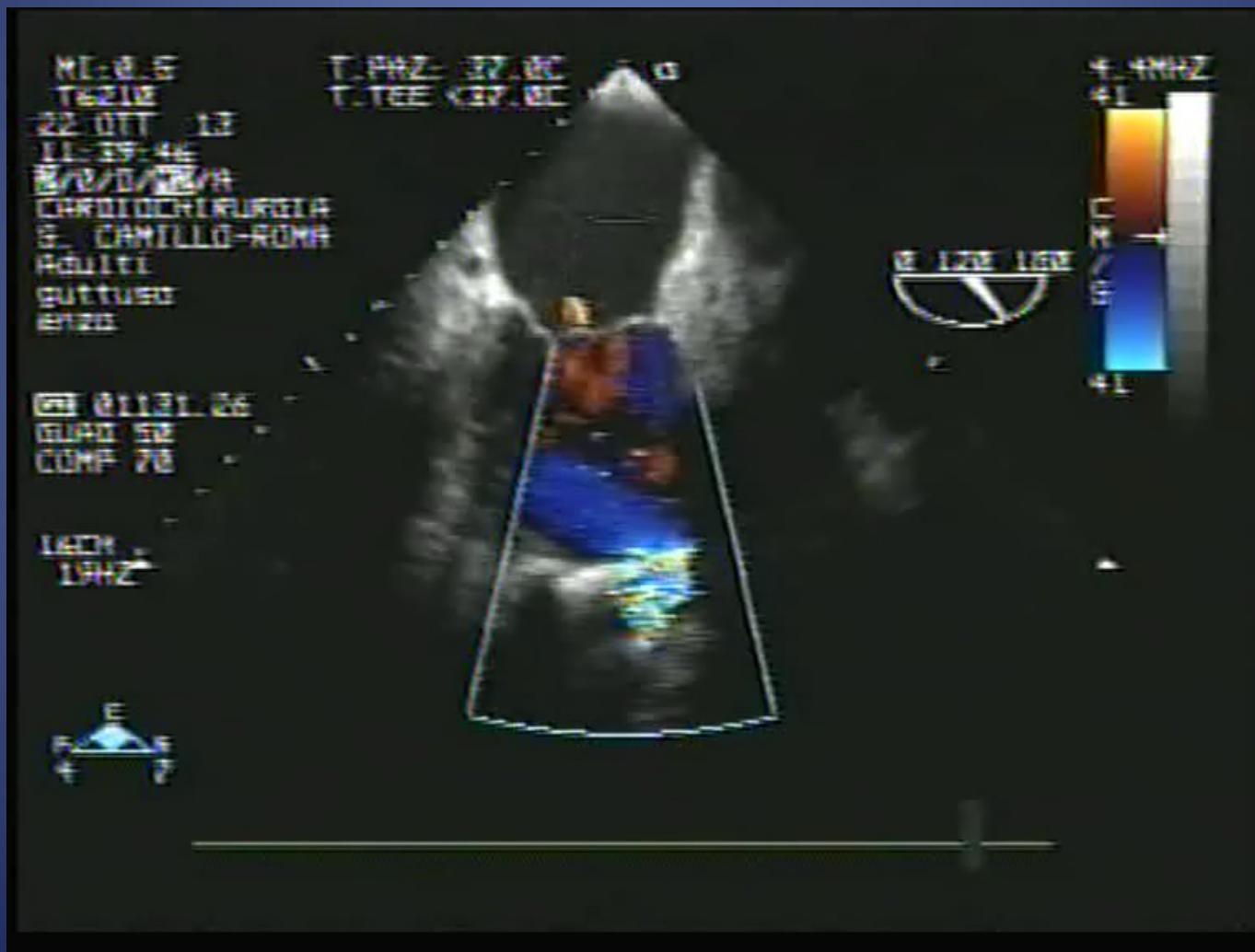
✓ Anomalous flows into and out of the cannulae

Cannula di inflow



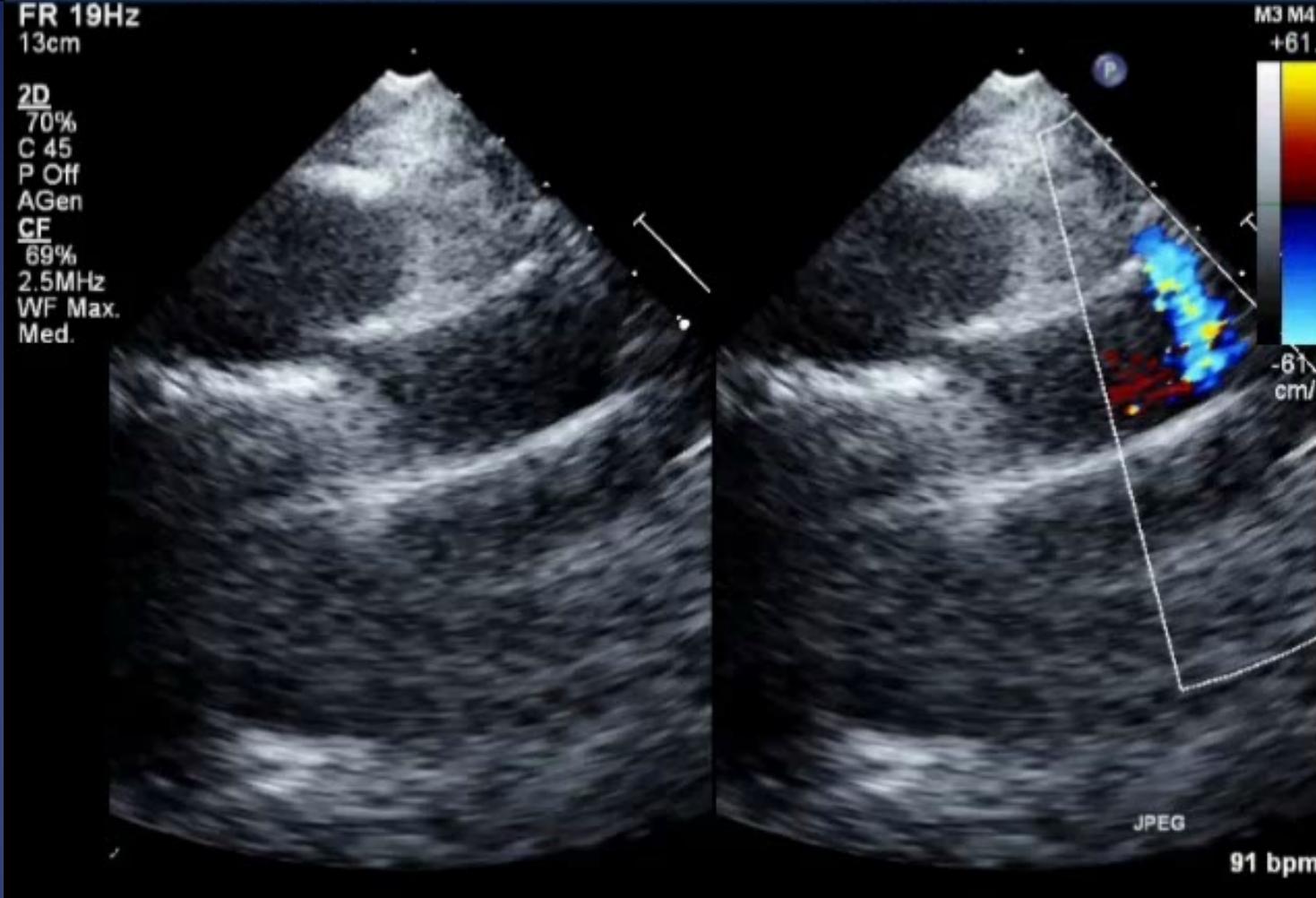
✓ Anomalous flows into and out of the cannulae

Cannula di inflow



FR 19Hz
13cm

2D
70%
C 45
P Off
AGen
CF
69%
2.5MHz
WF Max.
Med.

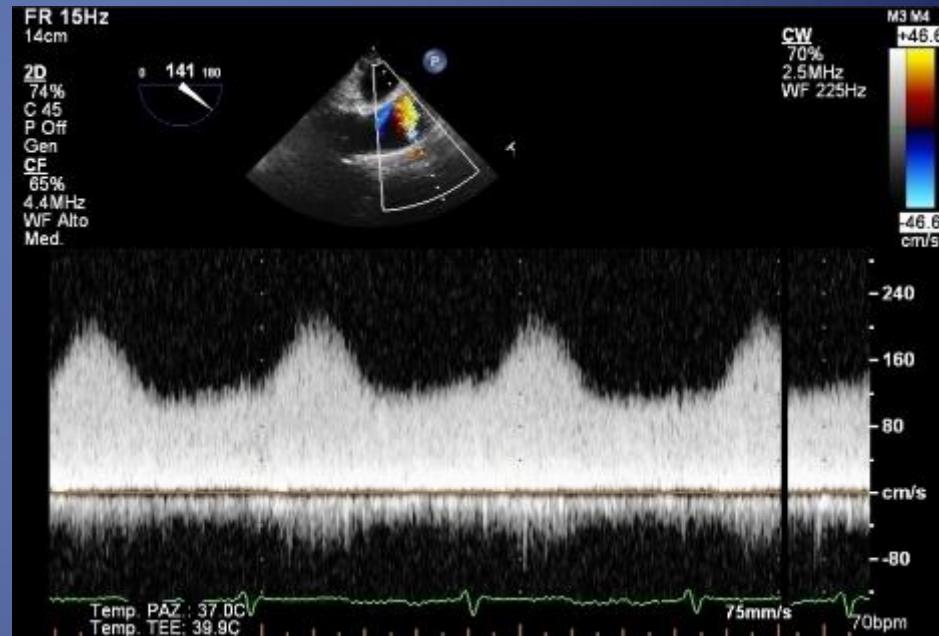
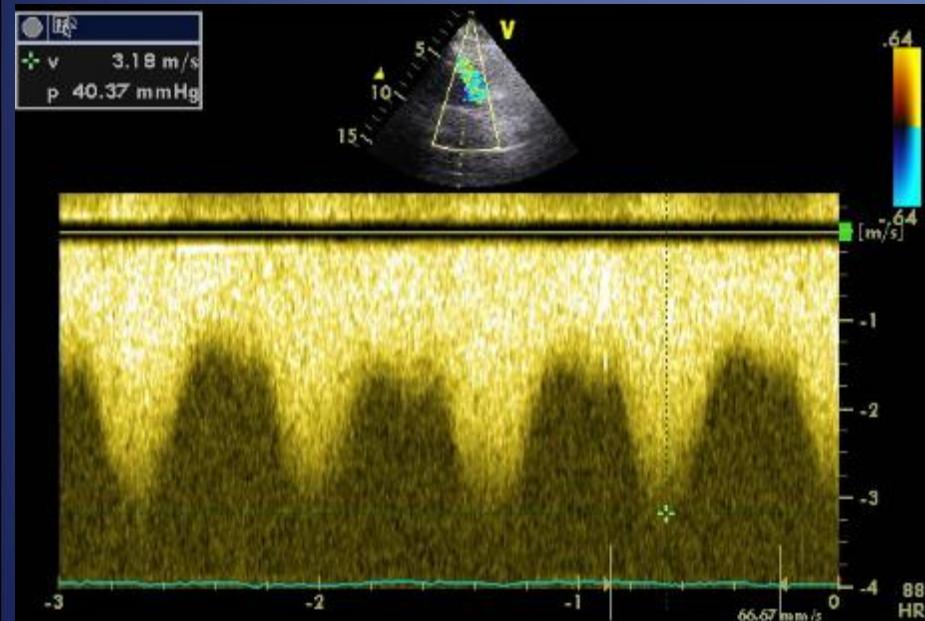


✓ Anomalous flows into and out of the cannulae

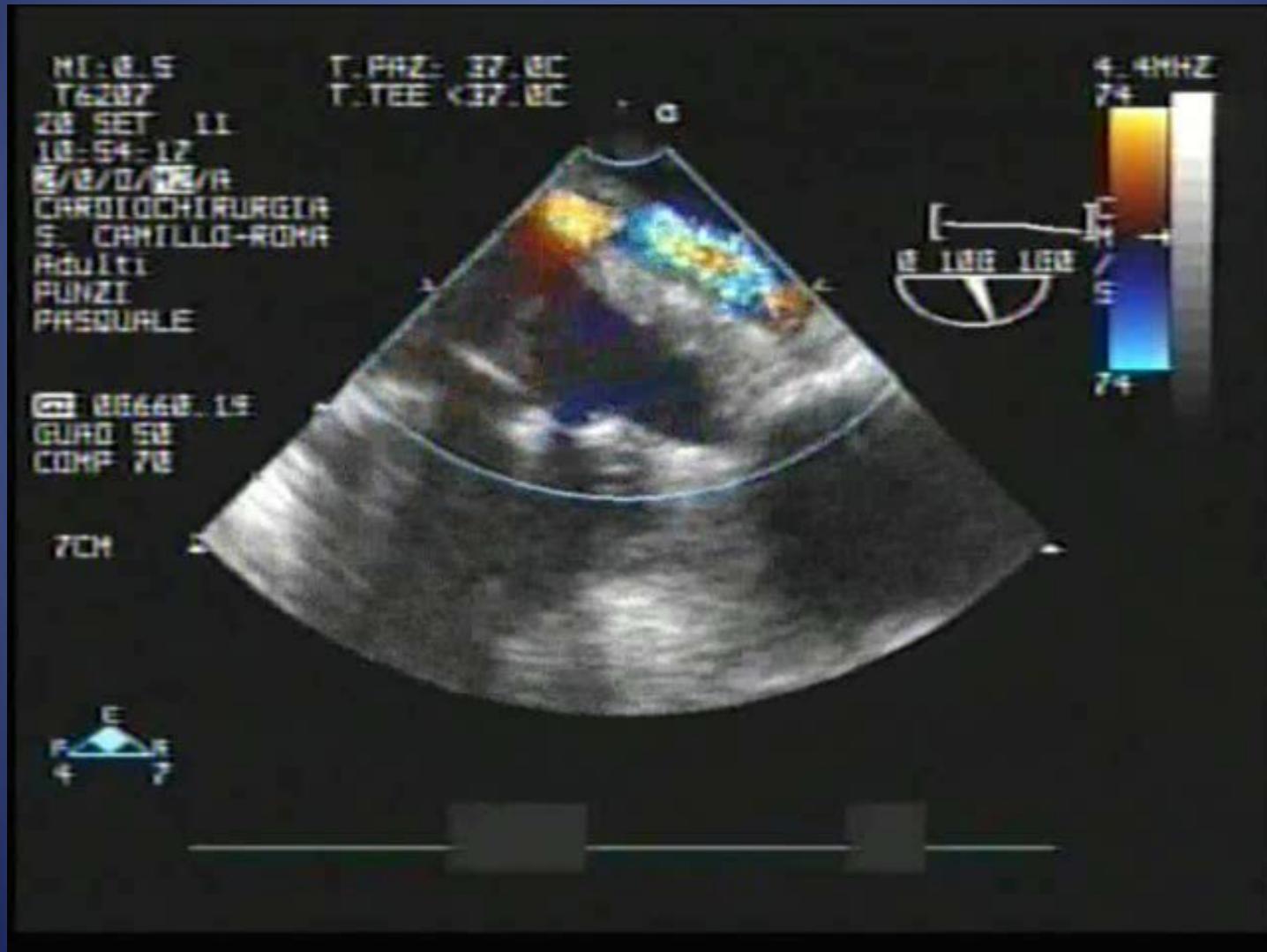
Cannula di outflow

✓ Anomalous flows into and out of the cannulae

Cannula di outflow



✓ Anomalous flows into and out of the cannulae
Shunt a livello del setto interatriale



✓ Detection of

✓ Bleeding (cardiac tamponade)
Complications

- ✓ Anomalous flows into and out of the cannulae
- ✓ Thrombus formation (intra-cardiac and intra-device
cannulae)
- ✓ Infection (cannulae endocarditis)
- ✓ Aortic dissection

✓

Thrombus formation (intra-cardiac and intra-device cannulae)

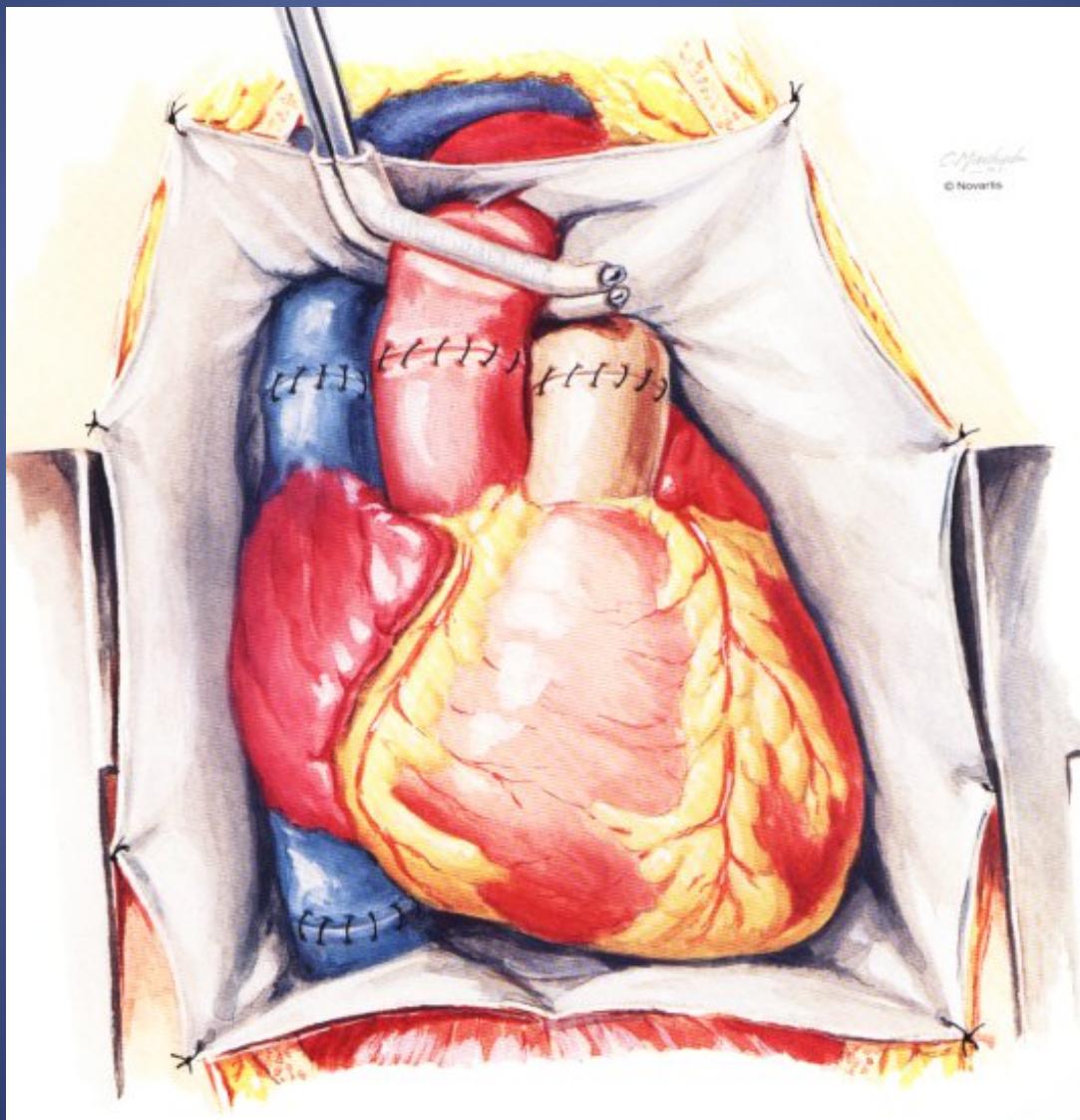




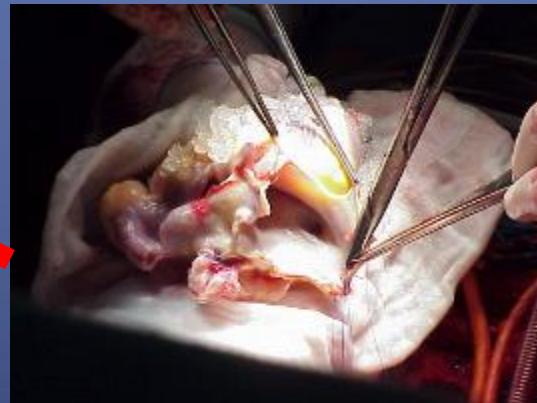
Grazie per l'attenzione!



IL TRAPIANTO CARDIACO



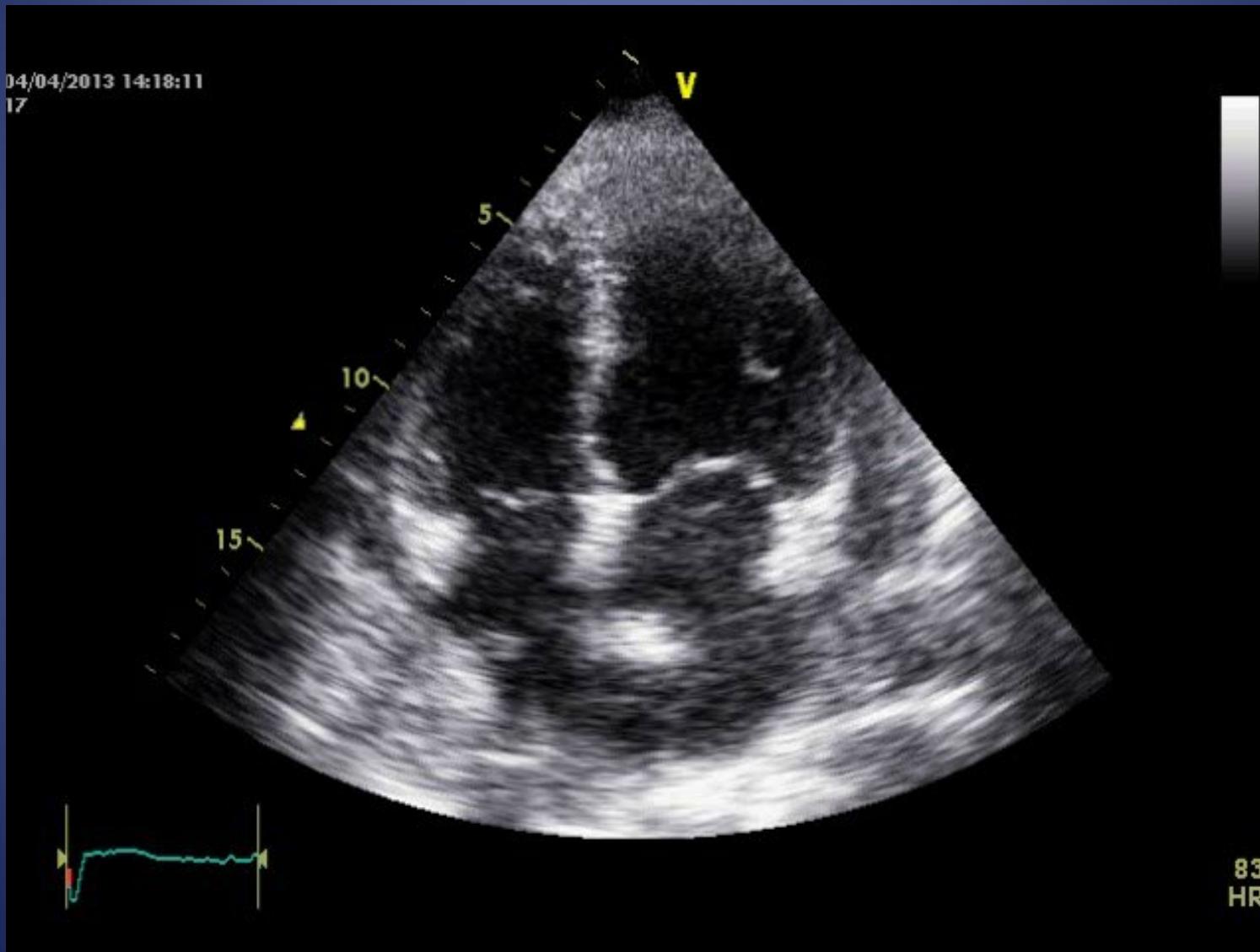
IL TRAPIANTO CARDIACO



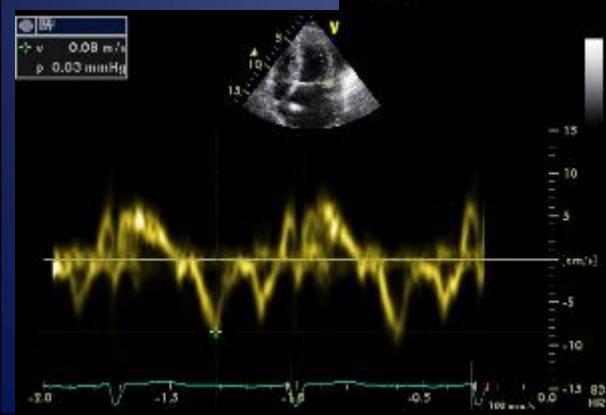
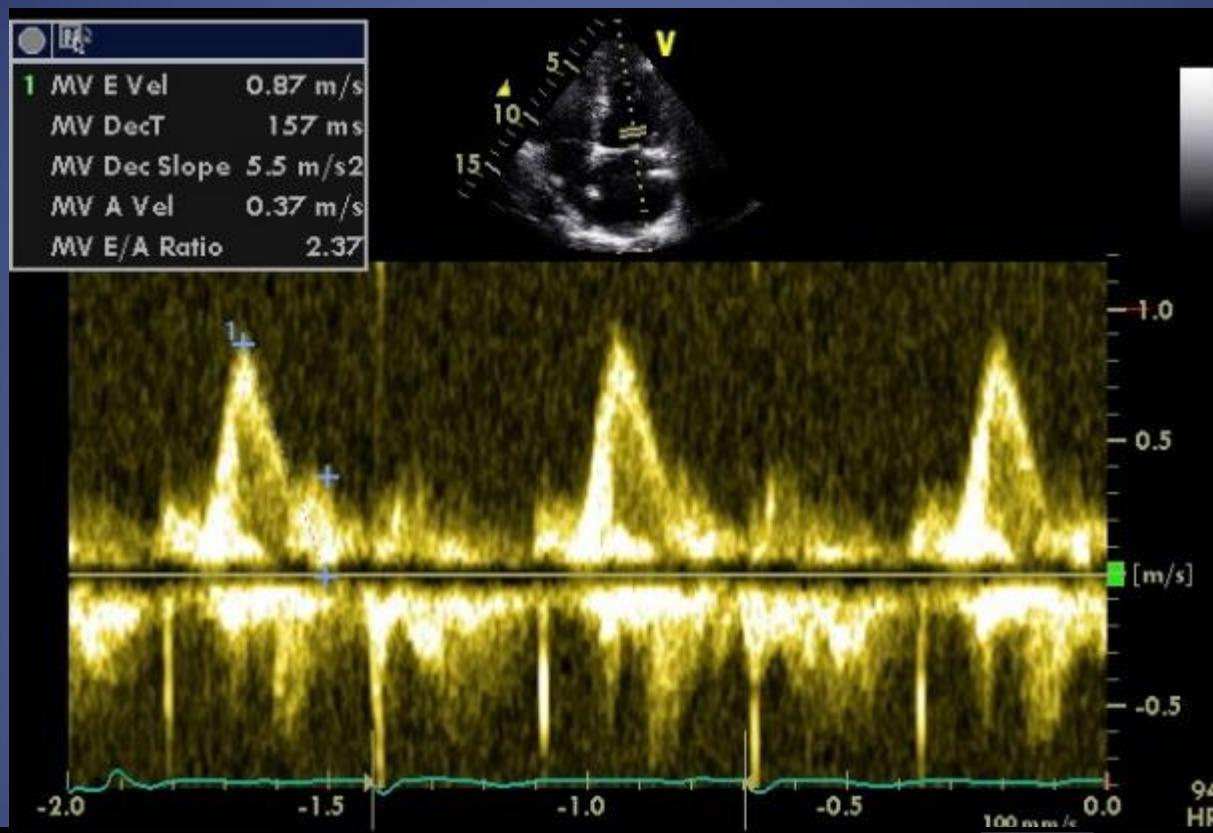
ECOCARDIOGRAFIA E TRAPIANTO CARDIACO

- ✓ Follow up del paziente
- ✓ Gestione clinica delle complicanze
(rigetto acuto e coronaropatia)

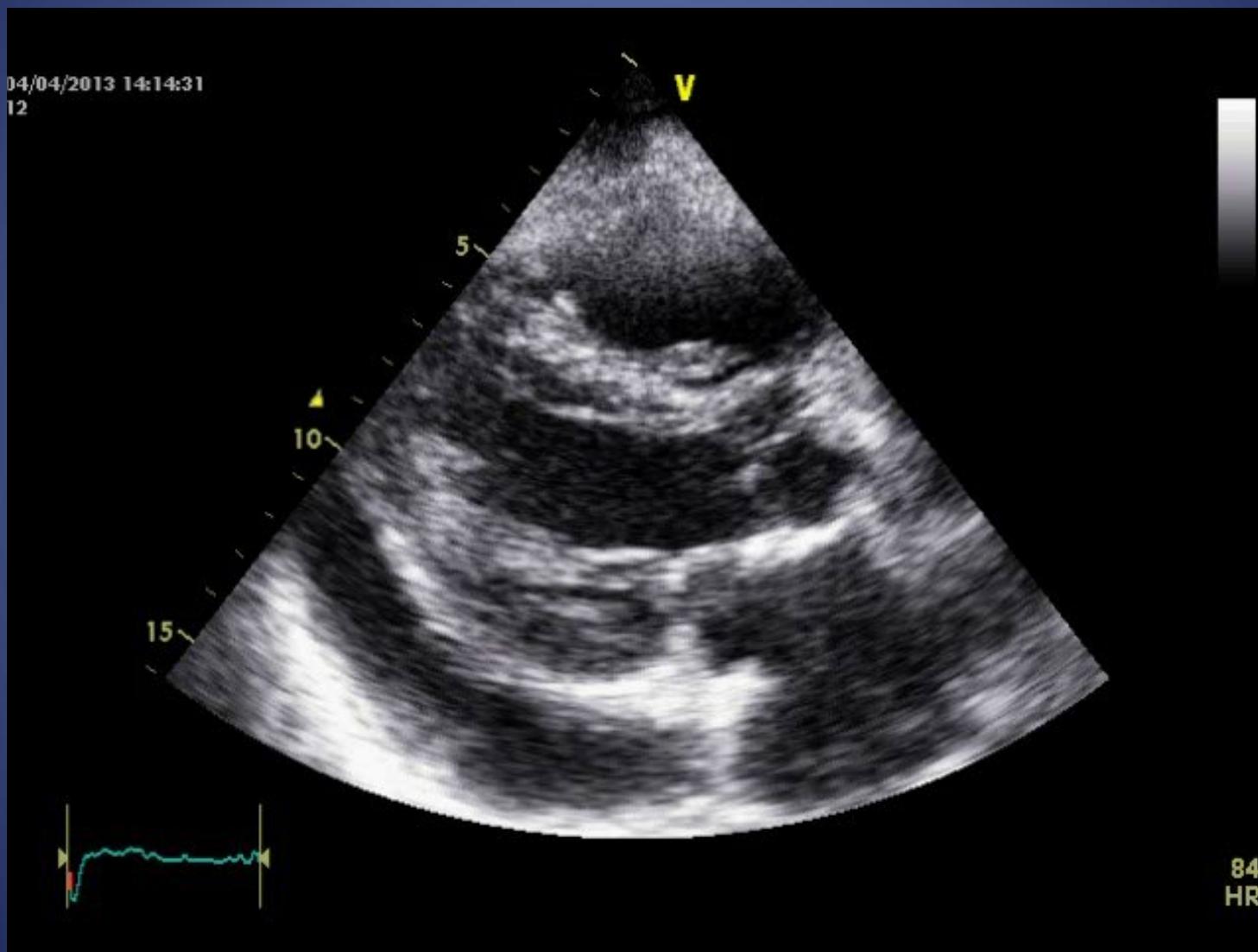
ASPETTI ANATOMICI DOPO IL TRAPIANTO CARDIACO



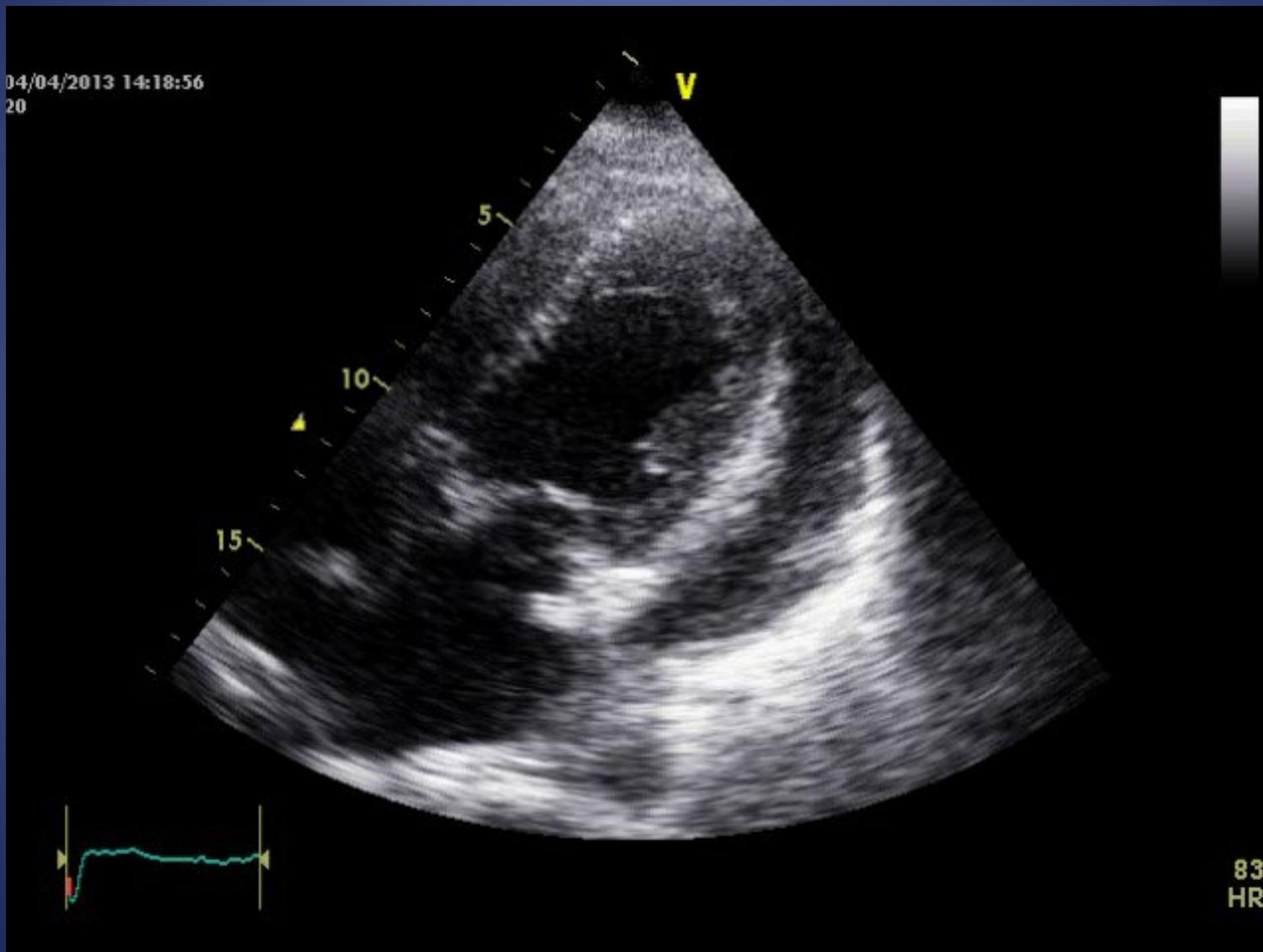
LA FUNZIONE DIASTOLICA



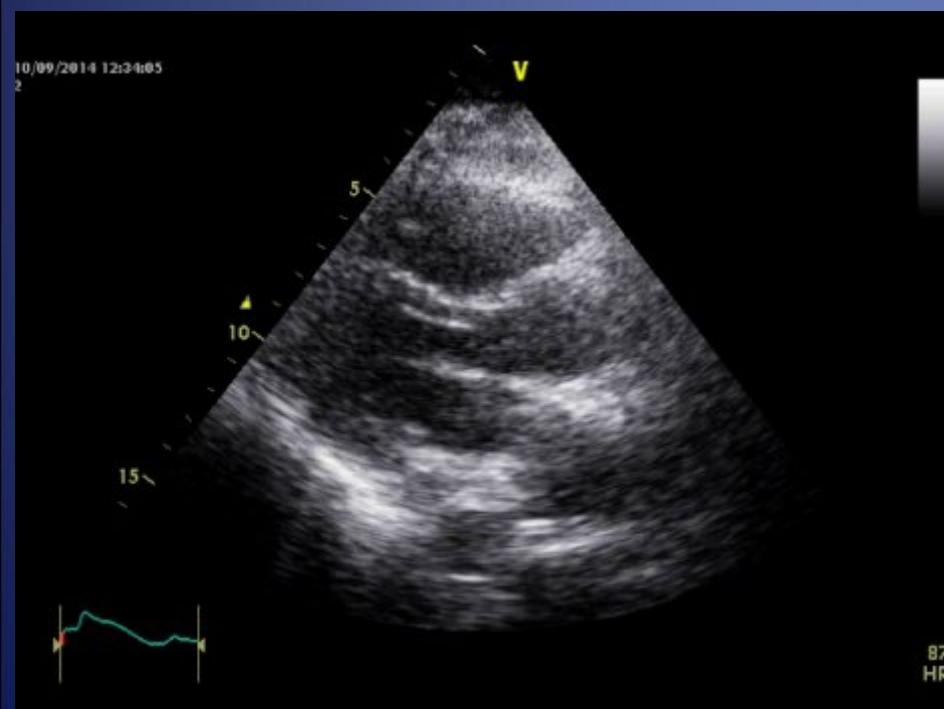
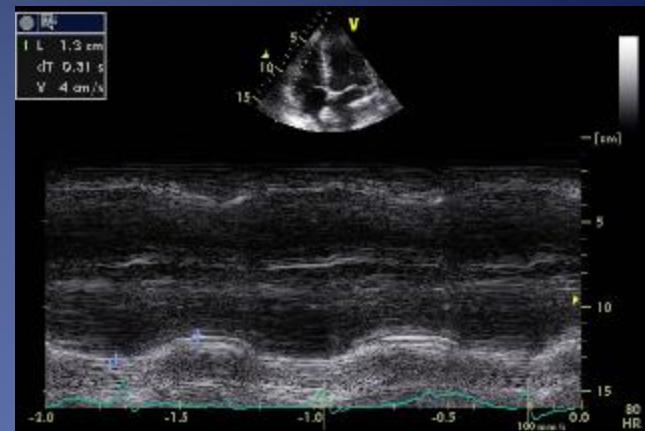
IL VERSAMENTO PERICARDICO



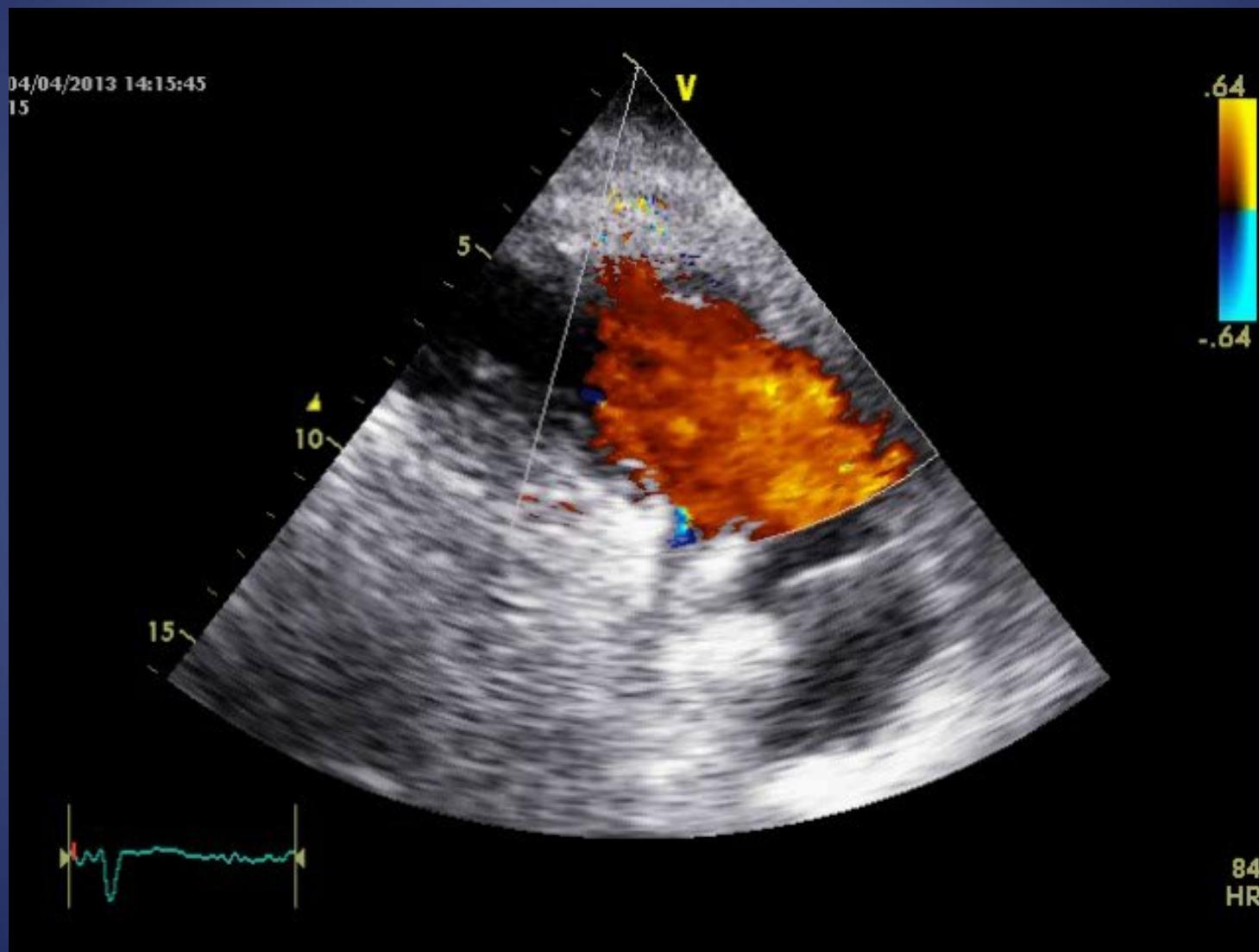
IL VERSAMENTO PERICARDICO



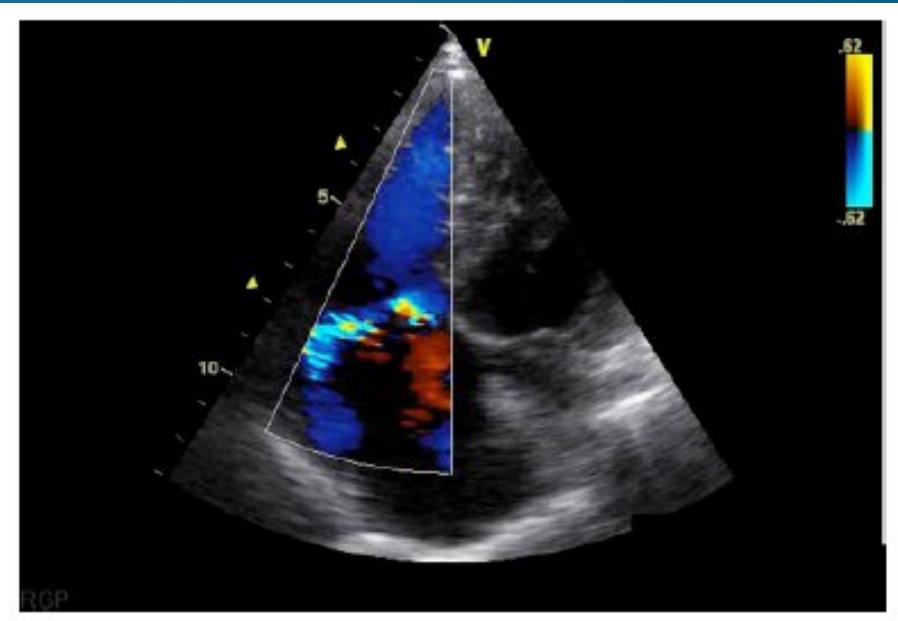
IL VENTRIColo DESTRO



L'INSUFFICIENZA TRICUSPIDALE



L'INSUFFICIENZA TRICUSPIDALE



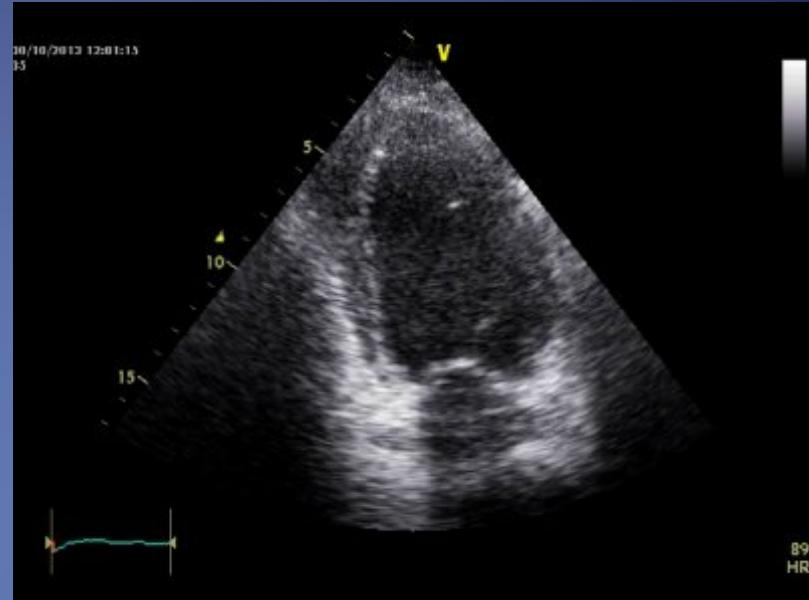
IL RIGETTO

PARAMETRI ECO PER LA DIAGNOSI DI RIGETTO ACUTO	
Criteri	Valori
Riduzione del PHT transmitralico	≥ 20 msec
Riduzione dell' IVRT V.sx	≥ 20 msec
Aumento degli spessori (SIV e PP)	≥ 4 mm
Aumento dell'ecoriflettenza	
Comparsa / Aumento del versamento pericardico	
Riduzione della FE del Vsx	≥ 10 %

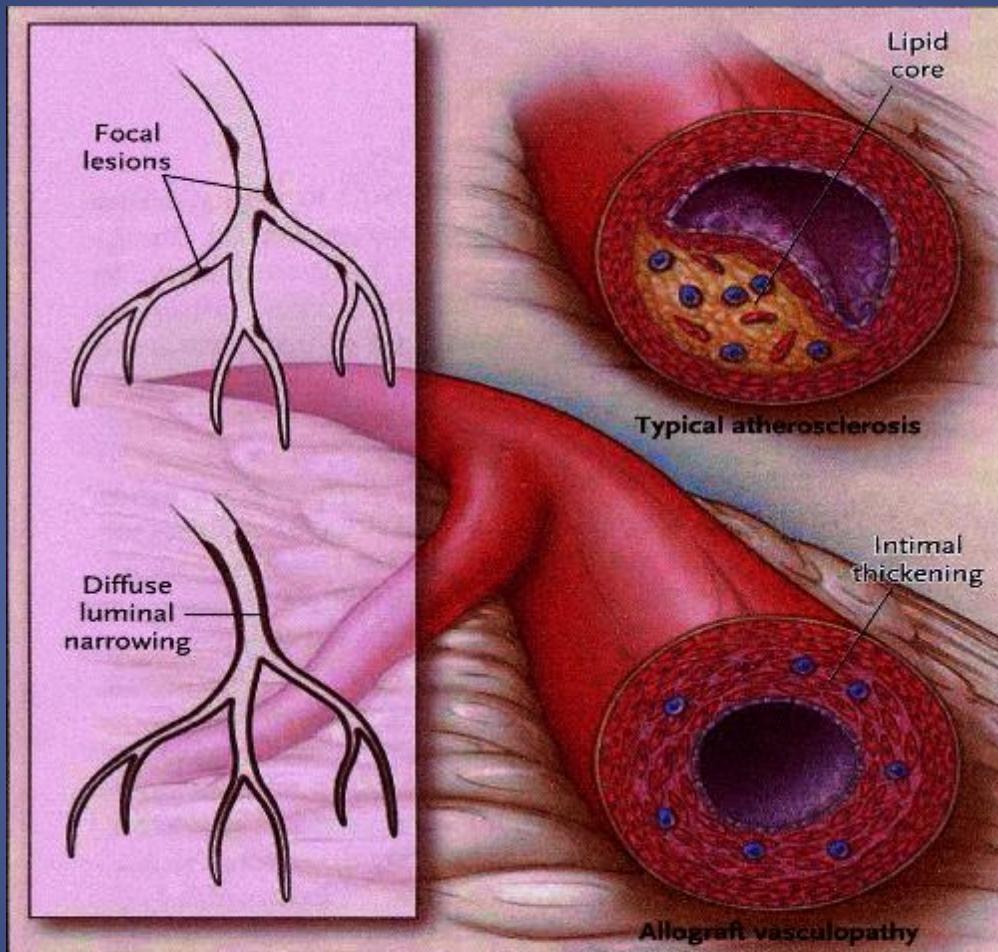
PHT = pressure half-time; IVRT = isovolumetric relaxation time; SIV = setto interventricolare; PP = parete posteriore; FE = frazione d'eiezione

La presenza contemporanea di due criteri ha un valore predittivo positivo dell'80% (da Ciliberto et al., modificato)

IL RIGETTO



LA CORONAROPATIA DEL GRAFT



Typical Atherosclerosis and Allograft Vasculopathy.

The typical atherosclerotic plaque, with its lipid core, has a focal distribution in major coronary arteries (inset). In allograft vasculopathy, with its characteristic concentric intimal thickening, there is a diffuse distribution throughout the coronary tree (inset).

FR 50Hz
19cm

M3

2D
75%
C 45
P Off
AGen



JPEG

68 bpm

LA CORONAROPATIA DEL GRAFT



Grazie per l'attenzione!

