Amicale des cardiologues de la côte d'azur

A.C.C.A

Douleur Thoracique Aiguë

4 Novembre 2014

Dr. Teboul, Dr. Tapia, Dr. Lopez,
Dr. Arnulf, Dr. Lena, Dr. Camarassa, Dr. Maccario, Dr. De La Chapelle
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ARNAULT TZANCK

Observation

Mme U… 20 ans

- Douleur thoracique
- Asthénie
- Fièvre
- Dyspnée
- Malaise

Urgence de Mougins

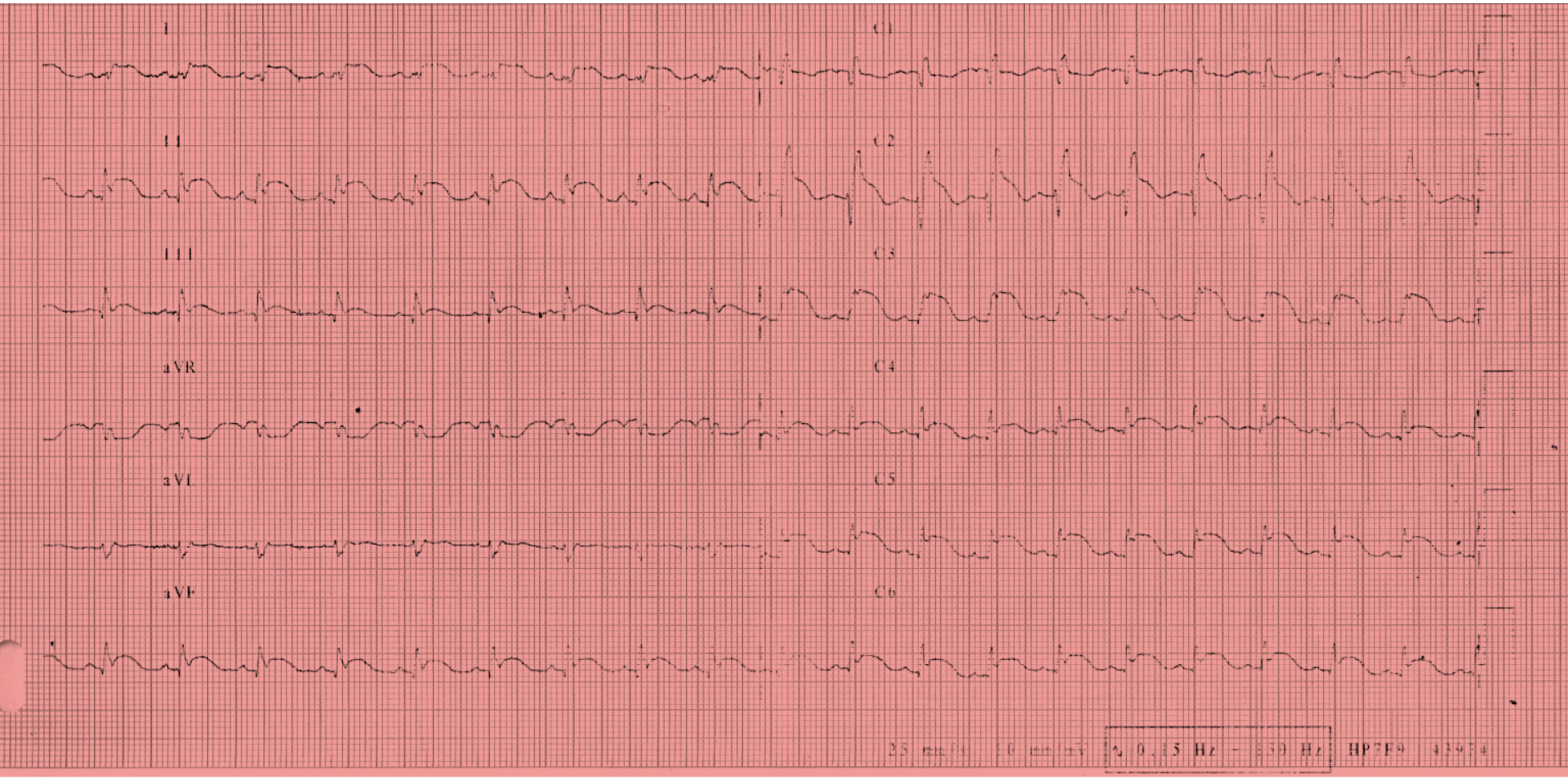
Début de choc cardiogénique

Adressée pour éventuelle **assistance circulatoire**

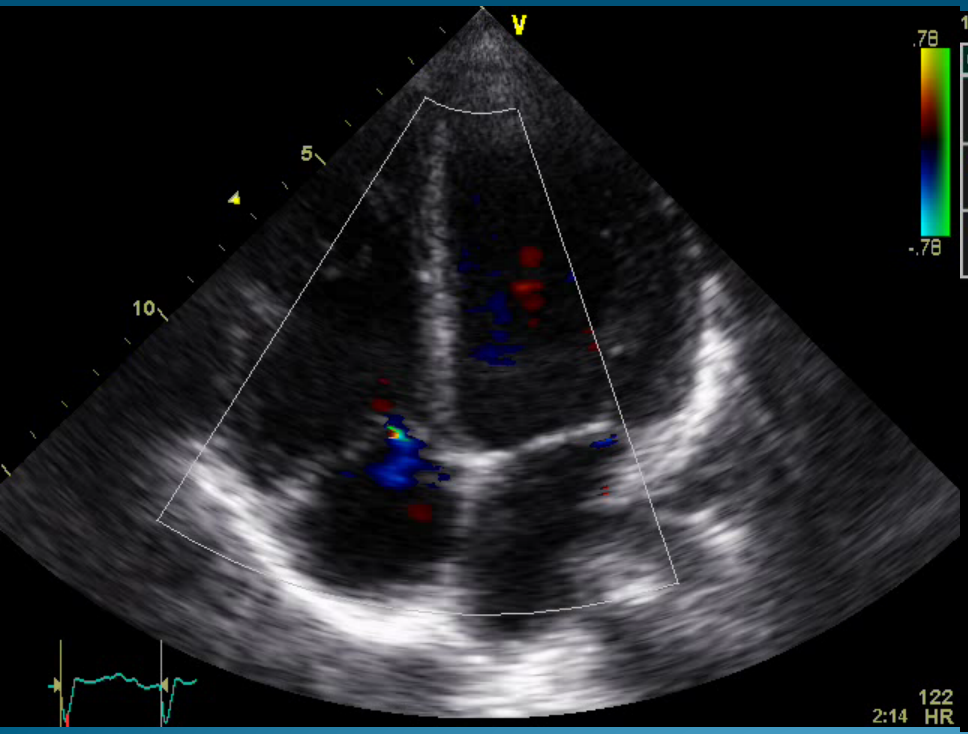
Observation

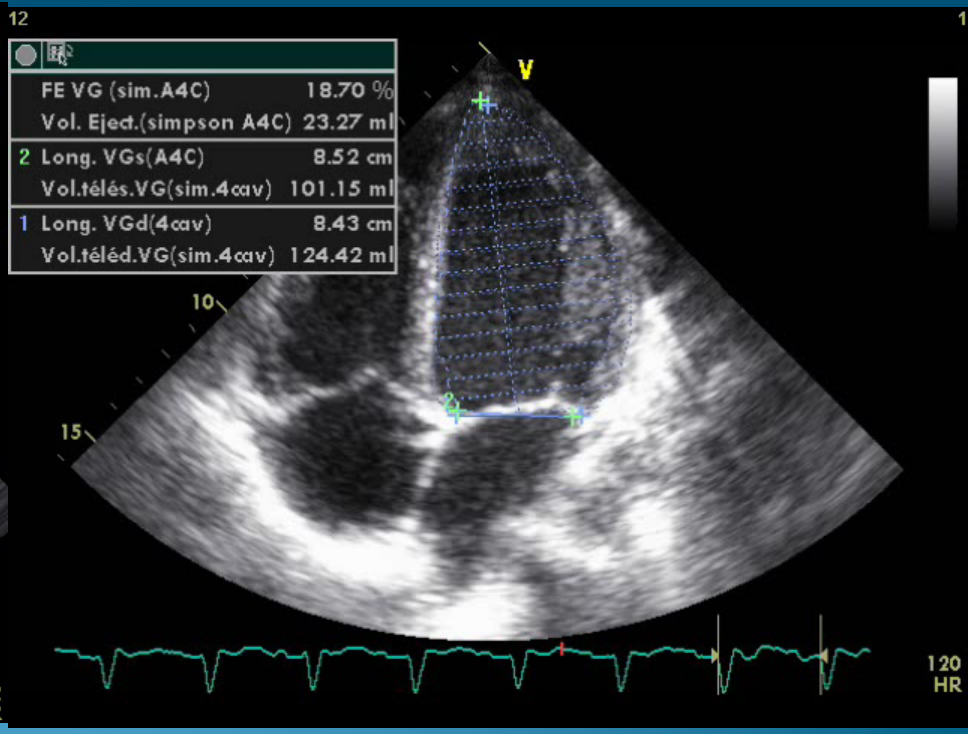
- 50 kg / 1m60
- TA : 84/57 mmHg
- Galop

1er ECG

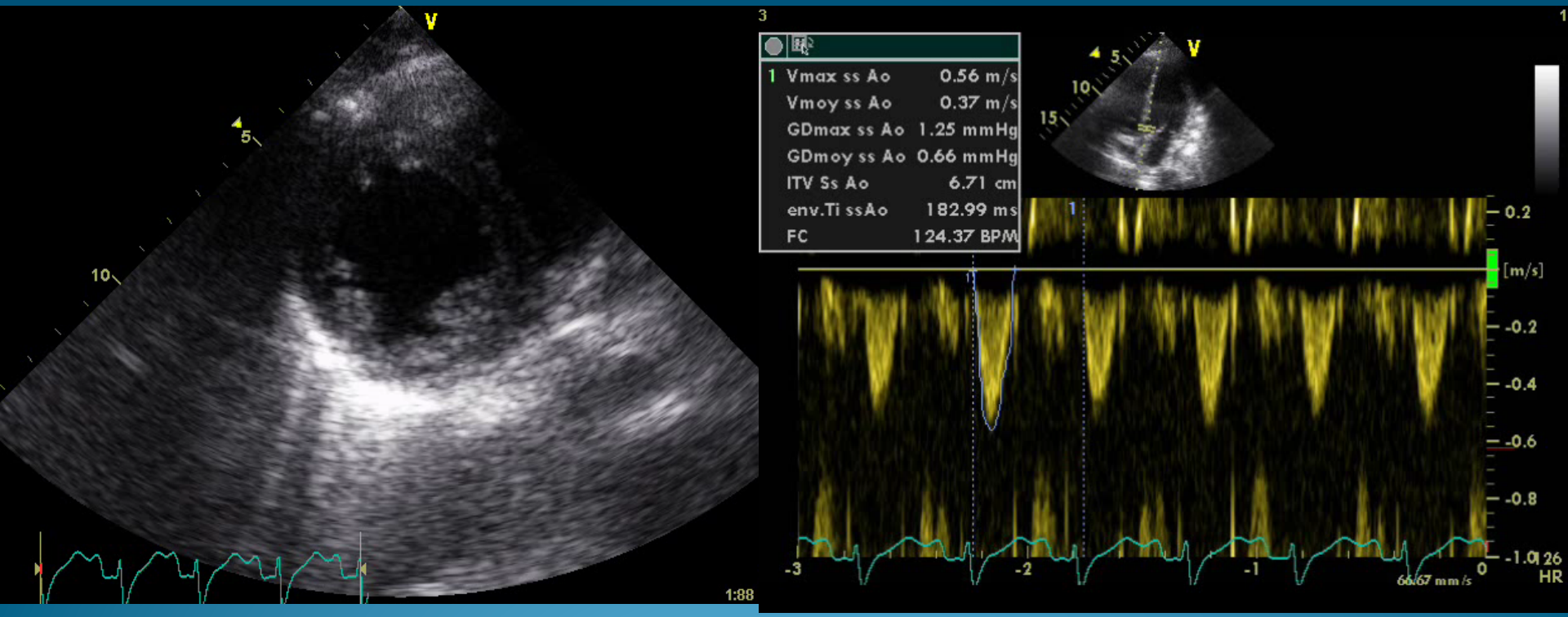

I
II
III
aVR
aVL
aVF
C1
C2
C3
C4
C5
C6
25 mm/s
10 mm/mV
0.15 Hz - 150 Hz
HP7F9

Echo

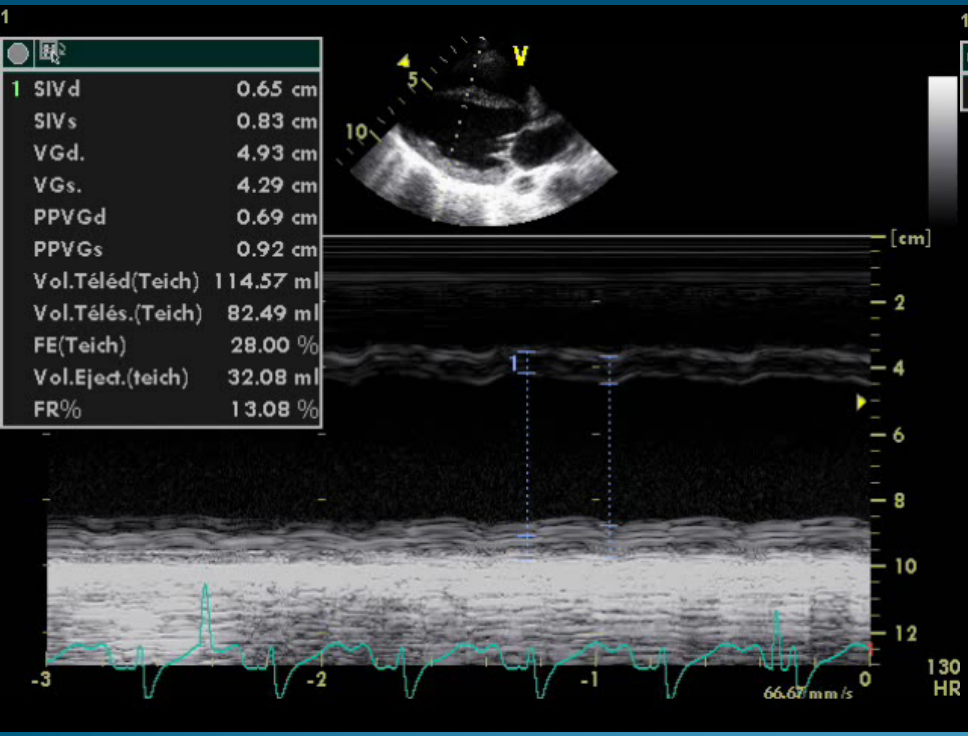

V
5
10
.78
-.78
2:14
122
HR

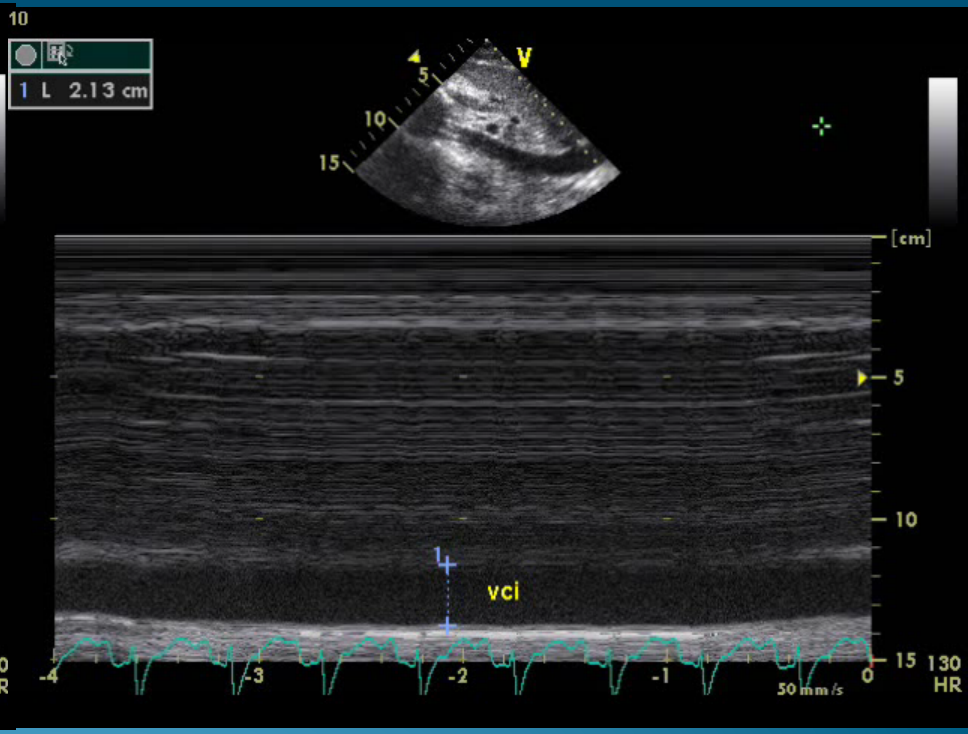

12
FE VG (sim.A4C) 18.70 %
Vol. Eject.(simpson A4C) 23.27 ml
2 Long. VGs(A4C) 8.52 cm
Vol.télés.VG(sim.4cav) 101.15 ml
1 Long. VGd(4cav) 8.43 cm
Vol.téléd.VG(sim.4cav) 124.42 ml
V
10
15
120
HR

Echo


V
5
10
1:88
3
1
Vmax ss Ao 0.56 m/s
Vmoy ss Ao 0.37 m/s
GDmax ss Ao 1.25 mmHg
GDmoy ss Ao 0.66 mmHg
ITV Ss Ao 6.71 cm
env.Ti ssAo 182.99 ms
FC 124.37 BPM
V
5
10
15
1
0.2
[m/s]
-0.2
-0.4
-0.6
-0.8
-1.0
-3
-2
-1
0
66.67 mm/s
126
HR

Echo





VG : 41/31 mm

Septum : 12 mm

Paroi post : 8 mm

VTD : 110 mL

FEVG : 30%

Biologie

- CPK : 899
- Troponine : 57,7
- CRP : 91
- BNP : 395
  1851

- Hb : 11,4
- GB : 8700
  PN : 86
  PEo : 1
  Mono : 8

Quel est le diagnostic le plus probable ?

A. Myocardite aiguë
B. Tako - Tsubo
C. Cardiopathie ischémique
D. Non compaction du VG
E. Amylose cardiaque

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Examens complémentaires ?

A. Coronarographie
B. Biopsie myocardique
C. IRM cardiaque
D. Scintigraphie

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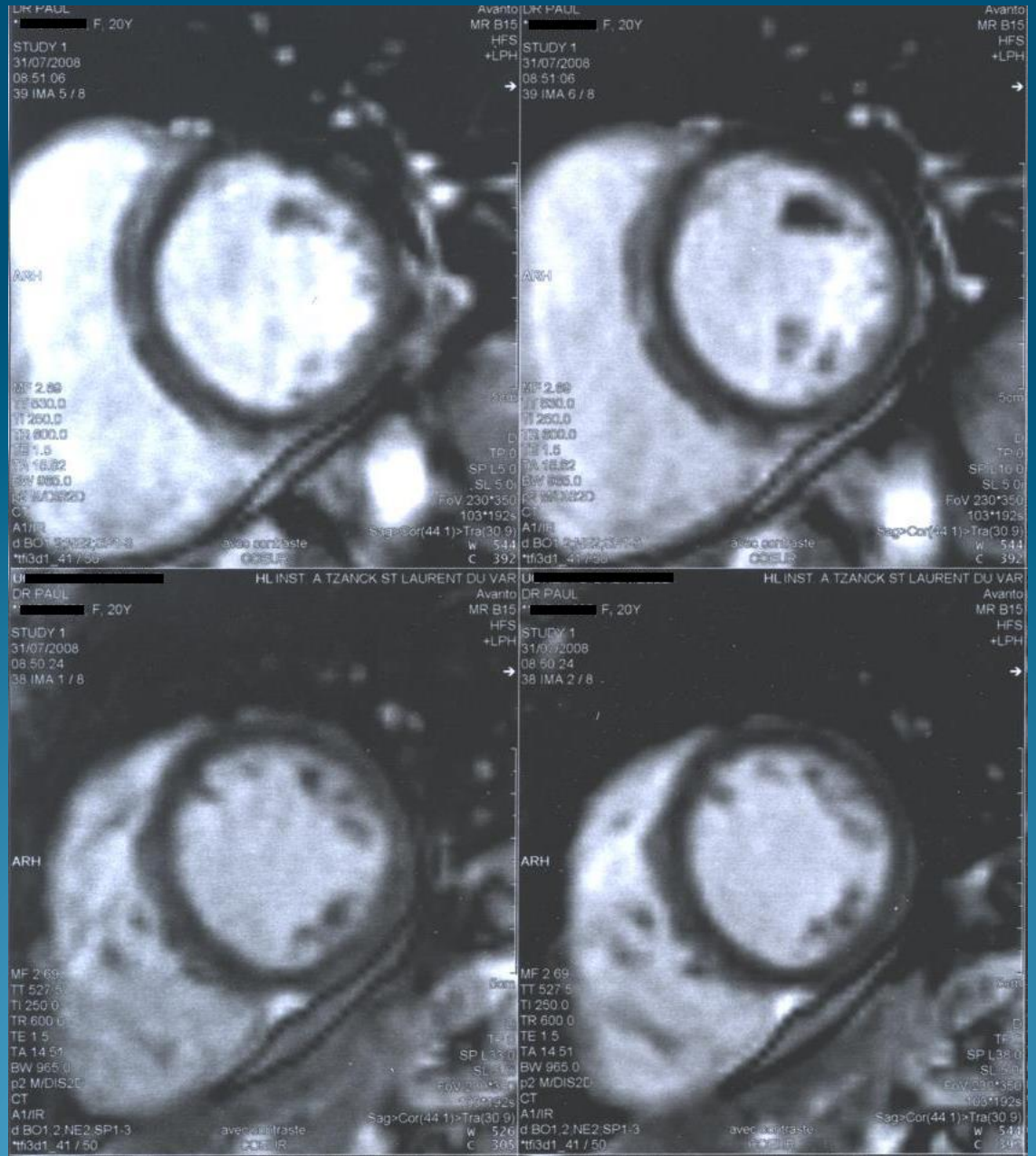
IRM cardiaque



Rehaussement sous-épicardique diffus

FEVG : 30%

Etiologie

A. Maladie de système (Ac anti-noyaux, Ac anti-tissus)
B. Brucellose , Coxsakie, fièvre Q, mononucléose
C. Toxoplasmose
D. Parvovirus B19 , Epstein Barr, HIV
E. Inconnue

Etiologie

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Traitement

A. **Traitement médical : IEC, diurétiques, dobutamine**

B. Assistance circulatoire

C. Transplantation cardiaque

Traitement

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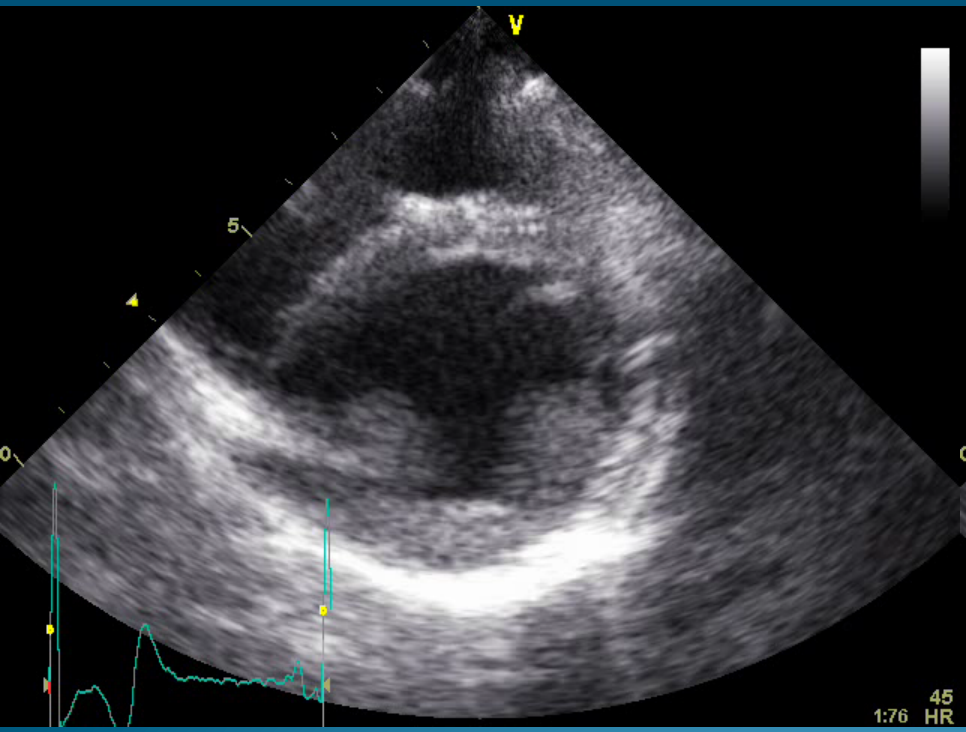
Assistance circulatoire

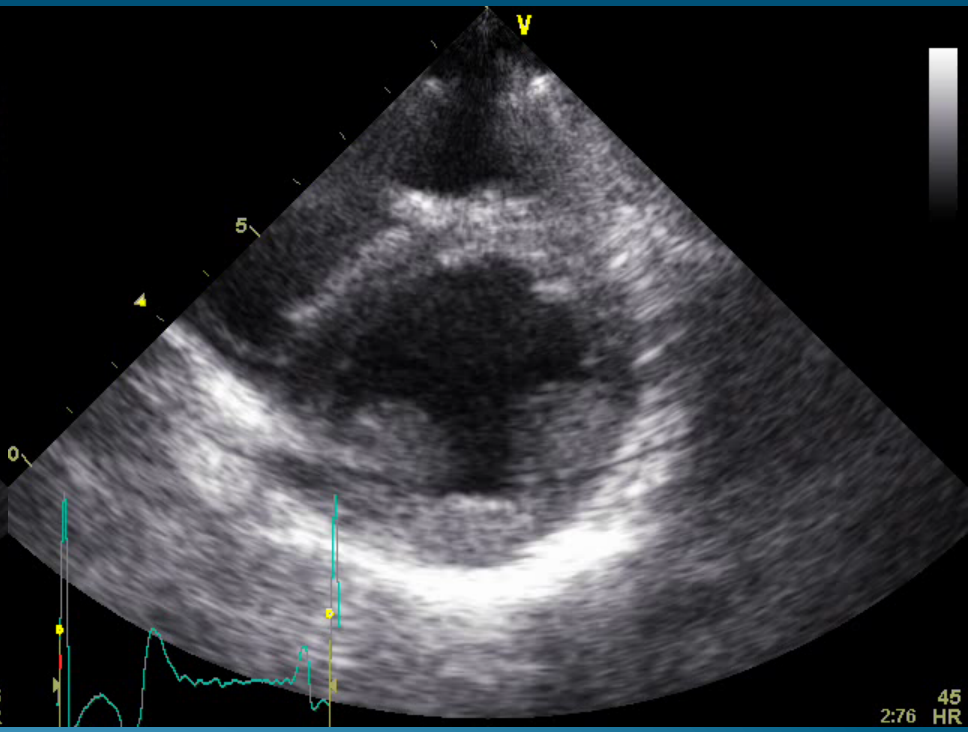
- Instabilité hémodynamique
- Savoir attendre 3 semaines
- Avis CHU-Marseille Pr. Habib et Pr. Averinos

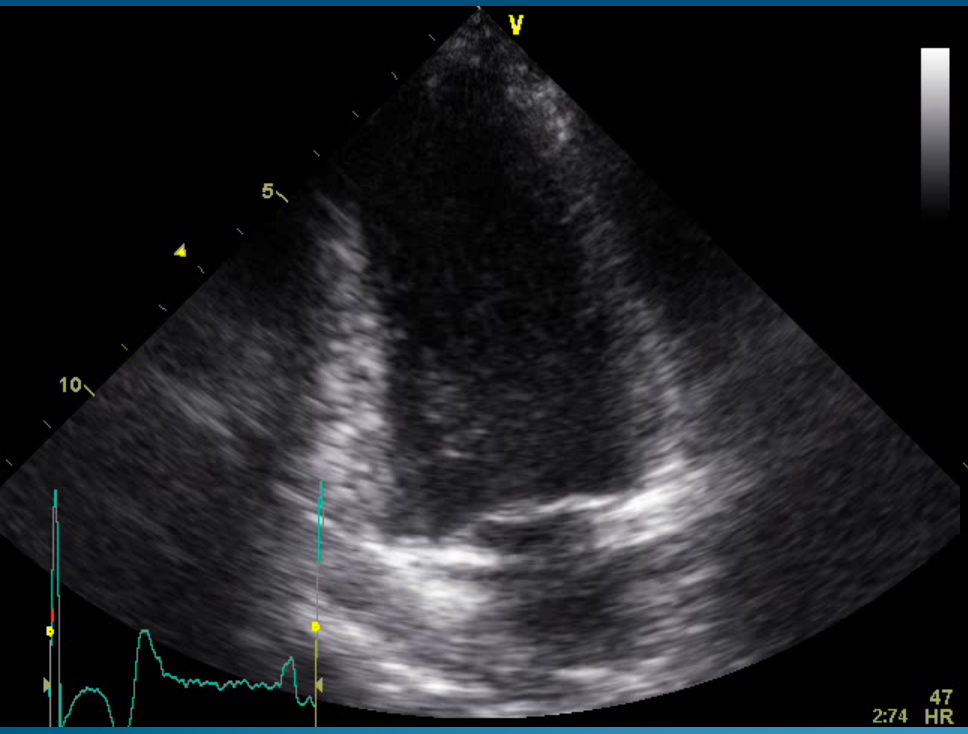
Mm. U

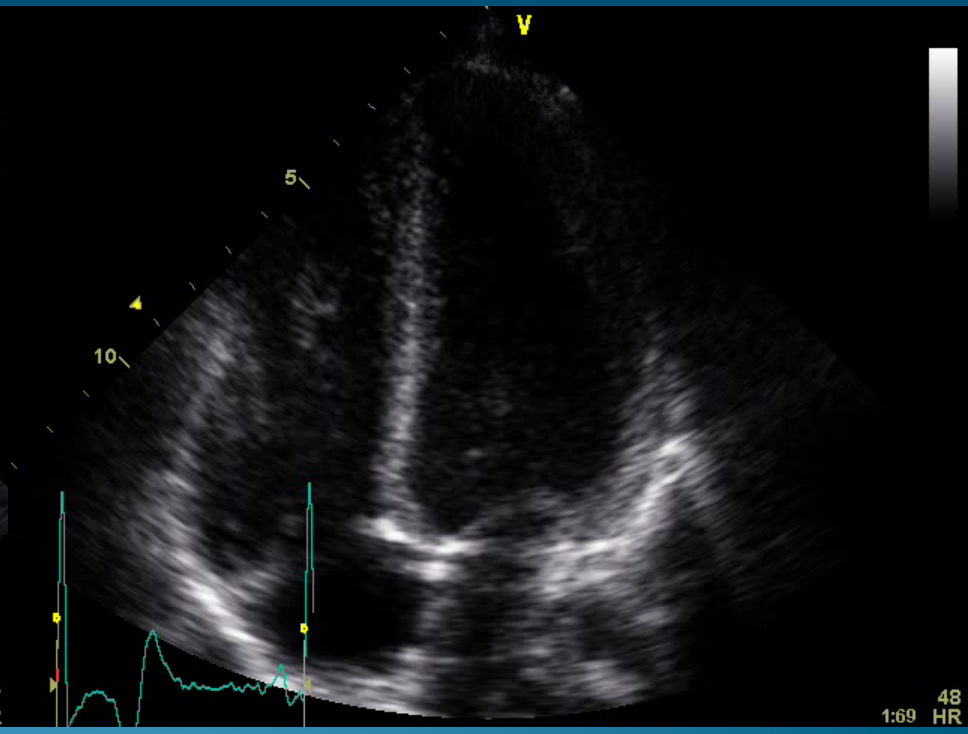
3 semaines après

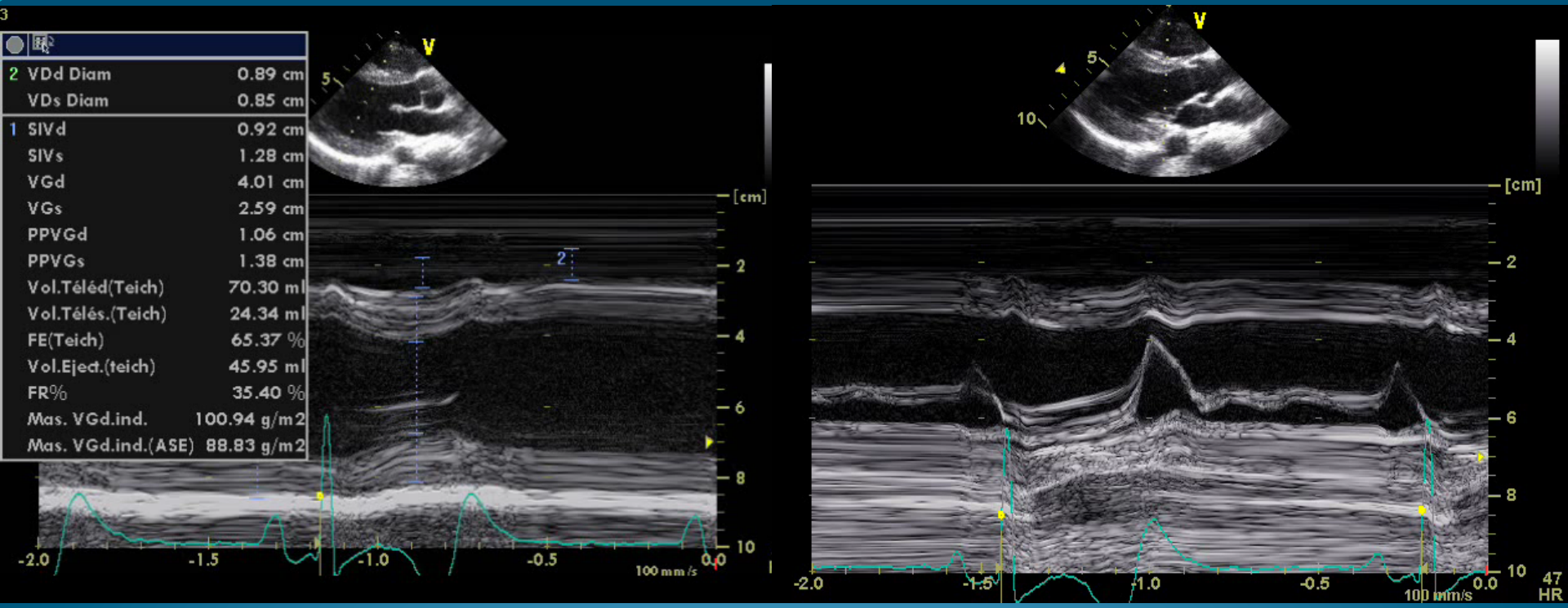
2008


V
5
0
45
1:76 HR

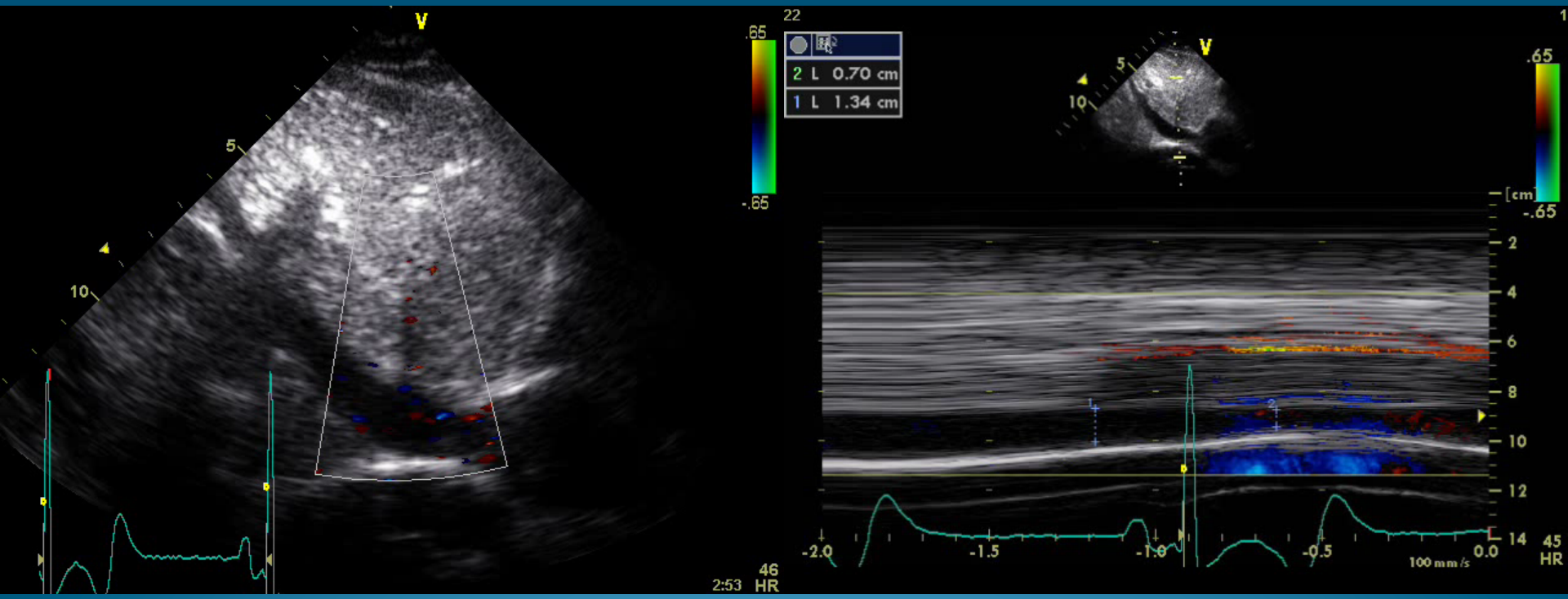

V
5
0
45
2:76 HR

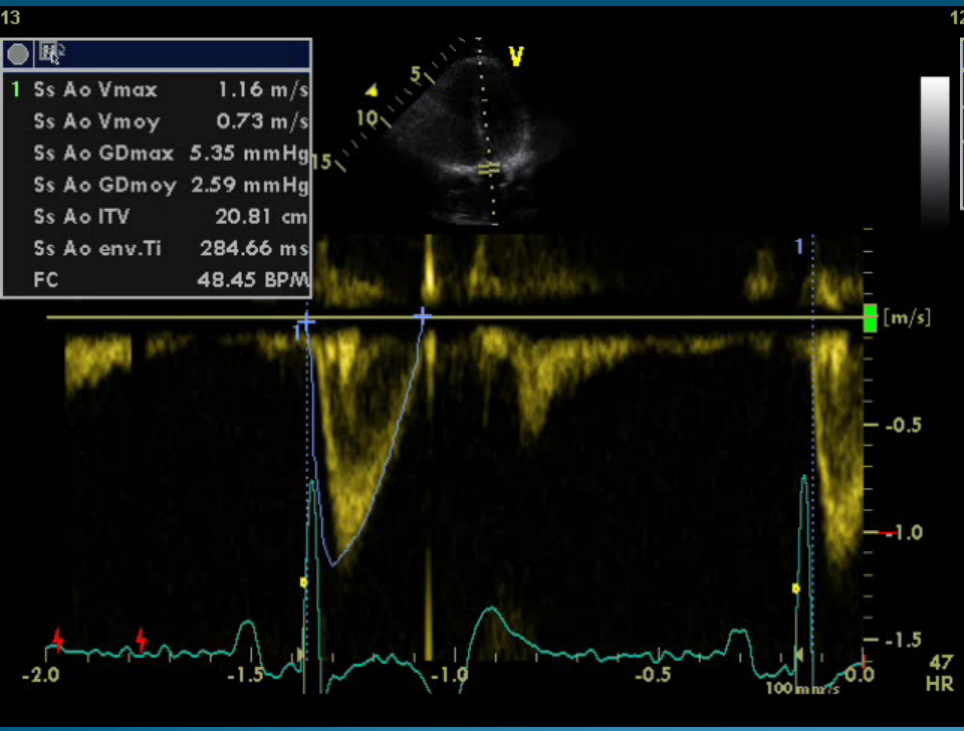

V
5
10
47
2:74
HR

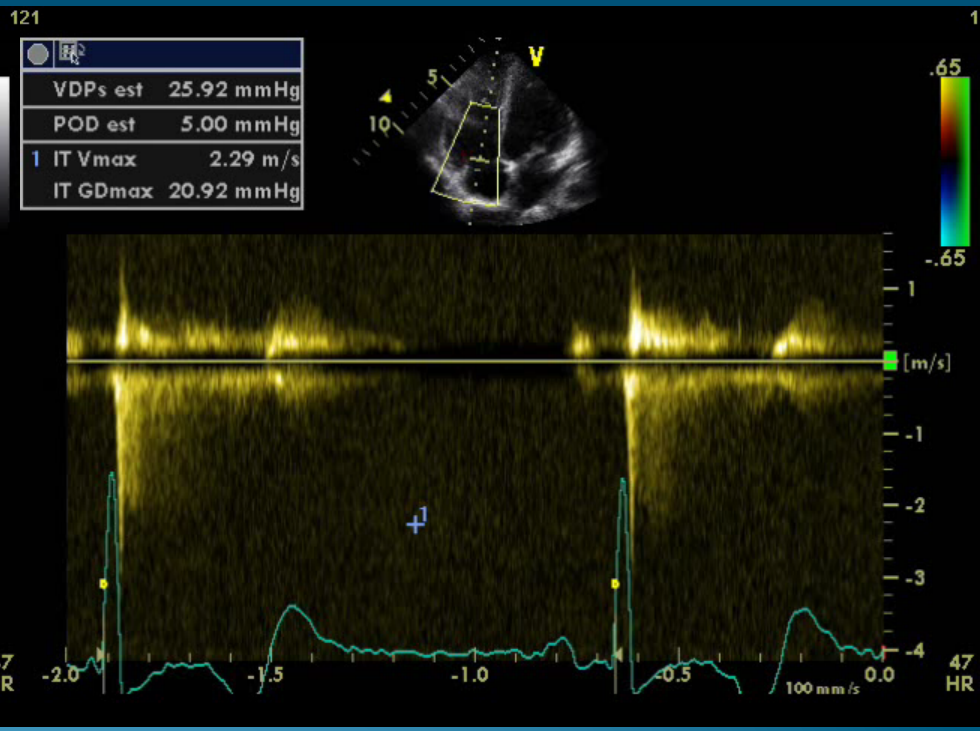

V
5
10
48
1:69
HR


3
2 VDd Diam 0.89 cm
VDs Diam 0.85 cm
1 SIVd 0.92 cm
SIVs 1.28 cm
VGd 4.01 cm
VGs 2.59 cm
PPVGd 1.06 cm
PPVGs 1.38 cm
Vol.Téléd(Teich) 70.30 ml
Vol.Télés.(Teich) 24.34 ml
FE(Teich) 65.37 %
Vol.Eject.(teich) 45.95 ml
FR% 35.40 %
Mas. VGd.ind. 100.94 g/m2
Mas. VGd.ind.(ASE) 88.83 g/m2
V
5
[cm]
2
4
6
8
10
-2.0
-1.5
-1.0
-0.5
0.0
100 mm/s
V
5
10
[cm]
2
4
6
8
10
-2.0
-1.5
-1.0
-0.5
0.0
100 mm/s
47
HR


1 VM E Vit 0.93 m/s
VM T.déc 163.06 ms
VM Pente Dec 5.71 m/s2
VM A Vit 0.42 m/s
VM E/A Ratio 2.23
VM PHT 47.29 ms
[m/s]
47 HR
v 0.12 m/s
p 0.06 mmHg
[cm/s]
49 HR


V
5
10
.65
-.65
22
2 L 0.70 cm
1 L 1.34 cm
2:53
46
HR
V
5
10
.65
-.65
[cm]
2
4
6
8
10
12
14
-2.0
-1.5
-1.0
-0.5
0.0
100 mm/s
45
HR

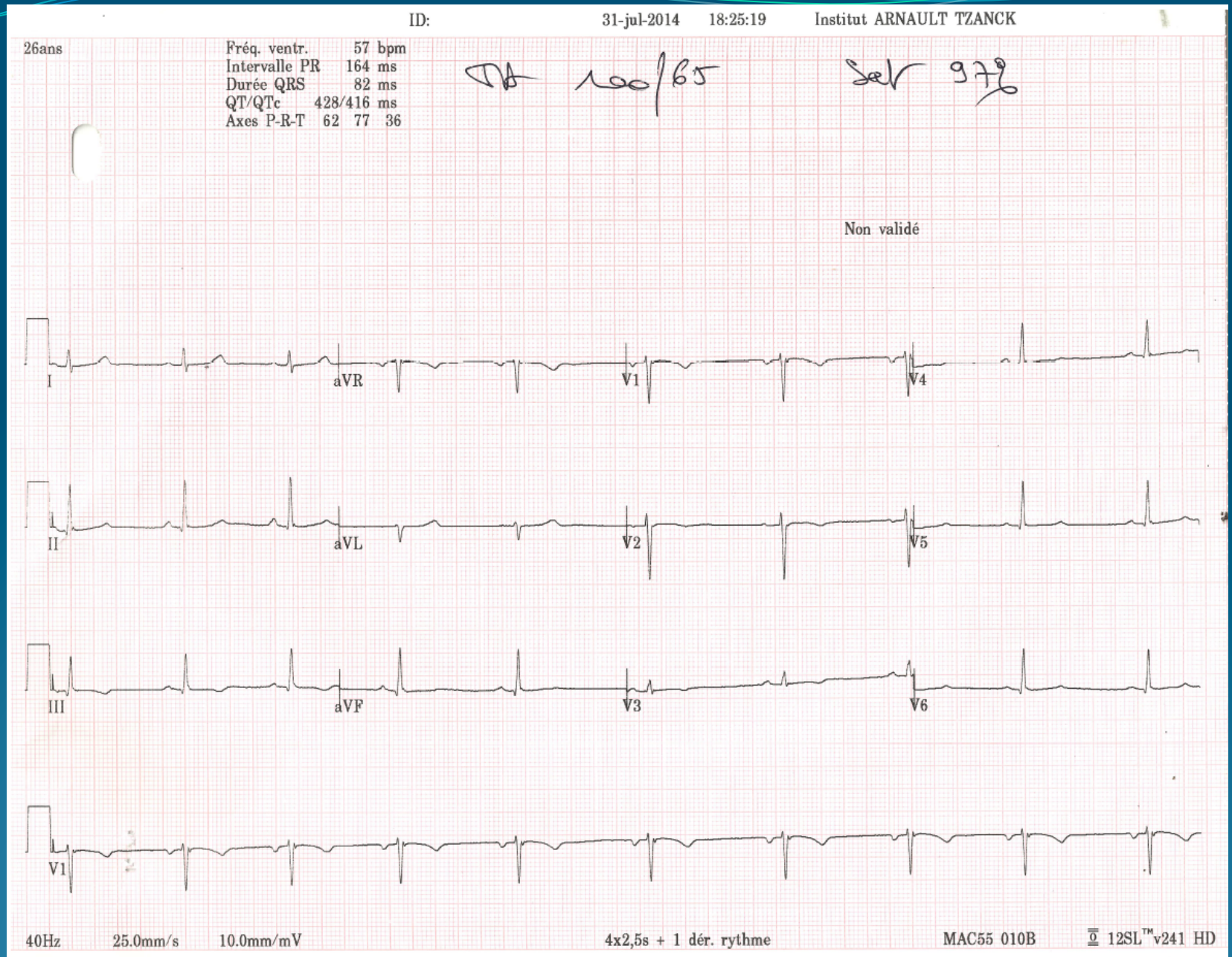

13
1 Ss Ao Vmax 1.16 m/s
Ss Ao Vmoy 0.73 m/s
Ss Ao GDmax 5.35 mmHg
Ss Ao GDmoy 2.59 mmHg
Ss Ao ITV 20.81 cm
Ss Ao env.Ti 284.66 ms
FC 48.45 BPM
[m/s]
-0.5
-1.0
-1.5
-2.0
-1.5
-1.0
-0.5
0.0
100 mm/s
47
HR

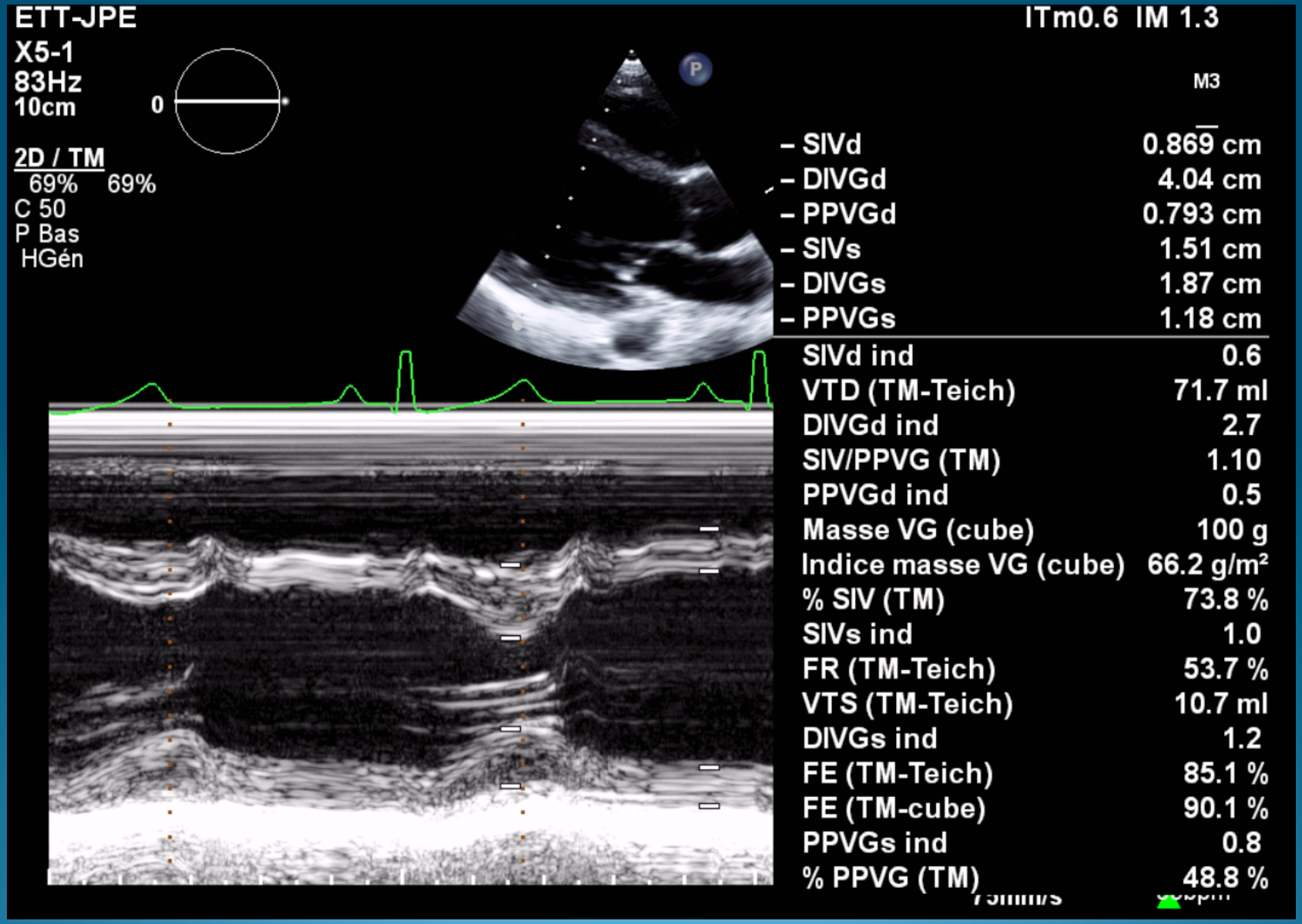

121
VDPs est 25.92 mmHg
POD est 5.00 mmHg
1 IT Vmax 2.29 m/s
IT GDmax 20.92 mmHg
.65
-.65
[m/s]
-1
-2
-3
-4
-2.0
-1.5
-1.0
-0.5
0.0
100 mm/s
47
HR

Mm. U

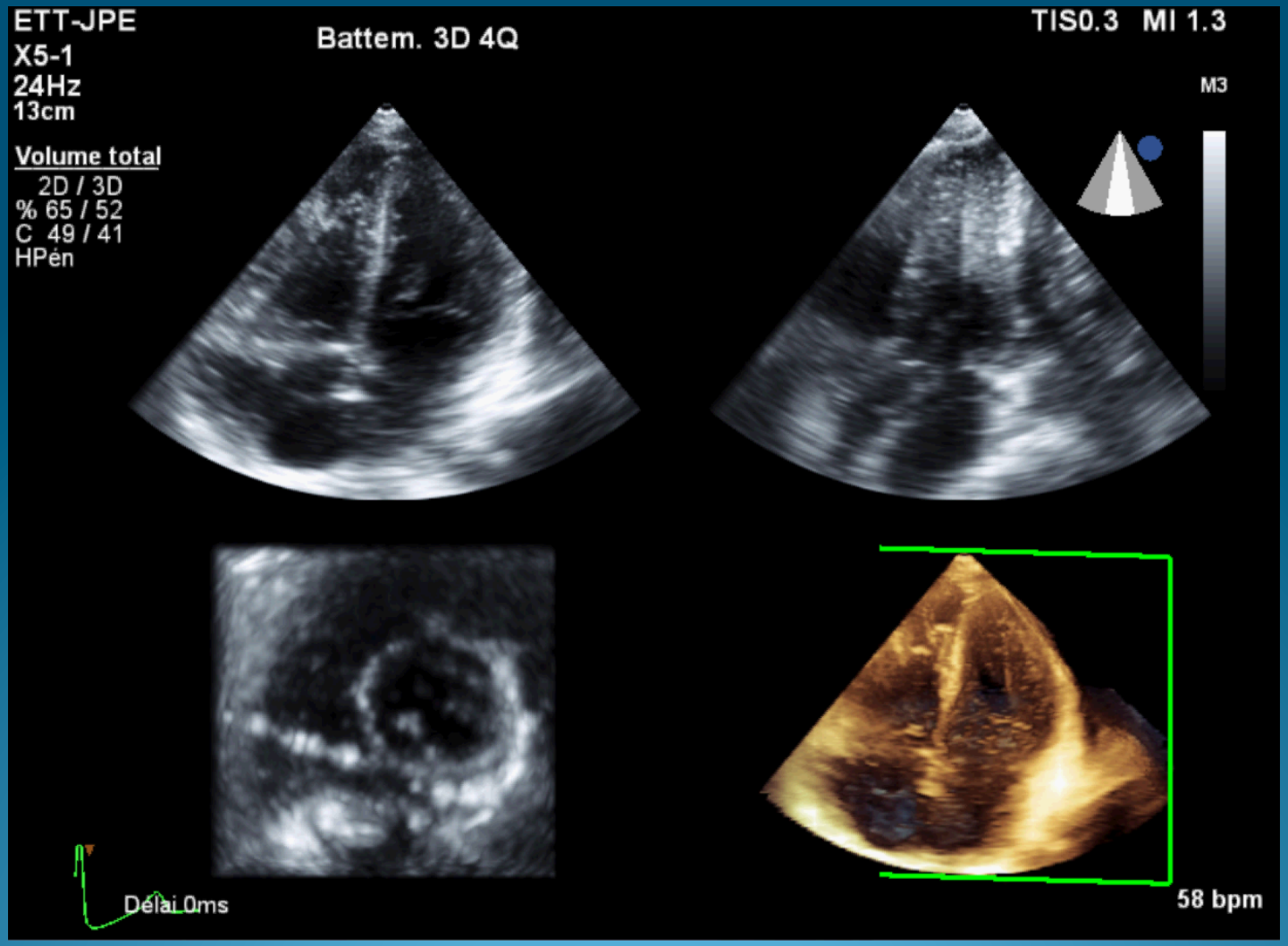
6 ans plus tard

2014

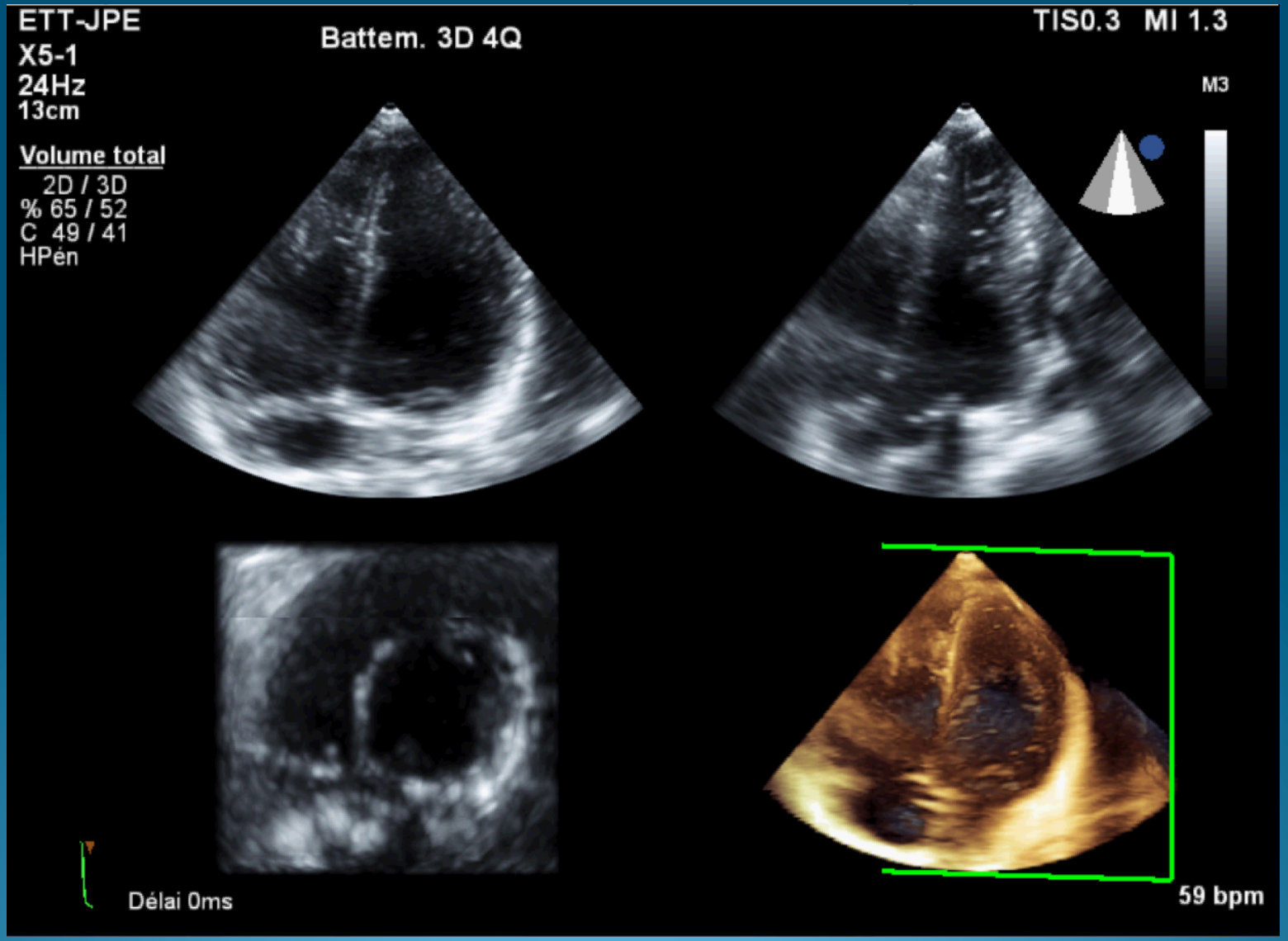

ID:
31-jul-2014 18:25:19
Institut ARNAULT TZANCK
26ans
Fréq. ventr. 57 bpm
Intervalle PR 164 ms
Durée QRS 82 ms
QT/QTc 428/416 ms
Axes P-R-T 62 77 36
TA 100/65
Sat 97%
Non validé
I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6
V1
40Hz
25.0mm/s
10.0mm/mV
4x2,5s + 1 dér. rythme
MAC55 010B
12SL™v241 HD

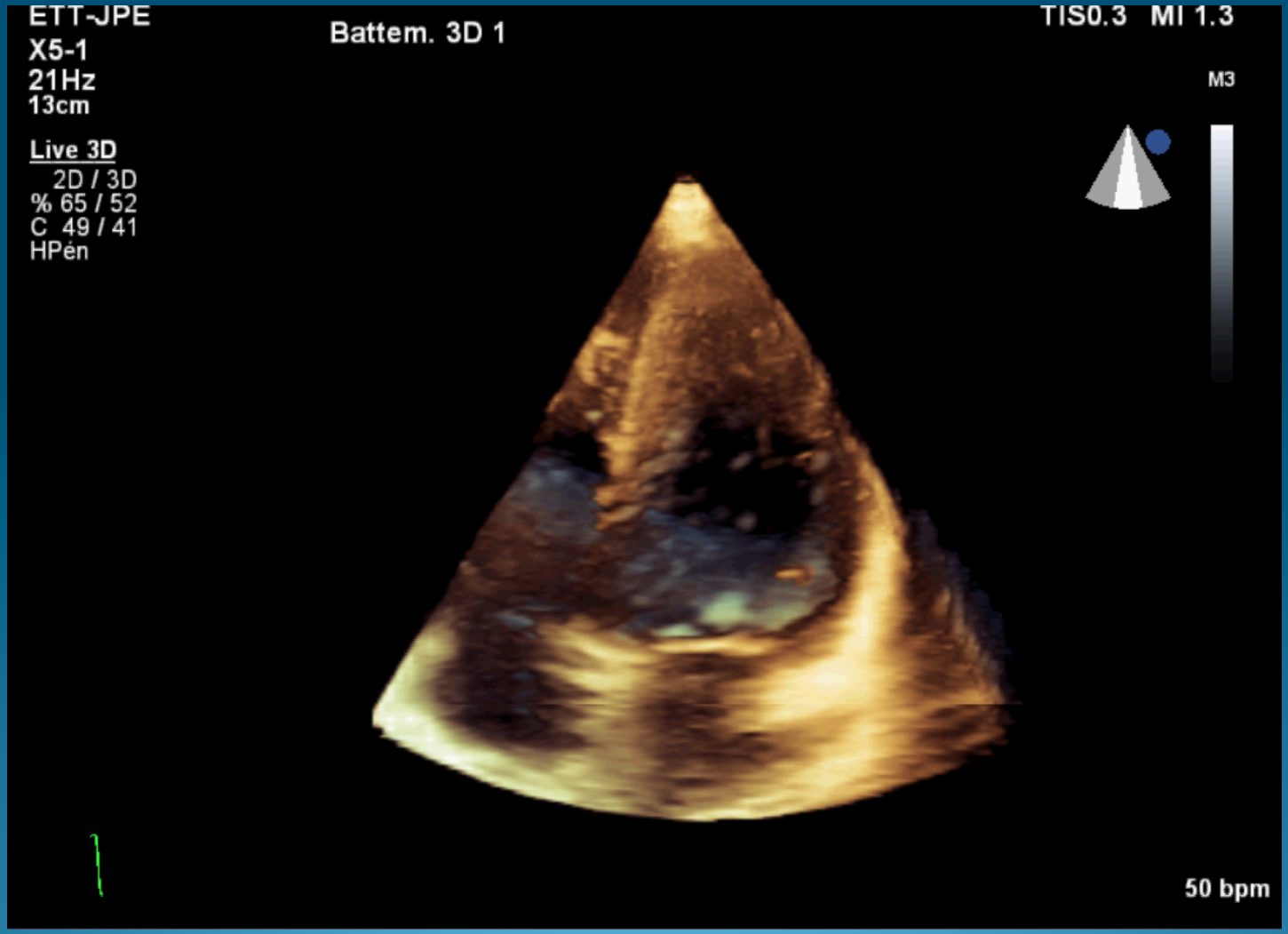

ETT-JPE
X5-1
83Hz
10cm
0
2D / TM
69% 69%
C 50
P Bas
HGén
ITm0.6 IM 1.3
M3
– SIVd 0.869 cm
– DIVGd 4.04 cm
– PPVGd 0.793 cm
– SIVs 1.51 cm
– DIVGs 1.87 cm
– PPVGs 1.18 cm
SIVd ind 0.6
VTD (TM-Teich) 71.7 ml
DIVGd ind 2.7
SIV/PPVG (TM) 1.10
PPVGd ind 0.5
Masse VG (cube) 100 g
Indice masse VG (cube) 66.2 g/m²
% SIV (TM) 73.8 %
SIVs ind 1.0
FR (TM-Teich) 53.7 %
VTS (TM-Teich) 10.7 ml
DIVGs ind 1.2
FE (TM-Teich) 85.1 %
FE (TM-cube) 90.1 %
PPVGs ind 0.8
% PPVG (TM) 48.8 %

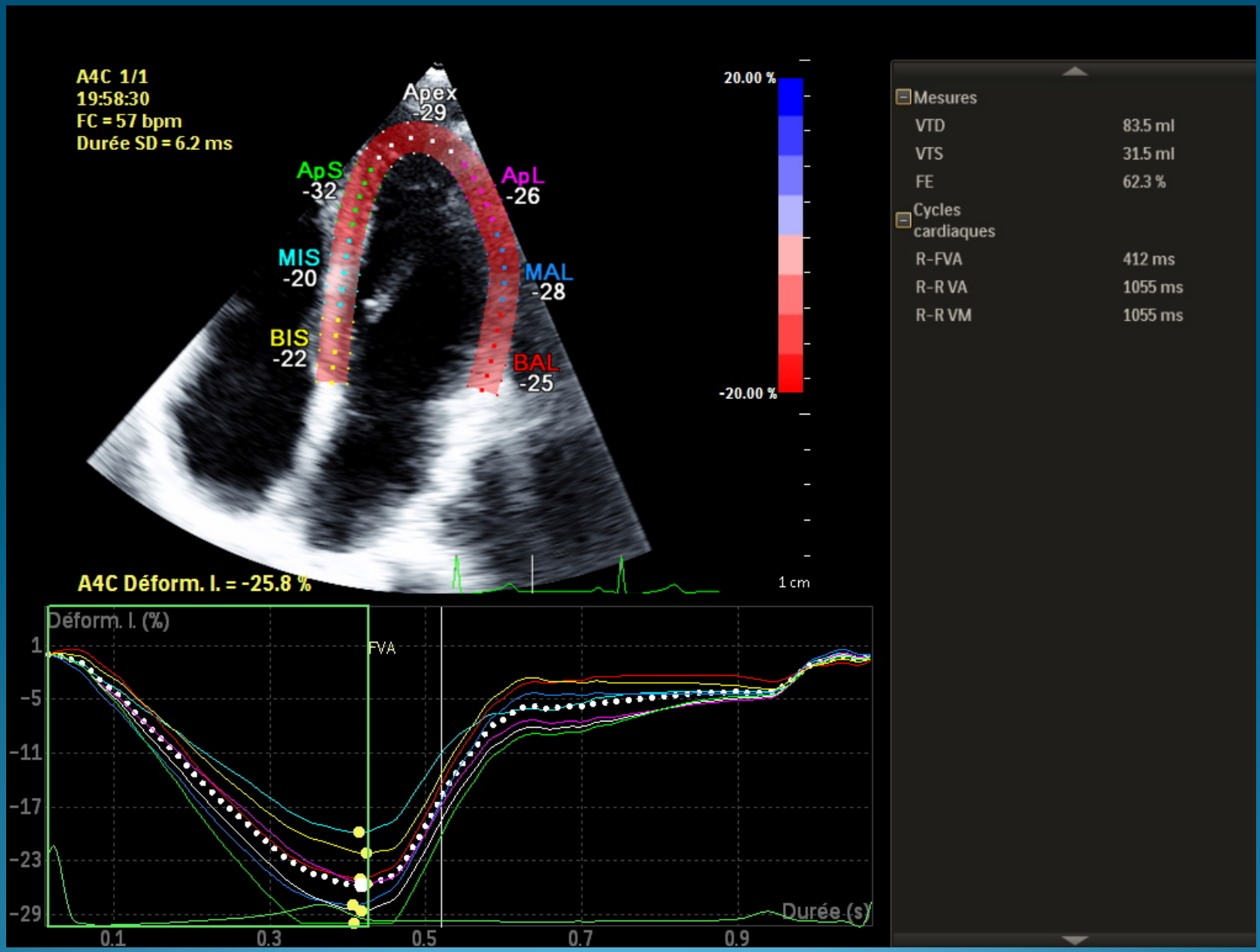
3D

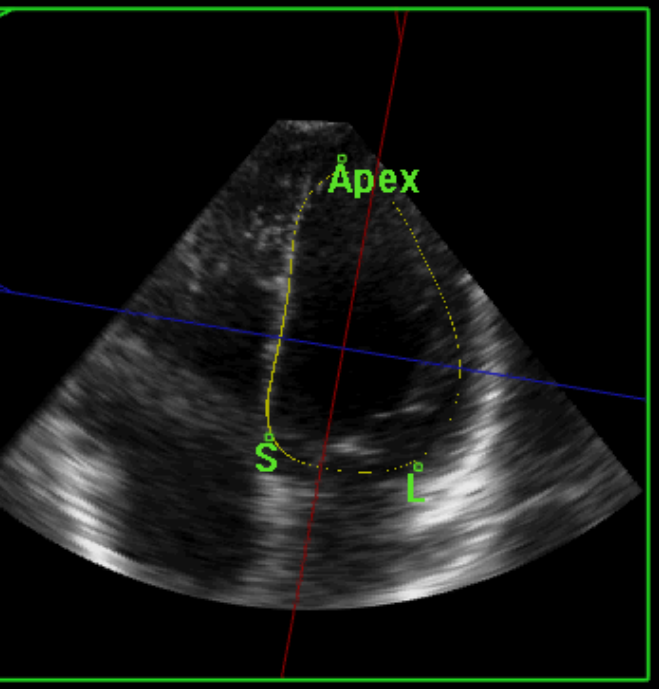


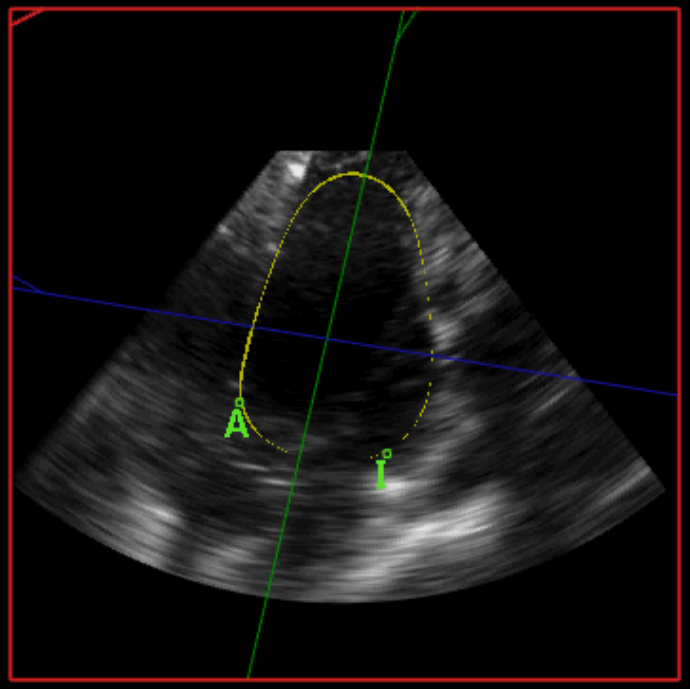
FEVG : 70% VTD : 100 mL

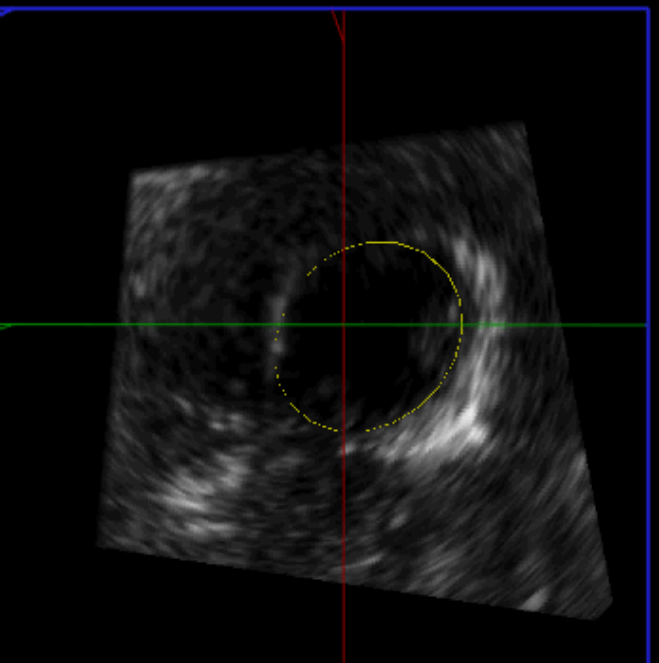

ETT-JPE
X5-1
24Hz
13cm
Volume total
2D / 3D
% 65 / 52
C 49 / 41
HPén
Battem. 3D 4Q
TIS0.3 MI 1.3
M3
Délai 0ms
59 bpm

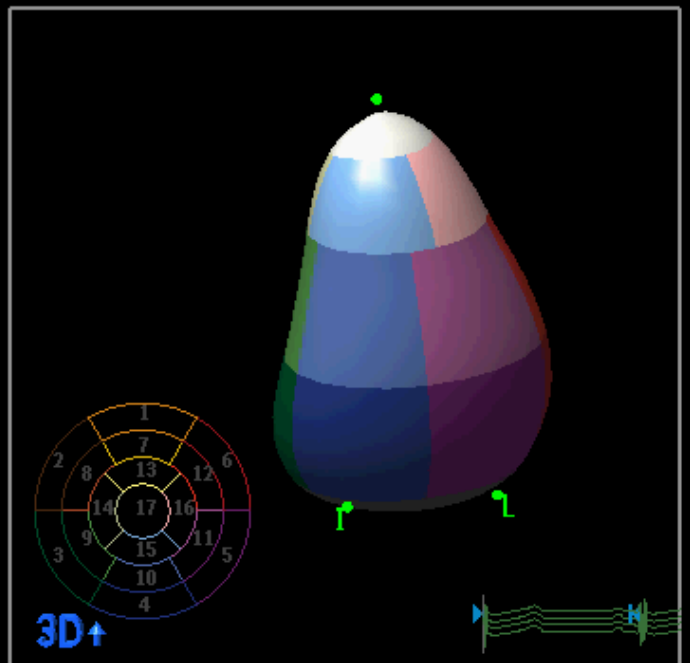

ETT-JPE
X5-1
21Hz
13cm
Live 3D
2D / 3D
% 65 / 52
C 49 / 41
HPén
Battem. 3D 1
TIS0.3 MI 1.3
M3
50 bpm


A4C 1/1
19:58:30
FC = 57 bpm
Durée SD = 6.2 ms
Apex
-29
ApS
-32
ApL
-26
MIS
-20
MAL
-28
BIS
-22
BAL
-25
20.00 %
-20.00 %
1 cm
A4C Déform. l. = -25.8 %
Déform. l. (%)
FVA
1
-5
-11
-17
-23
-29
0.1
0.3
0.5
0.7
0.9
Durée (s)
Mesures
VTD 83.5 ml
VTS 31.5 ml
FE 62.3 %
Cycles cardiaques
R-FVA 412 ms
R-R VA 1055 ms
R-R VM 1055 ms









Volume(s)	
VTD	84.4 ml
VTS	27.6 ml
Calcul(s)	
FE	67.3 %
VE	56.9 ml
Régional	
Tmsv Sel-SD	**** ms
Tmsv Sel-Dif	**** ms
Tmsv Sel-SD	**** %

Myocardite

Recommandations

Myocardite

Définition :

Inflammation du muscle cardiaque

Histologie :

Infiltrat cellulaire et nécrose myocytaire

Myocardite

Etiologies

- Maladie infectieuse
  - Virus : Parvovirus B19, Coxackie, HIV,H1N1
  - Bactéries : Streptocoque
  - Parasites : éosinophilie
  - Champignons
- Hypersensibilités : médicaments
- Auto-immune ,lupus, sarcoïdose, cellules géantes
- Toxiques : cocaïne, chimio
- Péripartum

Myocardite
Bilan spécifique

- NFS (éosino ++), CRP, Tropo, BNP
- Sérologie virale
- Anticorps antinucléaires
- Dosage enzyme de conversion de l'angiotensine + calcémie, granulome (sarcoïdose)
- Recherche de cellules LE
- Recherche de cellules géantes
- Anticorps anti-strepto

Myocardite

Manifestations cliniques

- Syndrome viral
  Fièvre
  Douleur thoracique simulant un infarctus
- Asymptomatique
- Insuffisance cardiaque
- Tachycardie
- Arythmie (auriculaire, ventriculaire),
  Troubles de la conduction
- Mort subite 10% (Annale interne de médecine 2004)

Myocardite

Sudden Death in Young Adults: A 25-Year Review of Autopsies in Military Recruits

Robert E. Eckart, DO; Stephanie L. Scoville, DrPH; Charles L. Campbell, MD; Eric A. Shrv. MD: Karl C. Staiduhar. MD: Robert N. Potter, DVM, MPH; Lisa A. Pearse, MD, MPH; and Renu Virmani, MD

Ann Intern Med. 2004;141:829-834.

- 6.3 millions military recruits over 25 yrs
  - 126 non-traumatic sudden deaths, autopsy performed
  - 10% of myocarditis-related deaths

Cardiac Abnormality	Sudden Deaths, *n* (%)*
Cardiomyopathy	23 (36)
Myocarditis	13 (20)
Hypertrophic cardiomyopathy	8 (13)
Idiopathic dilated cardiomyopathy	1 (2)
Right ventricular dysplasia	1 (2)
Coronary artery pathology	39 (61)
Anomalous coronary artery	21 (33)
Atherosclerotic coronary artery disease	10 (16)
Coronary artery hypoplasia	3 (5)
Coronary aneurysm	2 (3)
Intramyocardial coronary bridge	2 (3)
Coronary dissection	1 (2)
Miscellaneous cardiac findings	2 (3)
Bicuspid aortic valvular stenosis	1 (2)
Embolic myocardial infarction	1 (2)

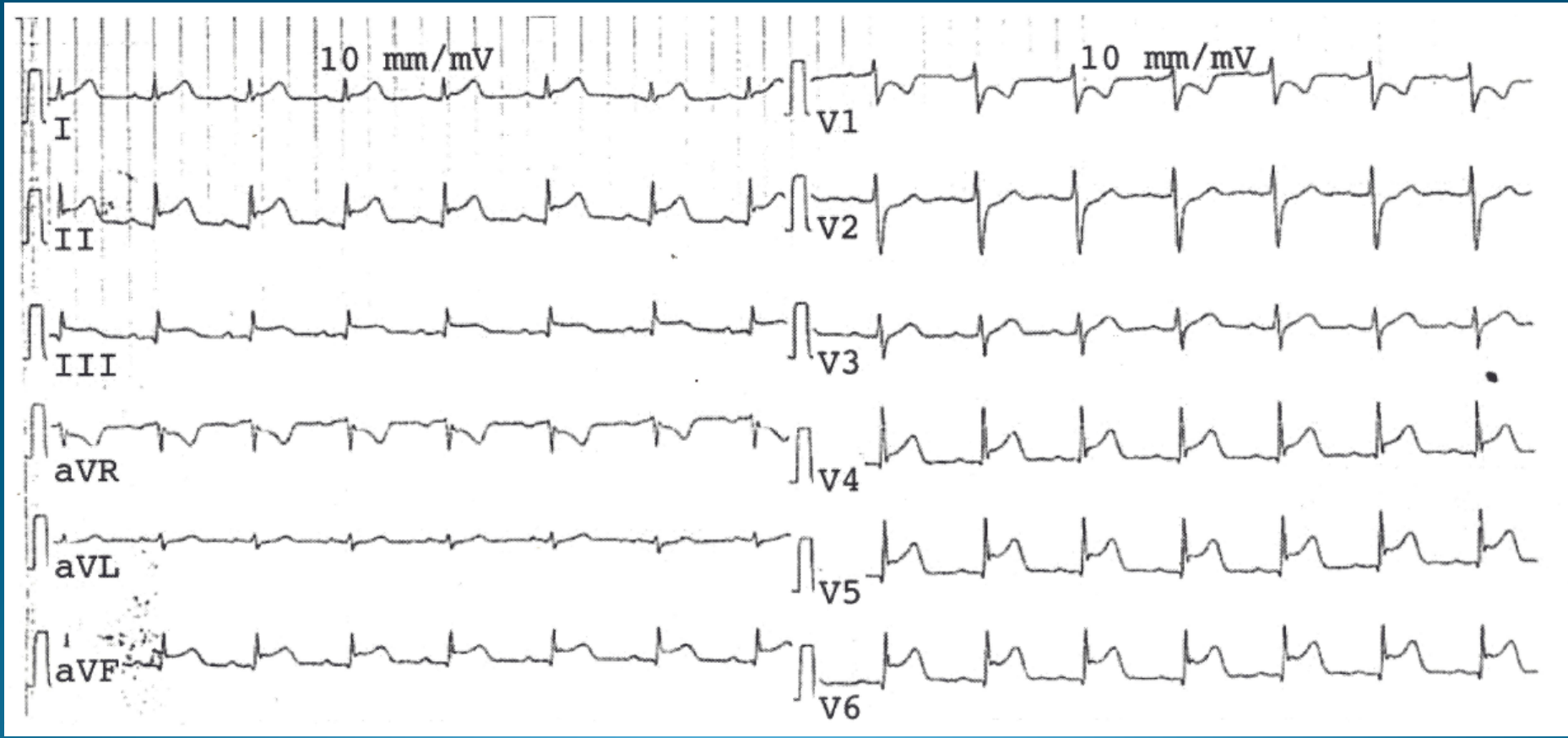
Myocardite

ECG

- Tachycardie sinusale
- Troubles de la repolarisation ST-T diffus
- Bloc de branche
- Tachycardie supraventriculaire
- Tachycardie ventriculaire
- Aspect d'infarctus

- Peut être normal

ECG mimant un infarctus



Myopéricardite

Myocardite

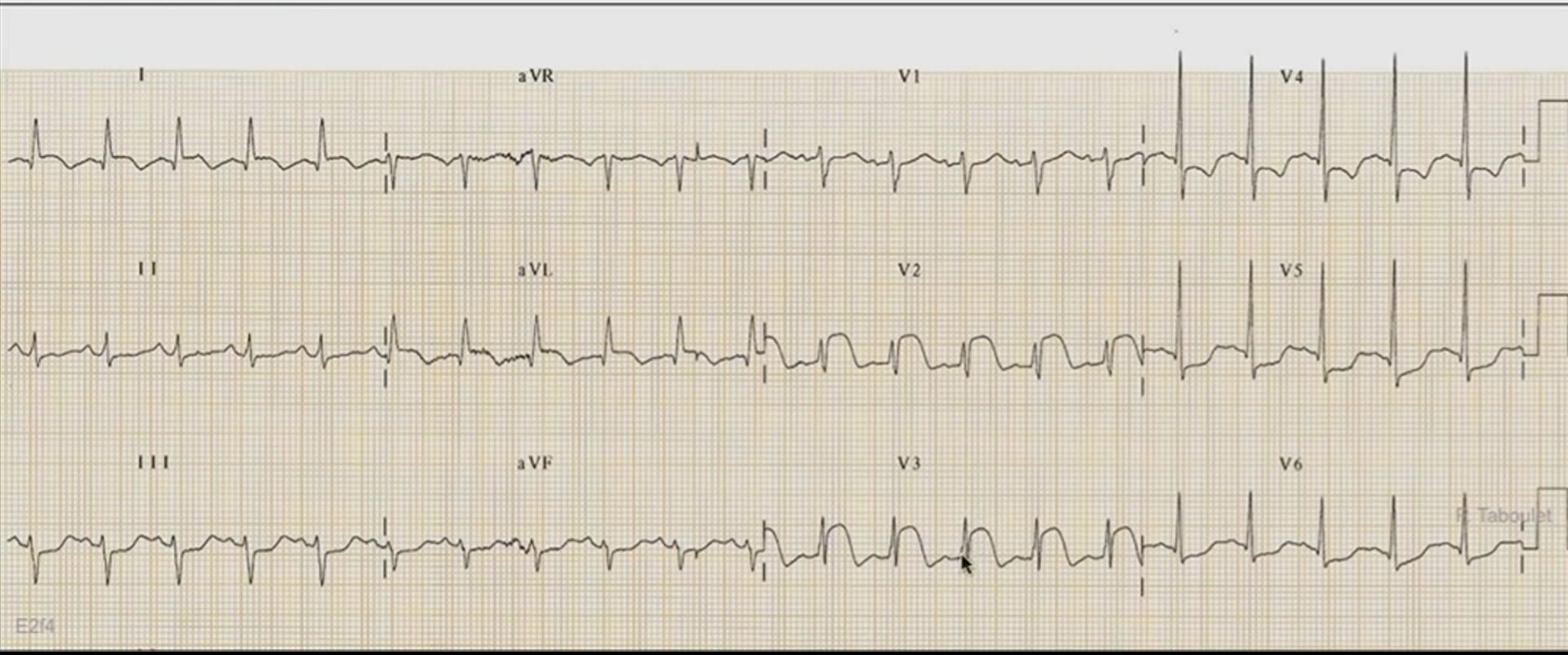
Lésions cellulaires

→ complexes QRS modifiés

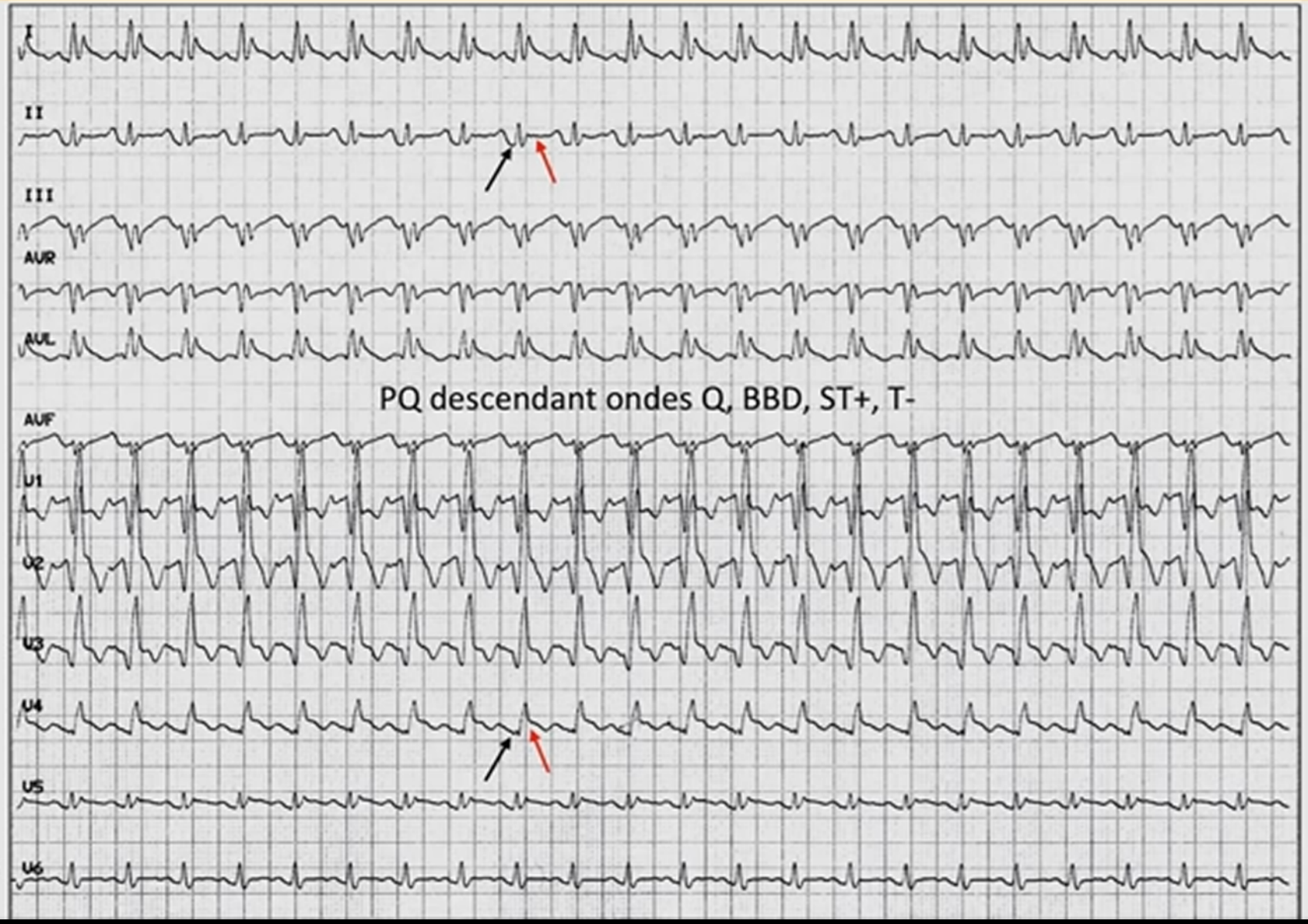
→ troubles de repolarisation ventriculaire (ST+, ST-, T)

→ tachycardie

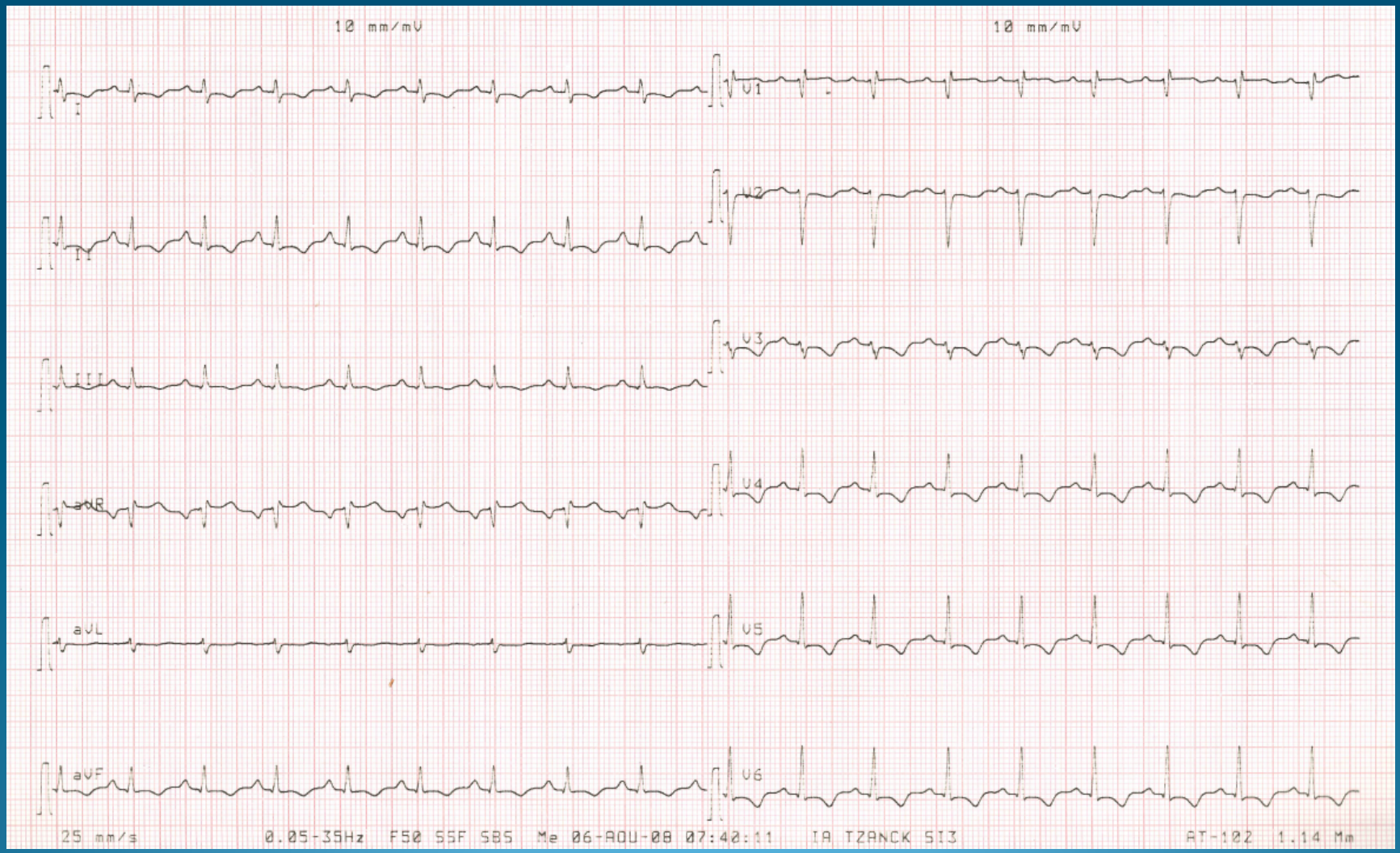
Homme 37 ans, douleur depuis H12, myocardite sévère



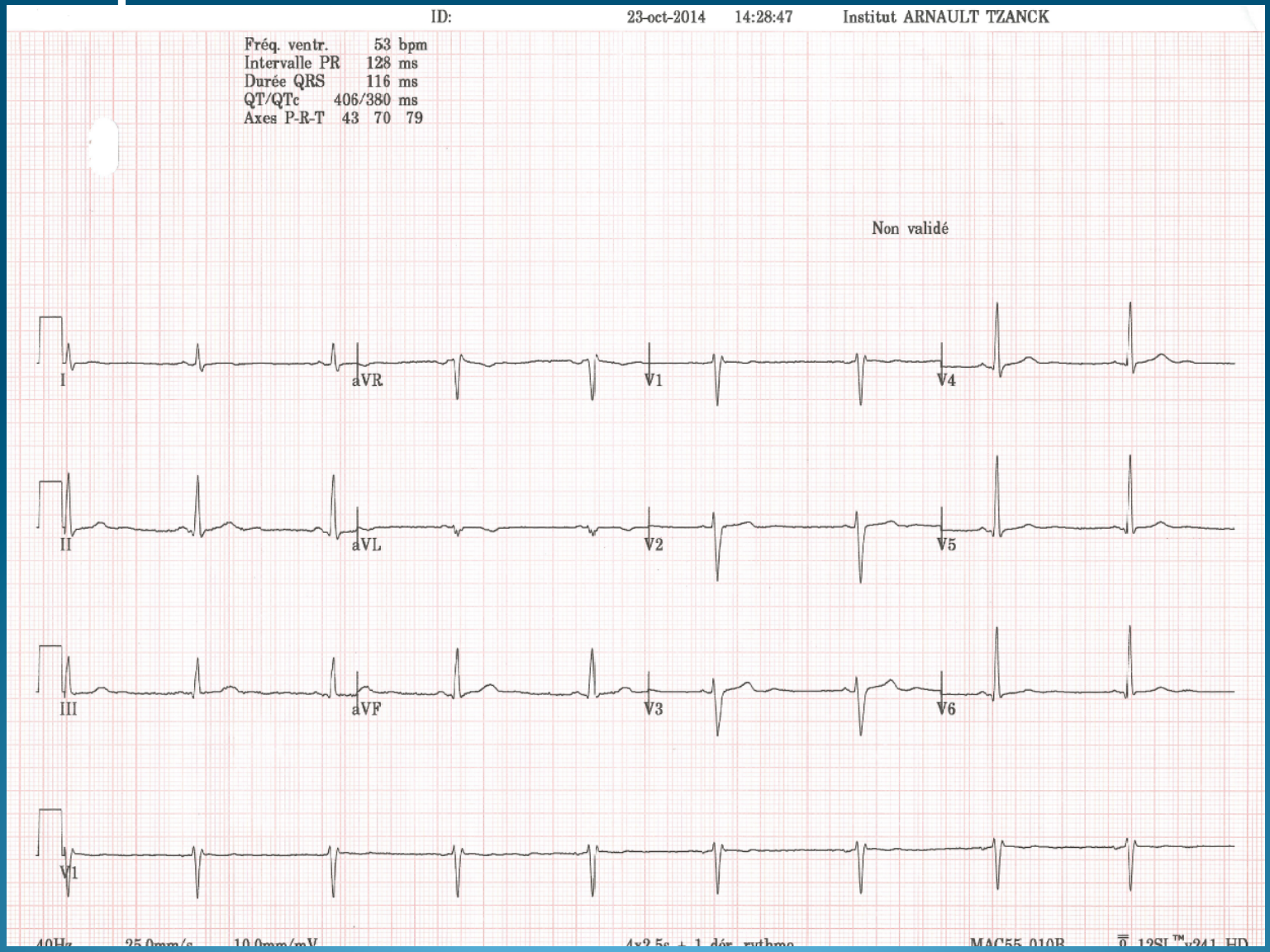
Myopéricardite



Troubles diffus de la repolarisation



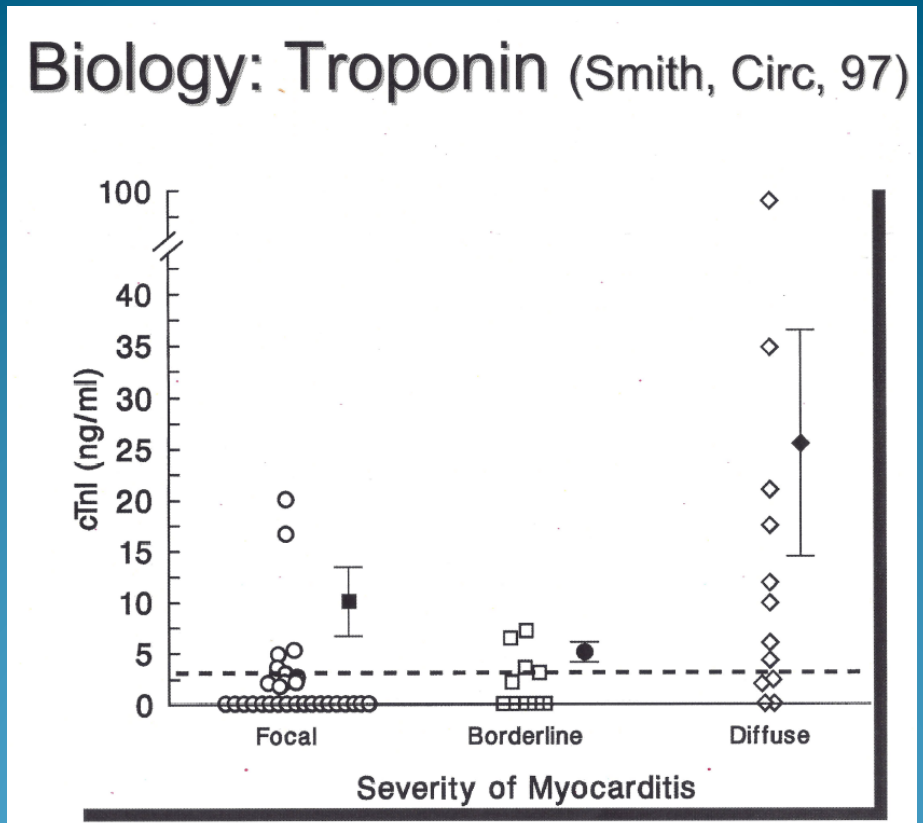
ECG peu différent de la normale



Intérêt du dosage de la troponine

Myocardite Biologie

- **Troponine**



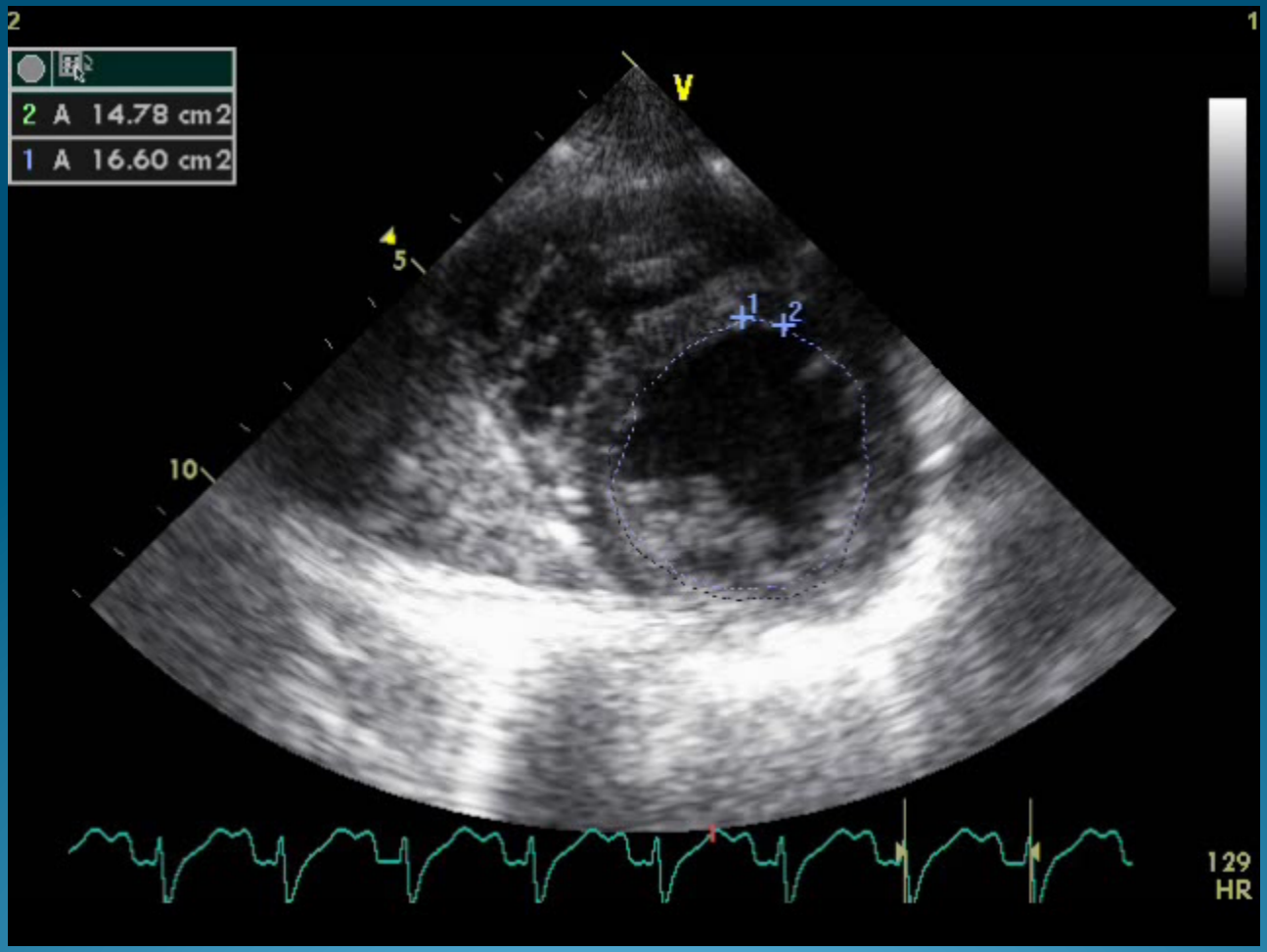
Myocardite Echo

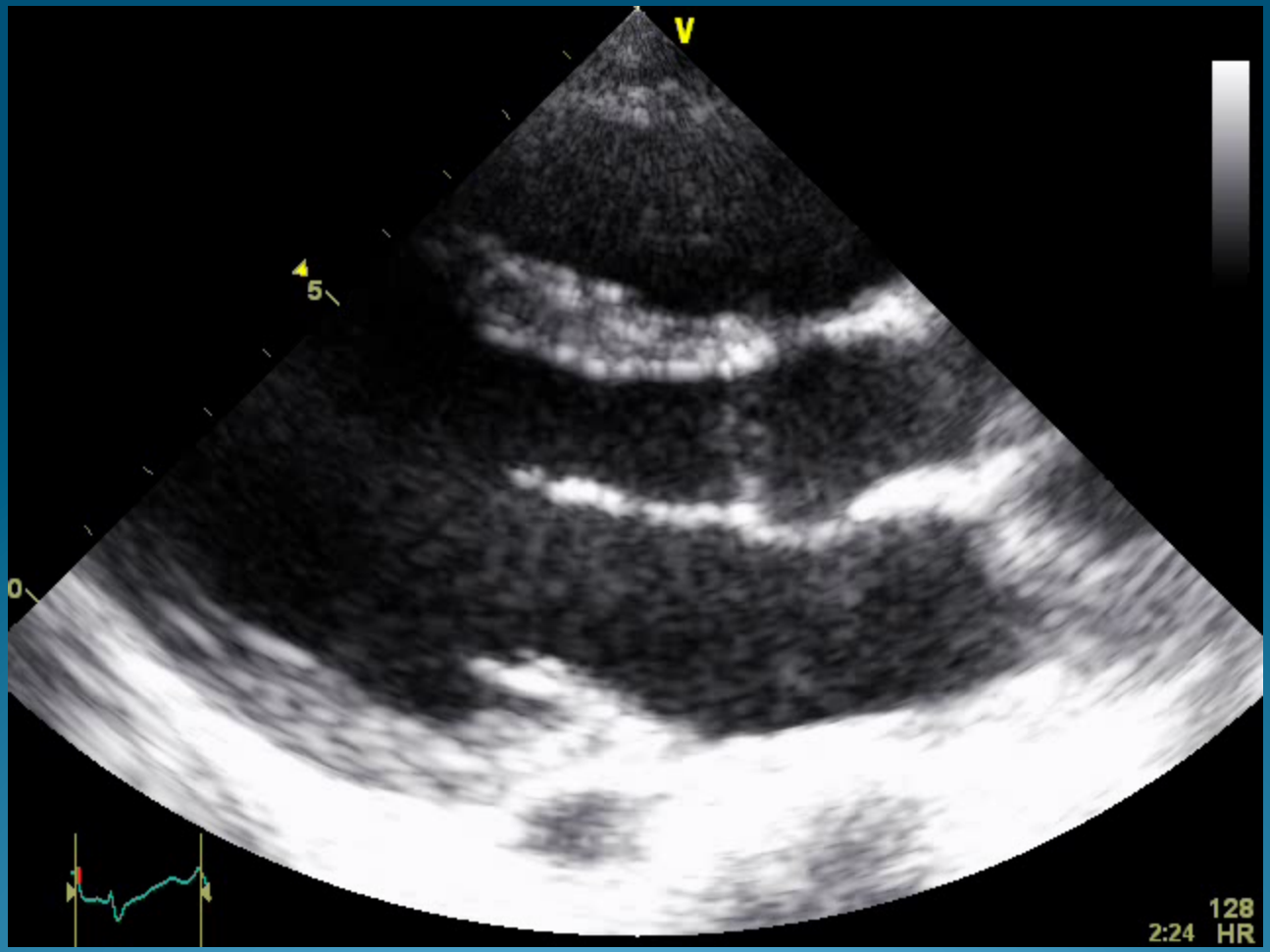
Echocardiographic Findings in Fulminant and Acute Myocarditis

G. Michael Felker, MD,* John P. Boehmer, MD, FACC,*‡ Ralph H. Hruban, MD,†

JACC Vol. 36, No. 1, 2000
July 2000:227–32

- Fulminant myocarditis
  - Near normal LV dimension
  - Markedly decreased LV EF+++
  - Increased septal thickness+++
- Acute myocarditis
  - Dilated LV
  - Markedly decreased LV EF+++
  - Normal septal thickness+++


2
1
2 A 14.78 cm2
1 A 16.60 cm2
V
5
10
1
2
129
HR


V
5
0
128
2:24 HR

Myocardite

Echo

Autres aspects :

- Trouble de la contractilité segmentaire (STRAIN)
- Trouble de la fonction diastolique
- Thrombi
- Epanchement péricardique

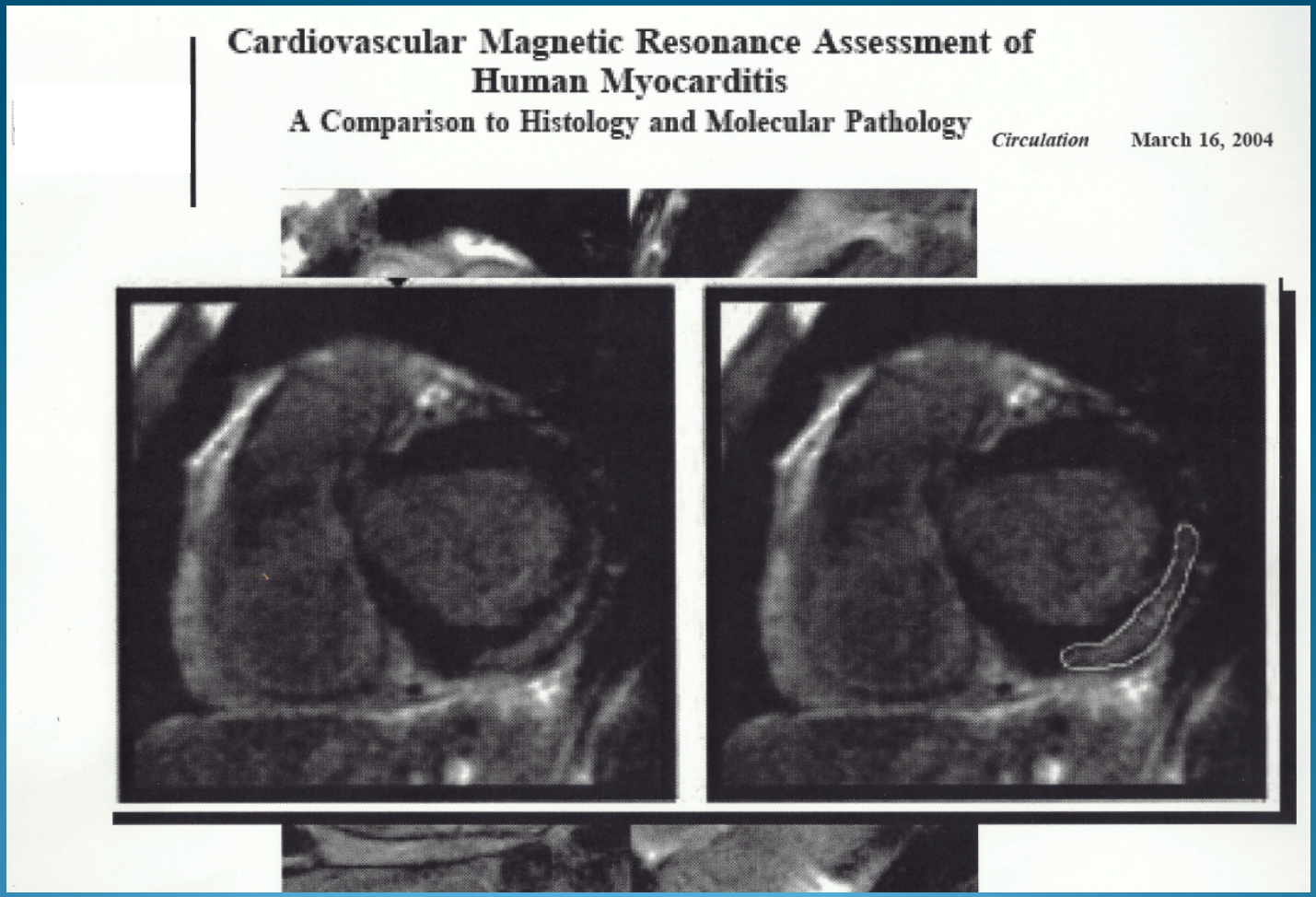
Myocardite
Coronarographie

- La plupart des patients ont cet examen
- Douleur thoracique, augmentation de la Tropo
- Normal

Myocardite

IRM cardiaque

GOLD standard



AHA/ACCF/ESC Scientific Statement

The Role of Endomyocardial Biopsy in the Management of Cardiovascular Disease

A Scientific Statement From the American Heart Association, the American College of Cardiology, and the European Society of Cardiology

Circulation 2007;116;2216-2233

Table 2. The Role of Endomyocardial Biopsy in 14 Clinical Scenarios

Scenario Number	Clinical Scenario	Class of Recommendation (I, IIa, IIb, III)	Level of Evidence (A, B, C)
1	New-onset heart failure of *<2 weeks'* duration associated with a normal-sized or dilated left ventricle and hemodynamic compromise	I	B
13	Unexplained ventricular arrhythmias	IIb	C
14	Unexplained atrial fibrillation	III	C

Grade 1, Level B:

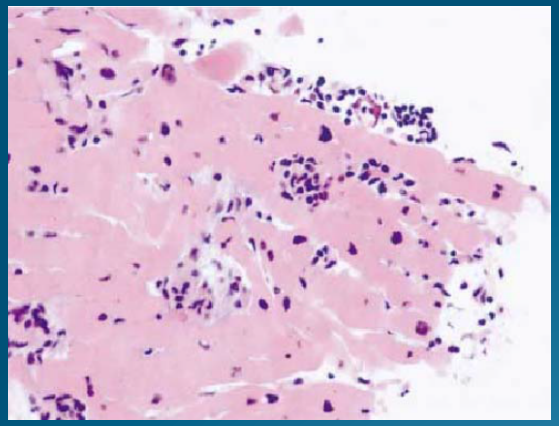
EMB may provide unique and clinically meaningful information and should be performed in the setting of unexplained, new-onset heart failure of 2 weeks' duration associated with a normal-sized or dilated left ventricle in addition to hemodynamic compromise.

Troubles de la conduction et Troubles du rythme

Myocardite

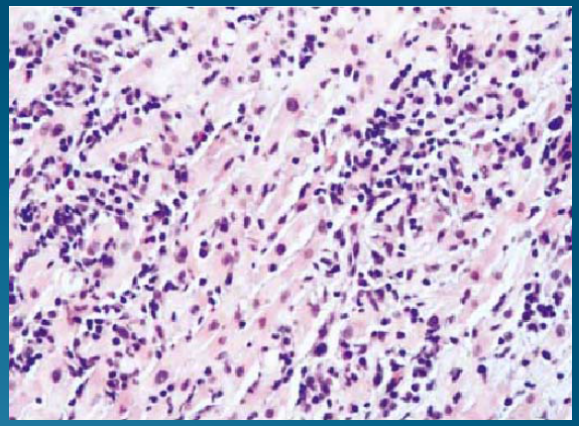
Biopsie

Critères de DALLAS



Borderline

Normale



Actif

Intérêts :

- Hypersensibilité
- Cellules géantes
- Strepto
- Sarcoïdose, granulome
- Lupus (cellules LE)

Myocardite

Pronostic

Le pronostic de la péricardite avec ou sans composante myocardique, est bon

Résultats d'une étude de cohorte prospective multicentrique

Massimo Imazio, MD ; Antonio Brucato, MD ; Andrea Barbieri, MD ; Francesca Ferroni, MD ; Silvia Maestroni, MD ; Guido Ligabue, MD ; Alessandra Chinaglia, MD ; Davide Cumetti, MD ; Giovanni Della Casa, MD ; Federica Bonomi, MD ; Francesca Mantovani, MD ; Paola Di Corato, MD ; Roberta Lugli, MD ; Riccardo Faletti, MD ; Stefano Leuzzi, MD ; Rodolfo Bonamini, MD ; Maria Grazia Modena, MD ; Riccardo Belli, MD

- Douleur thoracique
- Frottement péricardique, Epanchement péricardique
- Sus-décalage diffus du segment ST
- Sous-décalage du segment PR
- Elévation troponine
- Coro : normale
- IRM : GOLD standard

Circulation. 2013;128:42–49.

Myocardite
Pronostic

ATTENTION

⇨ Possible évolution grave :
insuffisance cardiaque, choc cardiogénique, arrêt cardiaque

⇨ Hospitalisation soins intensifs

⇨ Suivi CRP, Tropo, BNP, écho

Myocardite
Pronostic

Rechute possible

Surtout post-partum

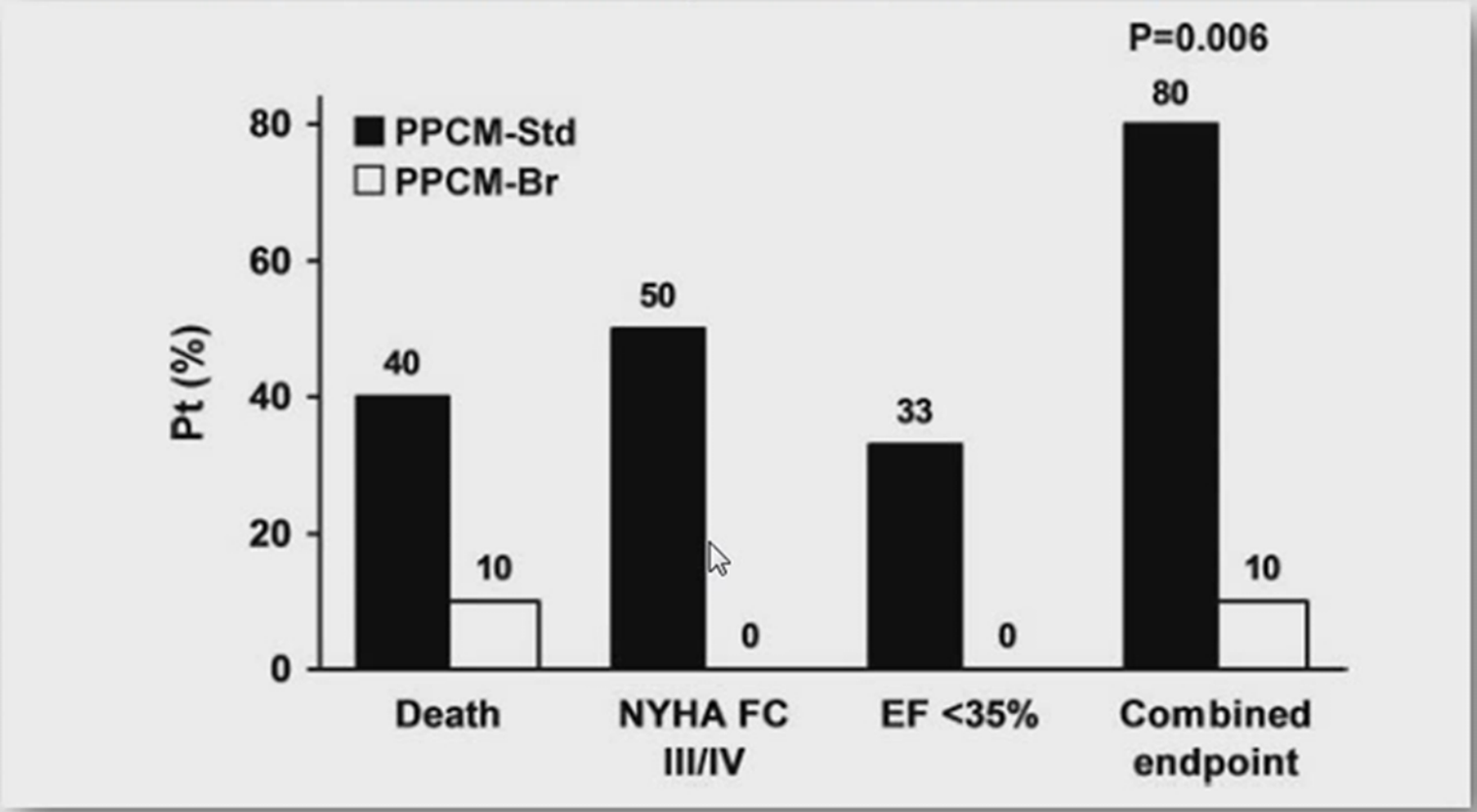
Myocardite
Prise en charge thérapeutique

Formes bénignes le plus souvent ++	Formes graves
Savoir y penser Doser la troponine • Aspegic 1g pendant 10 jours • Colchicine 1 cp pendant 3 mois	Medical : • IEC • Diurétiques • Dobutamine • Héparine Assistance circulatoire (si FEVG < 20%) Transplantation cardiaque

Evaluation of Bromocriptine in the Treatment of Acute Severe Peripartum Cardiomyopathy

A Proof-of-Concept Pilot Study

Karen Sliwa, MD, PhD; Lori Blauwet, MD; Kemi Tibazarwa, MD; Elena Libhaber, PhD; Jan-Peter Smedema, MD, MMed(Int); Anthony Becker, MD; John McMurray, MD, FESC; Hatice Yamac, MD; Saida Labidi, MSc; Ingrid Struhman, PhD; Denise Hilfiker-Kleiner, PhD



Specific/Novel treatments

- Immunosuppression si :
  - Cellules géantes
  - Maladie auto-immune

  Corticoides

  Cyclosporine, Tacrolimus

  Azathioprine

- Traitements spécifiques++ :
  - Lupus
  - Sarcoidose

- Macrolides, Cellules T régulatrices (recherche)

Myocardite

Conclusion

- Diagnostic basé sur : clinique, ECG, écho, Tropo, **IRM**
- Prend souvent la forme d'un SCA : coro normale
- Formes bénignes le + souvent
- Myocardite aigue : probablement responsable de nombreuses cardiopathies dilatées → doser la troponine devant un tableau atypique
- Savoir reconnaître très précocement une **forme fulminante** dont l'évolution peut être rapidement défavorable (en quelques heures : choc cardiogénique, insuffisance cardiaque réfractaire, arrêt cardiaque) et :
  - Diriger le malade le + rapidement possible vers un centre spécialisé
  - Implanter une assistance circulatoire (temporaire++) si FE < 20%
- Traitement spécifiques pour quelques patients (sarcoïdose , lupus , maladies AI)
- Guérison 3 semaines