

Bases de l'Echocardiographie

Dr D BERTORA

Remerciements : Dr S. CADE CHU Montpellier

ECHOCARDIOGRAPHIE

■ Indications

■ Non indications



Explorations TM, 2D et Doppler

■ Fenêtres échographiques usuelles

⇒ Analyse morphologique des structures

– **Parasternale G**

– **Apicale**

– **Sous-costale**

– Suprasternale

– Parasternale droite

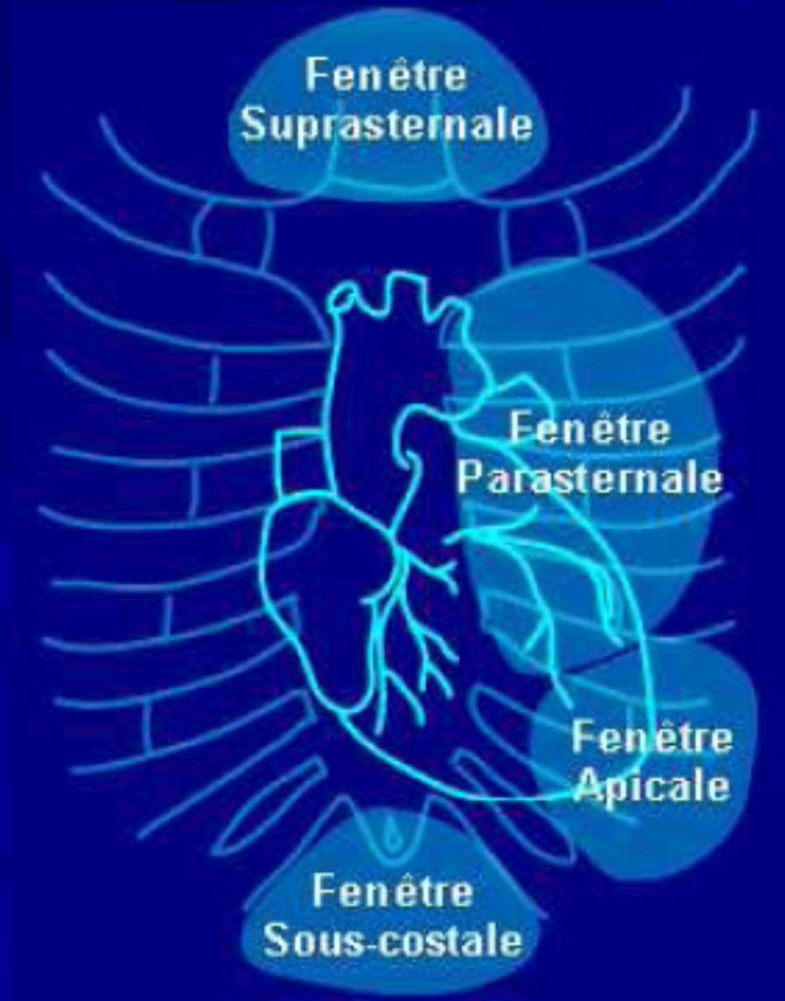


Cœur G

■ Obtention d'un tracé ECG de bonne qualité +++

Fenêtres exploitables en 2D

- **PST G** (grand et petit axe)
 - Aorte/OG vers l'apex +/-
- **Apicale** (4,5 et 2,3 cavités)
 - VG, OG,
 - Appareil mitro-aortique
- **Sous-costale** (Parfois seule disponible, 4C ou petit axe)
 - VG, OG
 - Appareil mitro-aortique
 - SIA

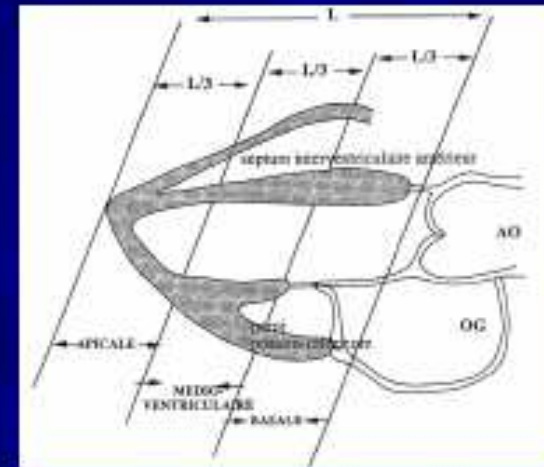
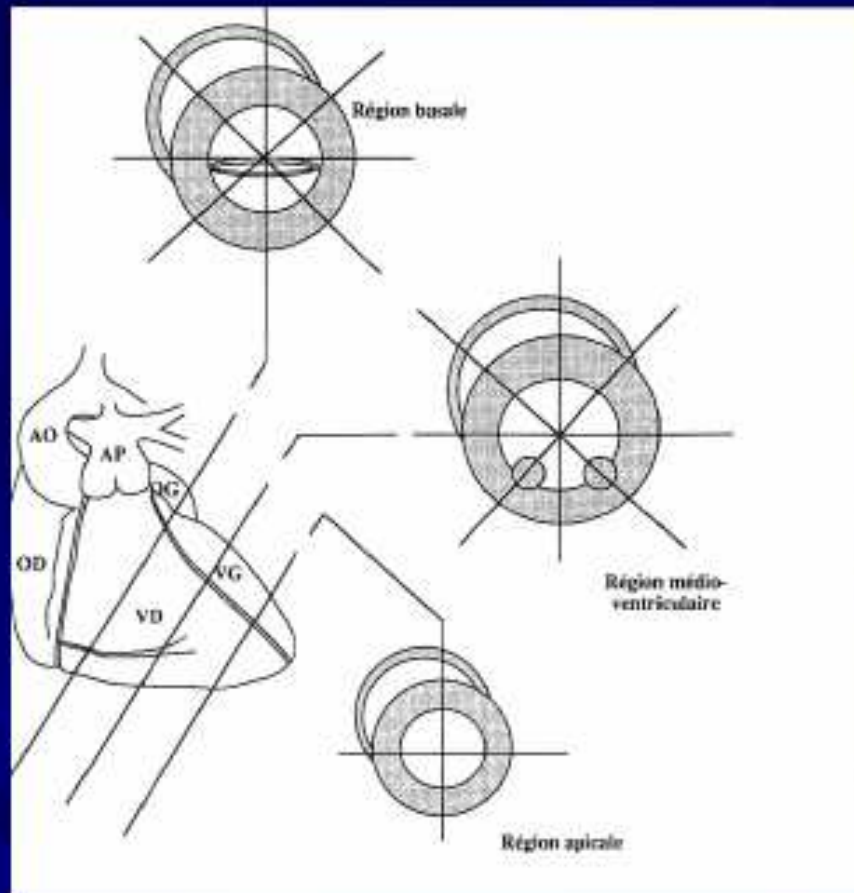


Fenêtre parasternale G

- **Grand axe** (ou longitudinale)
 - SIV le + horizontal avec angle septo-aortique large
 - Par convention, apex à G de l'écran
- **Petit axe** (ou transversale)
 - rotation horaire de 90°
 - Aorte
 - Base du coeur
 - Valve mitrale
 - Piliers
 - Apex



Topographie/Segmentation PST G selon l'ASE



PHILIPS

ITm0.8 JPEG CR 19:1
IM 1.4

S5-1/OPTIMAL Bertor

CI 50Hz
15cm

2D
59%
C 52
P Bas
HPén



JPEG - 15
47 bpm



PHILIPS

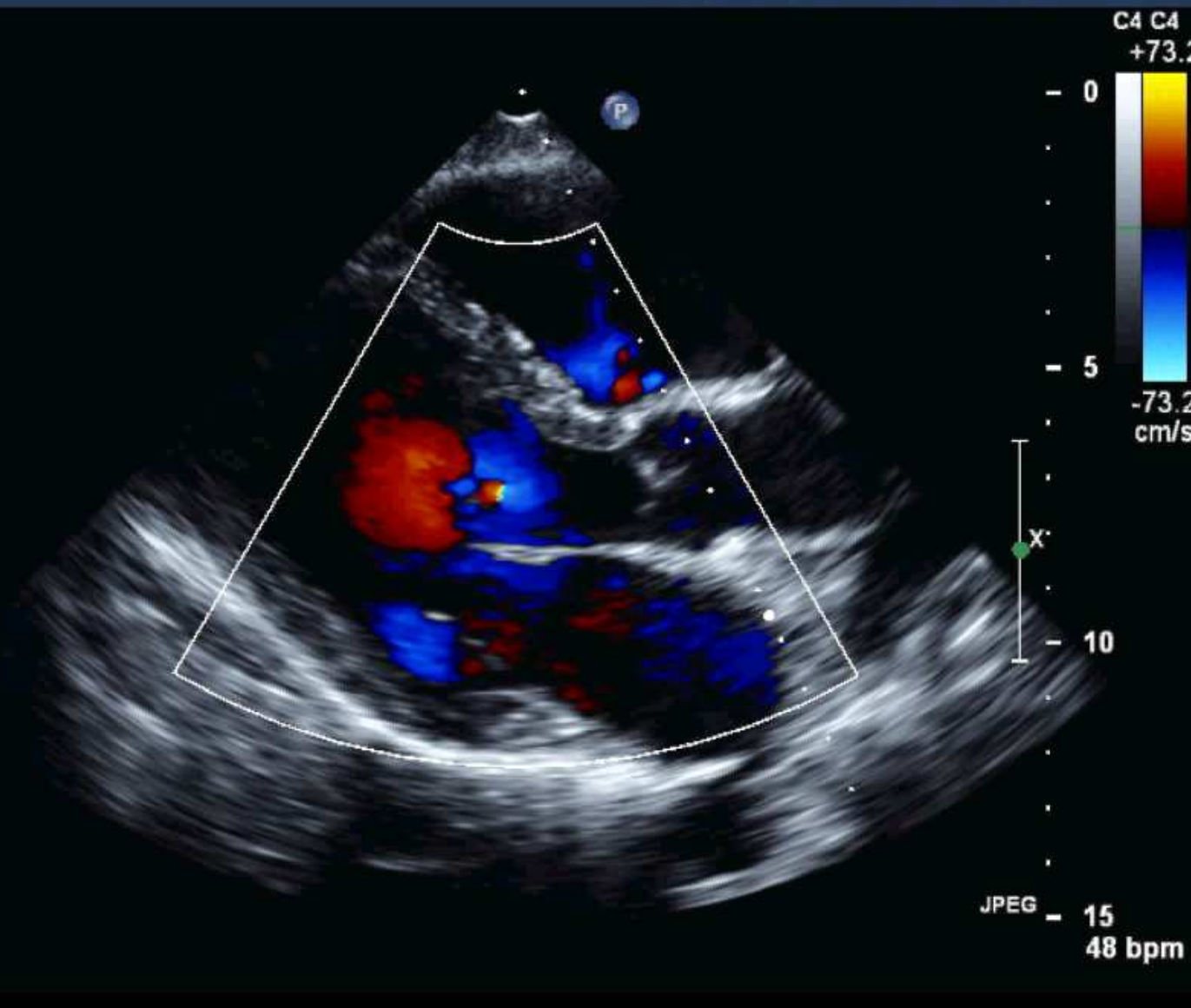
ITm2.3 **JPEG CR 17:1**
IM 1.1

S5-1/OPTIMAL Bertor

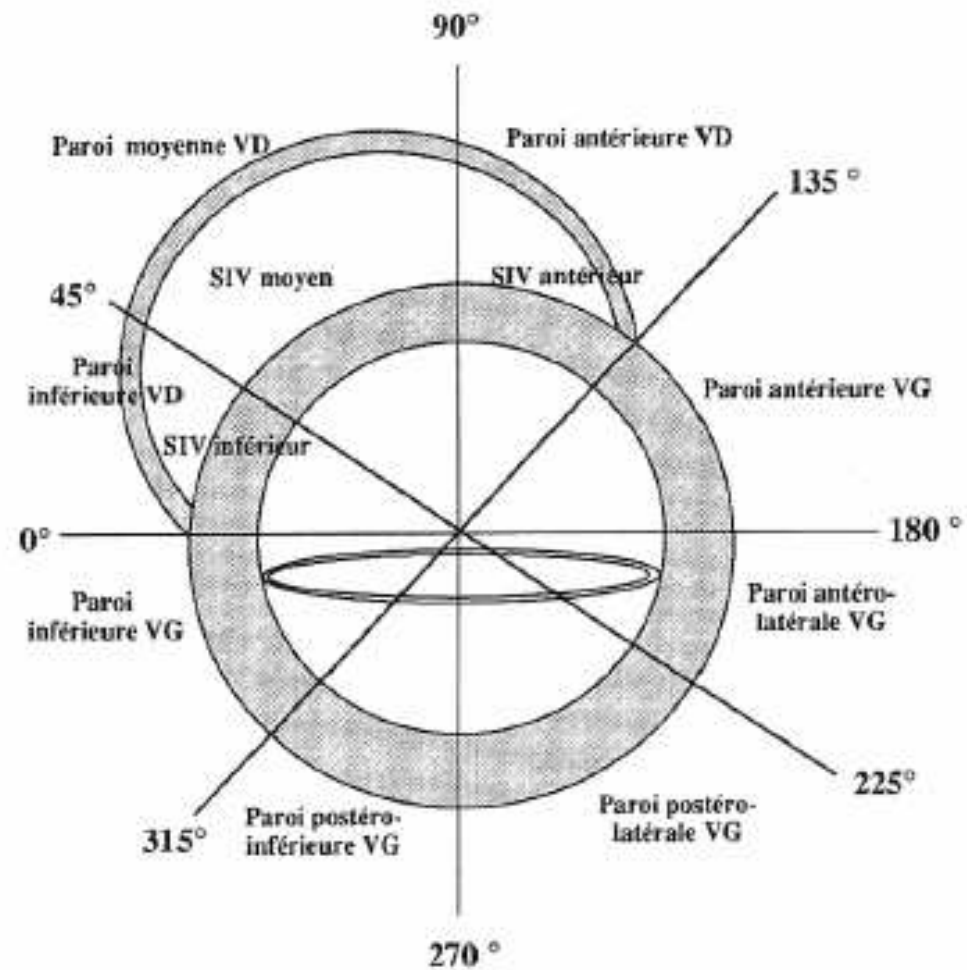
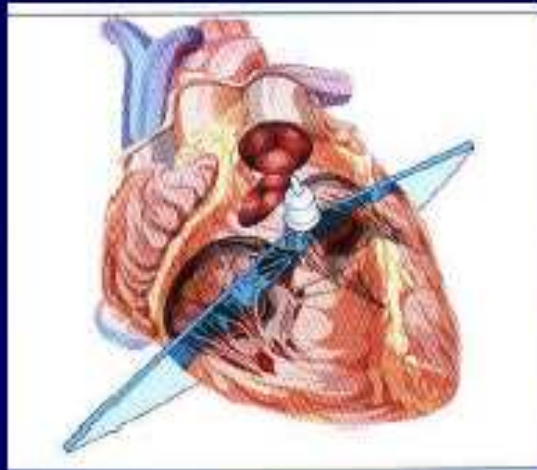
CI 12Hz
15cm

2D
58%
C 52
P Bas
HPén

Coul
65%
2.5MHz
FP Haut
Moy



Petit Axe au niveau basal



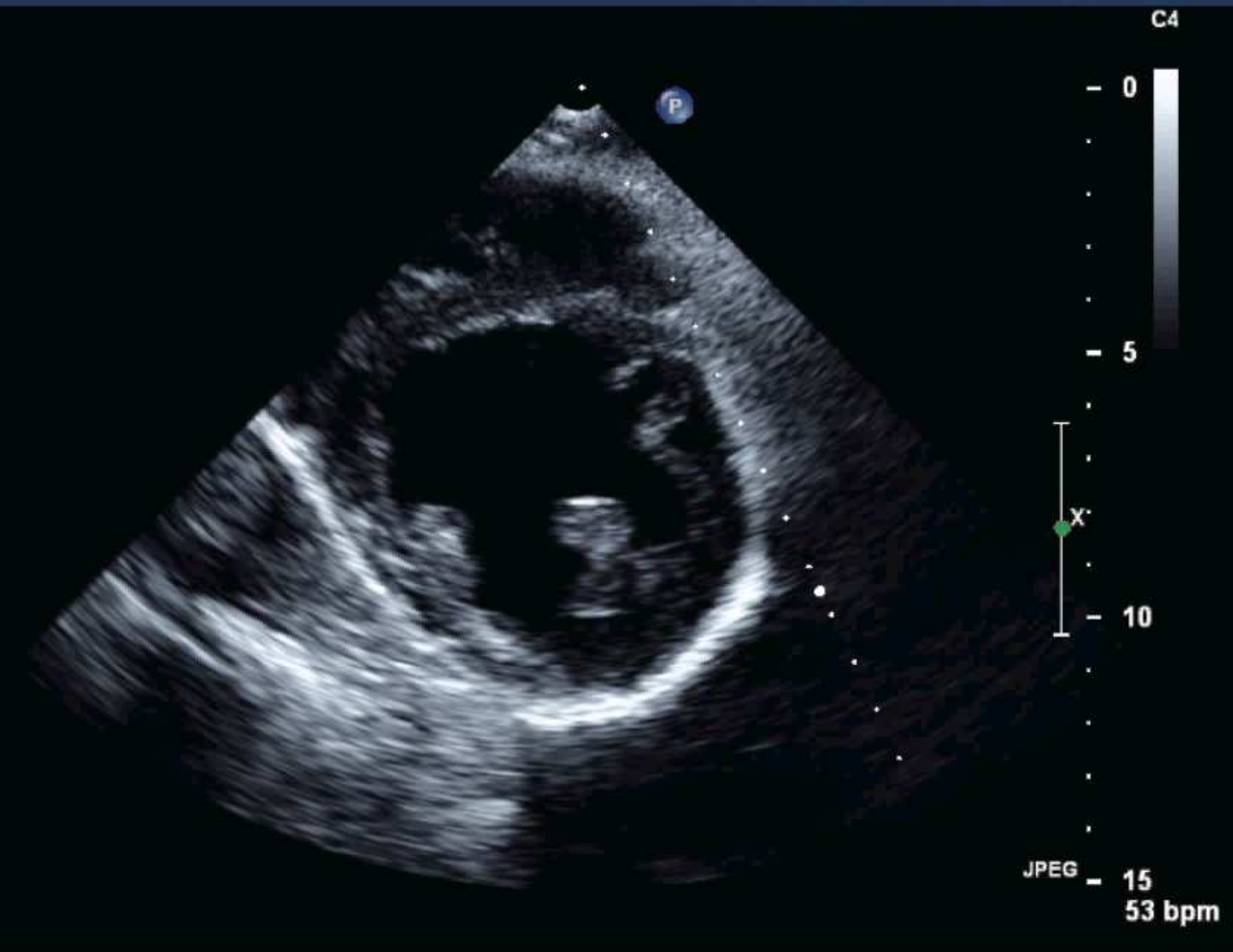
PHILIPS

ITm0.8 JPEG CR 21:1
IM 1.4

S5-1/OPTIMAL Bertor

CI 50Hz
15cm

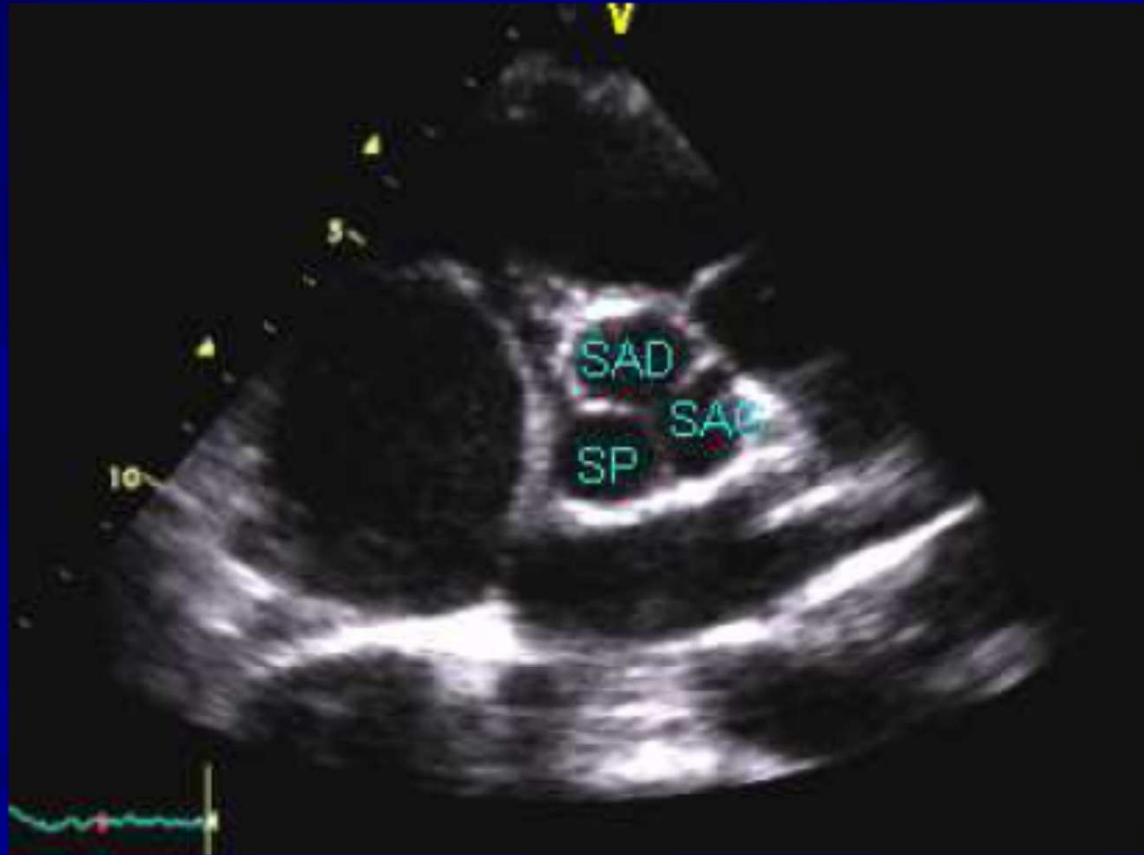
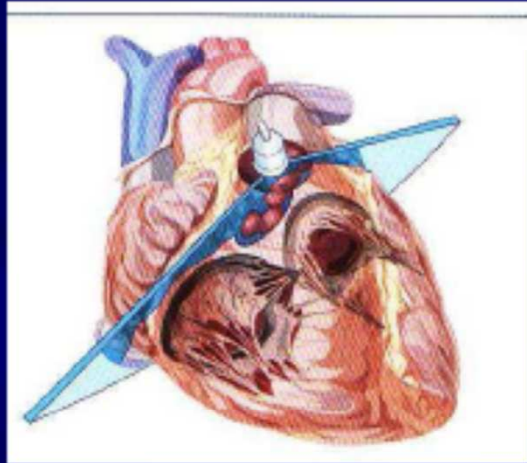
2D
59%
C 52
P Bas
HPén



JPEG - 15
53 bpm



Petit Axe au niveau aortique



PHILIPS

ITm0.8 JPEG CR 20:1
IM 1.4

S5-1/OPTIMAL Bertor

CI 50Hz
15cm

2D
59%
C 52
P Bas
HPén



C4

0

5

10

X

JPEG 15

50 bpm

PHILIPS

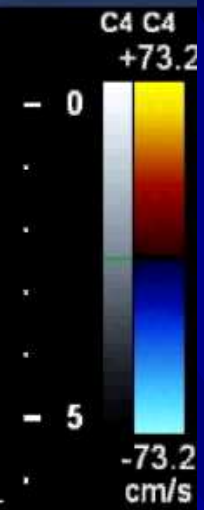
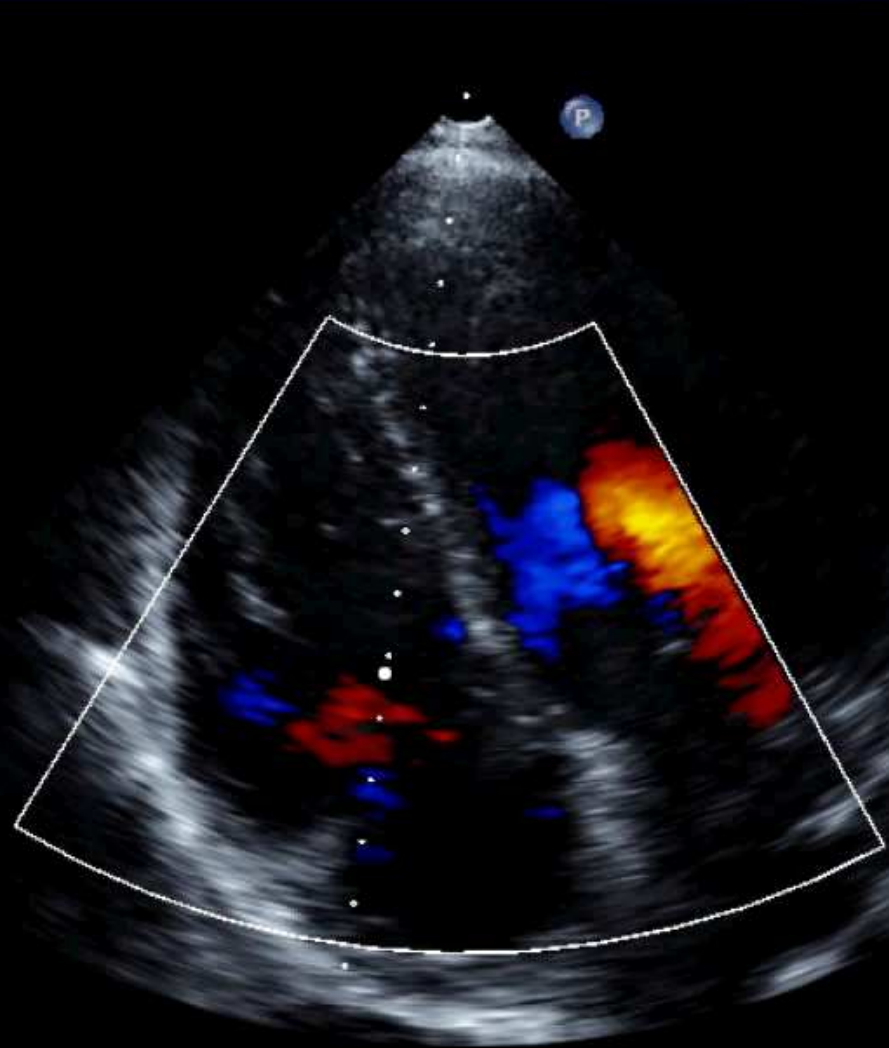
ITm2.2 JPEG CR 19:1
IM 1.1

S5-1/OPTIMAL Bertor

CI 11Hz
15cm

2D
69%
C 52
P Bas
HPén

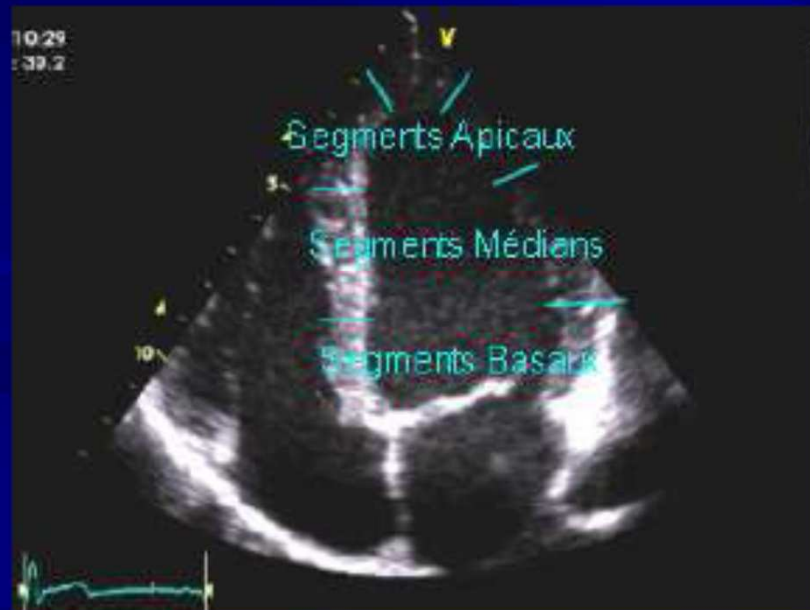
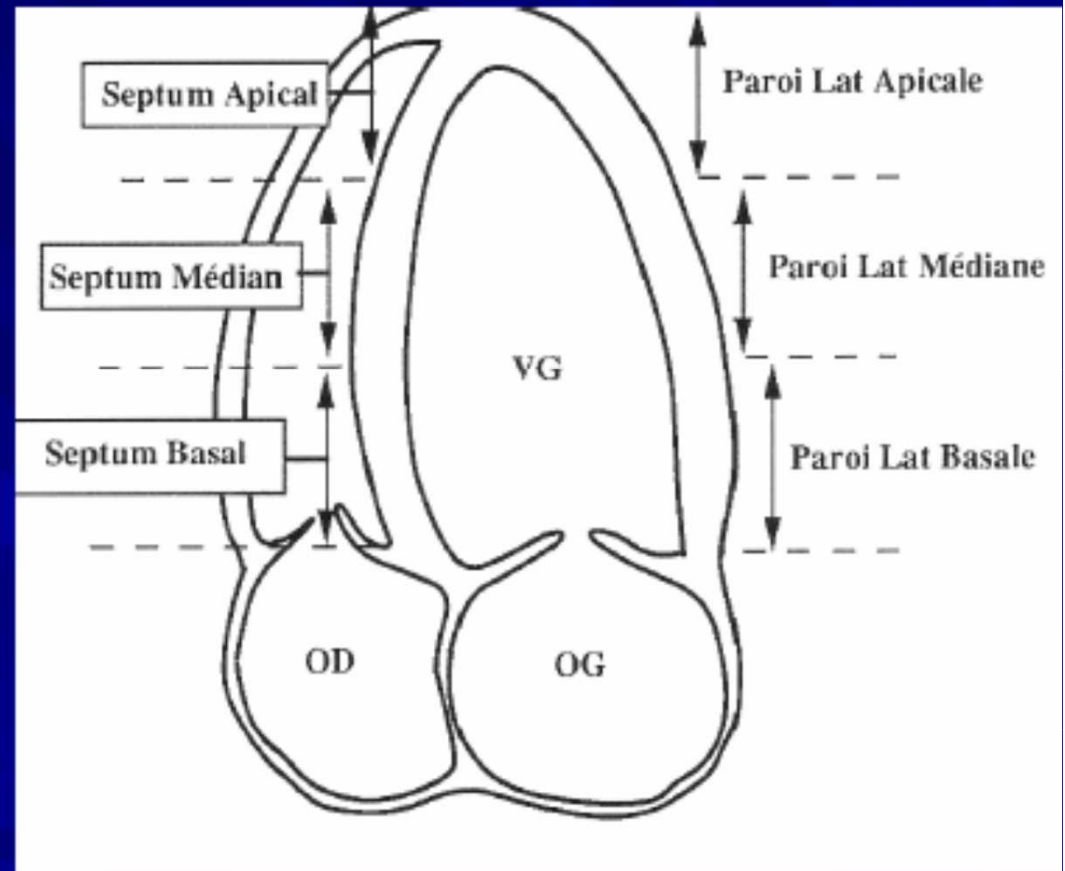
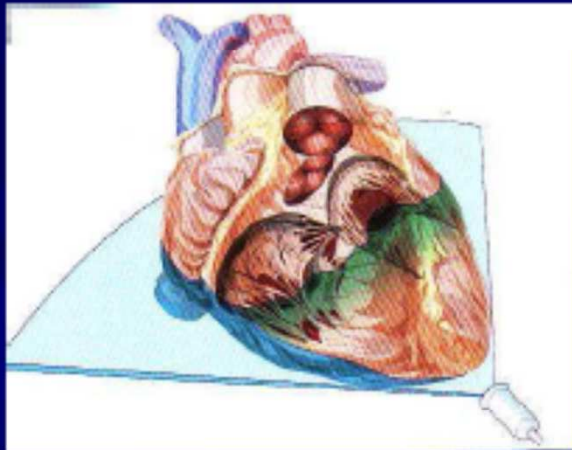
Coul
65%
2.3MHz
FP Haut
Moy



JPEG - 15
46 bpm



Incidence apicale 4 cavités



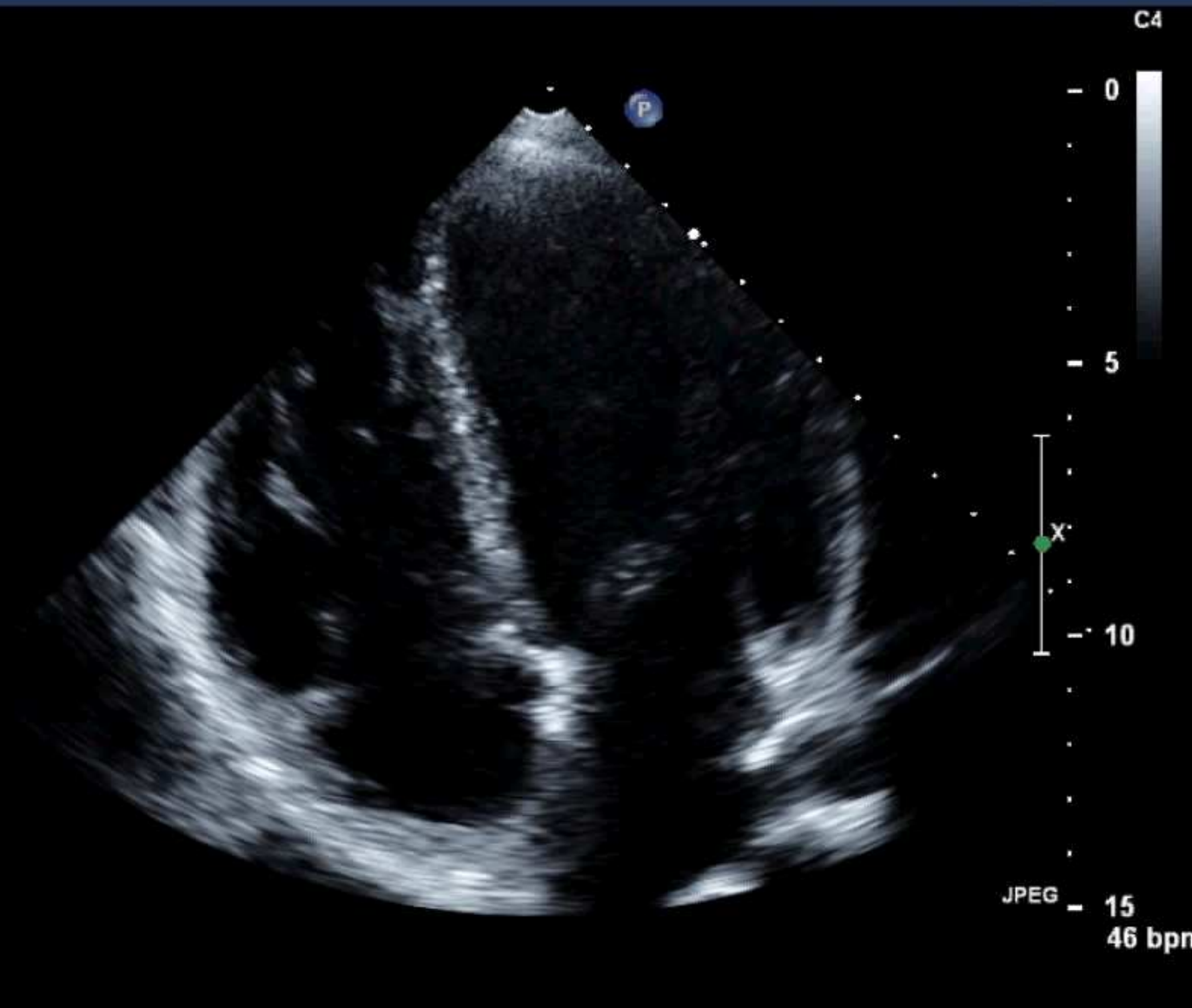
PHILIPS

ITm0.8 JPEG CR 21:1
IM 1.4

S5-1/OPTIMAL Bertor

CI 50Hz
15cm

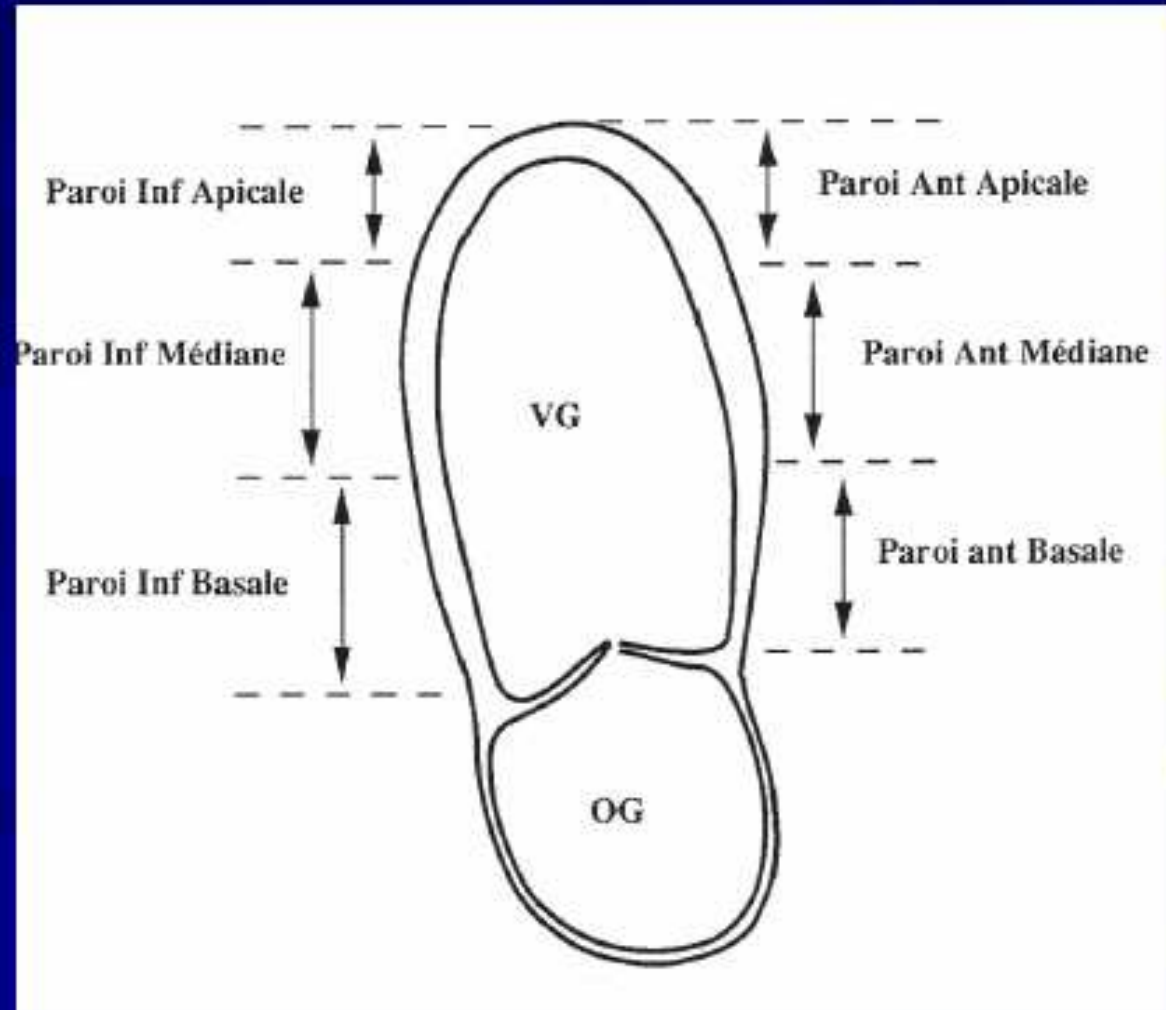
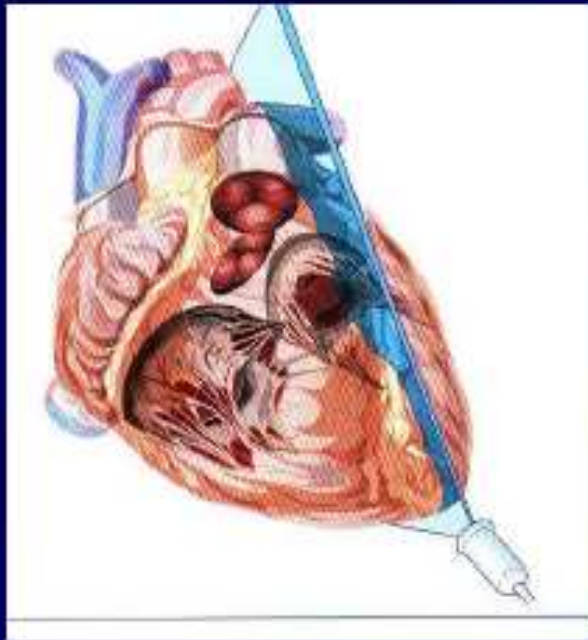
2D
69%
C 52
P Bas
HPén



JPEG - 15
46 bpm



Incidence apicale 2 cavités



PHILIPS

ITm0.8 JPEG CR 21:1
IM 1.4

S5-1/OPTIMAL Bertor

CI 50Hz
15cm

2D
69%
C 52
P Bas
HPén



C4

0

5

10

15

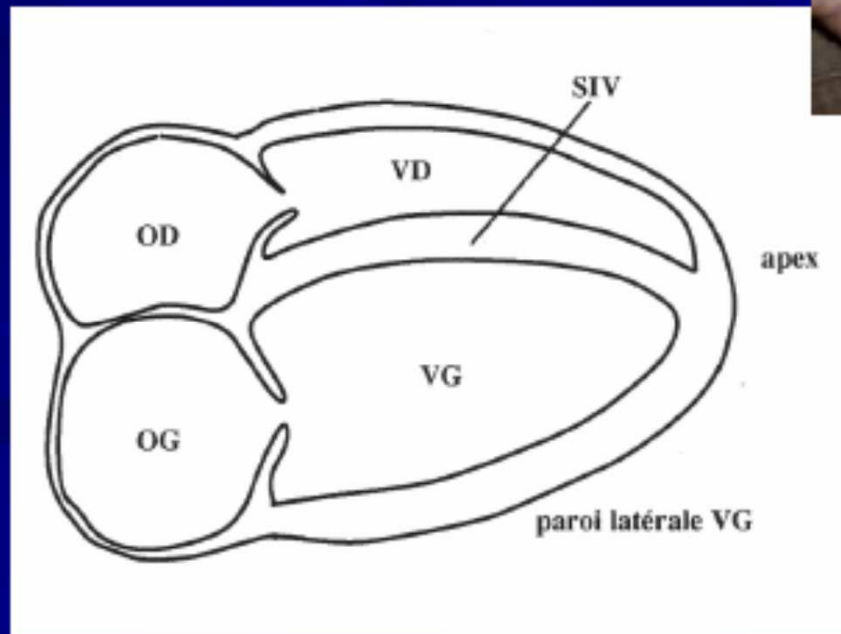
JPEG - 15
45 bpm

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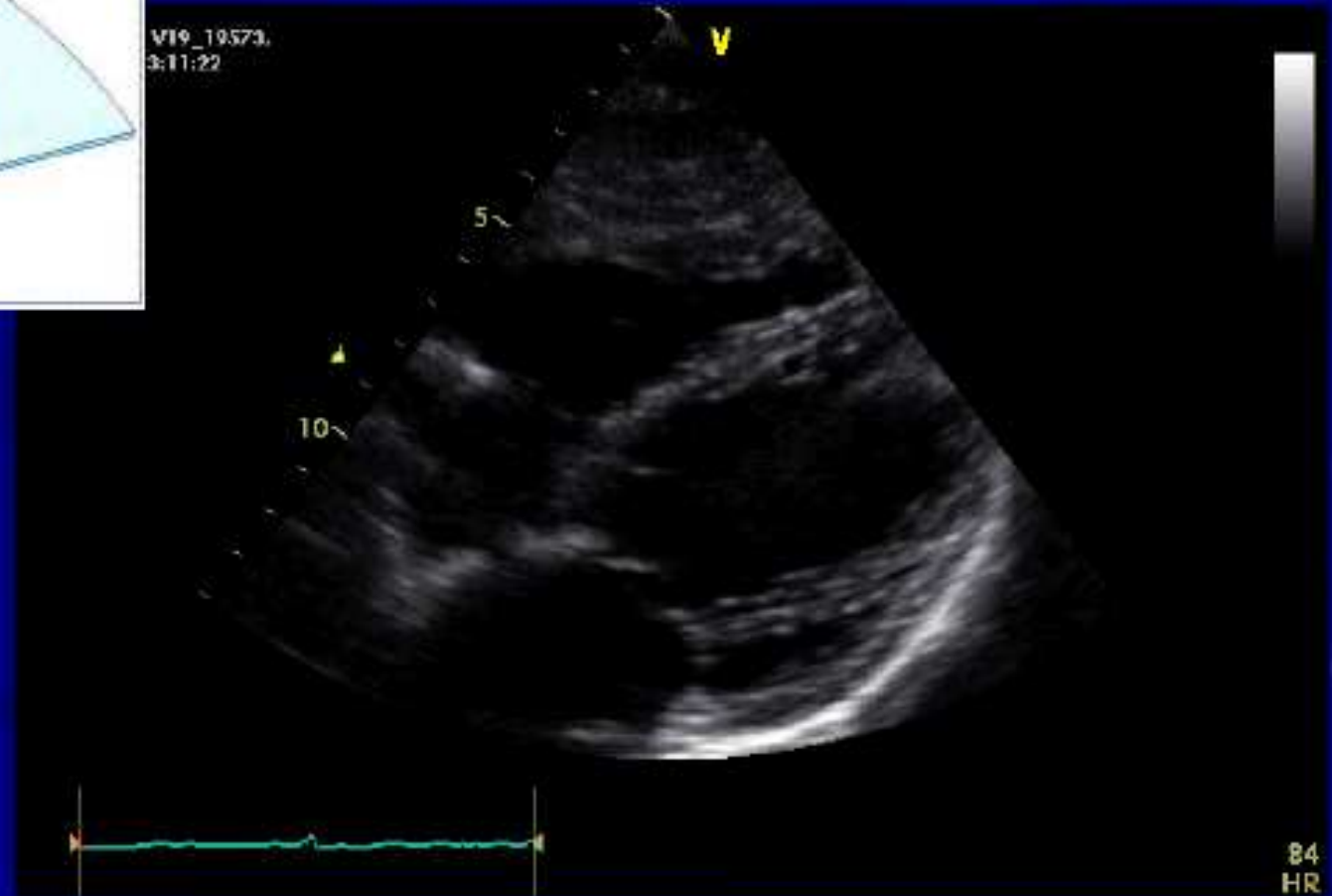
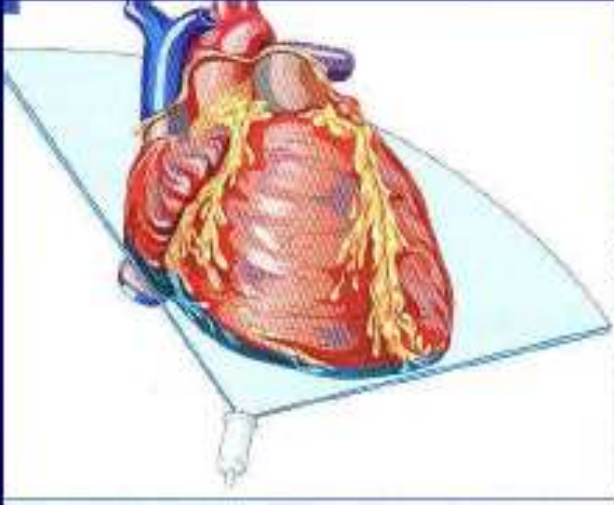
Fenêtre sous-costale

DD, en inspiration bloquée, genoux fléchis

- Incidence 4 cavités
- Incidence petit axe
- Fenêtre +++ chez les IRC et les patients intubés ventilés



Vue sous-costale 4C



84
HR

PHILIPS LAROYE

13/02/2008 16:19:40

ITm2.3 IIm 1.1 JPEG CR 16:1

07591520080213

S5-1/OPTIMAL Bertor

CI 19Hz
19cm

2D
68%
C 52
P Bas
HPén
Coul
65%
2.3MHz
FP Haut
Moy



JPEG

61 bpm

Nouvelle classification en 17 segments



Segments basaux



Segments médians



Segments apicaux



Apex



3 segments antérieurs basaux



3 segments antérieurs médians



Antérieur



Antéro-latéral



3 segments inférieurs basaux



3 segments inférieurs médians





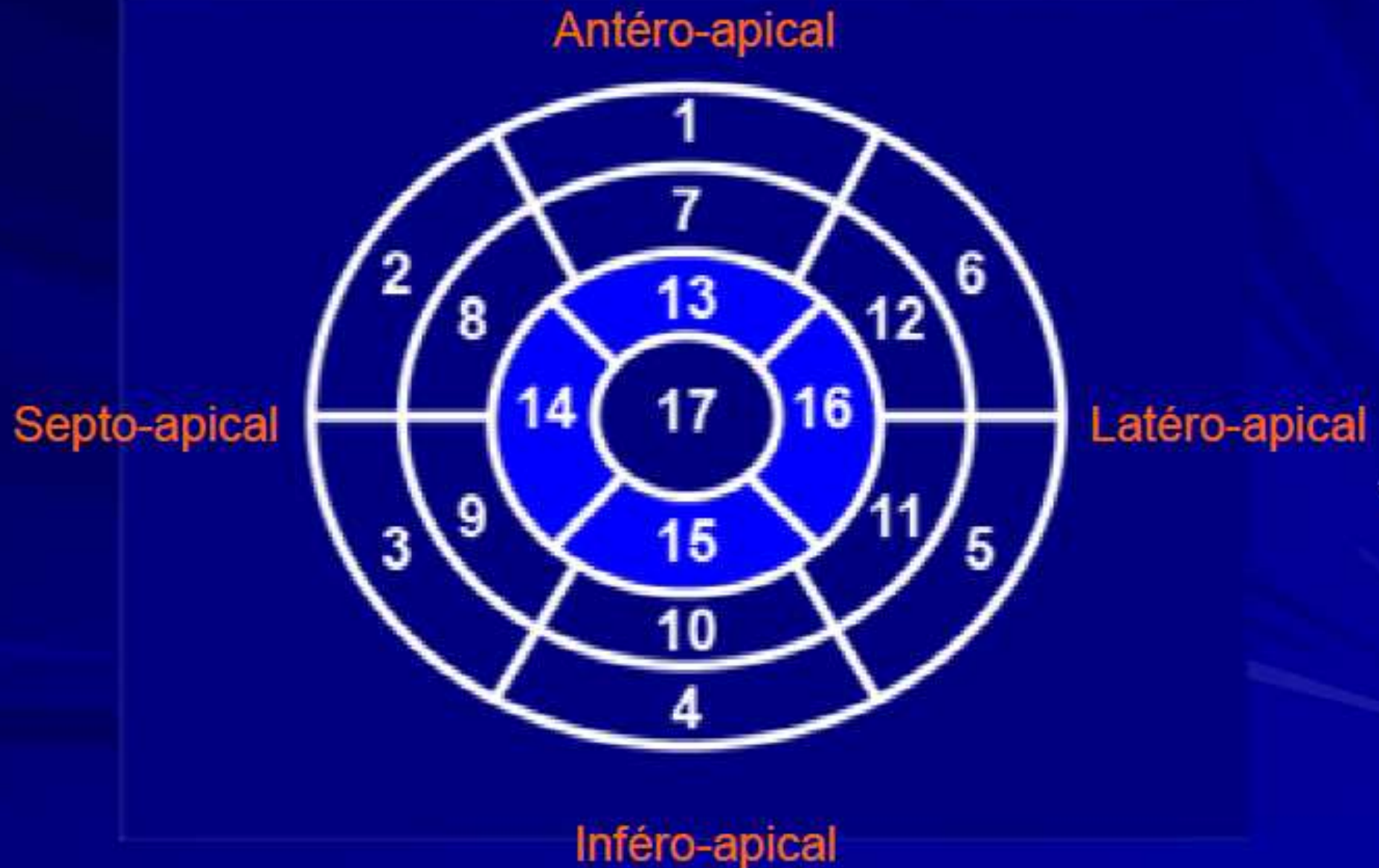


Inférieur



Inféro-latéral

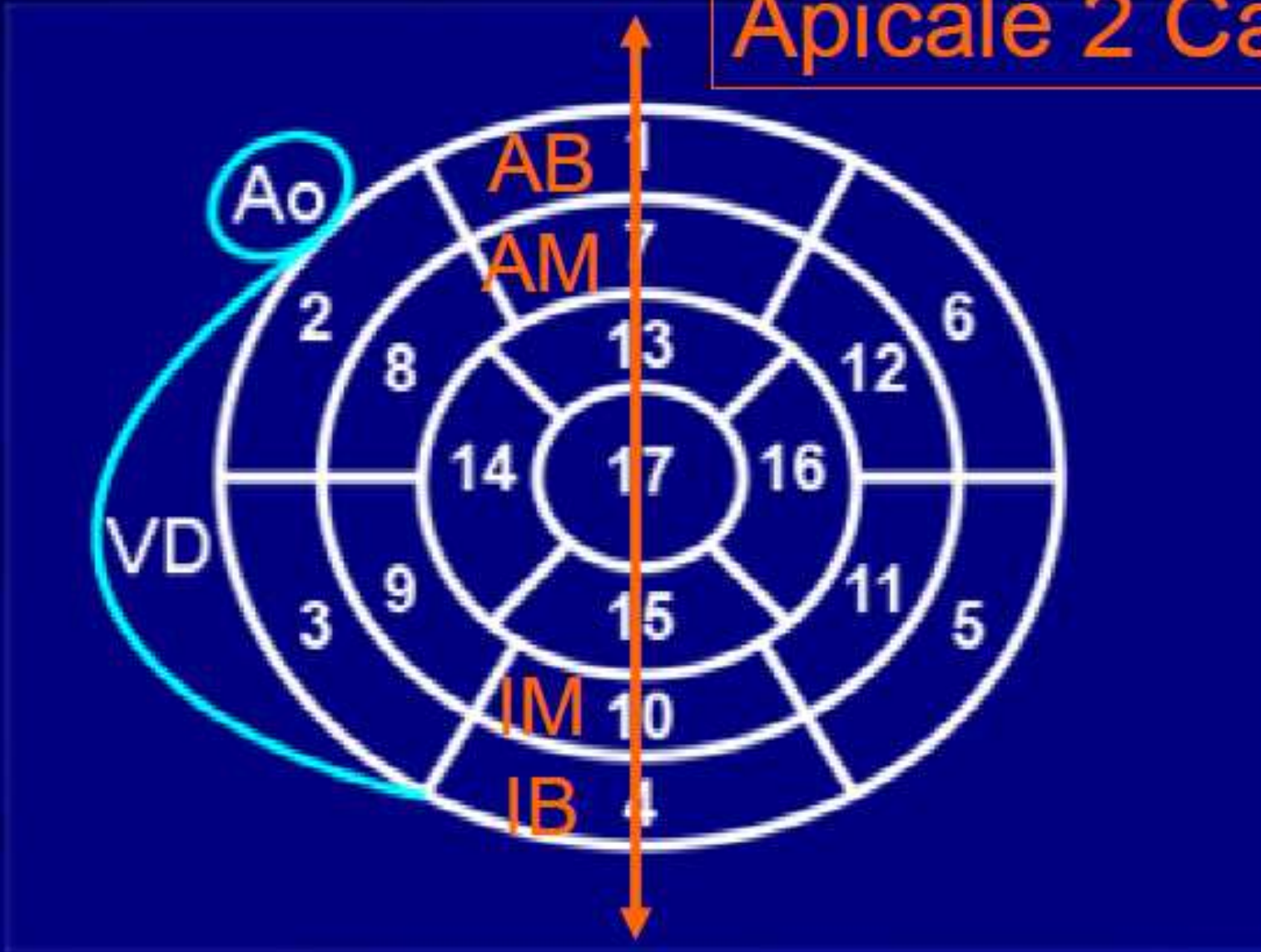
Segments apicaux

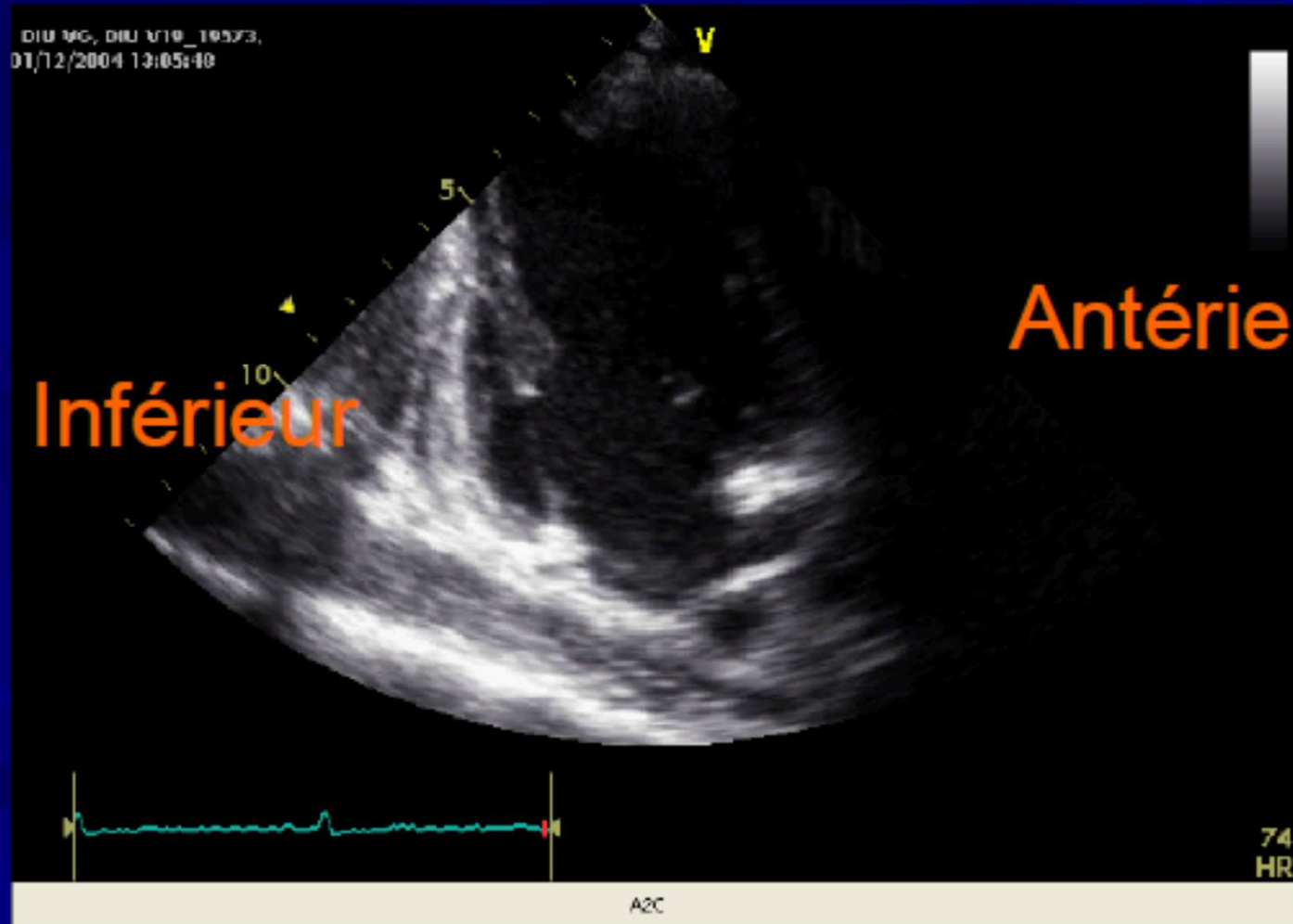
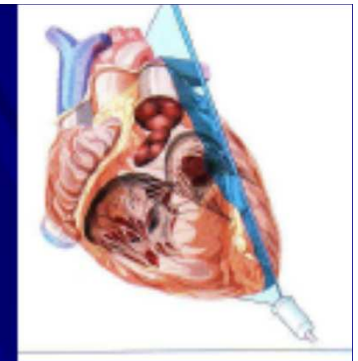


Apex

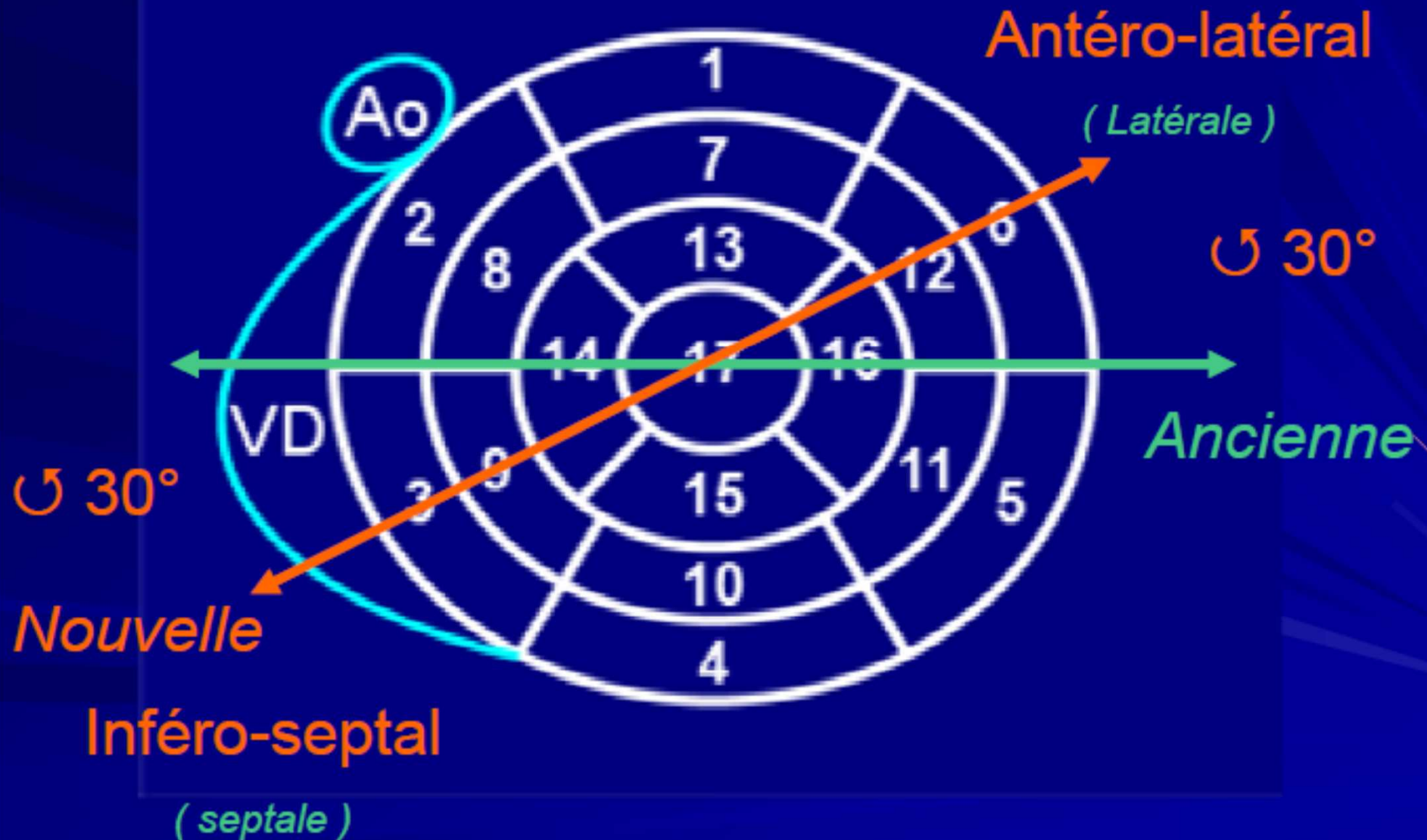


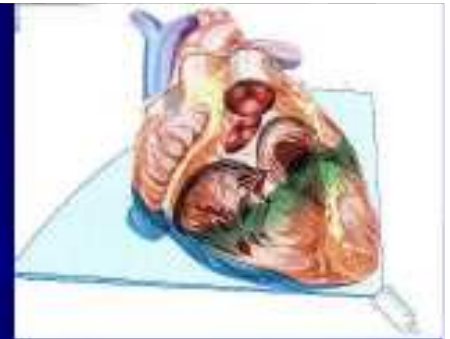
Apicale 2 Cav





Apicale 4 Cav

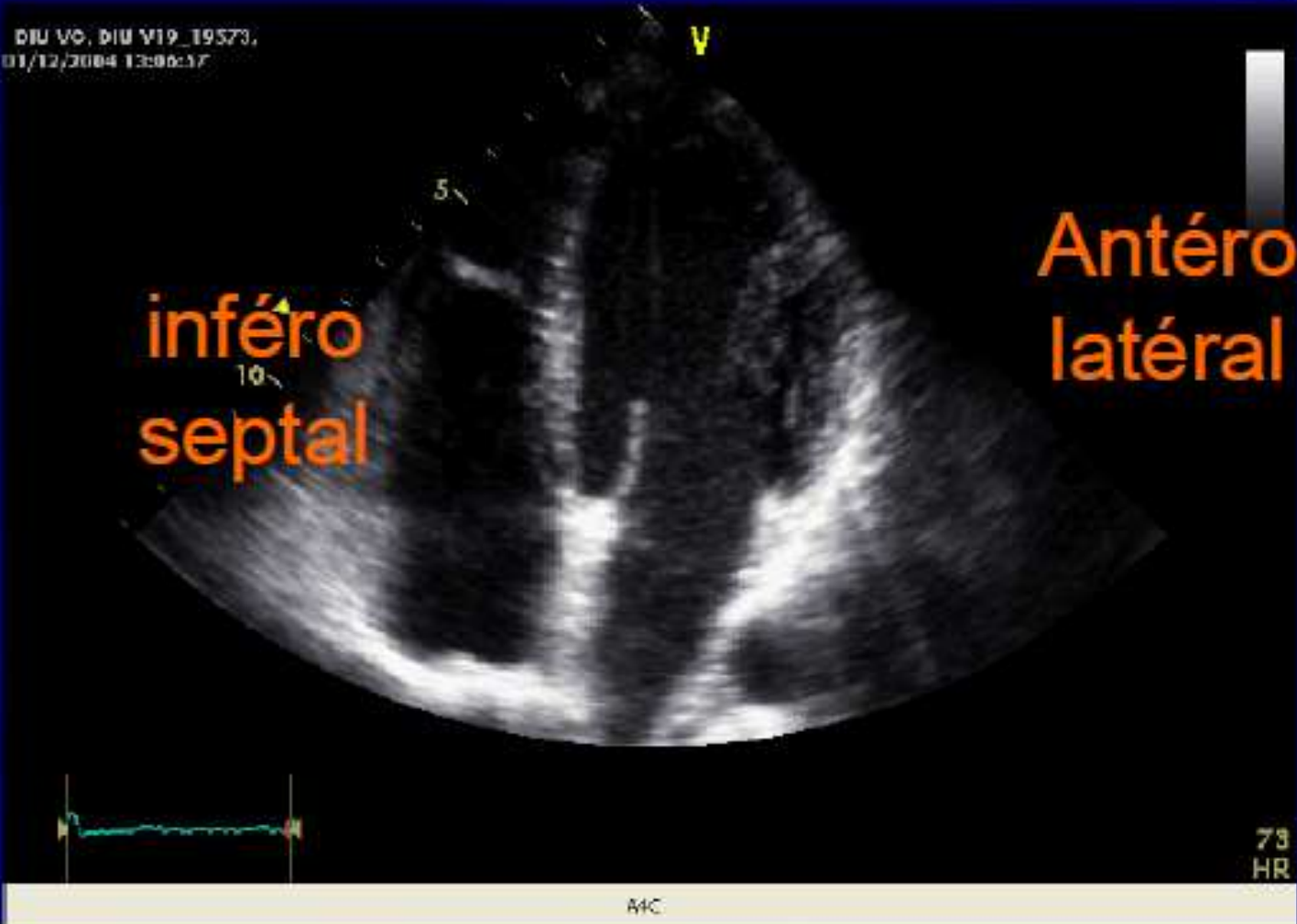




DIU VO, DIU V19_19573,
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inféro
septal

Antéro
latéral



73
HR

A4C

Antéro-septal

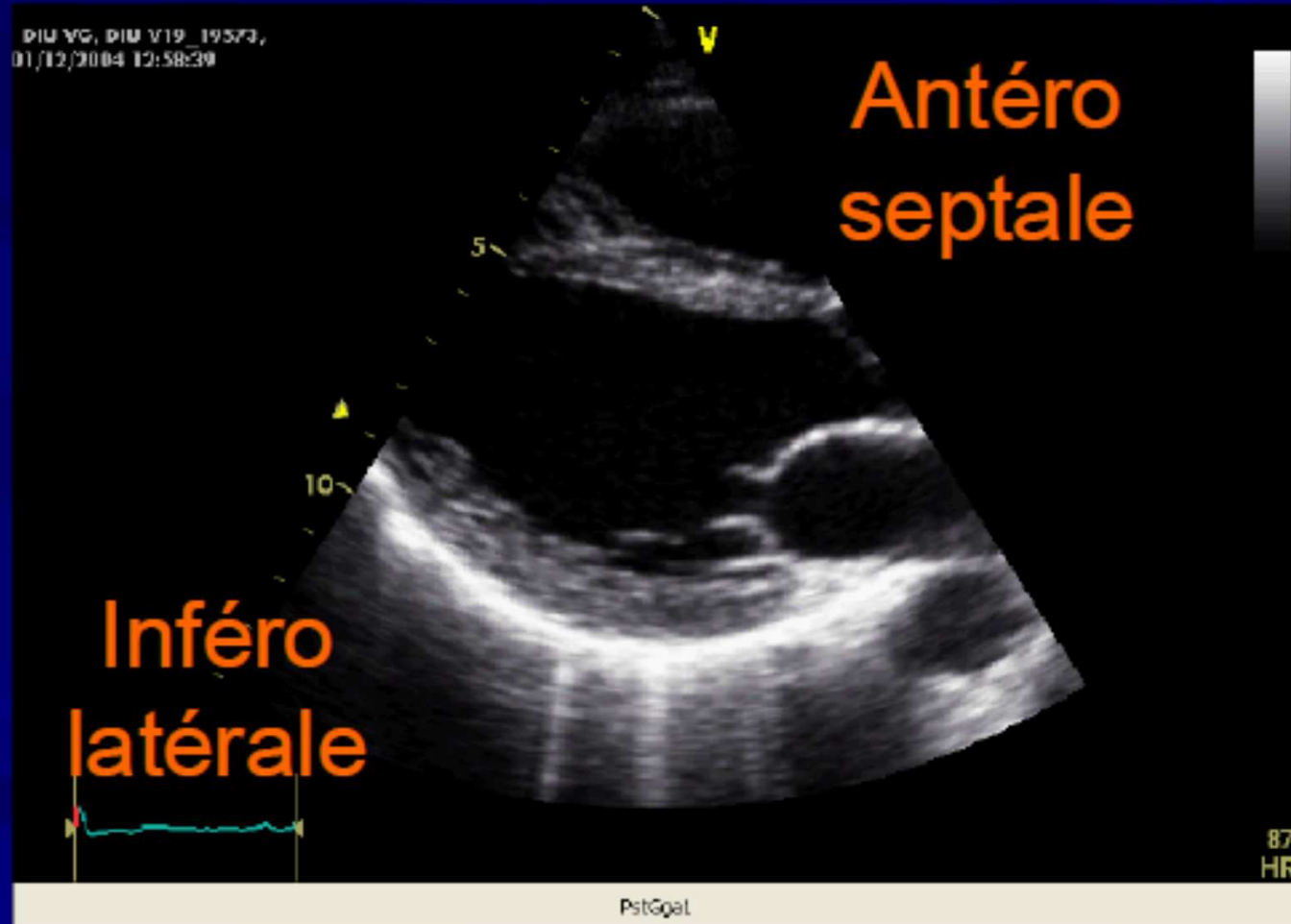
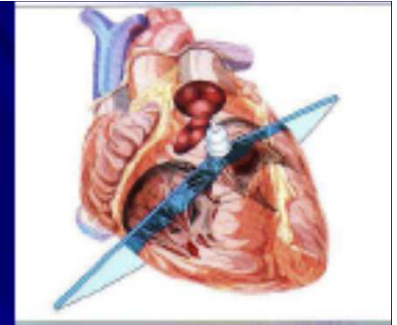
(antéro-septal)

**PST Grand
ou petit axe GA**

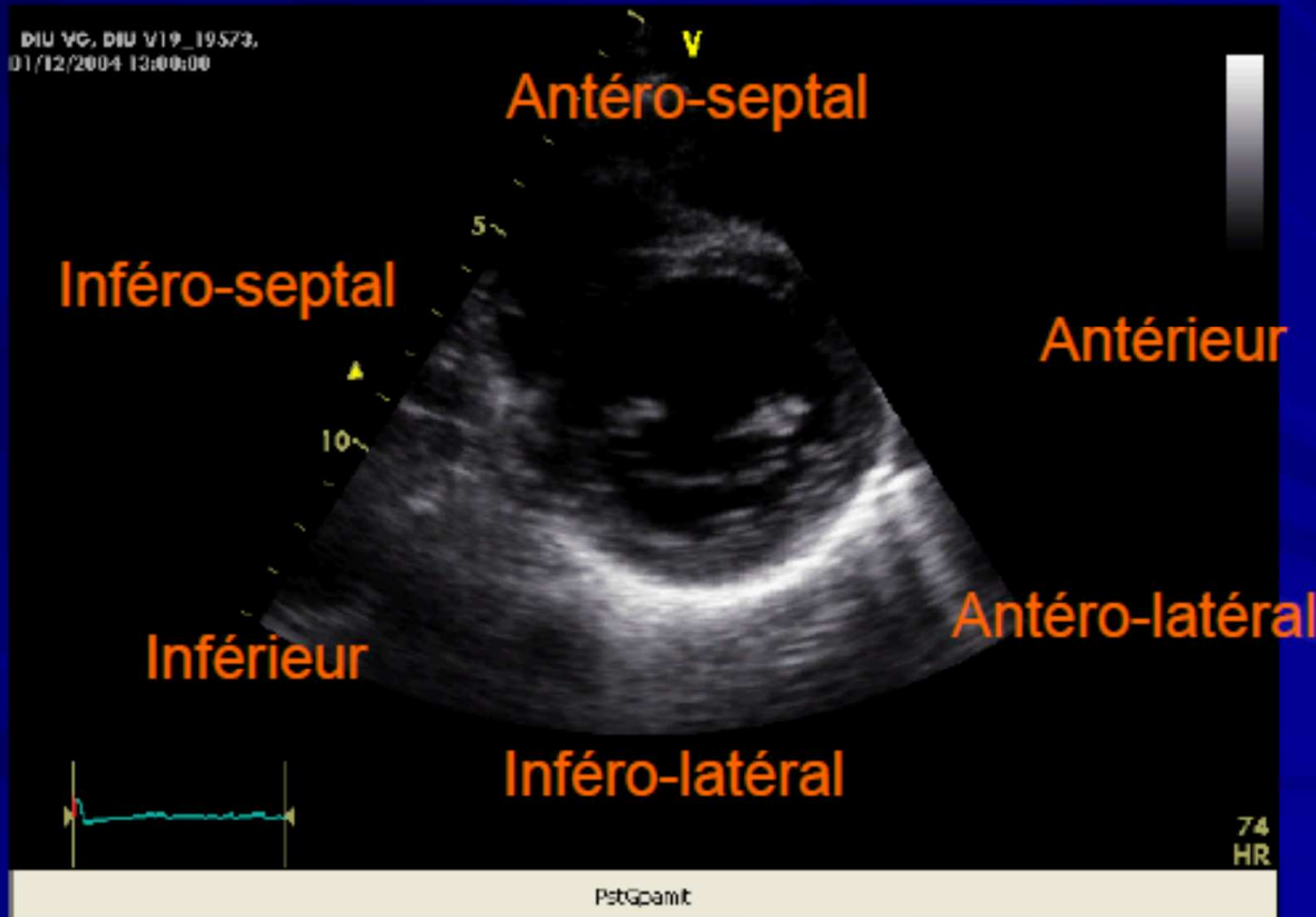
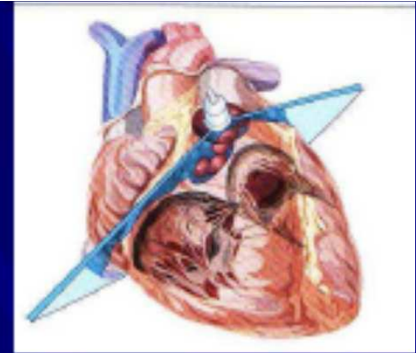


Inféro-latéral

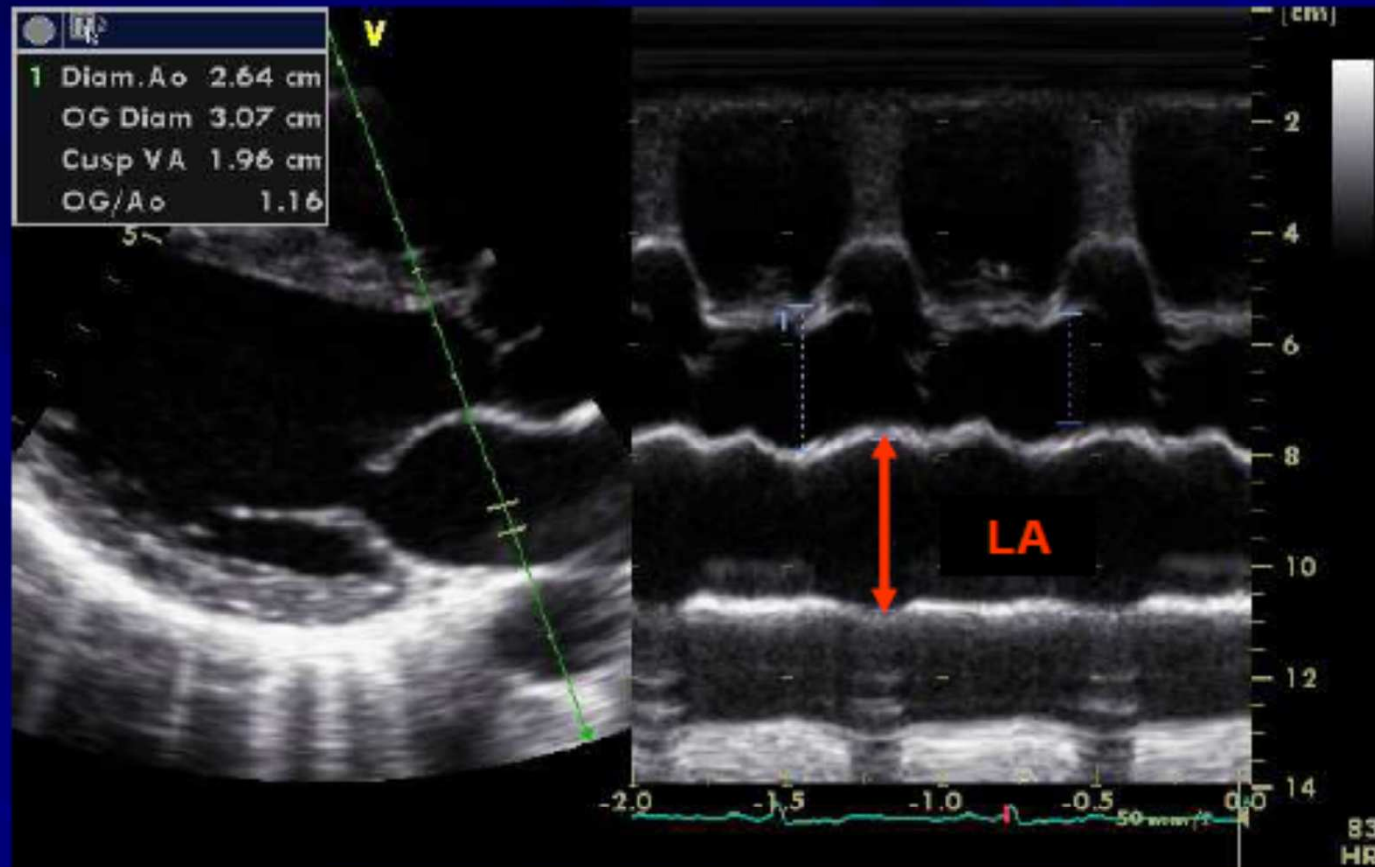
(postérieur)



Segments basaux

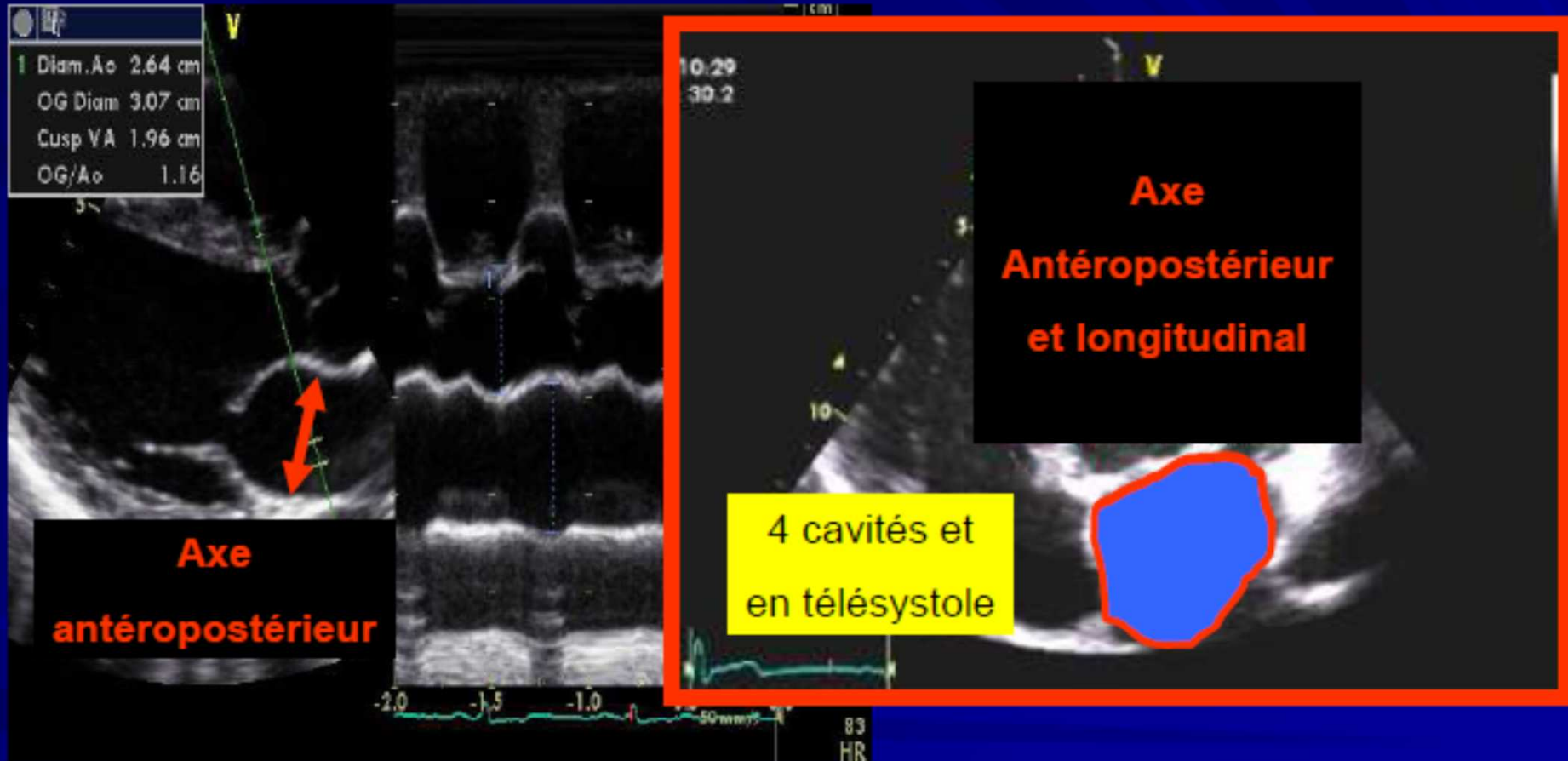


Mesure Aorte / OG



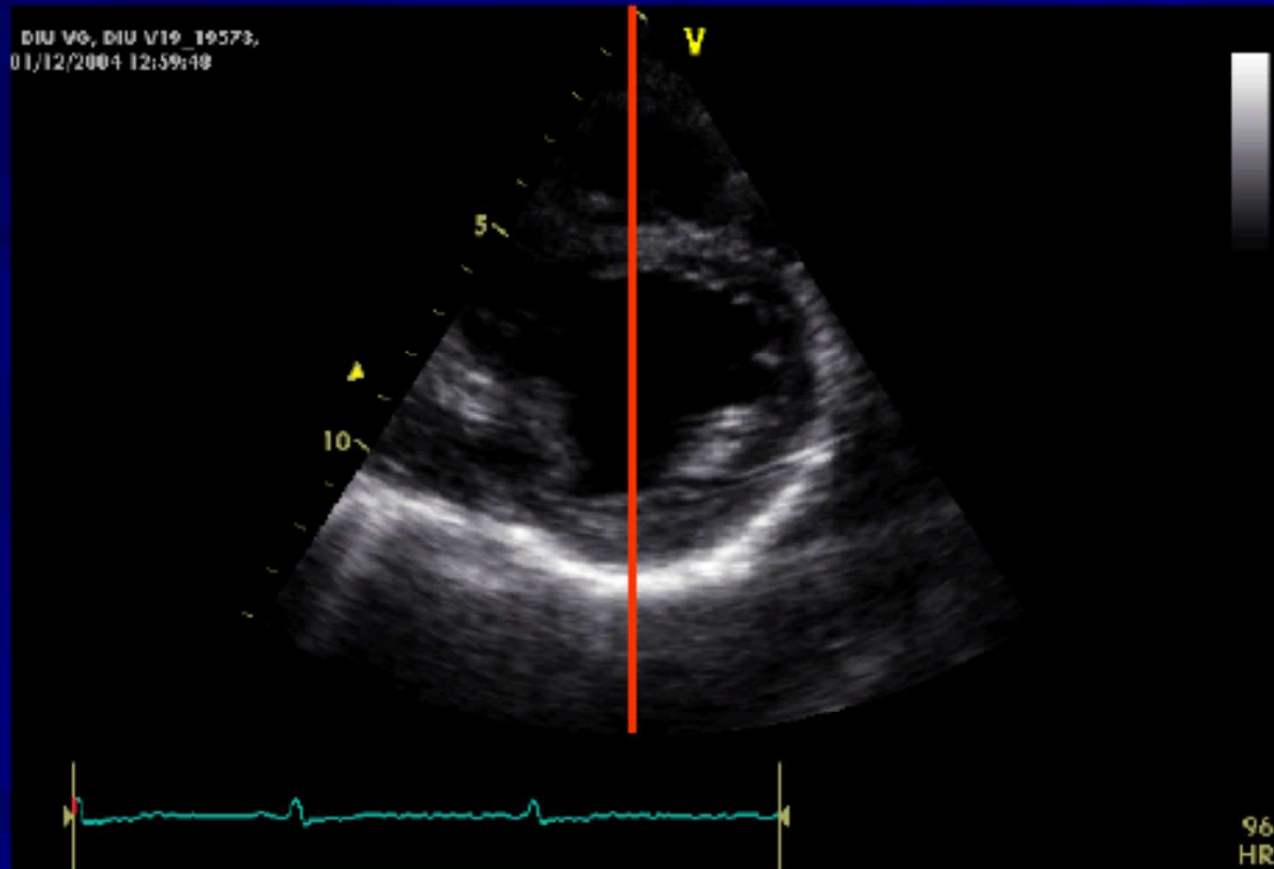
OG dilatée si diamètre > 43 mm (ou > 26 mm/m²)

Oreillette G

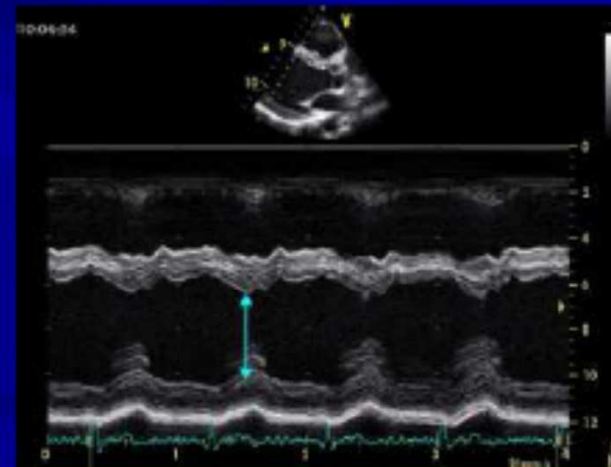
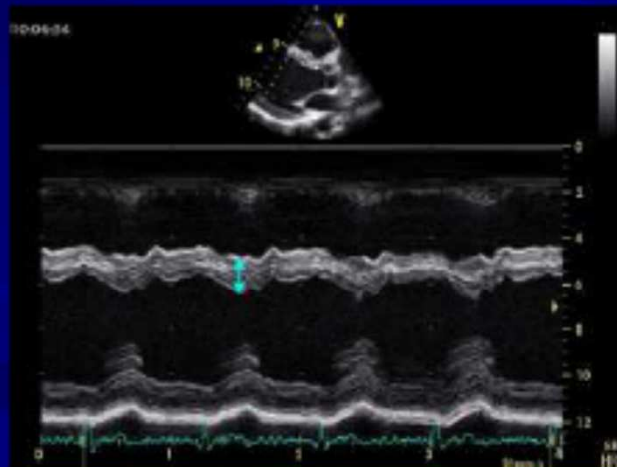
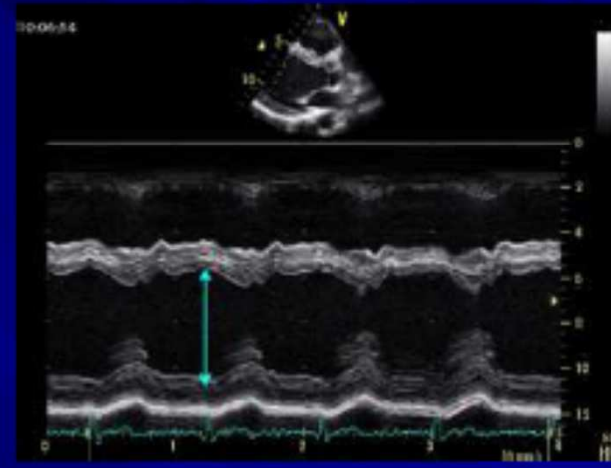
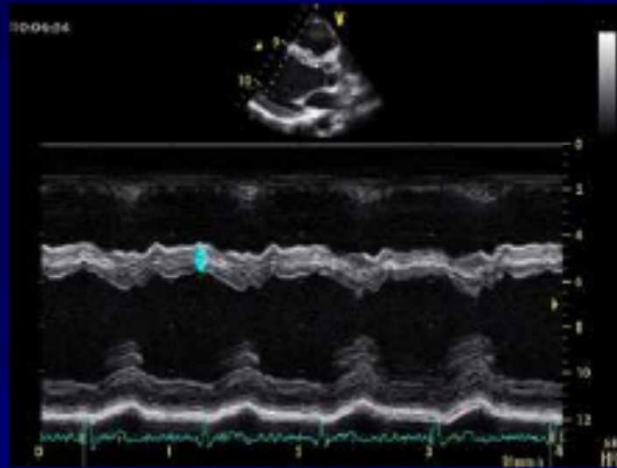


OG dilatée si Surface > 24 cm²

Petit Axe au niveau des piliers



Mesures VG Pst G



Mesures directes en 2D possible

Examen Doppler

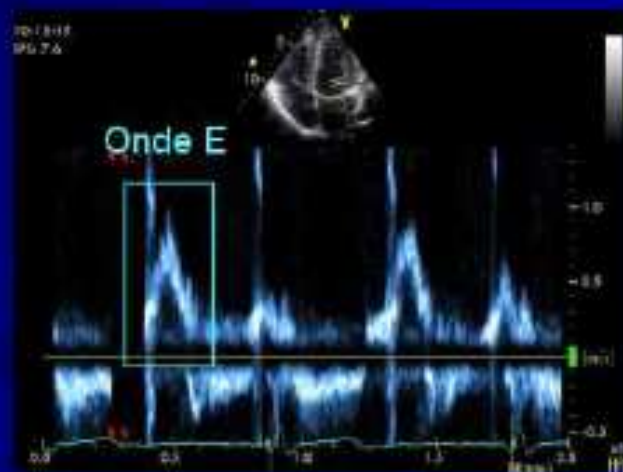
- 3 techniques en routine

- Pulsé
- Continu
- Couleur

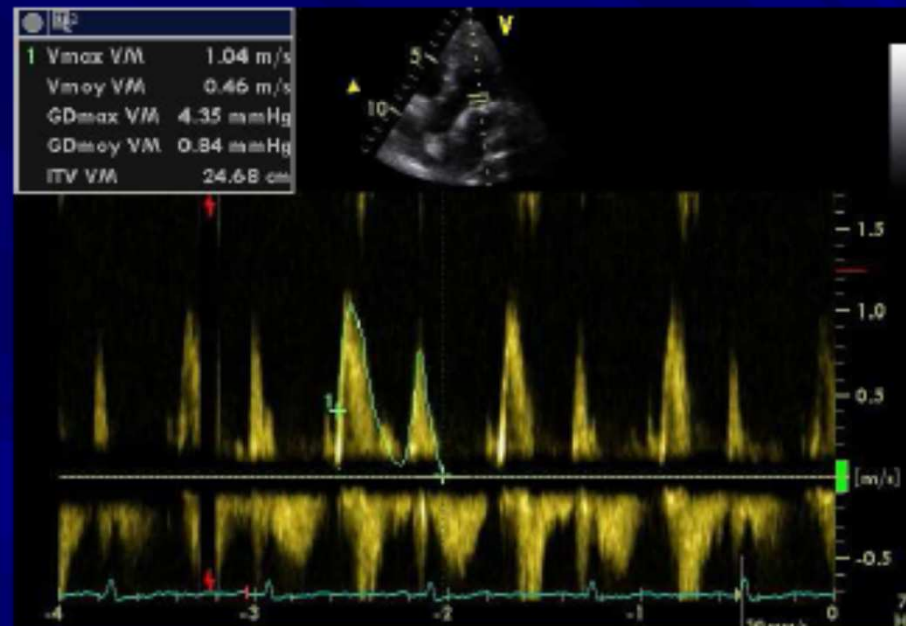
- Dti

- Flux mitral
- Flux Doppler sous-aortique
- Flux Doppler aortique

Doppler Transmitral

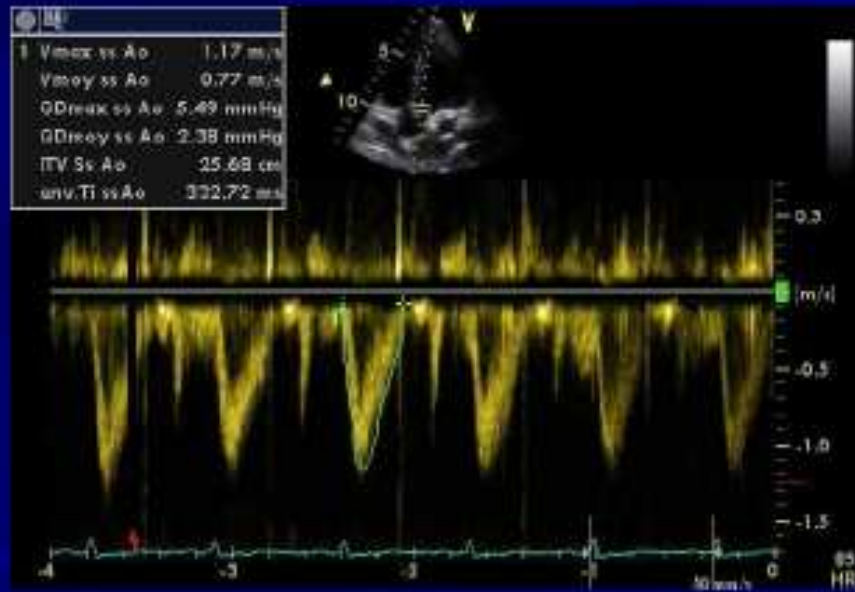


Flux Doppler transmitral

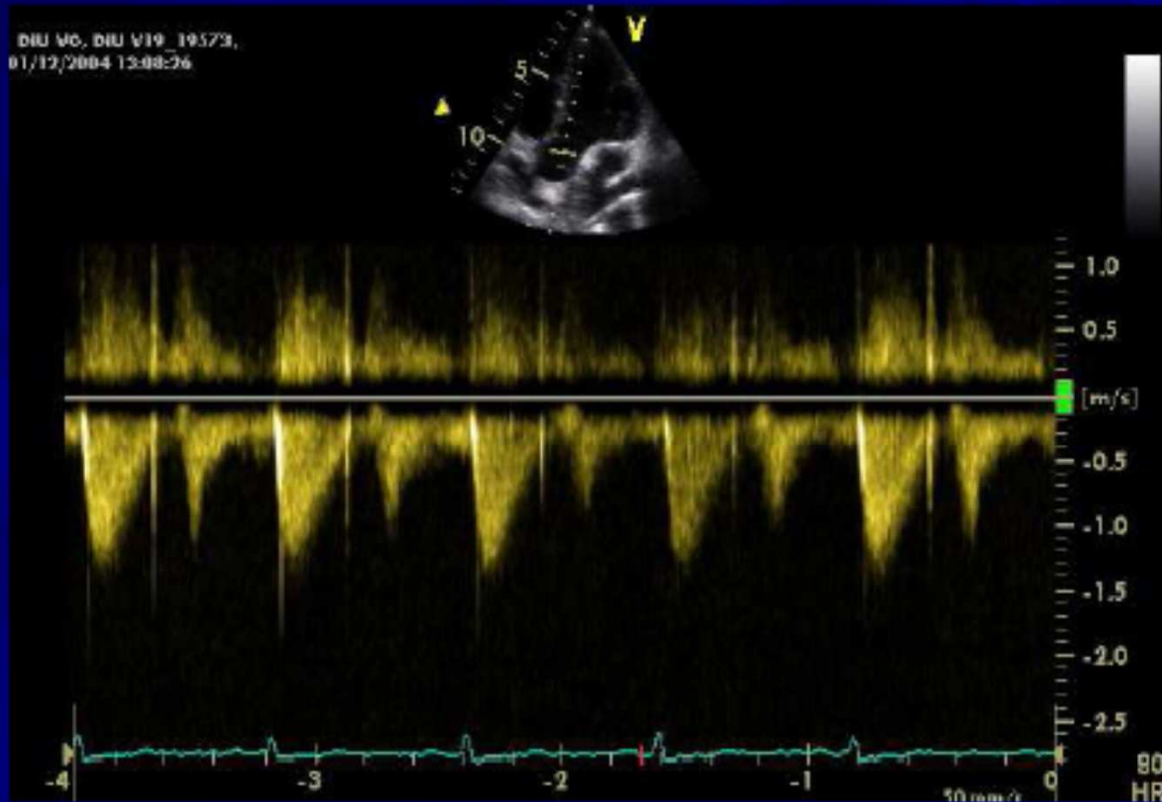


Âge	20-30 (n = 58)	30-40 (n = 71)	40-50 (n = 92)	50-60 (n = 51)	60-70 (n = 67)	70-80 (n = 47)
E (cm/s)	76 ± 13	72 ± 13	70 ± 14	63 ± 11	59 ± 13	59 ± 17
A (cm/s)	38 ± 8	43 ± 8	52 ± 11	52 ± 9	62 ± 13	67 ± 14
E/A	2,1 ± 0,6	1,7 ± 0,4	1,4 ± 0,3	1,3 ± 0,3	1 ± 0,3	0,9 ± 0,3

Flux Sous-Aortique (chambre de chasse VG)



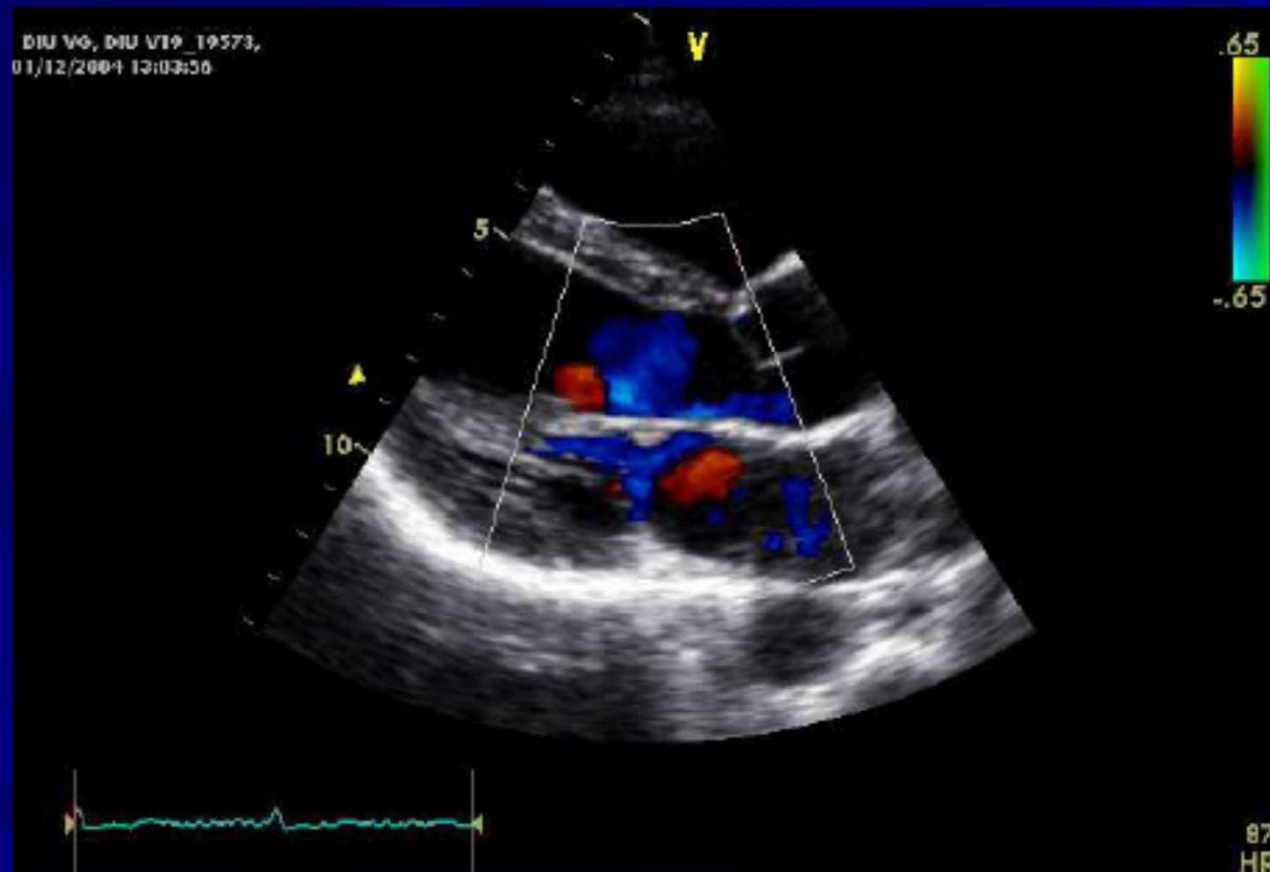
Flux Aortique



A rechercher dans 4 incidences :

Apical, sous-costal, suprasternal et PST Dt

PST G gd axe en Doppler



PHILIPS

ITm0.8 IM 0.7

CHU Nice Cardio

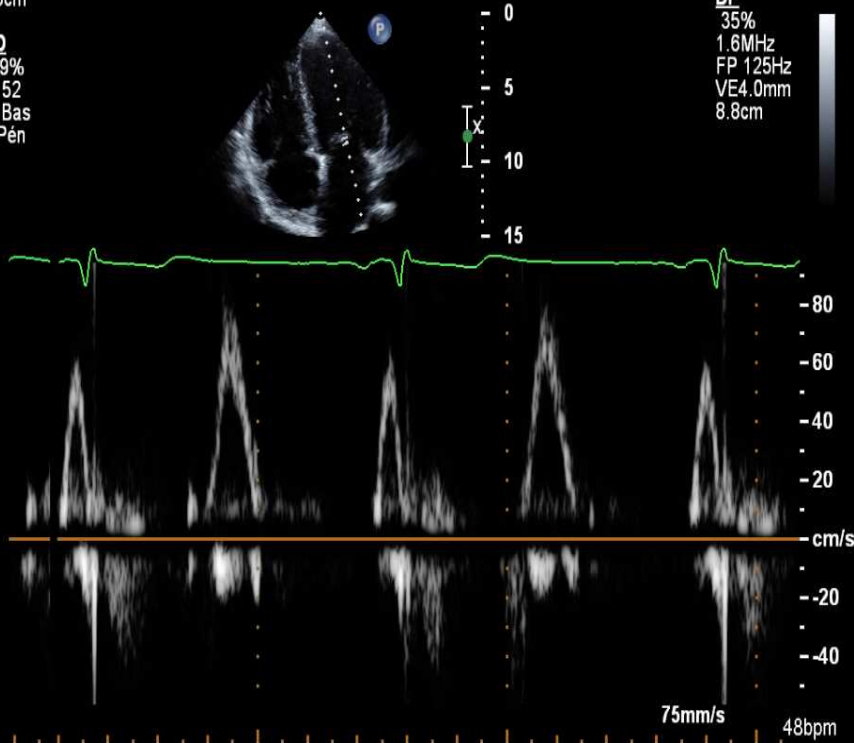
S5-1/OPTIMAL Bertor

CI 50Hz
15cm

2D
69%
C 52
P Bas
HPén

DP
35%
1.6MHz
FP 125Hz
VE4.0mm
8.8cm

C4



PHILIPS

ITm0.8 IM 1.4

CHU Nice Cardio

S5-1/OPTIMAL Bertor

CI 50Hz
15cm

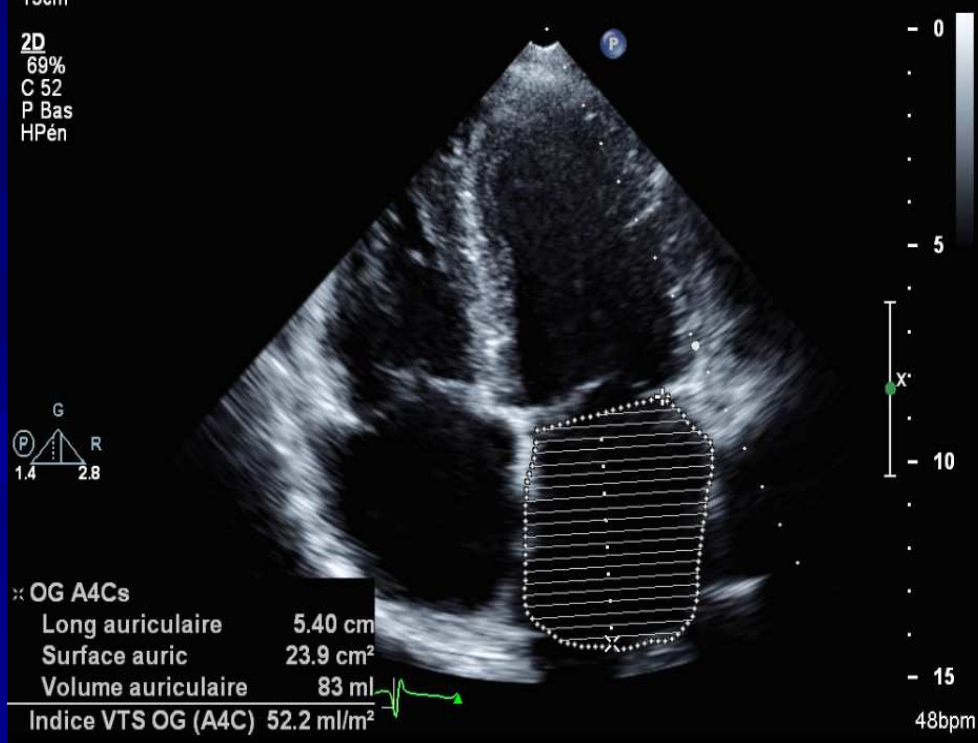
2D
69%
C 52
P Bas
HPén



:: OG A4Cs

Long auriculaire	5.40 cm
Surface auric	23.9 cm ²
Volume auriculaire	83 ml
Indice VTS OG (A4C)	52.2 ml/m ²

C4



PHILIPS

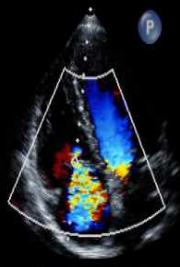
ITm0.6 IM 0.1

CHU Nice Cardio

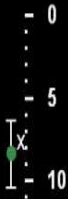
S5-1/OPTIMAL Bertor

CI 11Hz
15cm

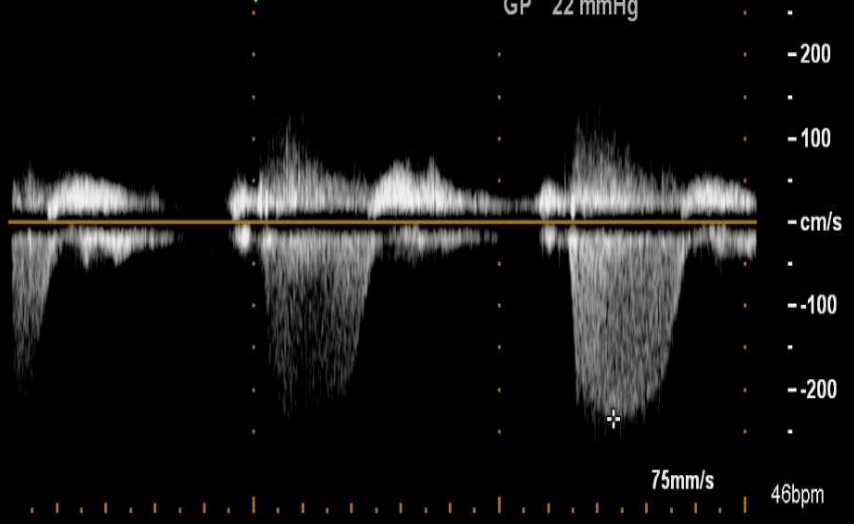
2D
69%
C 52
P Bas
HPén
Coul
65%
2.3MHz
FP Haut
Moy



C4 C4
DC
50%
1.8MHz
FP 275Hz



Vit 235 cm/s
GP 22 mmHg



PHILIPS

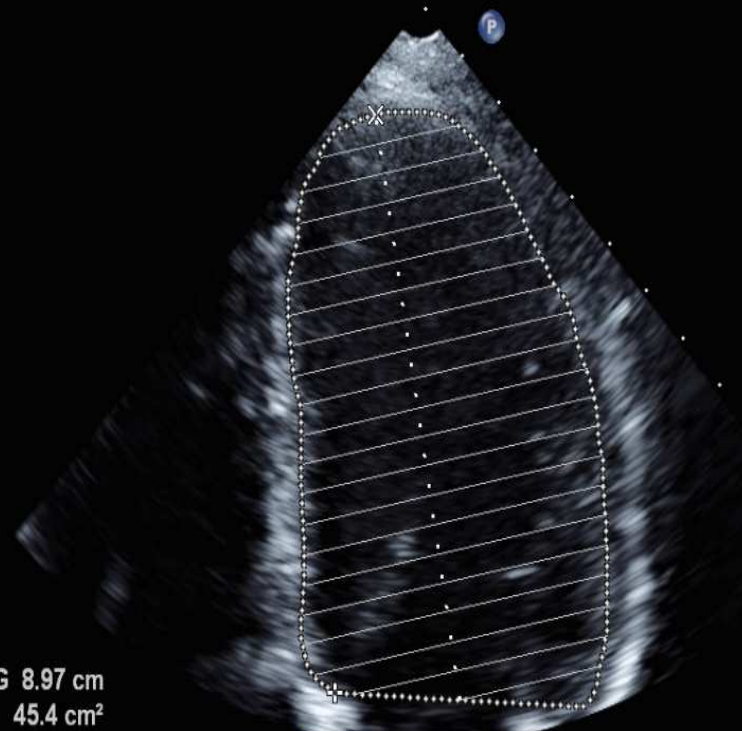
ITm0.8 IM 1.3

CHU Nice Cardio

S5-1/OPTIMAL Bertor

CI 61Hz
11cm

2D
68%
C 52
P Bas
HPén



× A4Cd
Long VG 8.97 cm
Surf VG 45.4 cm²
Vol VG 183 ml
VTD (A4C) 183 ml



