



MARINS-POMPIERS
DE
MARSEILLE



Échographie clinique préhospitalier

Quelles évolutions probables en ECMU ?

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MÉDECINE
MONTPELLIER-NÎMES
DEPUIS 1220



Conflits d'intérêts



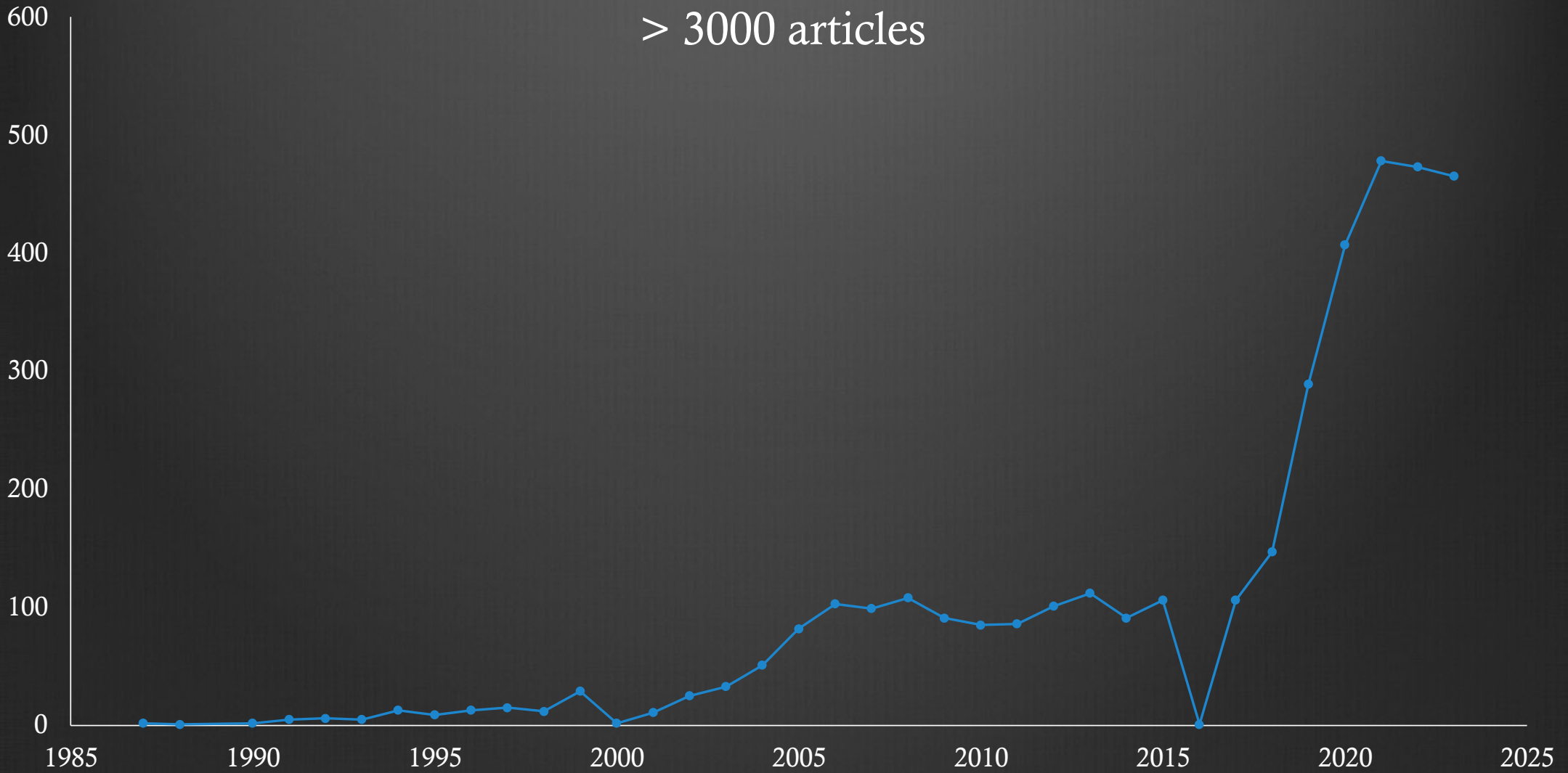
GE HealthCare

Ergonomie



("Ultrasonography"[Mesh]) AND "Artificial Intelligence"[Mesh]

> 3000 articles



Quelles évolutions probables en ECMU ?

⊗ Voir

⊗ Reconnaître

⊗ Suivre

⊗ Montrer

⊗ Monitorer

Quelles évolutions probables en ECMU ?

⦿ Voir

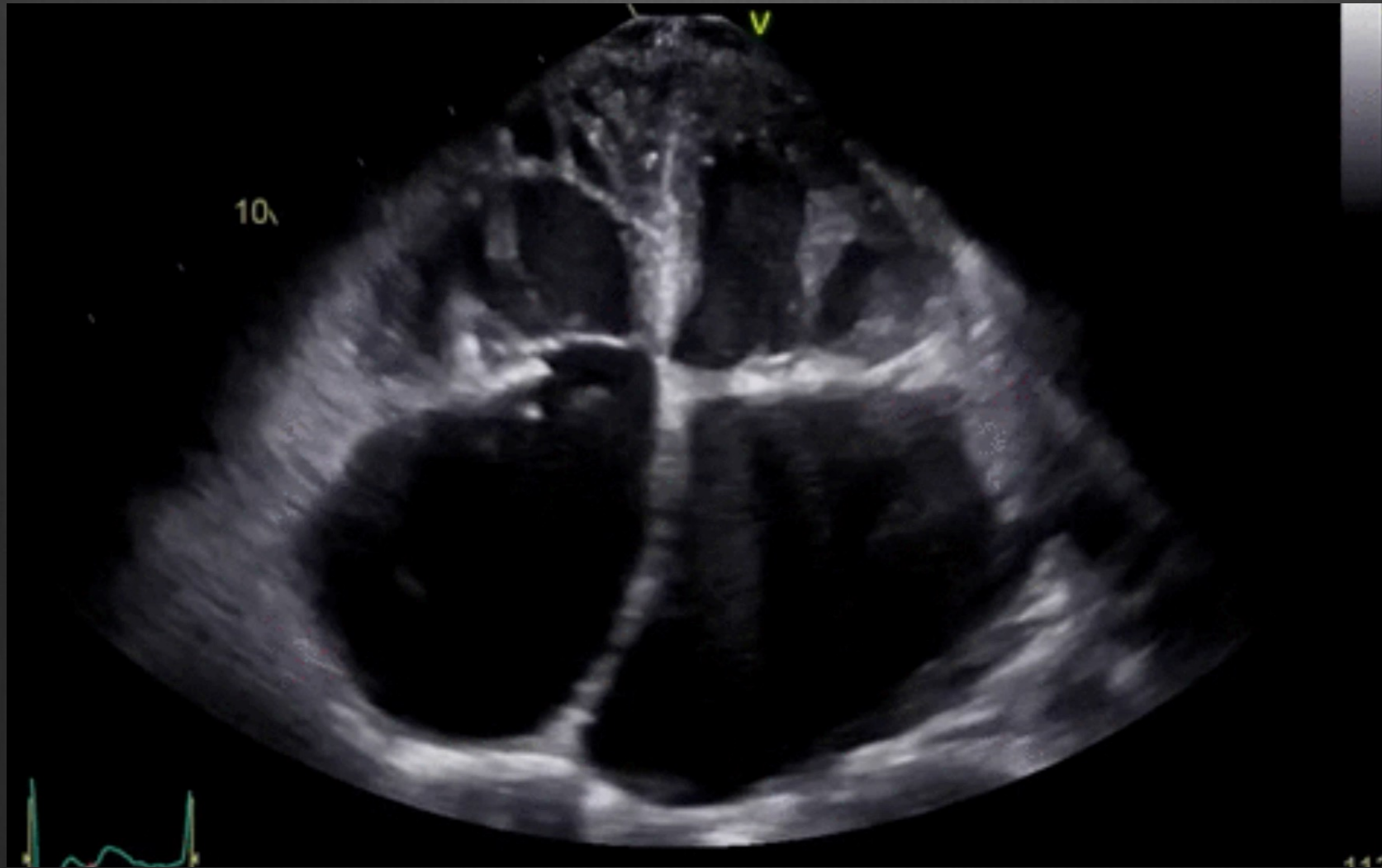
⦿ Reconnaître

⦿ Suivre

⦿ Montrer

⦿ Monitorer

Qualité d'image



Quelles évolutions probables en ECMU ?

⦿ Voir

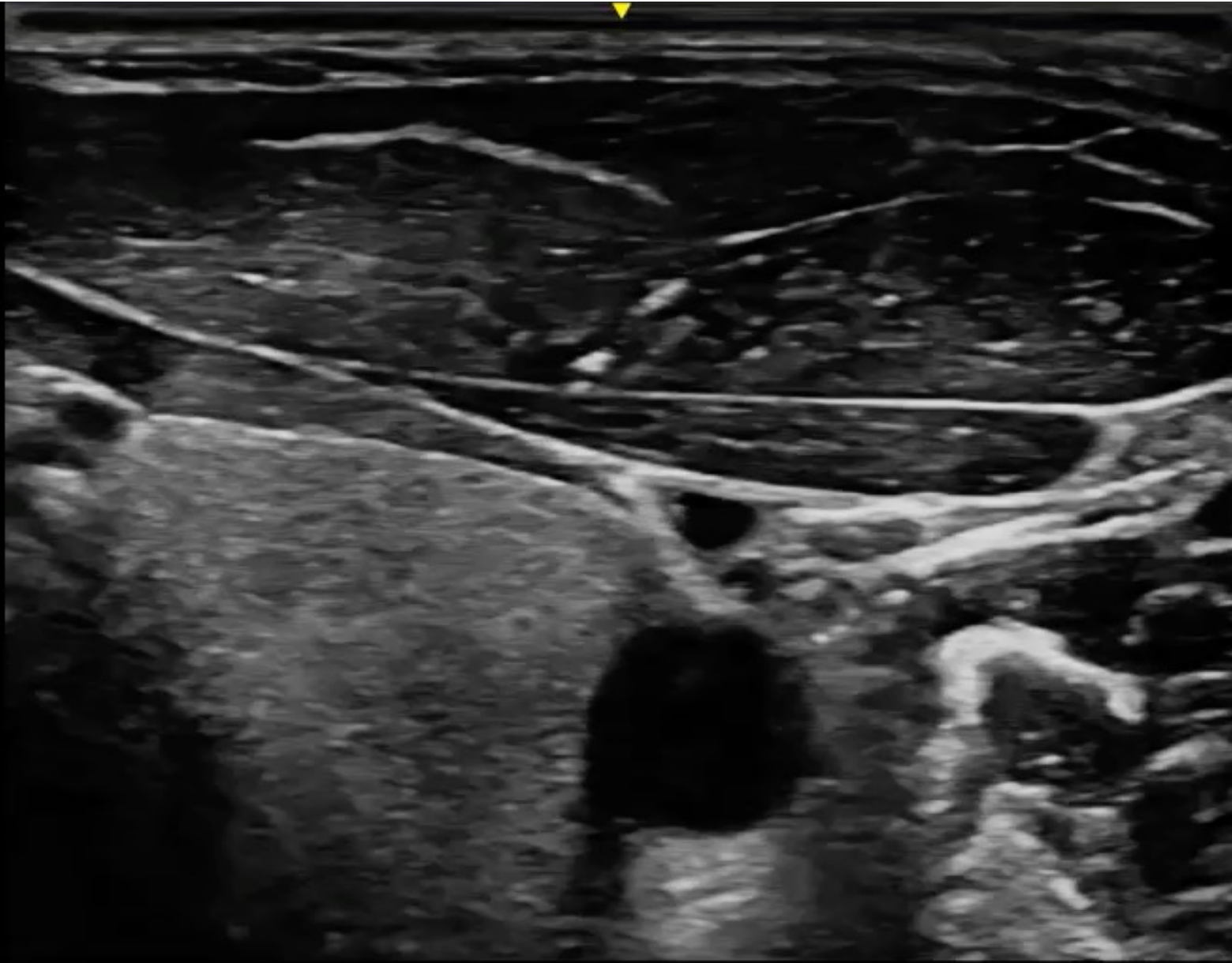
⦿ Reconnaître

⦿ Suivre

⦿ Montrer

⦿ Monitorer


GE
Venue



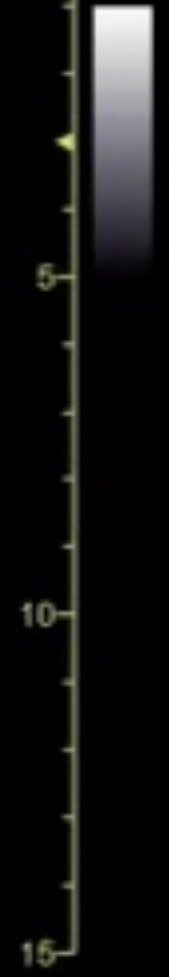
1

2

3

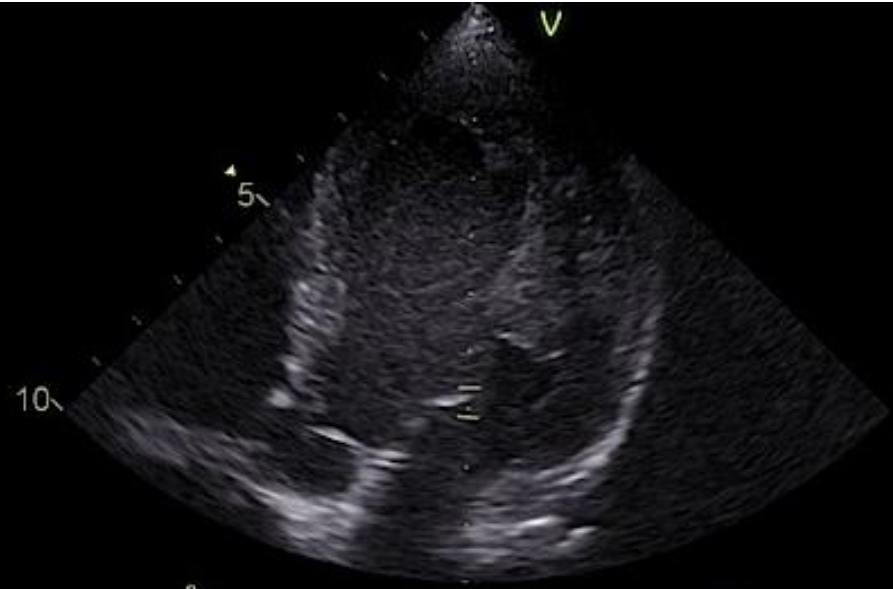
f: 
G **B Lines 2**
D: 15.0 cm

GE
Versue

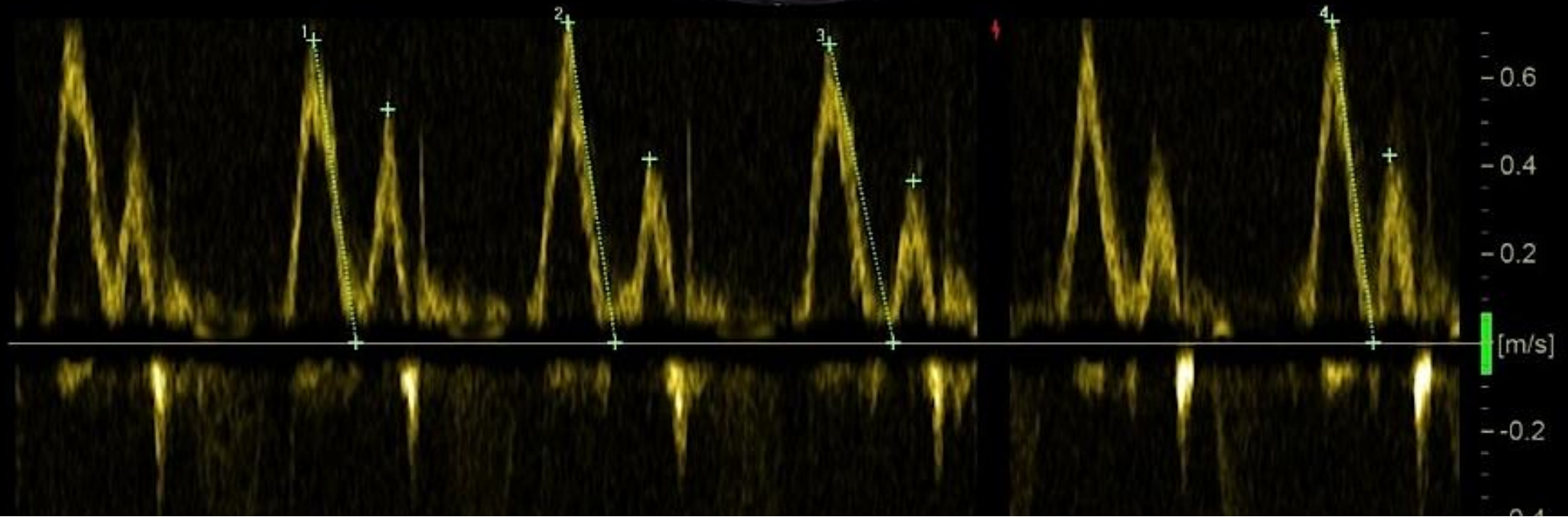


3R	1R	1L	3L
4R	2R	2L	4L

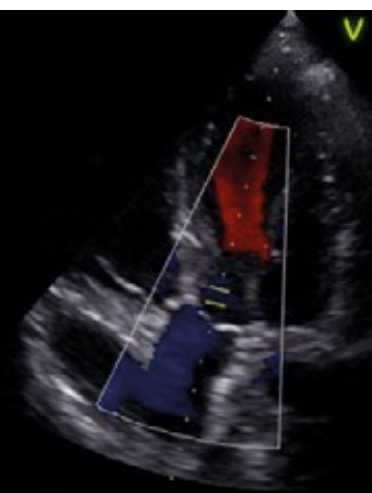
Av MV E Vel 0.71 m/s
MV DecT 132 ms
MV Dec Slope 5.5 m/s²
MV A Vel 0.44 m/s
MV E/A Ratio 1.65



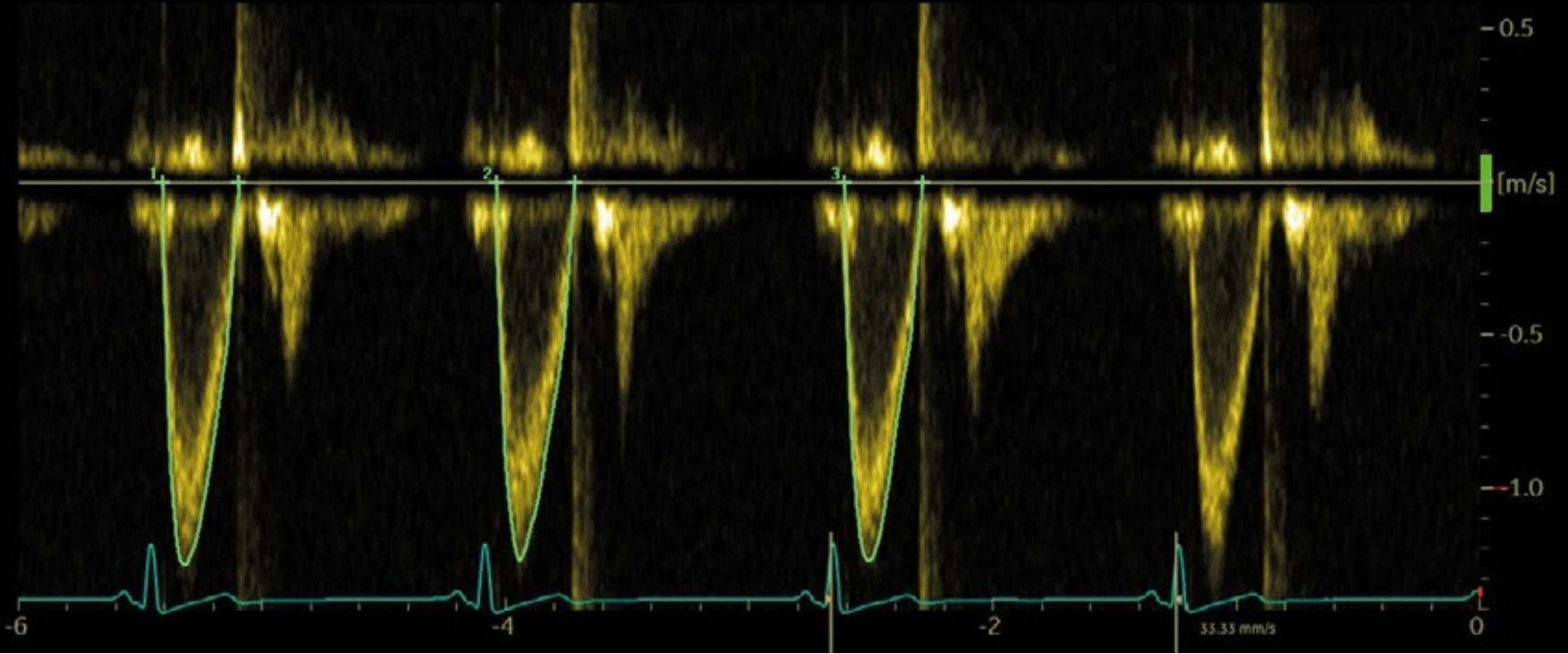
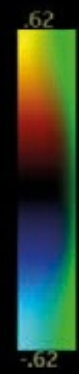
Soft



Av	LVOT Vmax	1.24 m/s
	LVOT Vmean	0.84 m/s
	LVOT maxPG	6.19 mmHg
	LVOT meanPG	3.28 mmHg
	LVOT VTI	26.6 cm
	LVOT Env.Ti	318 ms
	HR	43 BPM



Spectrum Auto Recognized



FPS: 49
f: 1.7 MHz/3.4 MHz
AG(t): 0 dB
D: 16.0 cm





Ss Ao Diam 15.0 mm

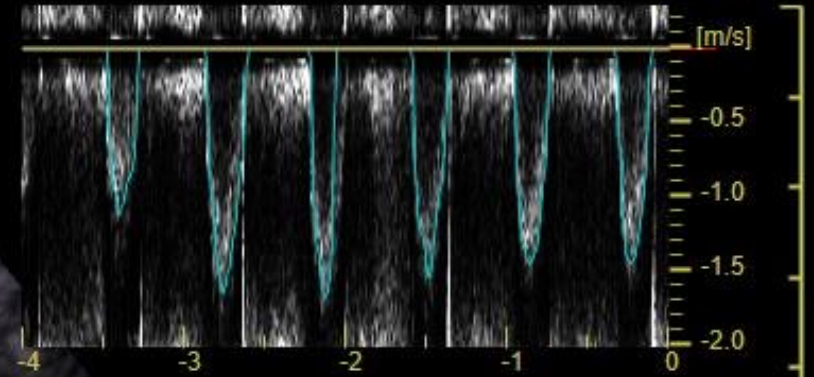
Ss Ao ITV 22.0 cm

FC 95 BPM

Ss Ao Vmax 1.48 m/s

Débit Syst. 3.7 l/min

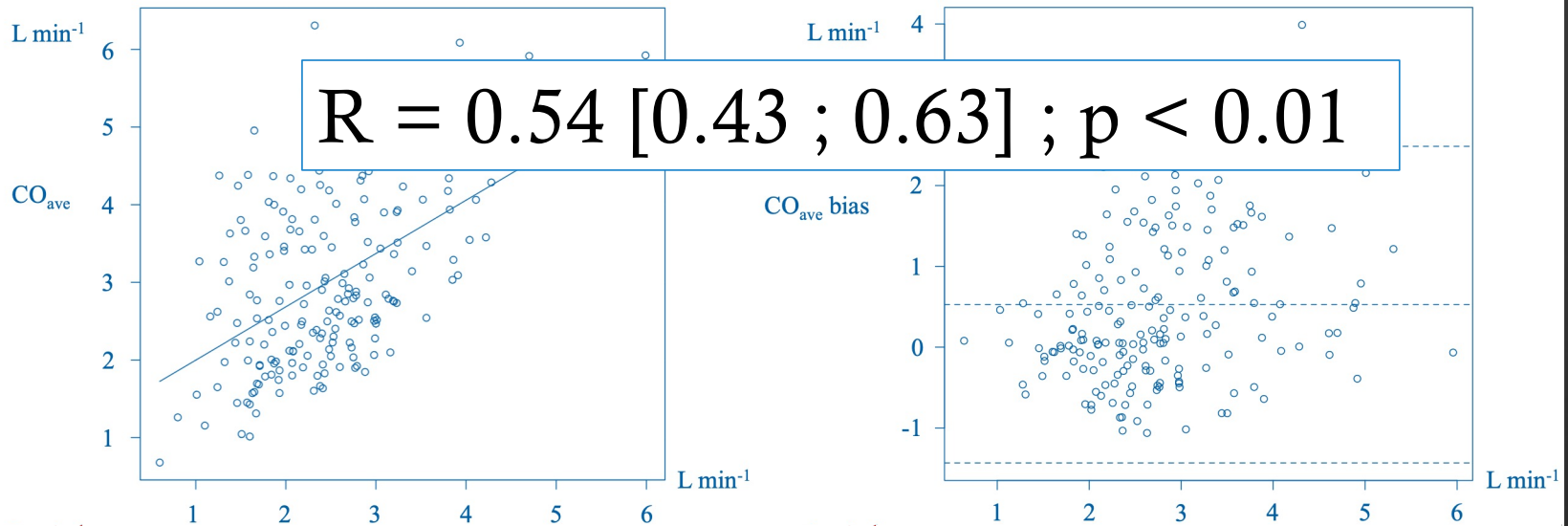
GE
Venue



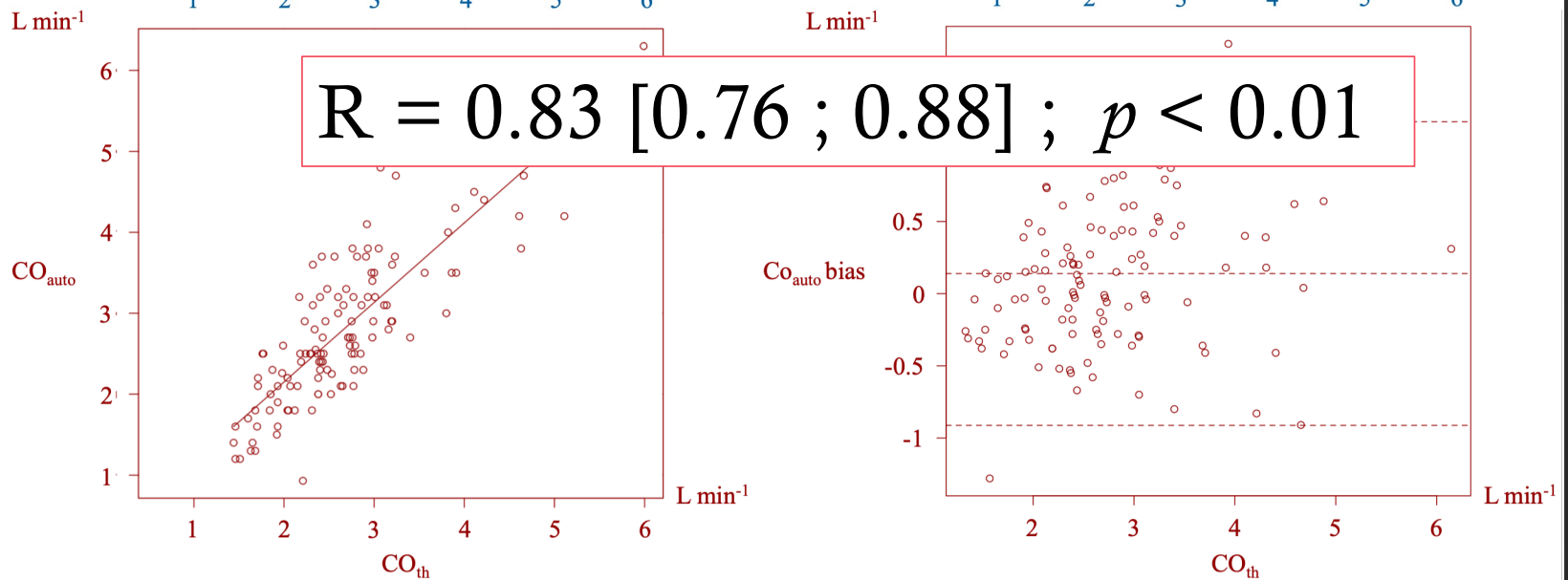
5

10

Manuel
3 ITV



Automatique
4s d'ITV



Quelles évolutions probables en ECMU ?

⦿ Voir

⦿ Reconnaître

⦿ Suivre

⦿ Montrer

⦿ Monitorer

Speckle tracking = imagerie de suivi des marqueurs acoustiques

2015/04/22-14:19:24

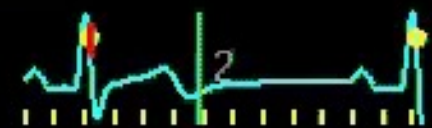
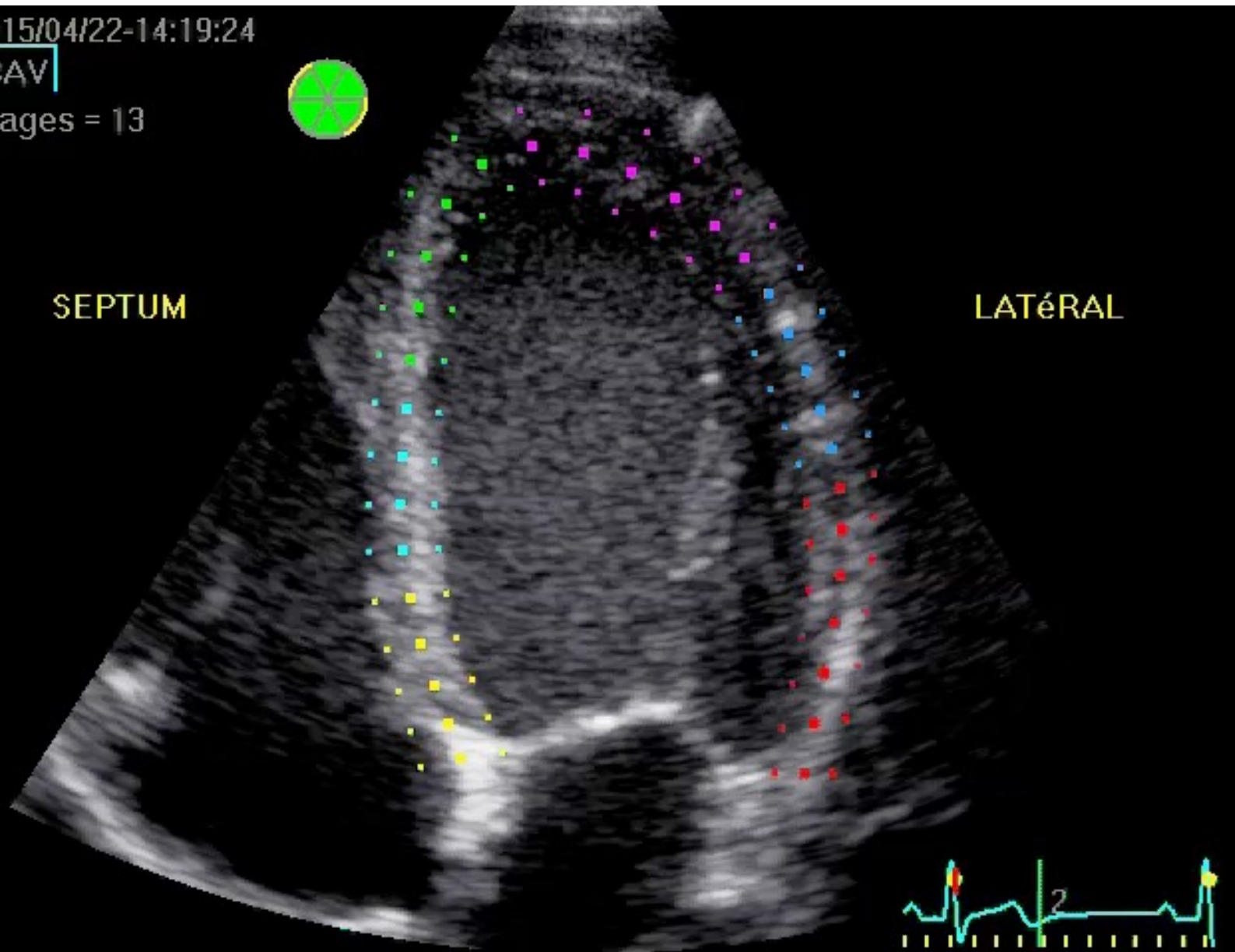
4CAV

Images = 13



SEPTUM

LATÉRAL



2015/04/22-14:19:24

4CAV

FR= 60 fps

HR= 55 bpm



5

10

SL

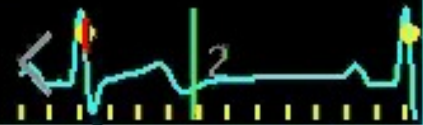
20.0



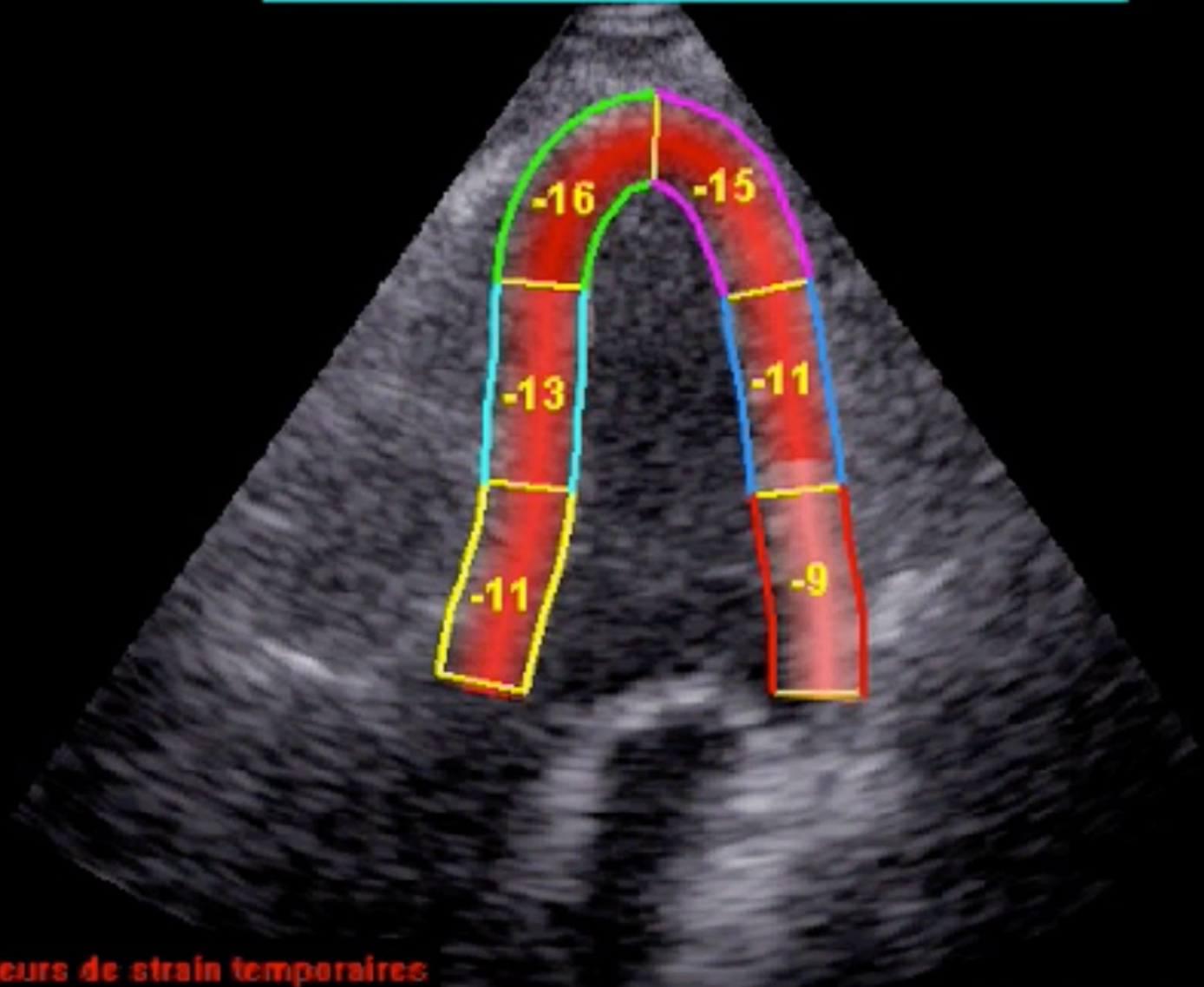
-20.0

%

SG=-18.8%

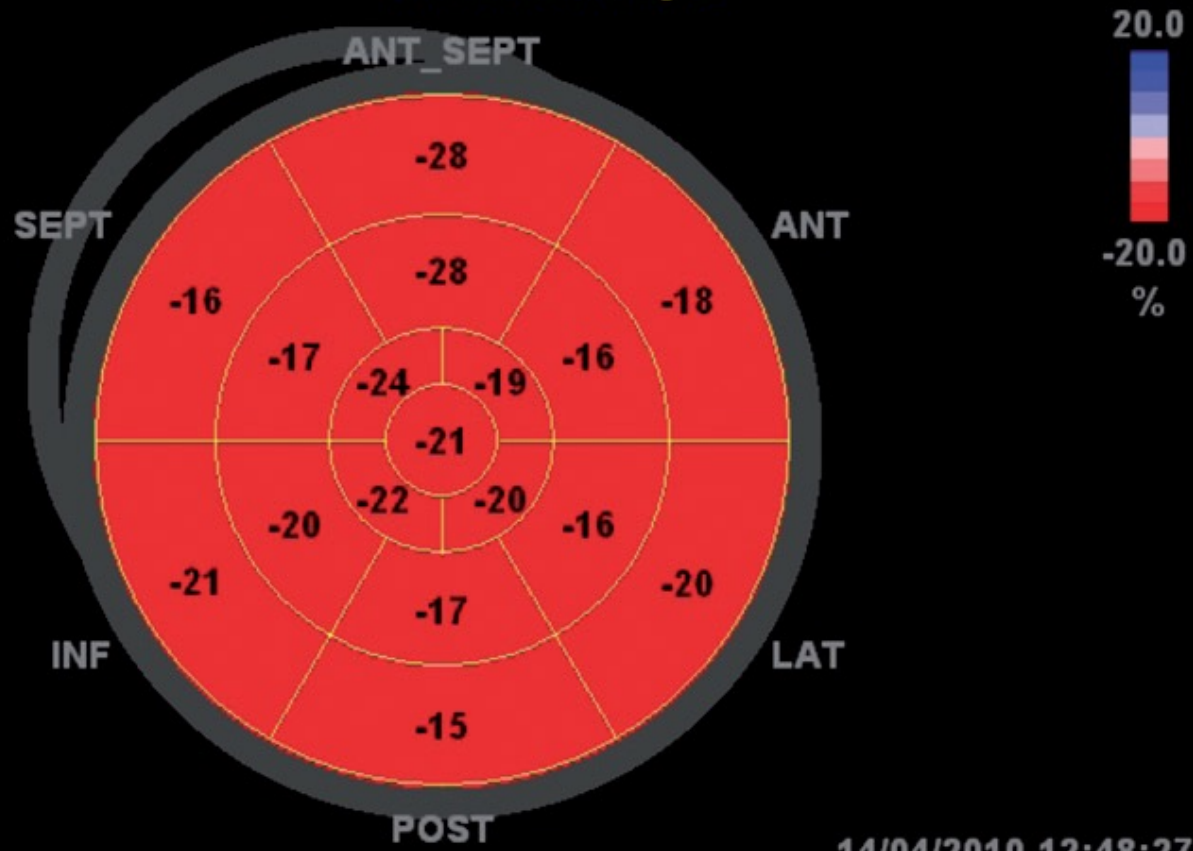


Pic du Strain Syst.



Valeurs de strain temporaires

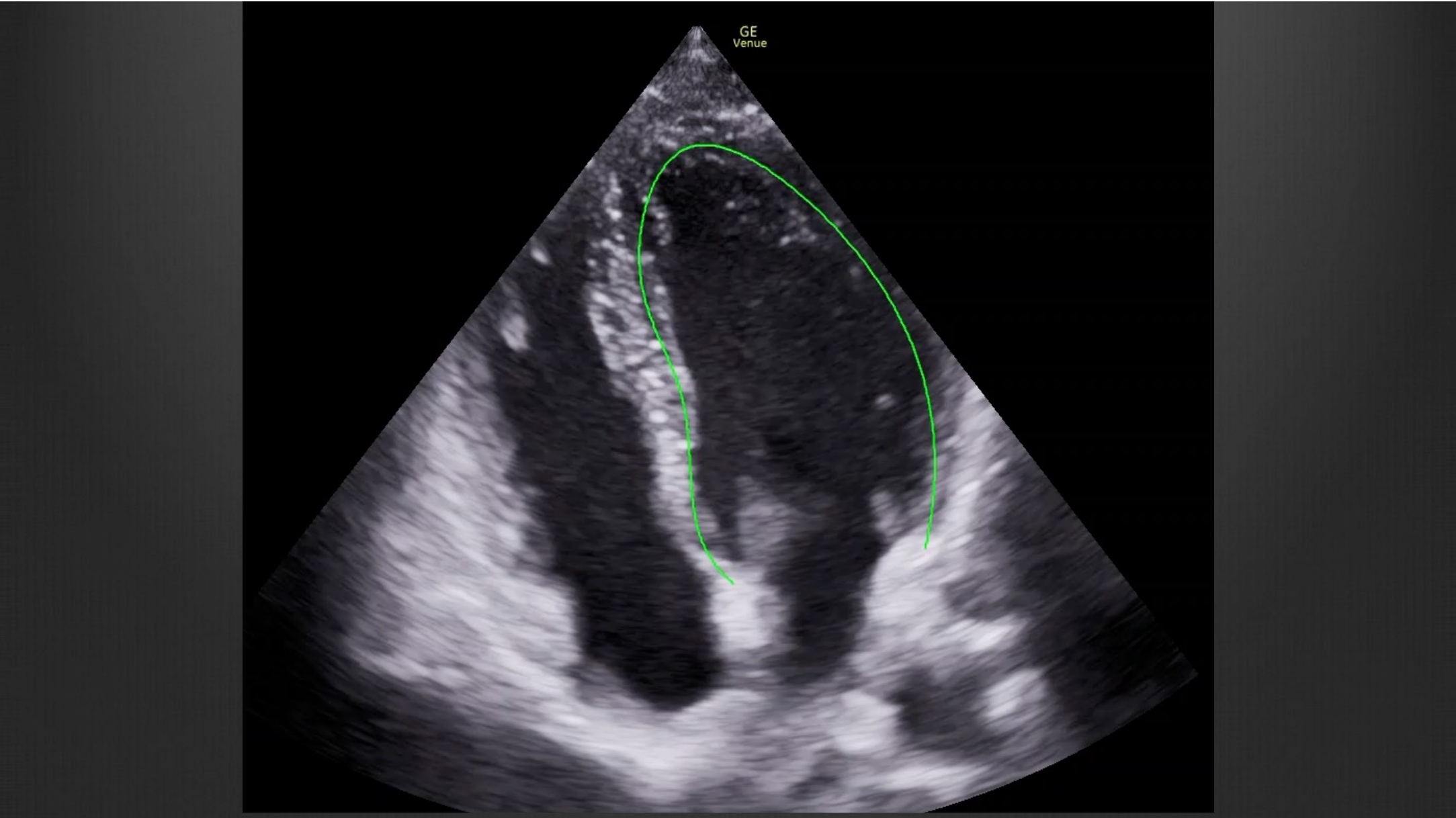
Pic du Strain Syst.

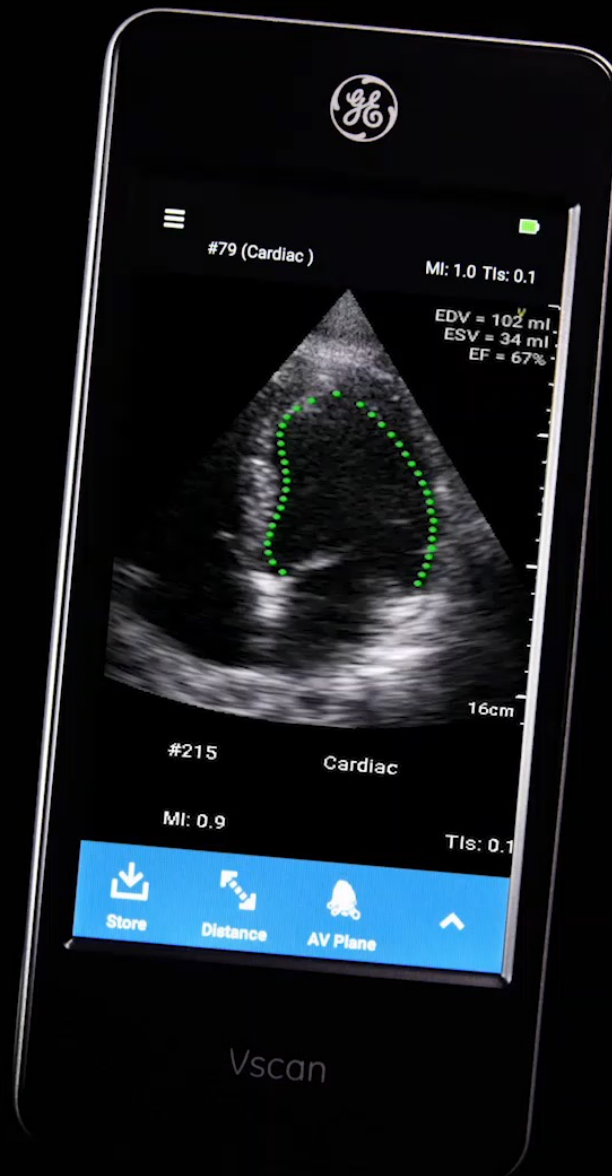


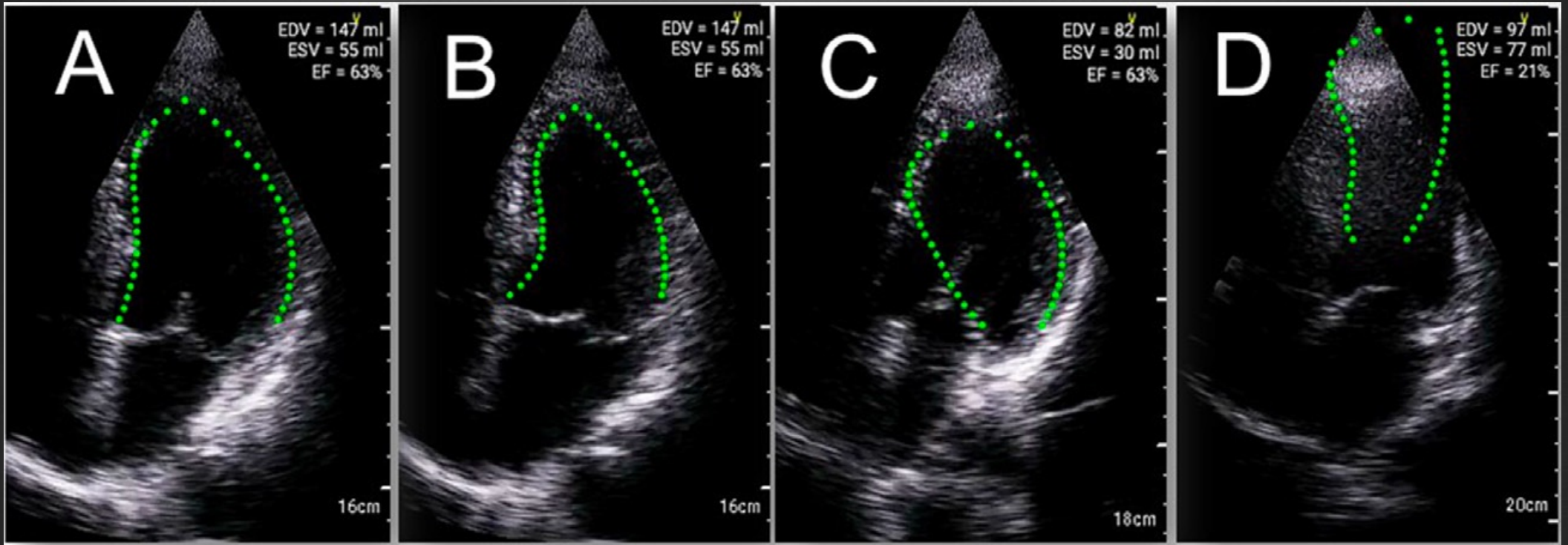
14/04/2010-12:48:27

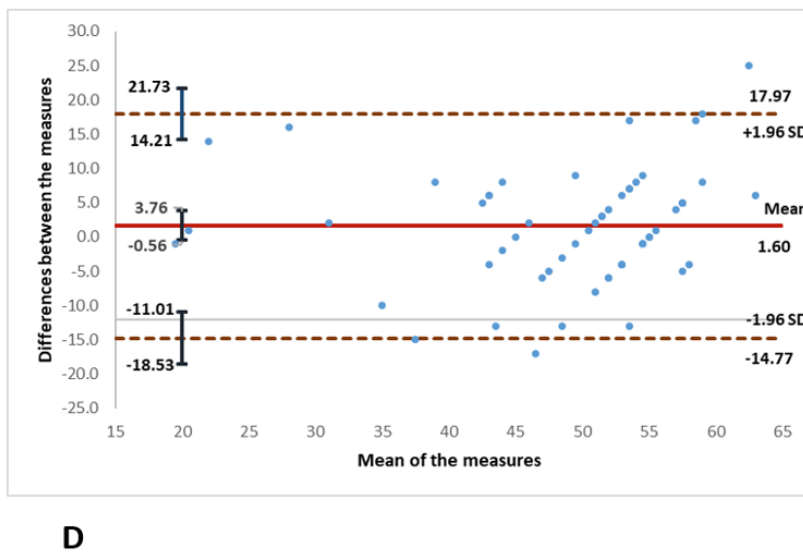
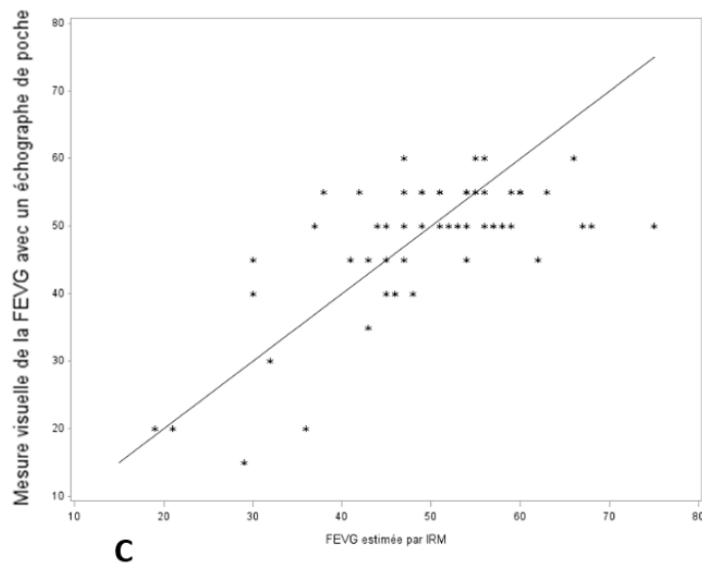
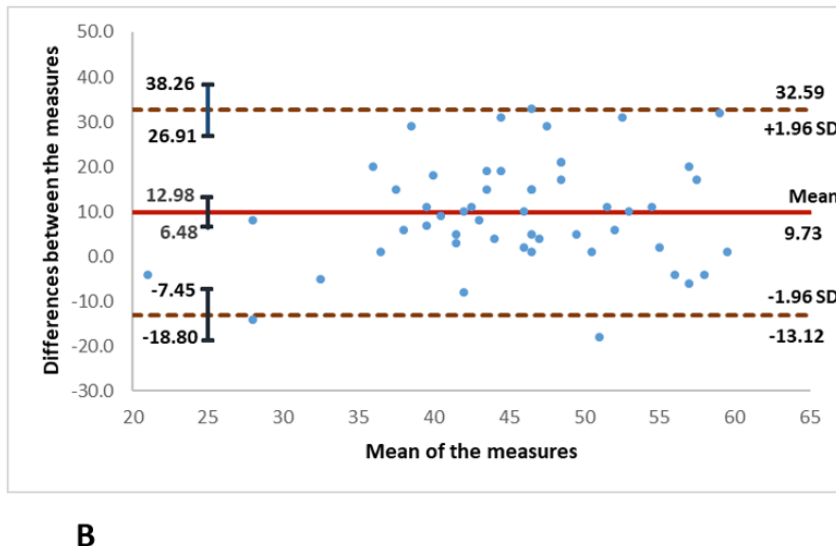
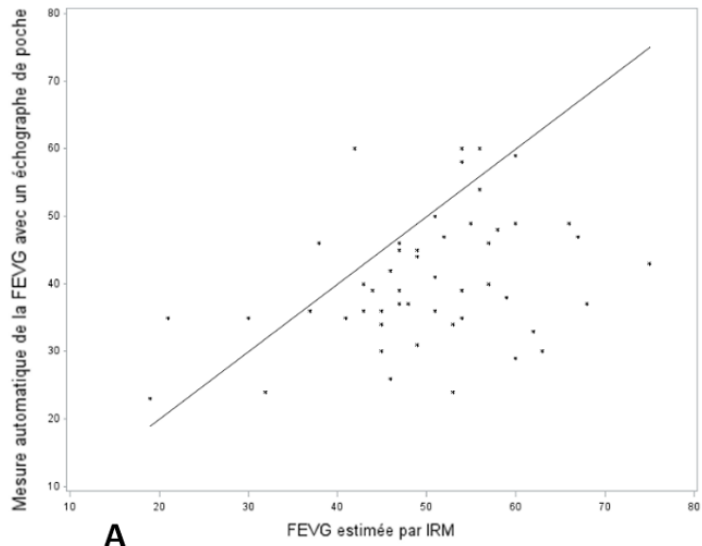
GLPS_LAX	-22.6 %
GLPS_A4C	-19.1 %
GLPS_A2C	-17.9 %
GLPS_Avg	-19.8 %

AVC_STORED	333 msec
HR_ApLAX	93.2 bpm









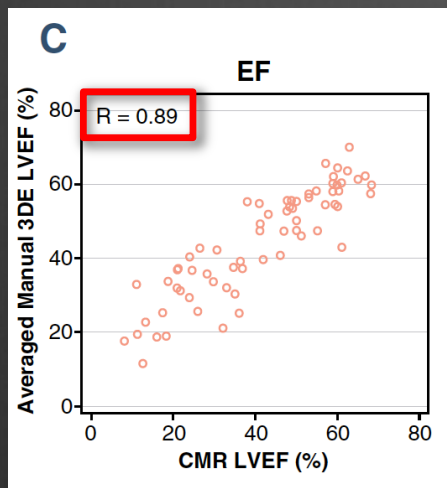
Concordance vs IRM

Automatique
0,23 [0,03 ; 0,40]

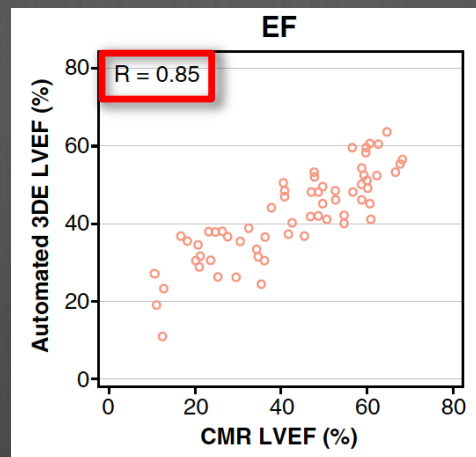
Visuelle
0,68 [0,51 ; 0,79]



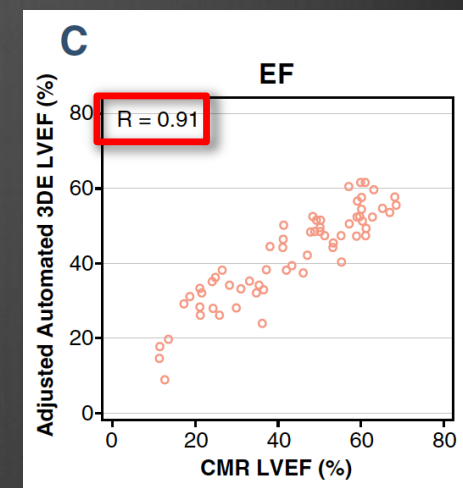
Manuel



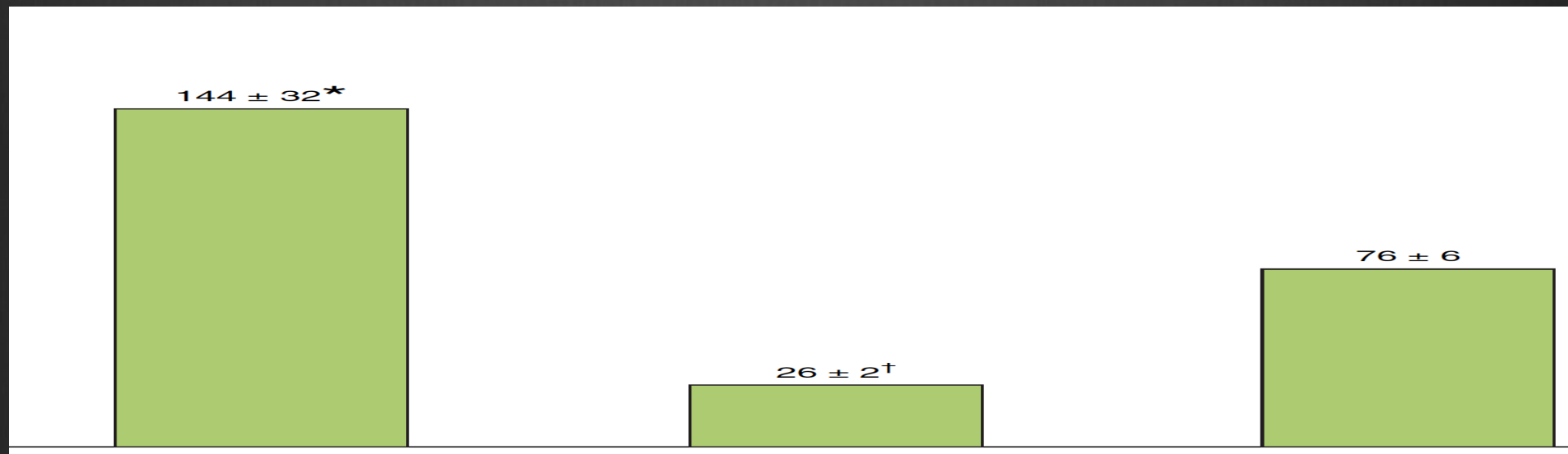
Automate sans ajustement



Automate avec ajustement

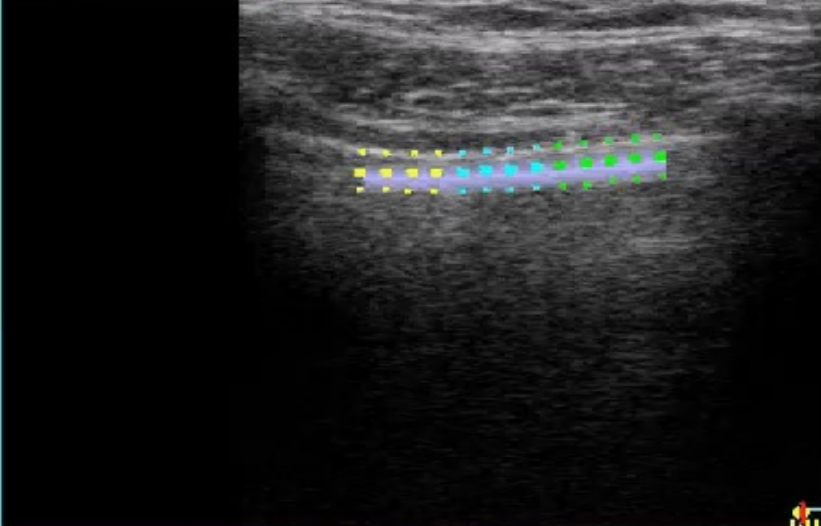


Temps de réalisation

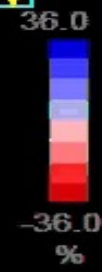


2018/06/05-16.38.02

A2C , paroi unique

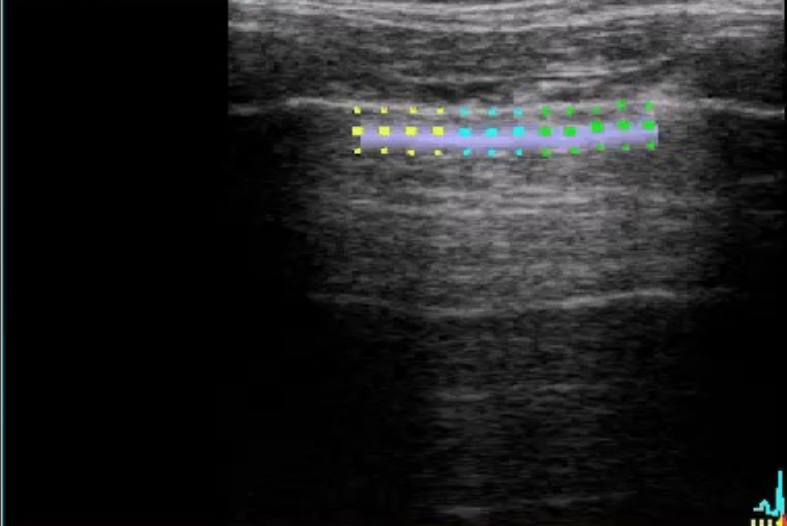


Pic du Strain Syst.

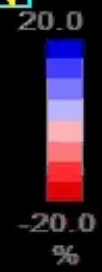
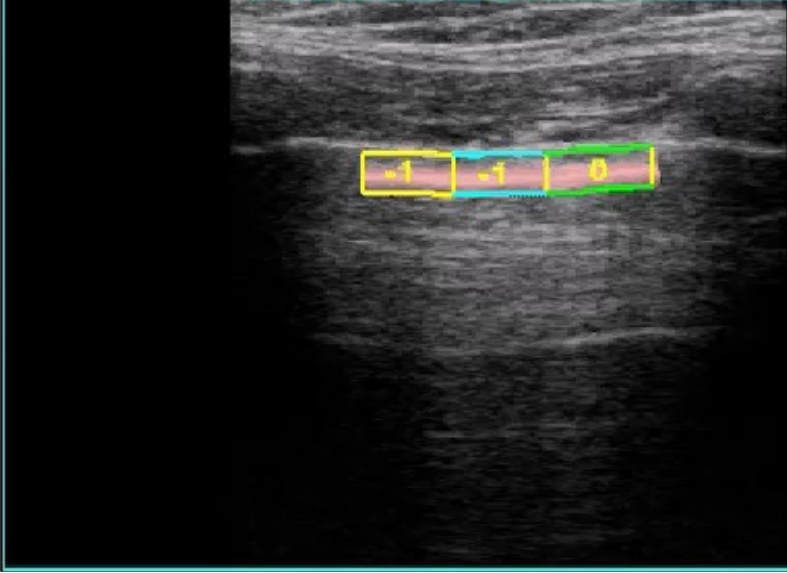


2018/06/05-16.40.15

A2C , paroi unique

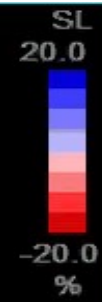


Pic du Strain Syst.

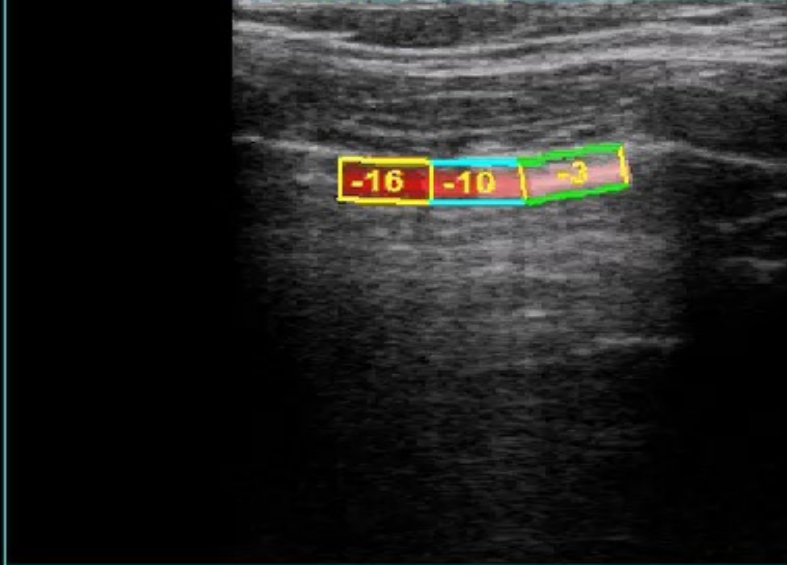


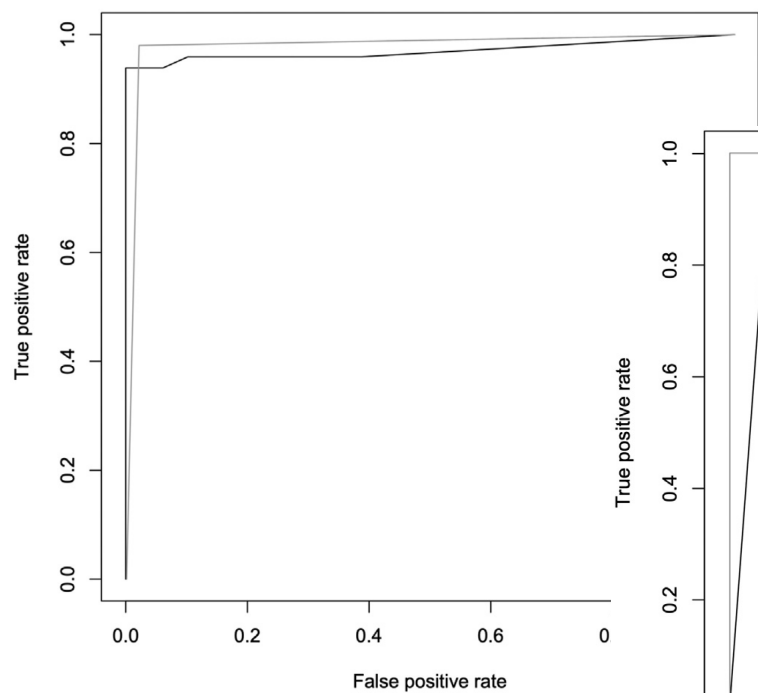
2018/06/05-16.39.37

A2C , paroi unique

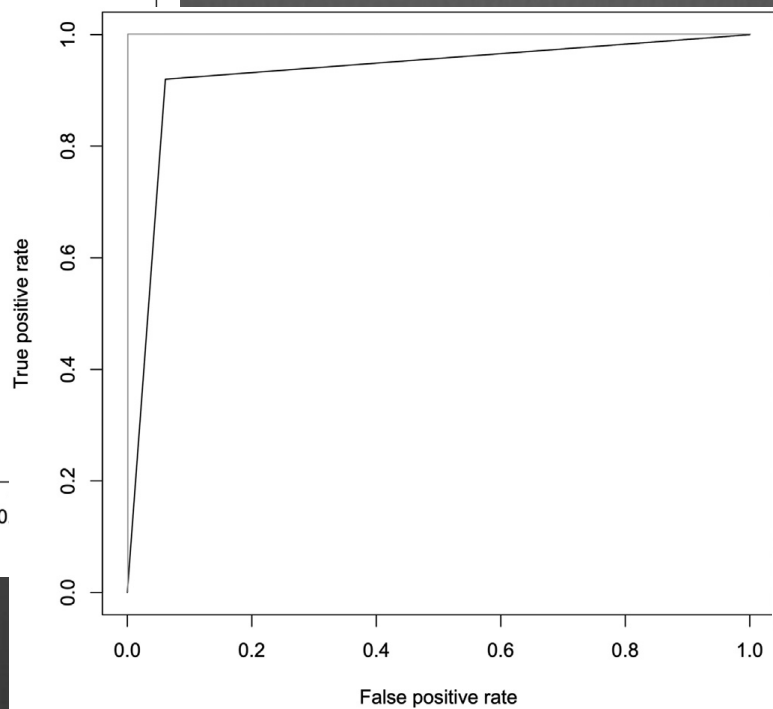


Pic du Strain Syst.

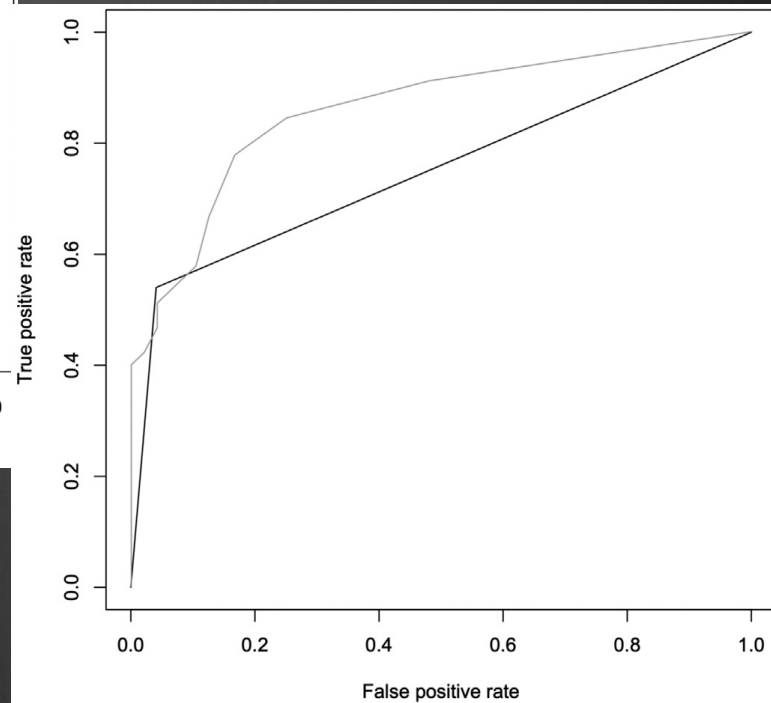




Expert



Praticien



Débutant

Quelles évolutions probables en ECMU ?

⦿ Voir

⦿ Reconnaître

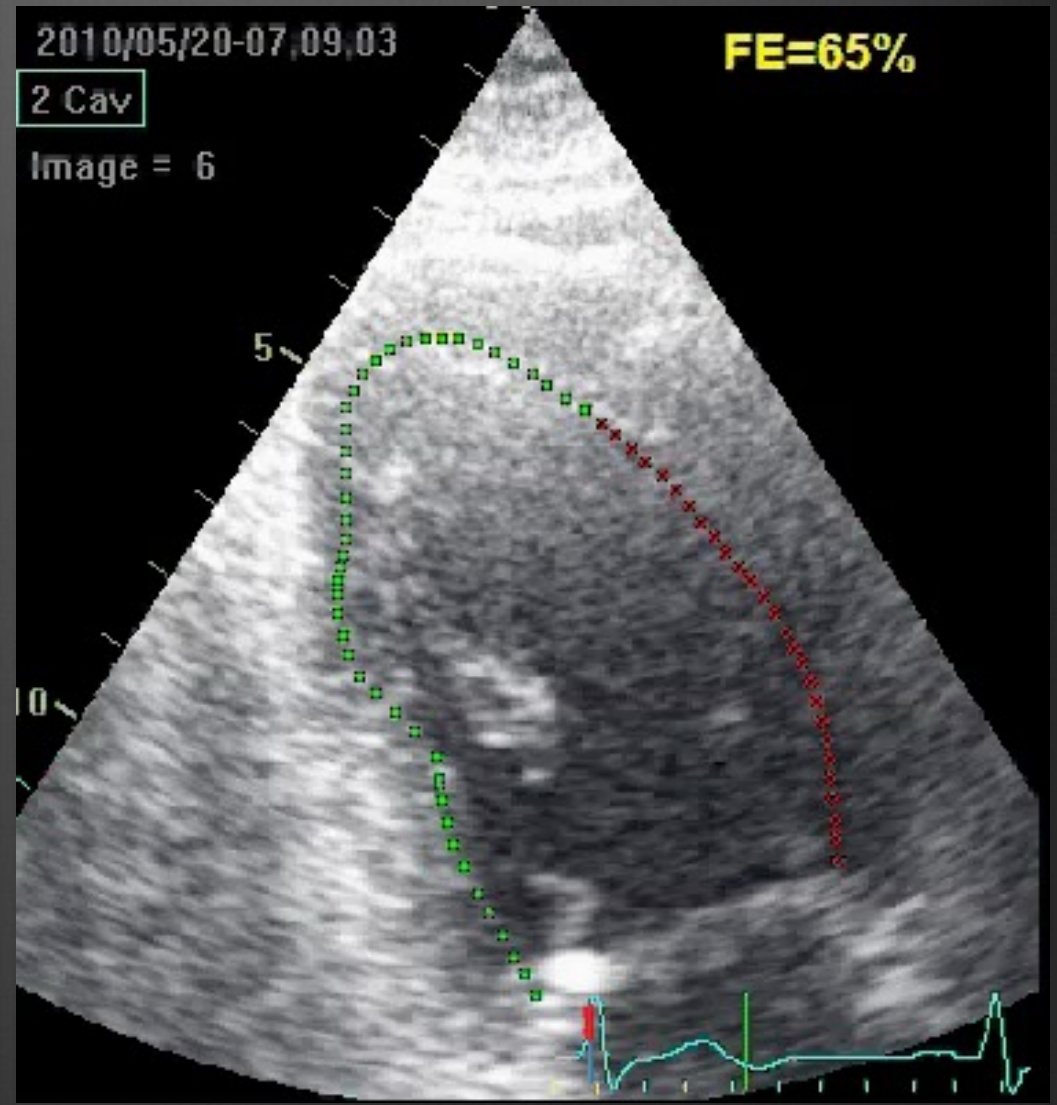
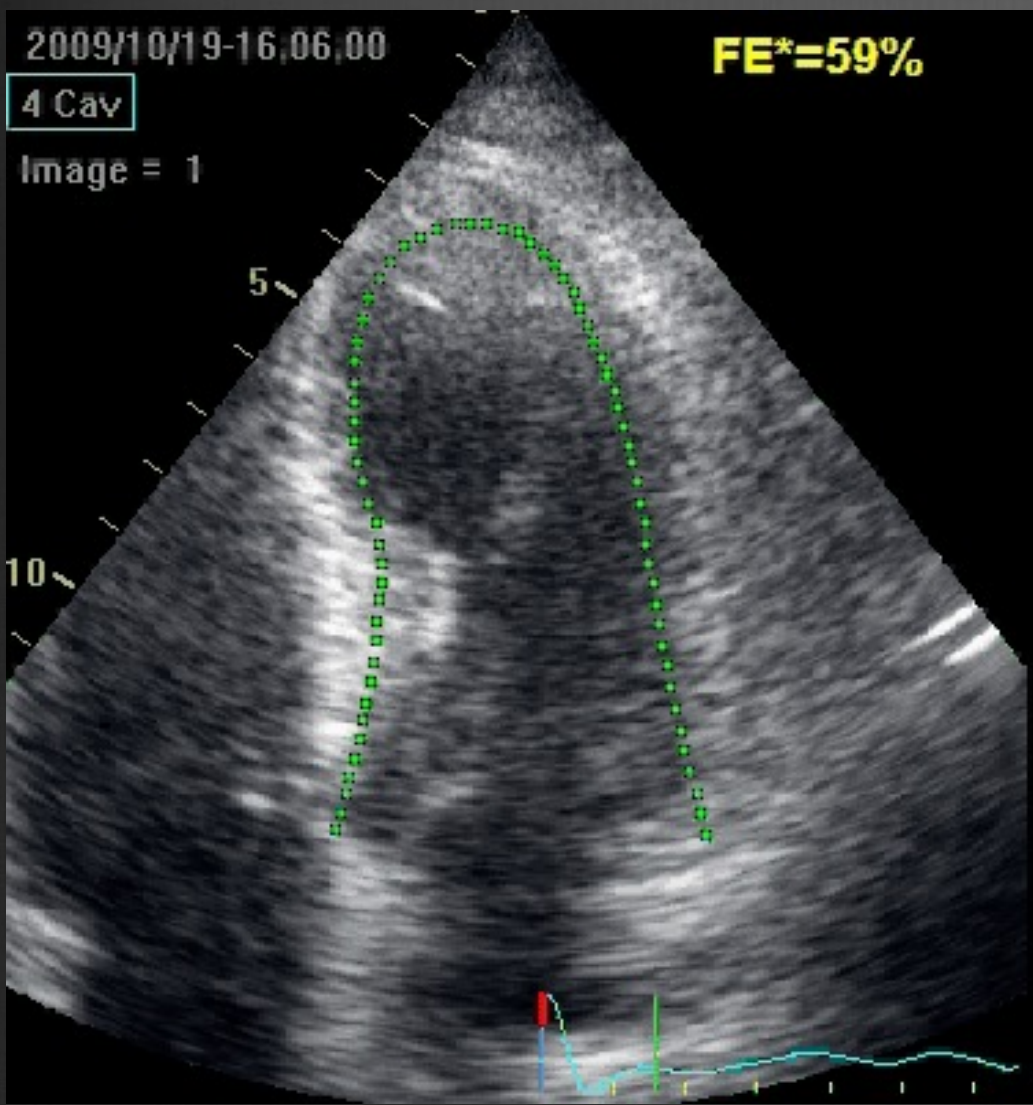
⦿ Suivre

⦿ Montrer

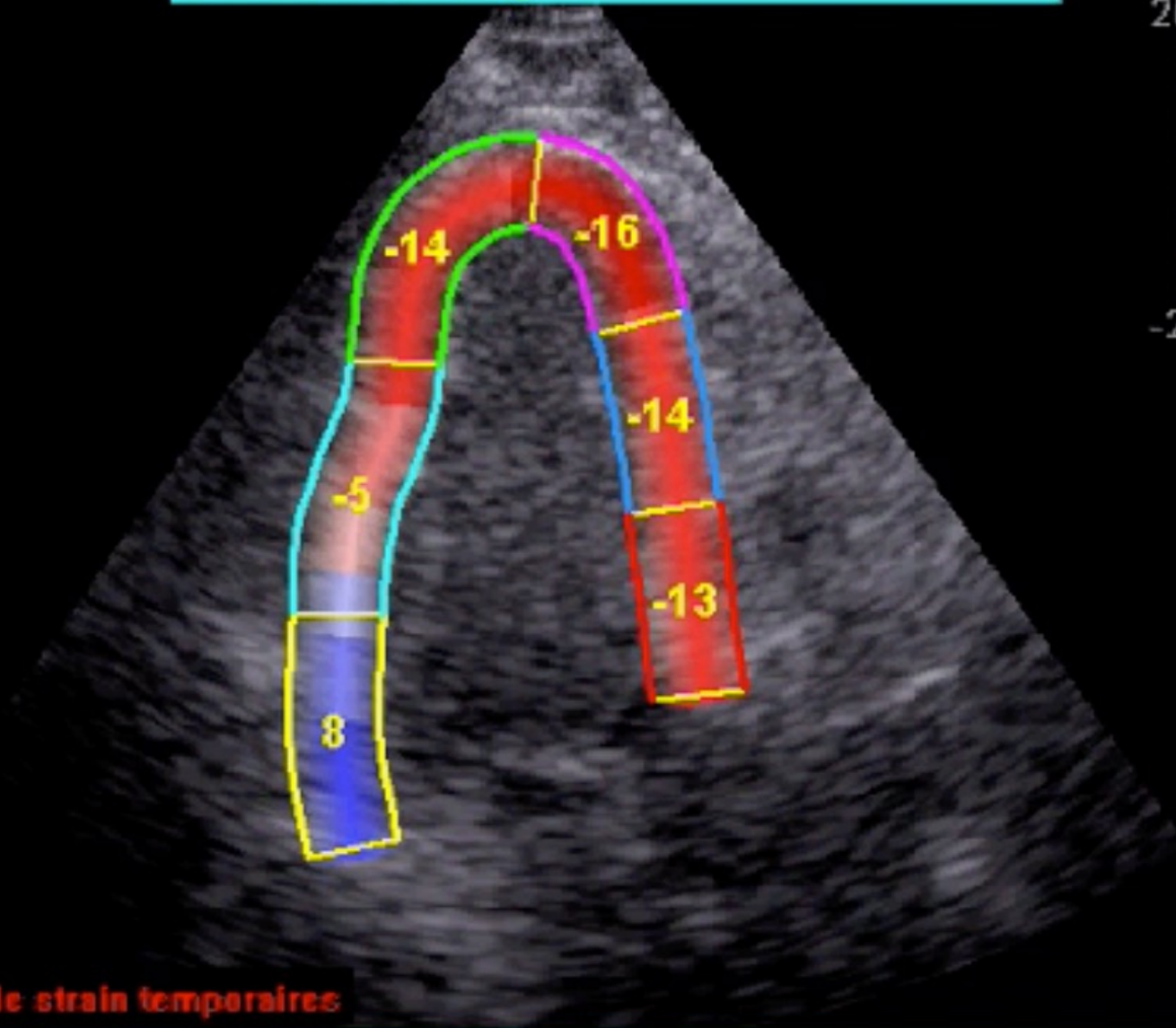
⦿ Monitorer

3D



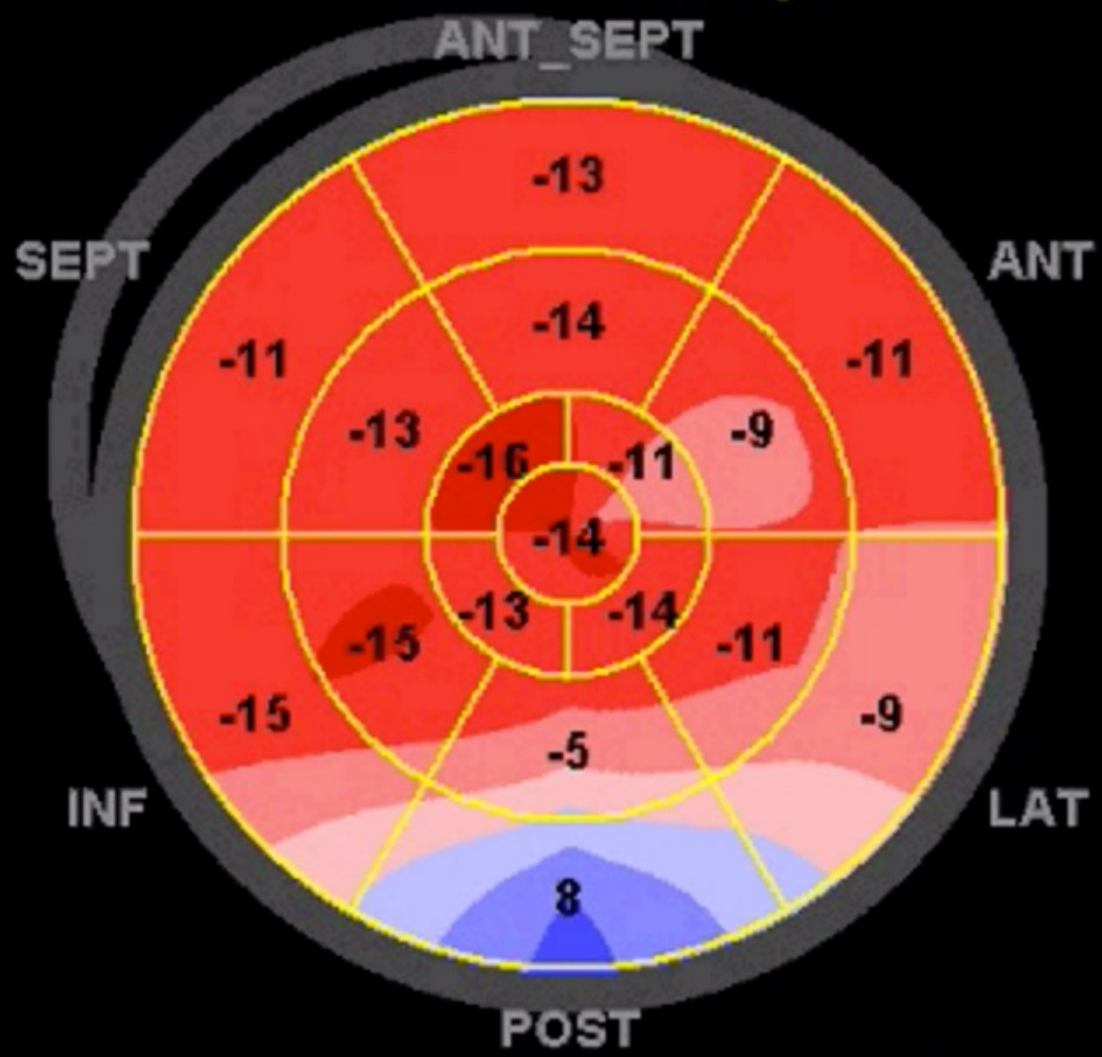


Pic du Strain Syst.



Valeurs de strain temporaires

Pic du Strain Syst.



- GLPS_LAX
- GLPS_A4C
- GLPS_A2C
- GLPS_Avg
- AVC_AUTO
- HR_ApLAX
- FR_min

11/04/2019-19:38:21

Quelles évolutions probables en ECMU ?

⦿ Voir

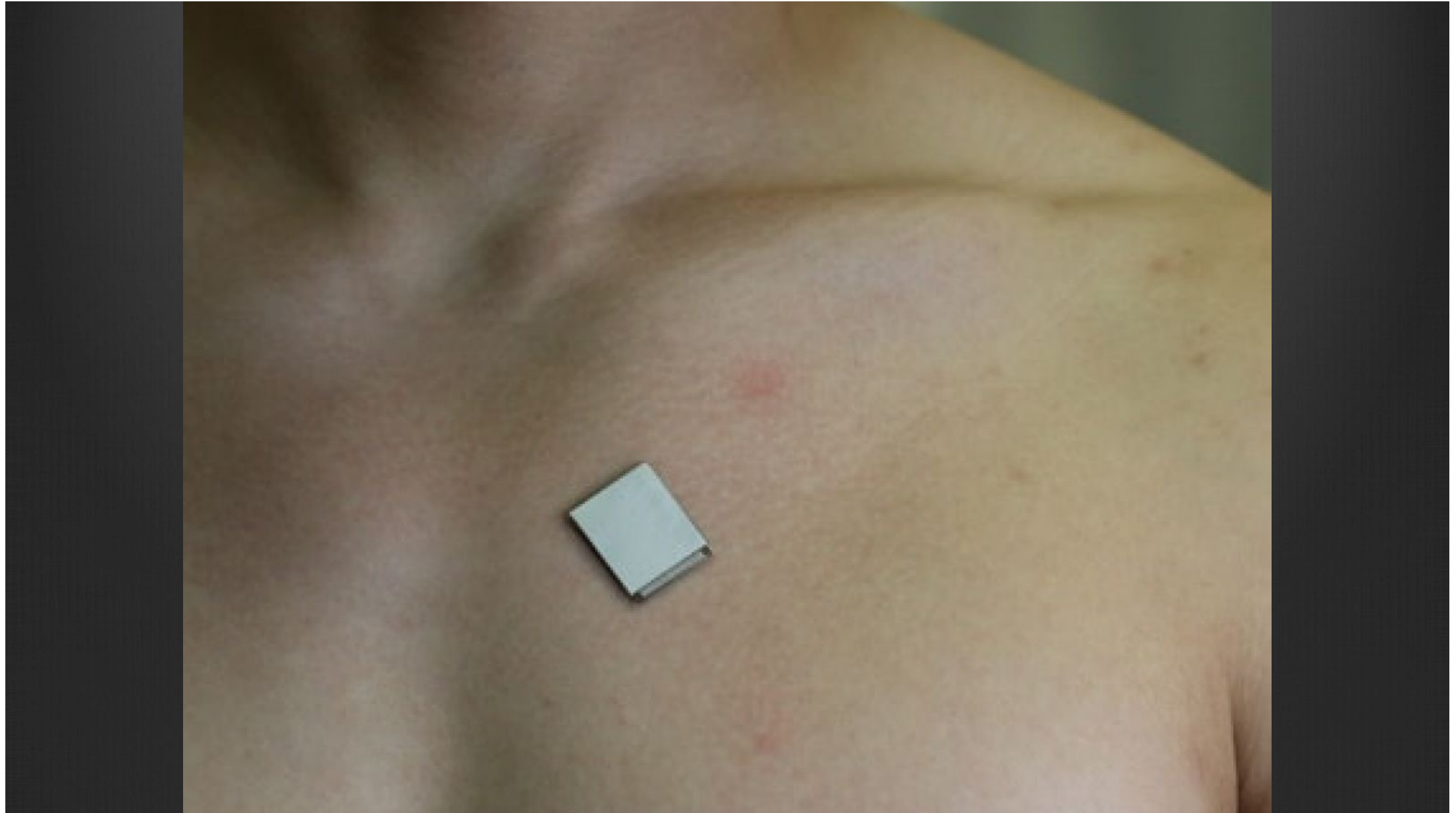
⦿ Reconnaître

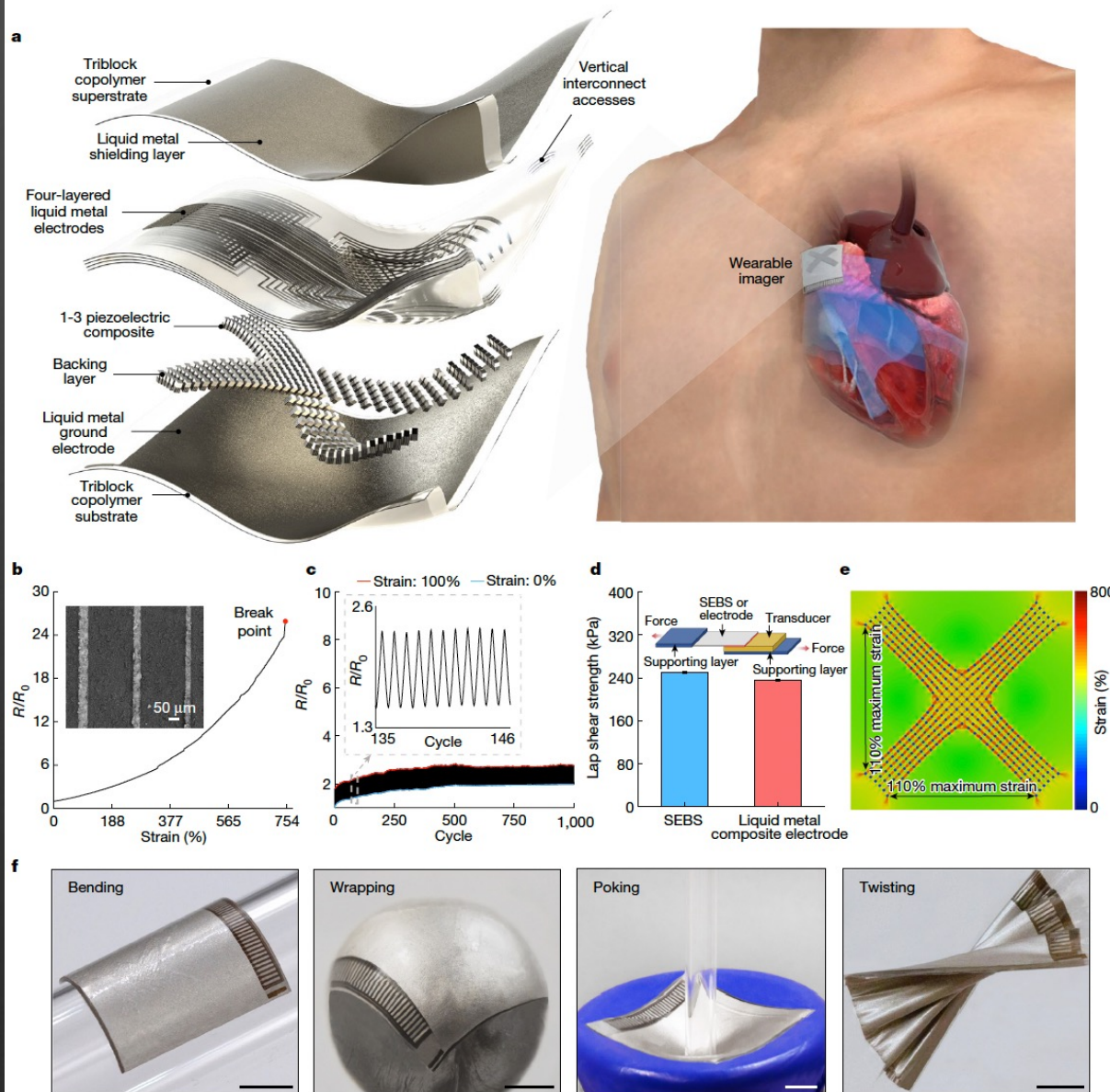
⦿ Suivre

⦿ Montrer

⦿ Monitorer

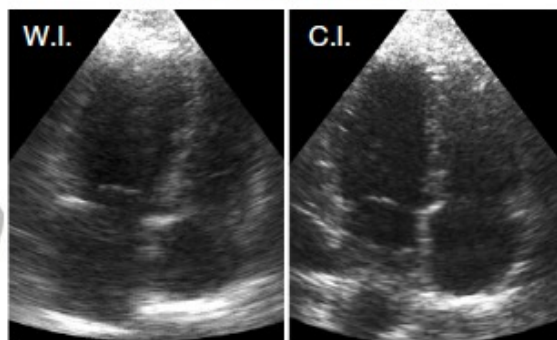
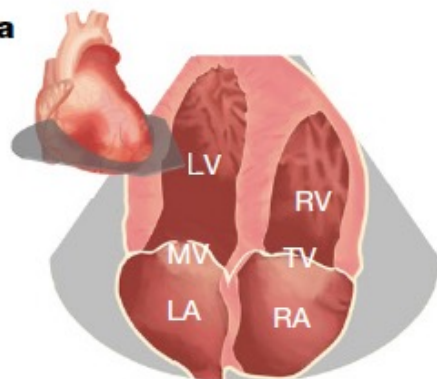




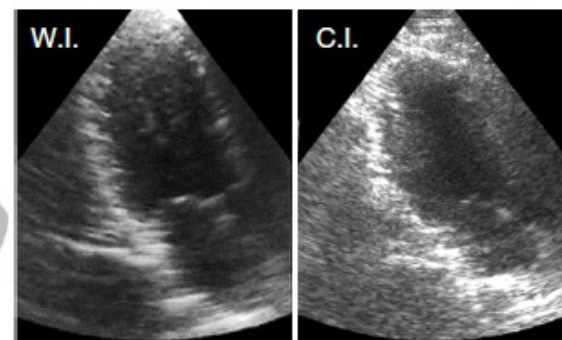
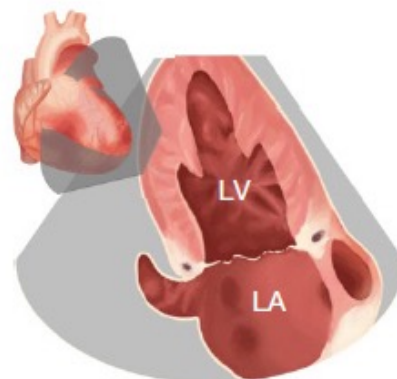


a

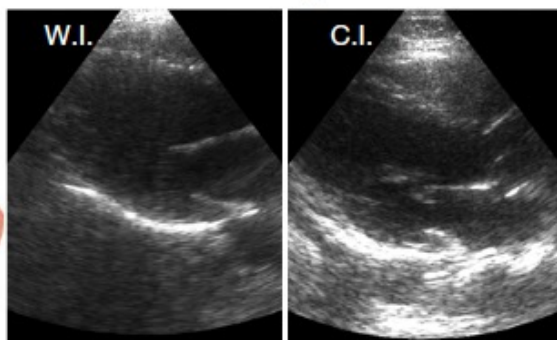
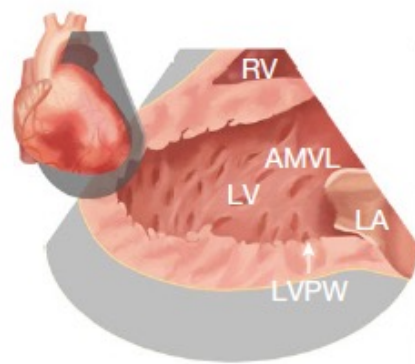
Apical four-chamber view



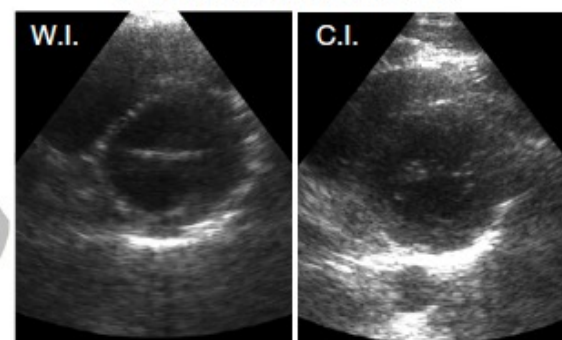
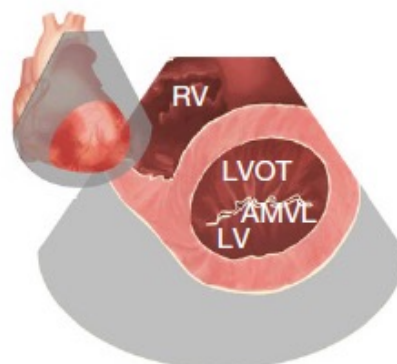
Apical two-chamber view

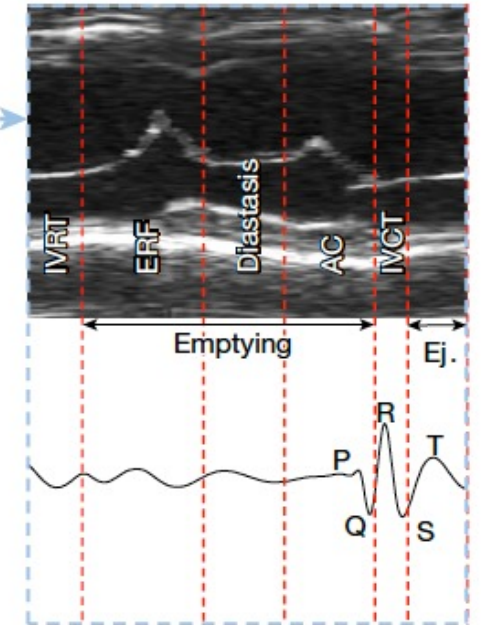
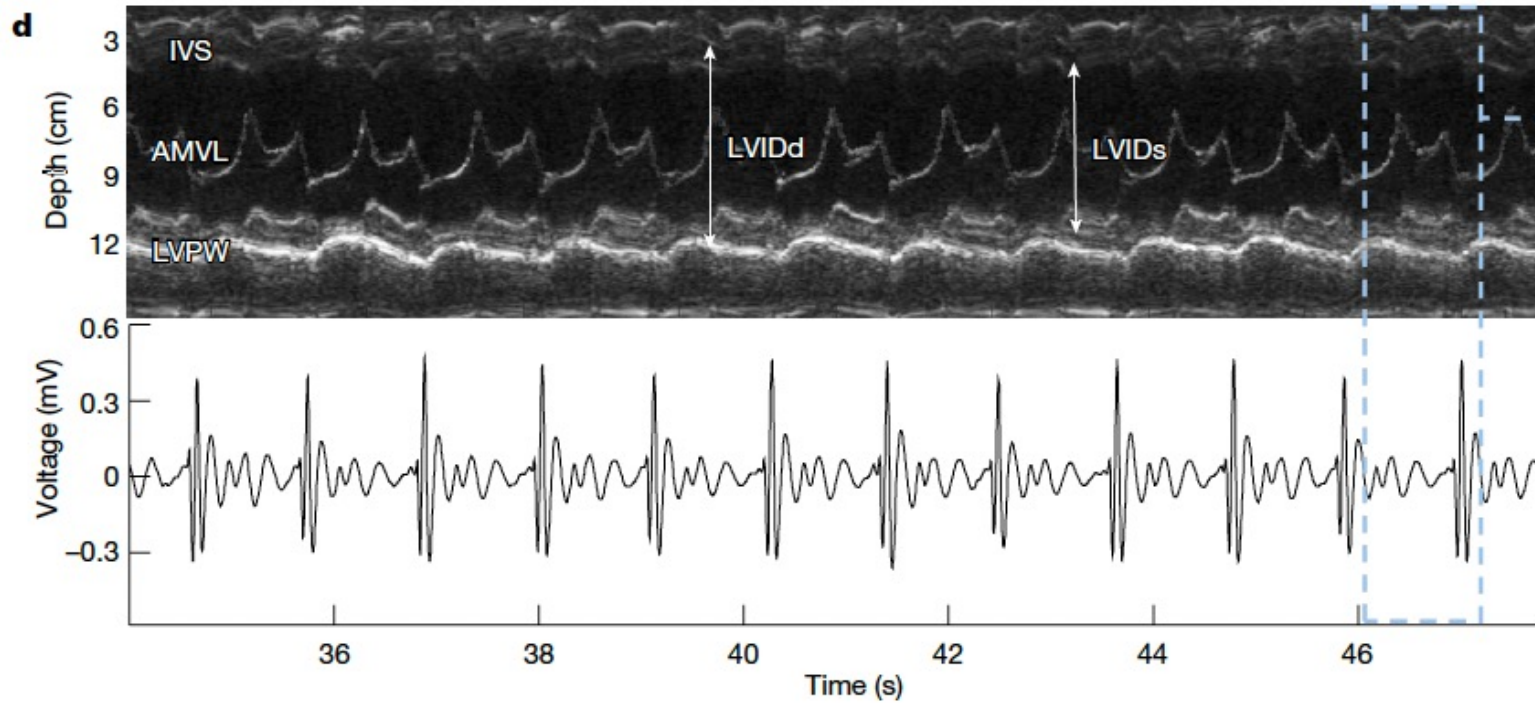


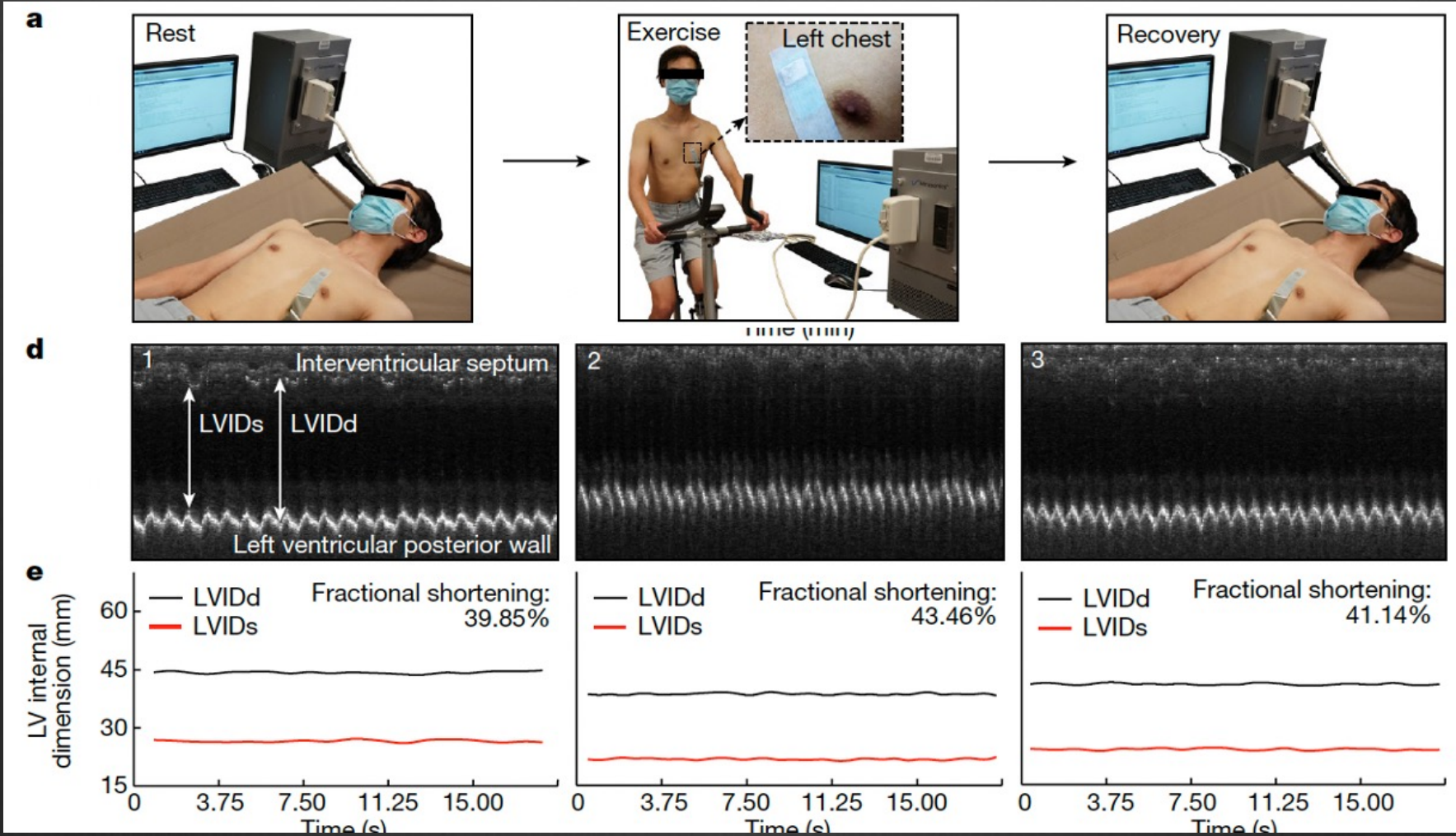
Parasternal long-axis view

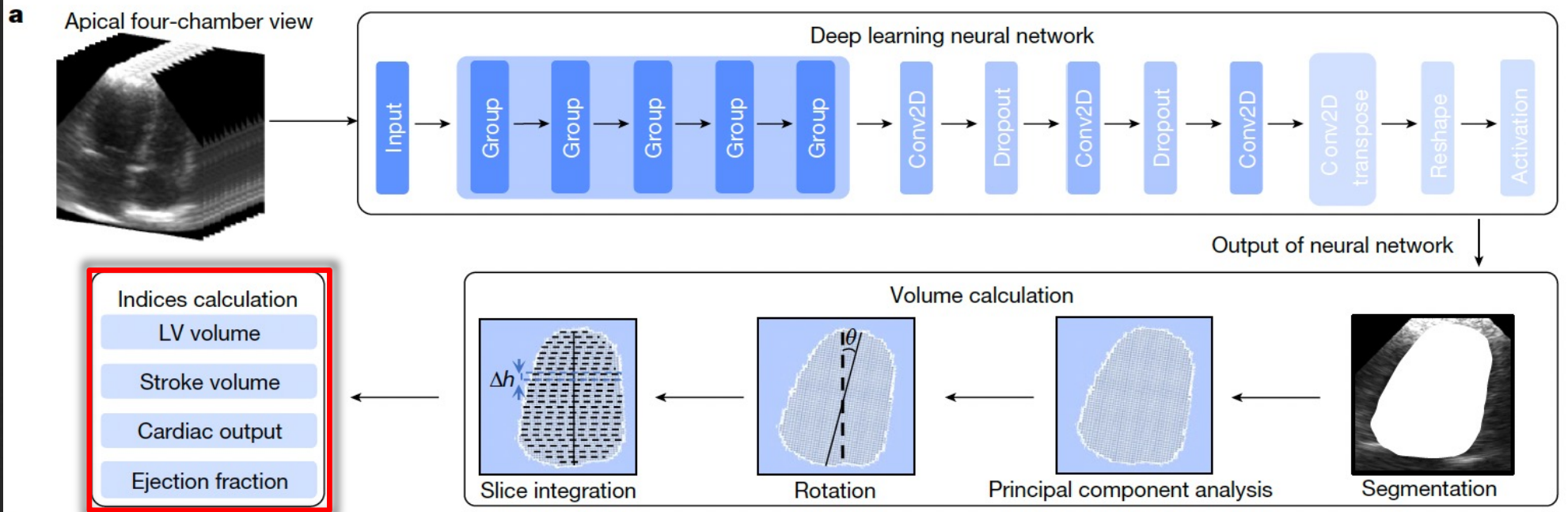


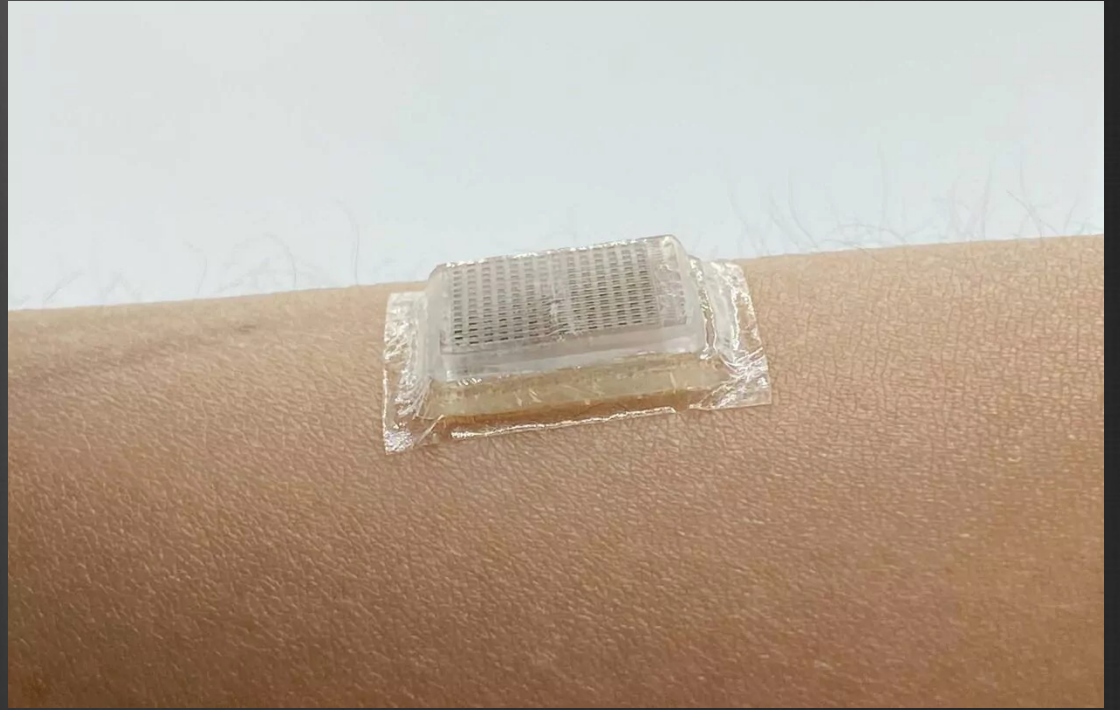
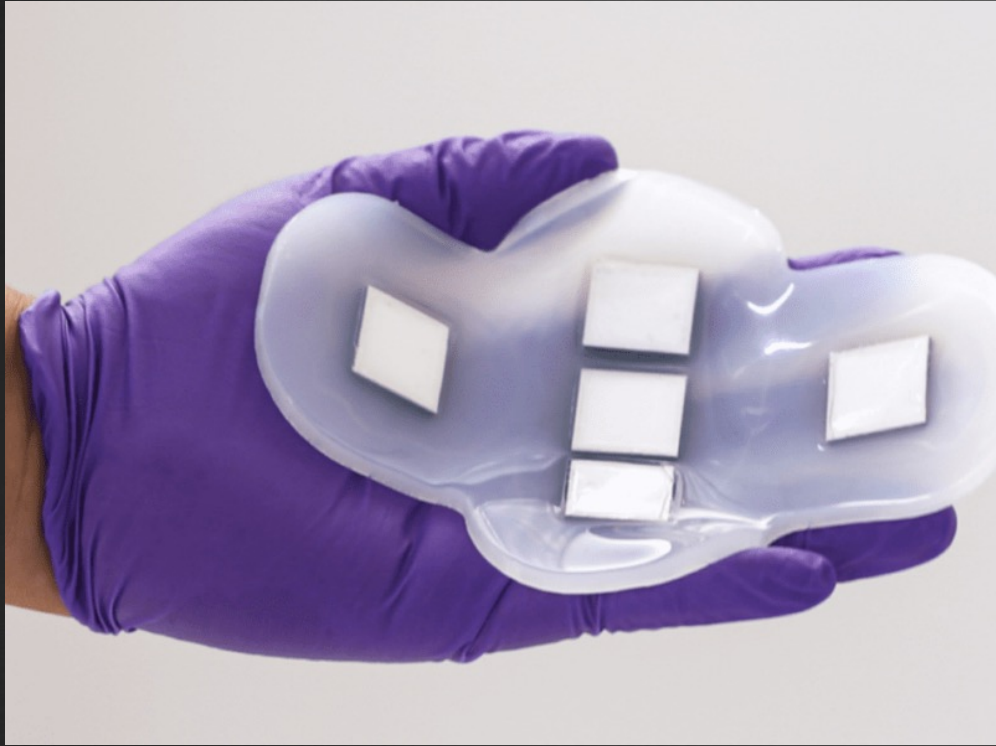
Parasternal short-axis view



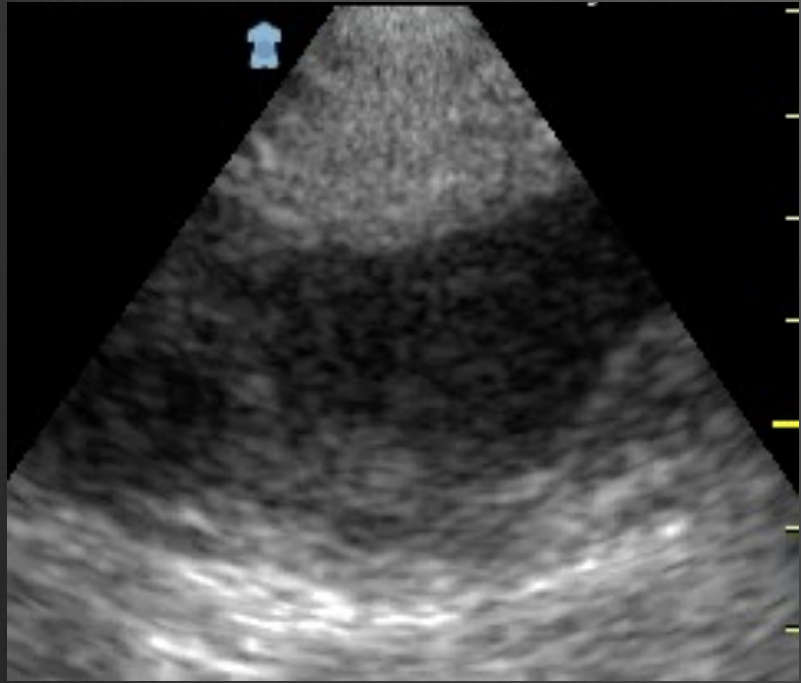


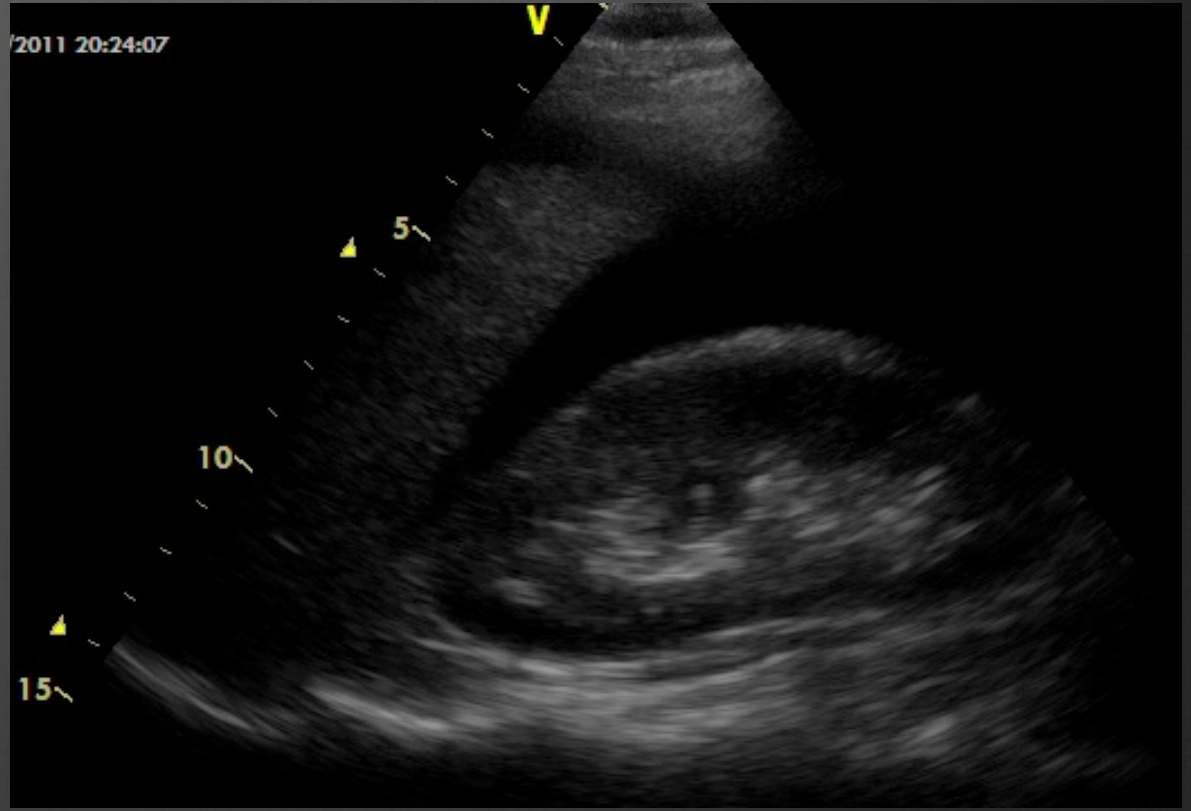
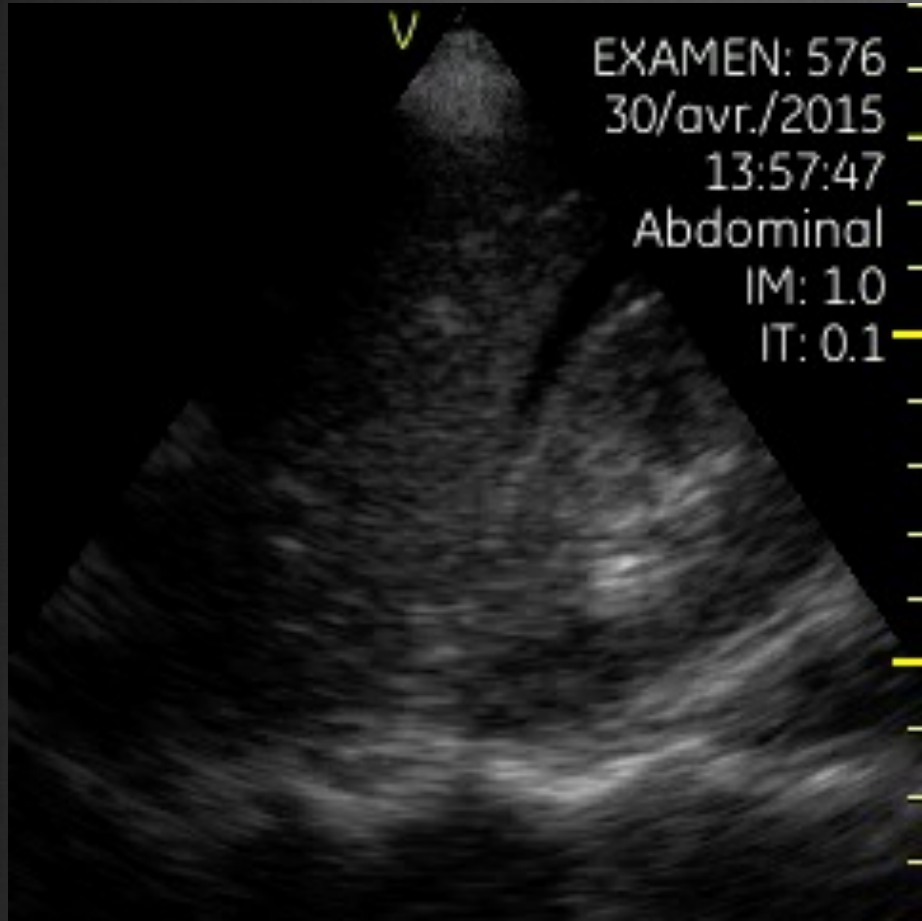






Que peut-on imaginer ?





SAMSUNG

V7 DEMO IMAGE 5

2022-04-07

03:27:17 PM

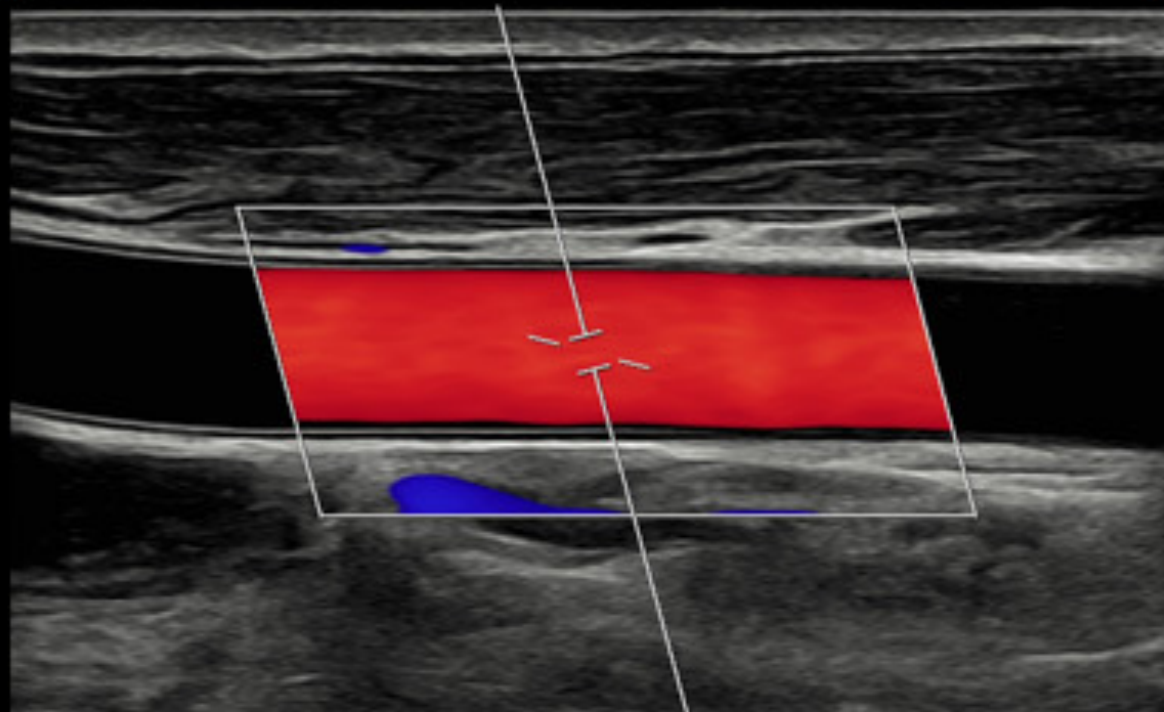
Carotid / LA2-14A / 3.0cm

TIs 0.2 / Tib 0.7 / MI 0.42

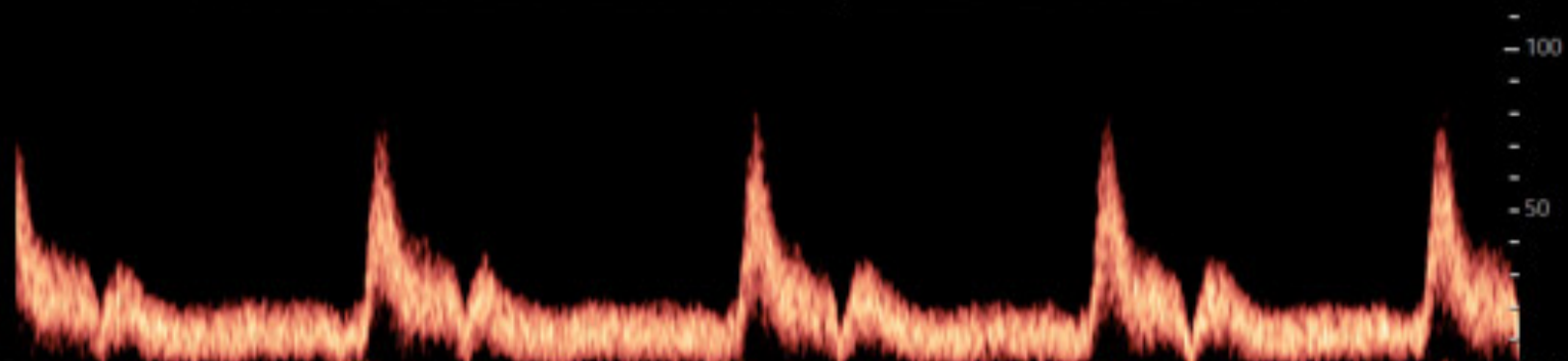
[2D]
Res2
Gn 50
DR 100
FA 5
P 92%

[C]
Gen
Gn 57
PRF 3.87kHz
P 90%

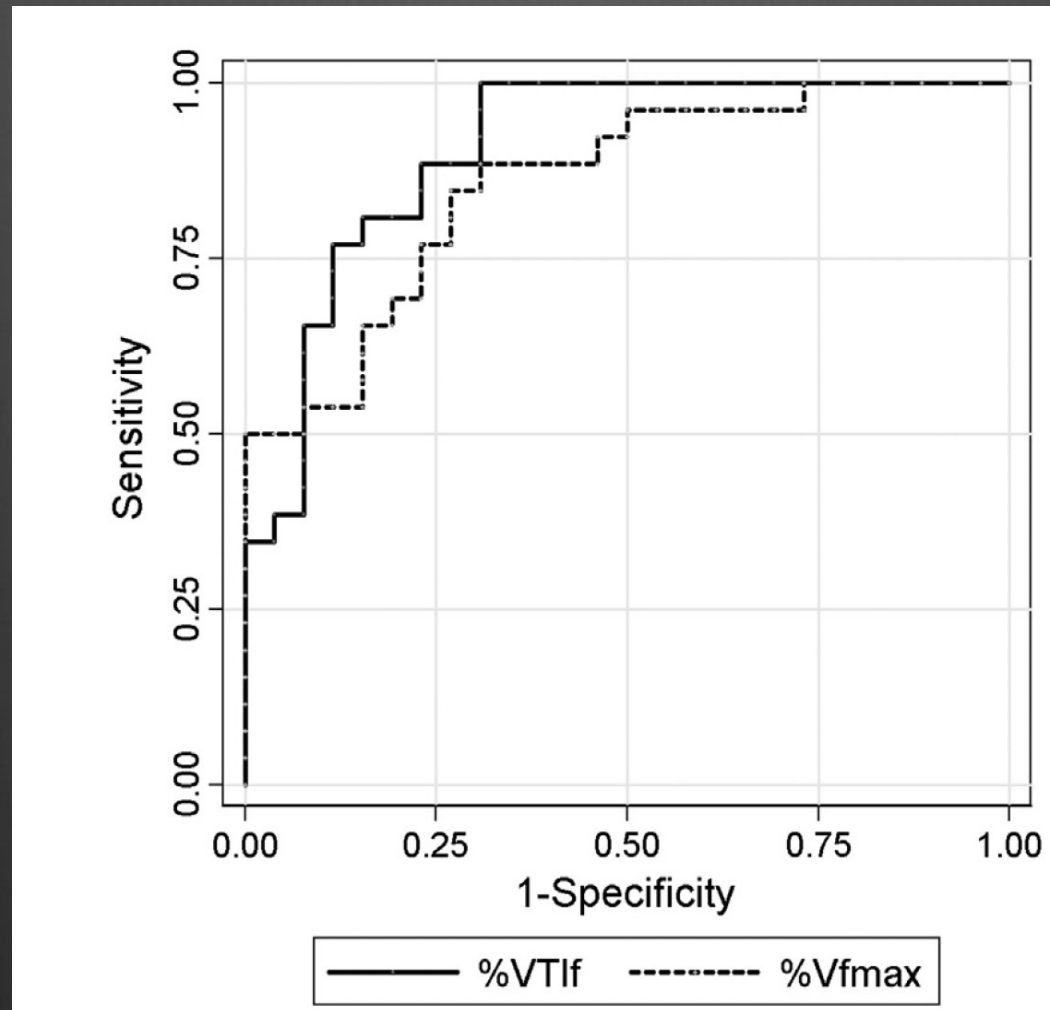
[PW]
Gen
Gn 45
PRF 4.85kHz
WF 104Hz
P 90%
SV 1.5mm
A -60°
SVD 1.5cm

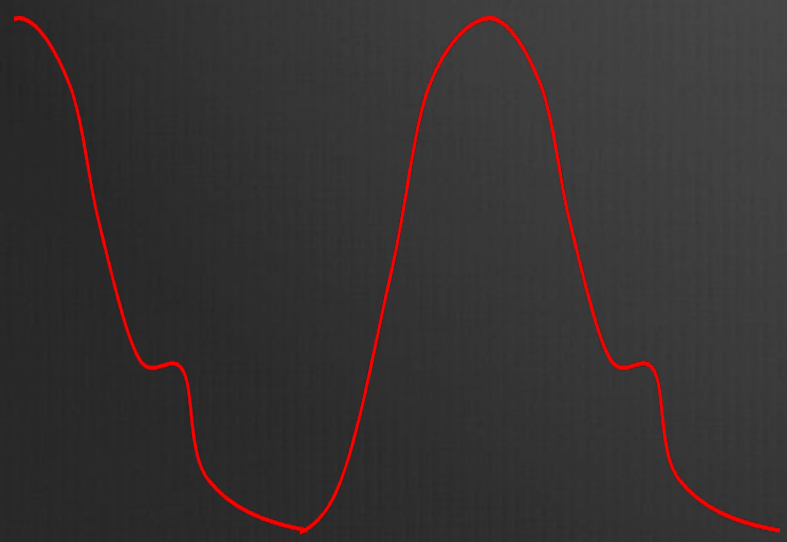


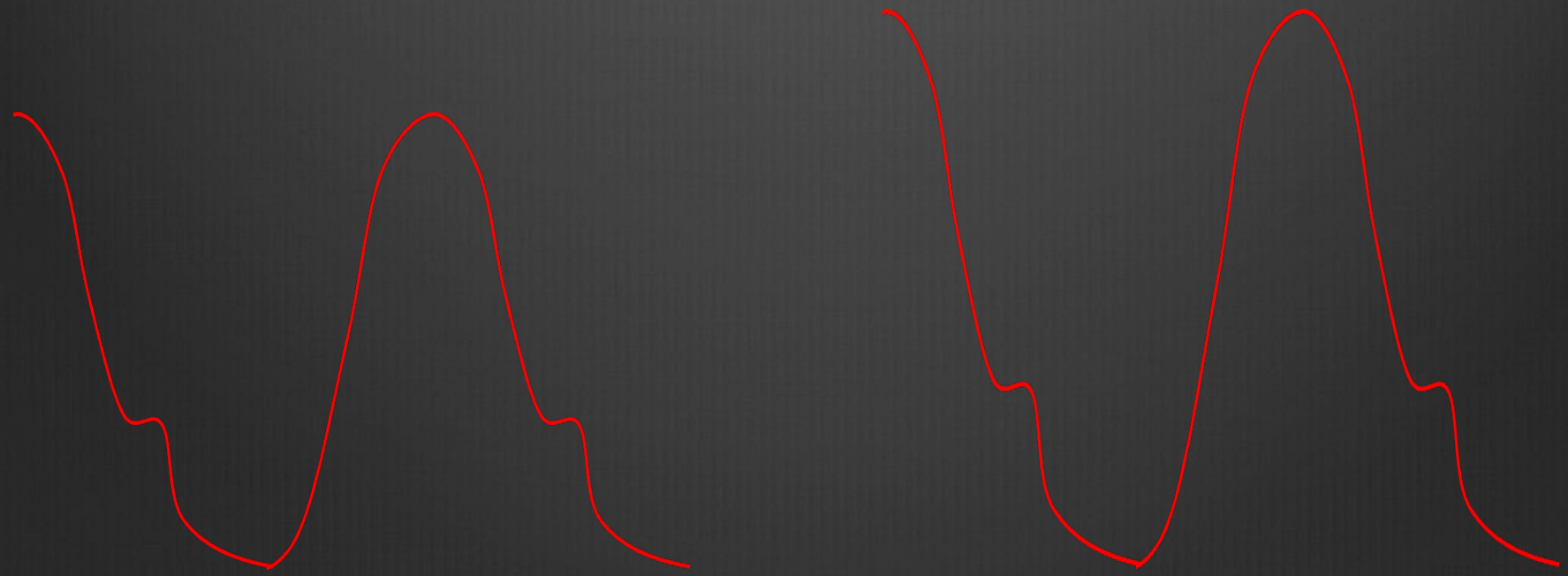
27.0
-27.0
cm/s



Δ ITV fémoral, Δ pic Doppler fémoral et Δ ITV sous Ao



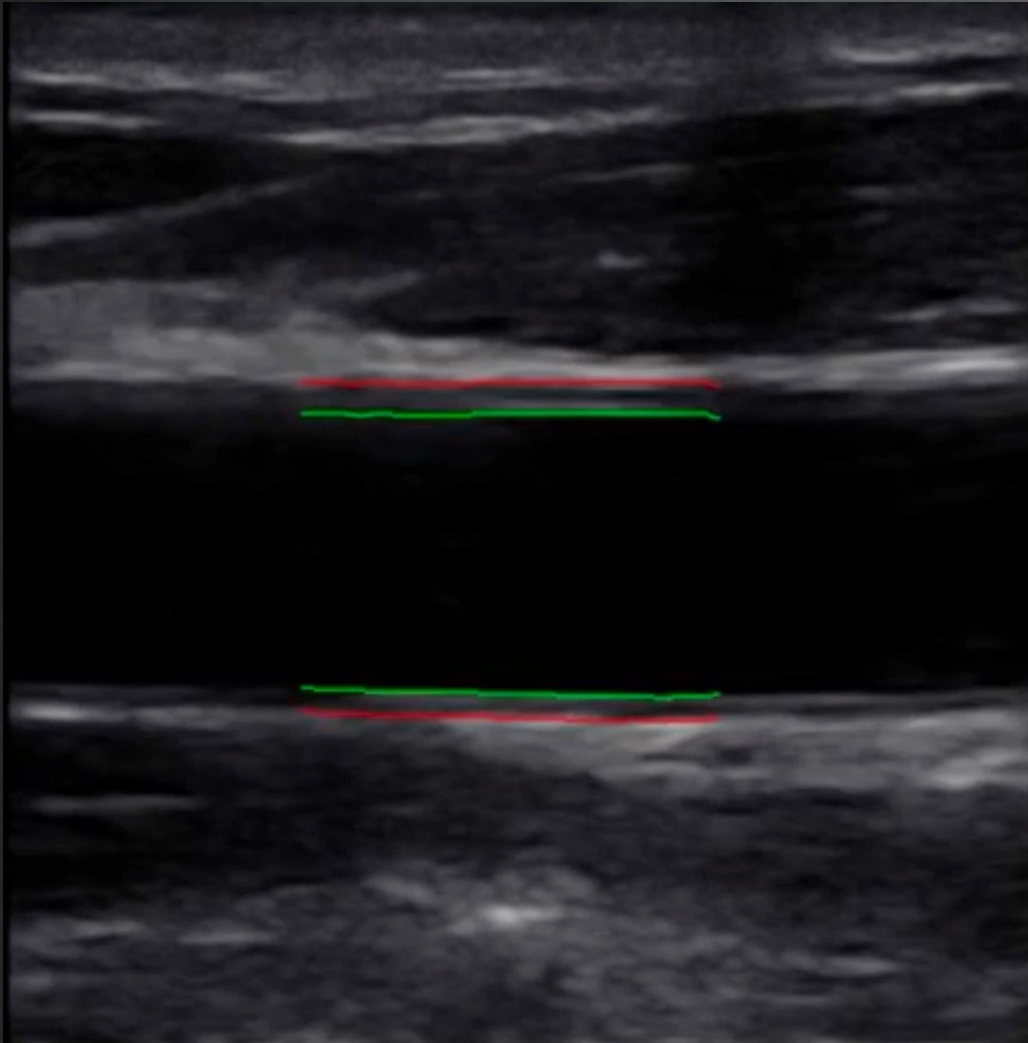




VDA



Suivi Δ calibre artériel

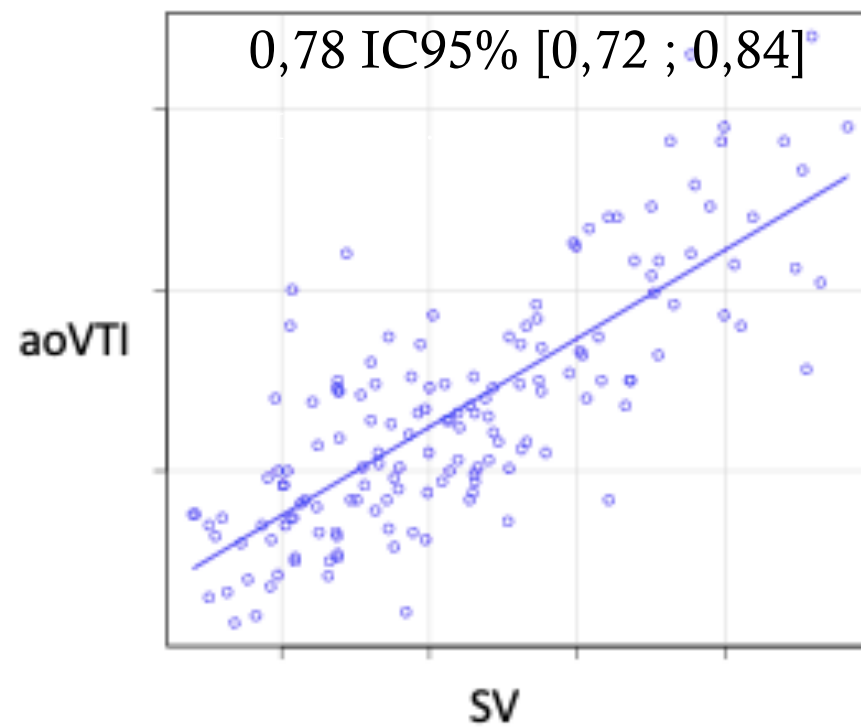
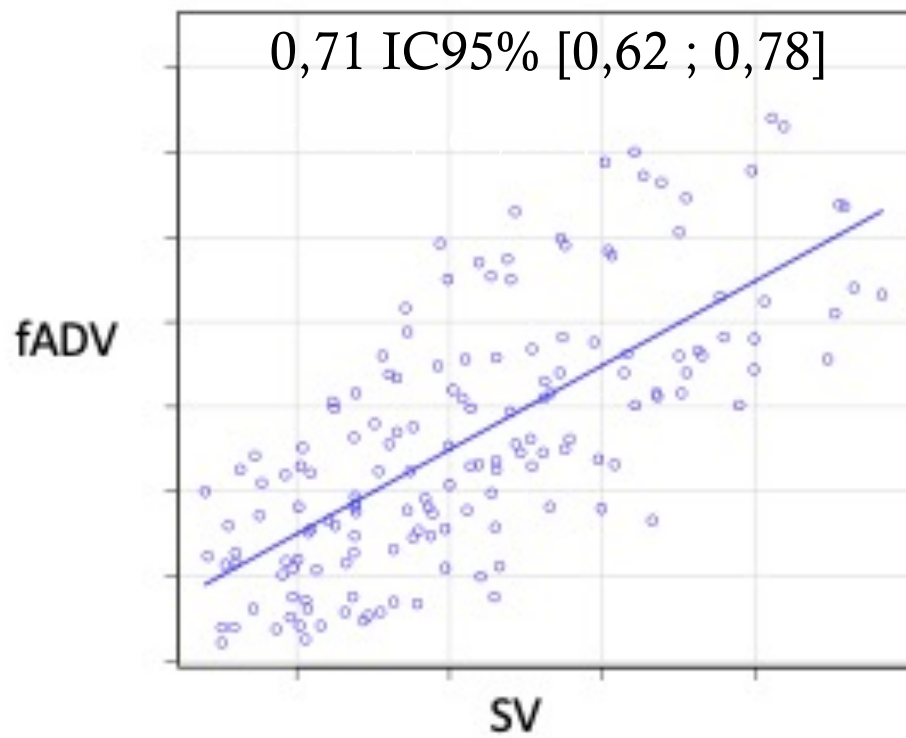


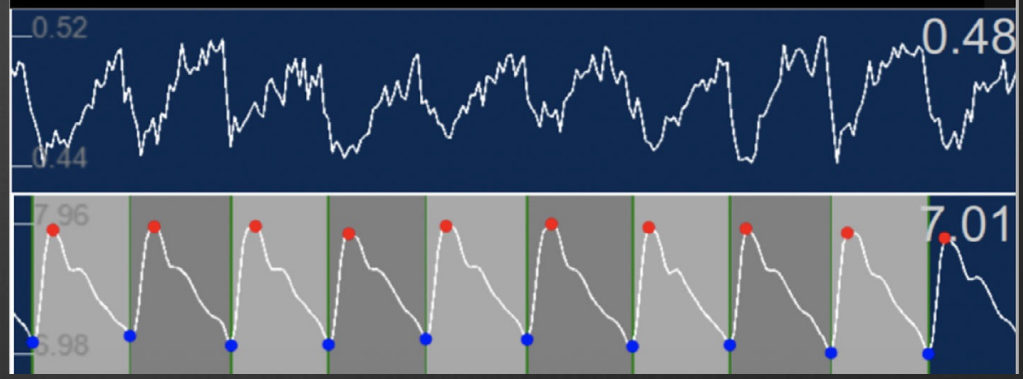
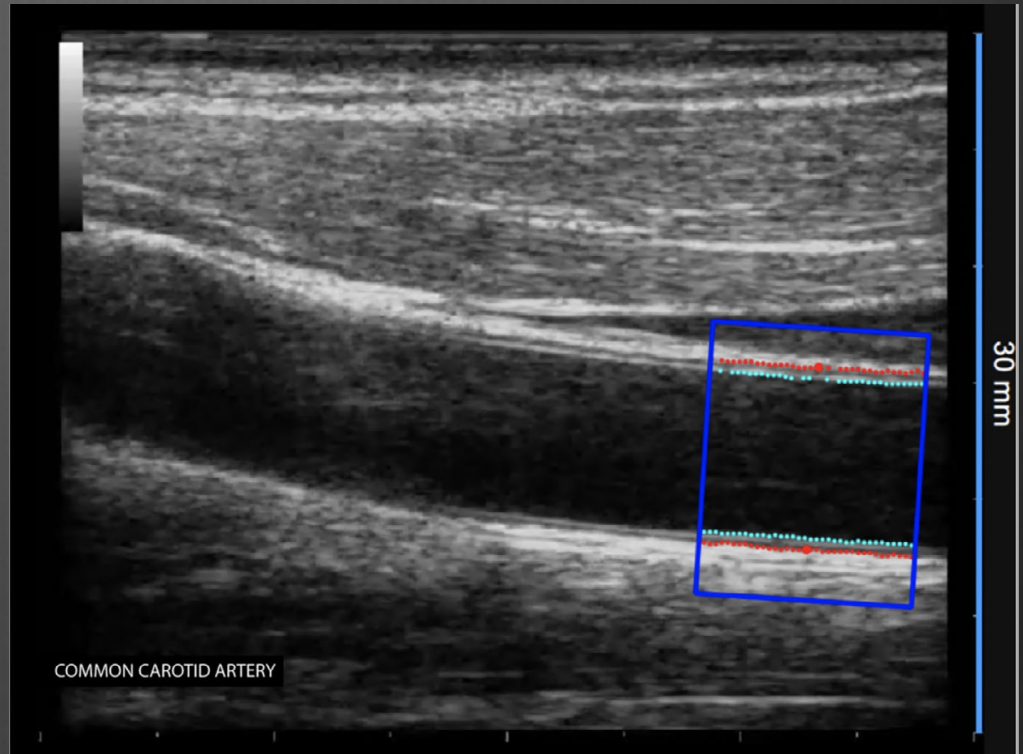
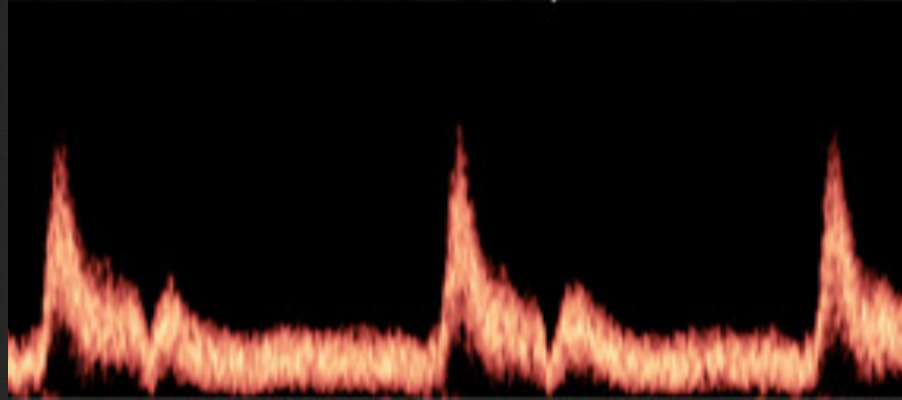
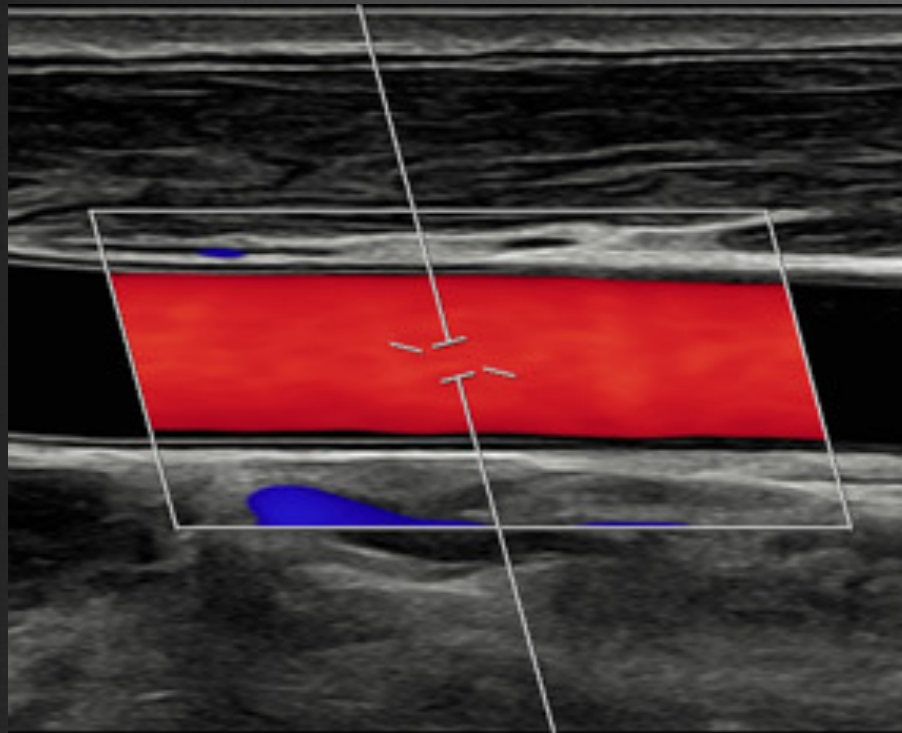
⊗ Analyse onde de pouls

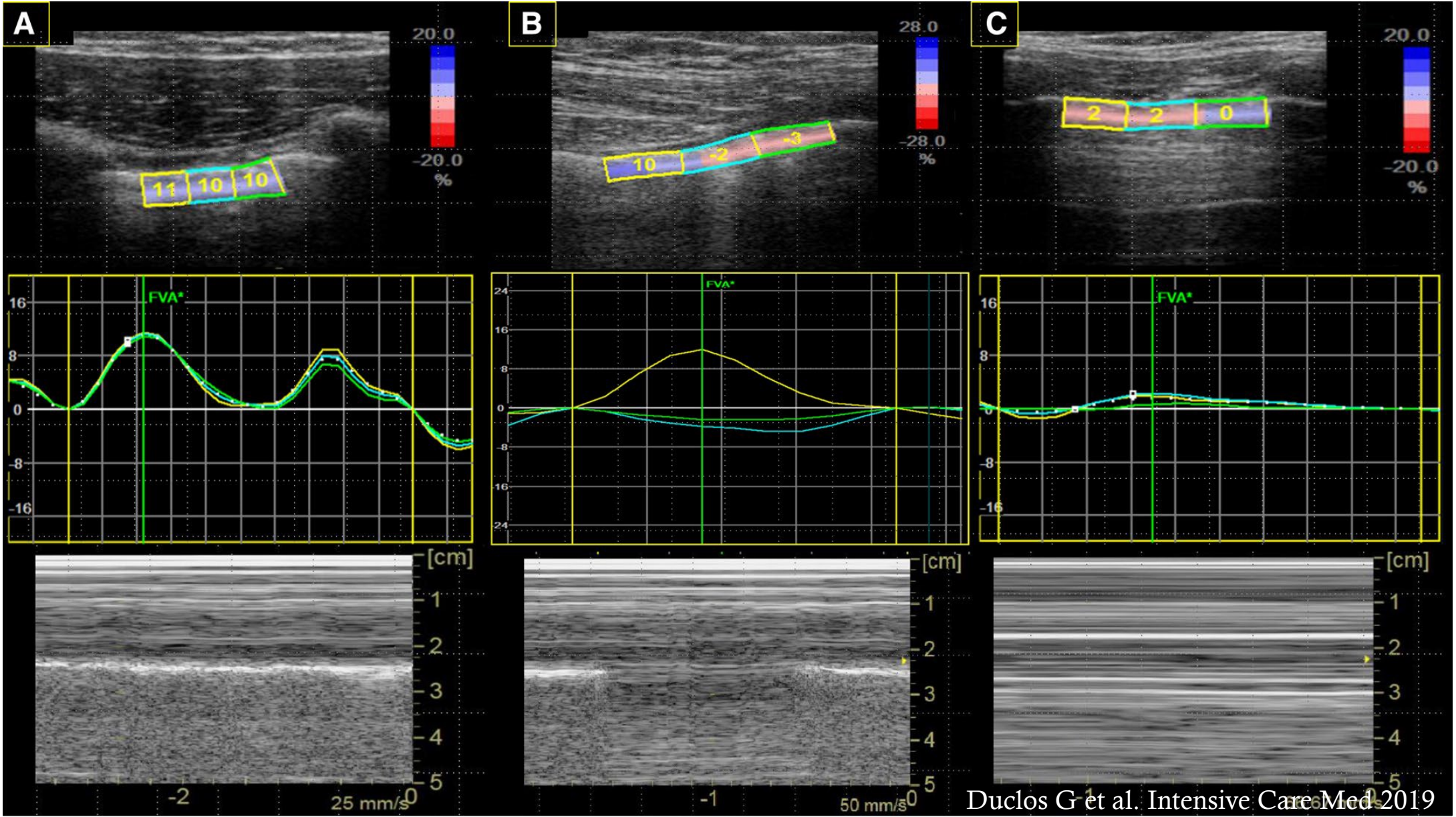
⊗ Rigidité artérielle

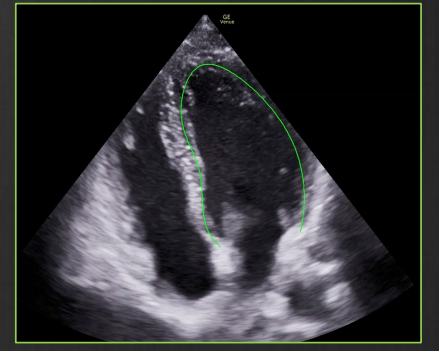
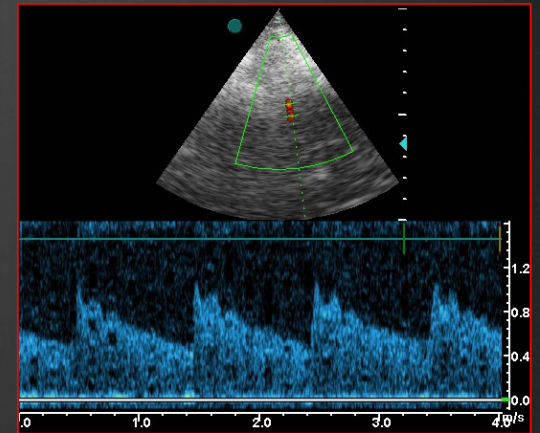
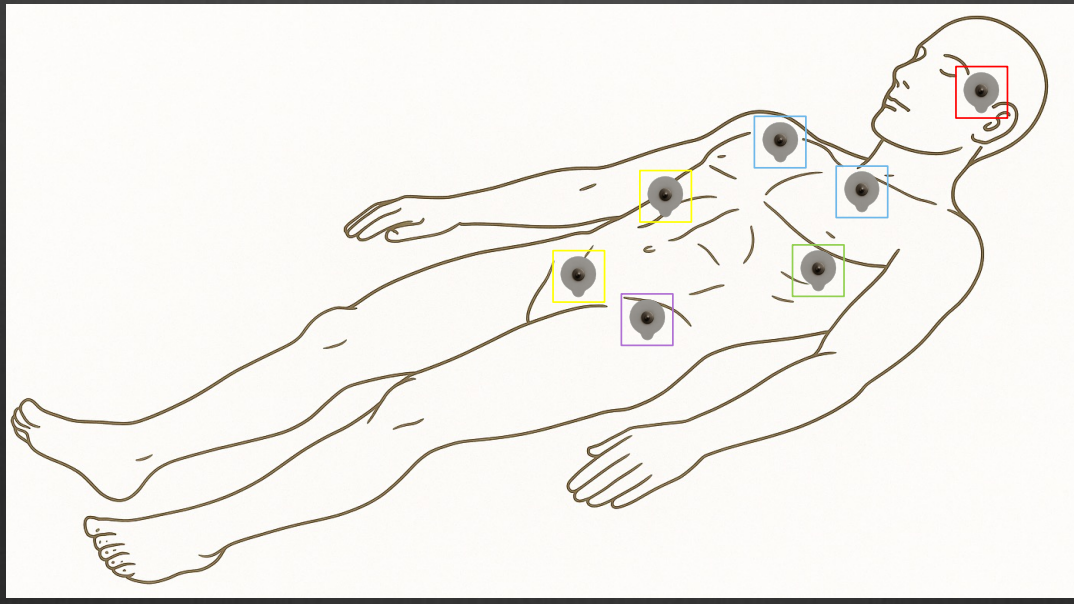
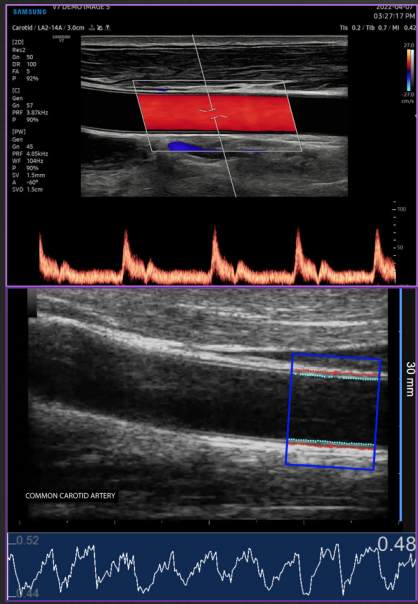
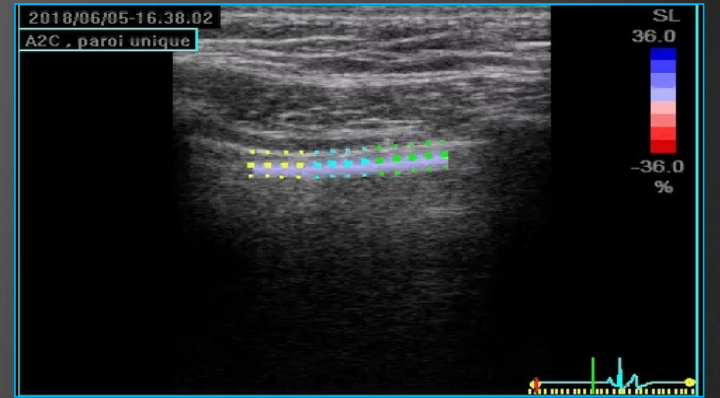
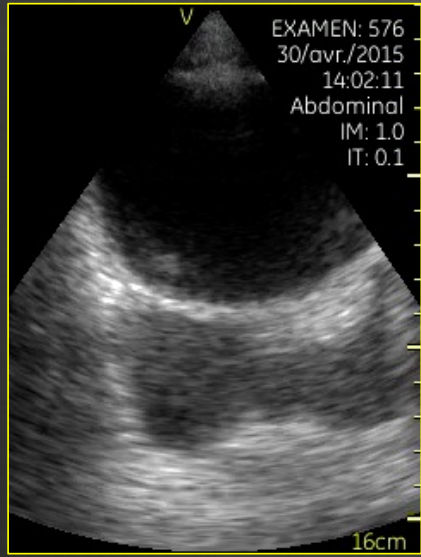
⊗ Faible variabilité

→ Corrélation Δ calibre/VES ?









Quelles évolutions probables en ECMU ?

⦿ Voir

↗ Qualité d'image

⦿ Reconnaître

Les structures et les mesures

⦿ Suivre

Les mouvements

⦿ Montrer

Par différentes vues - Les anomalies

⦿ Monitorer

Echo/Doppler continu