

# PATOLOGIA VALVOLARE AORTICA: RECENTI TENDENZE TERAPEUTICHE E RUOLO DELL'ECOCARDIOGRAFIA.

Dott. Alessandro Cialfi  
U.O. Cardiologia  
Azienda Osp. "L.Sacco"  
MILANO



# RIPARAZIONE VALVOLARE

La chirurgia riparativa della valvola **mitrale** è tecnica diffusamente accettata nell'IM da degenerazione mixomatosa e seppure con "luci e ombre" nell'IM ischemica e reumatica.

La riparazione della valvola **aorta** sembrava confinata a interventi saltuari per es. IAO secondaria a dissezione aortica e a DIV con prollasso cuspidi AO dx. Negli ultimi anni alcuni centri hanno ampliato queste indicazioni coinvolgendo di conseguenza il cardiologo-ecocardiografista



# IMPORTANZA DIMENSIONI AORTA ASCENDENTE

Nel corso degli ultimi decenni si è giunti alla conclusione che le dimensioni dell'aorta ascendente, oltre all'entità del reflusso aortico, in alcune patologie (Ao bic e dilatazione della radice aortica nella S. di Marfan) possono essere un elemento rilevante nella storia clinica dei pazienti (rottura, dissezione, morte)

Anche un diametro Ao Asc di 40 mm soprattutto in soggetti con sup corporea ridotta merita attenzione.



# METODO DI STUDIO DELL'APPARATO VALVOLARE

ECOGRAFIA TRANSTORACICA

ECOGRAFIA TRANSESOFOGEEA

TAC

RNM





# Projected Cancer Risks From Computed Tomographic Scans Performed in the United States in 2007

Amy Berrington de González, DPhil; Mahadevappa Mahesh, MS, PhD; Kwang-Pyo Kim, PhD; Mythreyi Bhargavan, PhD; Rebecca Lewis, MPH; Fred Mettler, MD; Charles Land, PhD

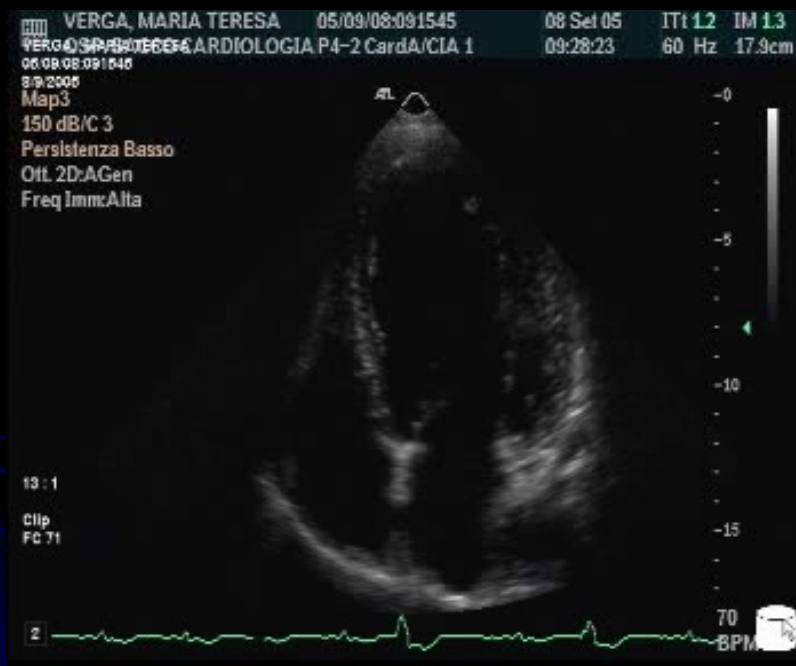
**Background:** The use of computed tomographic (CT) scans in the United States (US) has increased more than 3-fold since 1993 to approximately 70 million scans annually. Despite the great medical benefits, there is concern about the potential radiation-related cancer risk. We conducted detailed estimates of the future cancer risks from current CT scan use in the US according to age, sex, and scan type.

**Methods:** Risk models based on the National Research Council's "Biological Effects of Ionizing Radiation" report and organ-specific radiation doses derived from a national survey were used to estimate age-specific cancer risks for each scan type. These models were com-

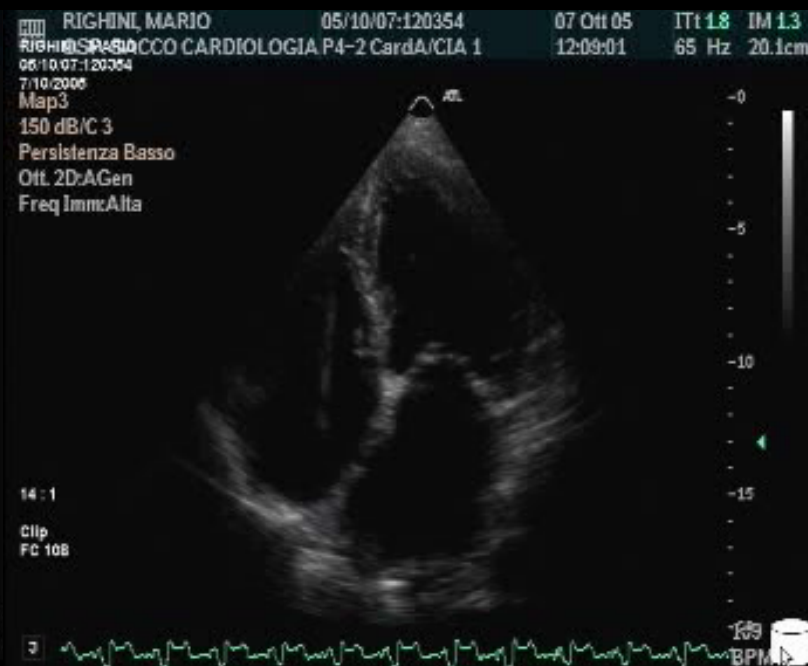
(95% UL, 15 000-45 000) future cancers could be related to CT scans performed in the US in 2007. The largest contributions were from scans of the abdomen and pelvis ( $n=14\,000$ ) (95% UL, 6900-25 000), chest ( $n=4100$ ) (95% UL, 1900-8100), and head ( $n=4000$ ) (95% UL, 1100-8700), as well as from chest CT angiography ( $n=2700$ ) (95% UL, 1300-5000). One-third of the projected cancers were due to scans performed at the ages of 35 to 54 years compared with 15% due to scans performed at ages younger than 18 years, and 66% were in females.

**Conclusions:** These detailed estimates highlight sev-

# NECESSITA' ECG !



BPV ISOLATI



TAB 2:1



# NECESSITA' ECG !



TACH SIN + BBS



# UTILIZZO ARMONICA TISSUTALE

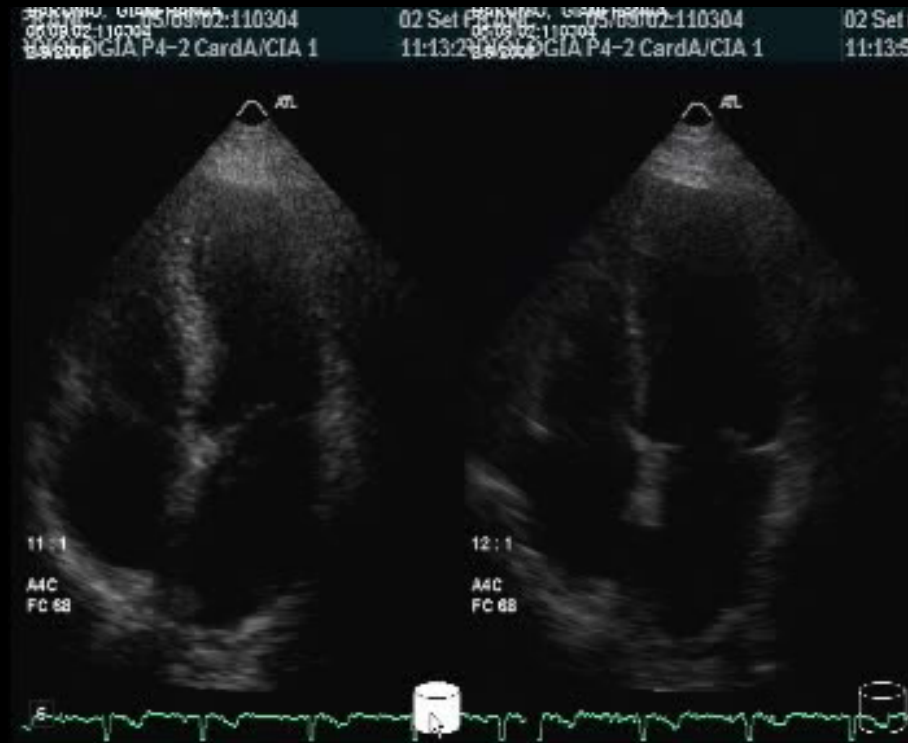


FONDAMENTALE

II ARMONICA



# OTTIMIZZAZIONE IMMAGINI



4 CAMERE AP

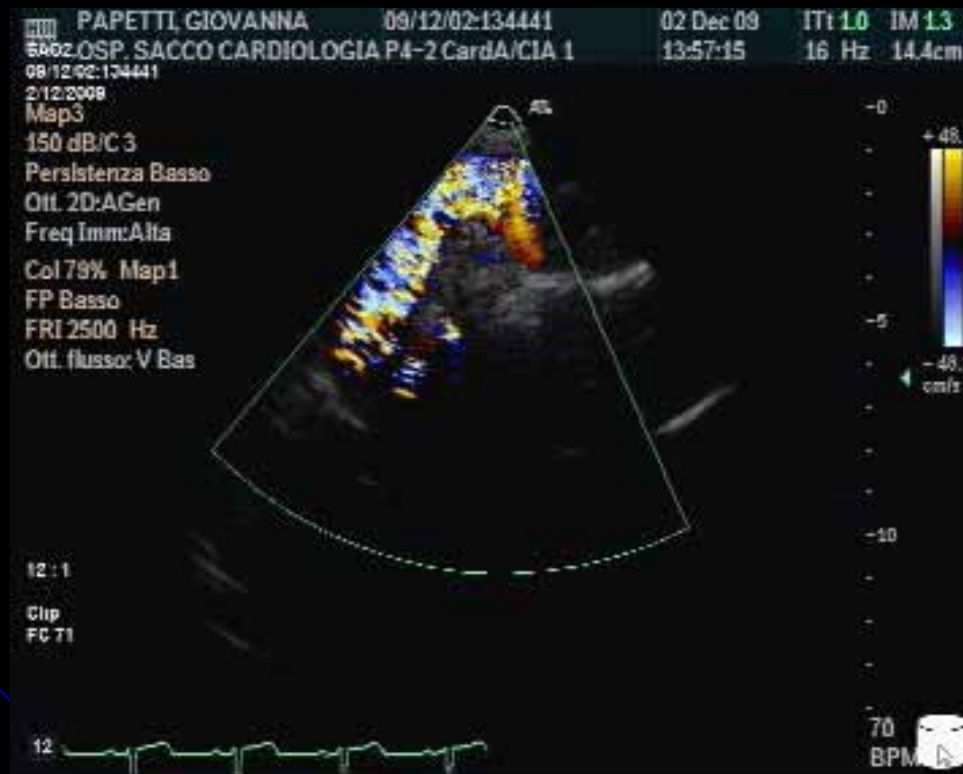


# SEZ PARASTERALI

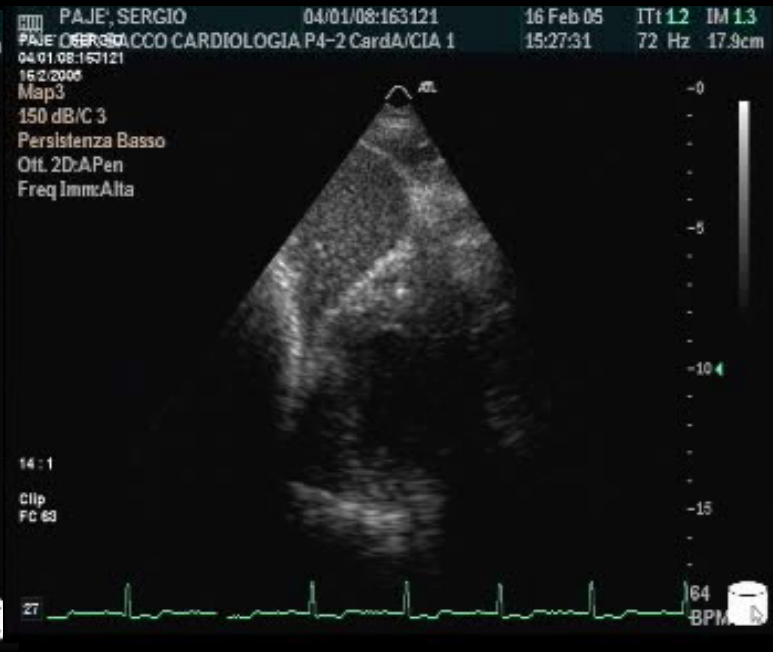




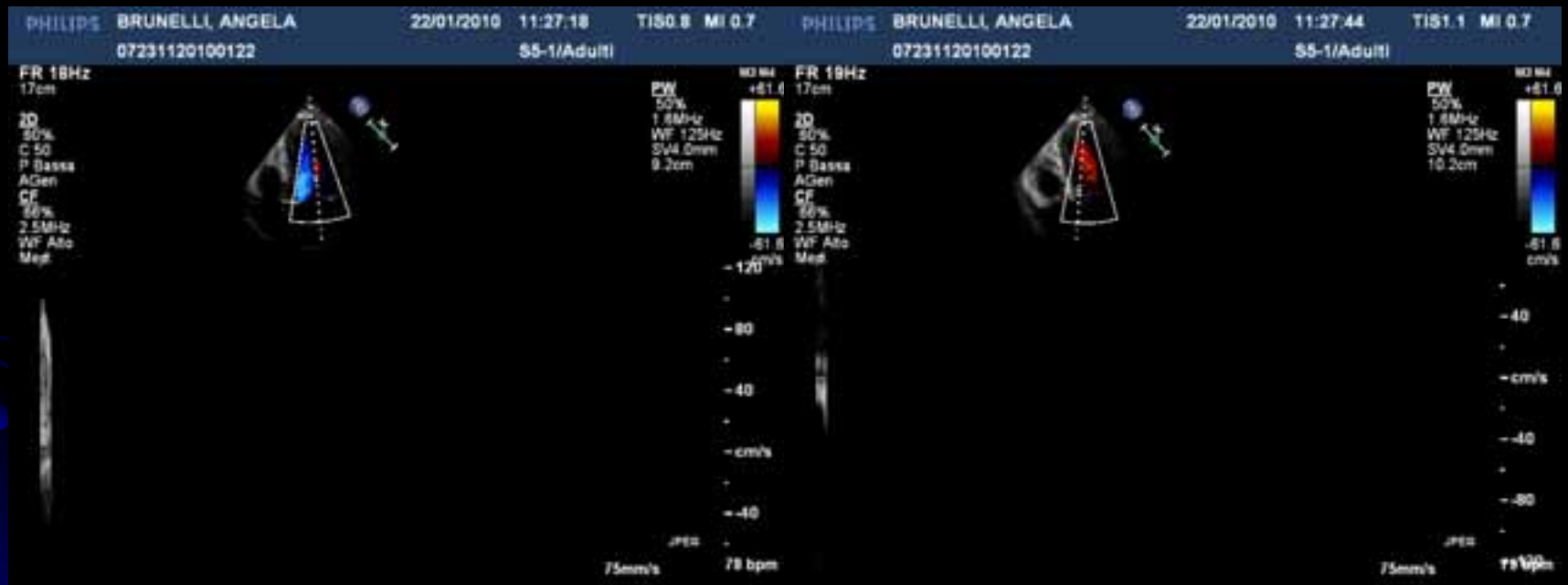
# SEZIONE SOPRASTERNALE



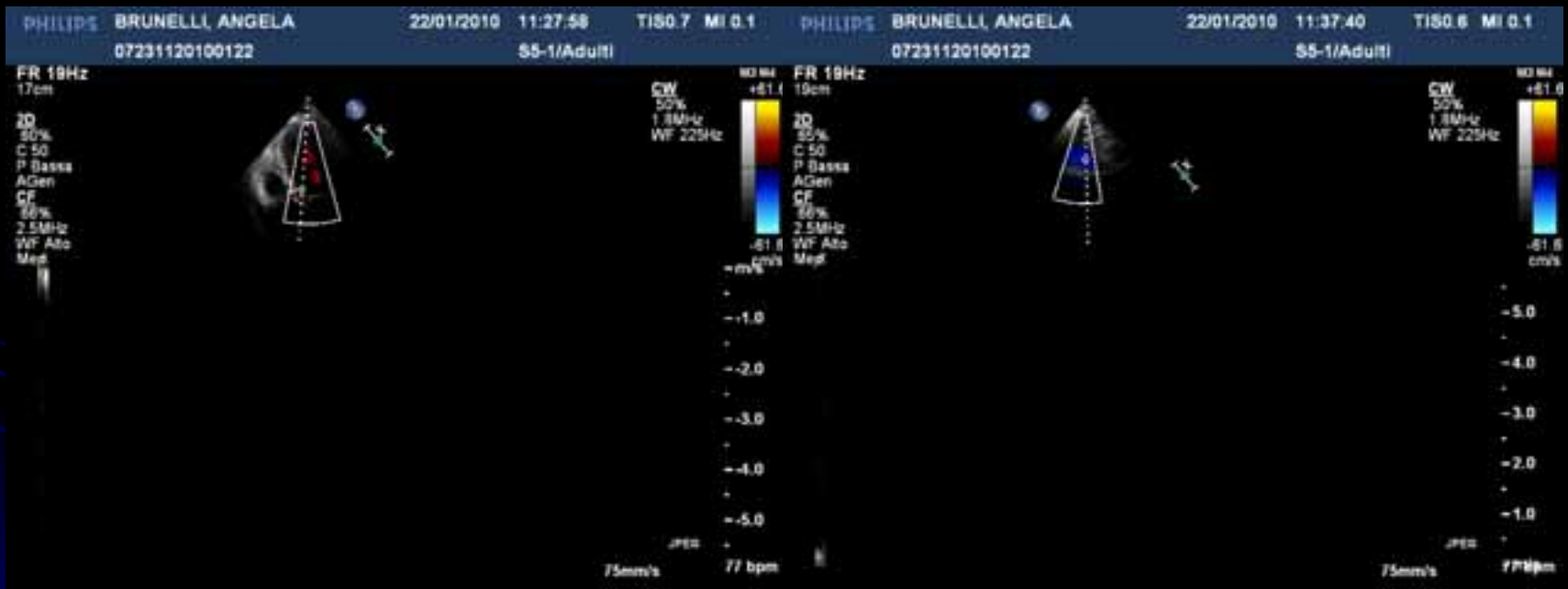
# SEZIONI SOTTOCOSTALI



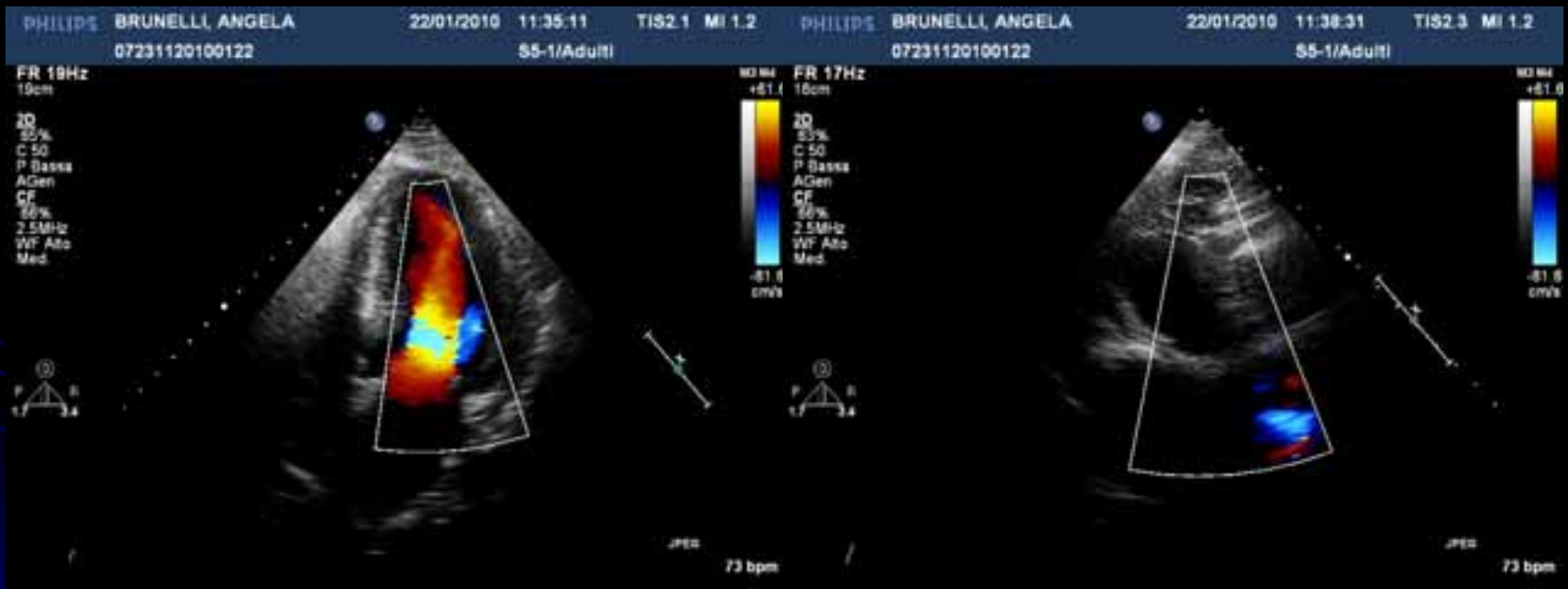
# DOPPLER PULSATO



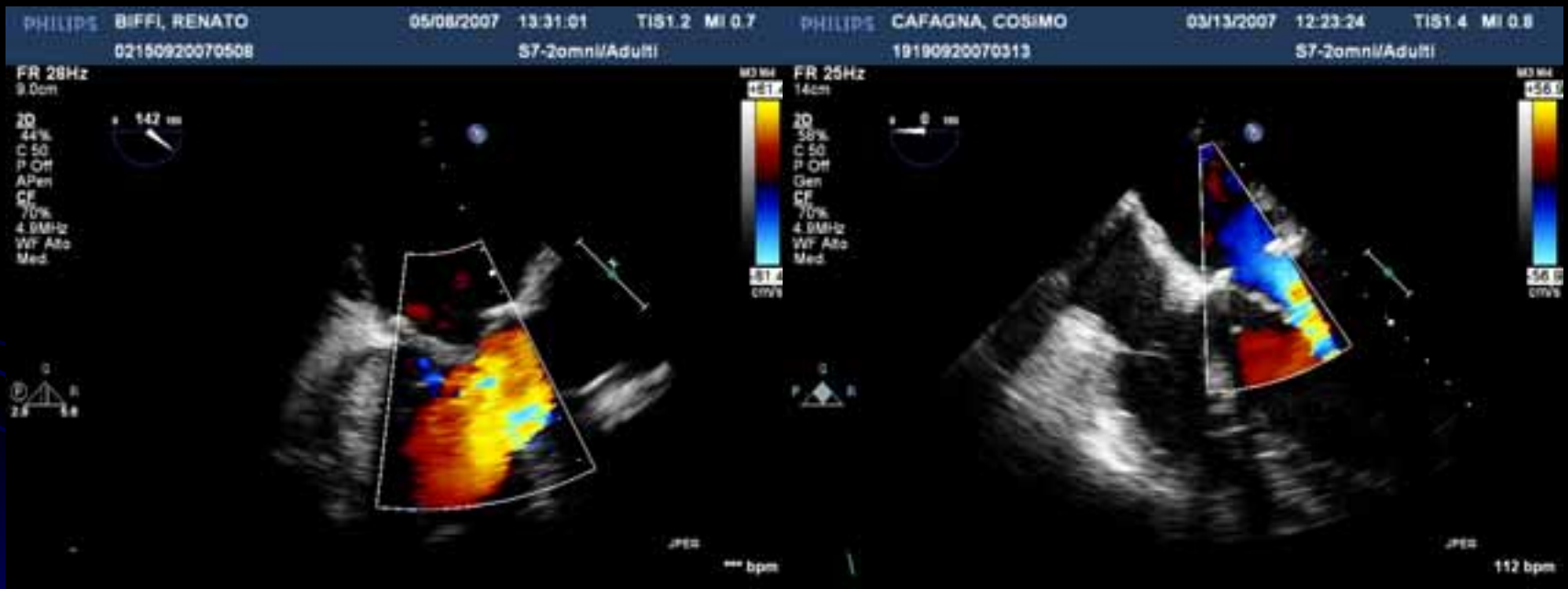
# DOPPLER ONDA CONTINUA



# COLOR DOPPLER



# COLOR DOPPLER TEE





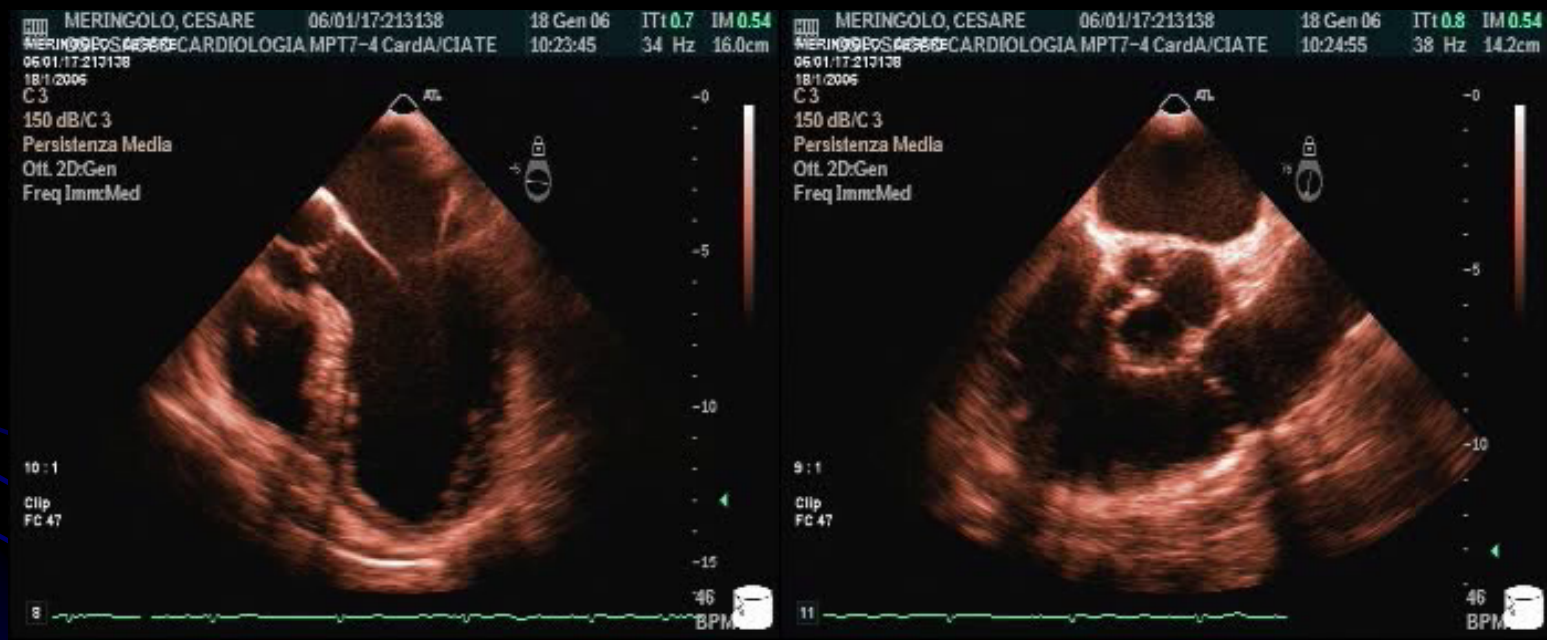
# TEE SEZ MEDIO-ESOFAGEE



# TEE SEZ MEDIO-ESOFAGEE



# TEE VS E VD



# VALUTAZIONE AORTA TEE

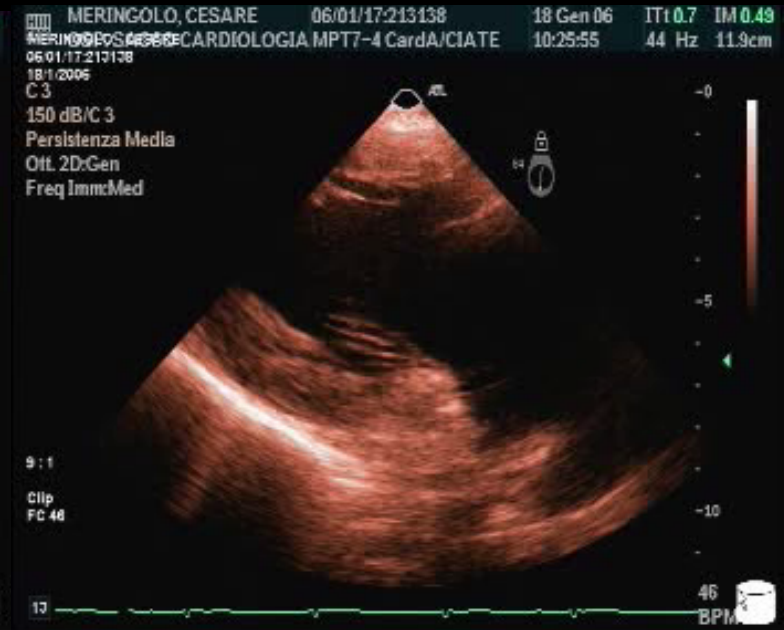


# TEE ARTERIA POLMONARE



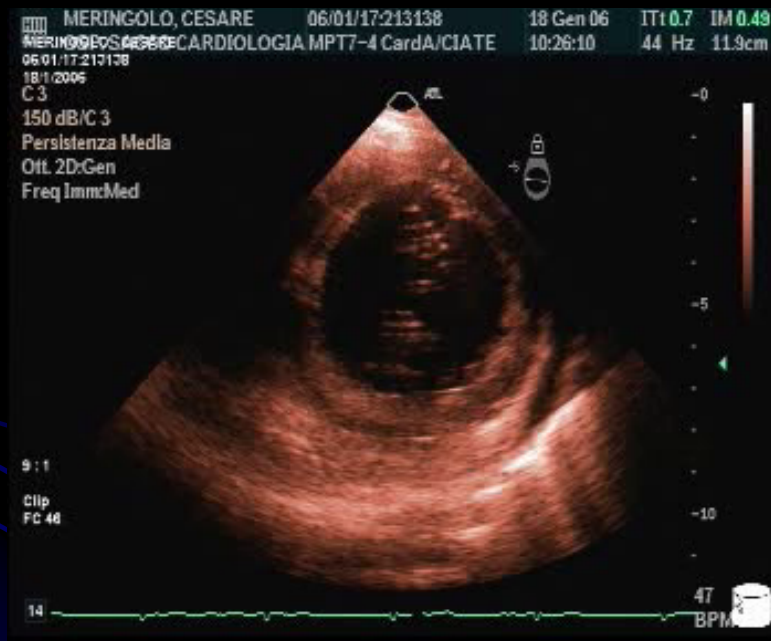


# TEE SEZ TRANSGASTRICHE

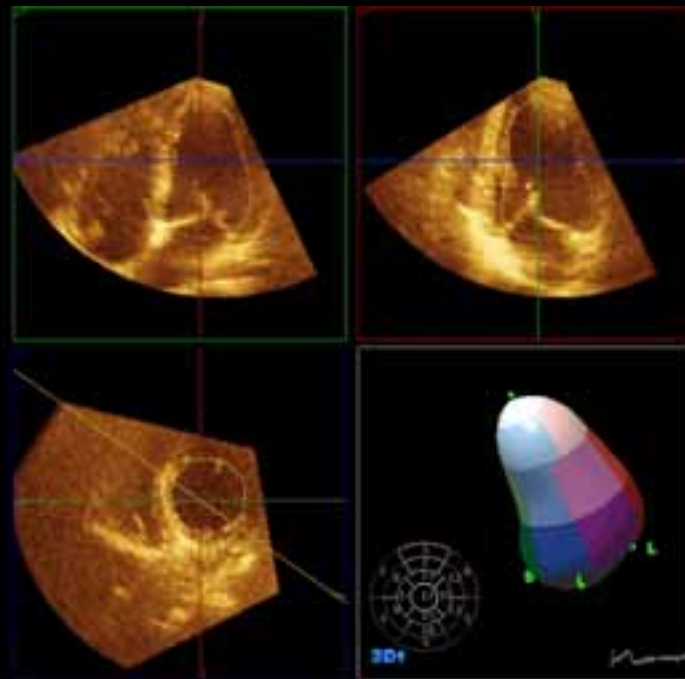




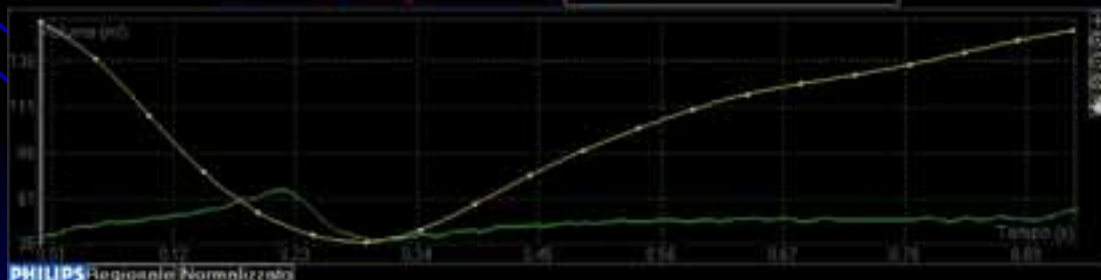
# TEE SEZ TRANSGASTRICHE



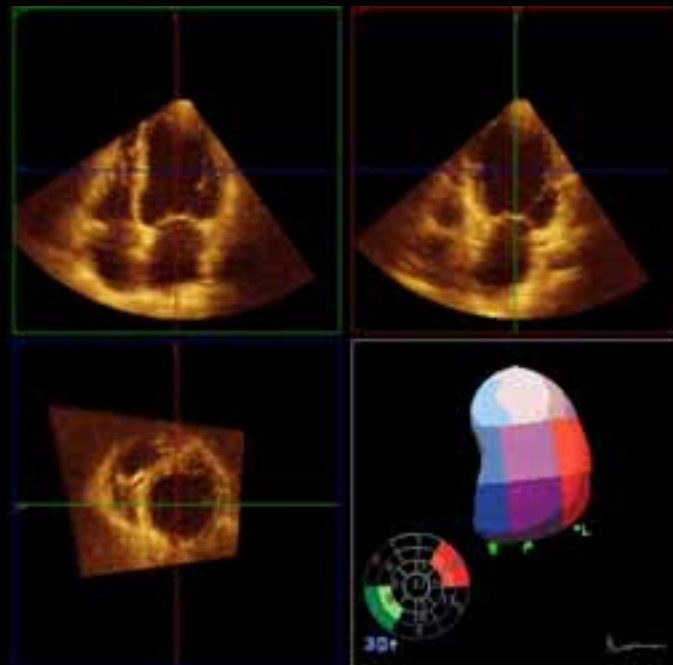
# 3D VS NORMALE



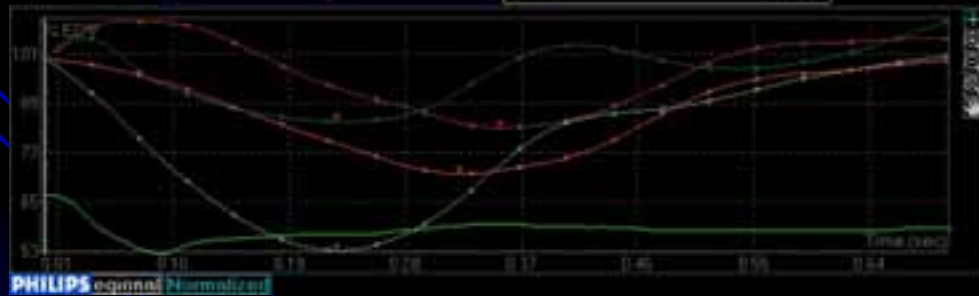
Volume	
EDV = 157.4 ml	
ESV = 37.3 ml	
Calcoli	
EF = 76.3%	
SV = 120.1 ml	
Regionale	
Tmax Sel-SD =	
Tmax Sel-DL =	
Tmax Sel-SD =	



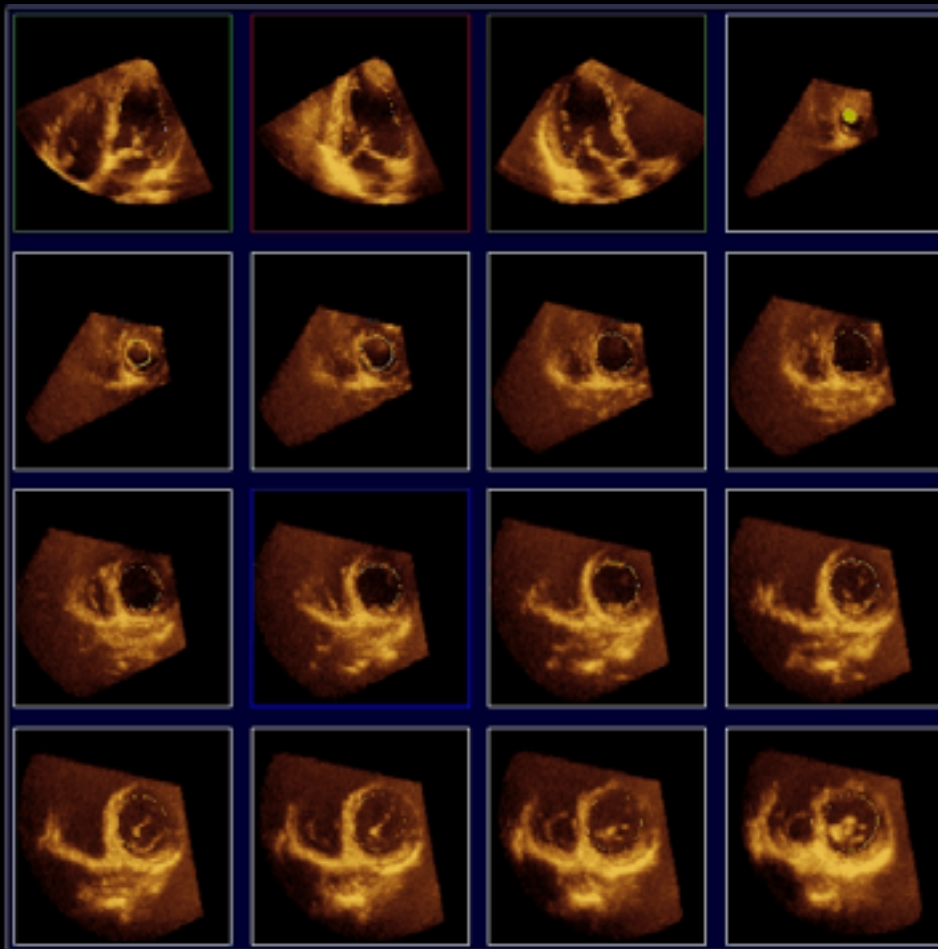
# 3D VS DISSINCRONO



Volume(s)
EDV = 181.4 ml
ESV = 100.5 ml
Calculation(s)
EF = 23.1 %
SV = 50.9 ml
Regional
Tmsv Sel-SD = 65 ms
Tmsv Sel-Ctl = 126 ms
Tmsv Sel-SD = 7.68 %



# TOMOGRAFIA VS



Volumi

EDV = 157.4 ml

ESV = 37.3 ml

Calcoli

EF = 76.3%

SV = 120.1 ml

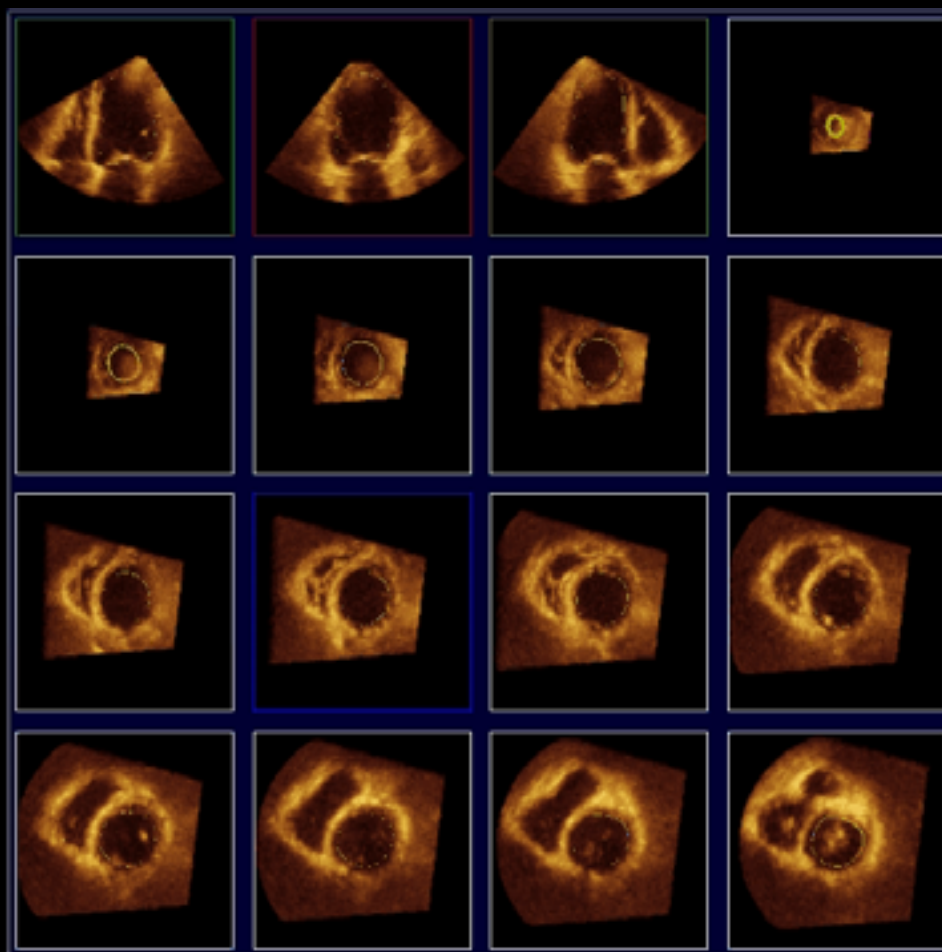
Regionale

Tmsv Sel-SD = \*\*\*\*

Tmsv Sel-Dif = \*\*\*\*

Tmsv Sel-SD = \*\*\*\*

# TOMOGRAFIA VS DISSINCRONO



Volumi  
EDV = 150.4 ml  
ESV = 111.5 ml

Calcoli  
EF = 25.9 %  
SV = 38.9 ml

Regionale  
Tmsv Sel-SD = \*\*\*\*  
Tmsv Sel-Dif = \*\*\*\*  
Tmsv Sel-SD = \*\*\*\*

# ECOGRAFIA EPICARDICA TRIDIMENSIONALE





# TEE 3D AURICOLA SX

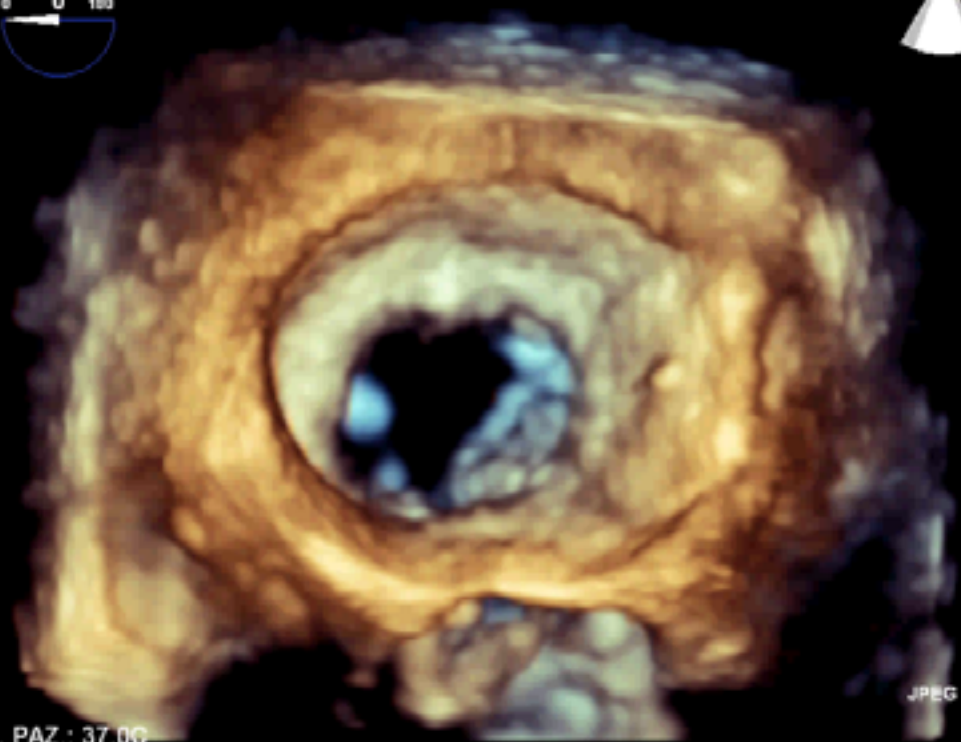
PHILIPS MANDER, GIUSEPPE  
14321020090710

10/07/2009 10:45:14 TIS0.2 MI 0.5  
CX7-2t/Adultl

FR 8Hz  
11cm

M4

Live 3D  
3D 49%  
3D 40dB  
Gen



Temp. PAZ.: 37.00  
Temp. TEE: 40.1C

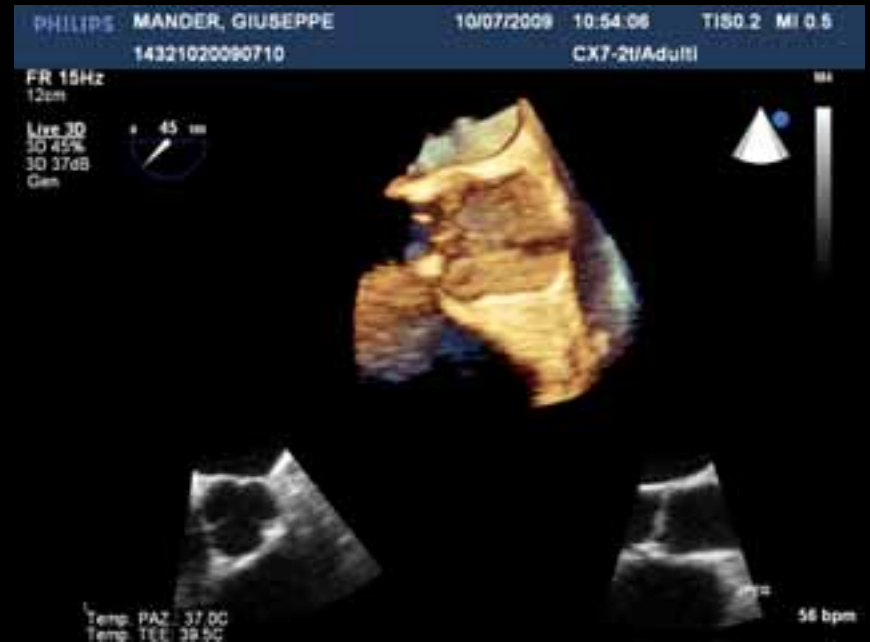
JPEG

42 bpm

# PFO 3D CHIUSURA

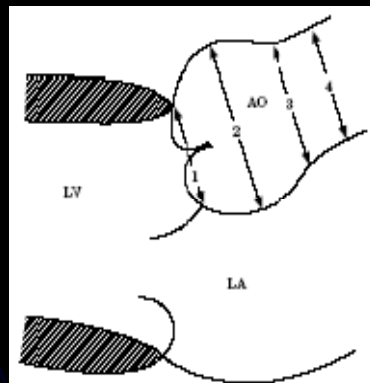


# TEE 3D AORTA

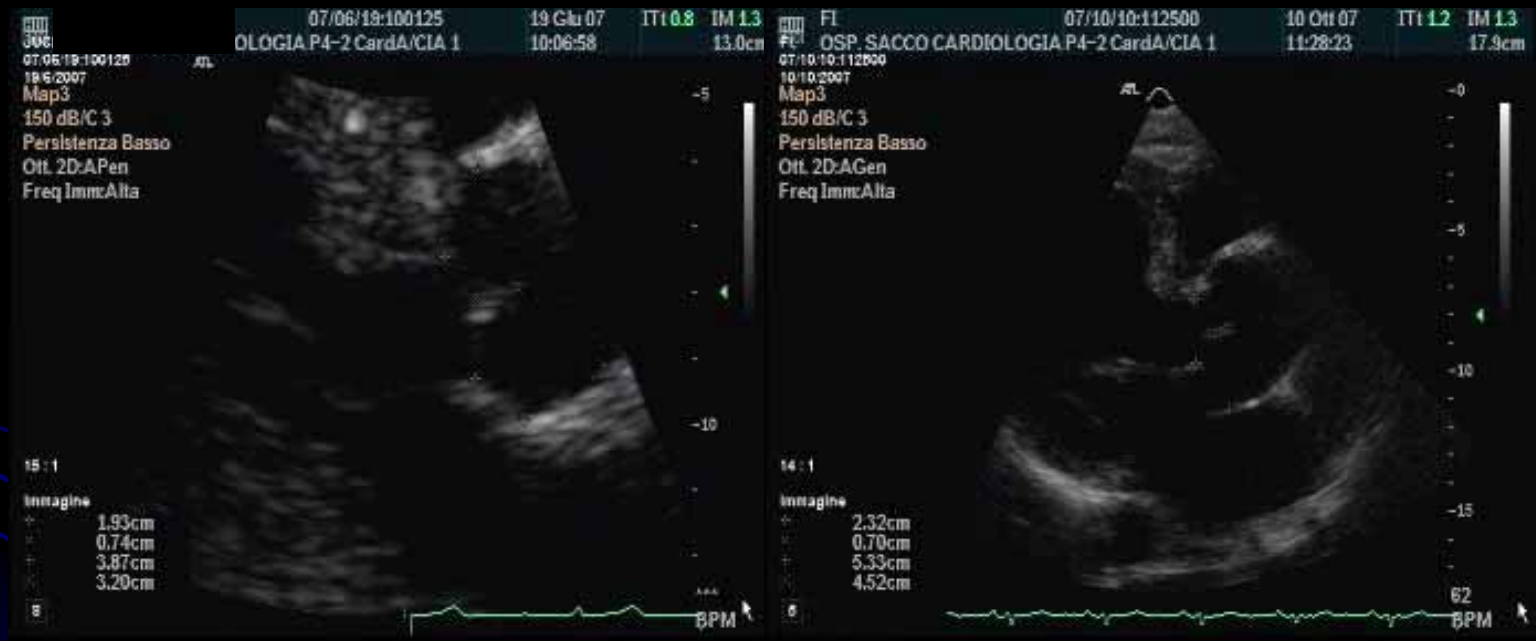


# ECOGRAFIA TRANSTORACICA

## MISURE PRICIPALI



# ECOGRAFIA: MISURE PRICIPALI



DIAM ANULUS AOR  
DIAM SENI VALSALVA  
DIAM GIUNZIONE S.TUB

DIAM MAX AO ASC  
(RAPPORTO SUP CORP)  
COAPTAZIONE LEMBI

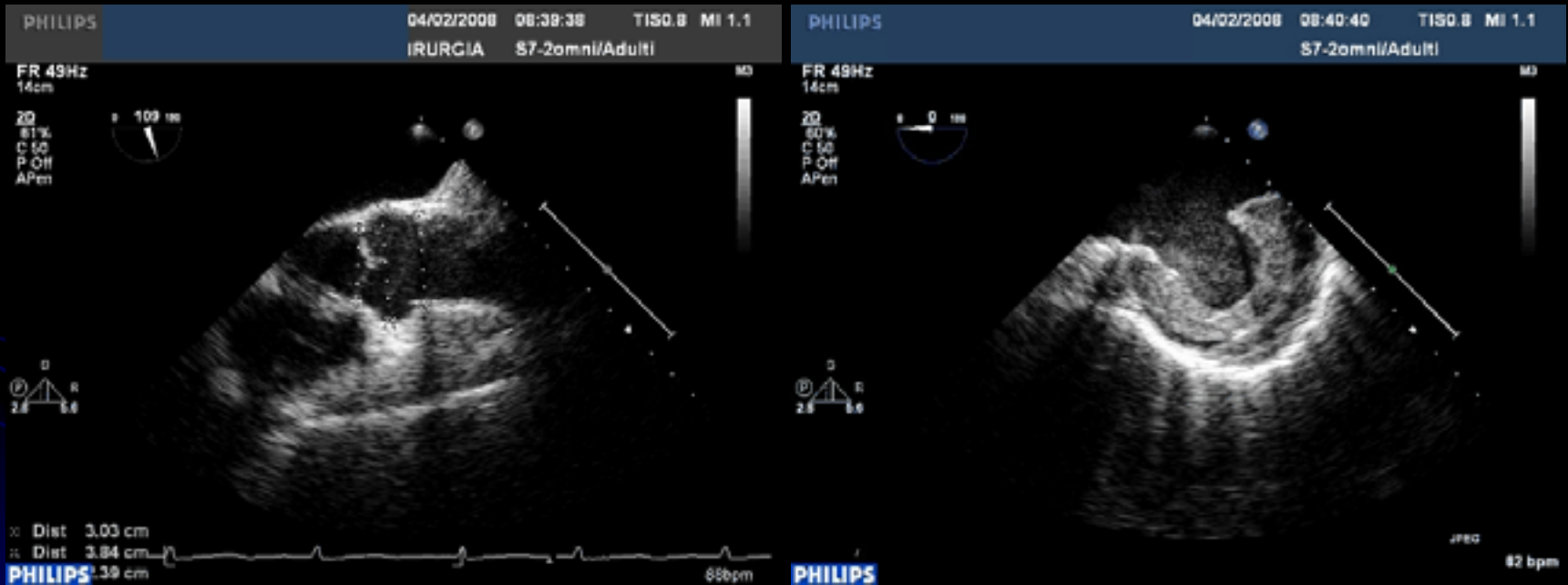


# LIMITI DELLO STUDIO ARCO AORTICO MEDIANTE ECO TTE





# LIMITI DELLO STUDIO ARCO AORTICO MEDIANTE ECO TTE





# RICONOSCIMENTO V BICUSPIDE

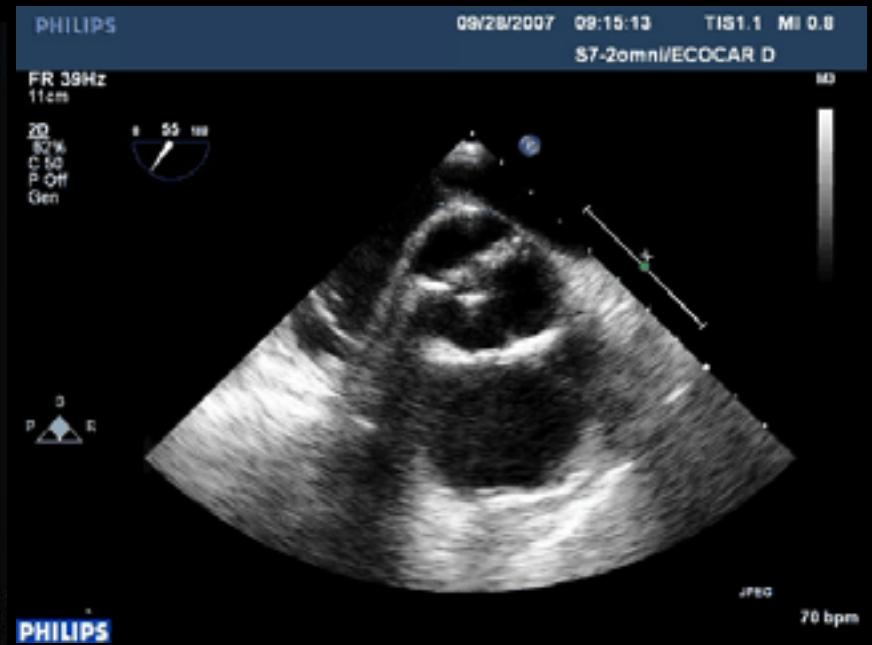
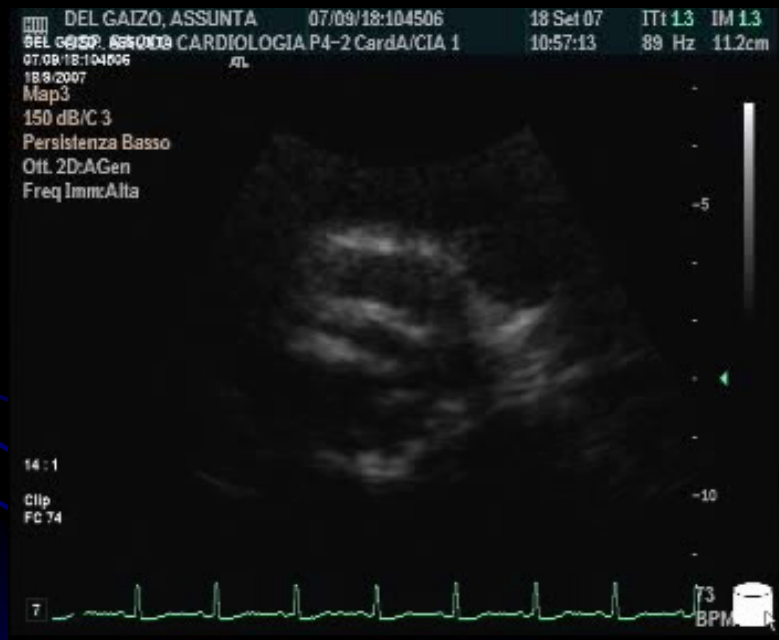
TTE: V BICUSPIDE?



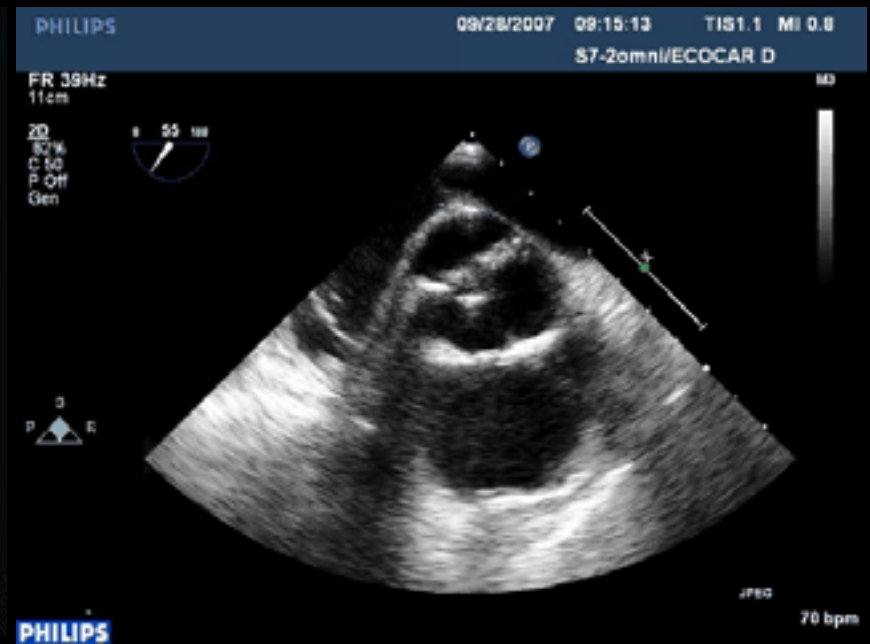
←  
T  
E  
E  
B  
I  
C  
+  
R  
A  
F  
E



# RICONOSCIMENTO V BICUSPIDE



# RICONOSCIMENTO V BICUSPIDE



# VALVOLA AO BICUSPIDE



VALVOLA AO BIC

RIPARAZIONE





# VALVOLA AO BICUSPIDE



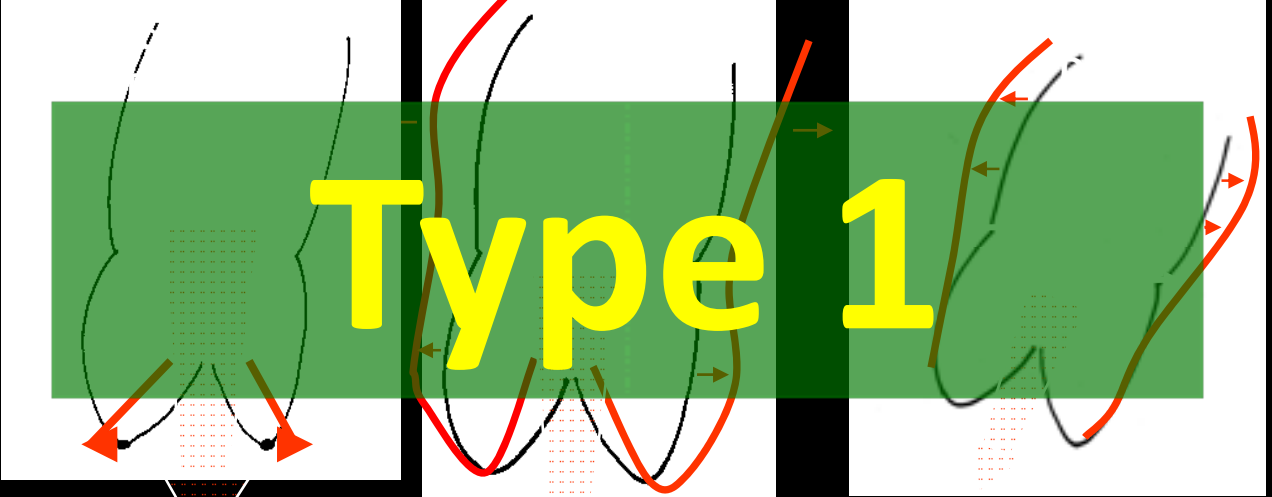
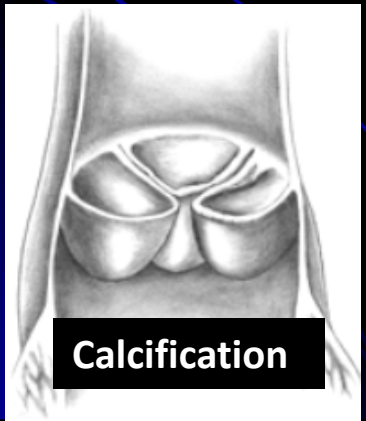
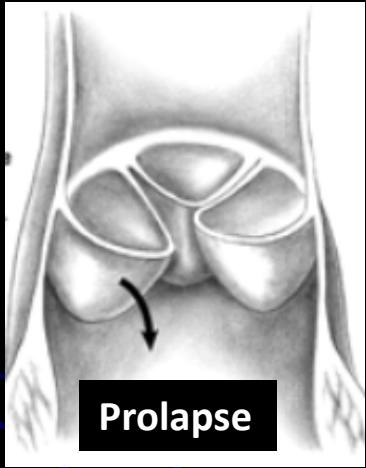
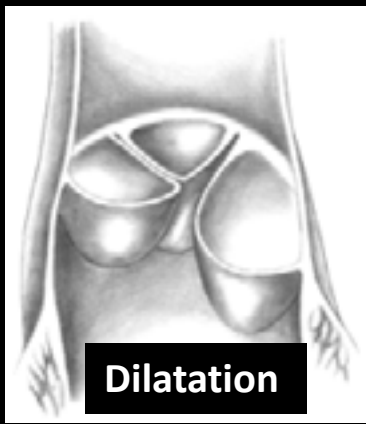
BASALE

RIPARAZIONE

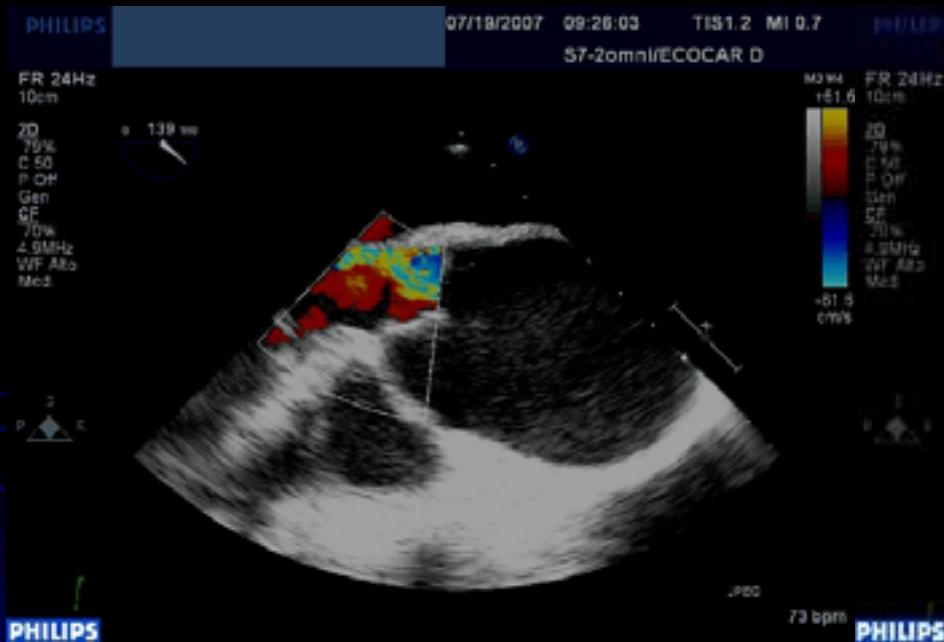


Aortic Valve

Disease



# MORFOLOGIA LEMBI, ORIGINE DEL JET

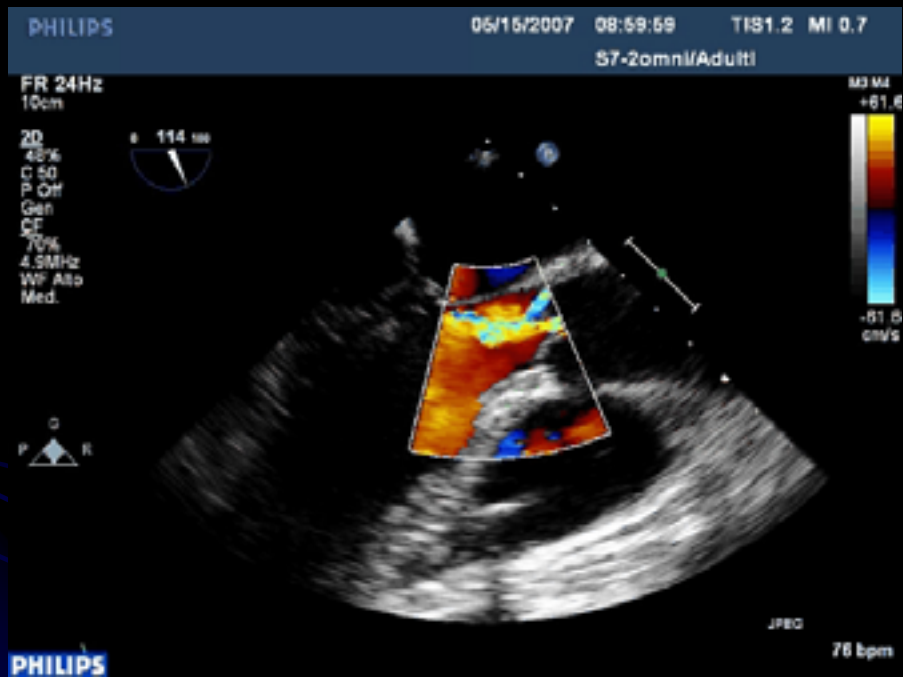


JET ECCENTRICO  
DIRETTO VERSO LAM  
COAPT 3-4 MM



VALVOLA TRICUSPIDE CON  
JET CENTRALE

# ORIGINE JET REFLUSSO AORTICO



←  
B  
A  
S

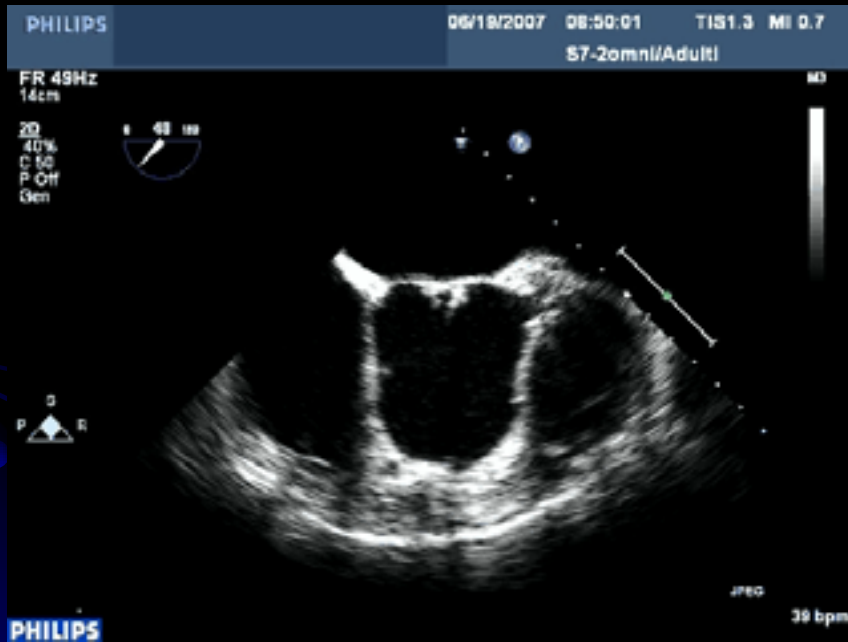


←  
R  
I  
P

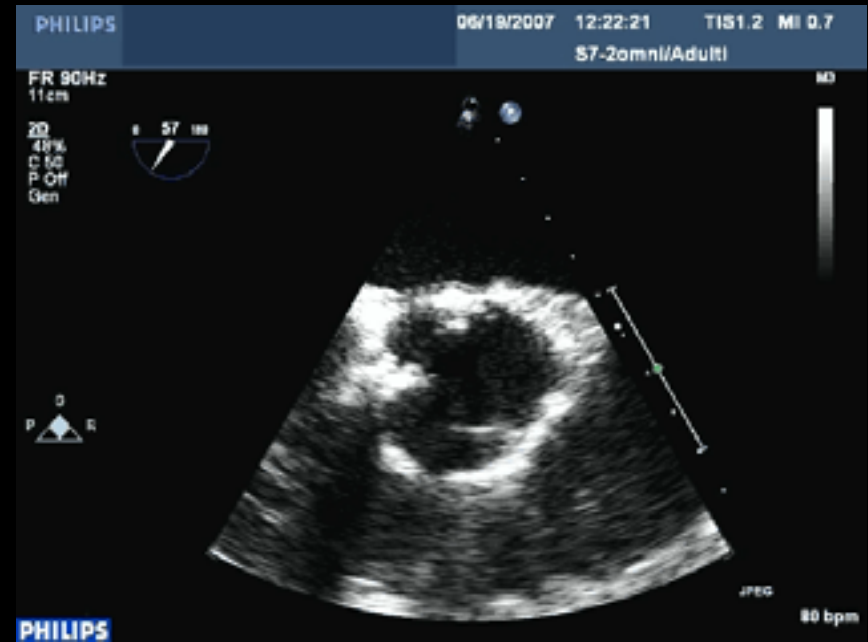
BASALE



# ASIMMETRIA SENI VALSALVA



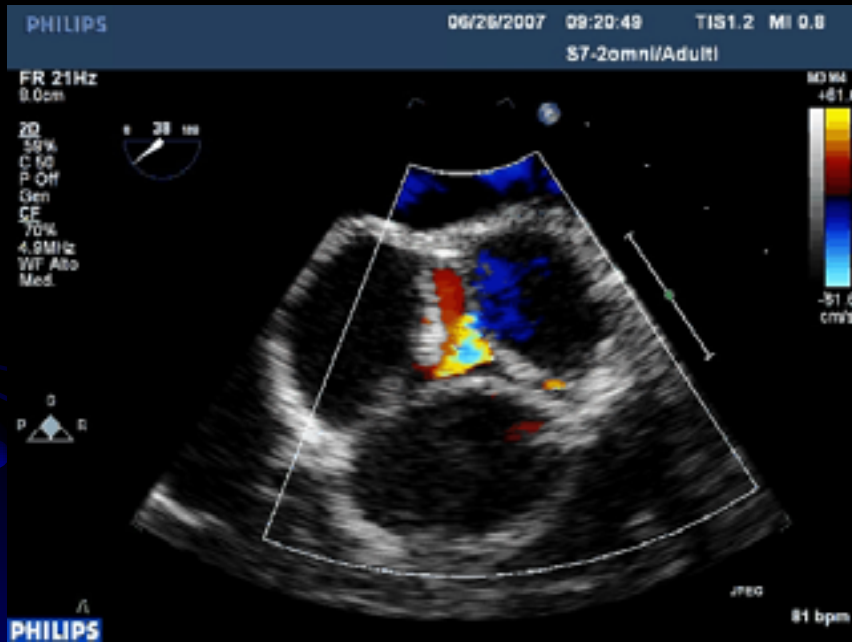
PRE RIP



RIPARAZIONE

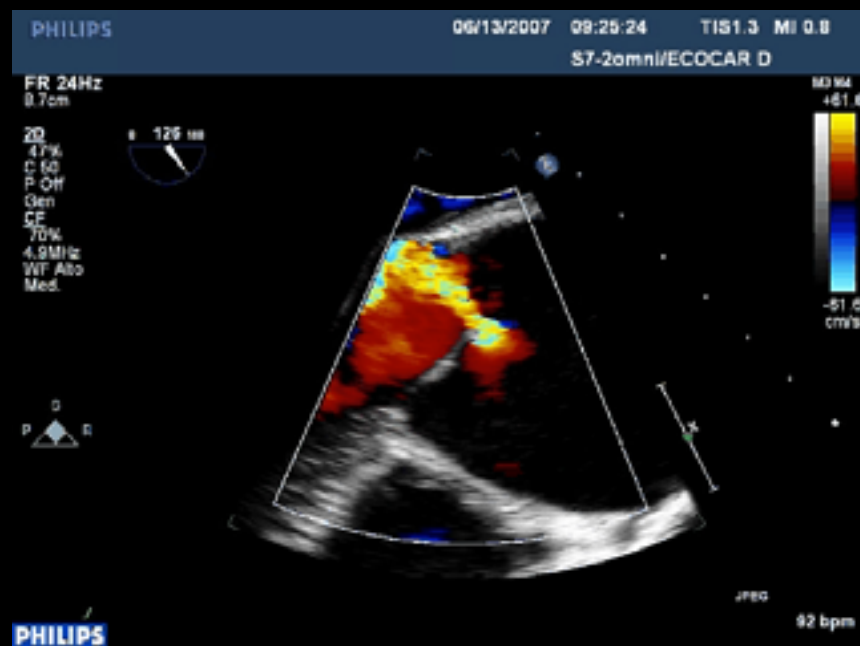
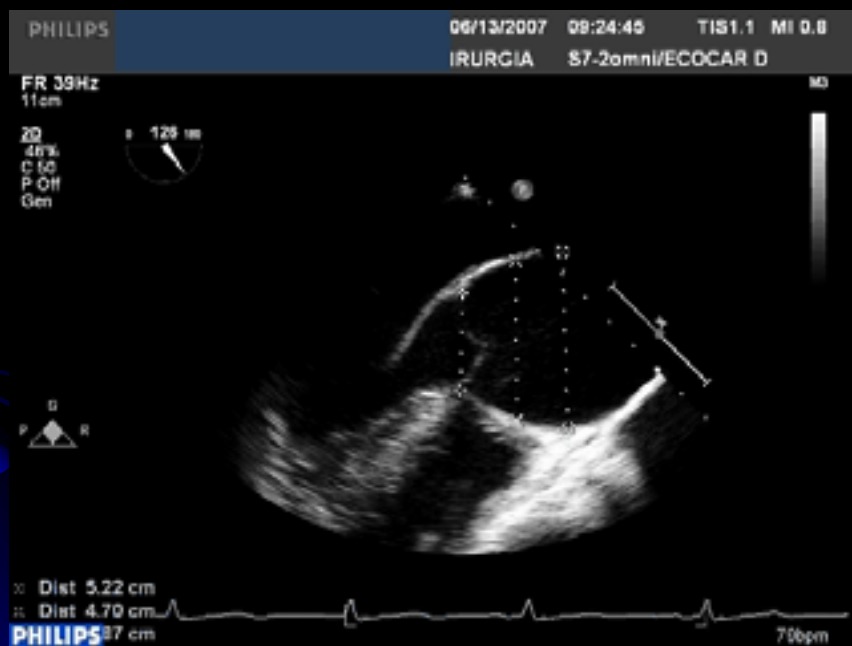


# ASIMMETRIA SENI VALSALVA

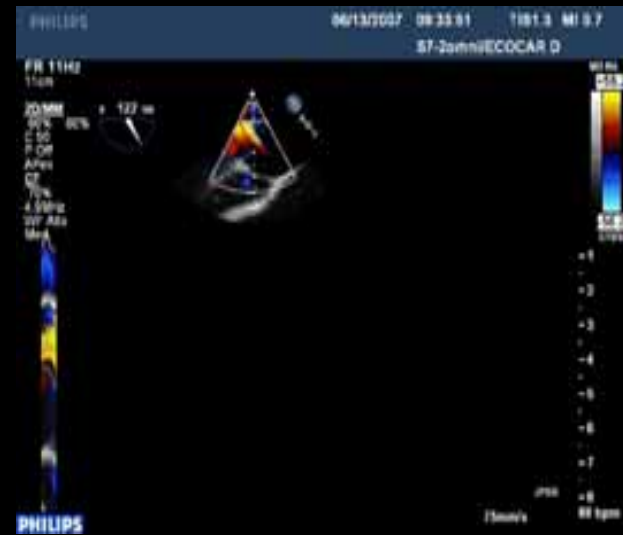
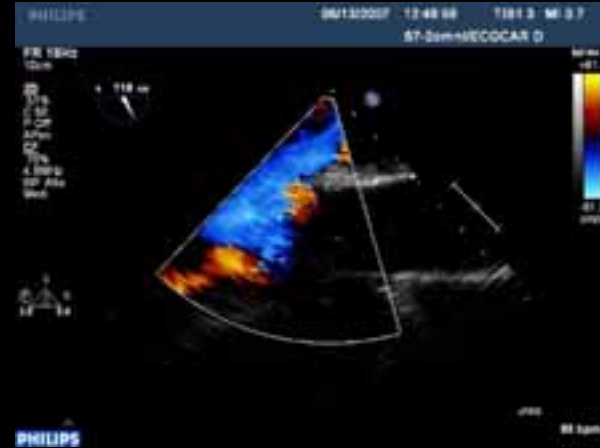




# DILATAZIONE BULBO AORTICO



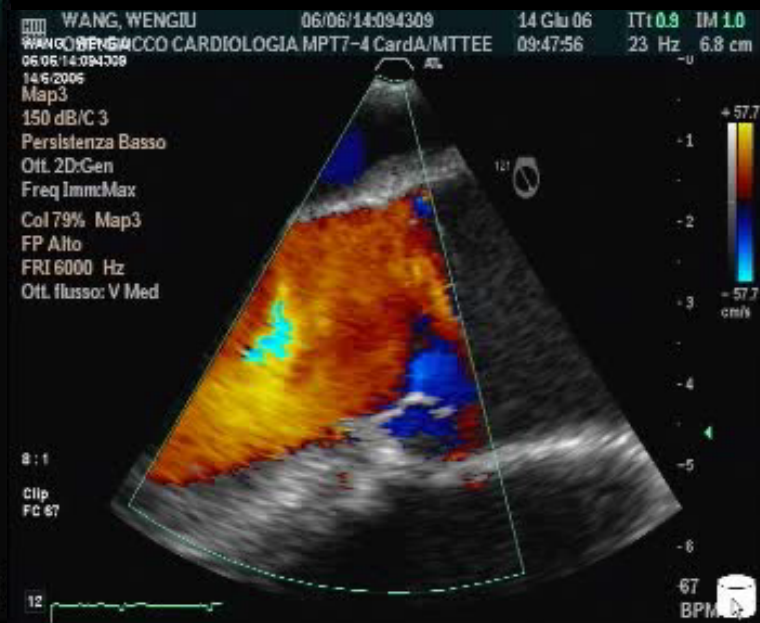
# RICOSTRUZIONE



B  
A  
S



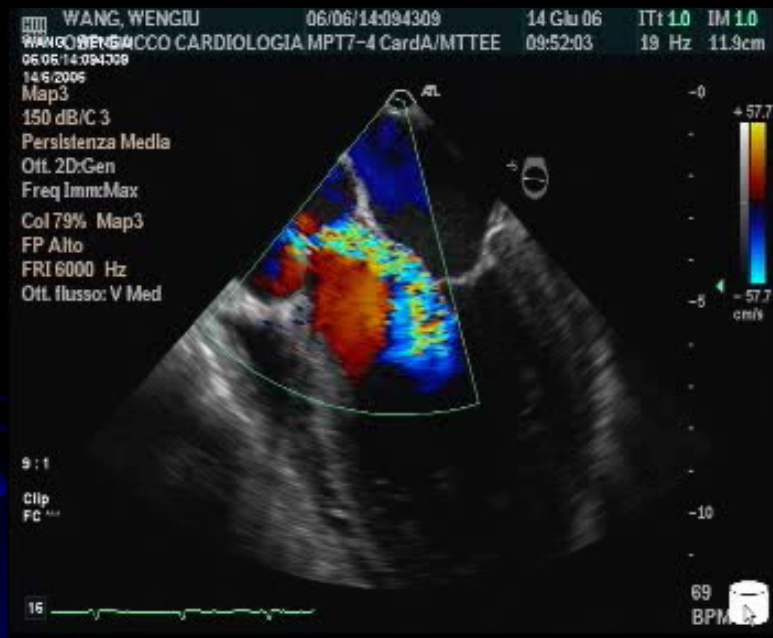
# PROLASSO LEMBO V AORTA



ZOOM TRATTO EFFLUSSO  
E VALVOLA



# RIPARAZIONE PROLASSO AORTICA



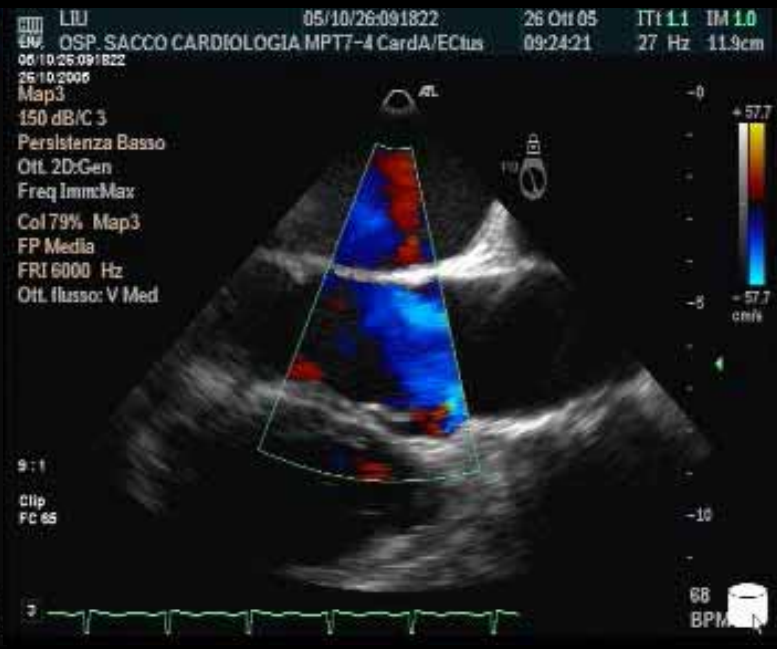
BASALE



RIPARAZIONE



# PROLASSO LEMBO V AORTA



# CASO CLINICO: V BICUSPIDE + IAO

Paziente 52 anni, classe NYHA II

Valvola aorta bicuspidica con jet centrale

basale

riparazione

Anulus 26 mm 23 mm

Seni Valsalva 44 mm 35 mm

• Coptazione 4 mm 9 mm

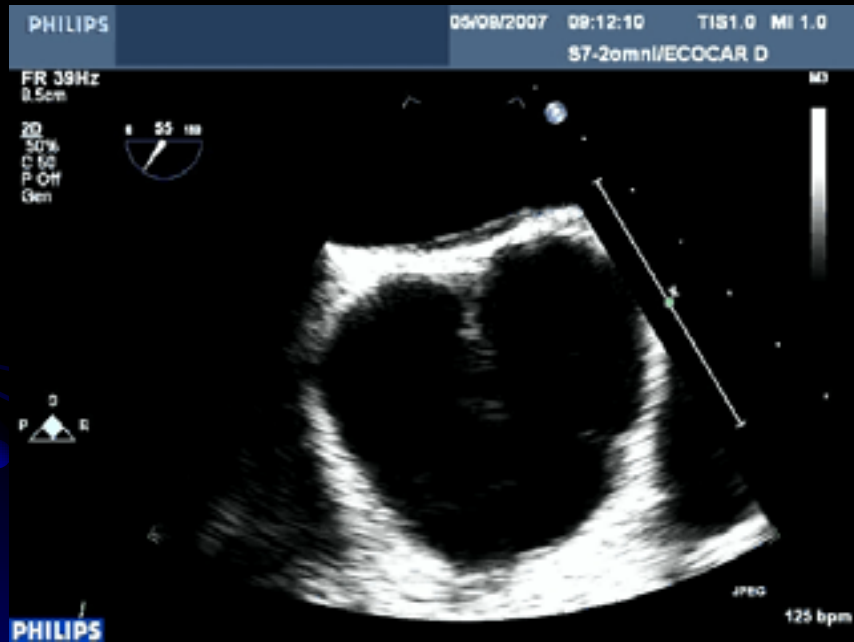
Giunzione 50 mm prot tubulare

Reflusso aortico 3+/4+ 0

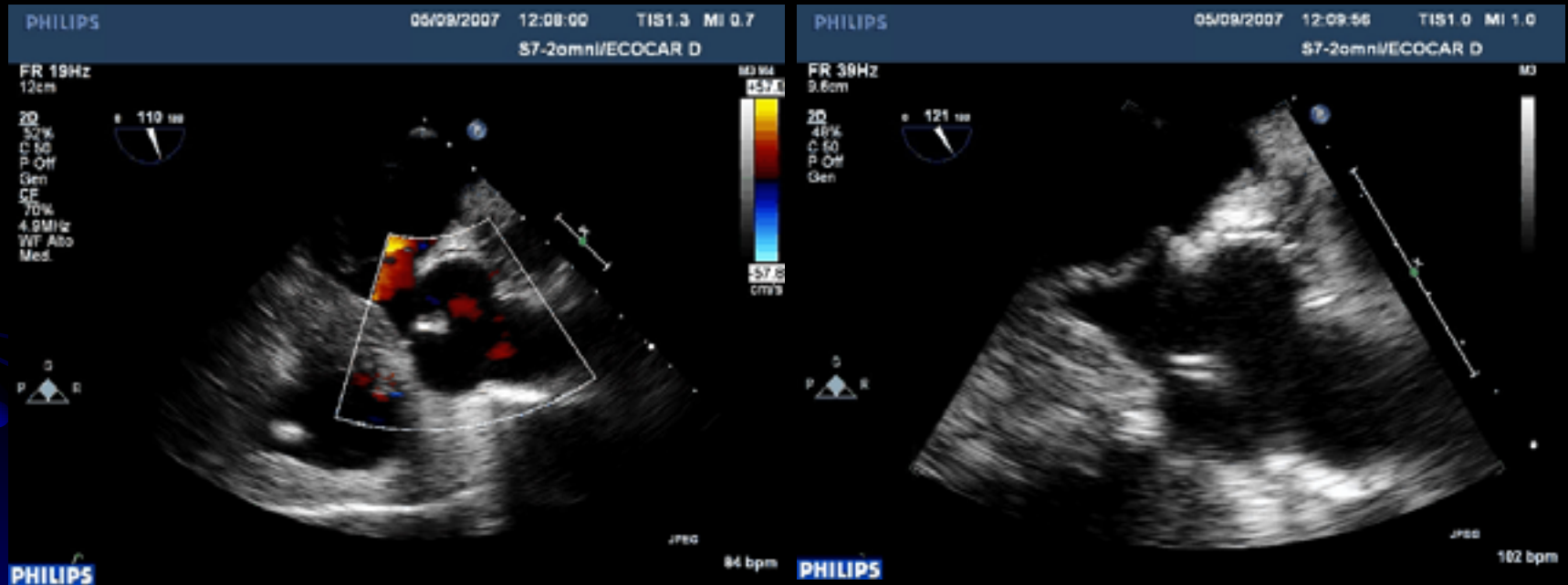




# V AO BICUSPIDE + IAO



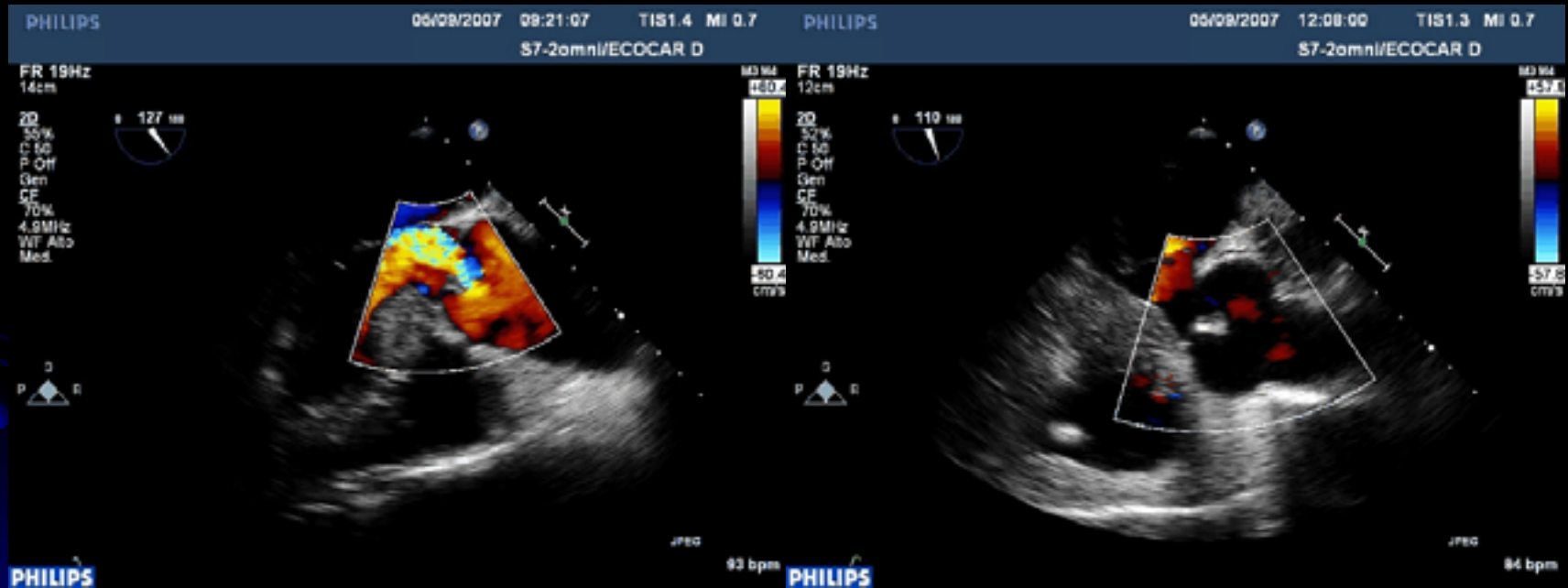
# RIPARAZIONE



# CONFRONTO REFLUSSO AORTICO

BASALE

RIPARAZIONE



# CASO CLINICO: IAO + IM

Paziente 71 anni, classe NYHA II

Valvola aortica tricuspidale con jet centrale

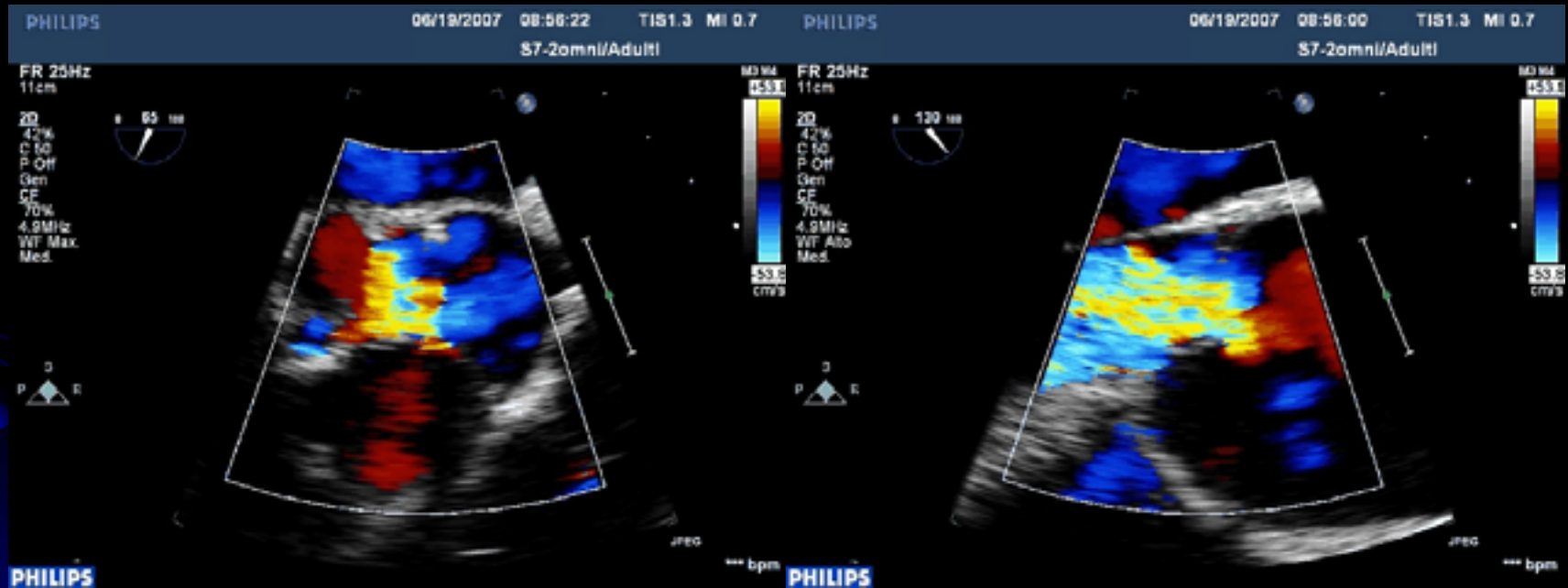
DDVS 72 mm, VTD 210 ml, FE 35%

	basale	riparazione
Anulus	28 mm	23 mm
Seni Valsalva	50 mm	36 mm
Coptazione	5 mm	9 mm
Giunzione	50 mm	prot tubulare
Reflusso aortico	3+/4+	1



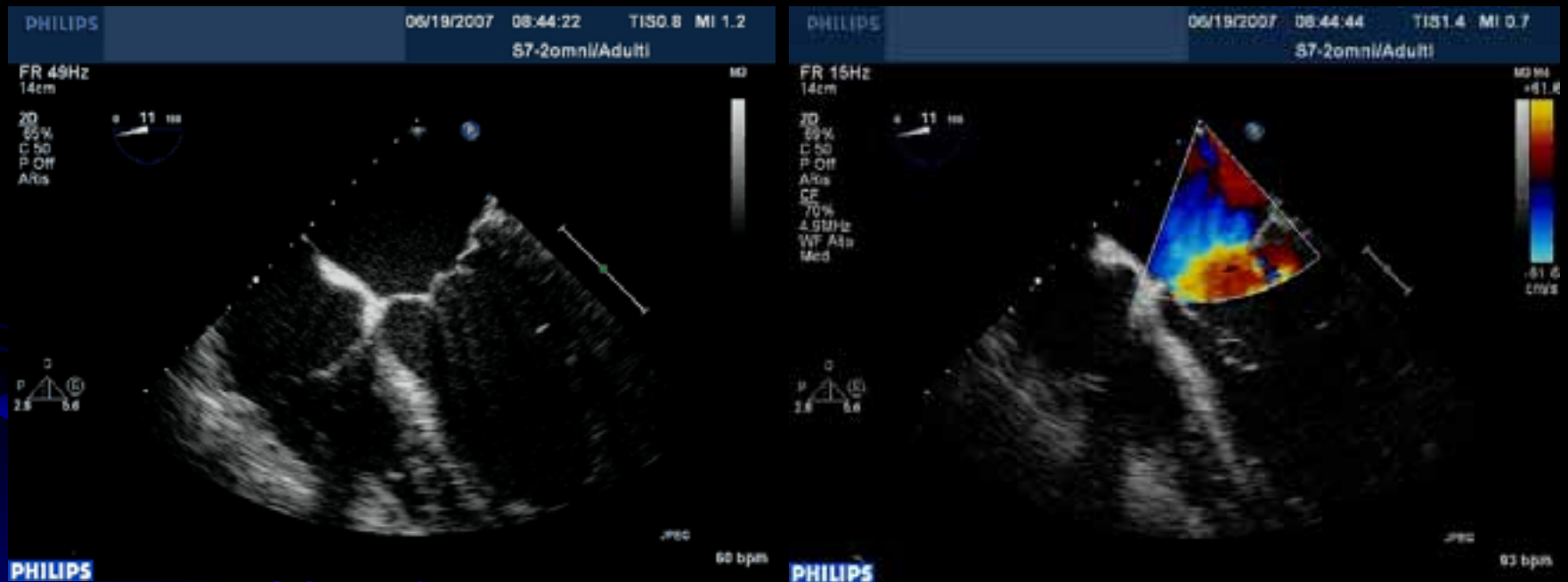
# VALVOLA AORTA TRICUSPIDE + REFLUSSO MITRALICO

## REFLUSSO AORTICO



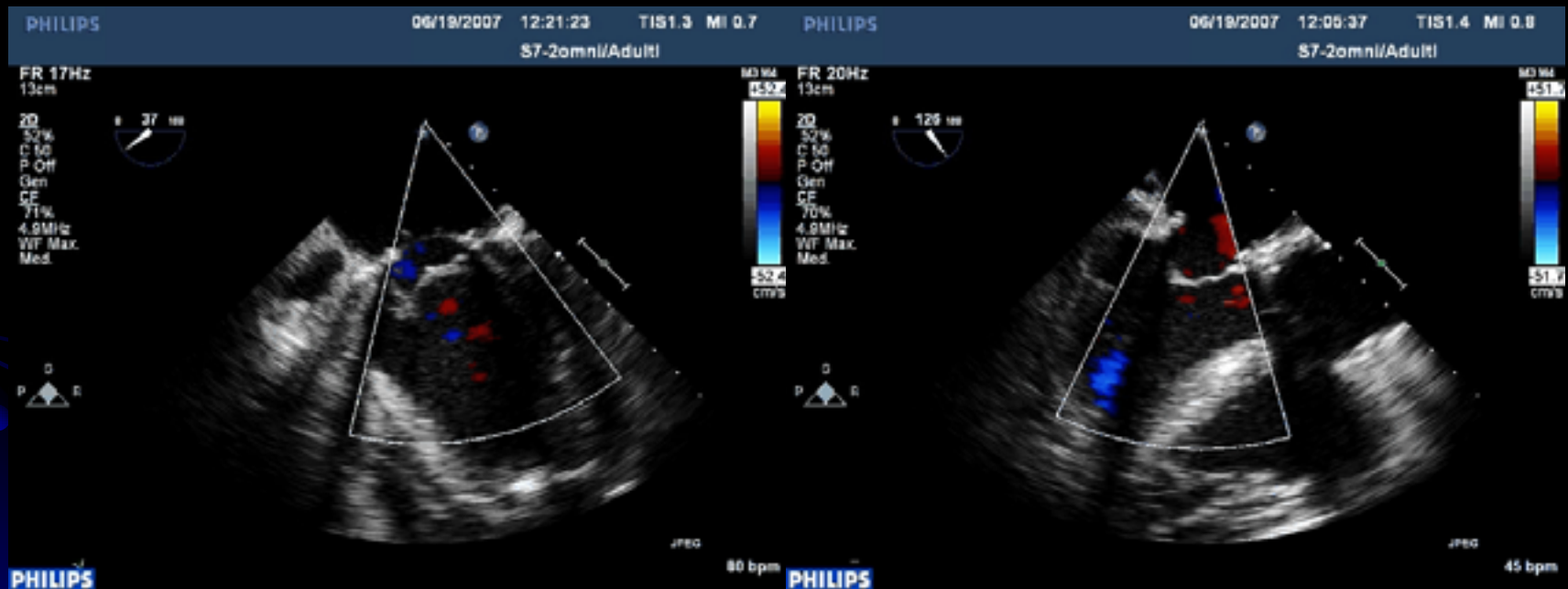
# VALVOLA AORTA TRICUSPIDE + REFLUSSO MITRALICO

## REFLUSSO MITRALICO





# RIPARAZIONE AORTICA E MITRALICA



# CASO CLINICO: IAO SECONDARIA A DISSECAZIONE

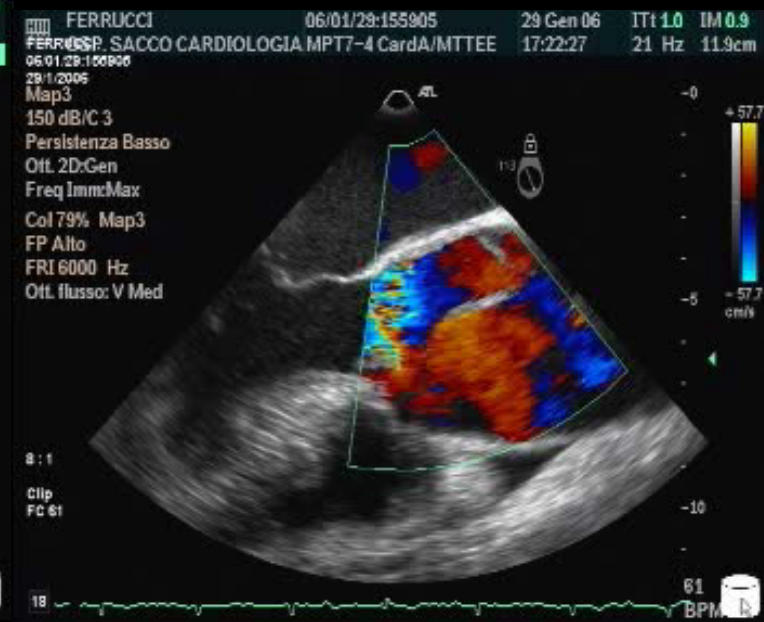
Paz. 42 anni, Valvola aorta tricuspidale con  
reflusso secondario alla dissezione

DDVS 60 mm, VTD 145 ml, FE 65%

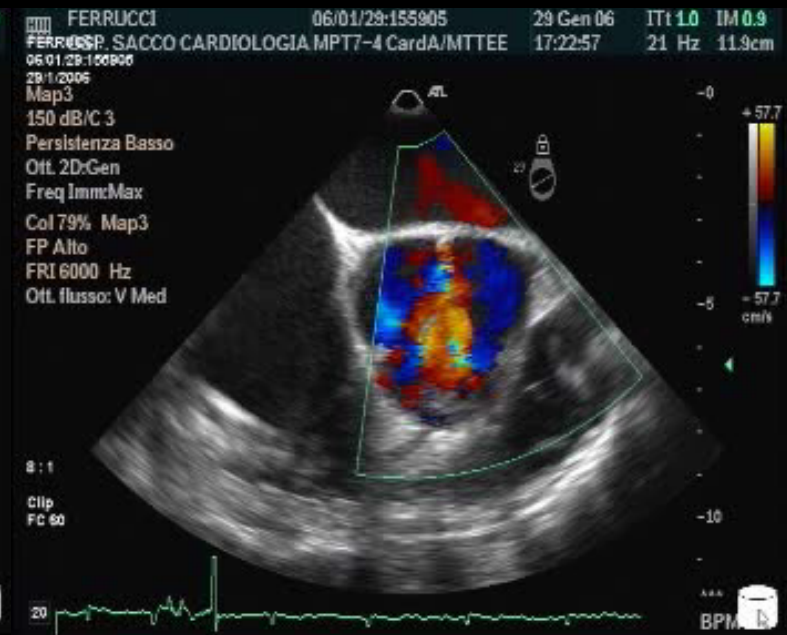
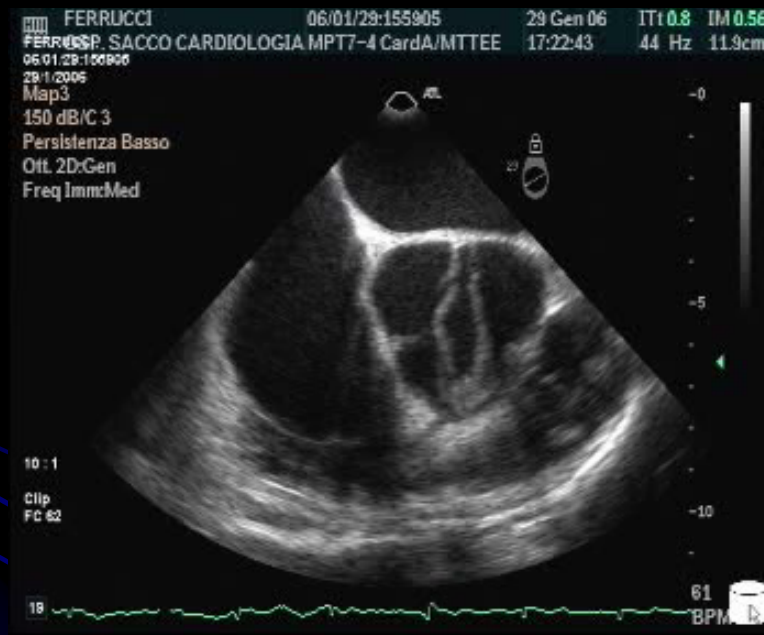
	basale	riparazione
Anulus	28 mm	23 mm
Seni Valsalva	58 mm	36 mm
Coptazione	0 mm	9 mm
Giunzione	60 mm	prot tubulare
Reflusso aortico	4+/4+	1



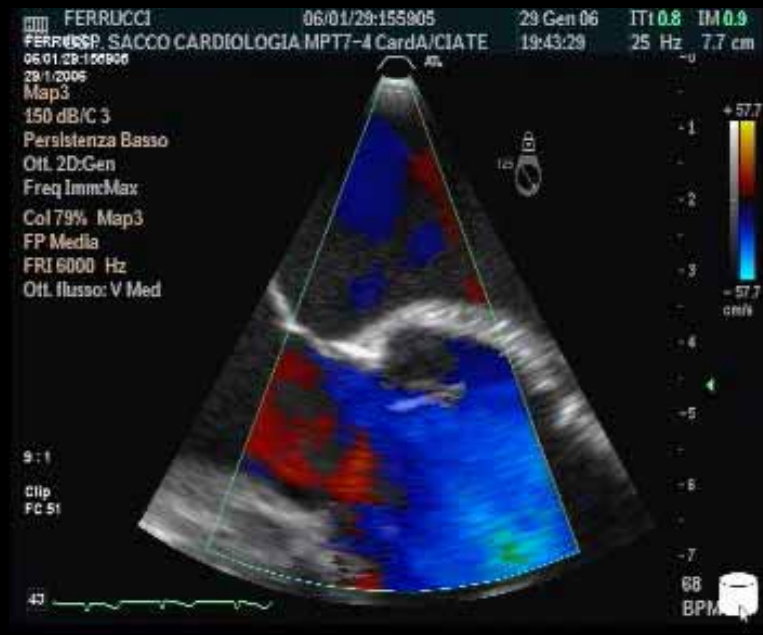
# REFLUSSO AORTICO SECONDARIO A DISSEZIONE



# REFLUSSO AORTICO SECONDARIO A DISSEZIONE

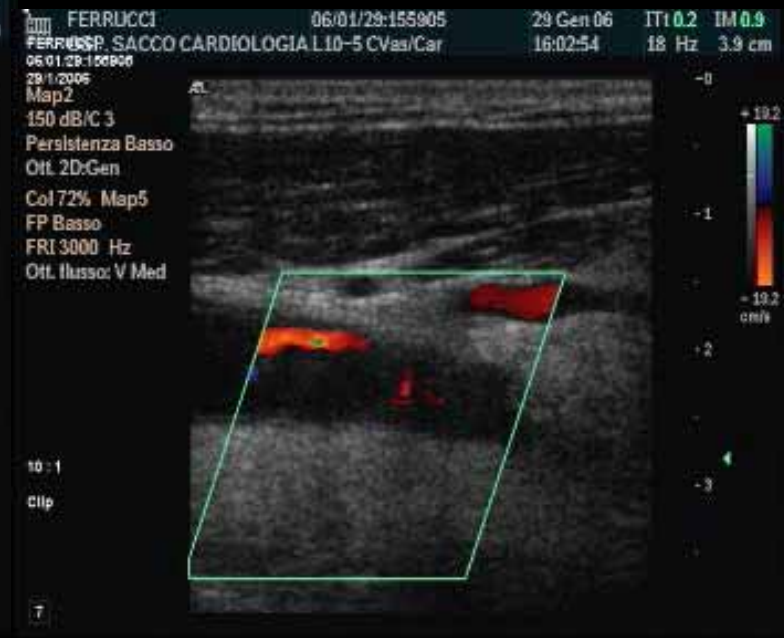
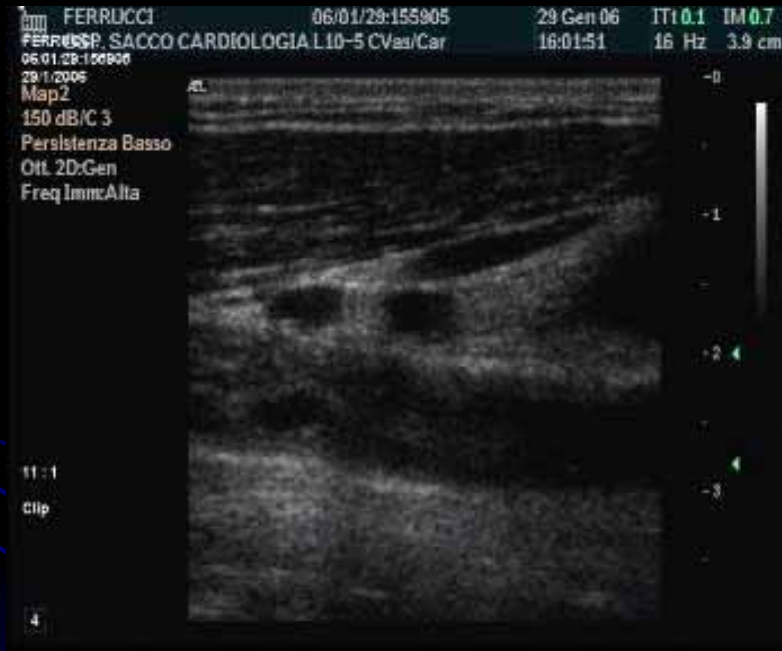


# RISULTATO OPERATORIO



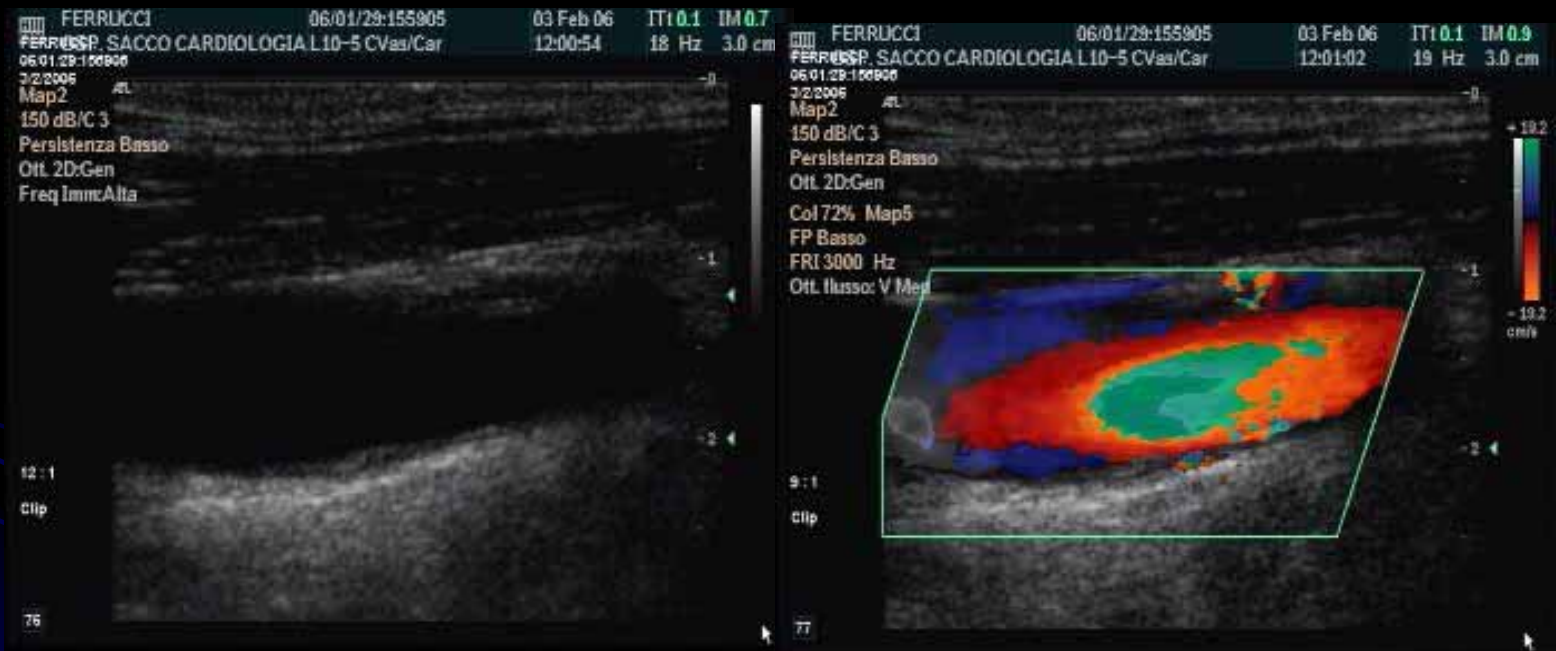


# TSA PRE





# TSA POST



# CASO CLINICO: INSUFFICIENZA AORTICA

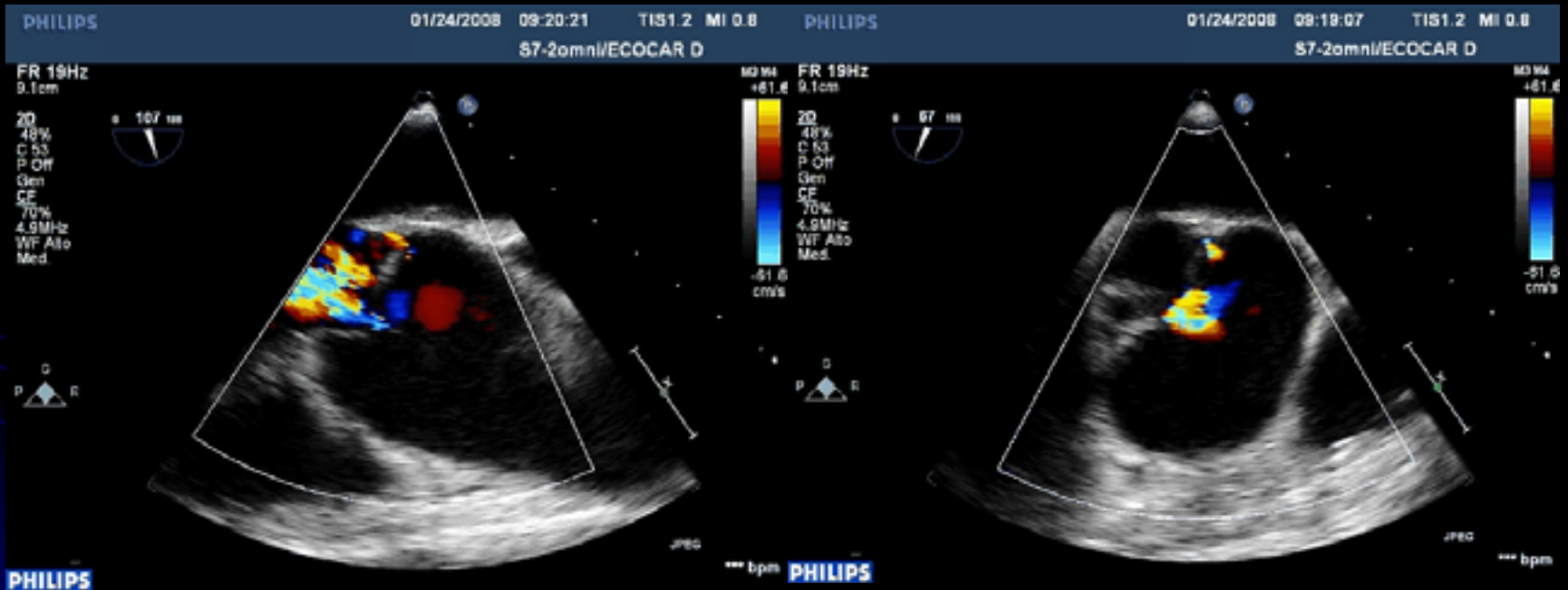
Paziente 73 anni, classe NYHA II (DDVS 71 mm.  
VTD 205 ml, FE 45%)

Valvola aorta tricuspidale con jet centrale e  
Commisura tra lembo sx e non coronarico

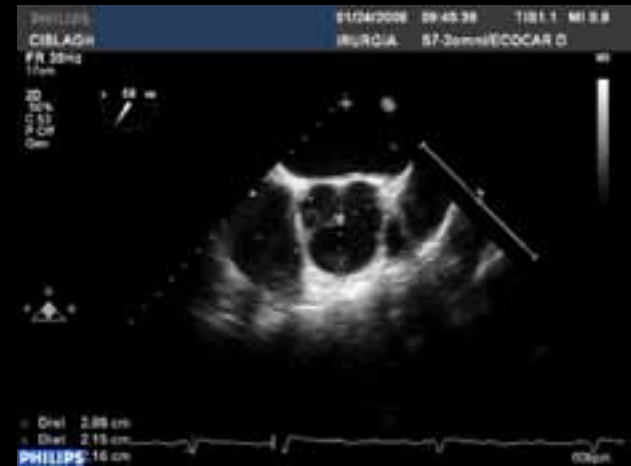
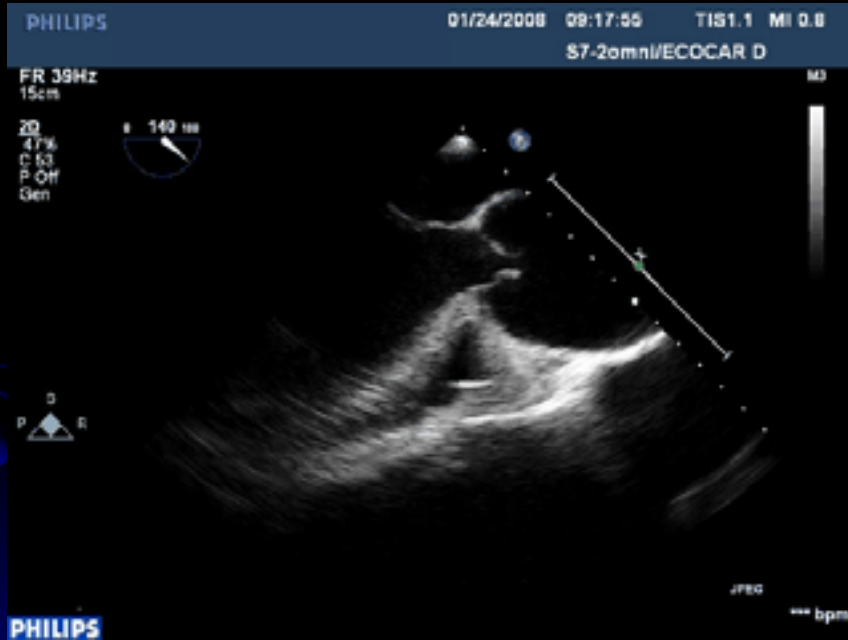
	basale	riparazione
Anulus	26 mm	23 mm
Seni Valsalva	48 mm	35 mm
Coptazione	5 mm	8-9 mm
Giunzione	50 mm	prot tubulare
Reflusso aortico	3+	1+



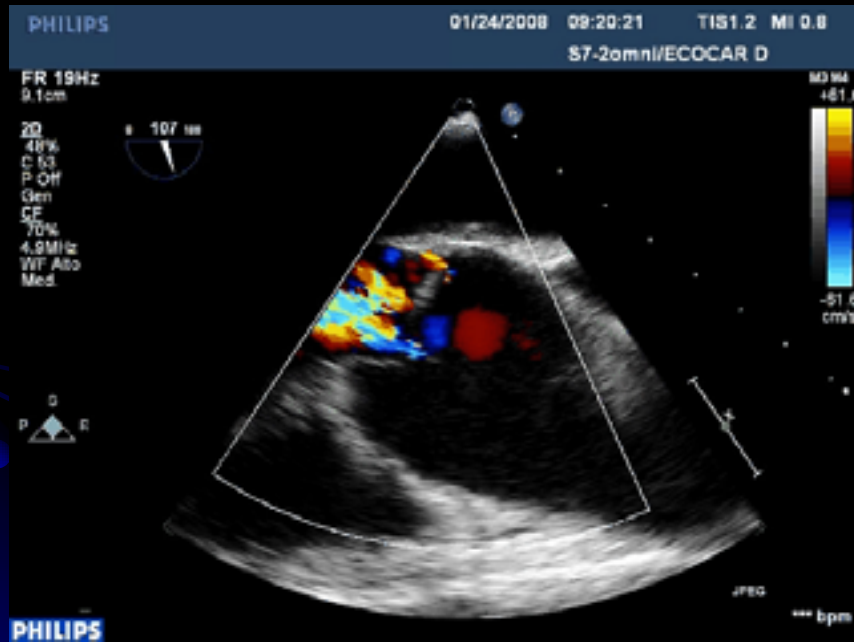
# REFLUSSO VALVOLARE AORTICO 2 JET



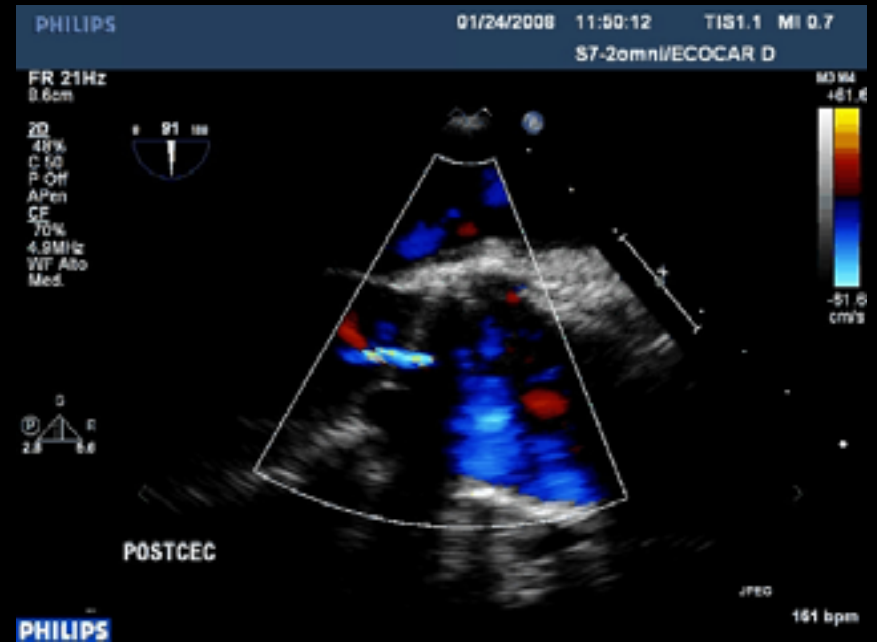
# DILATAZIONE SENO CORONARICO DX + IAO



# CONFRONTO REFLUSSO AORTICO



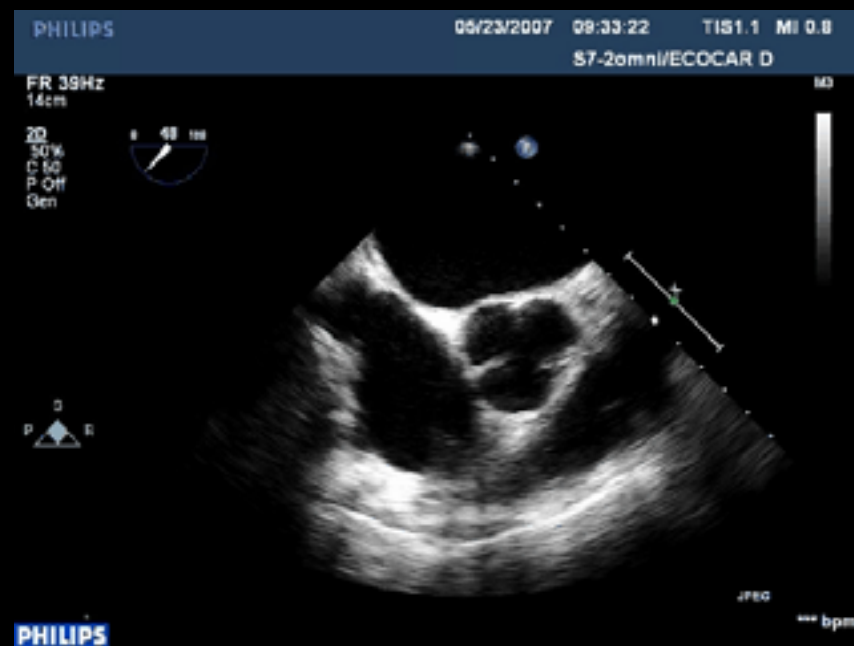
BASALE



RIPARAZIONE

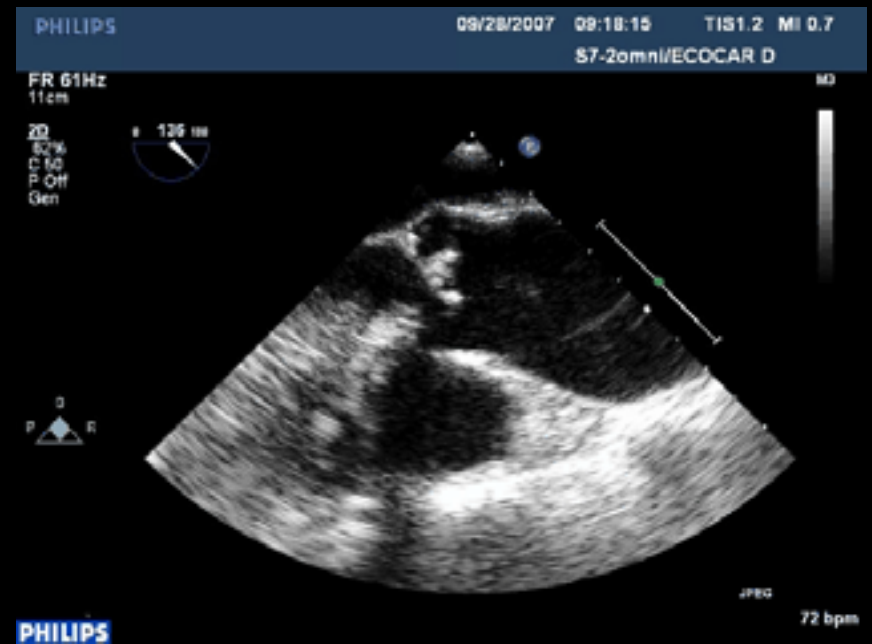
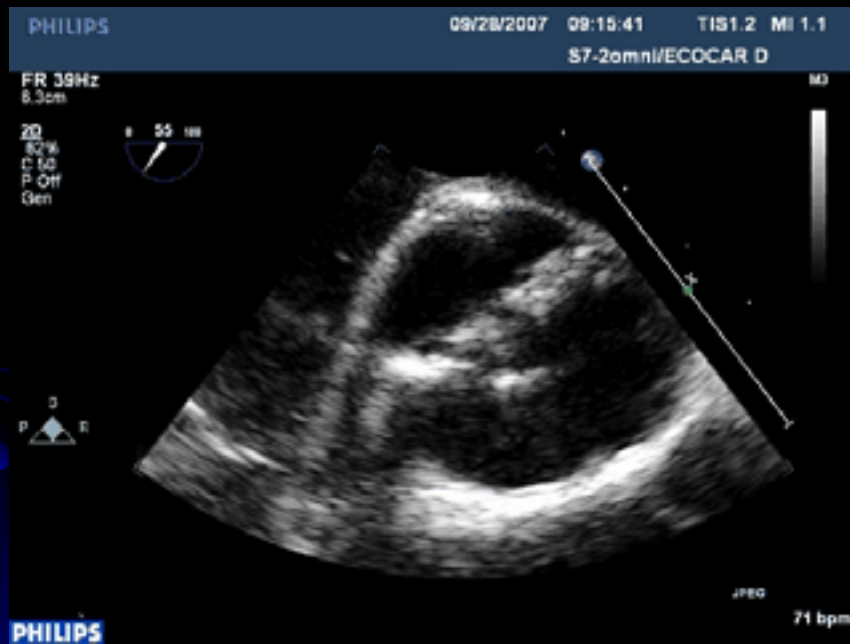


# CALCIFICAZIONE V TRICUSPIDE NON RIPARABILE





# BICUSPIDE NON RIPARABILE



# POSSIBILE RUOLO 3D



3 D  
EPIC



TEE INTRAOP

# RISULTATO NON OTTIMALE



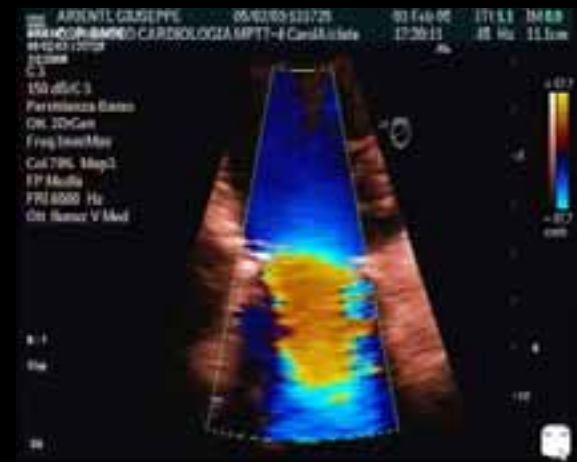
ECO TEE INTRAOP E' METODICA  
FONDAMENTALE PER CHIR RIP  
AORTICA: REFLUSSO AORTICO  
RESIDUO 2+ NON ACCETTABILE



# SEZIONI TRANSGASTRICHE PROFONDE



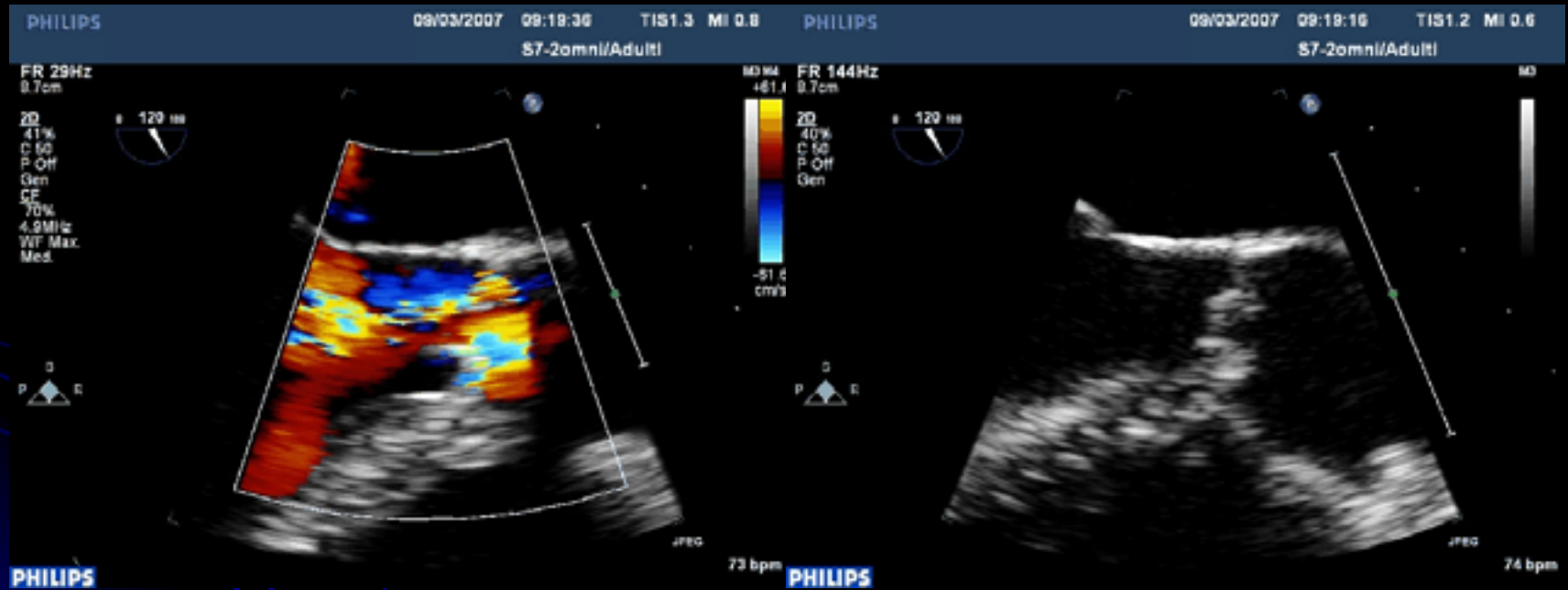
BASALE



R  
I  
P

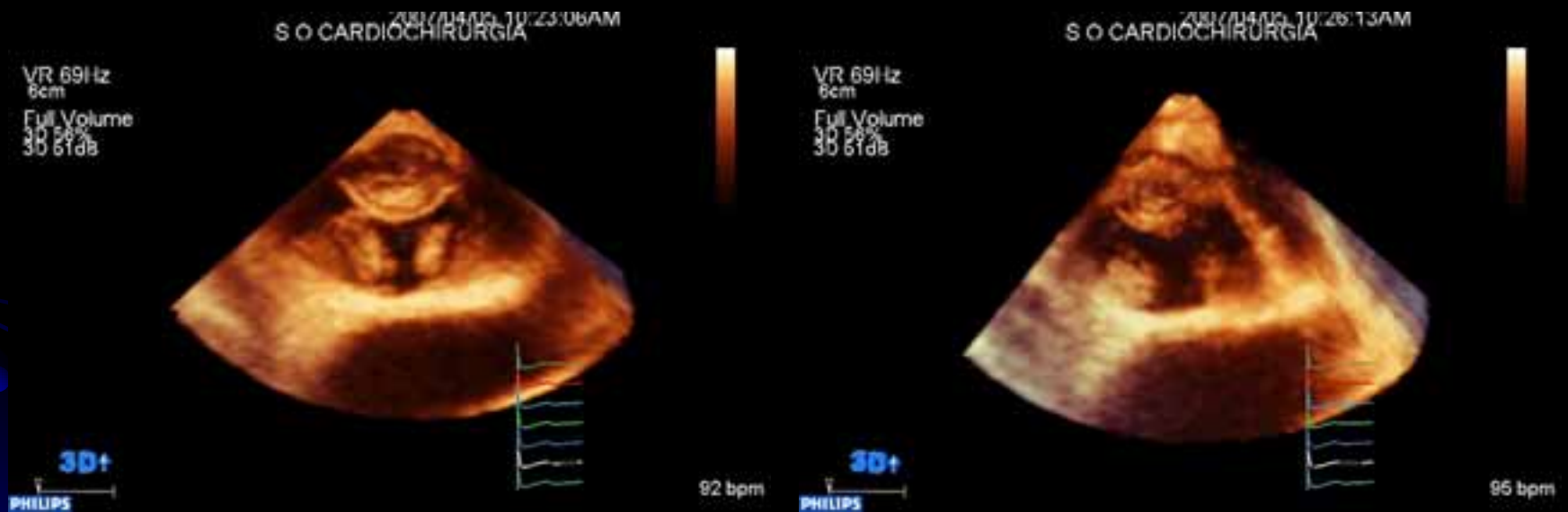


# ENDOCARDITE SU PLASTICA AORTICA





# POSSIBILE RUOLO 3D

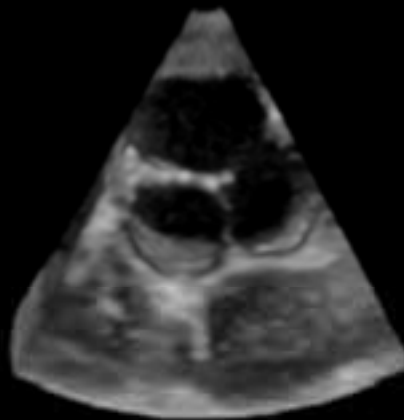


3D EPICARDICO



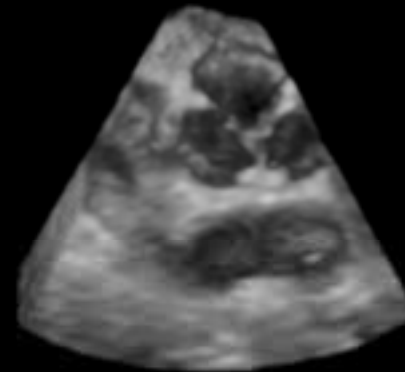
# ECOGRAFIA EPICARDICA TRIDIMENSIONALE

2005/04/27 09:31:38AM  
Philips Medical S.



71 bpm

2005/04/27 11:23:29AM  
Philips Medical S.



56 bpm

View Cropping Color MPR Setup

VR Mode	Gain 20%	3D Compression 70%	Water	Color	MPR S
Auto Crop	Reset Crop	Adjustment (dB)	Smoothing (I)	+	-
3D	Reset MPR	Mapping (1.00)	Interpolate	VR	Default

1/27 0.80s/0.28s (1.4s, 1Hz, 0.000s)

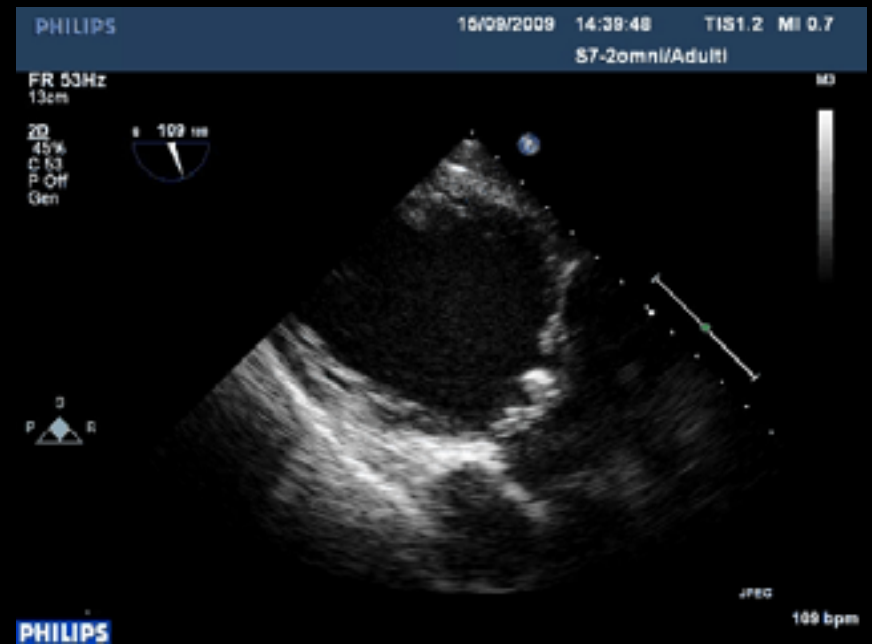
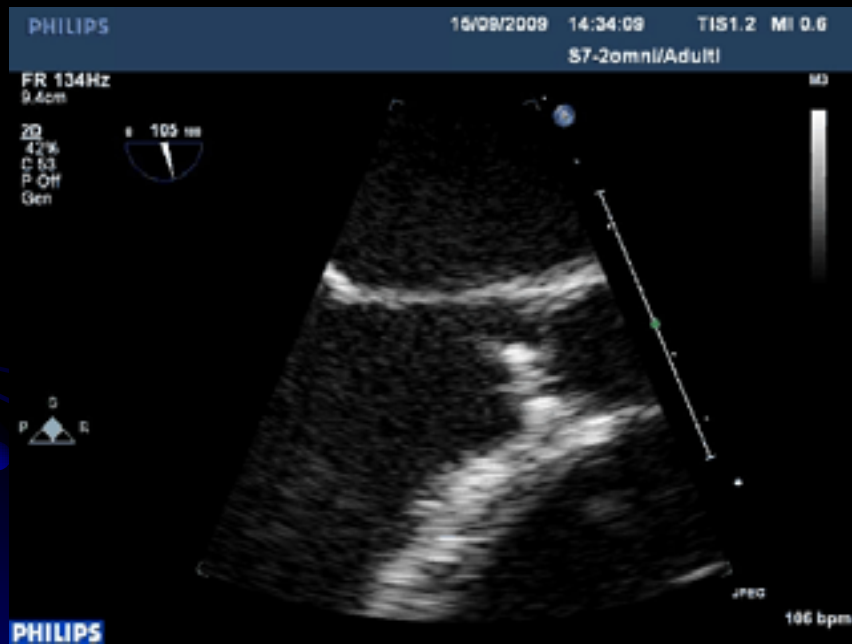
View Cropping Color MPR Setup

VR Mode	Gain 20%	3D Compression 70%	Water	Color	MPR S
Auto Crop	Reset Crop	Adjustment (dB)	Smoothing (I)	+	-
3D	Reset MPR	Mapping (1.00)	Interpolate	VR	Default

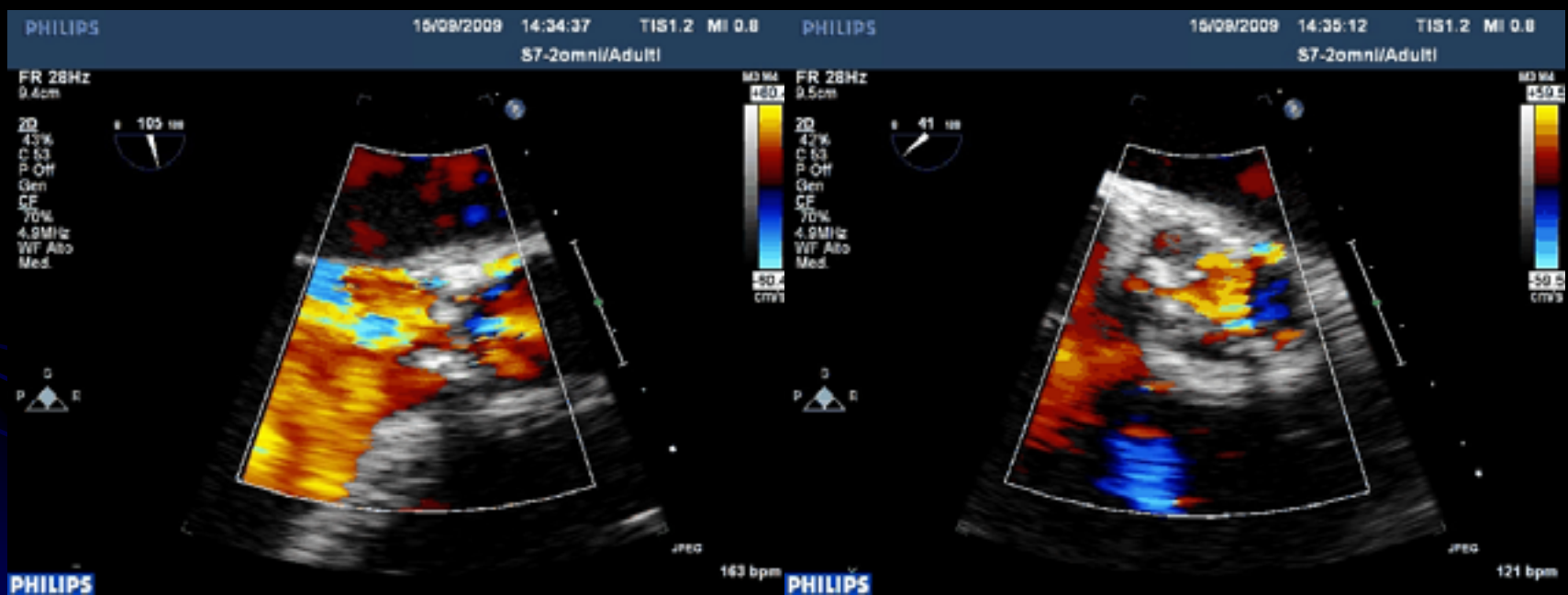
1/27 0.80s/1.17s (1.4s, 1Hz, 0.000s)



# ENDOCARDITE AO TEE



# ENDOCARDITE AO TEE COLOR



# ENDOCARDITE AO TEE



# ENDO AORTICA TEE COLOR

