



ECHOGRAPHIE AU DECHOCAGE

Dr C. Perrier



ECHOGRAPHIE AU DECHOCAGE

Echographie au dechocage

LES OUTILS

CHOC

F.A.S.T EXTENDED

INTERVENTIONNEL

LES OUTILS



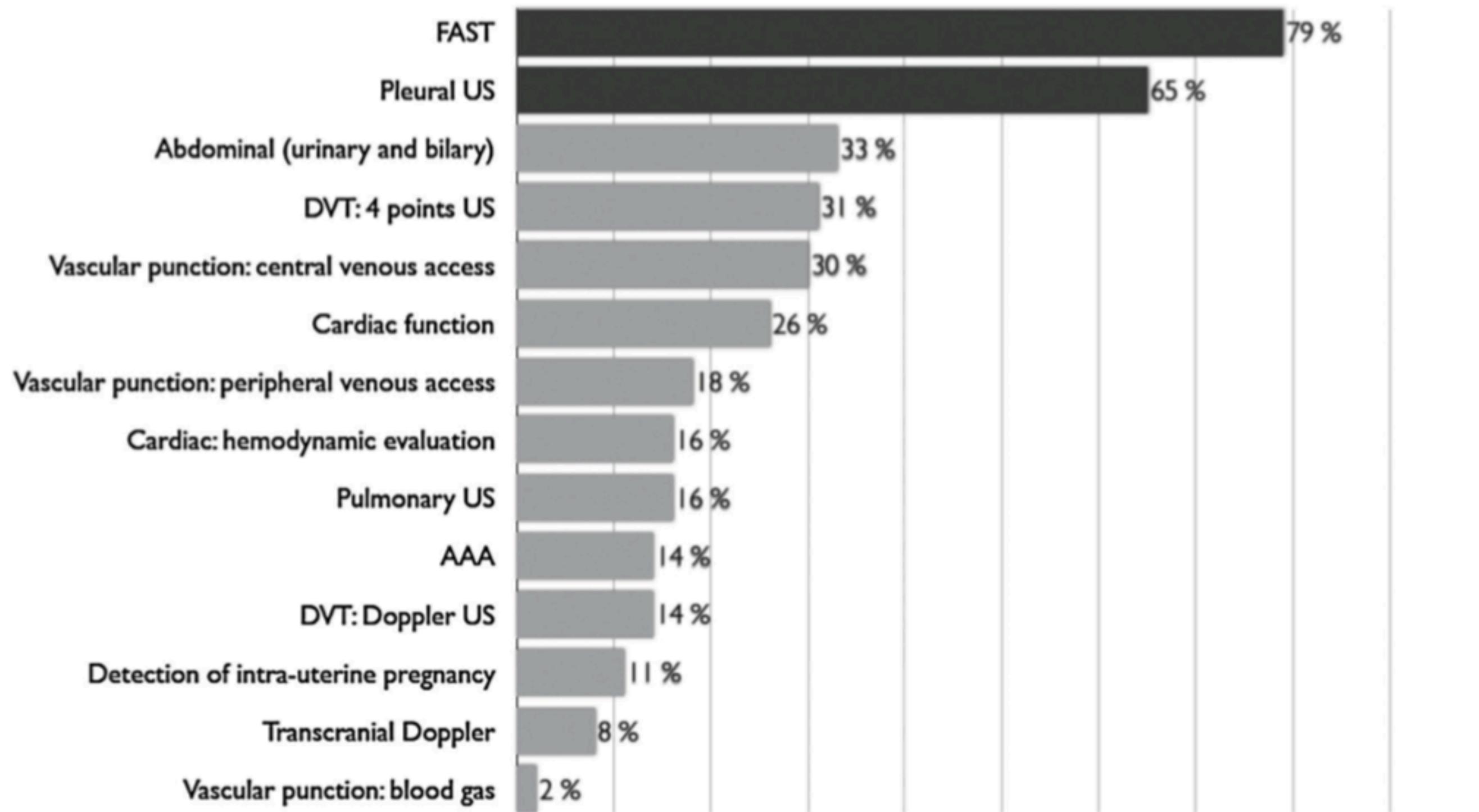
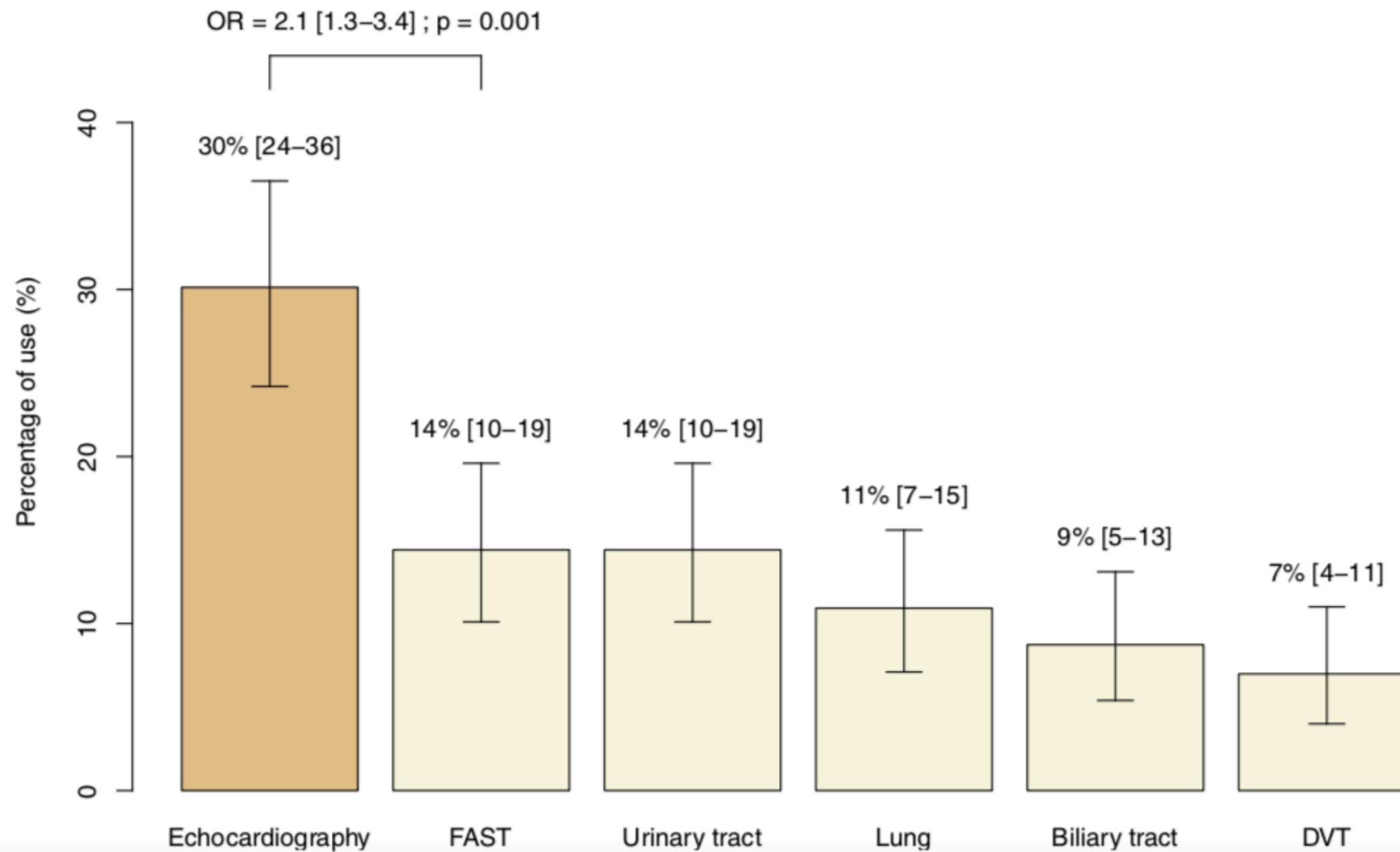
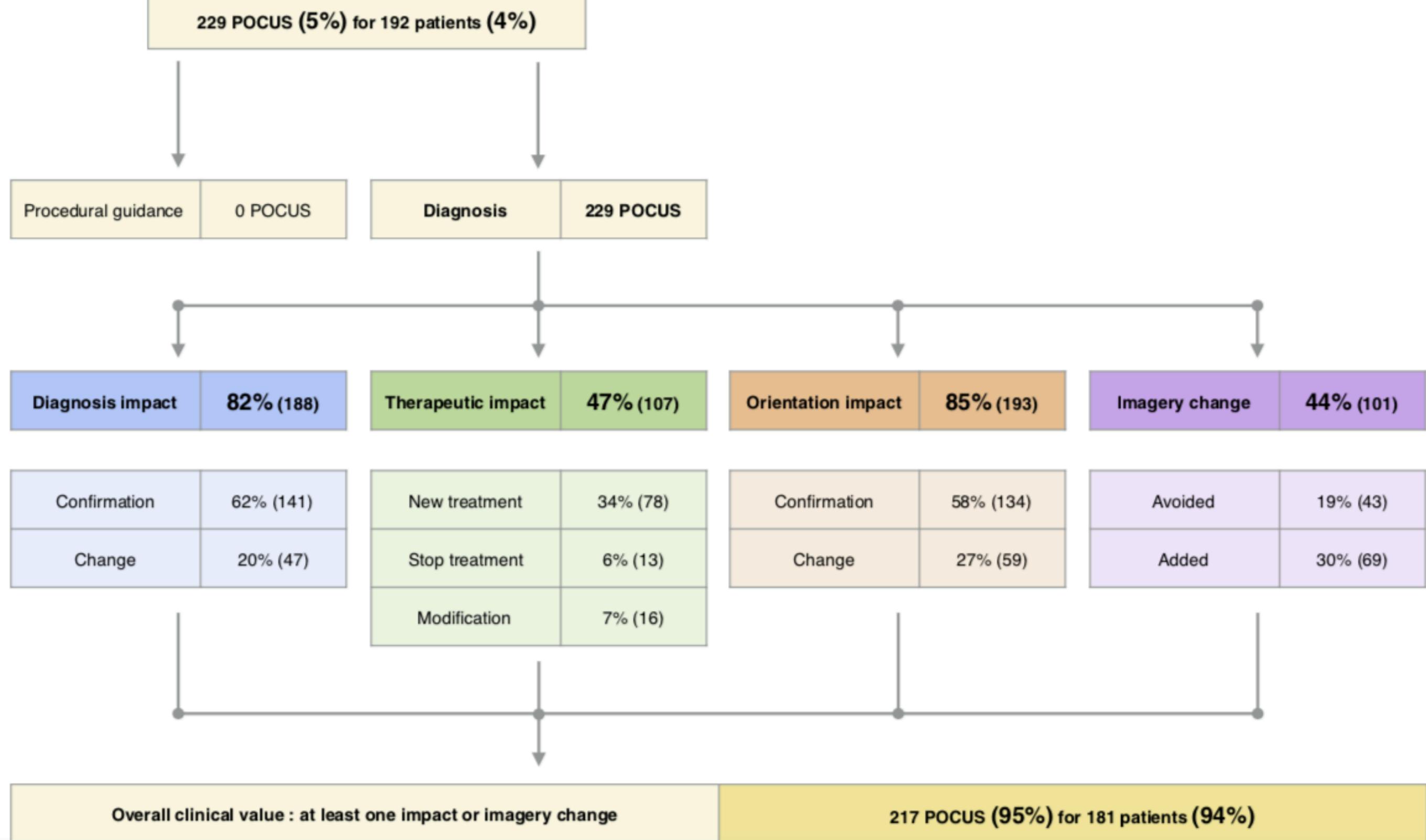


Fig. 1. Clinical applications of the US in the ED.



Bobbia, X., et al. (2017). The clinical impact and prevalence of emergency point-of-care ultrasound: A prospective multi-center study. *Anaesthesia Critical Care & Pain Medicine*, 36(6), 383–389.



Bobbia, X., et al. (2017). The clinical impact and prevalence of emergency point-of-care ultrasound: A prospective multi-center study. *Anaesthesia Critical Care & Pain Medicine*, 36(6), 383–389.



C'est mieux avec que sans

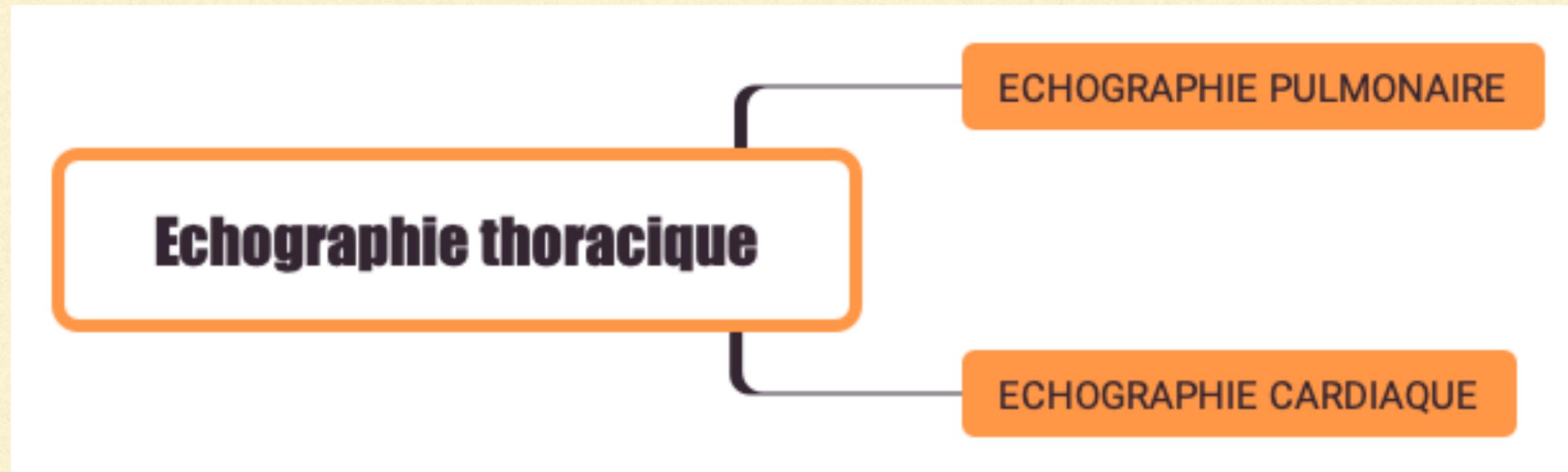
Echographie clinique fait mieux (71.9% vs. 57.1%, D 14.8% [CI 0.5%, 28.4%]).

Plus particulièrement pour les pathologies cardiaques (94.7% vs. 40.0%, D 54.7% [CI 8.9%, 86.4%]).

Correct initial diagnostic syndrome	Intervention <i>n</i> = 89	Control <i>n</i> = 84	Effect size (95% confidence interval)
Correct initial diagnostic syndrome (overall)	64 (71.9%)	48 (57.1%)	Δ 14.8% (0.5%, 28.4%)
Correct initial diagnostic syndrome by group (<i>n</i> , % correct of counts in this group)			
Neurologic	15 (68.2%)	19 (67.9%)	
Sepsis	19 (70.4%)	10 (50%)	
Cardiac	18 (94.7%)	2 (40%)	
Endocrine	4 (57.1%)	7 (50%)	
Hepatic	0 (0%)	3 (60%)	
Renal	0 (0%)	3 (100%)	
Acute abdomen	1 (50%)	0 (0%)	
Pulmonary embolism	3 (100%)	N/A	

Becker, T. K., Tafoya, C. A., Osei-Ampofo, M., Tafoya, M. J., Kessler, R. A., Theyyunni, N., et al. (2017). Cardiopulmonary ultrasound for critically ill adults improves diagnostic accuracy in a resource-limited setting: the AFRICA trial. *Tropical Medicine & International Health : TM & IH*, 22(12), 1599–1608 trial

ECHOGRAPHIE THORACIQUE

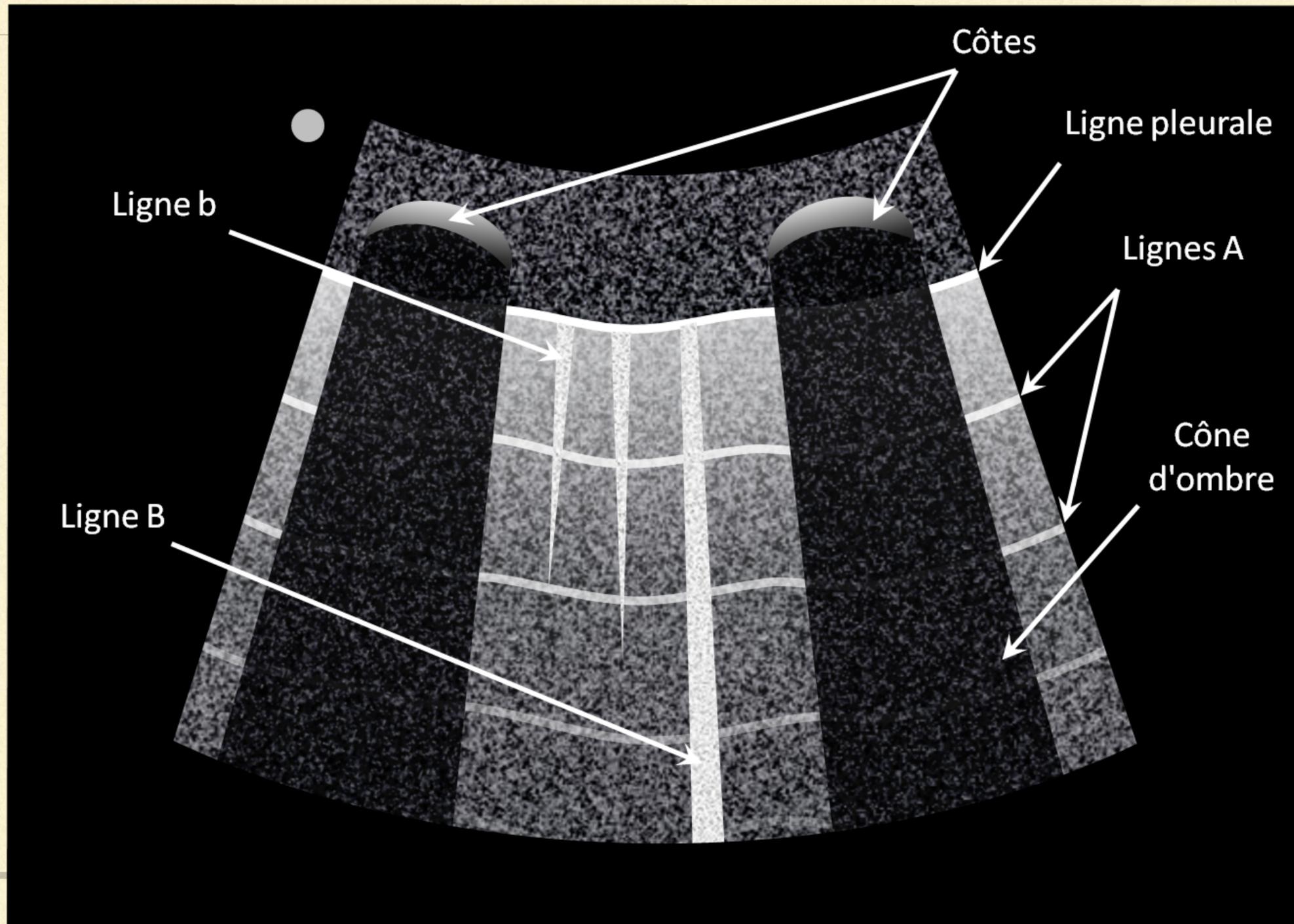


SEMIOLOGIE

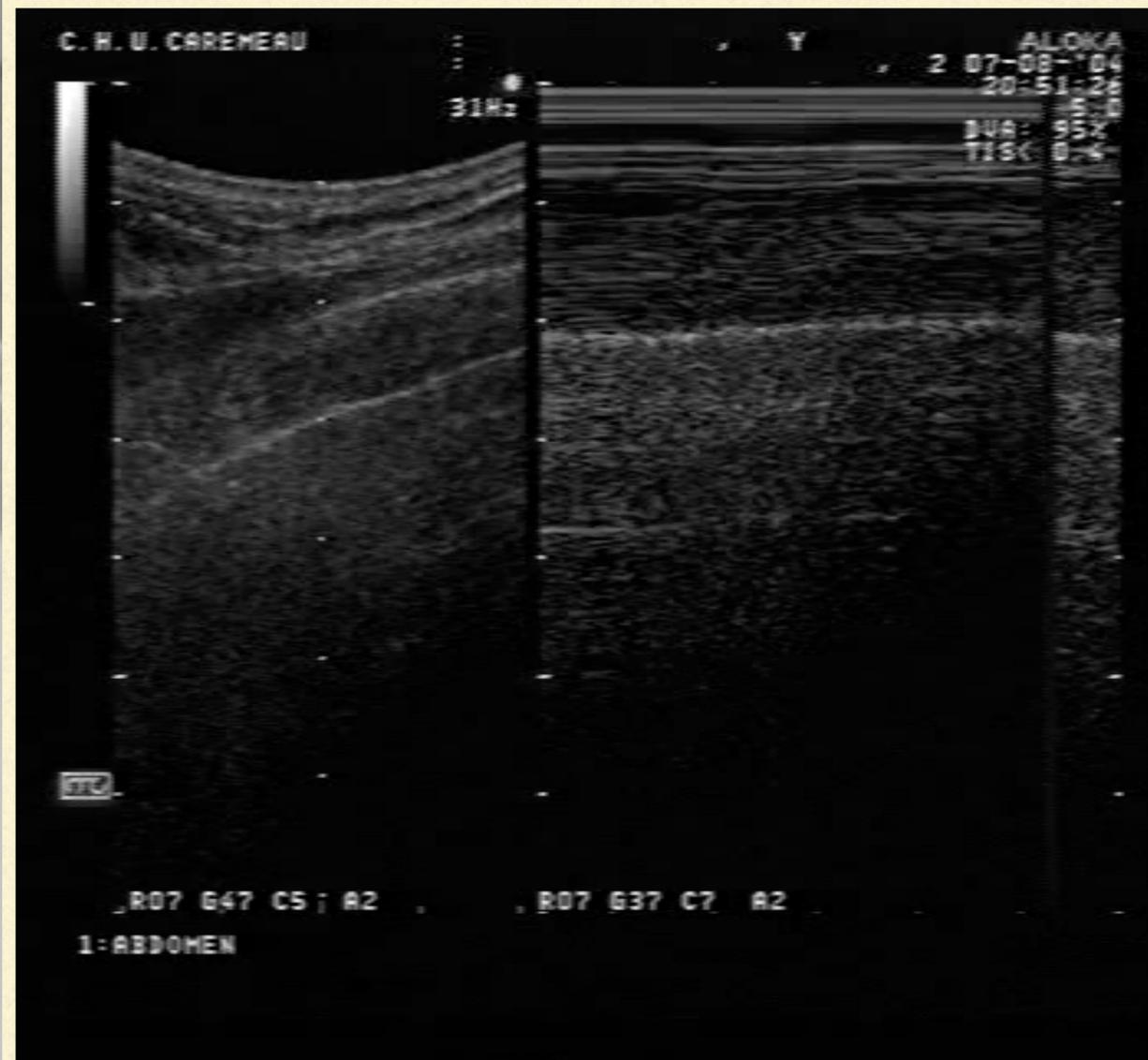
- **Signe de la chauve souris**
- **Ligne A** : artéfact de réverbération
 - **Horizontale**
- **Ligne B** : artéfact en queue de comète
 - **Verticale**
 - **Peu fréquente chez le sujet sain**
 - **Plus visible dans les zones déclives**

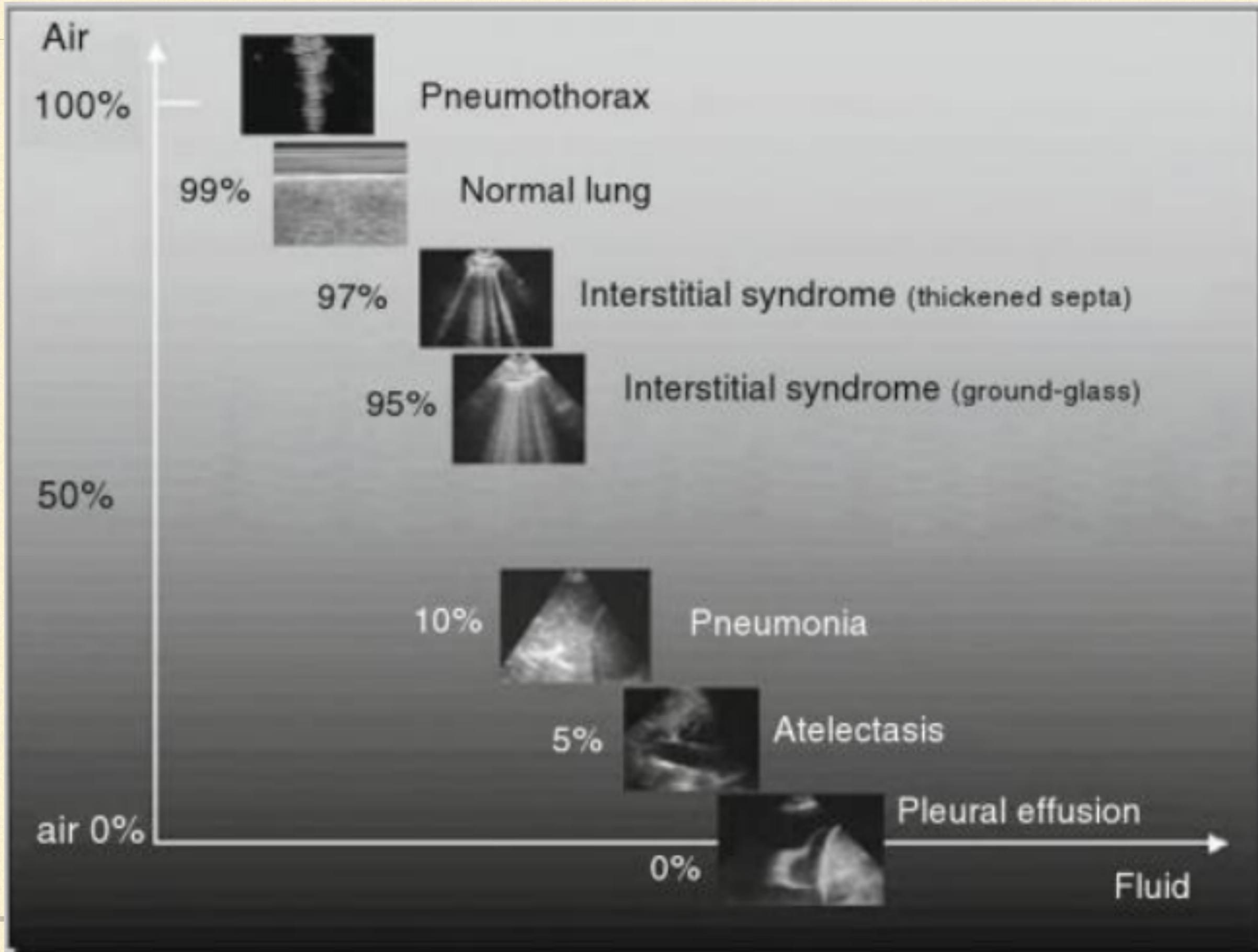


ECHOGRAPHIE PULMONAIRE



MODE TM

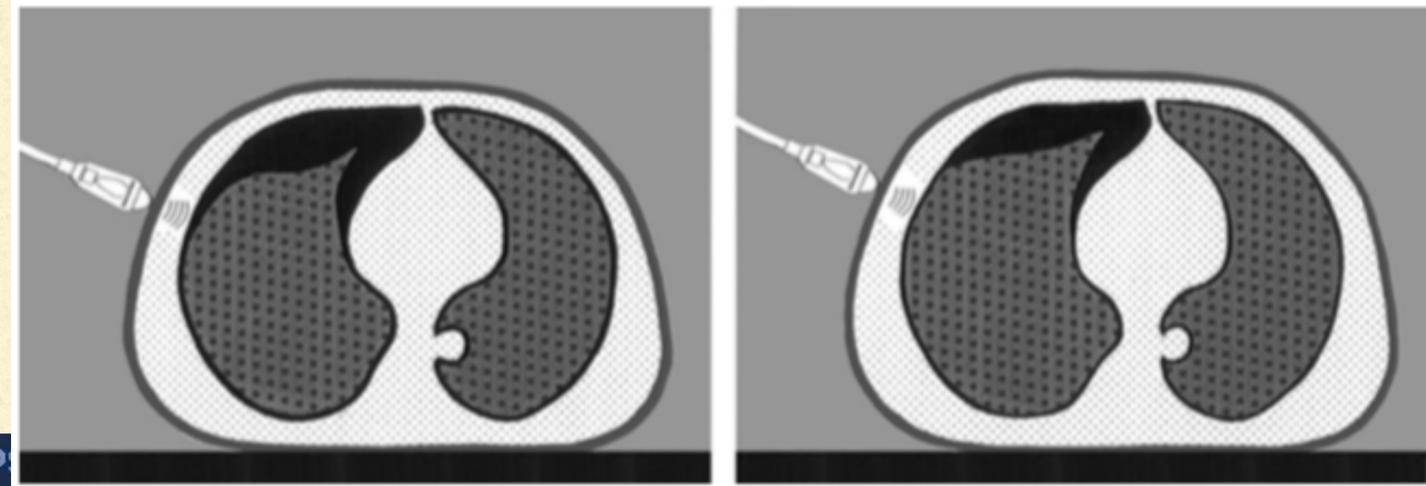




ÉPANCHEMENT PLEURAL LIQUIDIEN



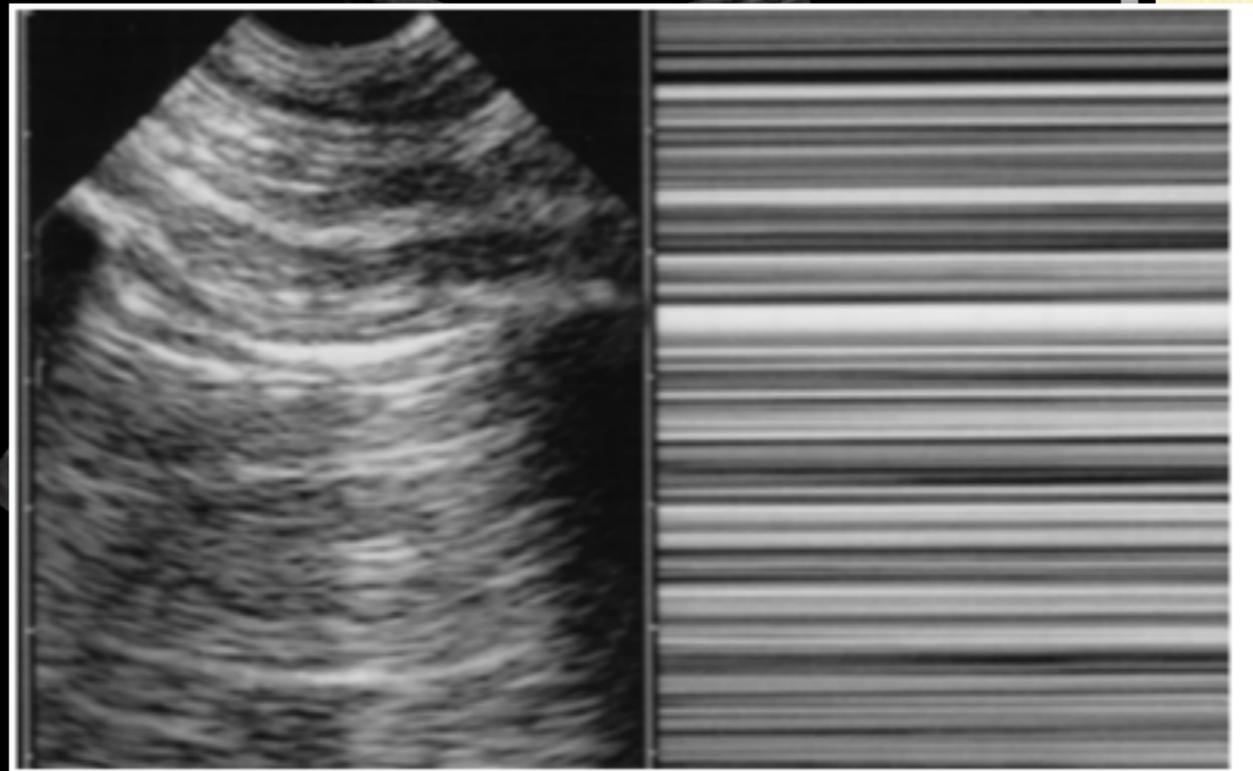
PNEUMOTHORAX



17-06-30-133145 URGENCES CHU-CLERMOMT- ITm 0,1 14:15:37

VASC

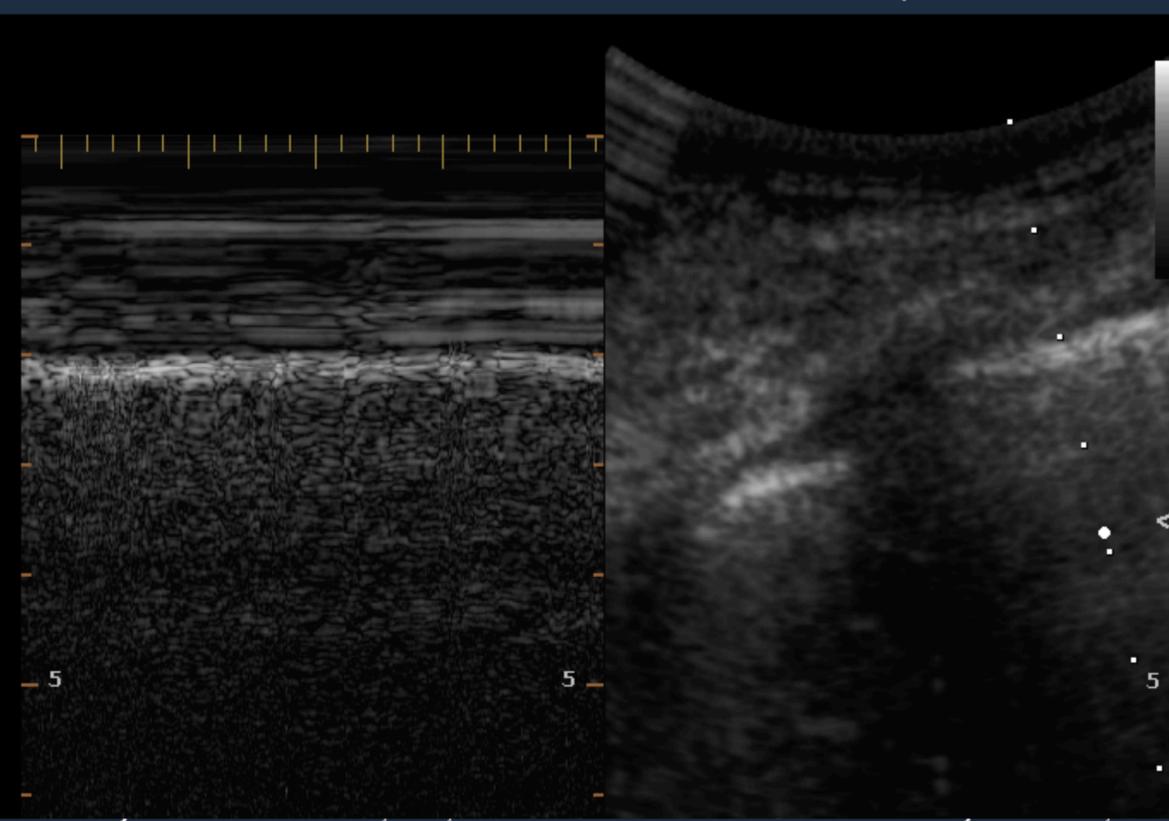
P



Abd gén
C5-1
53Hz
7,0cm

2D
HGén
Gn 60
C 56
3/3/3

TM
1/2
25 mm/s

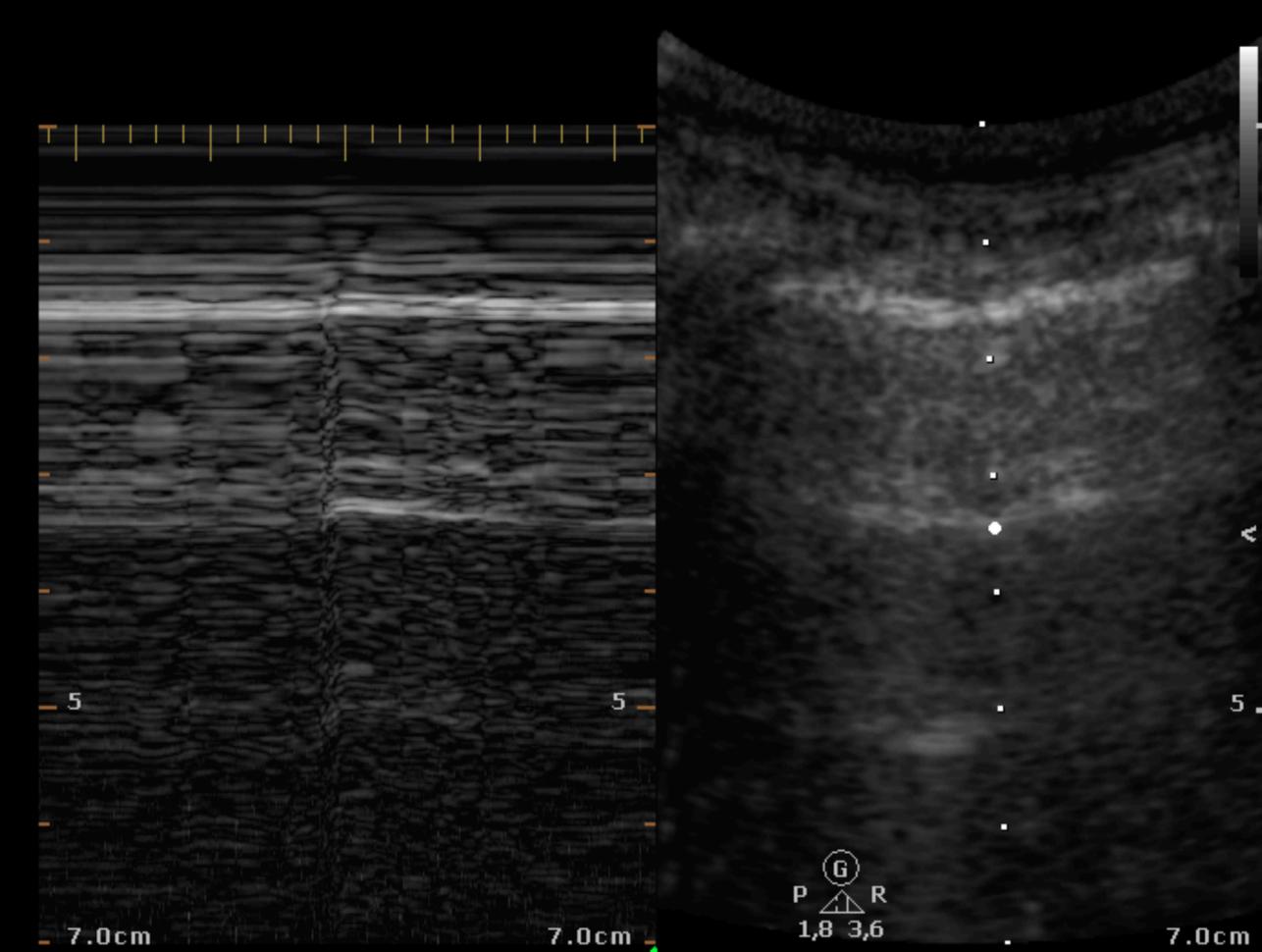


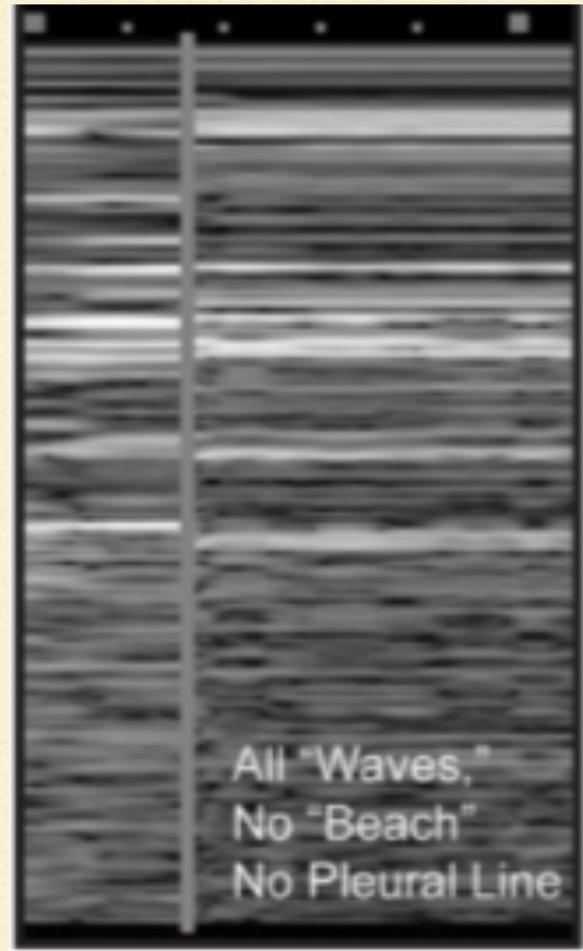
17-06-30-133145 URGENCES CHU-CLERMOMT- ITm 0,1 13:42:06

Abd gén
C5-1
53Hz
7,0cm

2D
HGén
Gn 60
C 56
3/3/3

TM
1/2
25 mm/s





D

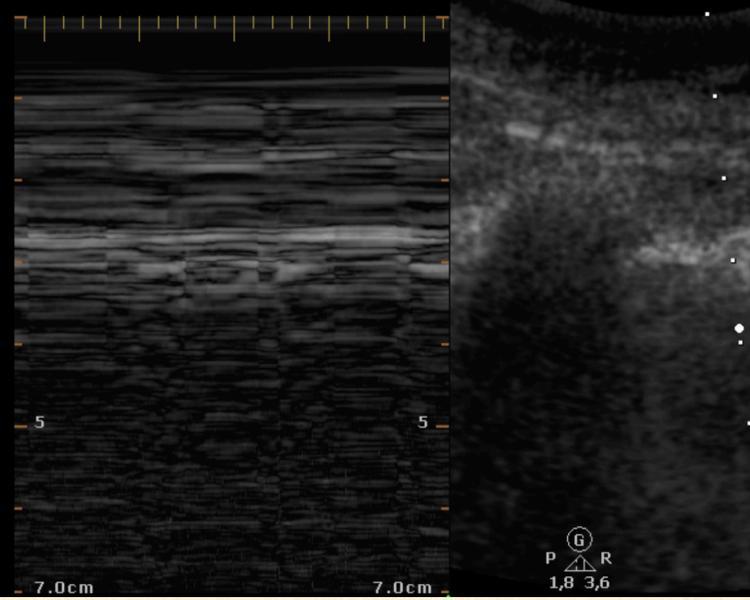
ASSIS

MEBRE 17-06-30-133145 URGENCES CHU-CLERMONT- ITm 0,1 13:

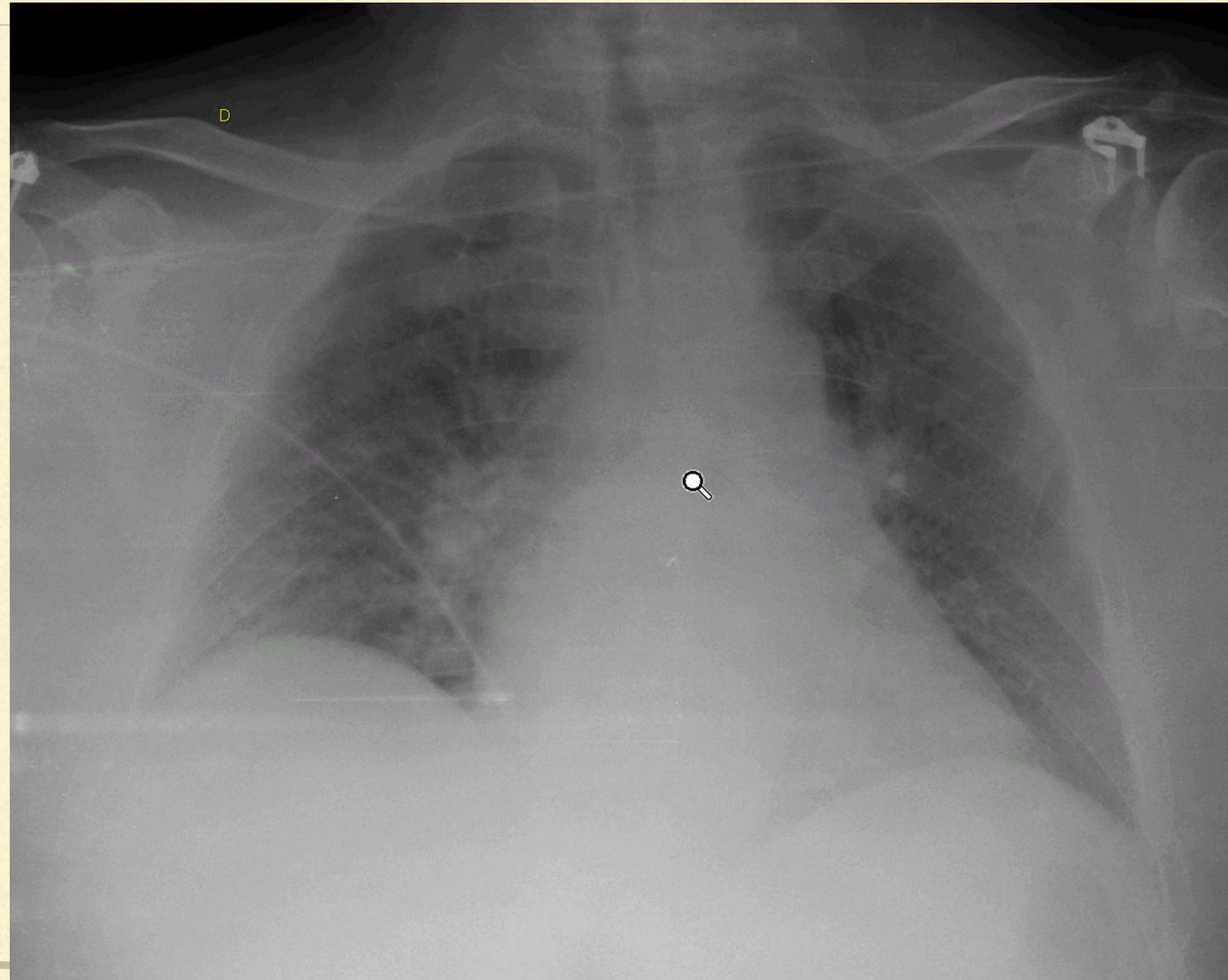
Abd gén
C5-1
53Hz
7,0cm

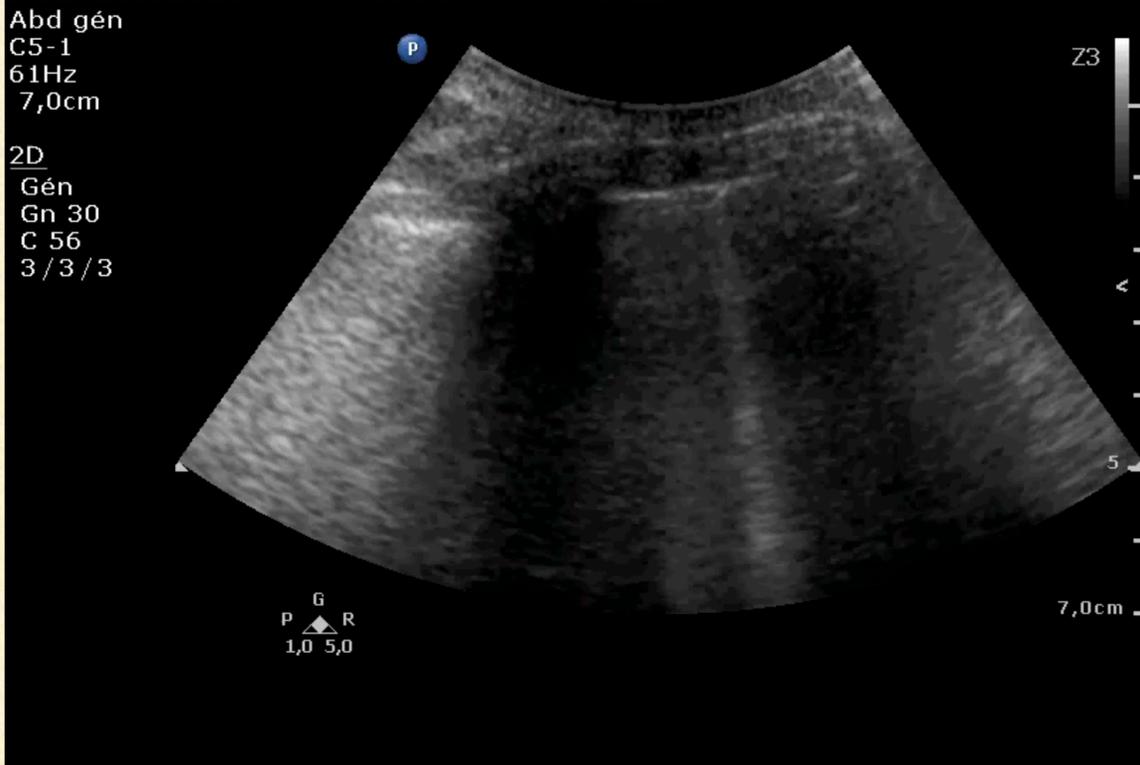
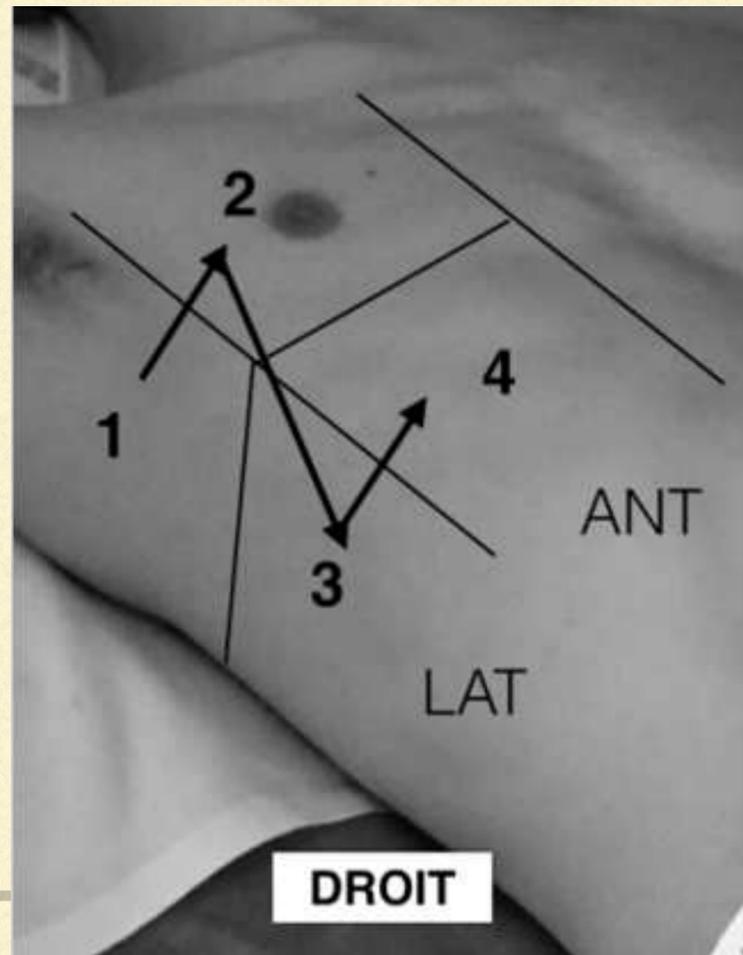
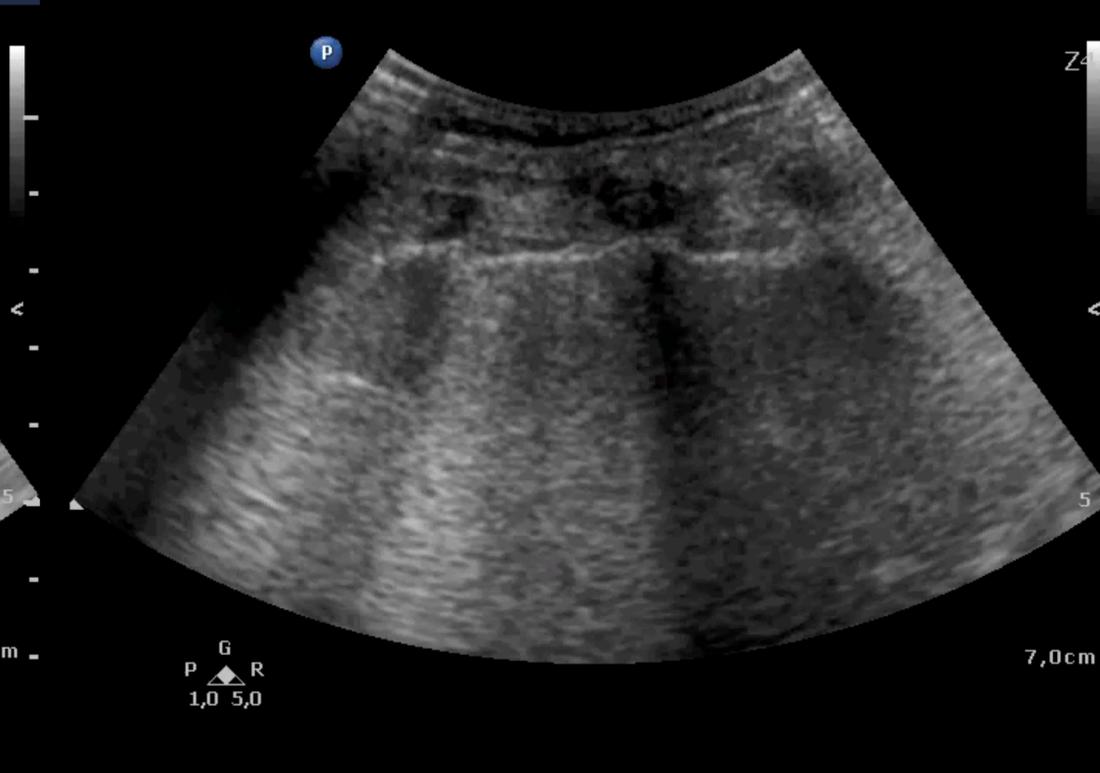
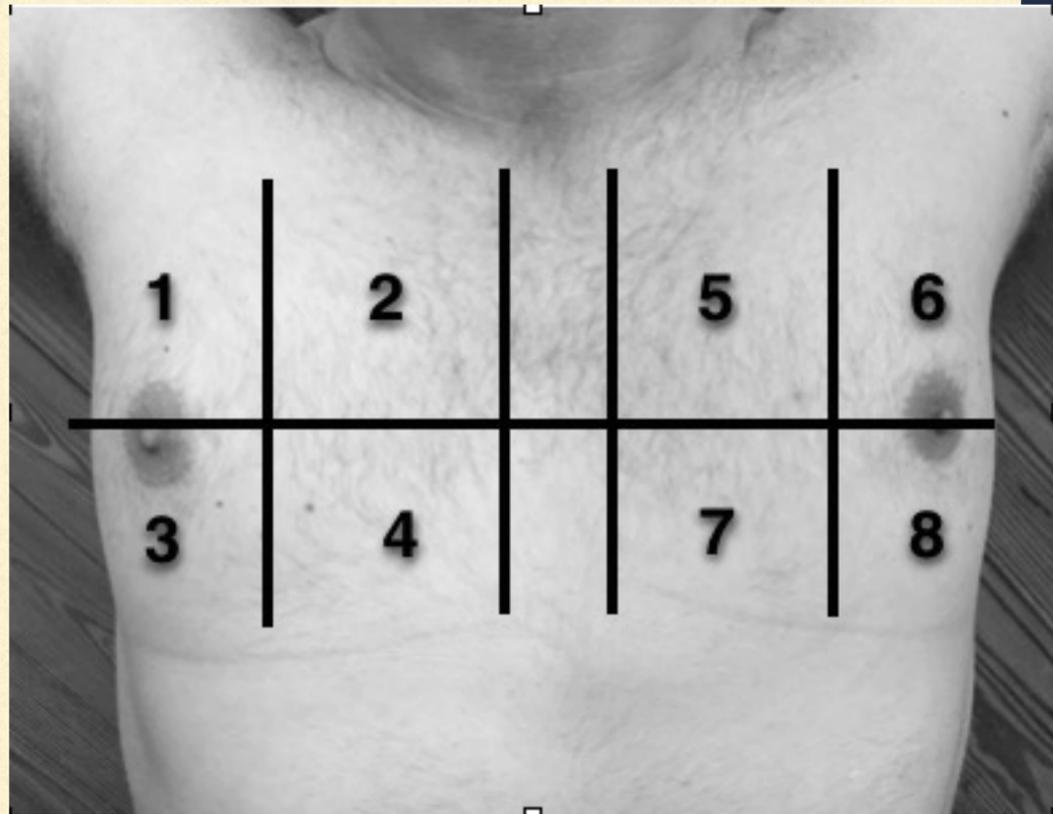
2D
HGén
Gn 60
C 56
3 / 3 / 3

TM
1 / 2
25 mm/s

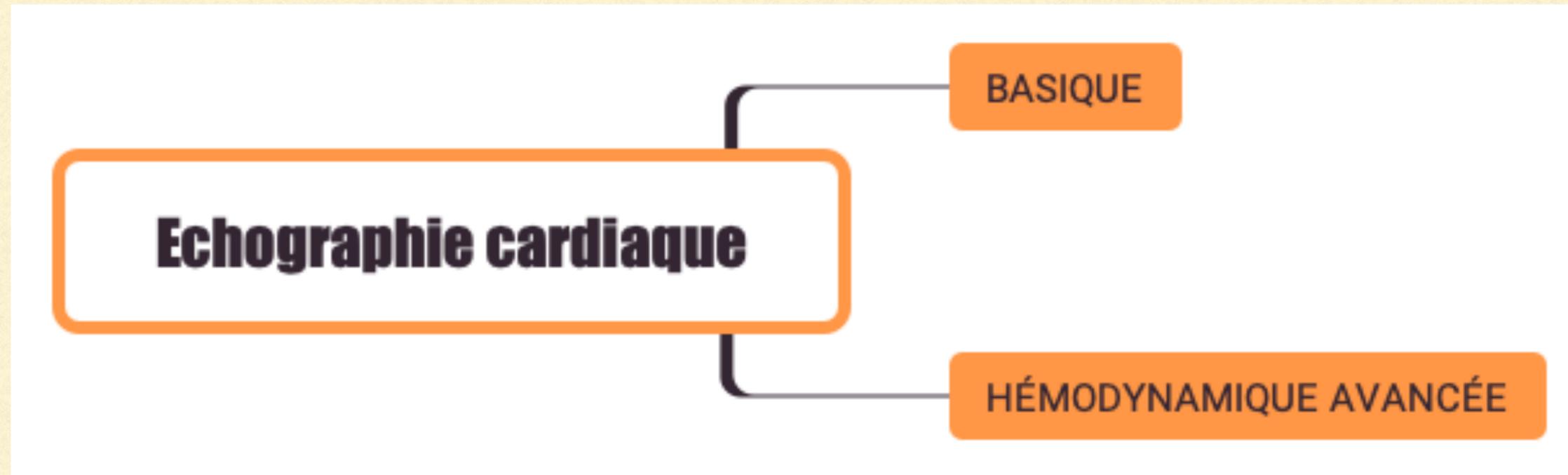


LIGNES B: SYNDROME INTERSTITIEL





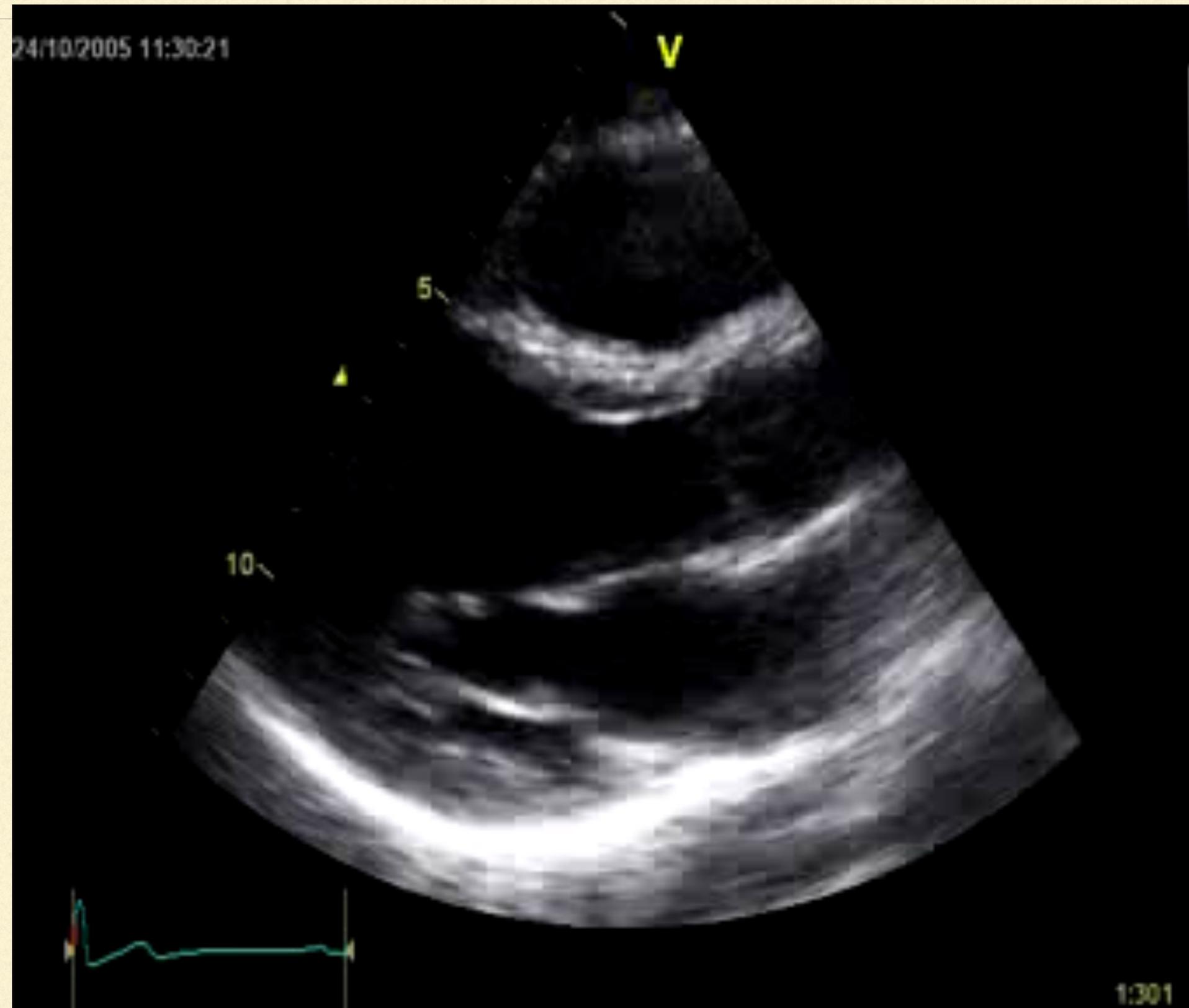
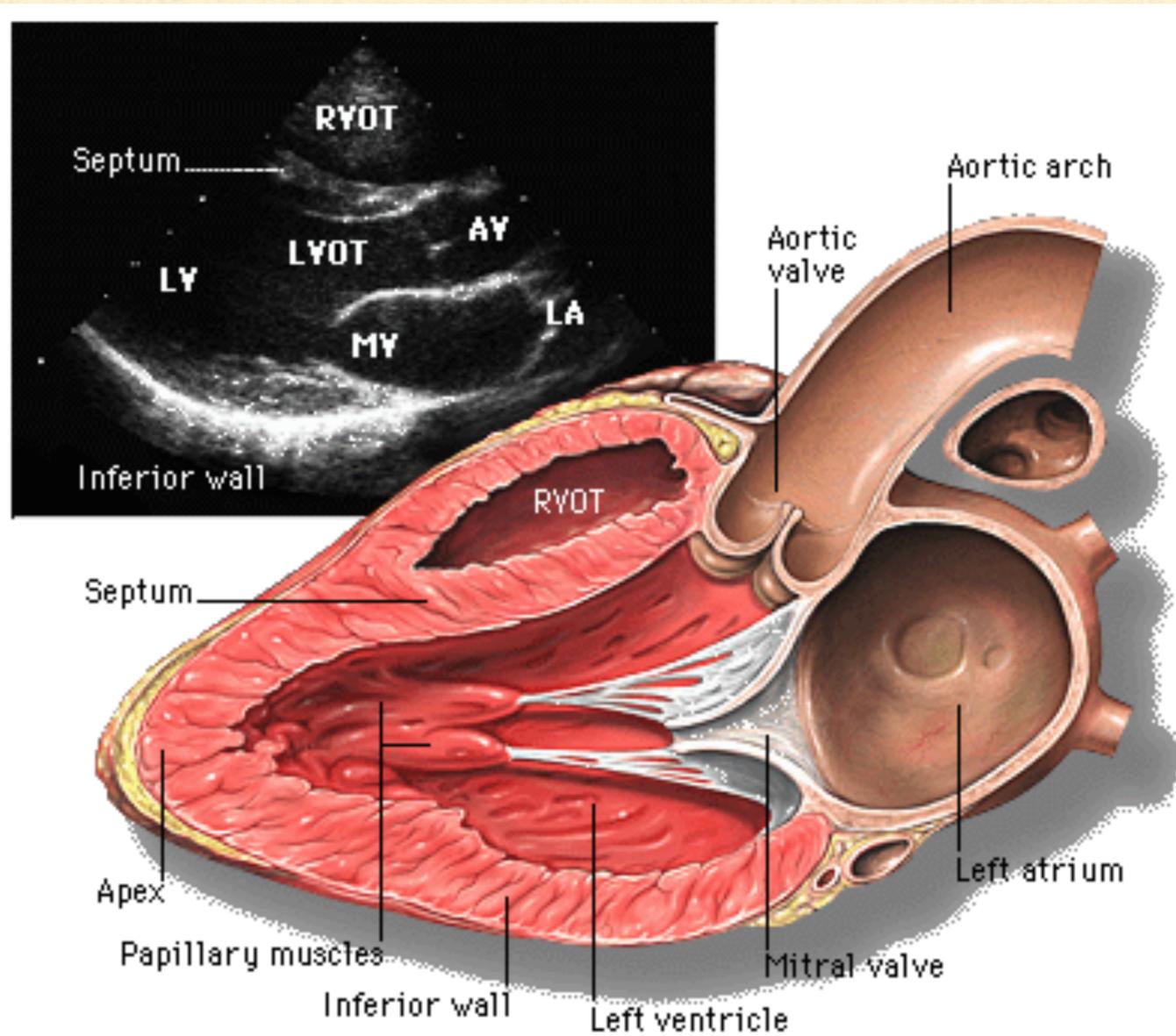
ECHOGRAPHIE CARDIAQUE



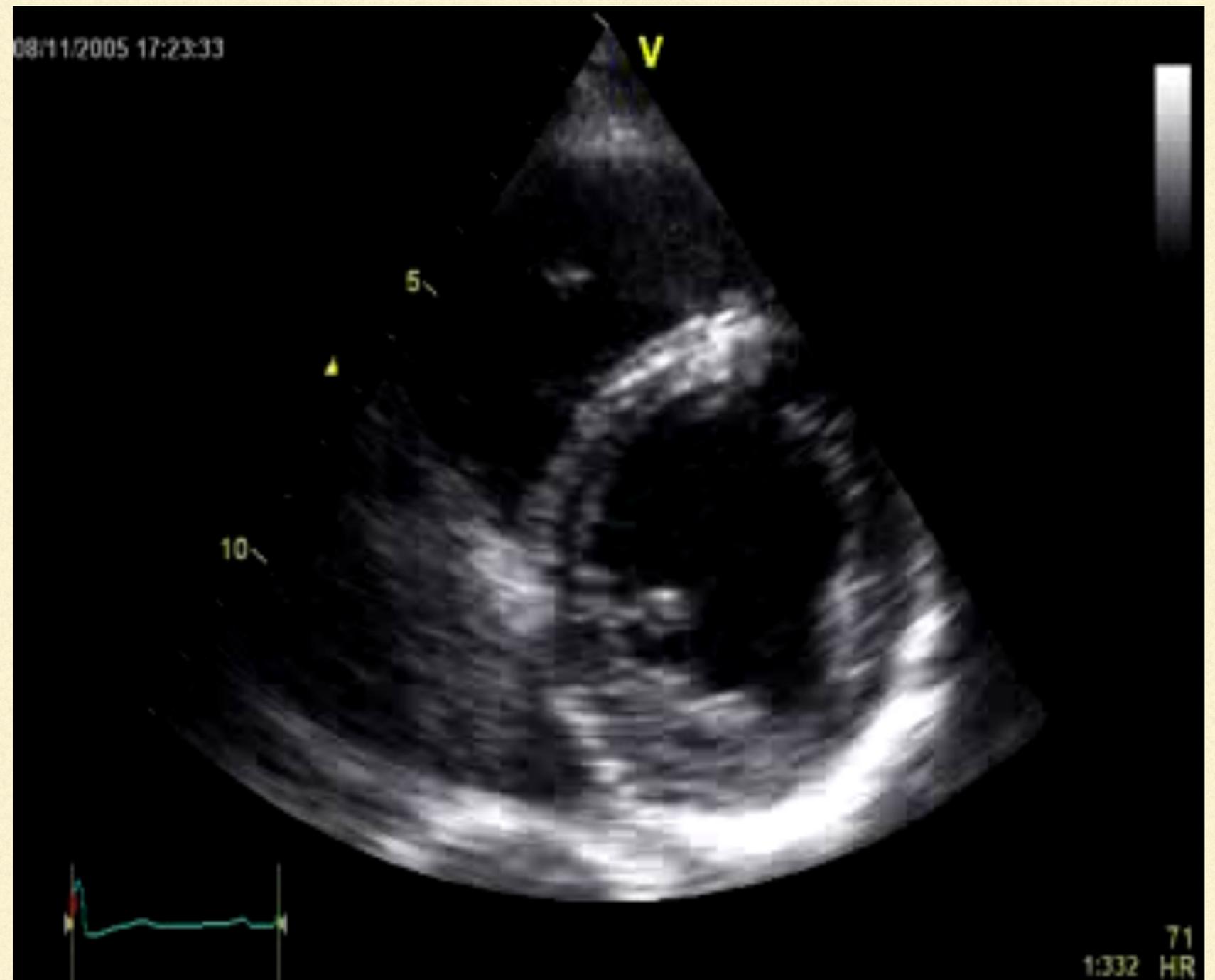
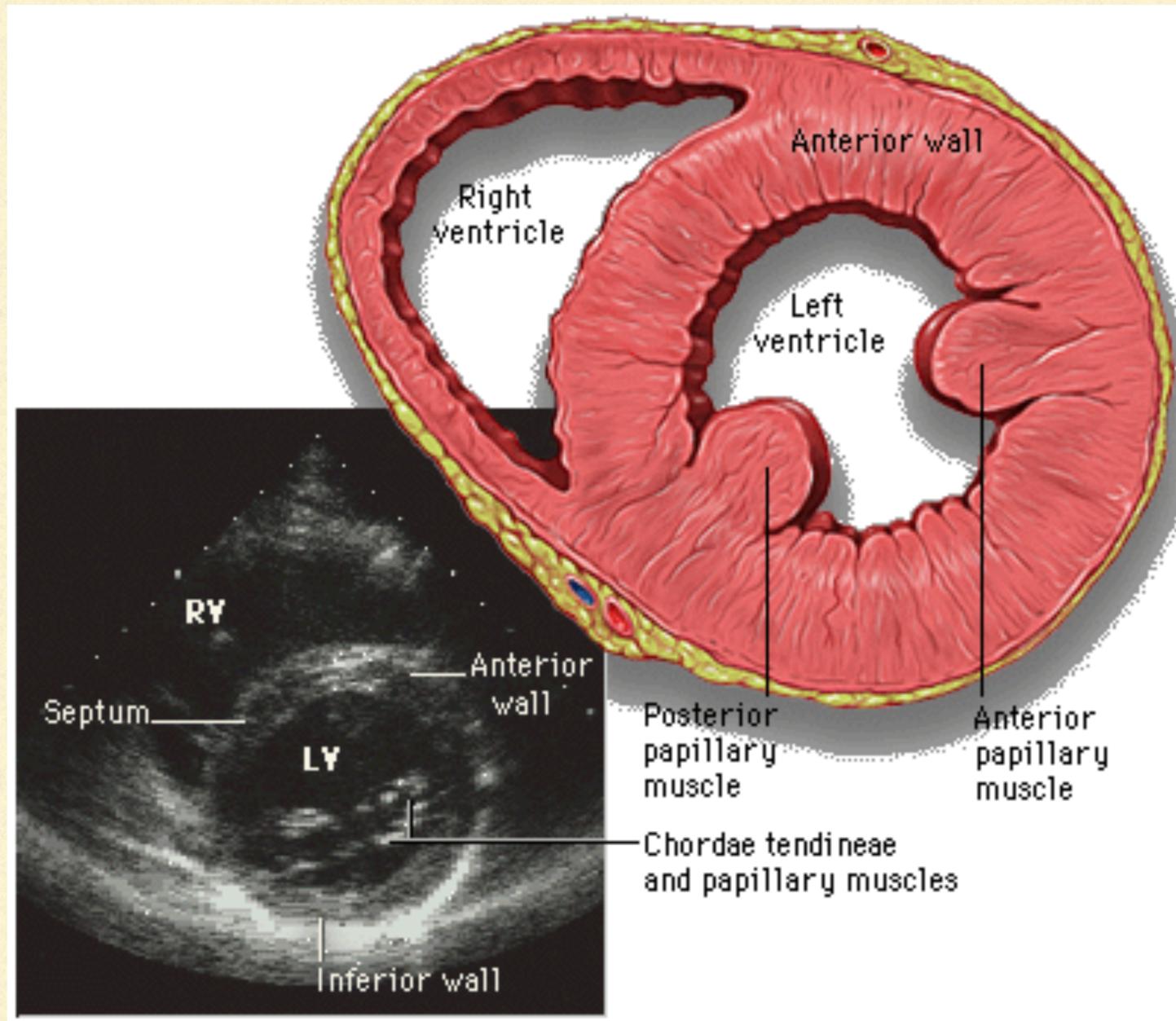
BASIQUE

Coupes en échocardiographie	Position de la sonde, le point vert représentant le curseur de la sonde	Structures anatomiques visibles	Image échocardiographique
<i>Coupe parasternale grand axe</i>			
<i>Coupe parasternale petit axe</i>			
<i>Coupes apicales</i>			
<i>Coupe sous-costale 4 cavités</i>			
<i>Incidence « veine cave inférieure »</i>			

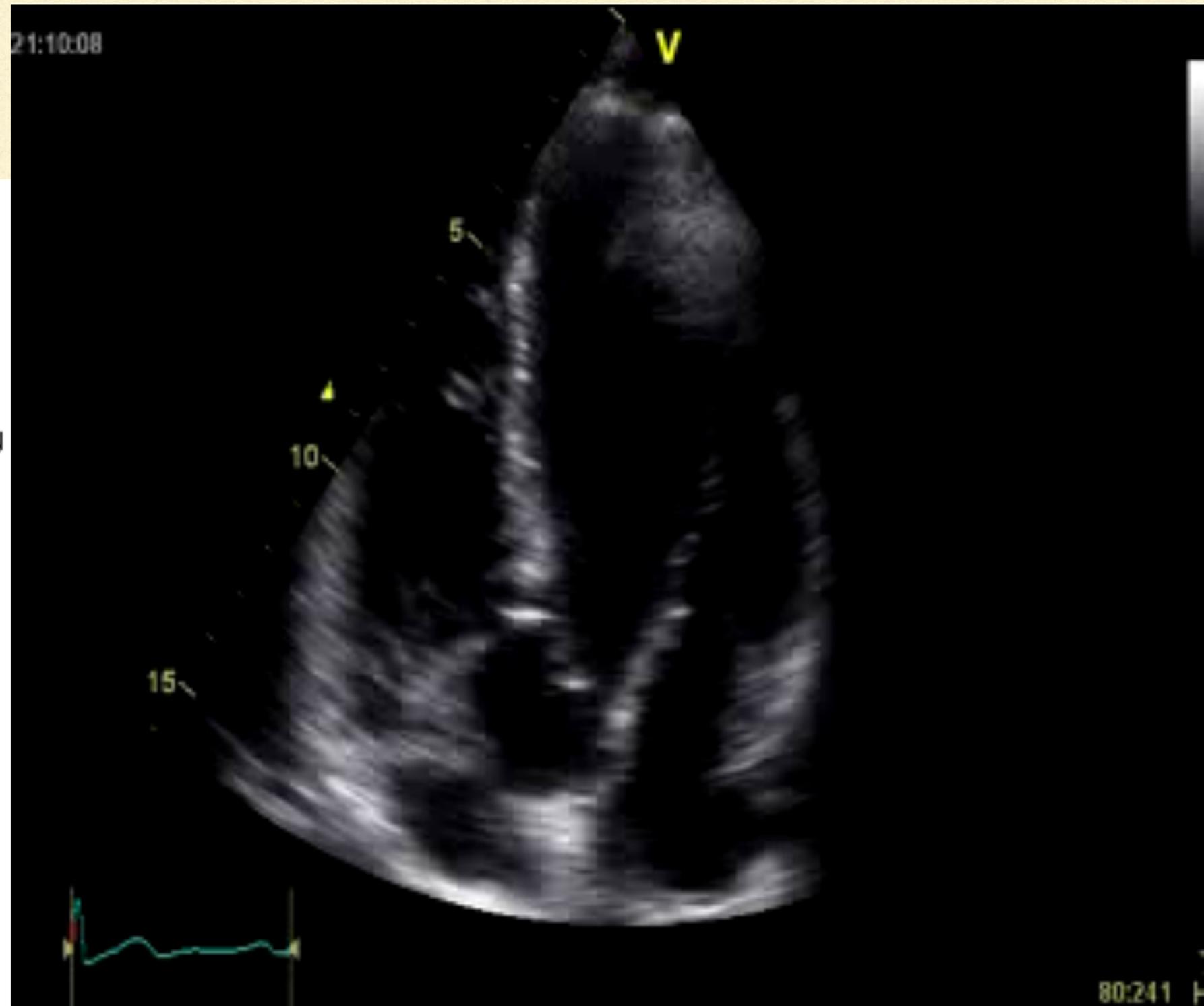
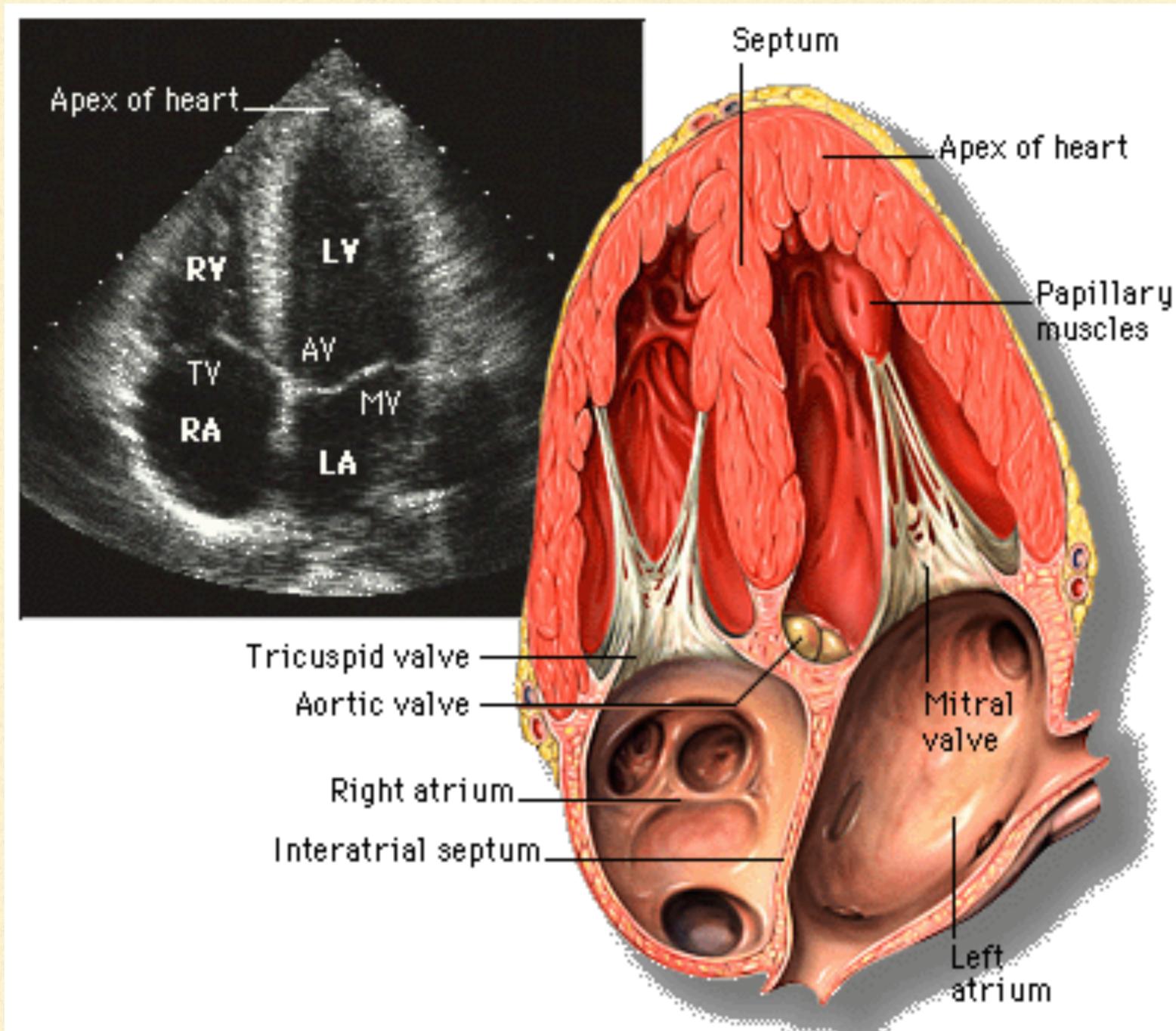
Basique Grand Axe



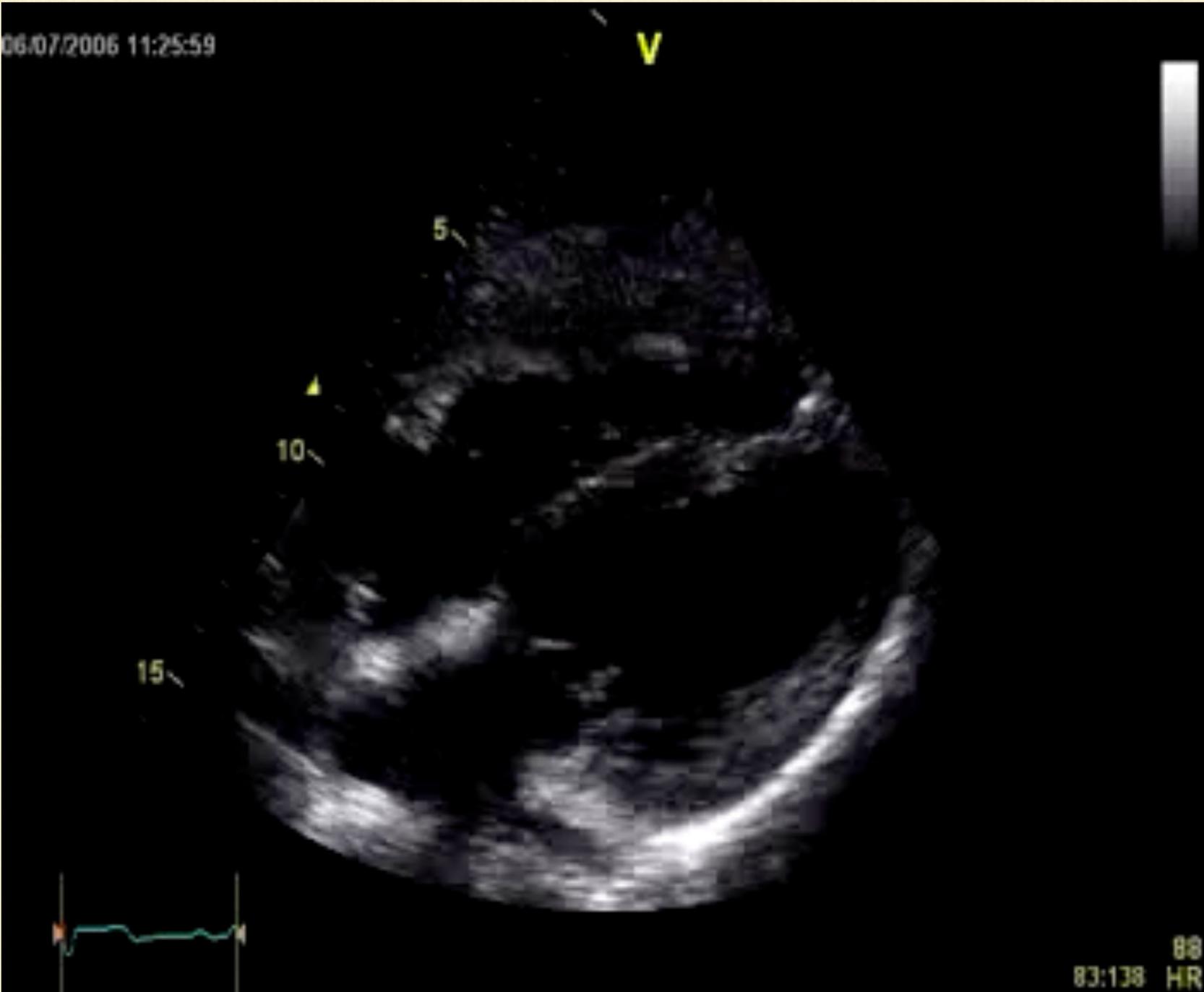
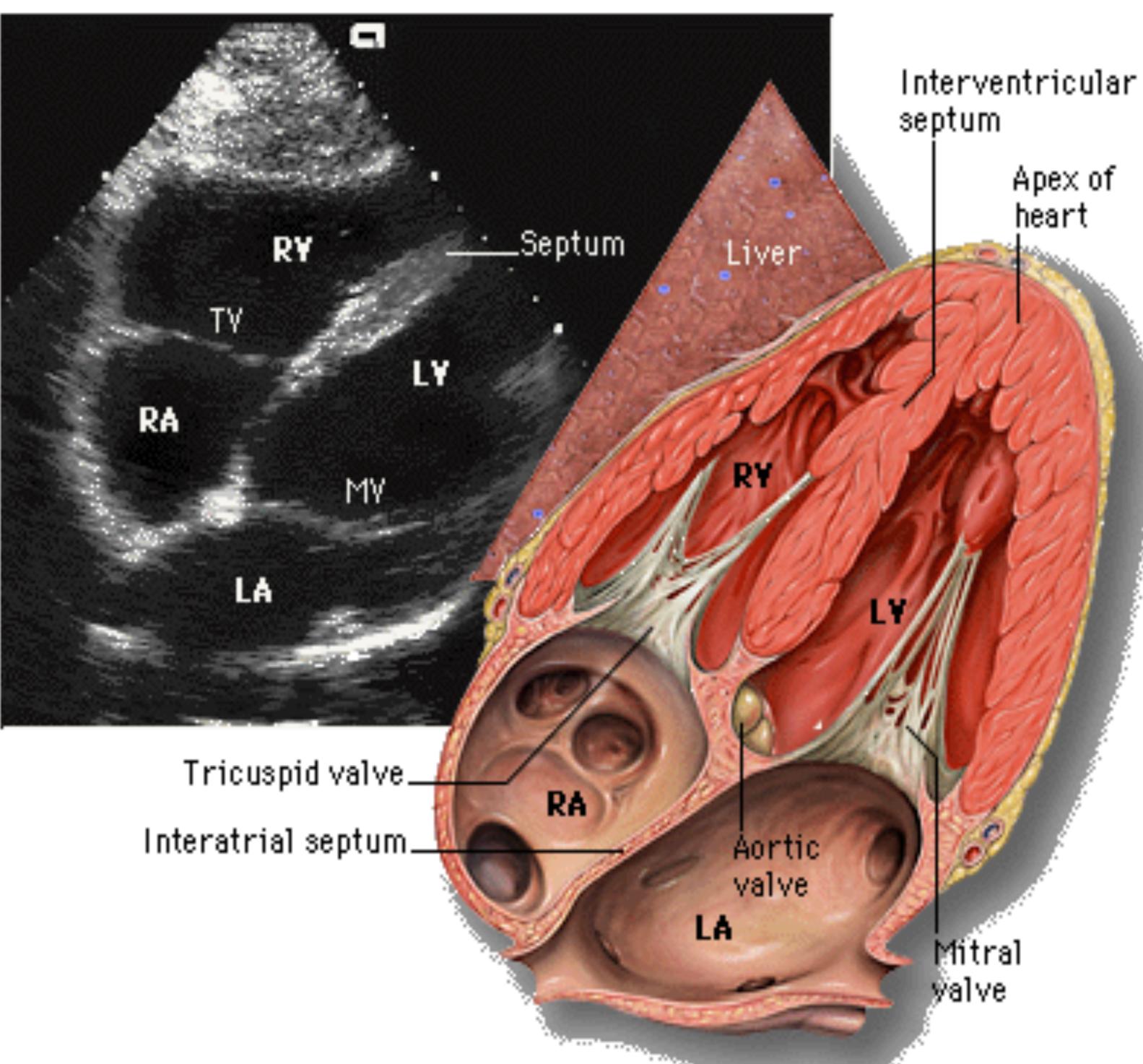
Basique Petit Axe



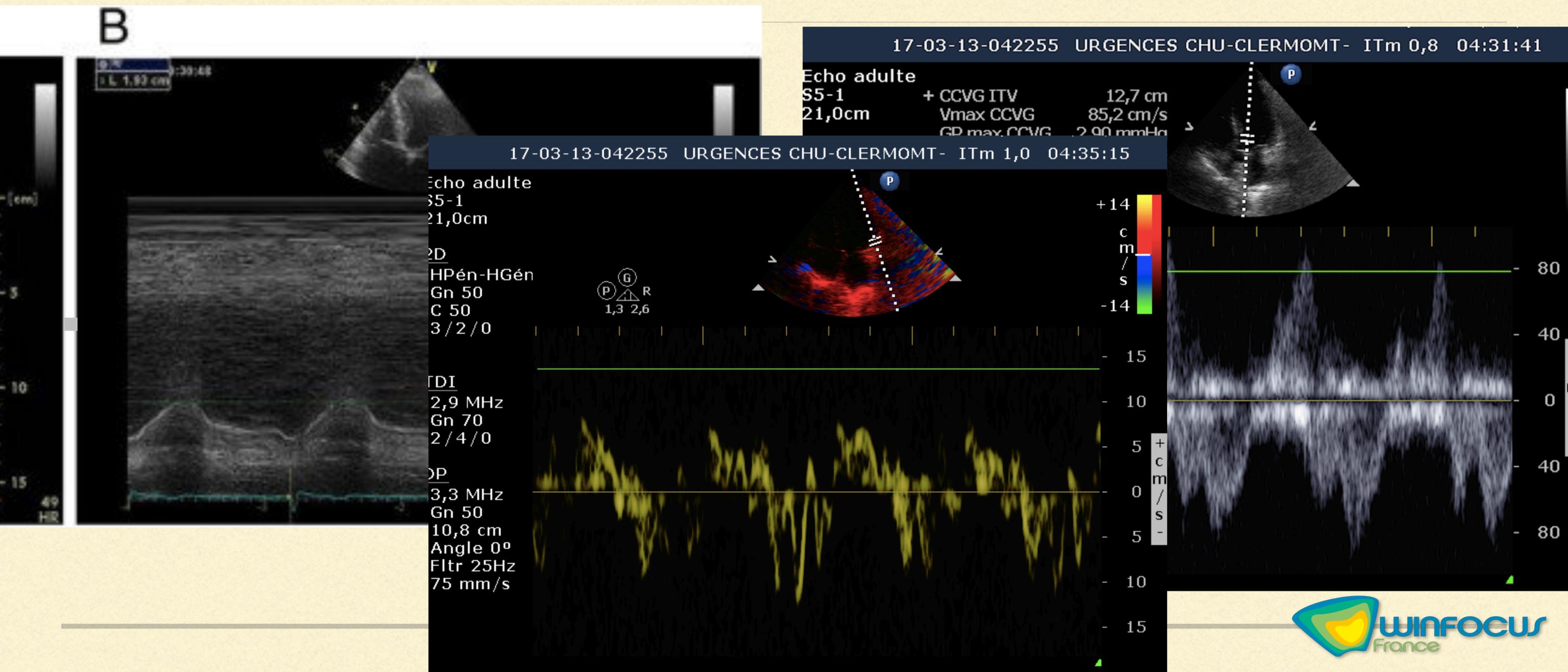
Basique 4 ou 5 Cavités



Basique Sous xiphoidienne

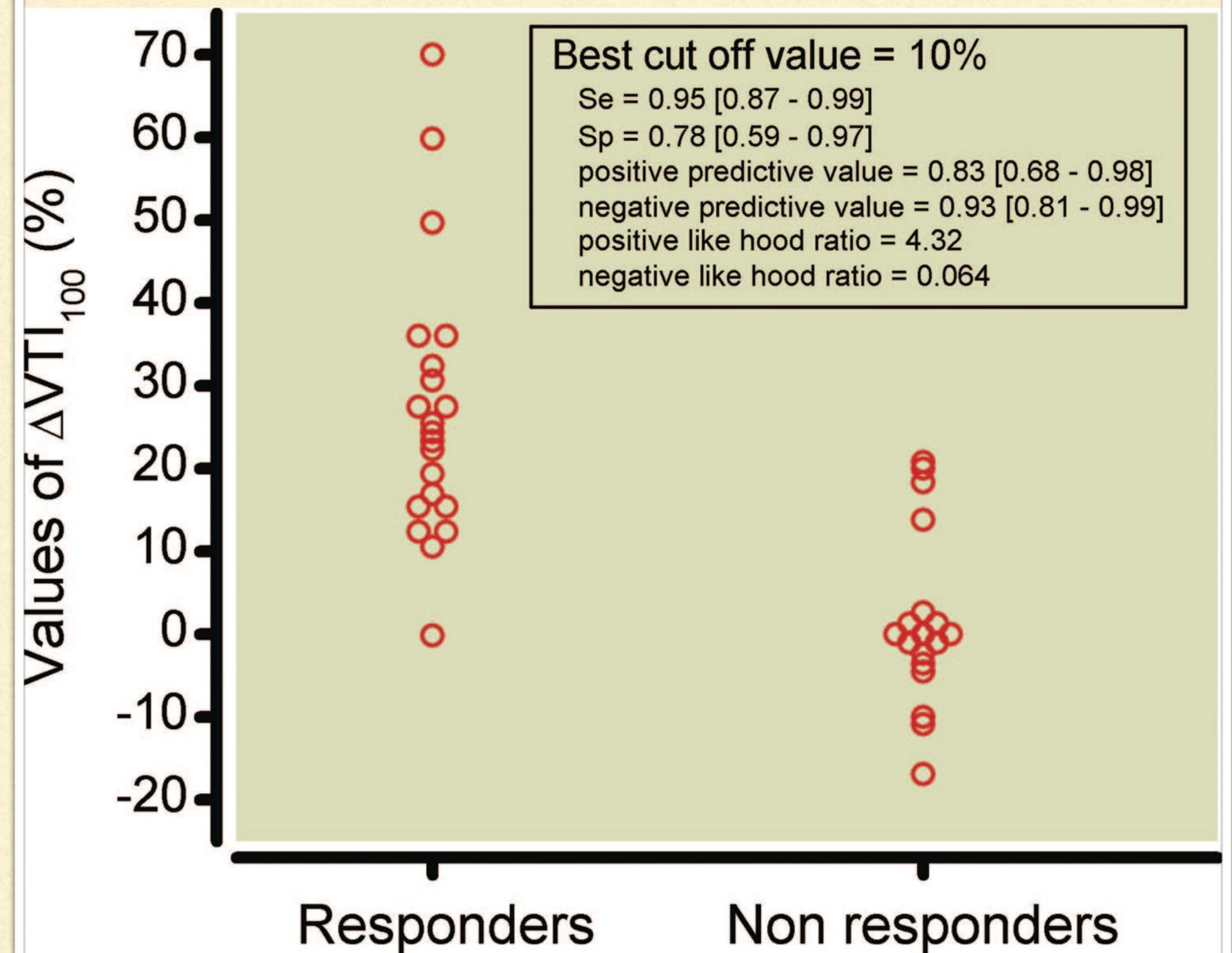


HÉMODYNAMIQUE AVANÇÉE (SYSTOLIQUE)



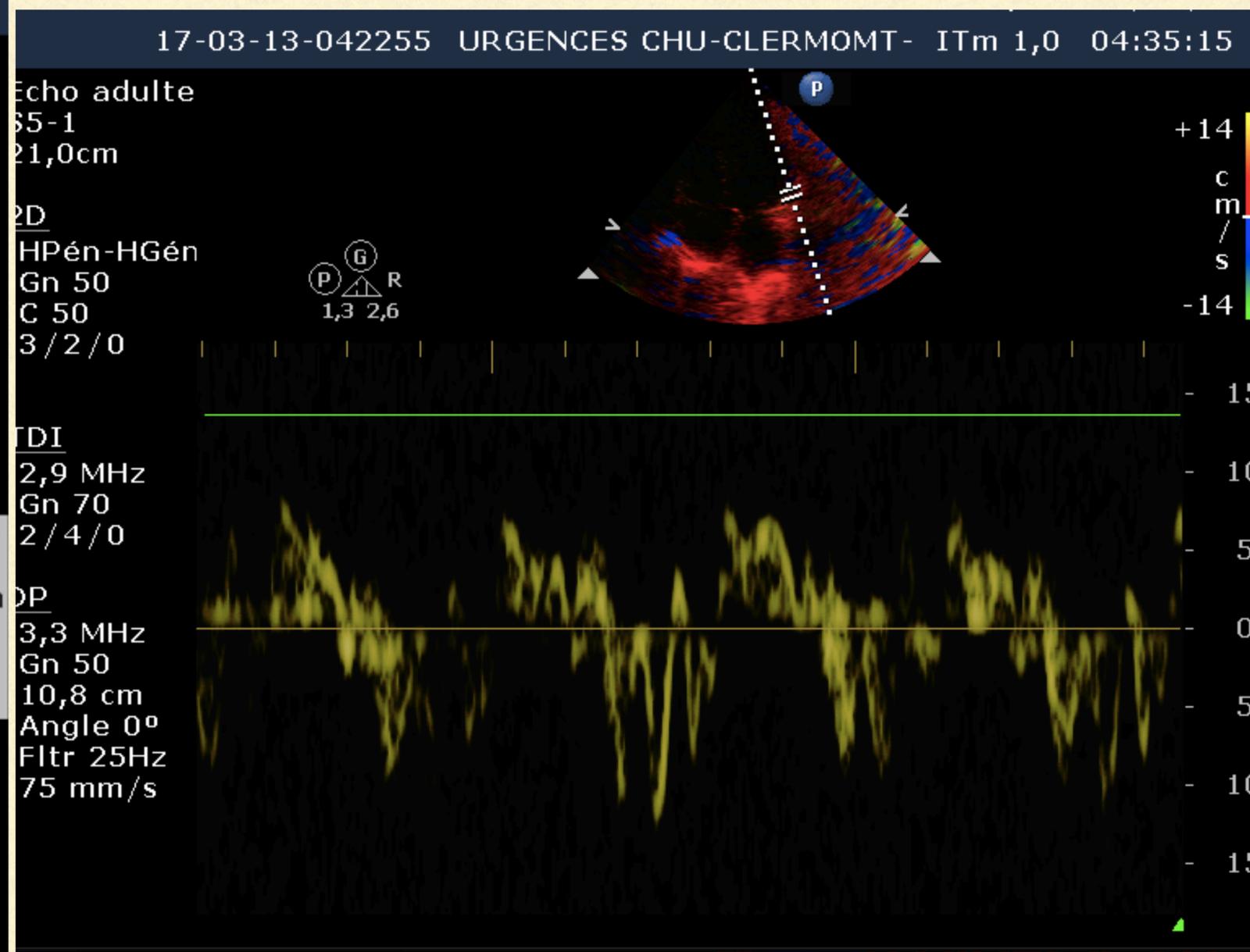
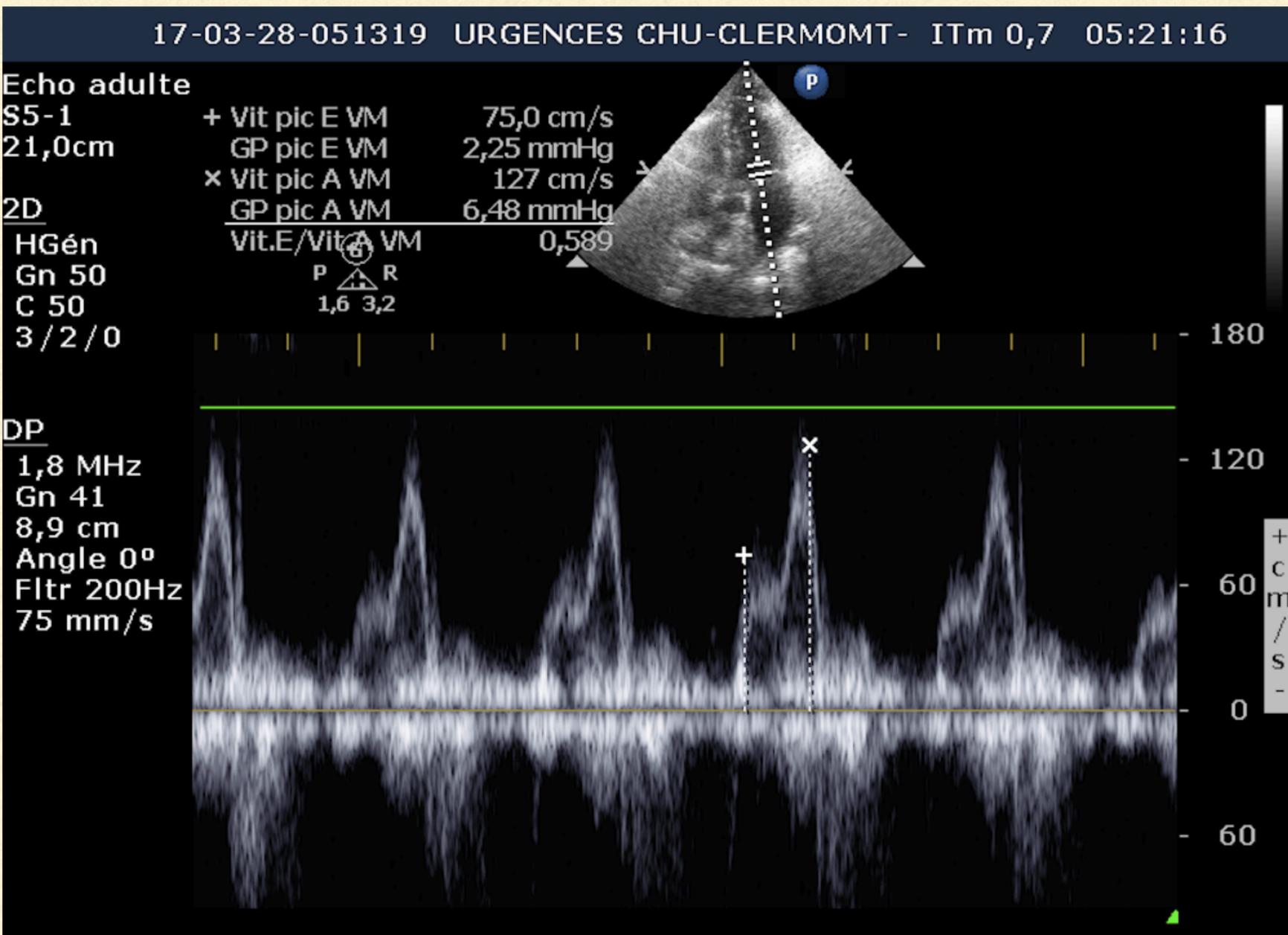
Une méthode avec peu de faille

- ITV ao après un remplissage de 100 ml chez le patient ventilé



Muller, L., Toumi, M., of, P. B. T. J., 2011. (n.d.). An Increase in Aortic Blood Flow after an Infusion of 100 ml Colloid over 1 Minute Can Predict Fluid Responsiveness The Mini-fluid Challenge Study. Anesthesiology.

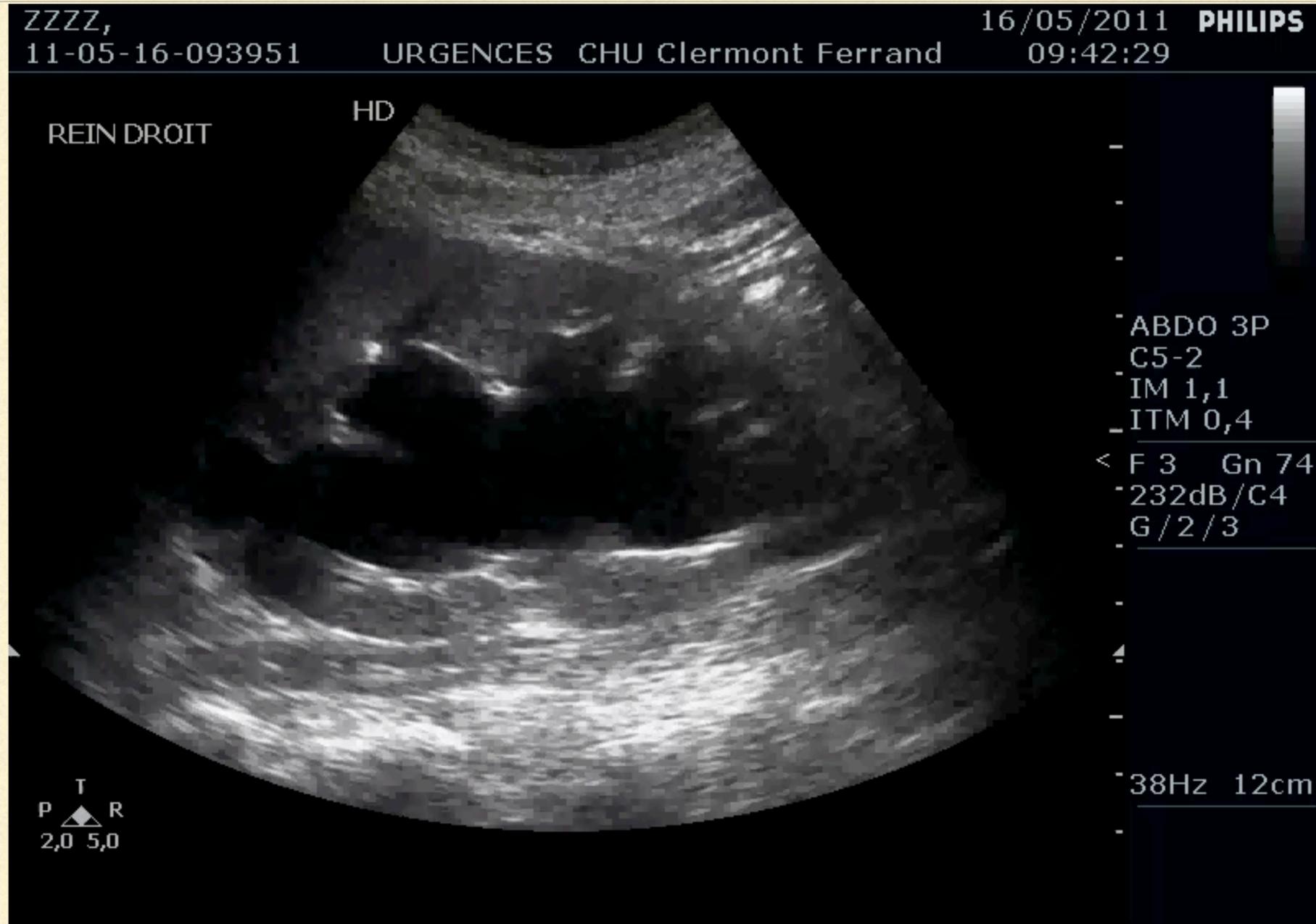
HÉMODYNAMIQUE AVANÇÉE (DIASTOLIQUE)



ECHOGRAPHIE ABDOMINALE



RÉNALE



VOIES BILIAIRES

PHILIPS

URGENCE CHU-CLERMONT- ITm 0,1 23:2

IM 1,1 25/0

Cadez, Jean Paul
2674492 M: 1,3
12/05/2014
15:24:00

Abd gén
C5-1
39Hz
12,0cm

2D
HGén
Gn 100
C 56
3 / 3 / 3

CH4-1
ABDOMINAL
10fps
MI:1.2

ITH/2.2 MHz
6dB/DR65
MapD/VEDés
RS1/SC1

DILAT VBIH GAUCHE_

int...

22cm
10ips

Im.403

SIEMENS

ABDO VASC
C5-1
45Hz
10,0cm

2D
HGén
Gn 82
C 52
3 / 3 / 3

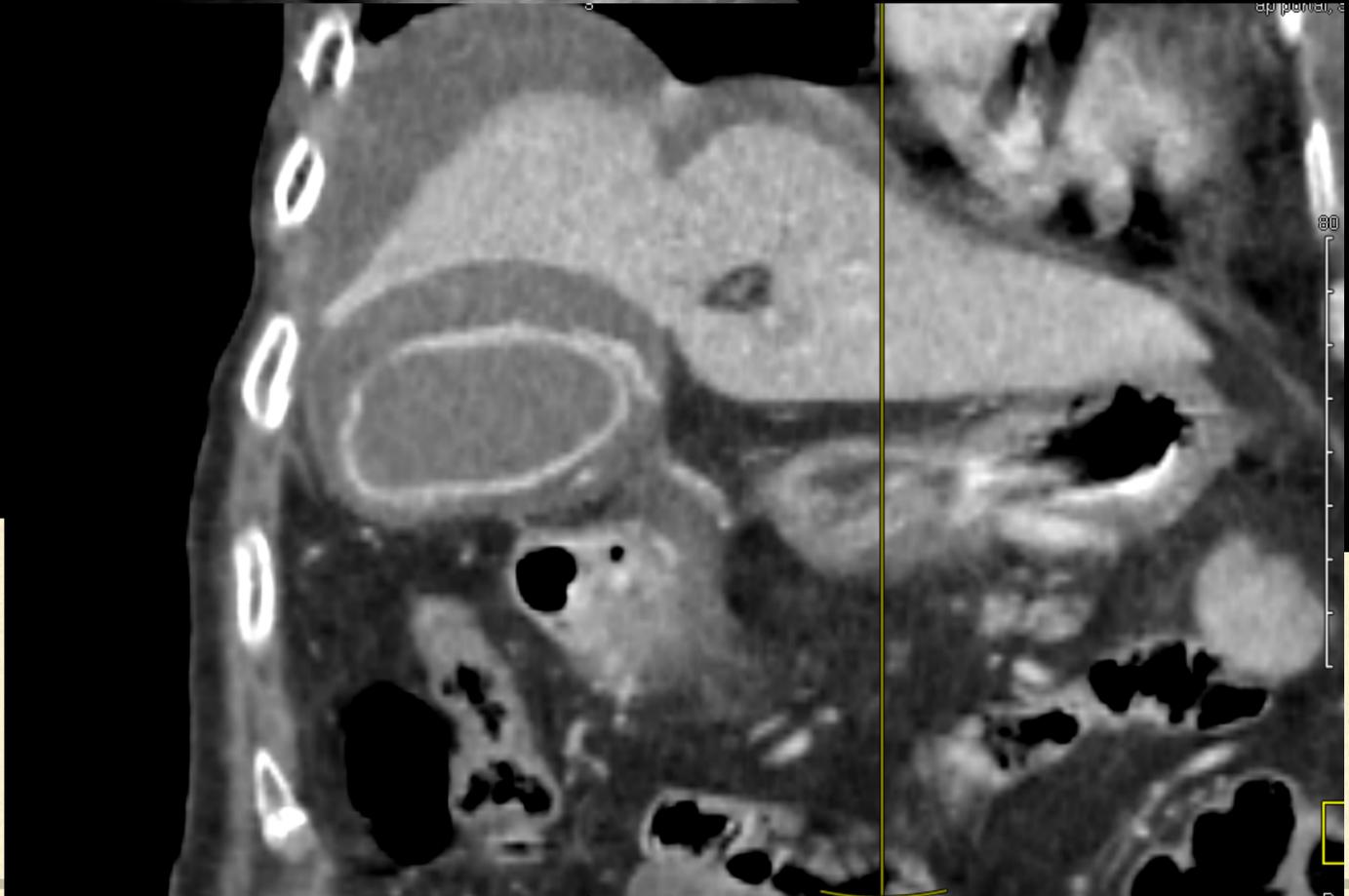


ABDO VASC
1
2
3cm

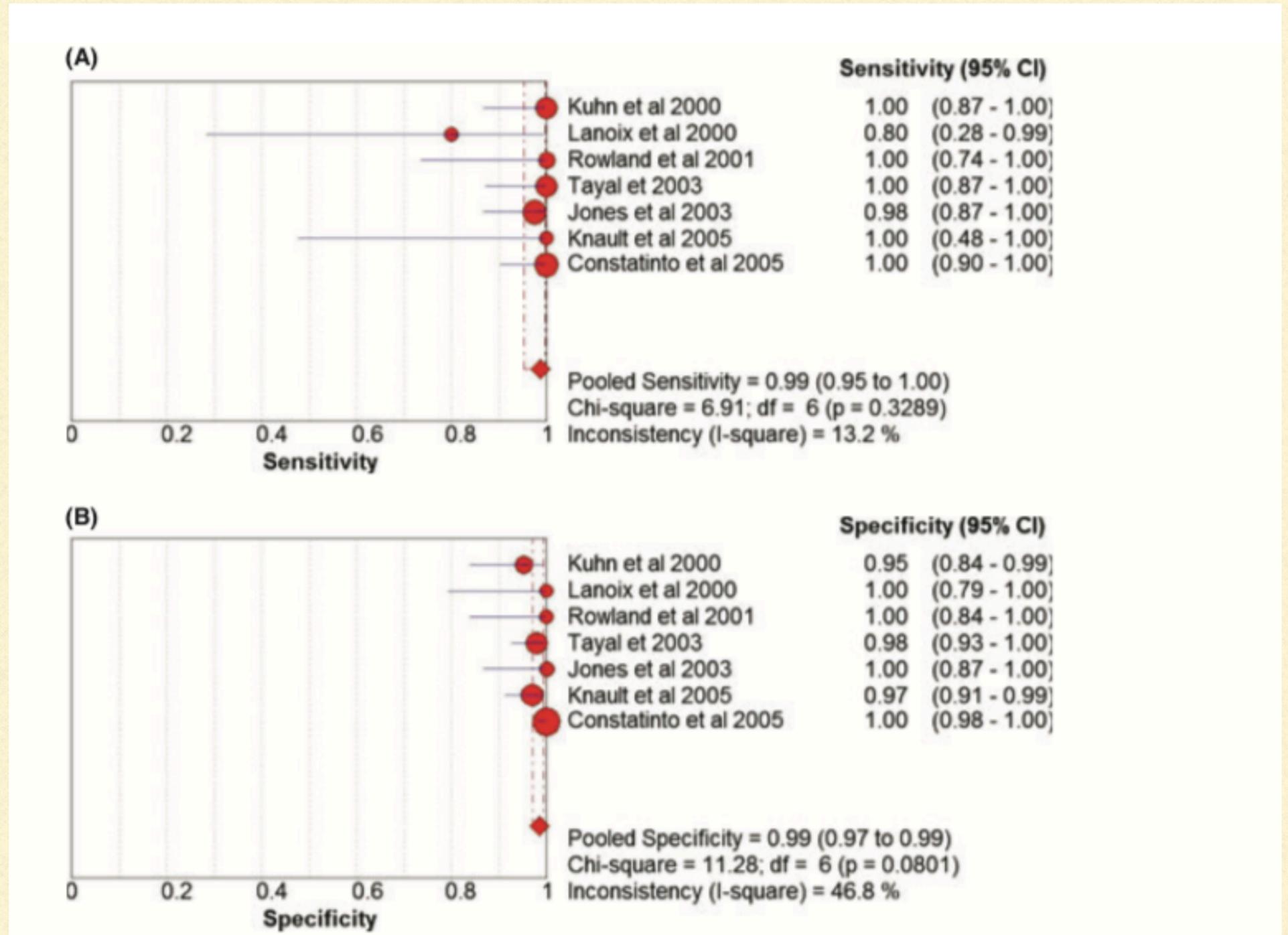
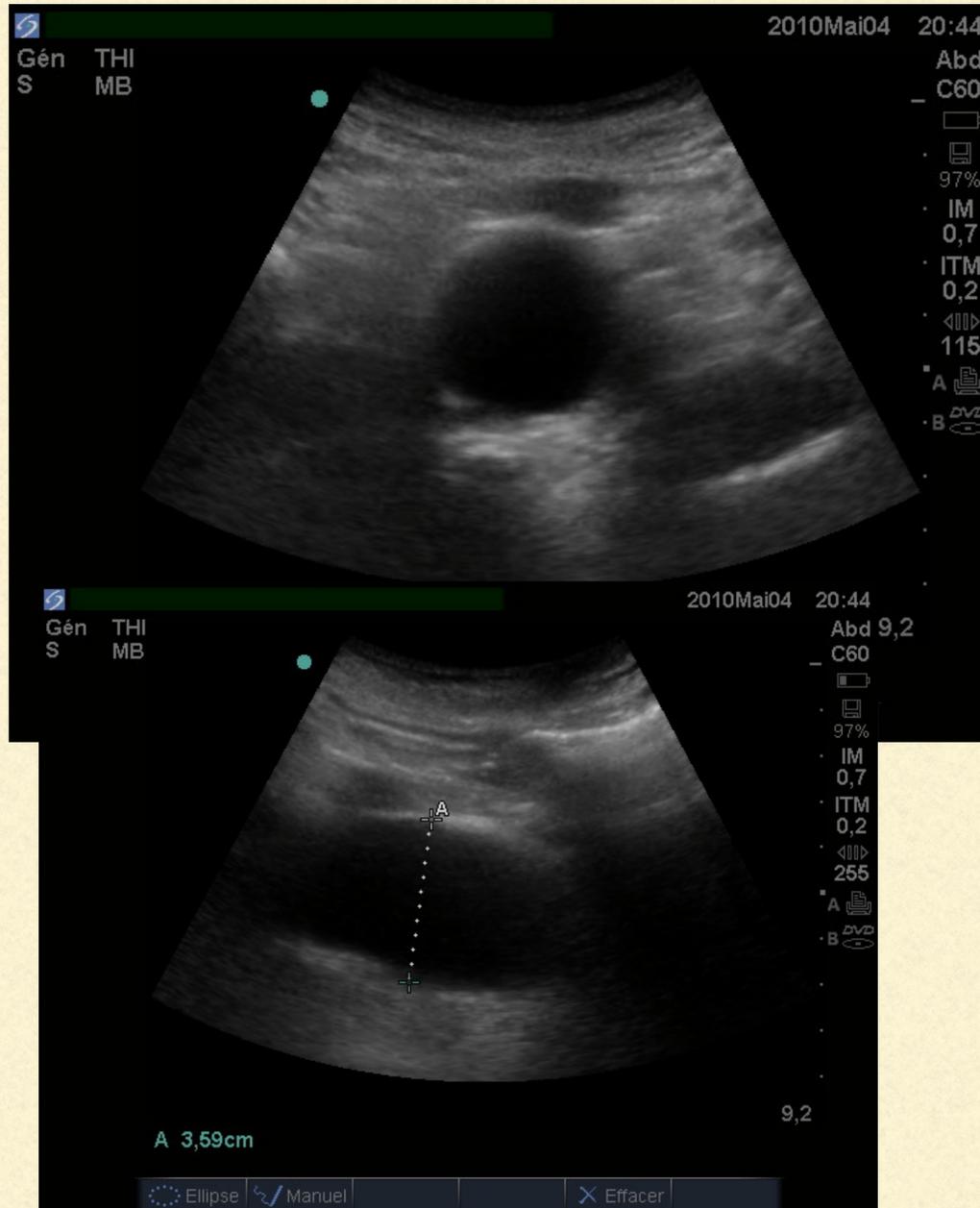
Gén
82
52
3 / 3



G
P R
1,8 3,6

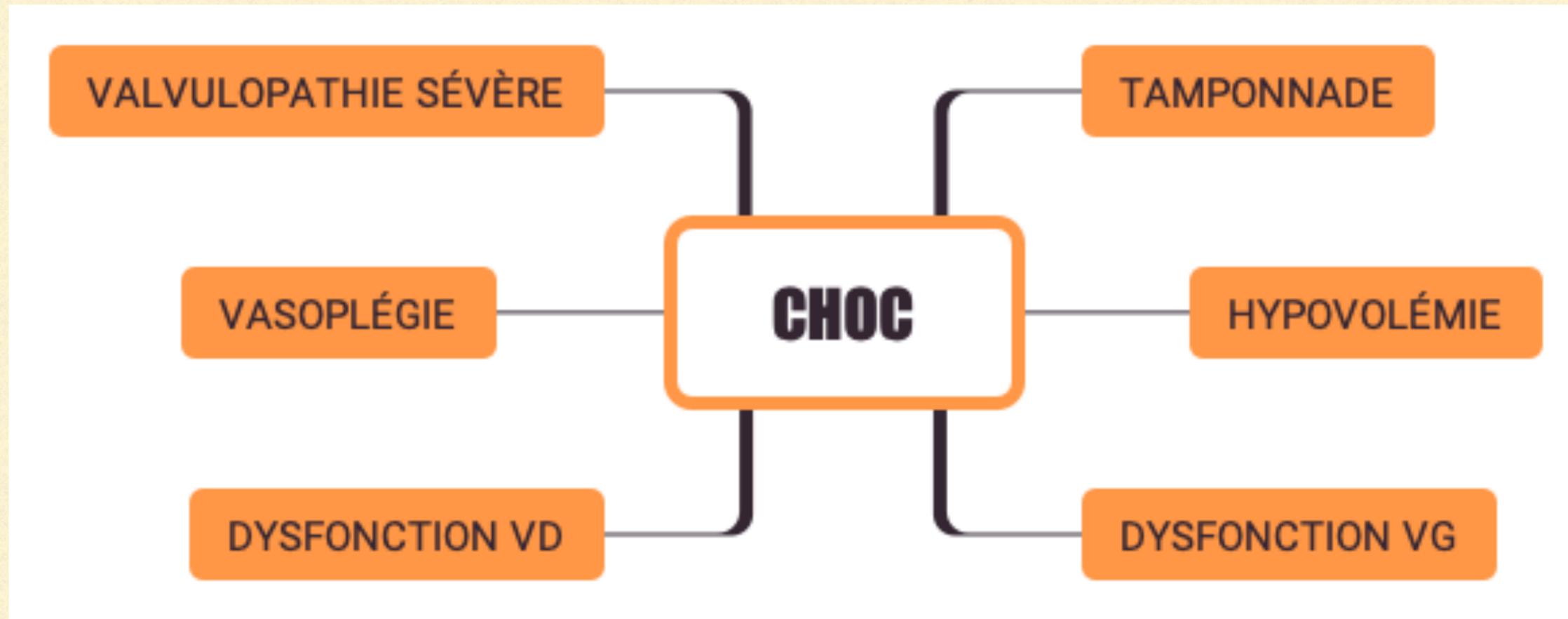


Jamais sans l'aorte

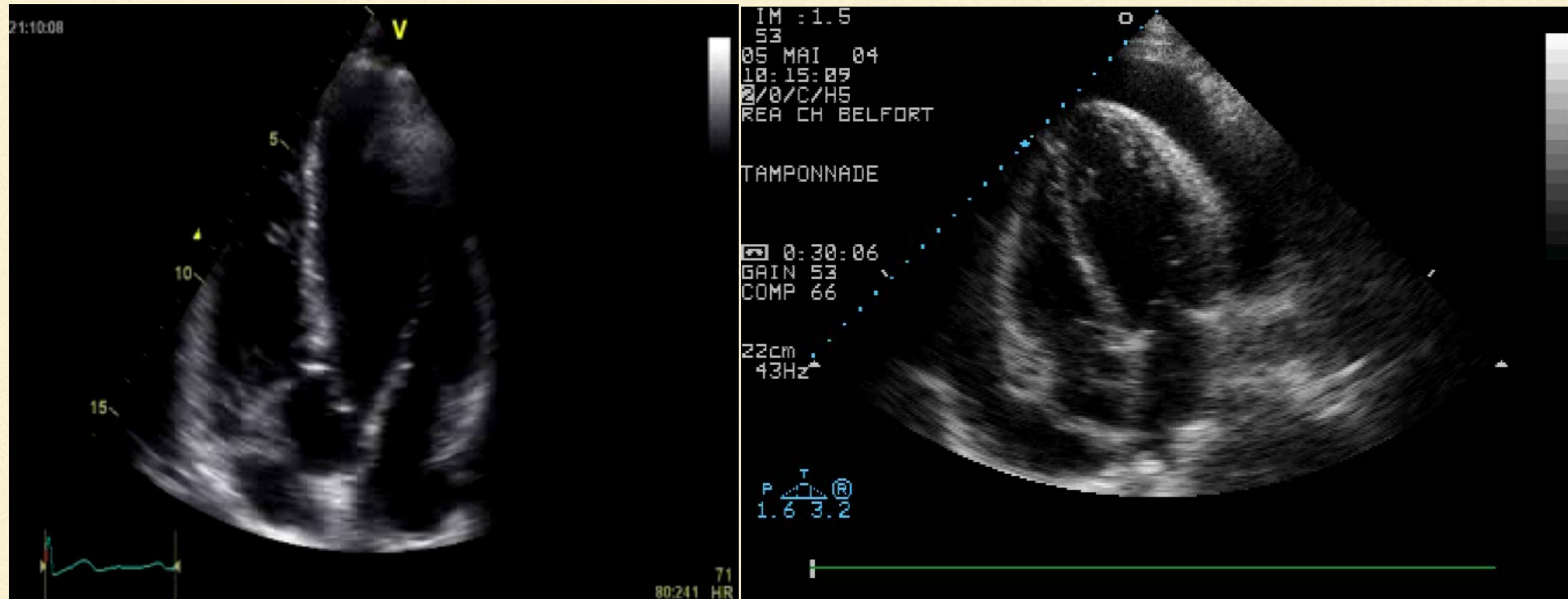


Rubano, E., .all. (2013). Systematic review: emergency department bedside ultrasonography for diagnosing suspected abdominal aortic aneurysm. Academic Emergency Medicine : Official Journal of the Society for Academic Emergency Medicine,

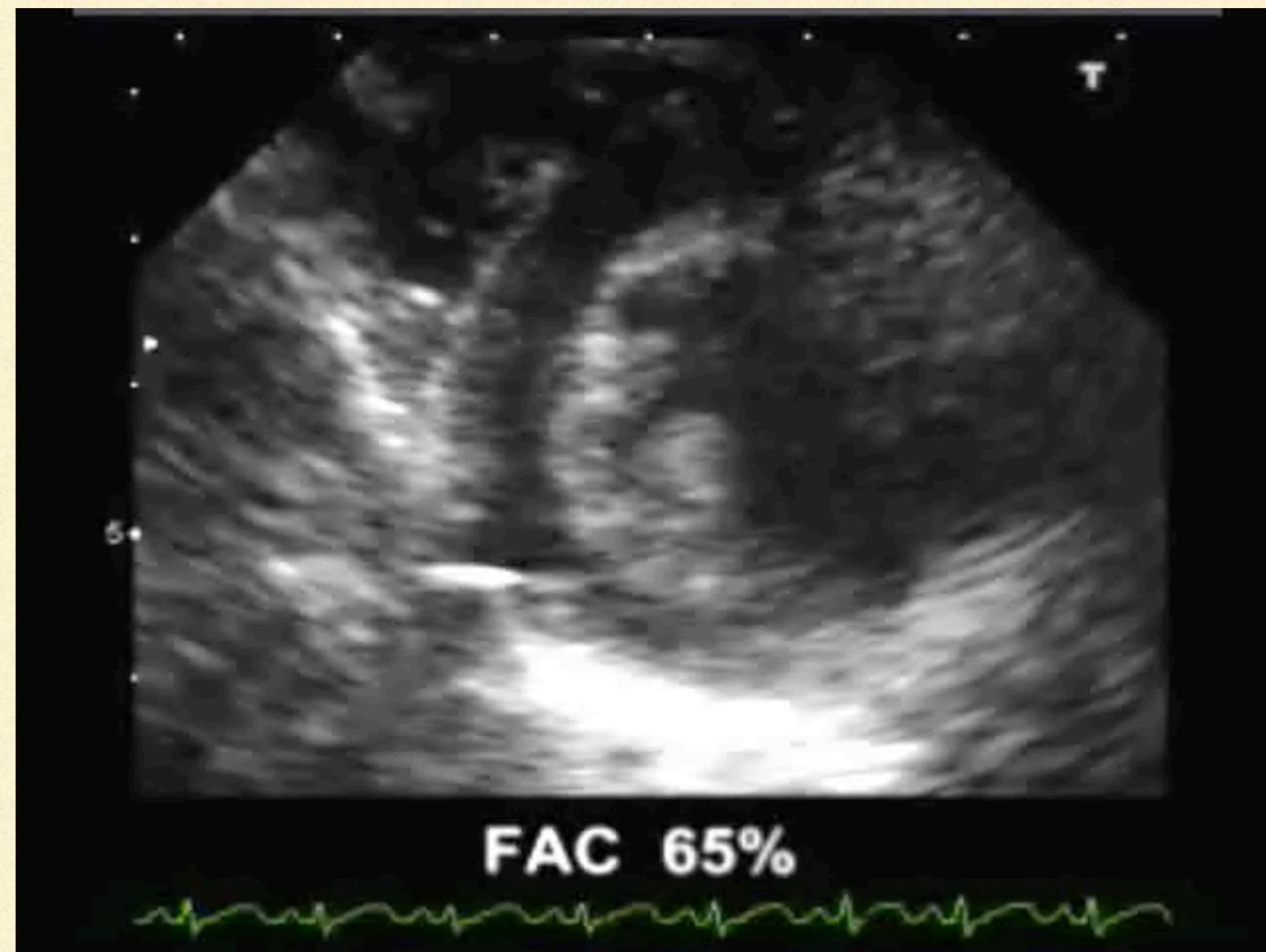
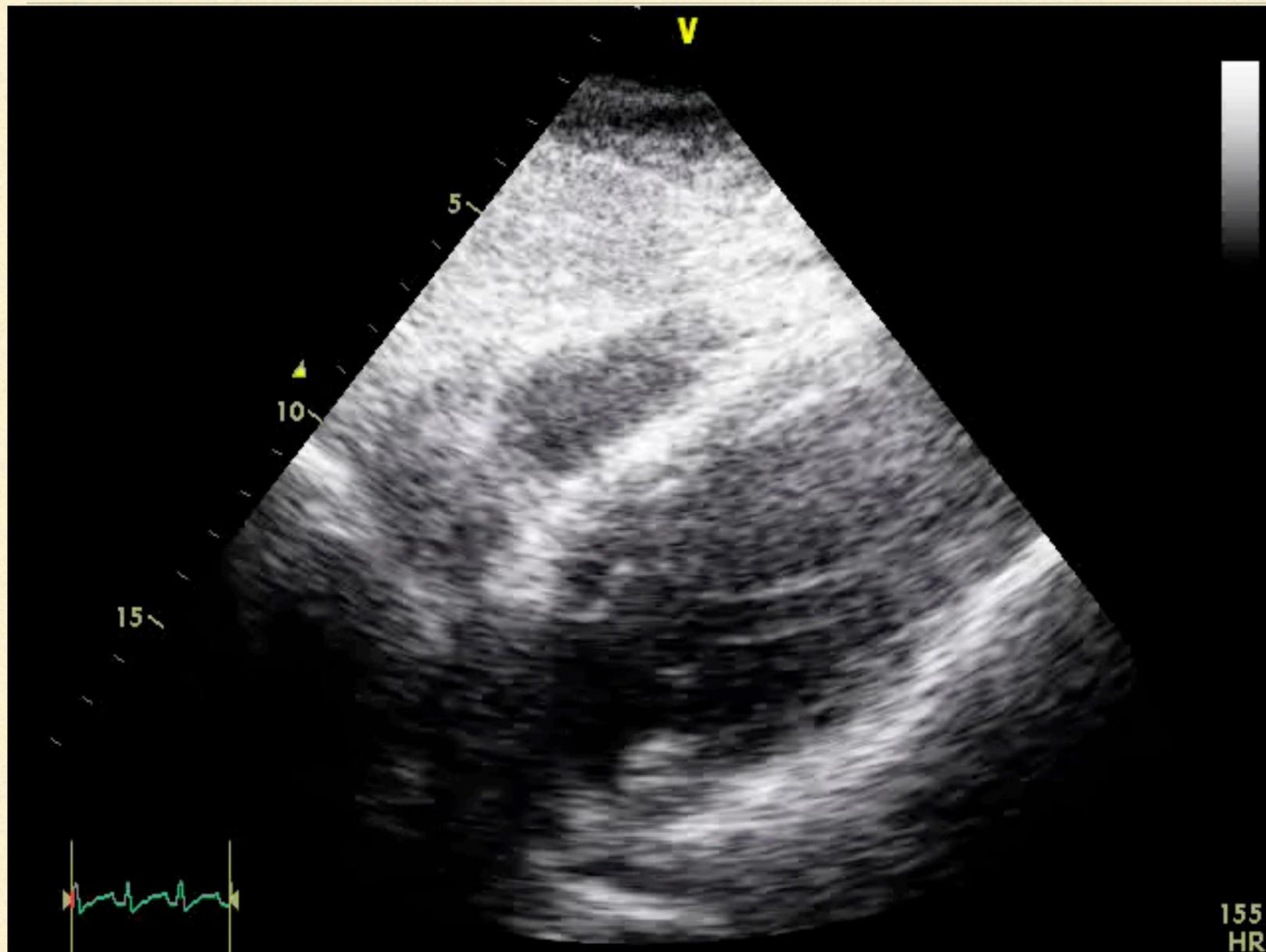
CHOC



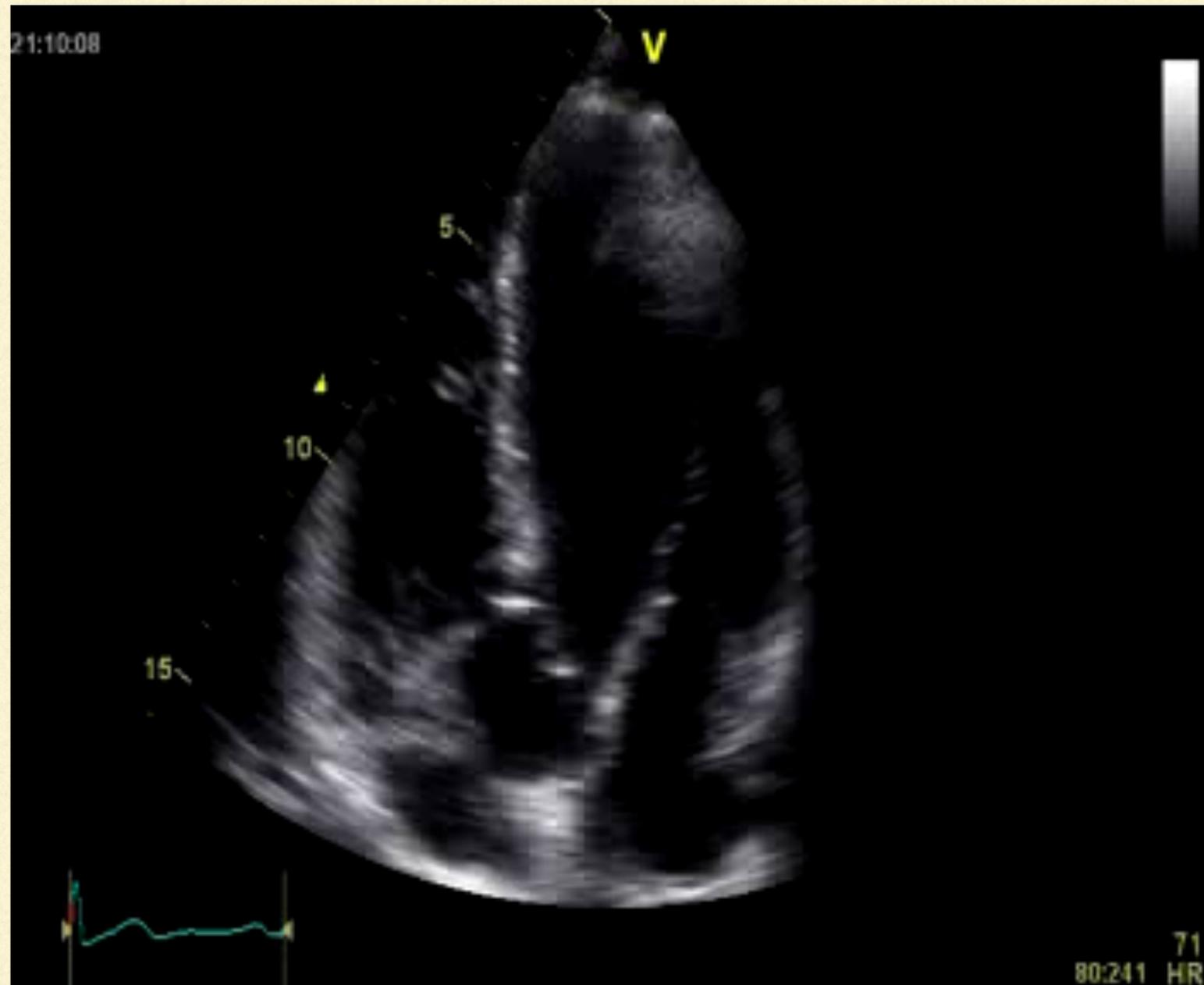
TAMPONNADE



HYPOVOLÉMIÉ



DYSFUNCTION VG



DYSFONCTION VD

PHILIPS

Service des Urgences

IM 1.2 14-Mar-14

ITm 0.5 5:29:35 PM

Echo adulte
S5-1
31Hz
17.0cm

2D

HGén

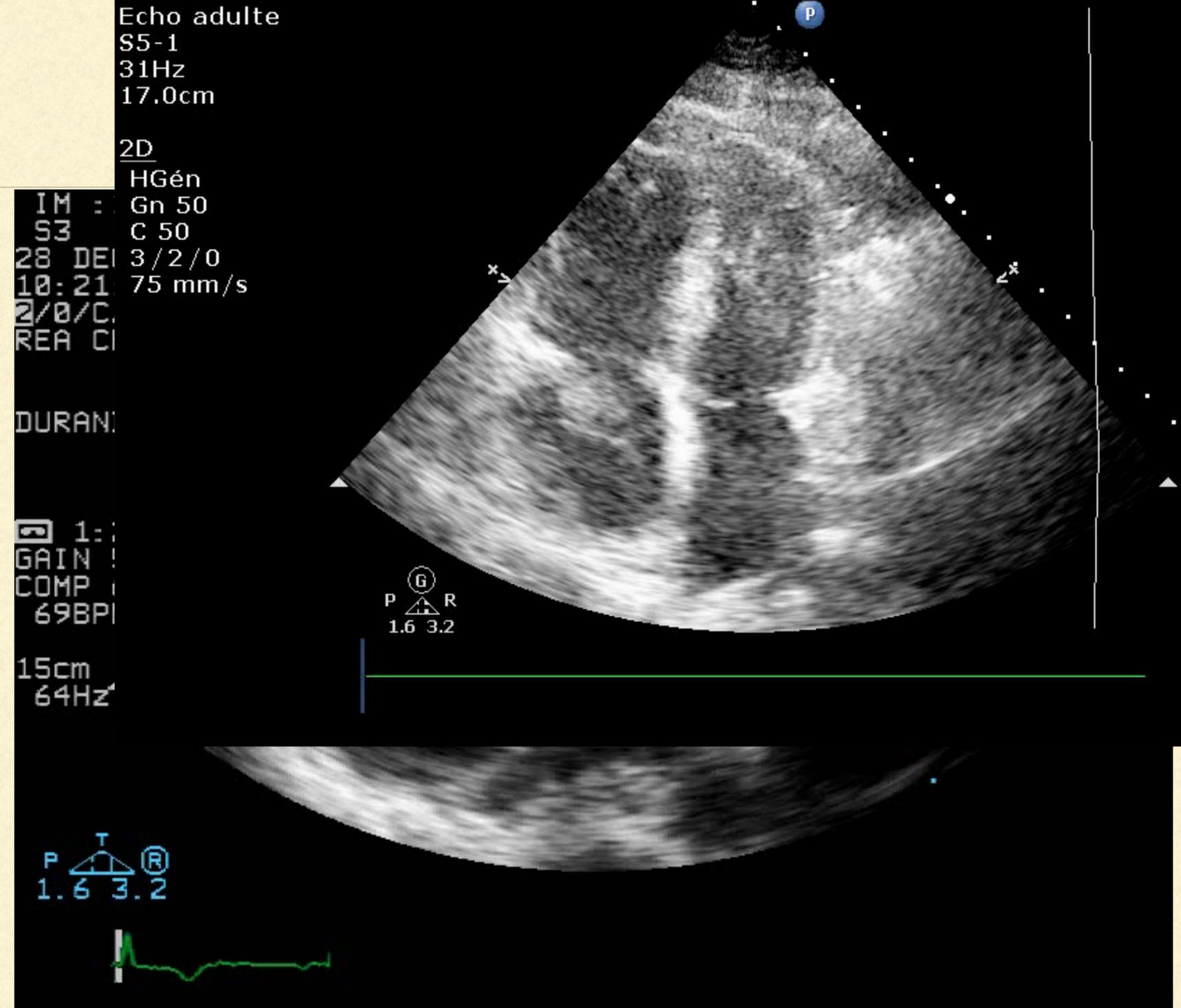
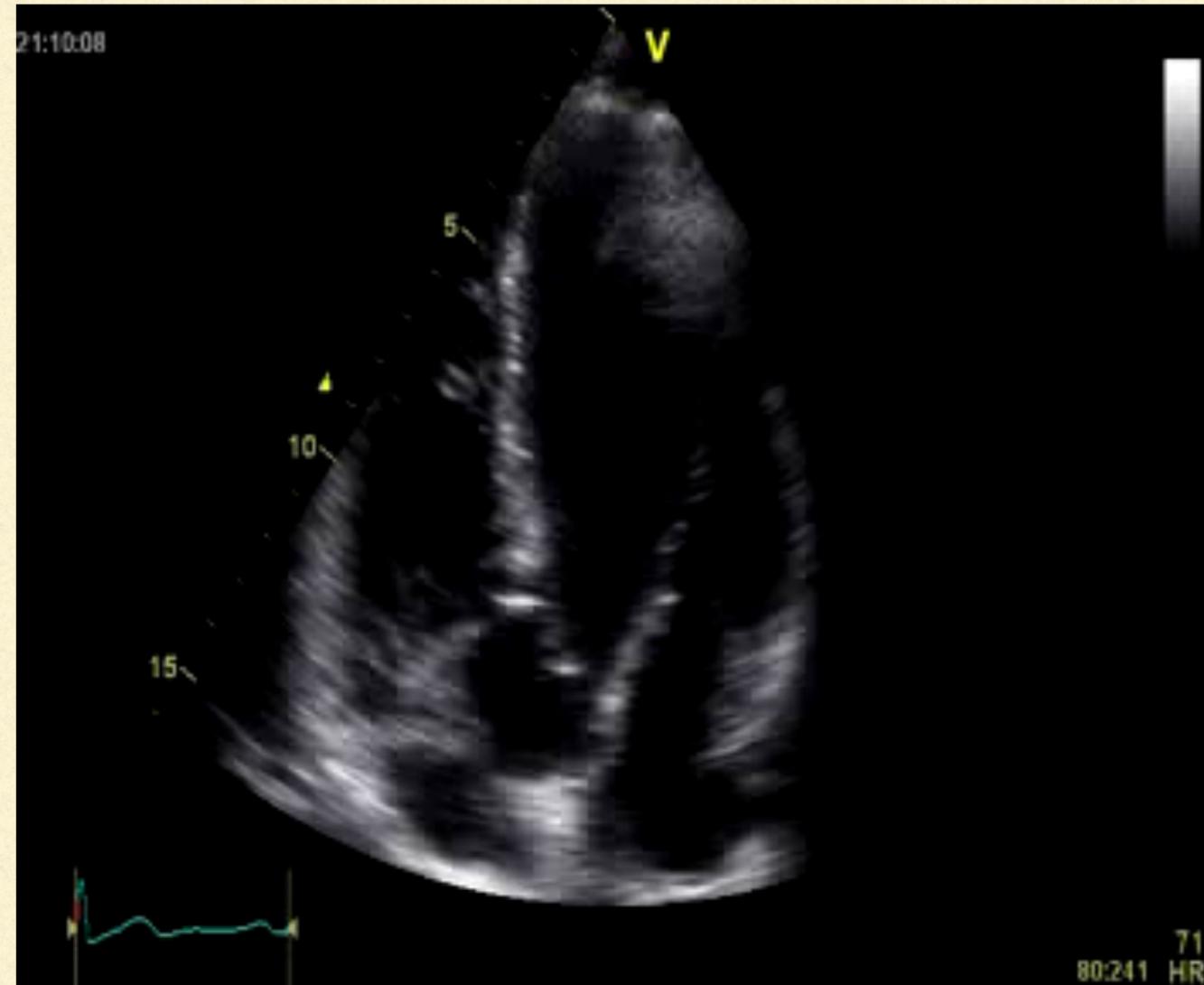
IM : Gn 50
S3 C 50
28 DEI 3/2/0
10:21 75 mm/s
2/0/C
REA CI

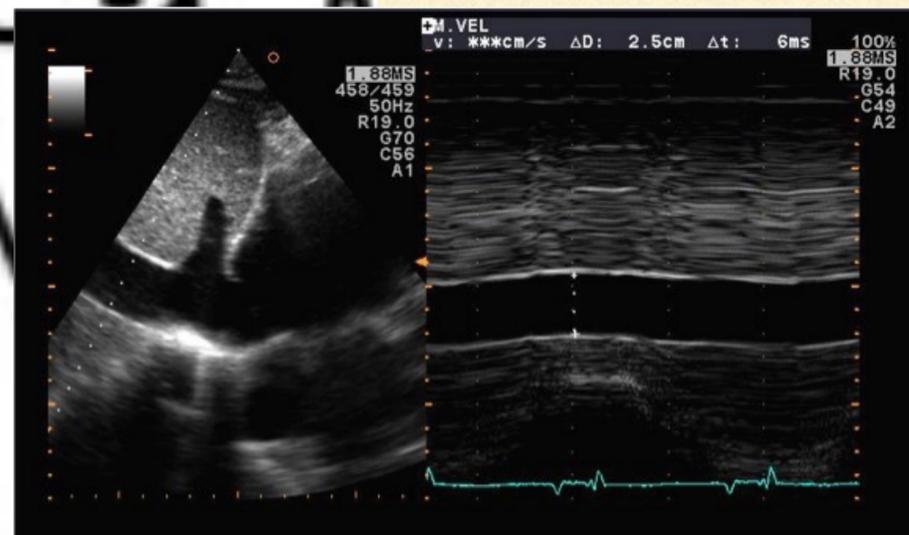
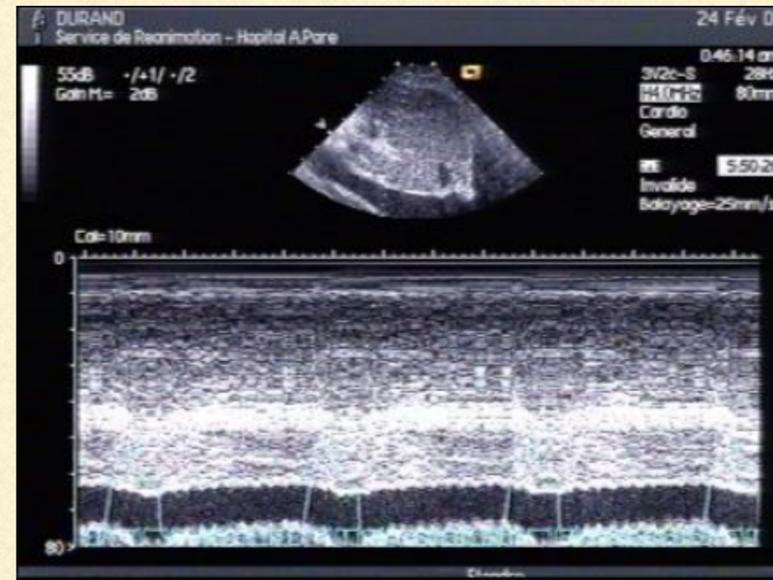
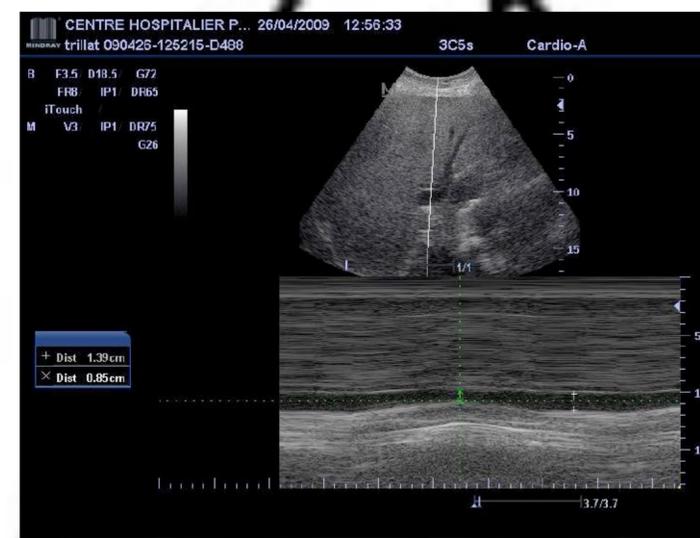
DURAN:

1: :
GAIN :
COMP :
69BPI

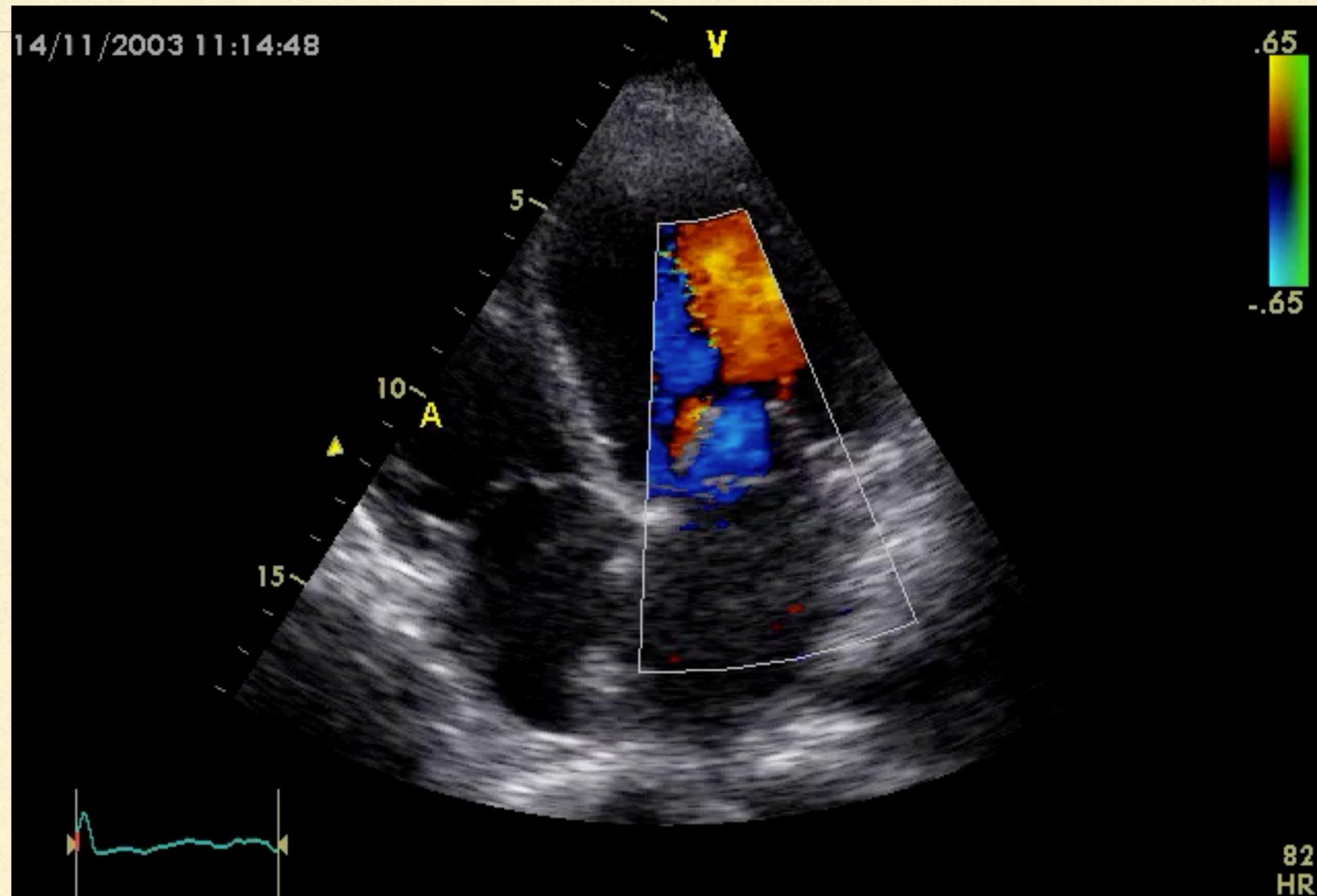
15cm
64Hz'

P T R
1.6 3.2

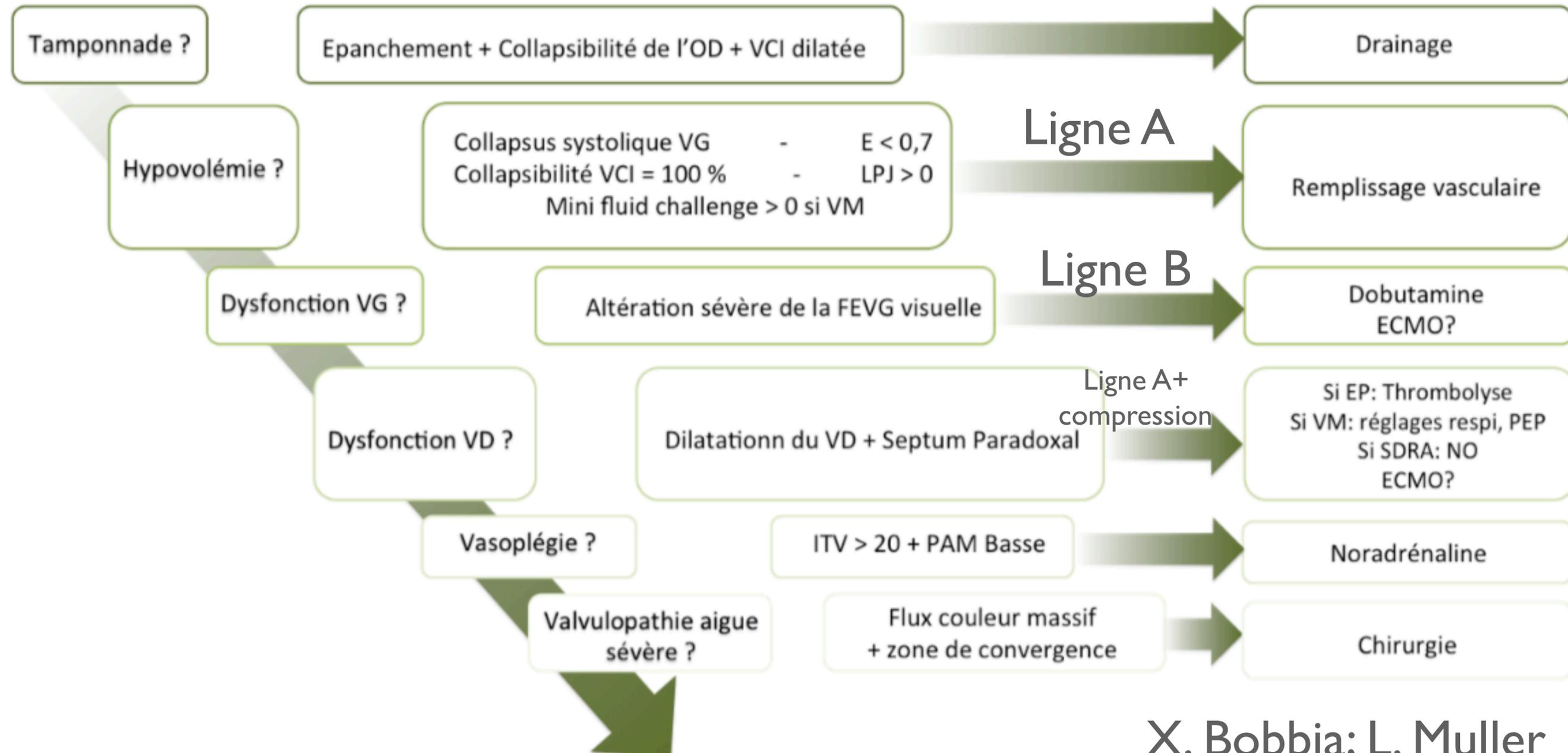




VALVULOPATHIE SÉVÈRE



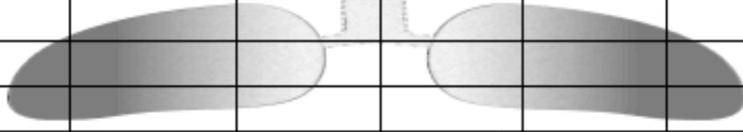
PATIENT HYPOTENDU



X. Bobbia; L. Muller

**COMPTE RENDU
D'ECHOGRAPHIE HEMODYNAMIQUE CIBLEE**

Date :	Age patient :	Conditions d'examen	Pré hospitalier
			Urgences
			USC & Réa
Indication :		Autre :	
Echographiste référent :			

POUMON						
	D			G		
	Postérieur	Latéral	Antérieur	Antérieur	Latéral	Postérieur
Supérieur						
Inférieur						
Epanchement						
Légende Normal 0 Pas de glissement pleural A Syndrome interstitiel modéré 1 Shunt vasculaire intra consolidation S Syndrome interstitiel sévère 2 Bronchogramme dynamique intra consolidation B Consolidation 3						
Notes :						

ABDOMEN					
Epanchement	Hépto- rénal		Oui	Non	Notes :
	Spléno-rénal		Oui	Non	
	Douglas		Oui	Non	
Aorte Abdominale	Flap	Oui	Non	Diamètre : (<2,5cm)	

VEINES					
Compressibilité Fémorale	G		Oui	Non	Notes :
	D		Oui	Non	
Compressibilité Poplitée	G		Oui	Non	
	D		Oui	Non	
Extension ilio-cave					

PERICARDE				
Non				
Oui	Compression OD	Compression VD	Dilatation VCI	Swinging Heart

FONCTION SYSTOLIQUE VG				
FeVG visuelle	Bonne	Modérément altérée	Effondrée	Notes :
Onde S:		MAPSE (Nle>12mm) (effondrée <6mm)		
<8cm/s	FEVG<30%			
8-8cm/s	FEVG 30-49%			
>8cm/s	FEVG>50%			
Anomalie cinétique segmentaire	Non	Oui :		

FONCTION VD			
Rapport visuel VD/VG	<0,6	0,6-1	>1
Cœur pulmonaire	Septum paradoxal	Oui	Non
	Paroi libre VD (Nle <5mm)	fine	Épaisse
TAPSE (Nle>16mm)		Notes :	
IT	PAPS (IT+P _{oo}) (Nle 25-30 mmHg)		
P _{oo}			
TaccAP (HTAP si <100ms)			

FONCTION VG DIASTOLIQUE ET PRESSIONS						
VCI	collapsibilité	100%	Diamètre :	Equivalence P _{oo}	<8mm	P _{oo} 5
		40-100%			8-25mm	P _{oo} 10
		<40%			>25mm	P _{oo} 15
Kissing Heart	Oui	Non	E (0,6-1,3m/s)		E/A (0,8<zone grise>2)	
Notes :				E' (patho <8cm/s)	E/E' (8<zone grise>14)	

DEBIT CARDIAQUE ET EPREUVE DE REMPLISSAGE						
ITVSAo initiale (Nle ≥17cm/s)		Epreuve de remplissage	Non	Oui	Laquelle :	
ITVSAo suivantes	1	2	3	4	5	6

VALVULOPATHIES	
Notes :	

AORTE THORACIQUE			
	Racine (<3,7cm)	Crosse (<3,8cm)	Descendante (<2,8cm)
Diamètre			
Flap			

CONCLUSION	

**COMPTE RENDU
D'ECHOGRAPHIE HEMODYNAMIQUE CIBLEE**

Date :	Age patient :	Conditions d'examen	Pré hospitalier
Indication :			Urgences
			USC & Réa
			Autre :
Echographiste référent :			

POUMON						
	D			G		
	Postérieur	Latéral	Antérieur	Antérieur	Latéral	Postérieur
Supérieur						
Inférieur						
Epanchement						
Légende					Notes :	
Normal	0	Pas de glissement pleural		A		
Syndrome interstitiel modéré	1	Shunt vasculaire intra consolidation		S		
Syndrome interstitiel sévère	2	Bronchogramme dynamique intra consolidation		B		
Consolidation	3					

ABDOMEN					
Epanchement	Hépto- rénal		Oui	Non	Notes :
	Spléno-rénal		Oui	Non	
	Douglas		Oui	Non	
Aorte Abdominale	Flap	Oui	Non	Diamètre : (<2,5cm)	

ABDOMEN					
Epanchement	HépatO- rénal		Oui	Non	Notes :
	Spléno-réнал		Oui	Non	
	Douglas		Oui	Non	
Aorte Abdominale	Flap	Oui	Non	Diamètre : (<2,5cm)	

VEINES					
	G		D		Notes :
Compressibilité Fémorale	Oui	Non	Oui	Non	
Compressibilité Poplitée	Oui	Non	Oui	Non	
Extension ilio-cave					

PERICARDE				
Non				
Oui	Compression OD	Compression VD	Dilatation VCI	Swinging Heart

FONCTION SYSTOLIQUE VG				
FeVG visuelle	Bonne	Modérément altérée	Effondrée	Notes :
Onde S:		MAPSE (Nie>12mm) (effondrée <6mm)		
<8cm/s	FEVG<30%			
8-8cm/s	FEVG 30-49%			
>8cm/s	FEVG>50%			
Anomalie cinétique segmentaire	Non	Oui :		

F.A.S.T EXTENDED

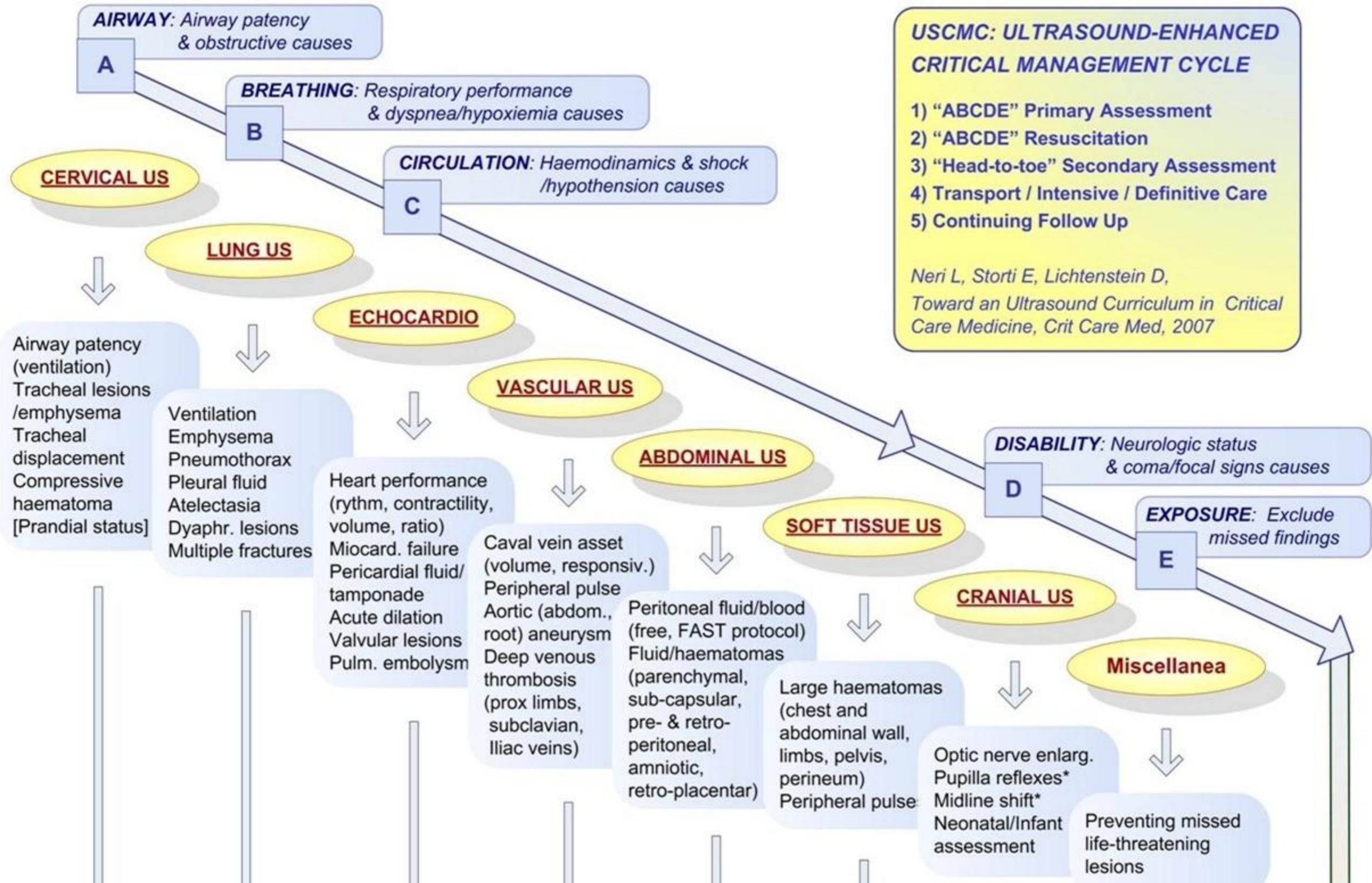


HISTORIQUE



Leçon d'anatomie du Dr. Tulipe

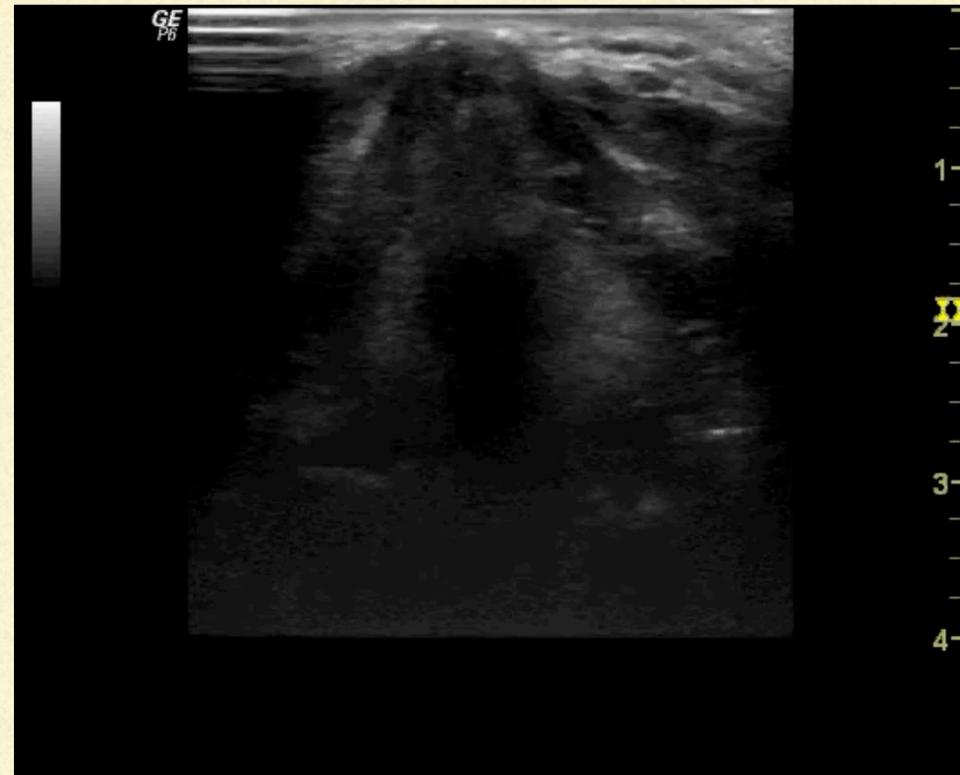
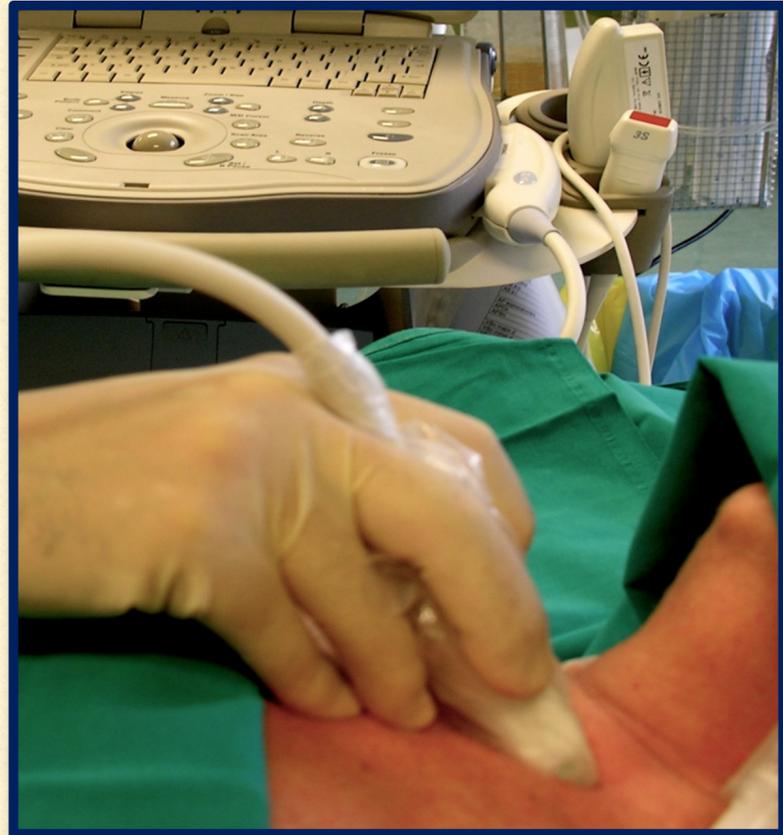
1. "ABCDE" PRIMARY ASSESSMENT (FAST-ABCDE: Vital signs, anomalies, detectable causes, responses, complications)



ABCDE

AIRWAY

Aide à la Cricothyroidotomie

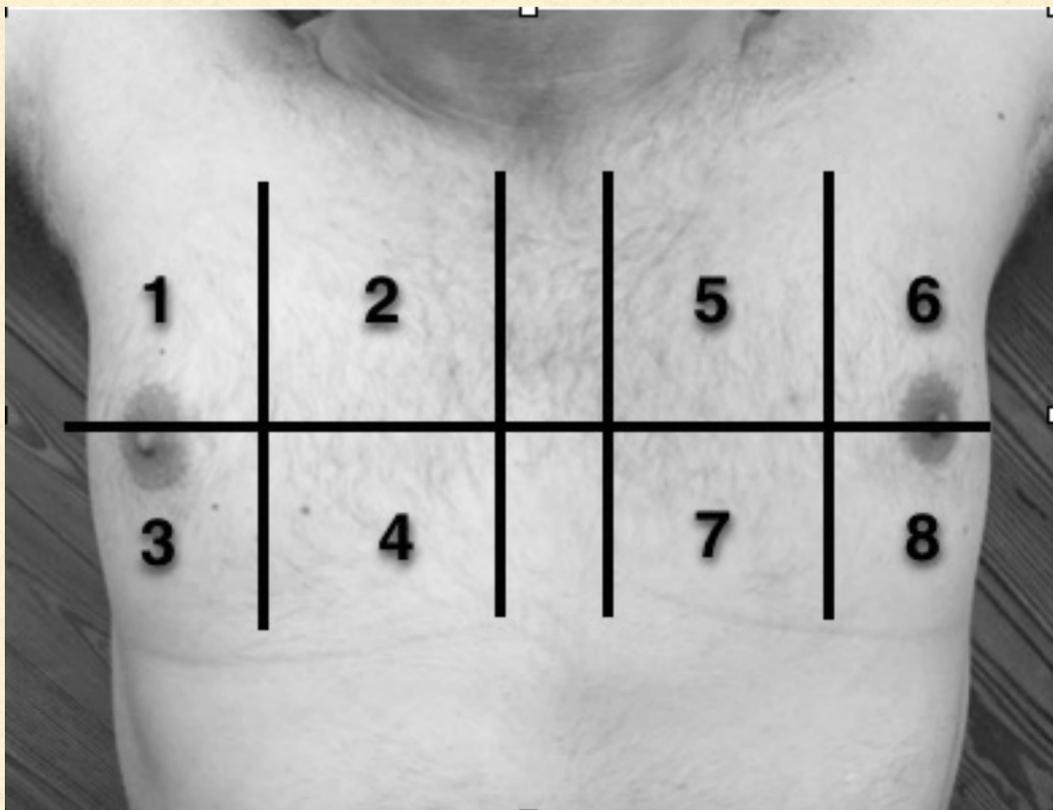


Aide à l'intubation



ABCD

BREATH



PHILIPS READ 006 IM 0,6 16/11/2016
16-11-16-131045 URGENCES CHU-CLERMONT- ITm 0,1 13:15:07

Abd gén
C5-1
61Hz
7,0cm

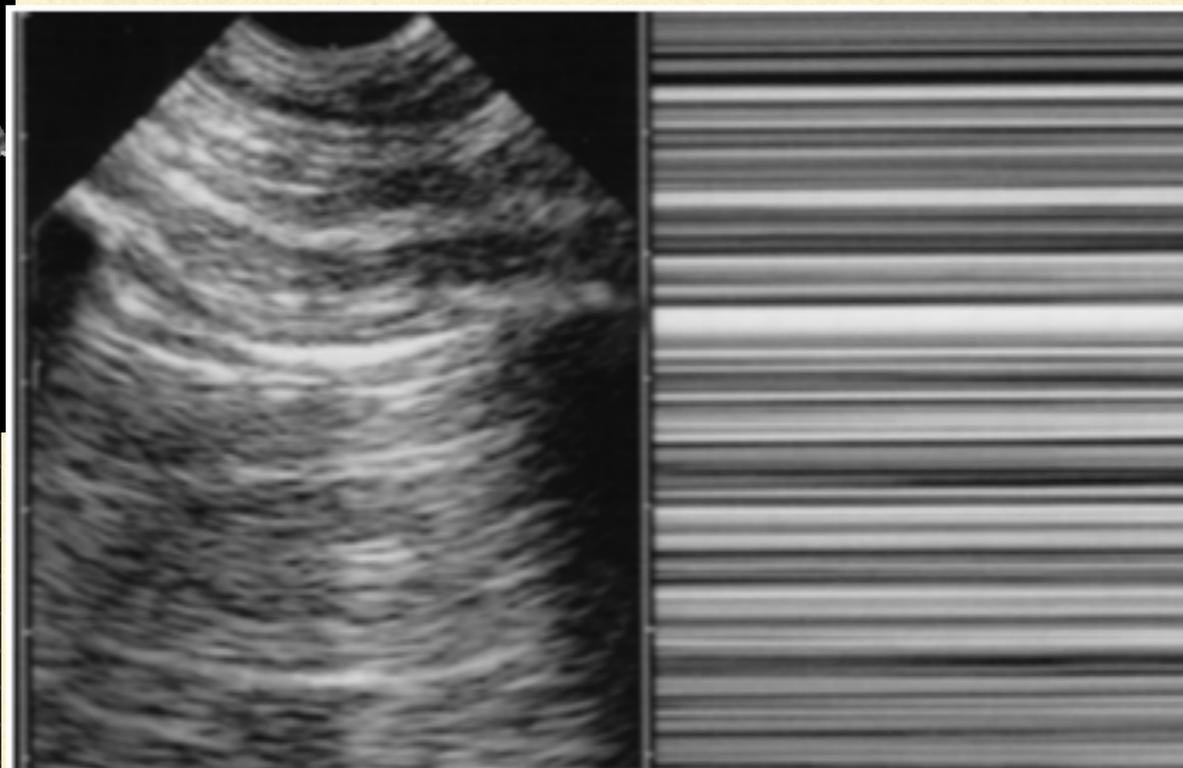
2D
Gén
Gn 30
C 56
3/3/3

G
P R
1,0 5,0

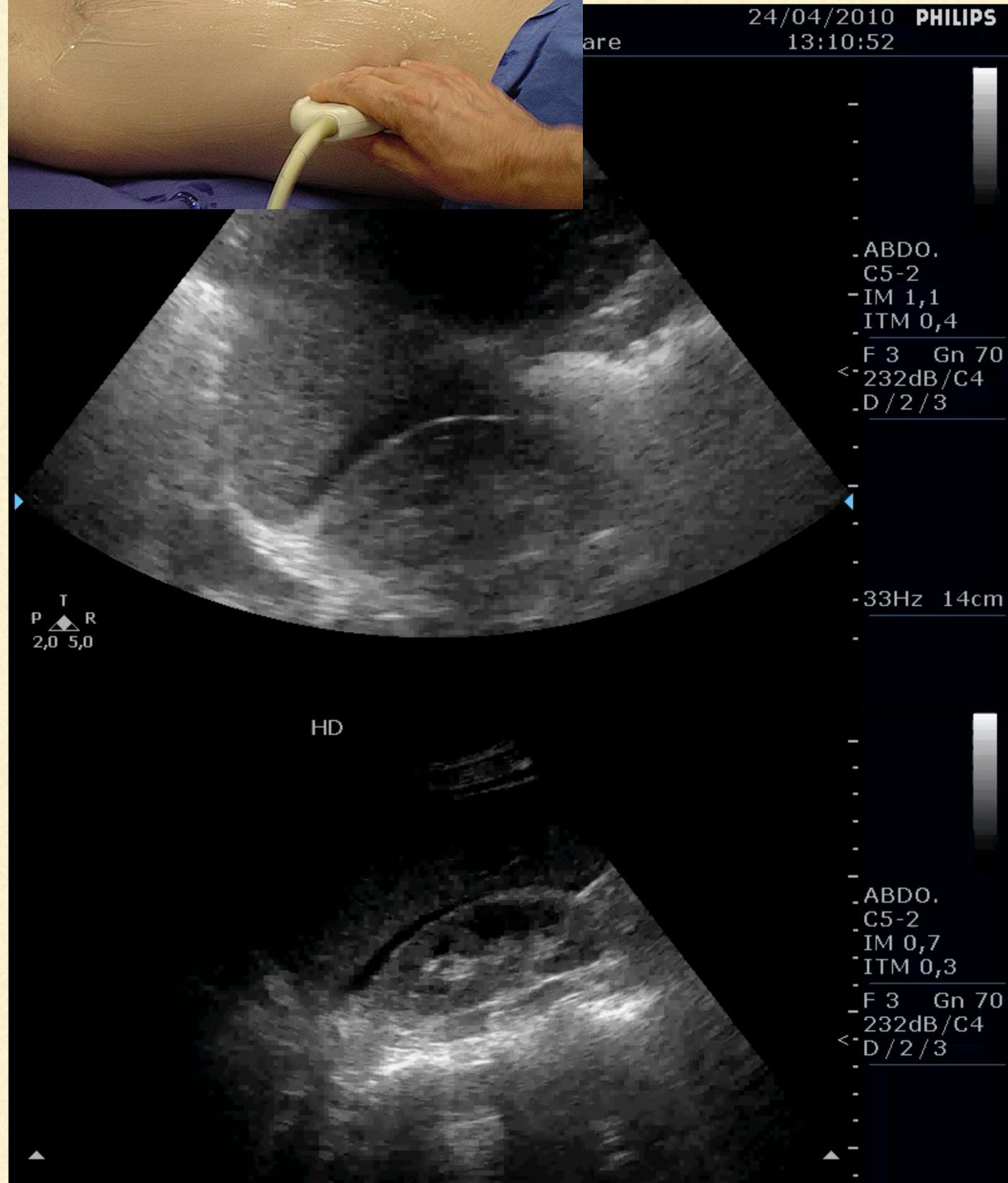
ABDO VASC
C5-1
34Hz
15,0cm

2D
HGén
Gn 84
C 52
3/3/3

G
P R
1,8 3,6

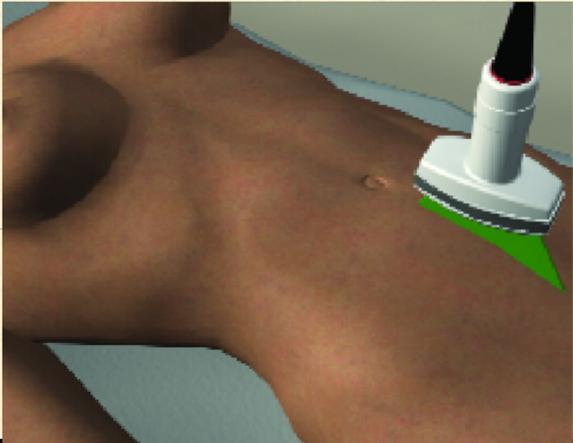
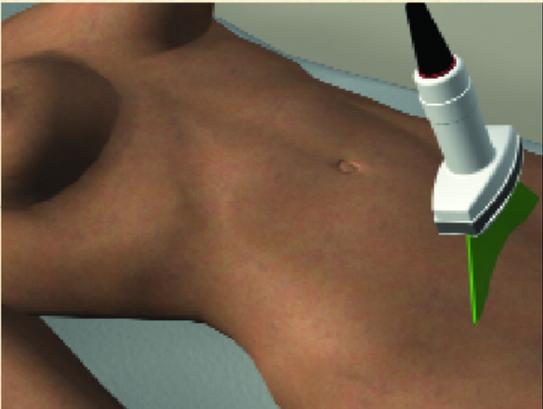


ABCD CIRCULATION



ABCD

CIRCULATION



PHILIPS IM 1,1
ITm 0,1

Abd gén
C5-1
34Hz
15cm

2D
HGén
Gn 60
C 56
3 / 3 / 3

P
G
P R
1,8 3,6

29/11/2008 PHILIPS
01:51:15 c p

- Philips HD 7 -

HD

ABDO.
C5-2
IM 1,1
ITM 0,4

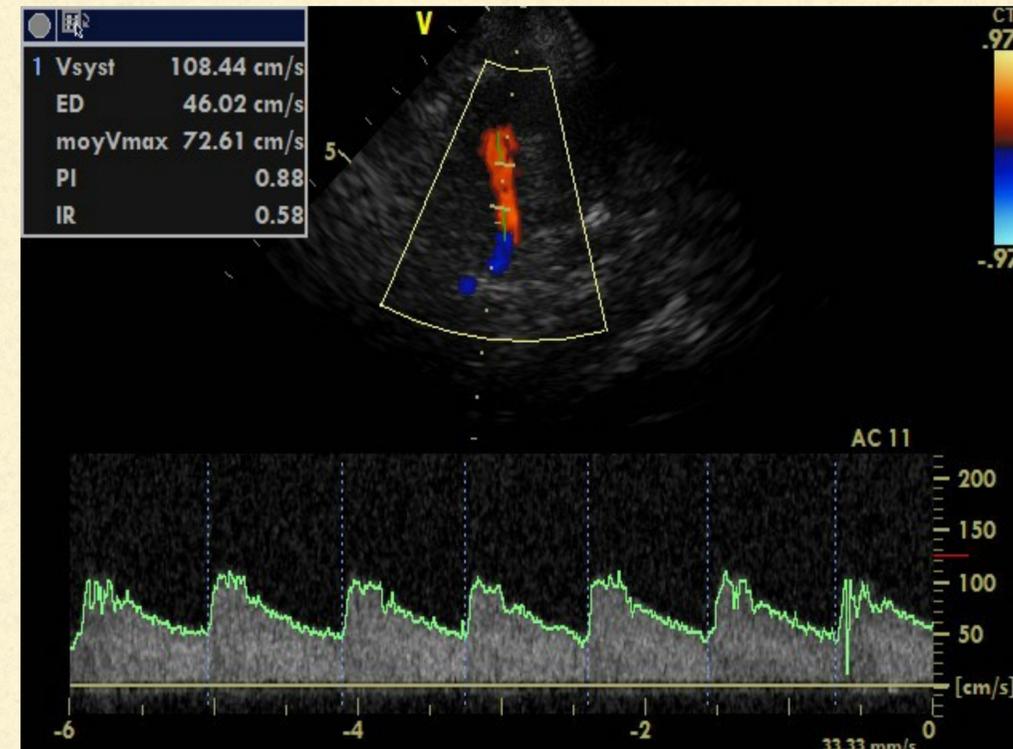
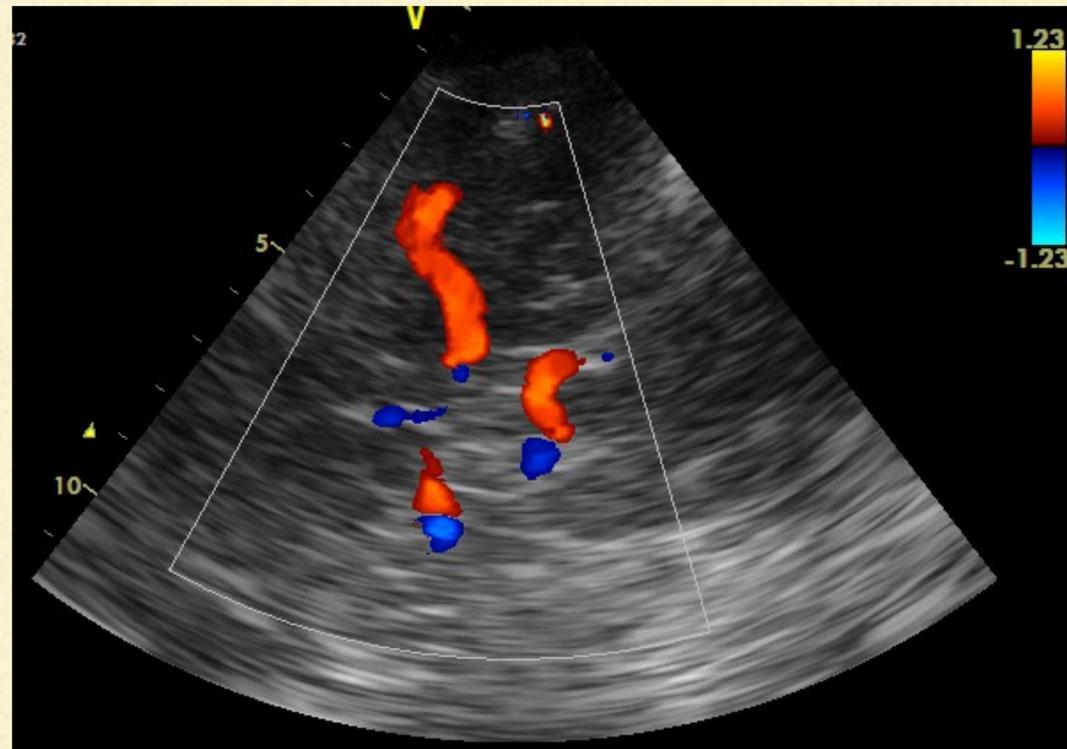
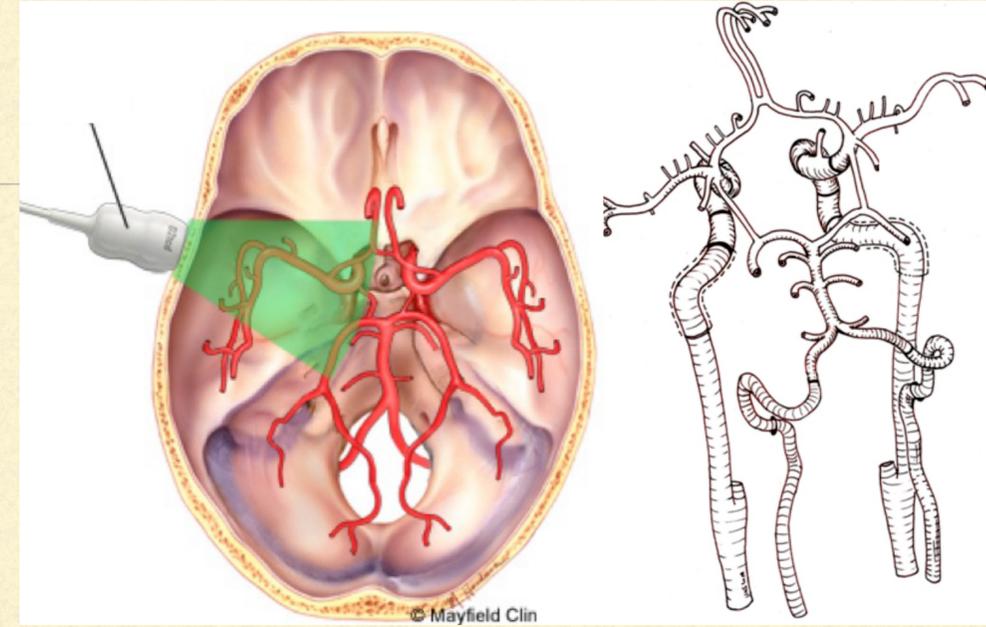
< F 3 Gn 70
-232dB/C4
D / 2 / 3

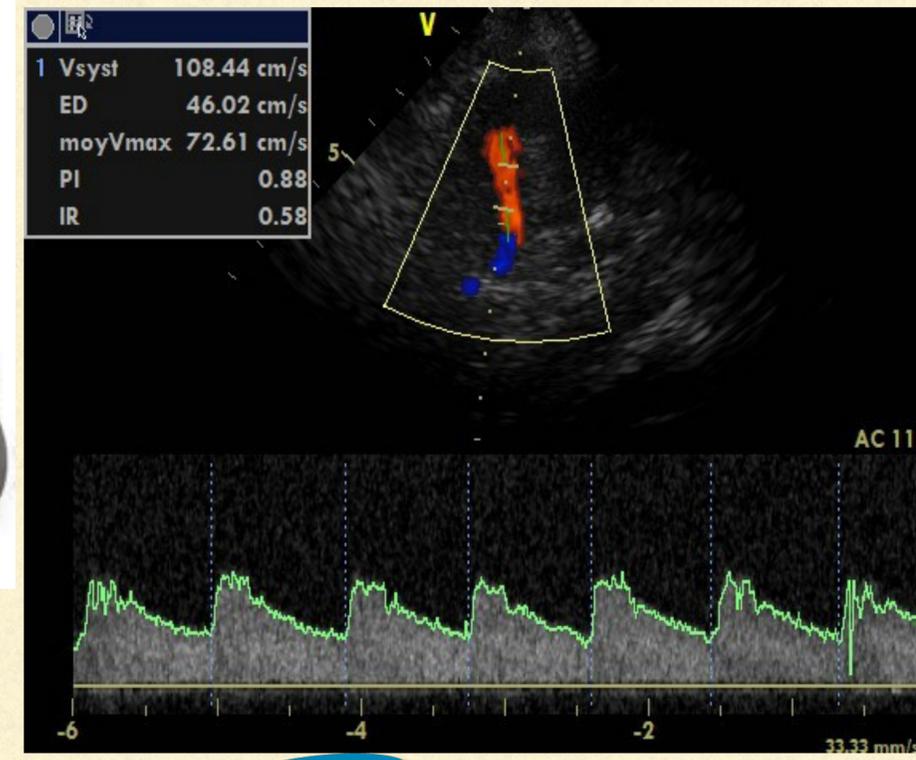
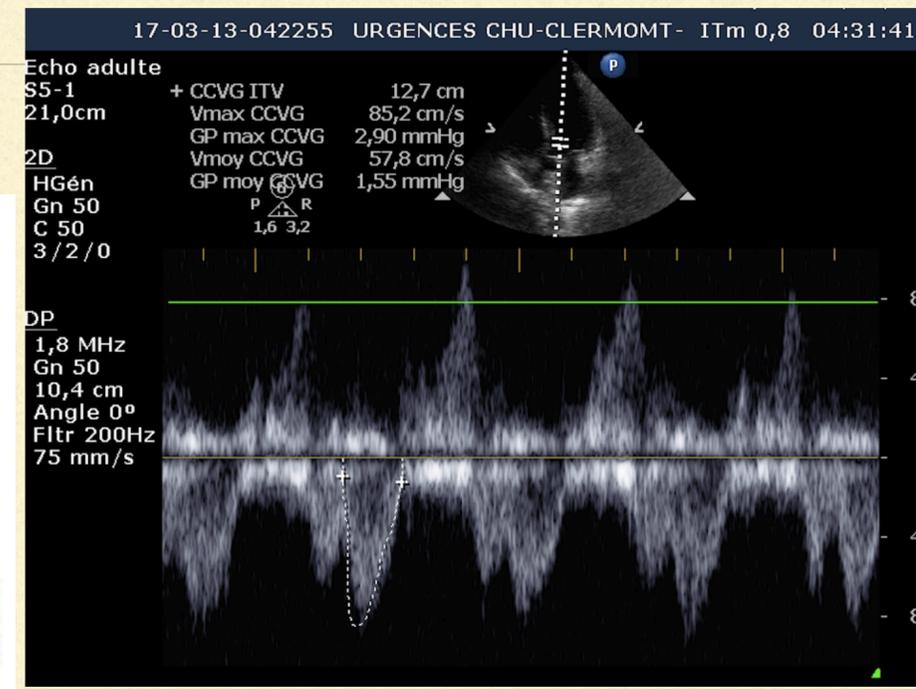
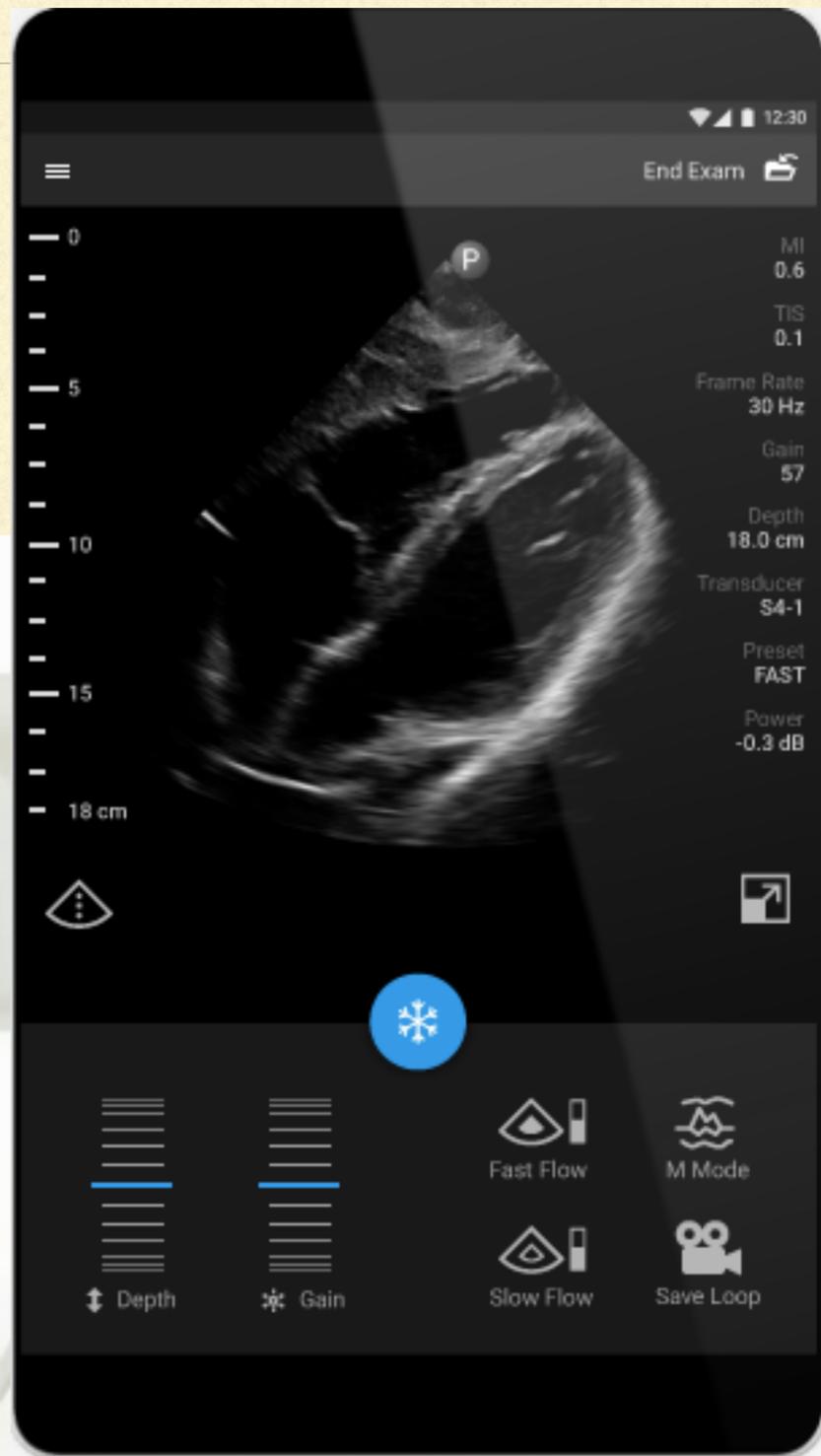
38Hz 12cm

T
P R
2,0 5,0

ABCD

DYSABILITY







SÉMINAIRE GRAND-EST WINFOCUS FRANCE
2^{ème} édition : 11-12 DÉCEMBRE 2018
METZ





INFORMATIONS ET PROGRAMME SUR
www.sgewff.org

ORGANISATION GÉNÉRALE : MCO CONGRÈS
Contact informations et inscriptions :
julie.faber@mcocongres.com
www.mcocongres.com

#1 : INITIATION À L'ÉCHOGRAPHIE CLINIQUE D'URGENCE
(USLS-BL1, niveau débutant ou remise à niveau)
#2 : ÉVALUATION HÉMODYNAMIQUE ÉCHO-AUGMENTÉE
(HD-2, niveau avancé, maîtrise requise des coupes cardiaques)



SMWFF
27, 28, 29
MARS **2019**
MARSEILLE VILLA GABY
SÉMINAIRE MÉDITERRANÉEN WINFOCUS-FRANCE

#1 : INITIATION À L'ÉCHOGRAPHIE CLINIQUE D'URGENCE
(USLS-BL1, niveau débutant ou remise à niveau)
#2 : ÉVALUATION HÉMODYNAMIQUE ÉCHO-AUGMENTÉE
(HD-2, niveau avancé, maîtrise requise des coupes cardiaques)

www.sgewff.org
Informations et inscriptions :
julie.faber@mcocongres.com





URGENCES URGENCES LE CONGRÈS




5-6-7 JUIN 2019
PALAIS DES CONGRÈS
PARIS PORTE MAILLOT

URGENCES 2019 PROGRAMME INSCRIPTION APPEL À COMMUNICATIONS PARTENAIRES CONCOURS INFOS

Conférences et ateliers autour de l'échographie d'urgence.

