

# RHYTHM 2019

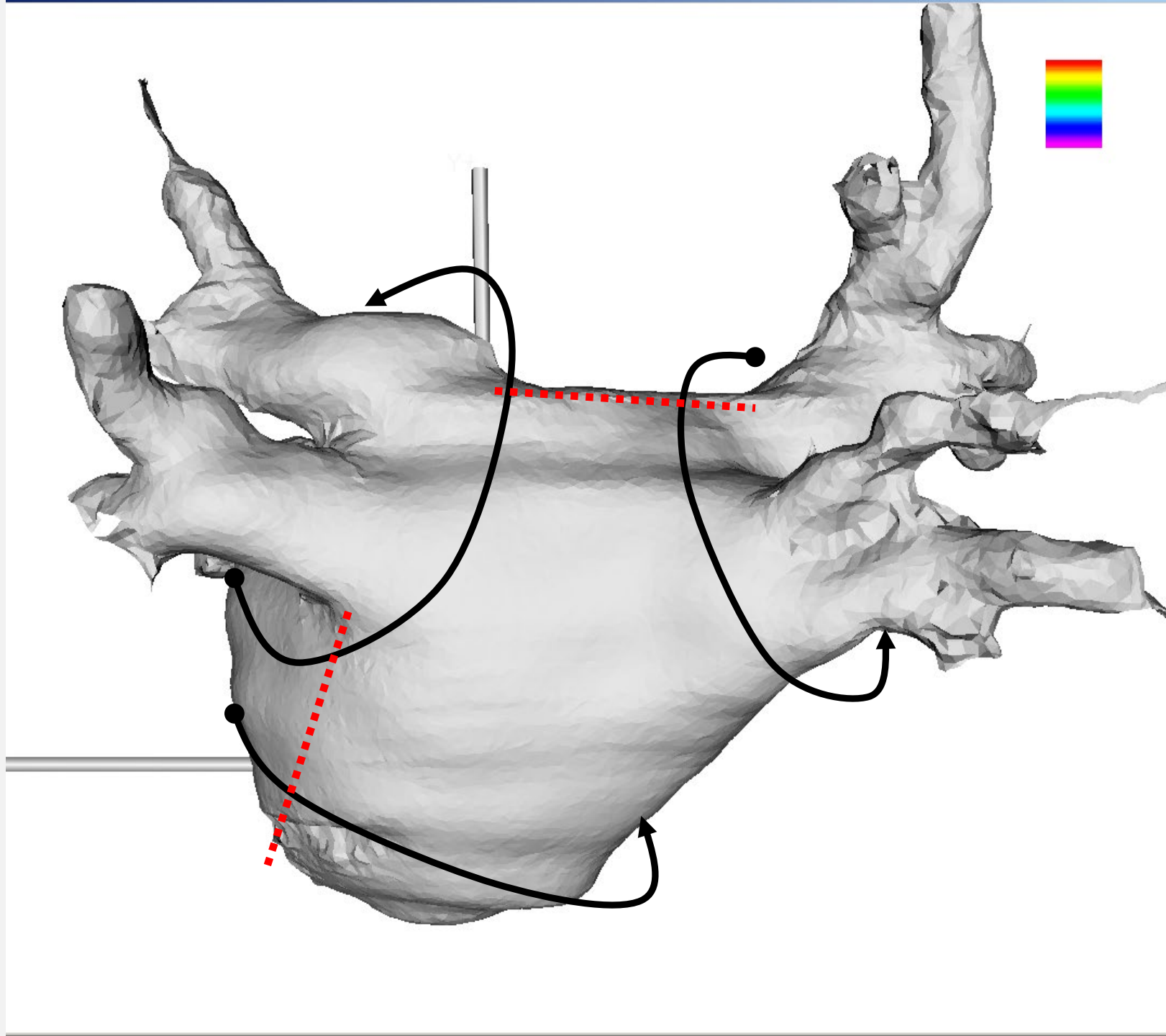
Session paramédicale, 18/10/2019

**DE L'ECG DE SURFACE À L'EGM  
ENDOCAVITAIRE: FLUTTER GAUCHE**

Dr Clément Bars, Marseille, France

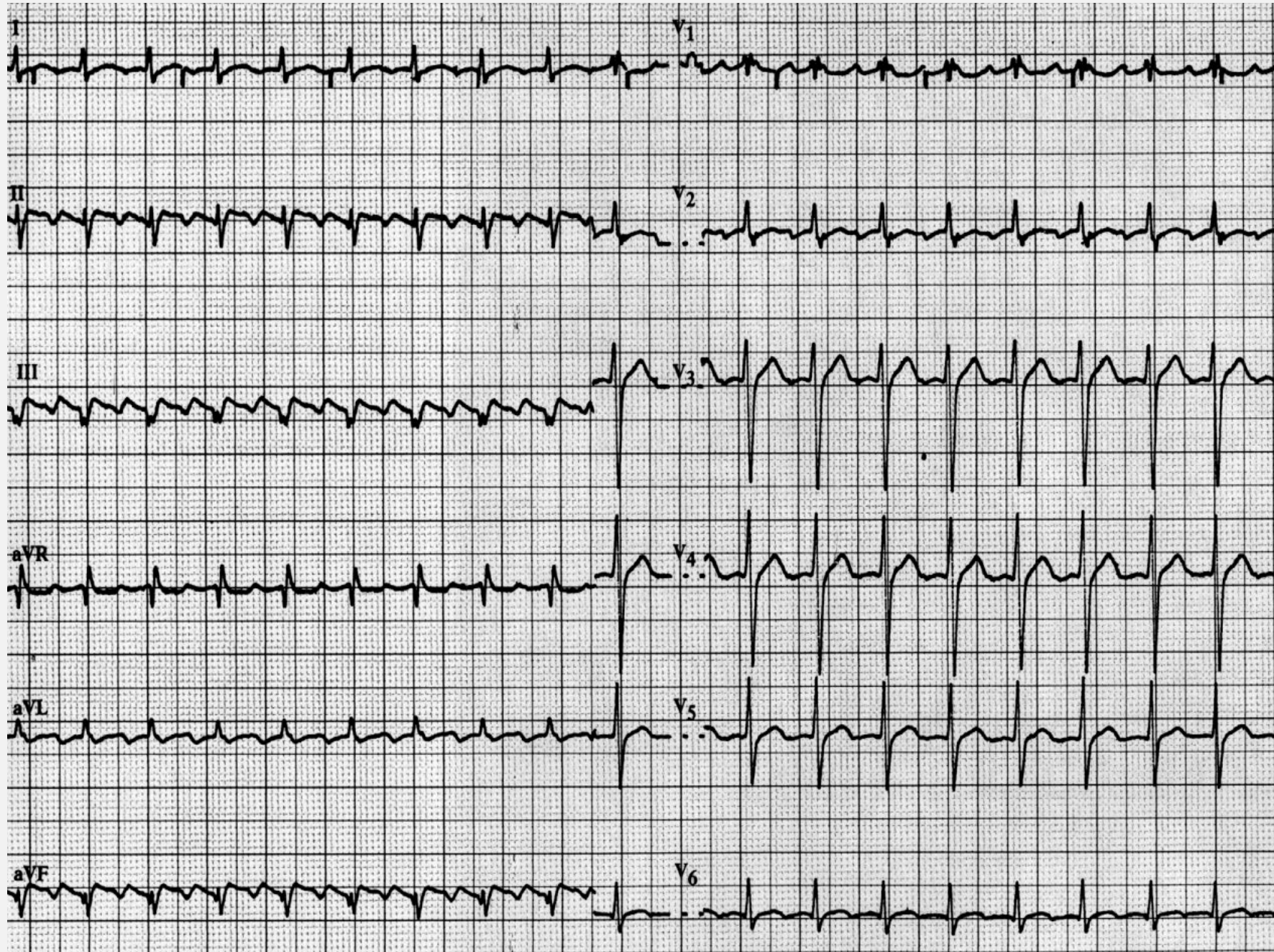
## FLUTTER GAUCHE?

- Non isthme droit-dépendant
- Macro-réentrée
- Cycle plutôt long (autour de la mitrale, autour du toit, autour d'une large cicatrice...)



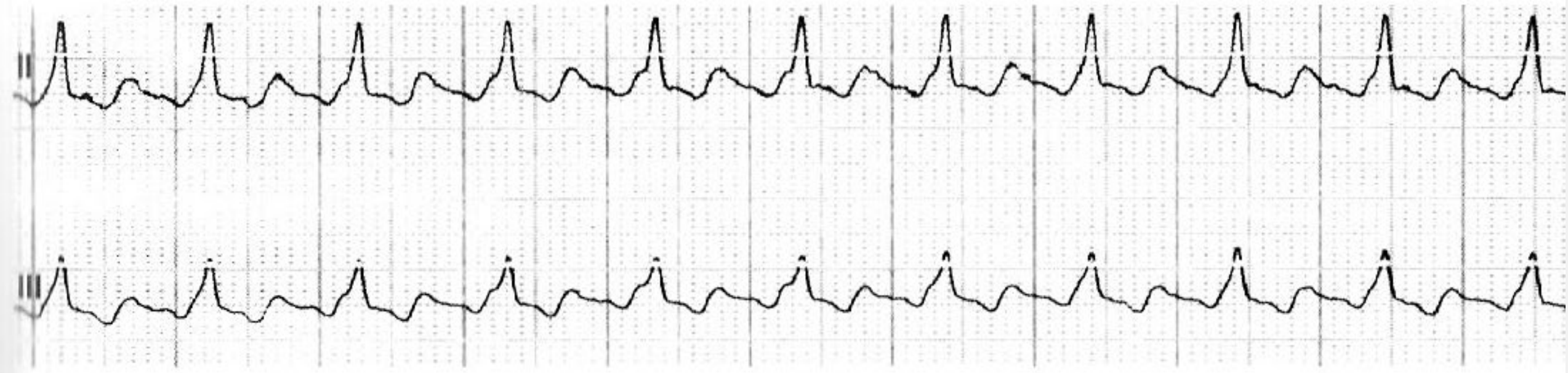
## FLUTTER GAUCHE?

- Non isthme droit-dépendant
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- Cycle plutôt long (autour de la mitrale, autour du toit, autour d'une large cicatrice...)
- ECG : Activité continue (regarder toutes les dérivations). Conduction en 2/1, 3/1,...
- Régulier, stable (activité atriale+++)



## FLUTTER GAUCHE?

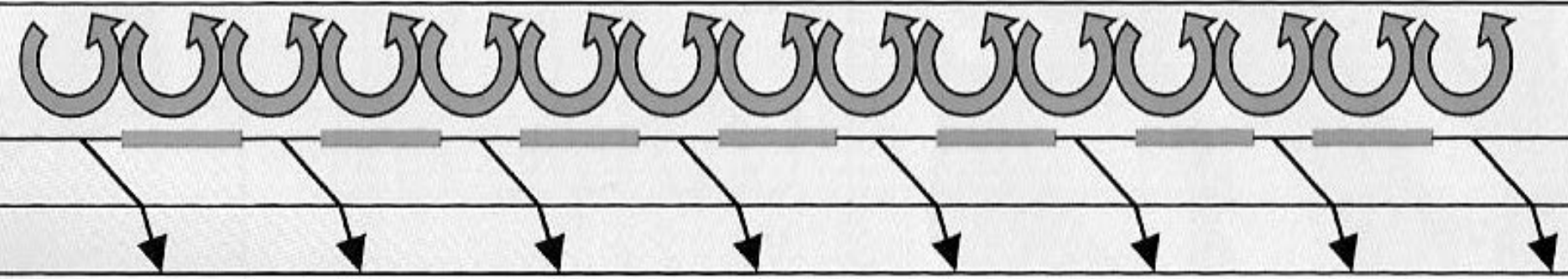
- Non isthme droit-dépendant
- Macro-réentrée
- ECG :Activité continue (regarder toutes les dérivations). Conduction en 2/1, 3/1,...
- Cycle plutôt long (autour de la mitrale, autour du toit, autour d'une large cicatrice...)
- Régulier, stable
  
- Localisées: Tachycardies atriales, gauches ou droites : micro-réentrées ou activités focales



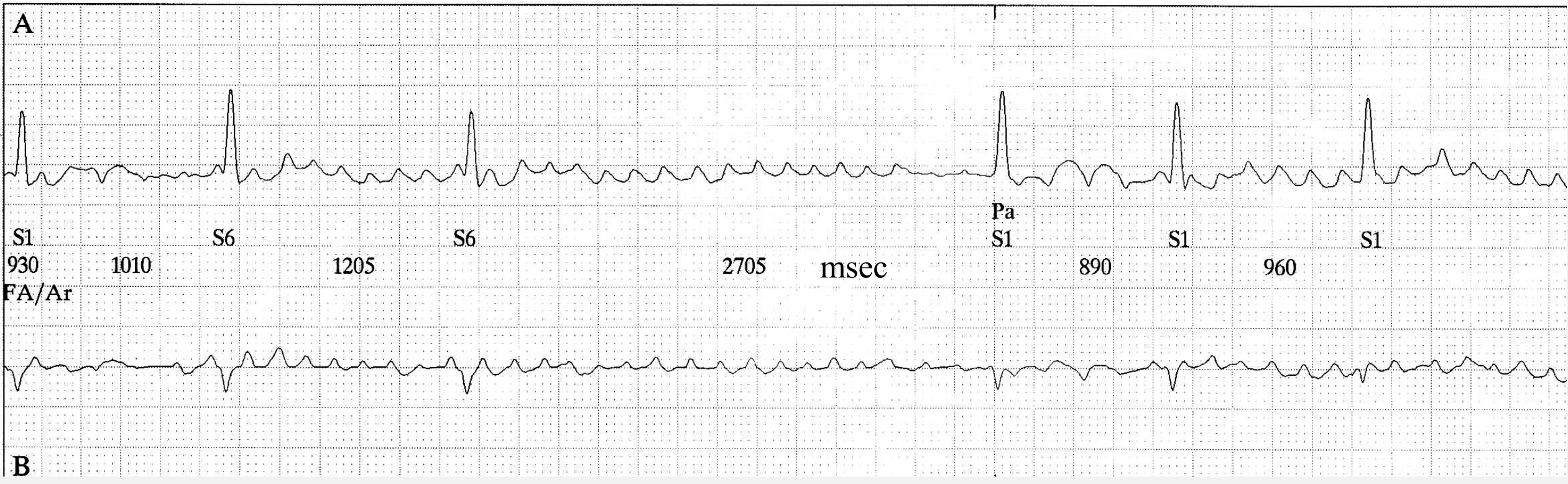
Oreillette droite  
(ondes de flutter)

Nœud AV

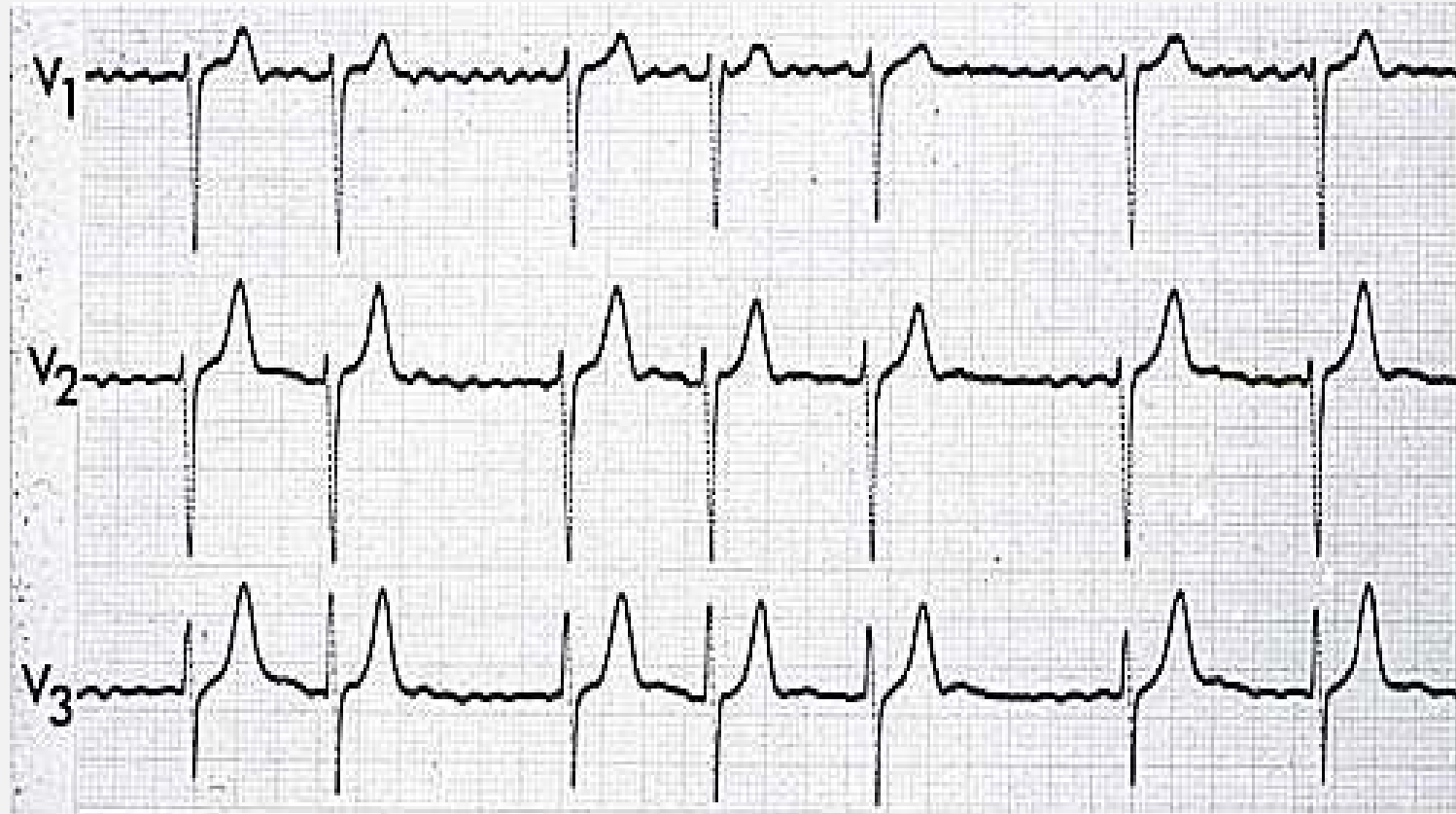
Ventricule (QRS)



03:38:52

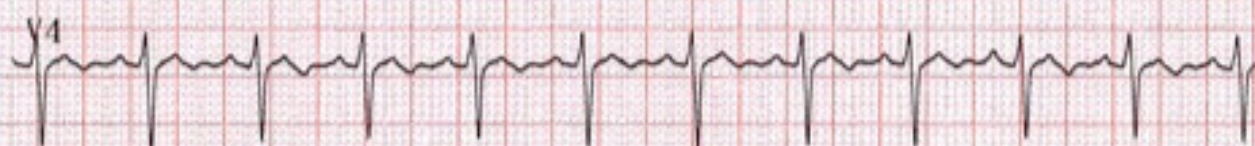
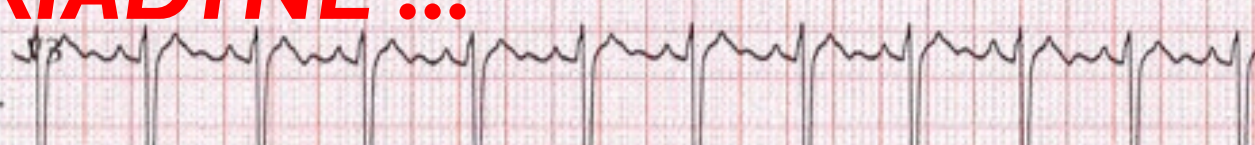
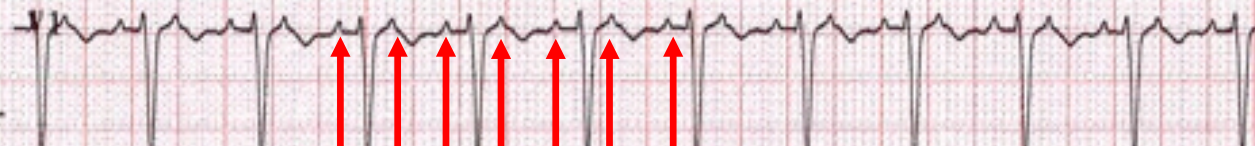
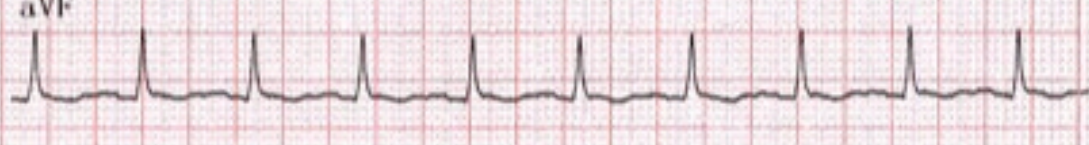
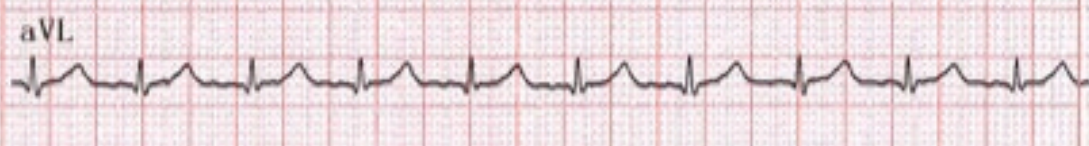
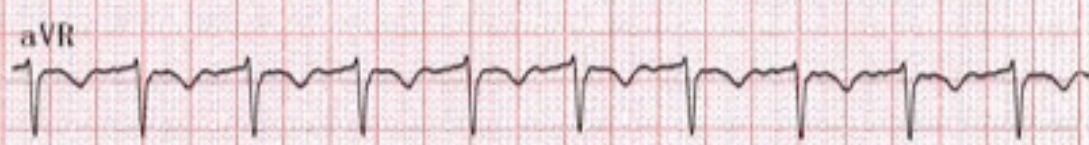
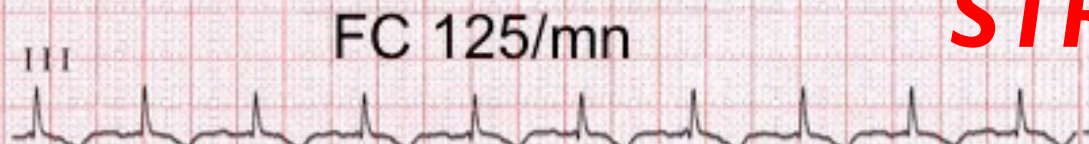




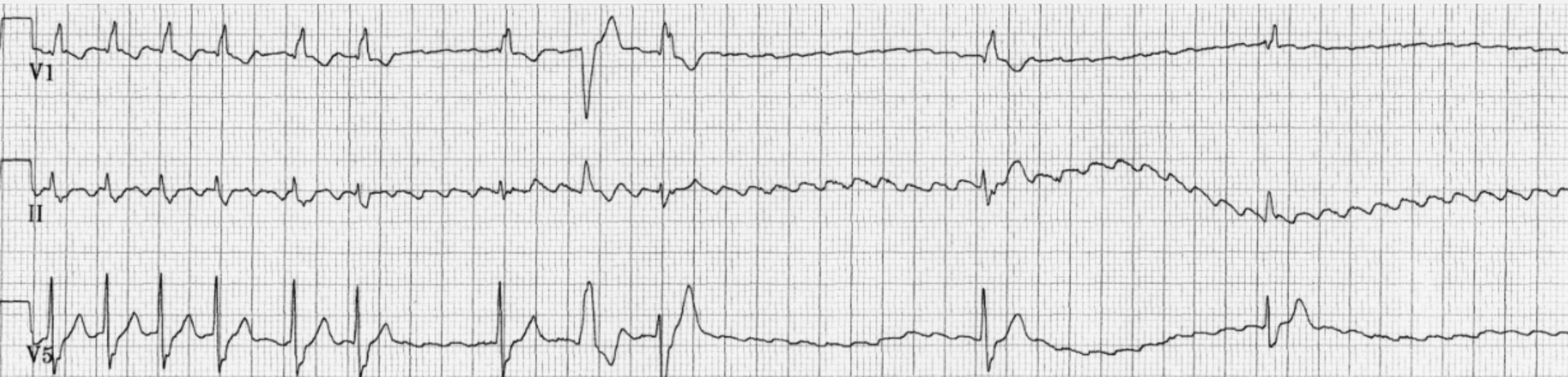


10 mm/mV 25 mm/s Filtre: H50 d 35 Hz

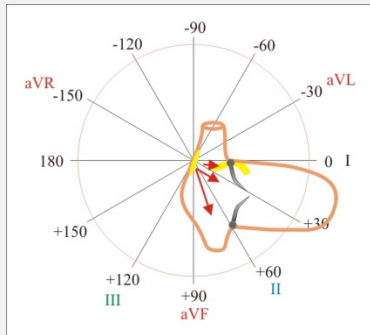
10 mm/mV



**STRIADYNE !!!**



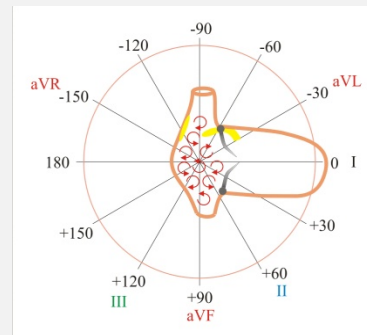
# DEVANT UNE TSV



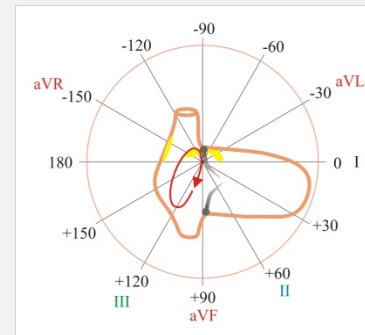
Sinusal?



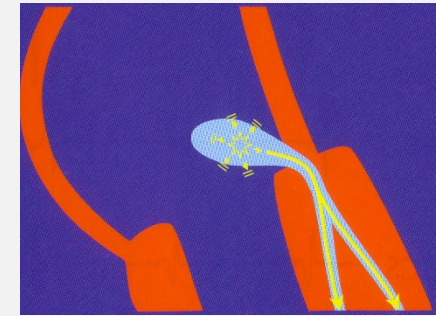
TA?



FA?



Flutter?

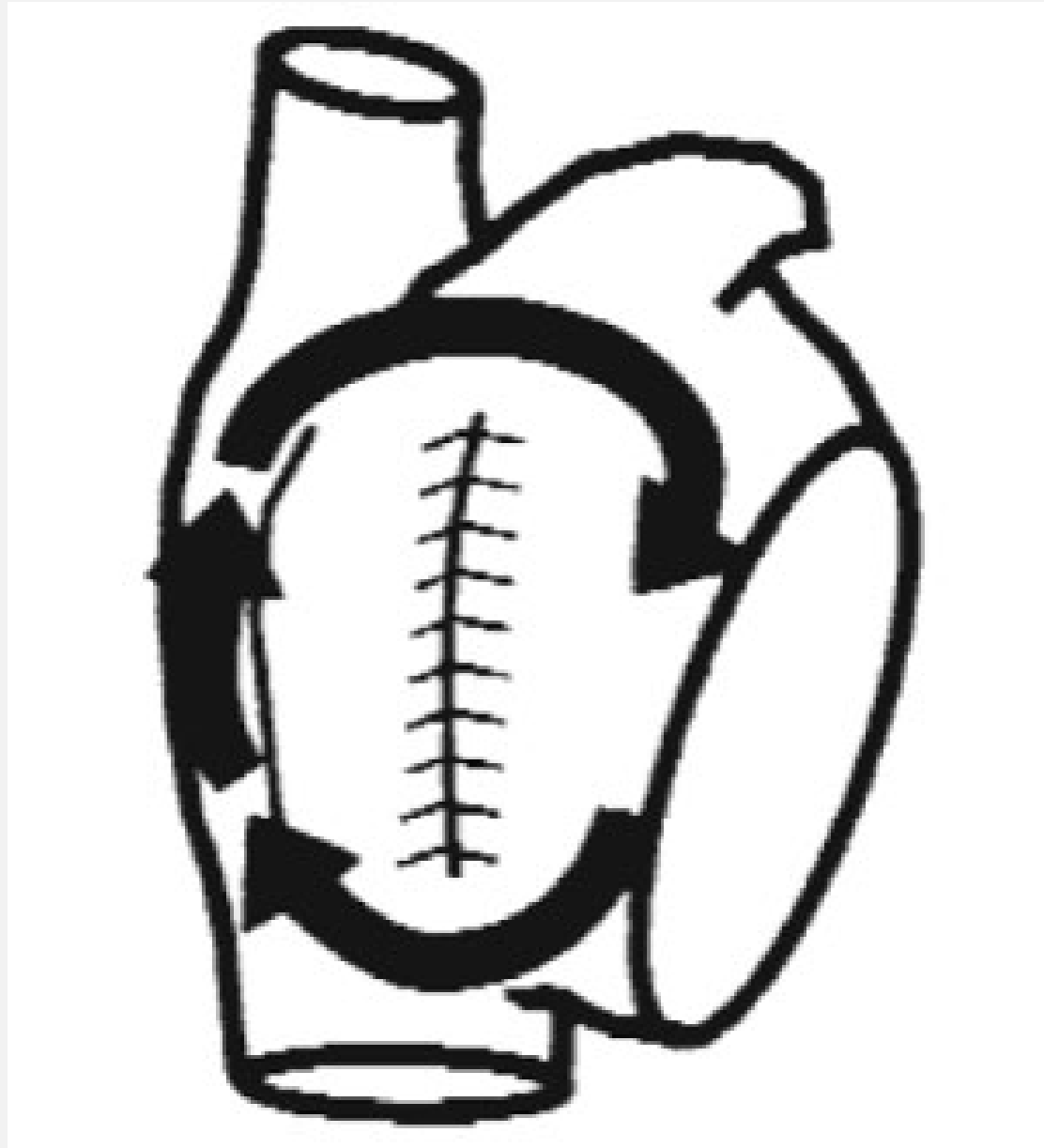


TJ?

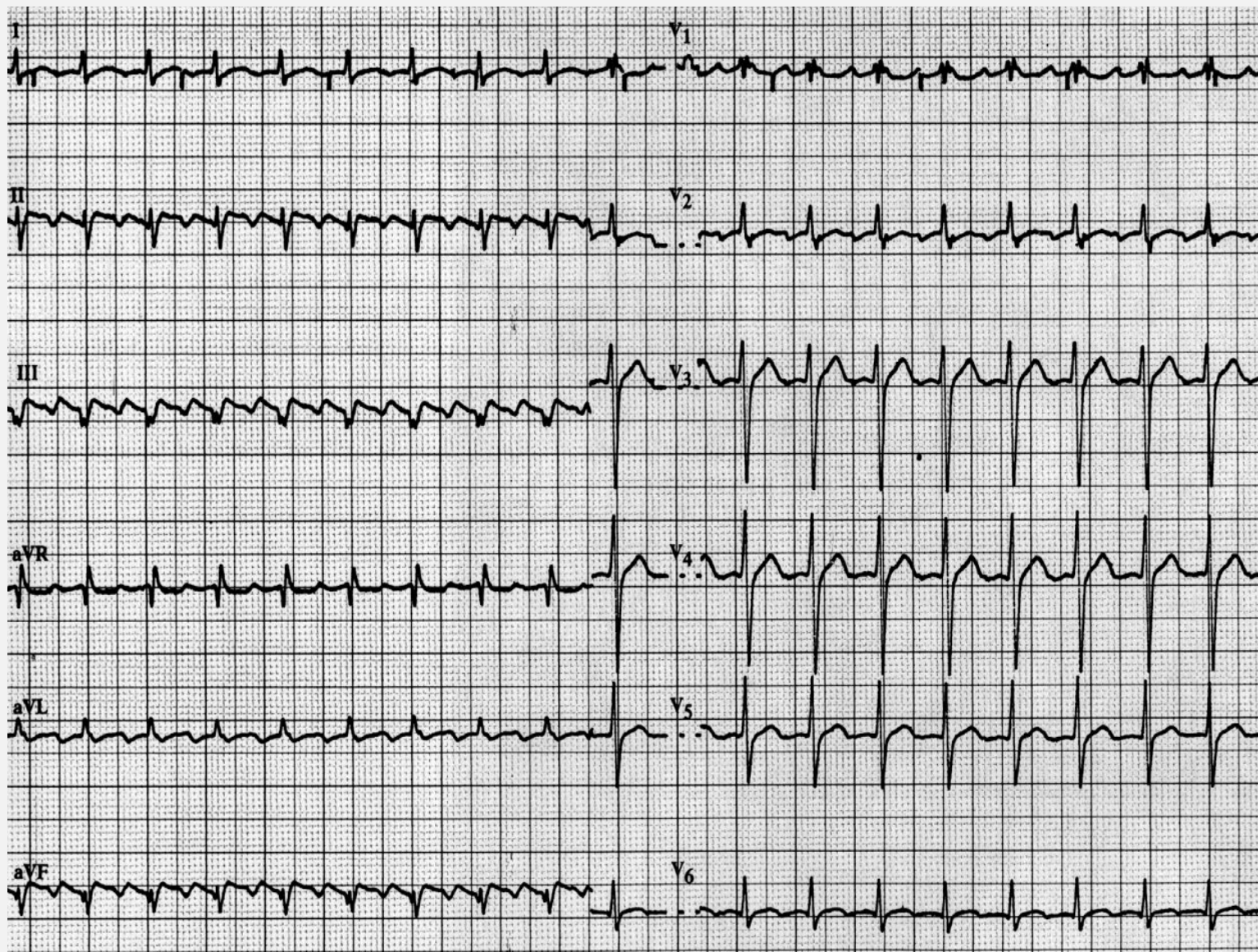
**Doute : manœuvres vagales ou adénosine**

# FLUTTER ATYPIQUE

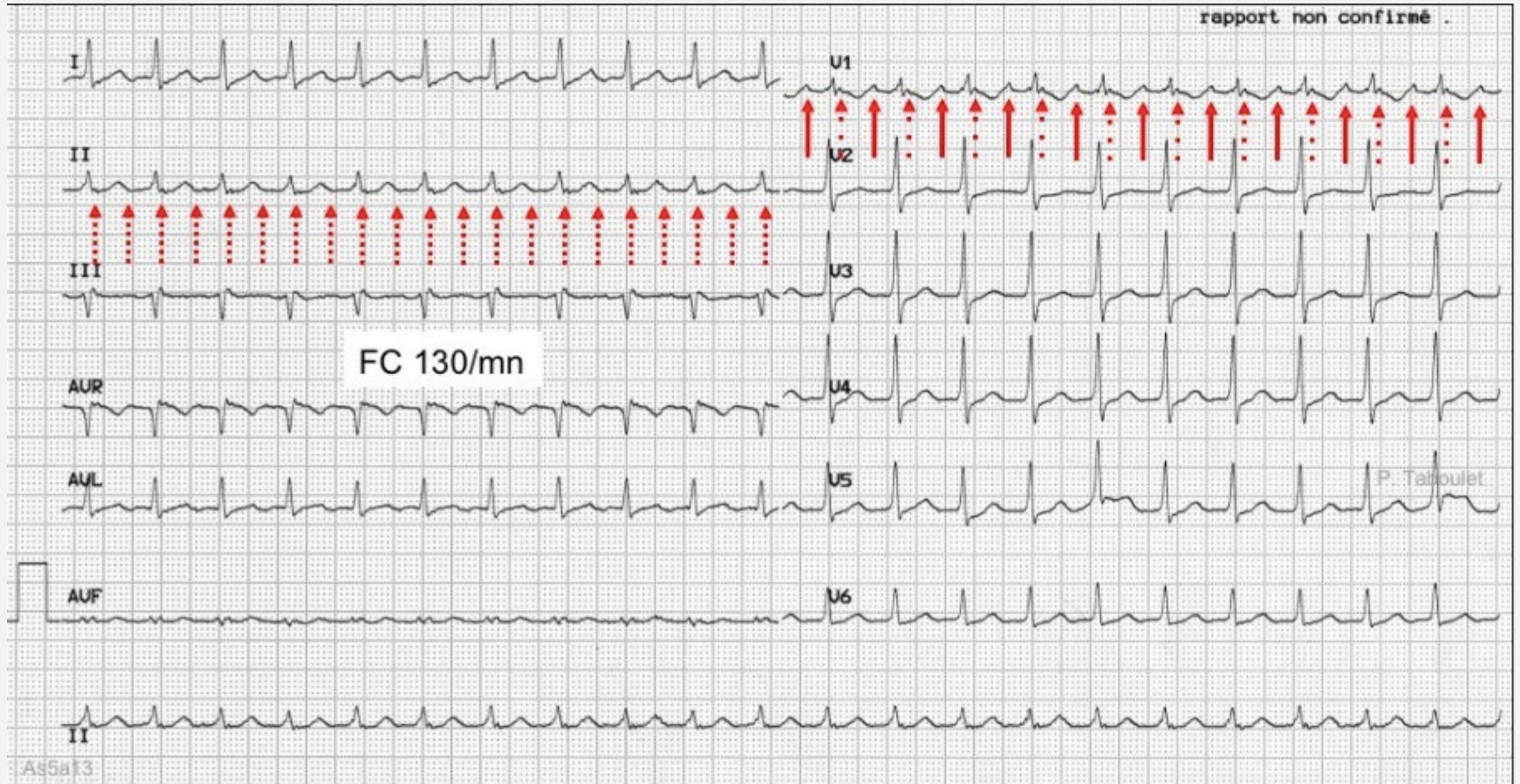
- Post ablation FA+++ (immédiat ou second temps)
- Post chirurgie cardiaque (canulation OD: cicatrices)
- Présentation initiale



# ASPECT FLUTTER COMMUN

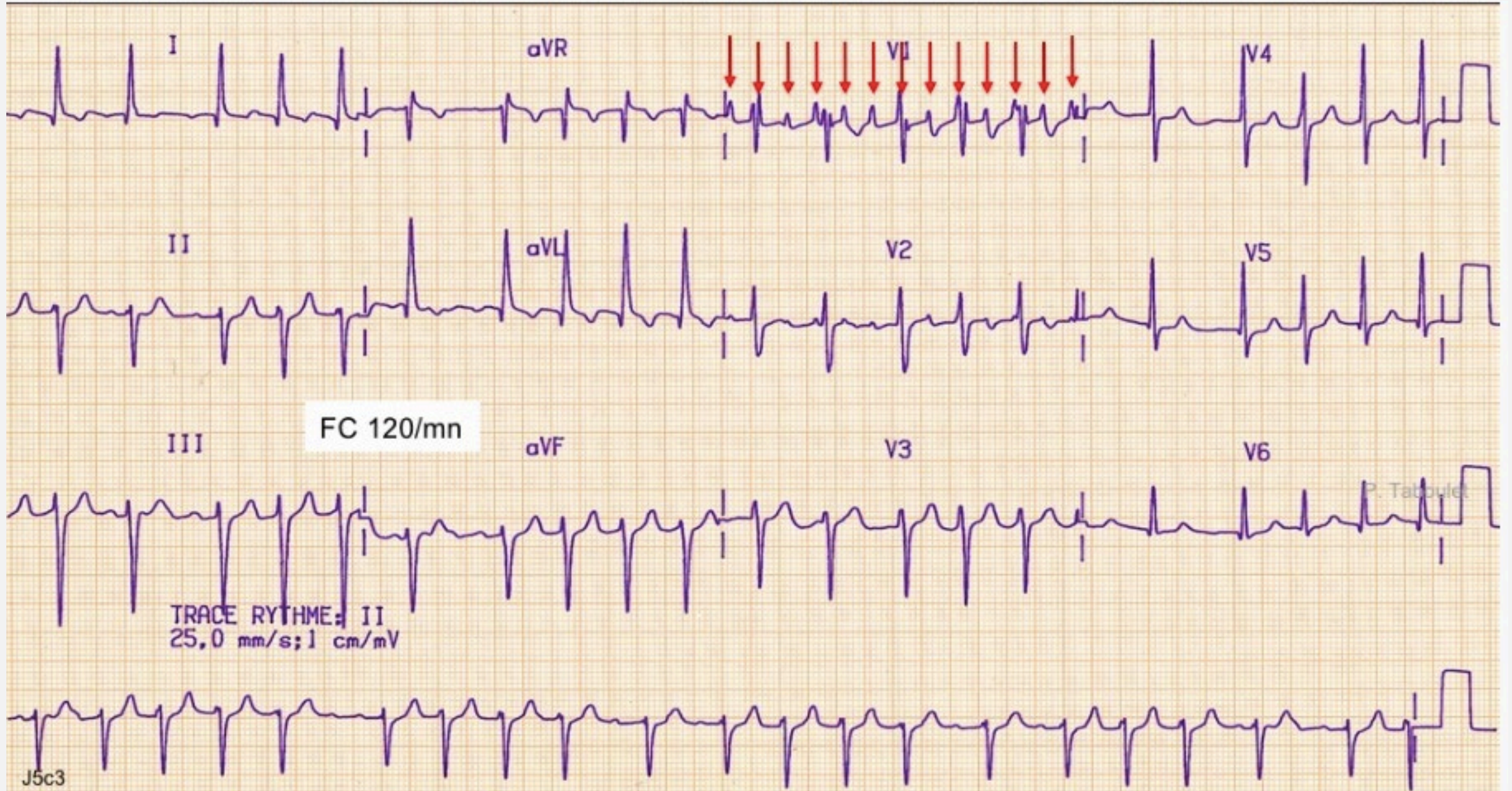


# Flutter gauche ?



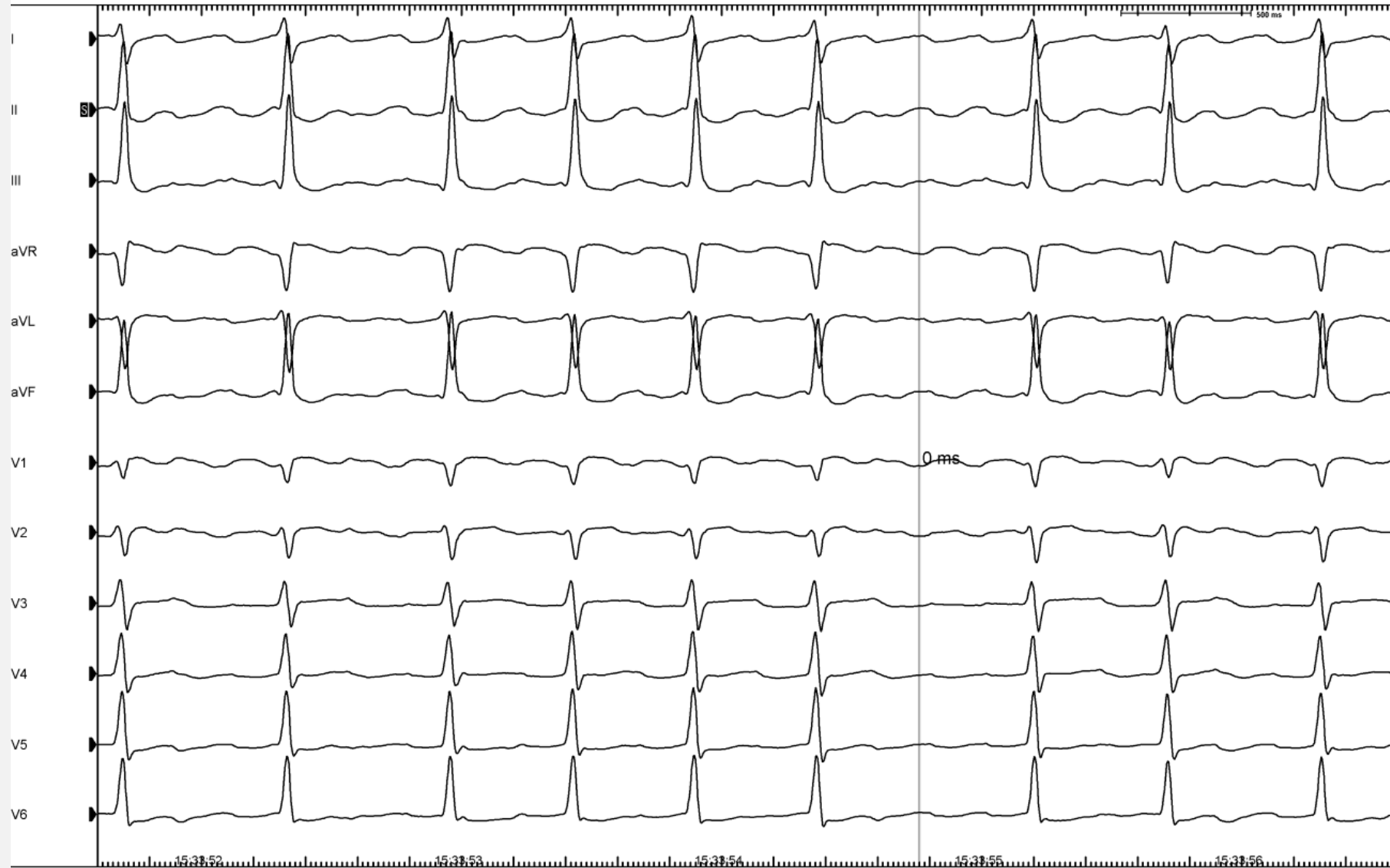


# Flutter gauche ?

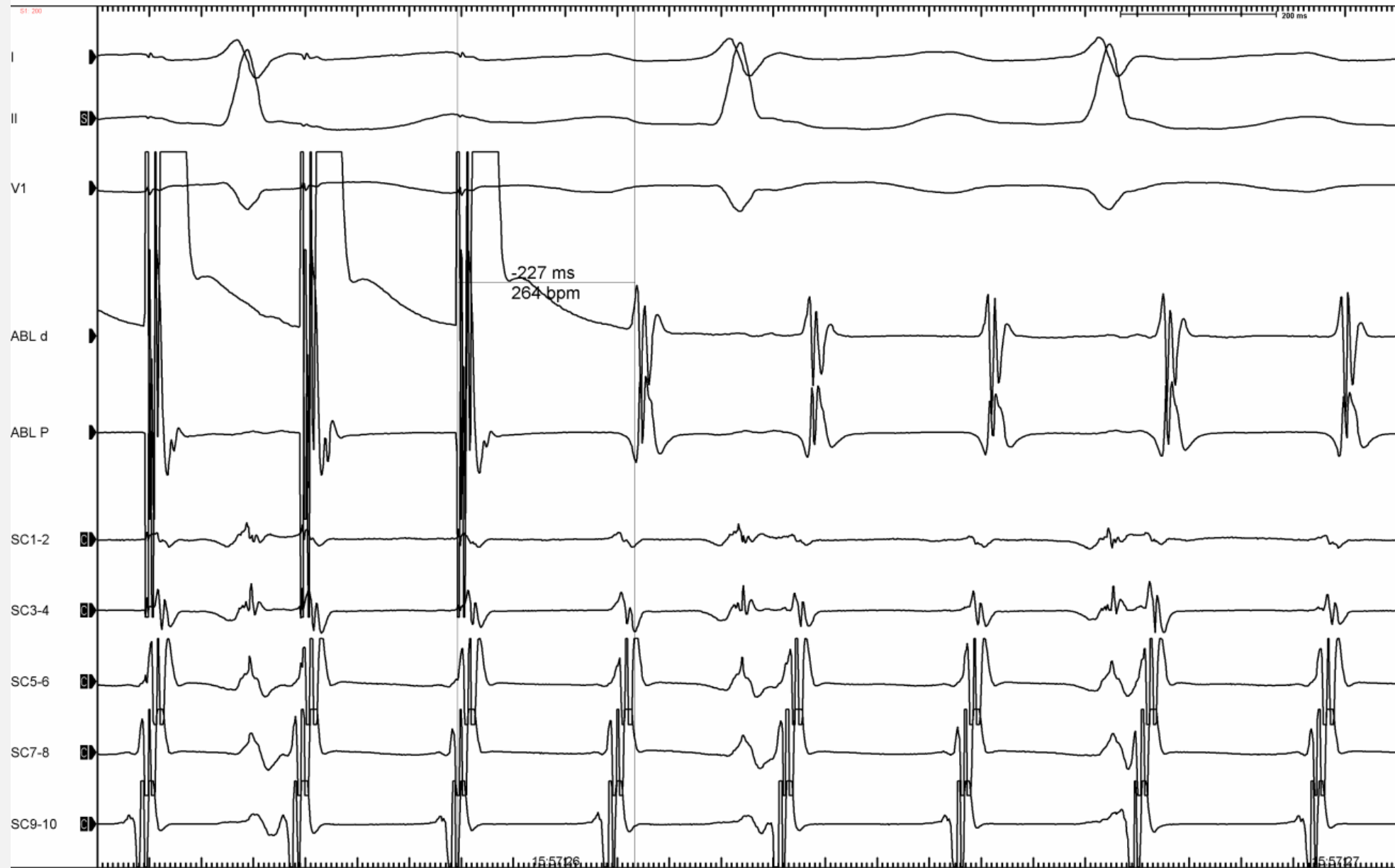


# Flutter gauche ?

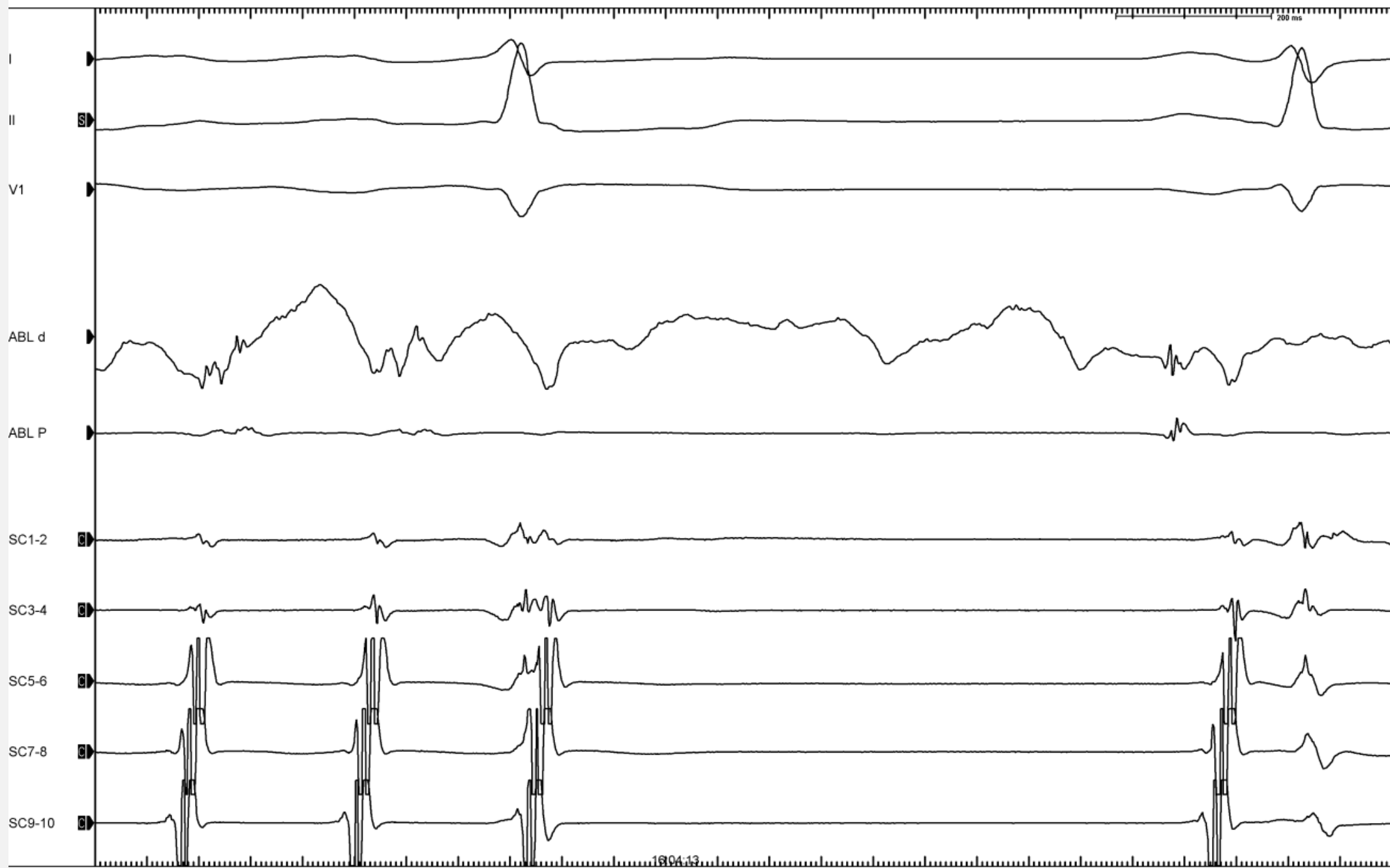
FLUTTER



ppi ok sur ict

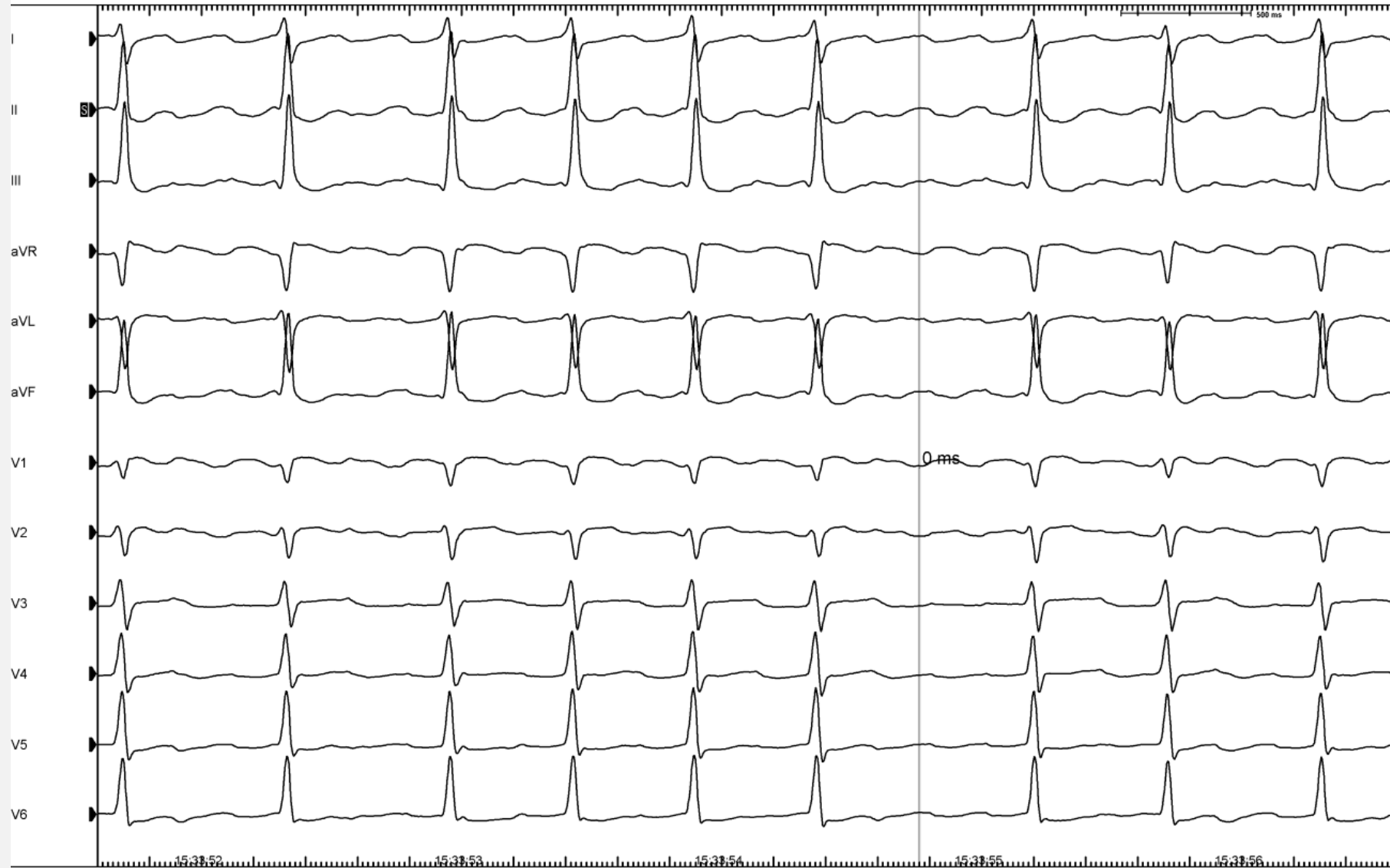


CS 225 MS



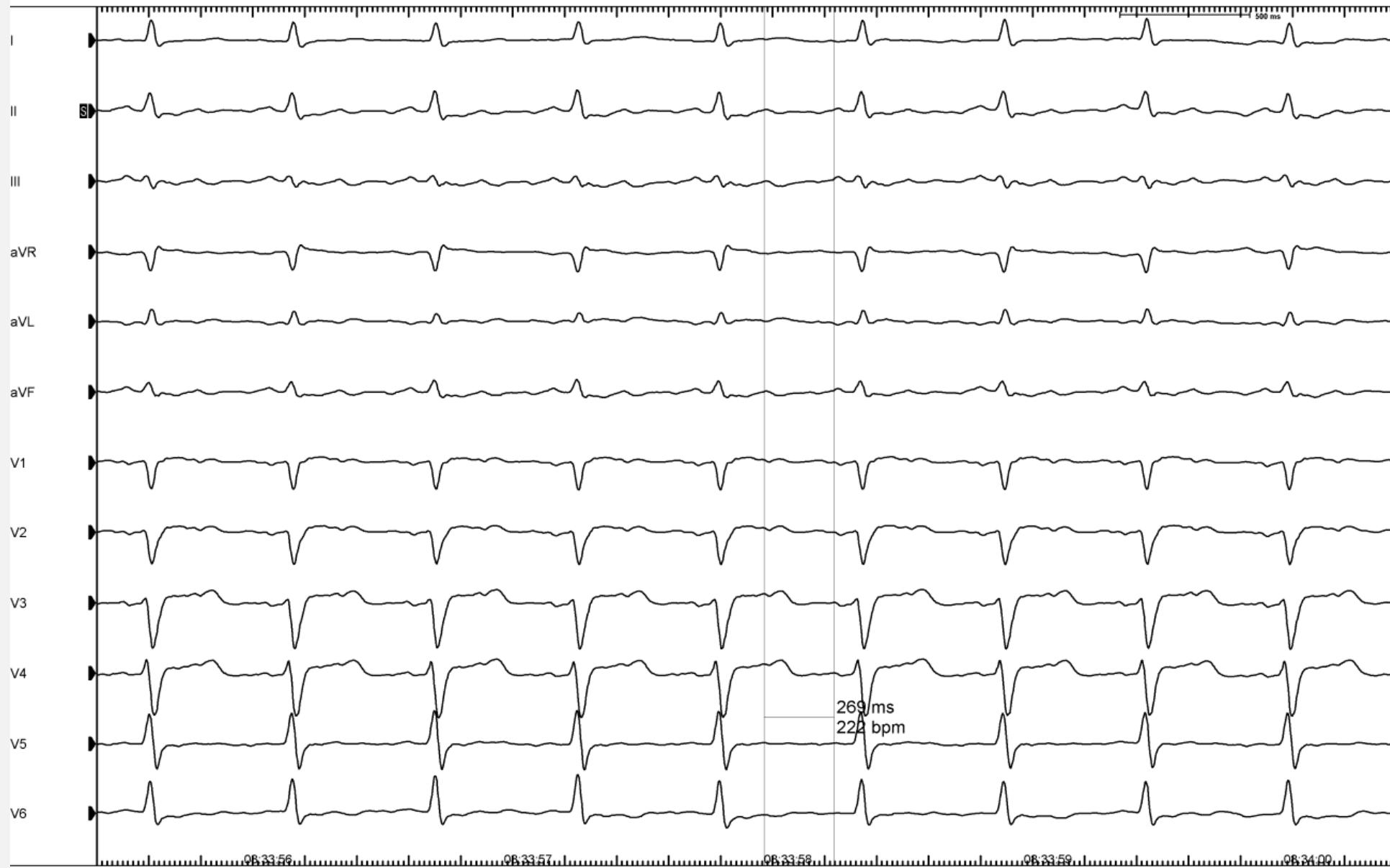
# Flutter isthmique droit horaire

FLUTTER

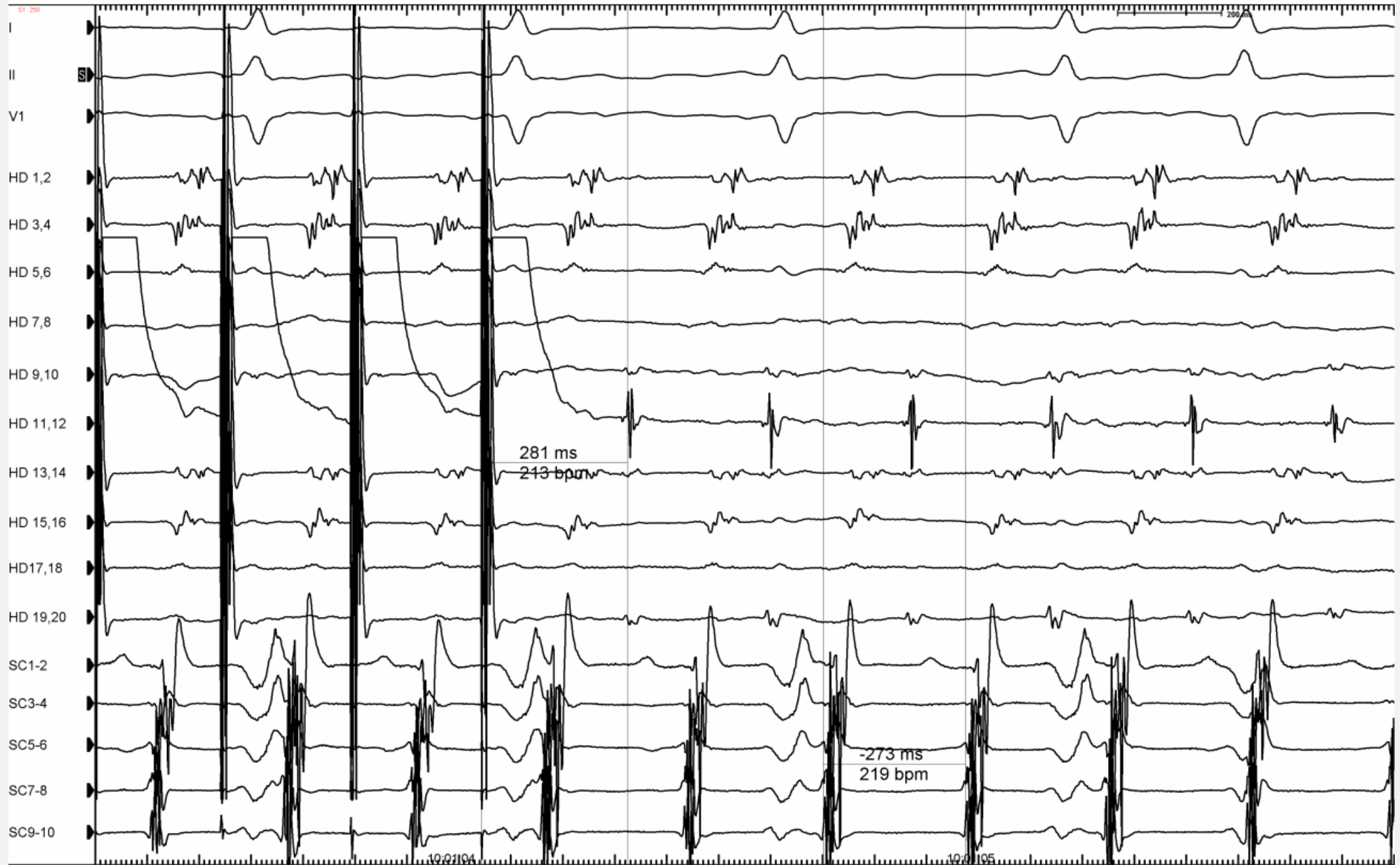


# Flutter post ablation FA

ECG INITIAL TA 270MS

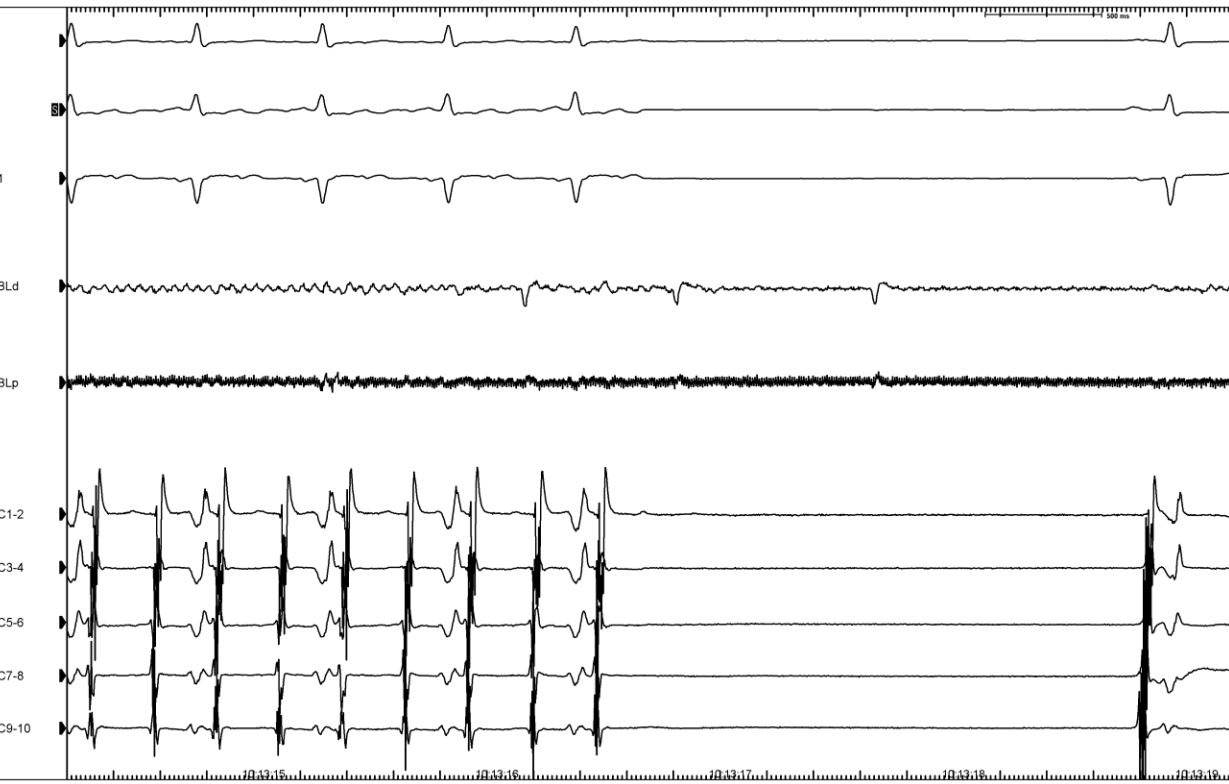


# PPI TOIT

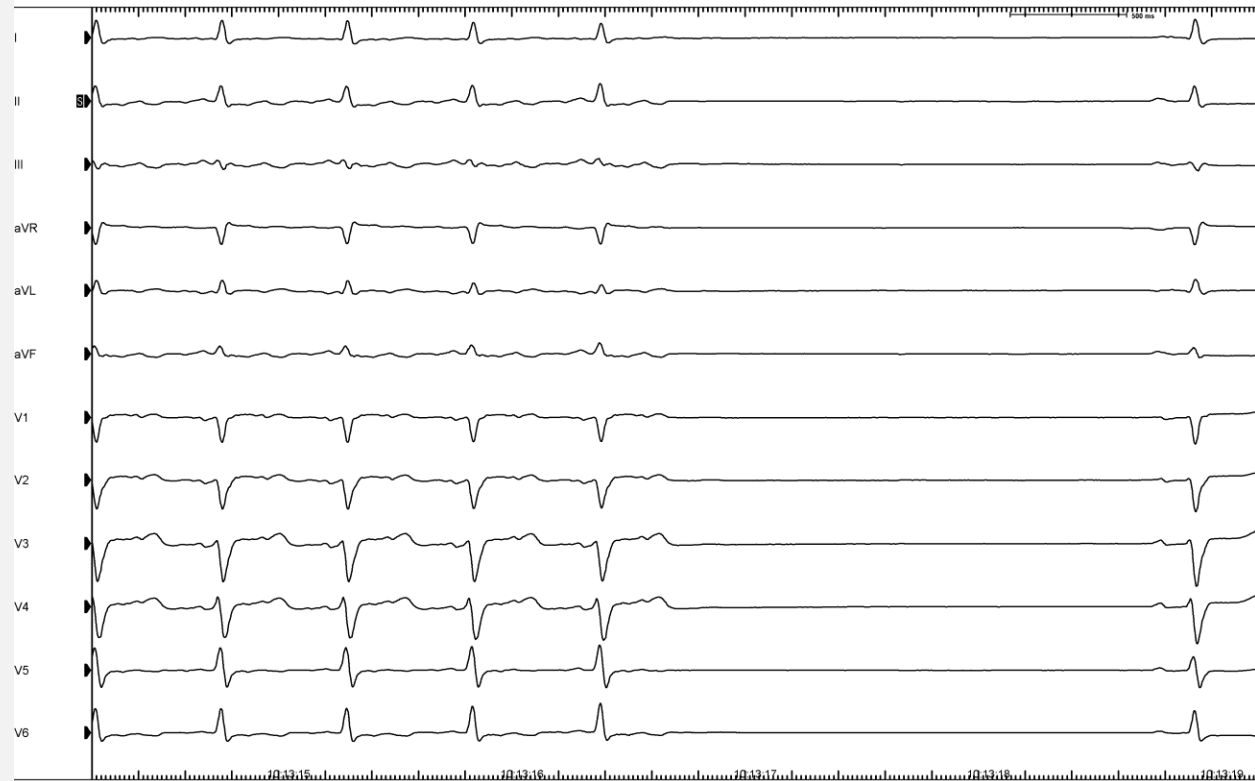


# Flutter du toit

SINUSAL ENDO

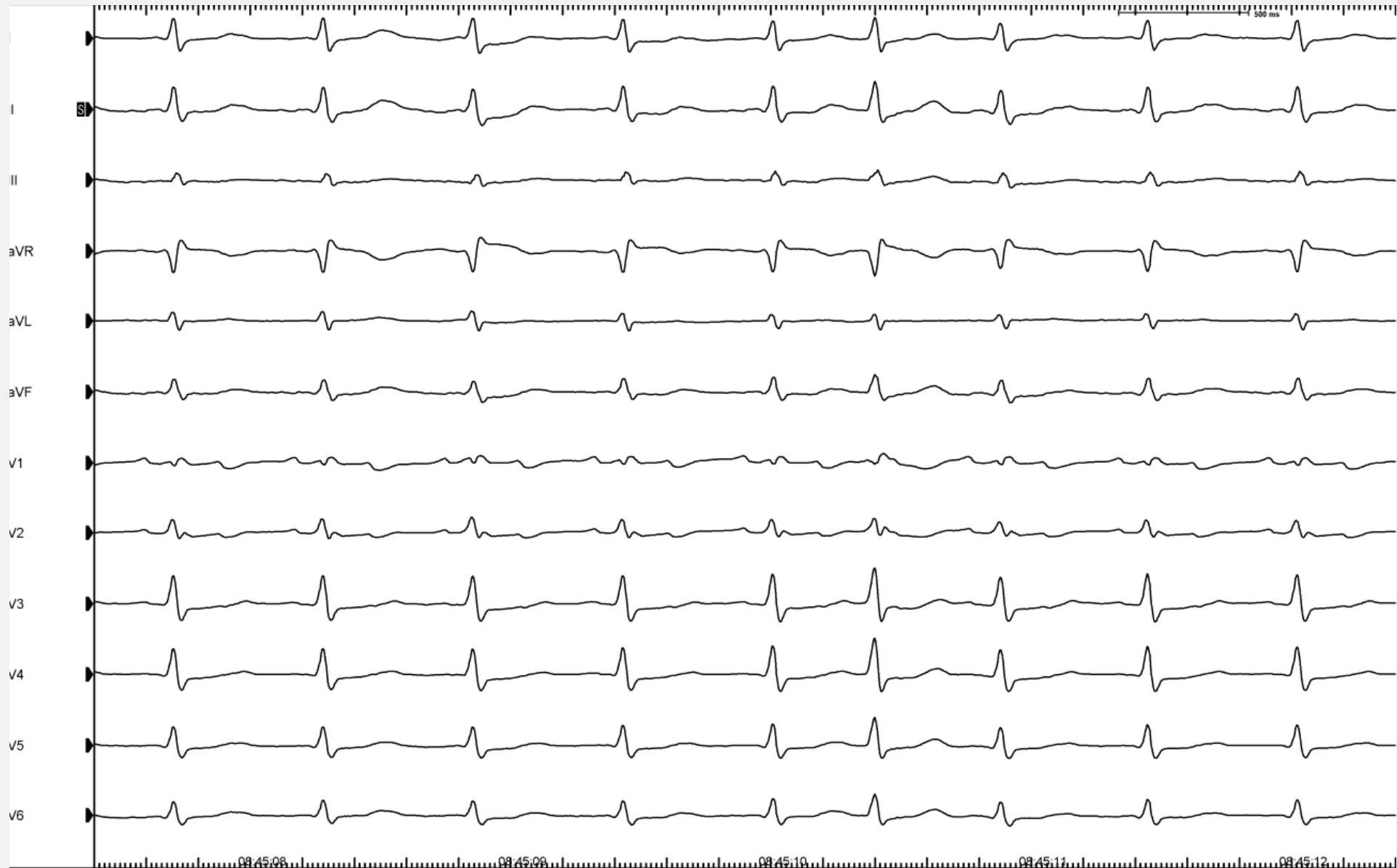


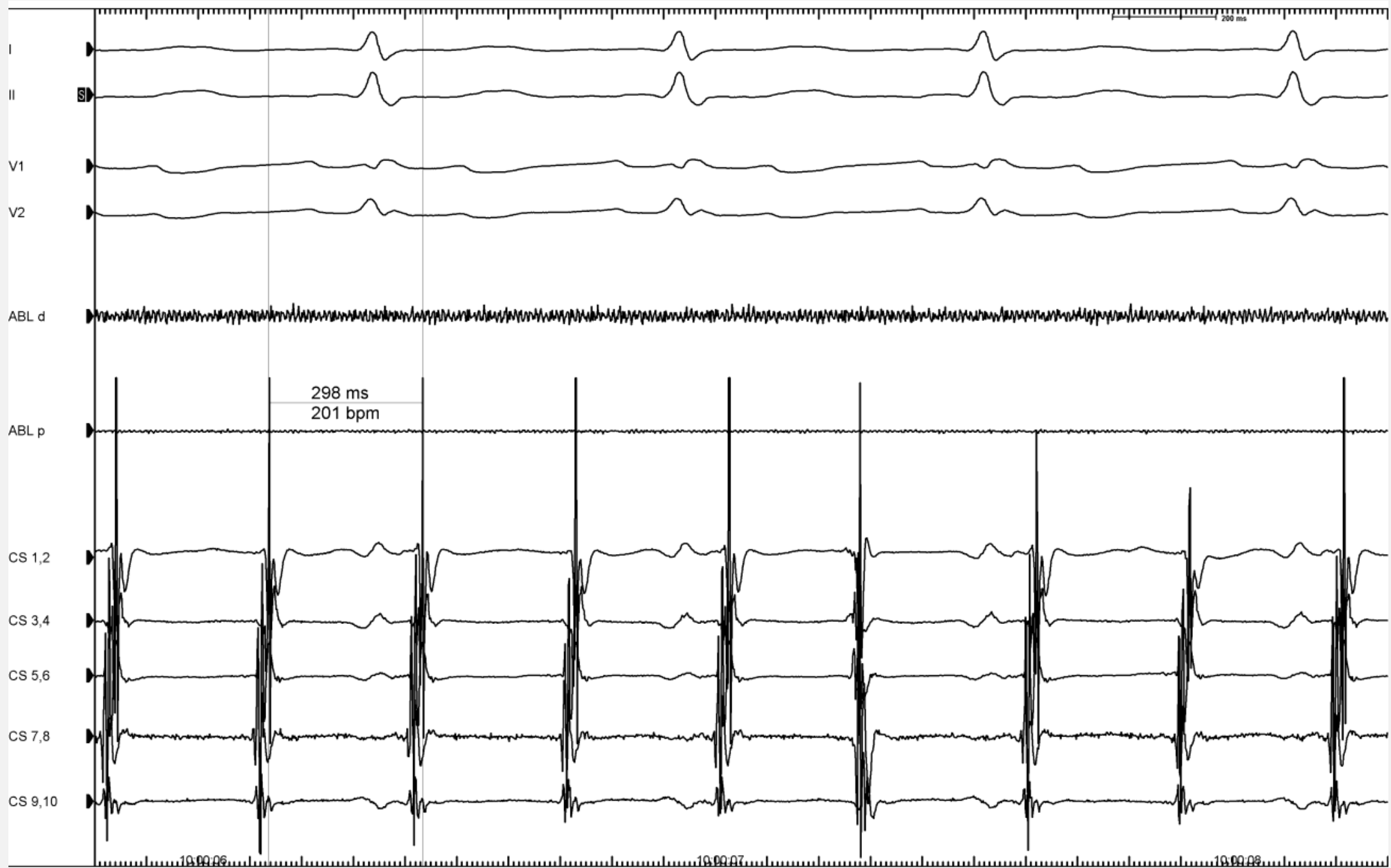
SINUSAL 12D





# TA, Flutter durant ablation FA

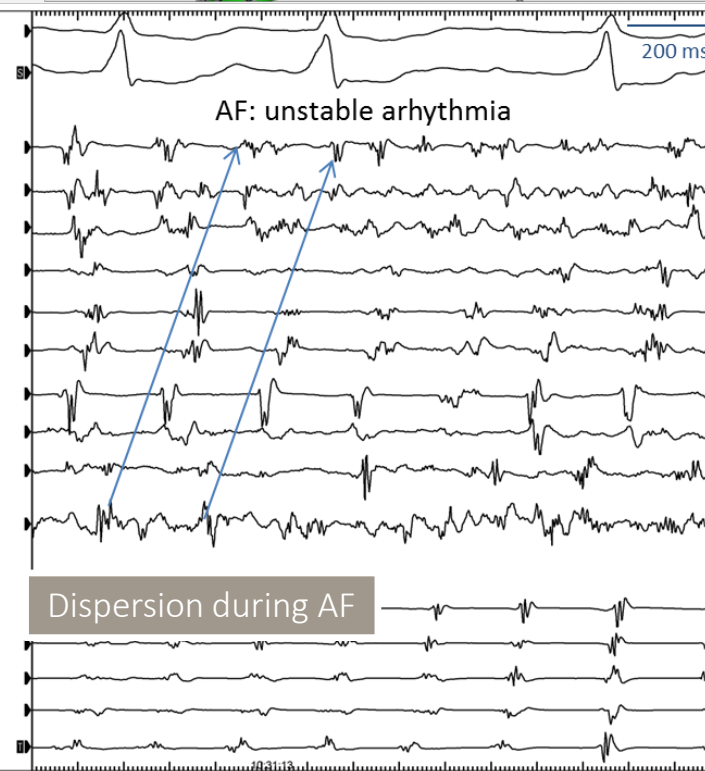
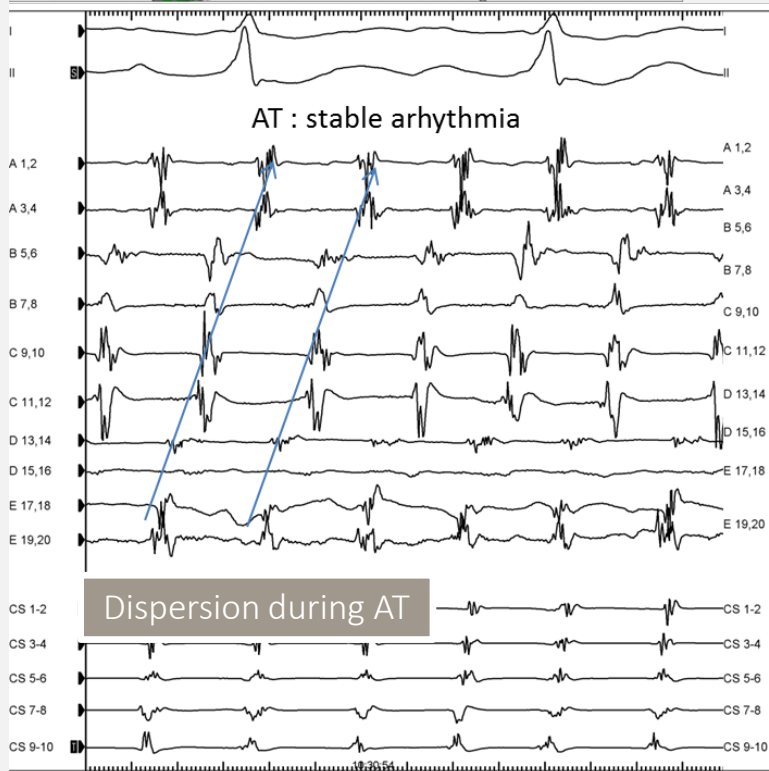
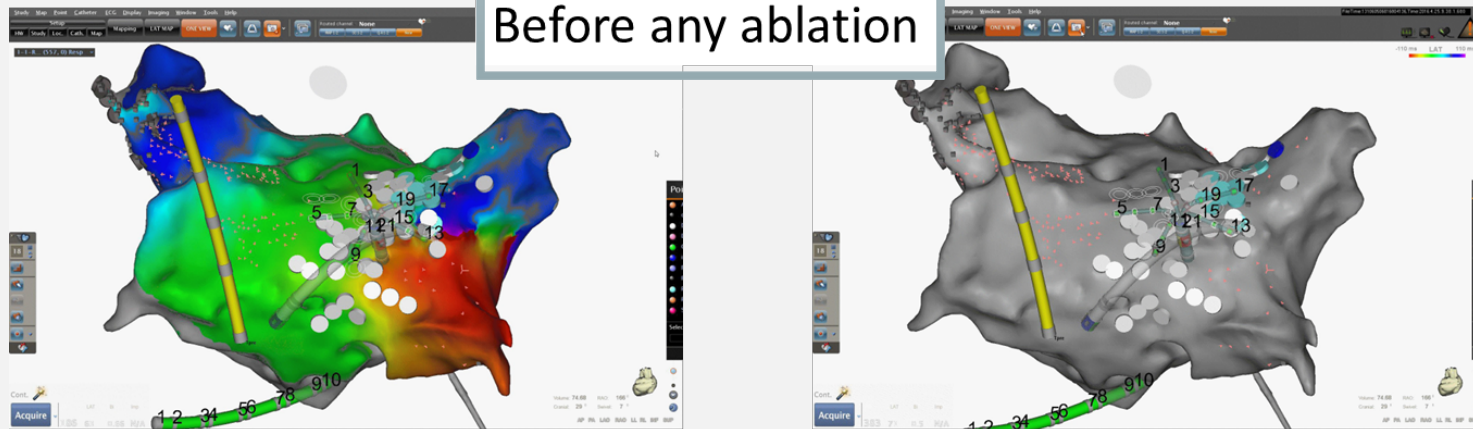




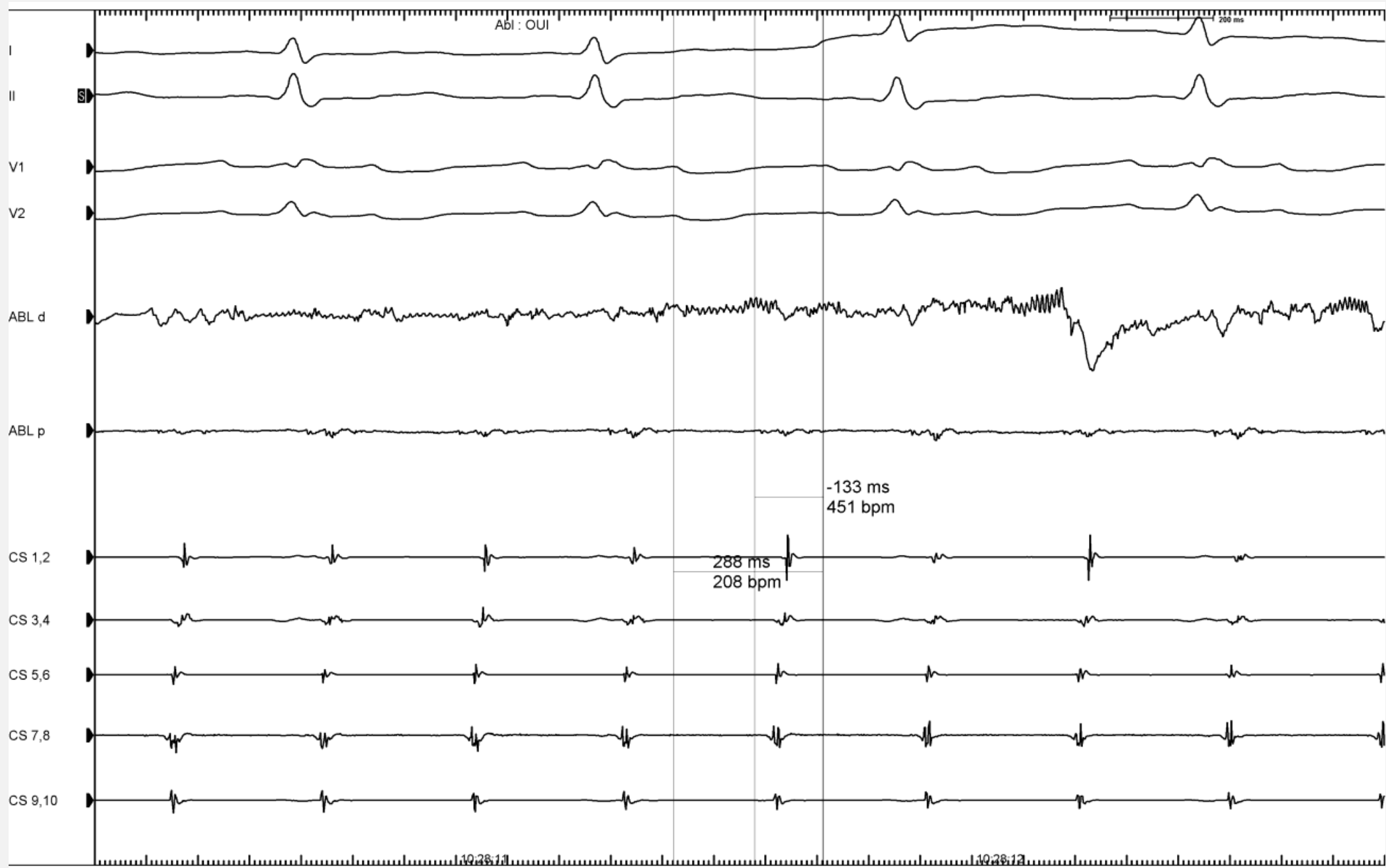
# DEVANT VPSD



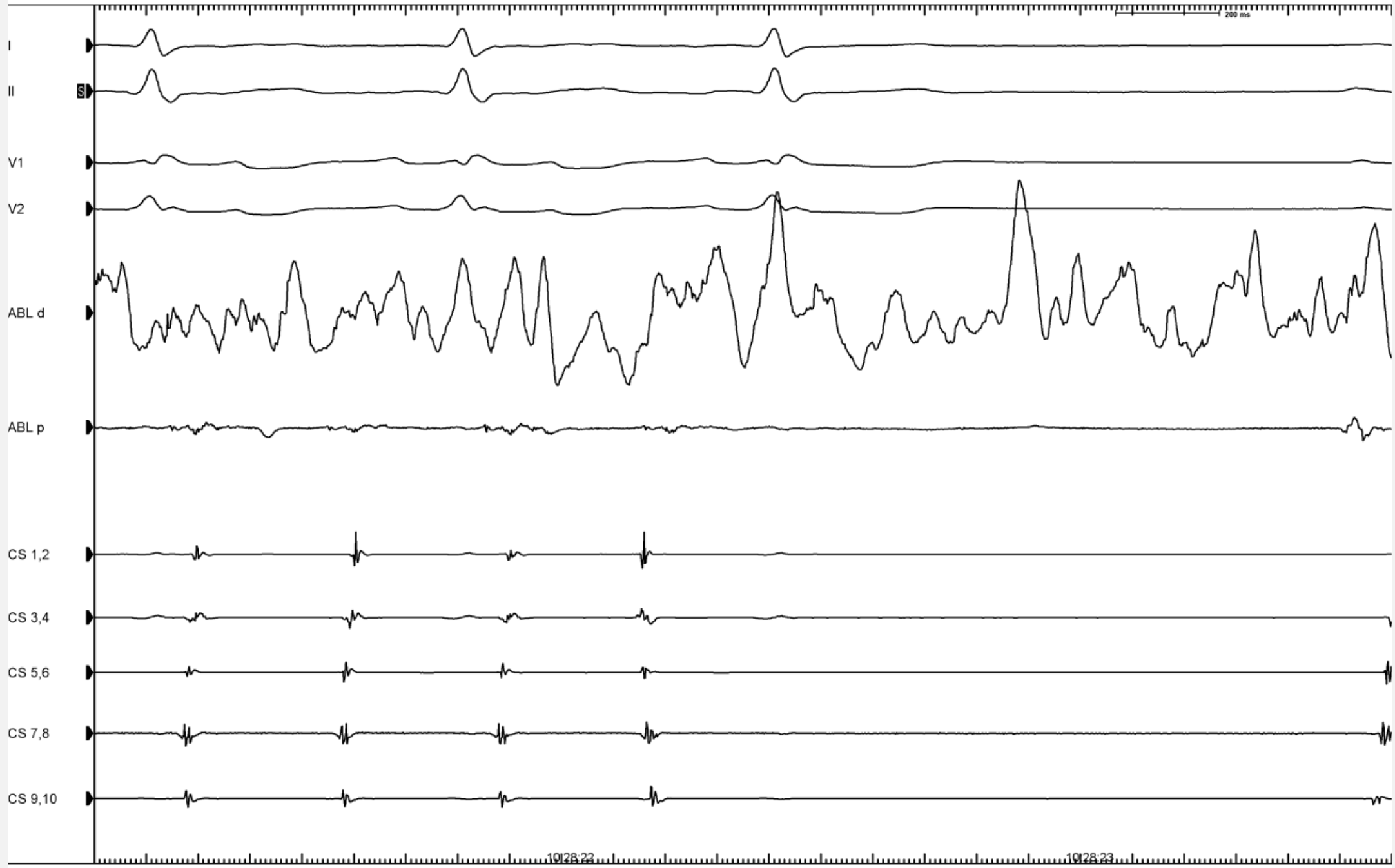
Before any ablation



# SITE EFF 2



# SINUSAL



TACHYCARDIES ATYPIQUES...

# TACHYCARDIE ATRIALE FOCALE POST ABLATION FA





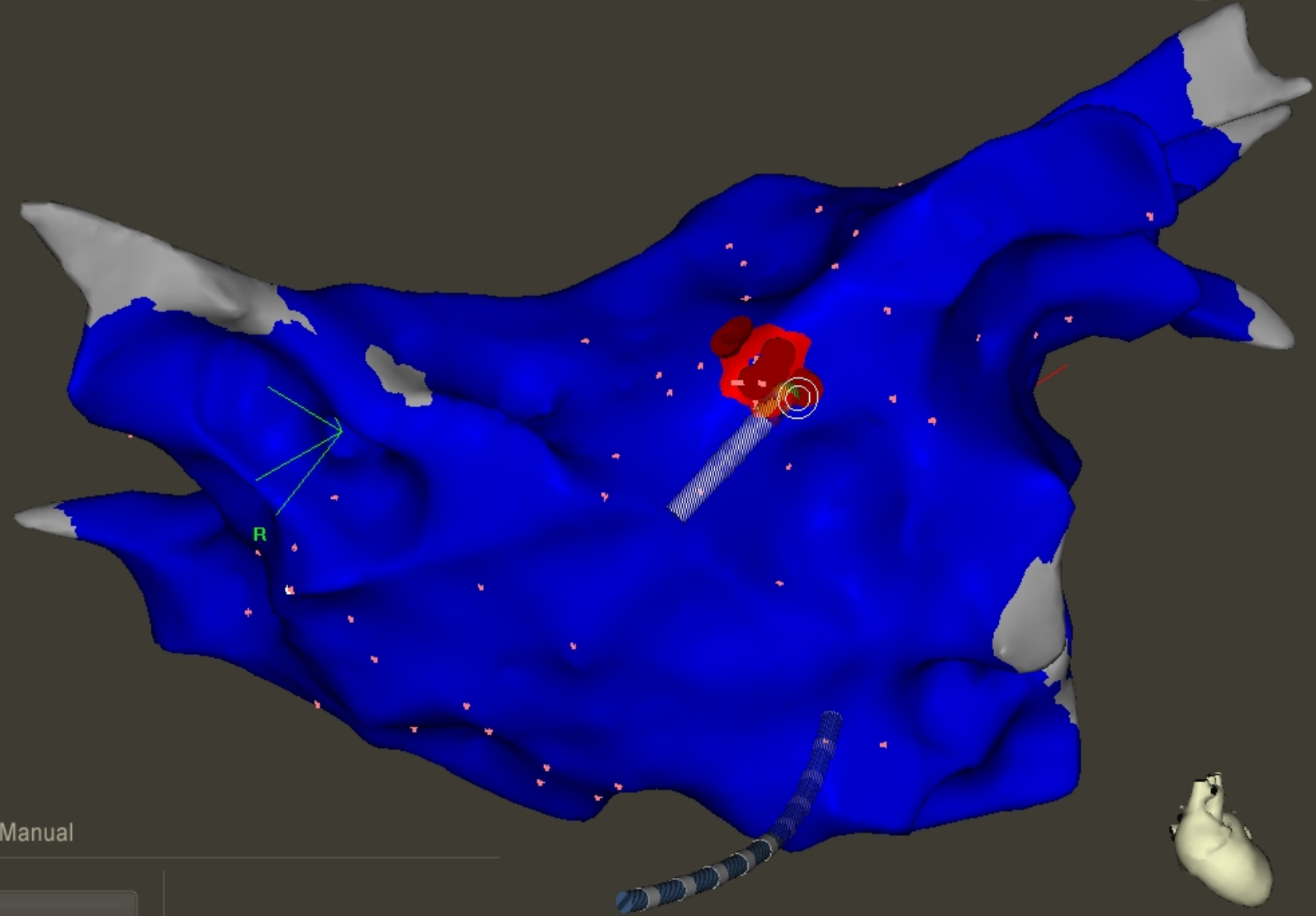
2-Map (106, 0) ▾



-139 ms 20 ms

-130 -114

LAT



R

1.33

Manual

Acquire ▾

CL	LAT	Bi	Imp
1018	12	1.17	N/A

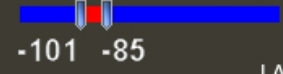
AP PA LAO RAO LL RL INF SUP

2-Map (106, 0) ▾

Navigation toolbar with icons for zoom, pan, and other map controls.

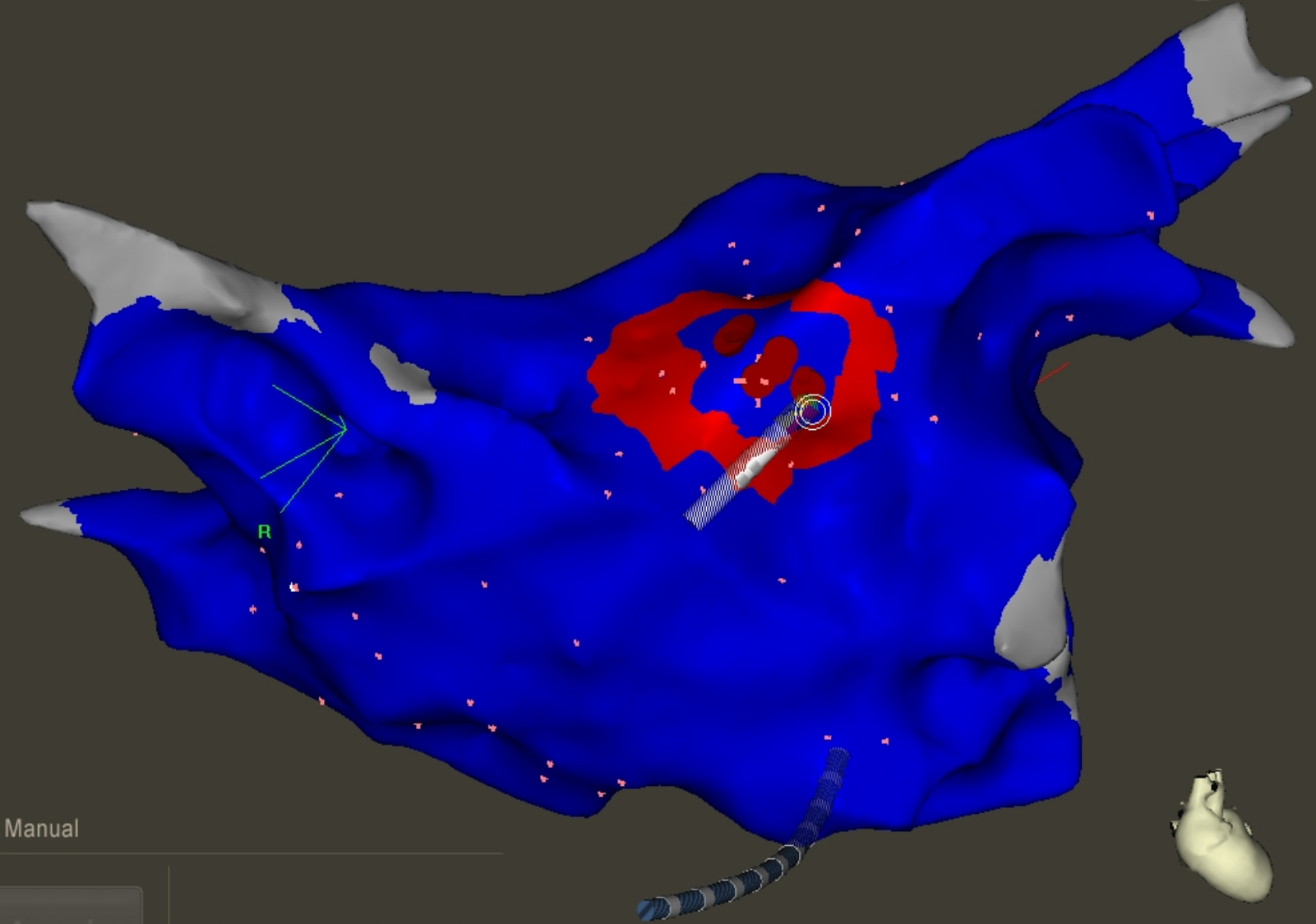


-139 ms 20 ms



LAT

Playback controls: play, stop, fast forward, and close buttons.



Manual

Acquire ▾

CL	LAT	Bi	Imp
1042	-11	0.78	N/A

1.33

Vertical slider and navigation icons.

AP PA LAO RAO LL RL INF SUP

2-Map (106, 0) ▾

Navigation and tool icons: Home, Rotate, Zoom, Pan, Grid, Scale (14), and Settings.



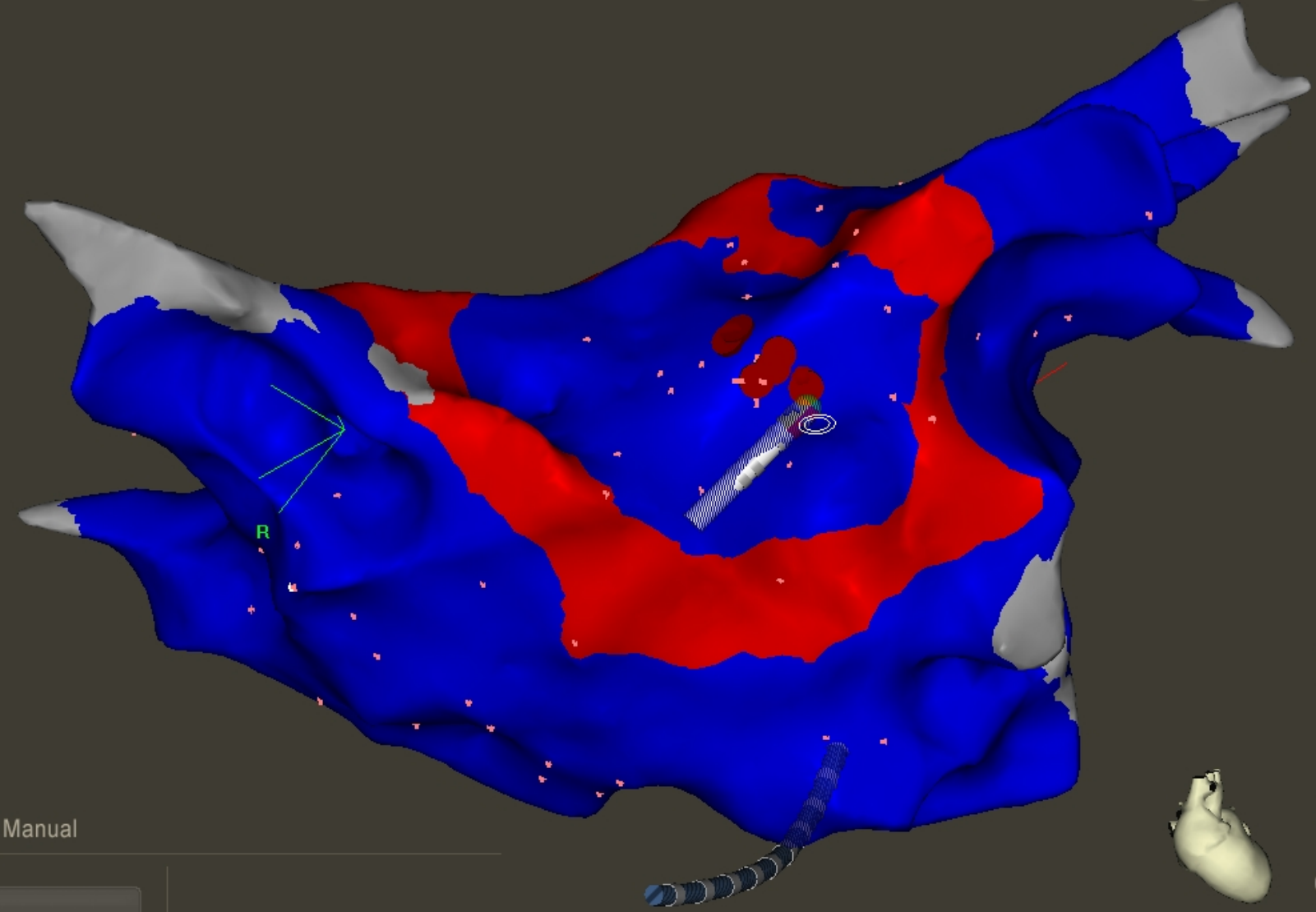
-139 ms 20 ms



-72 -56

LAT

Playback controls: Play, Stop, Previous, Next, and Close (X).



Manual

Acquire ▾

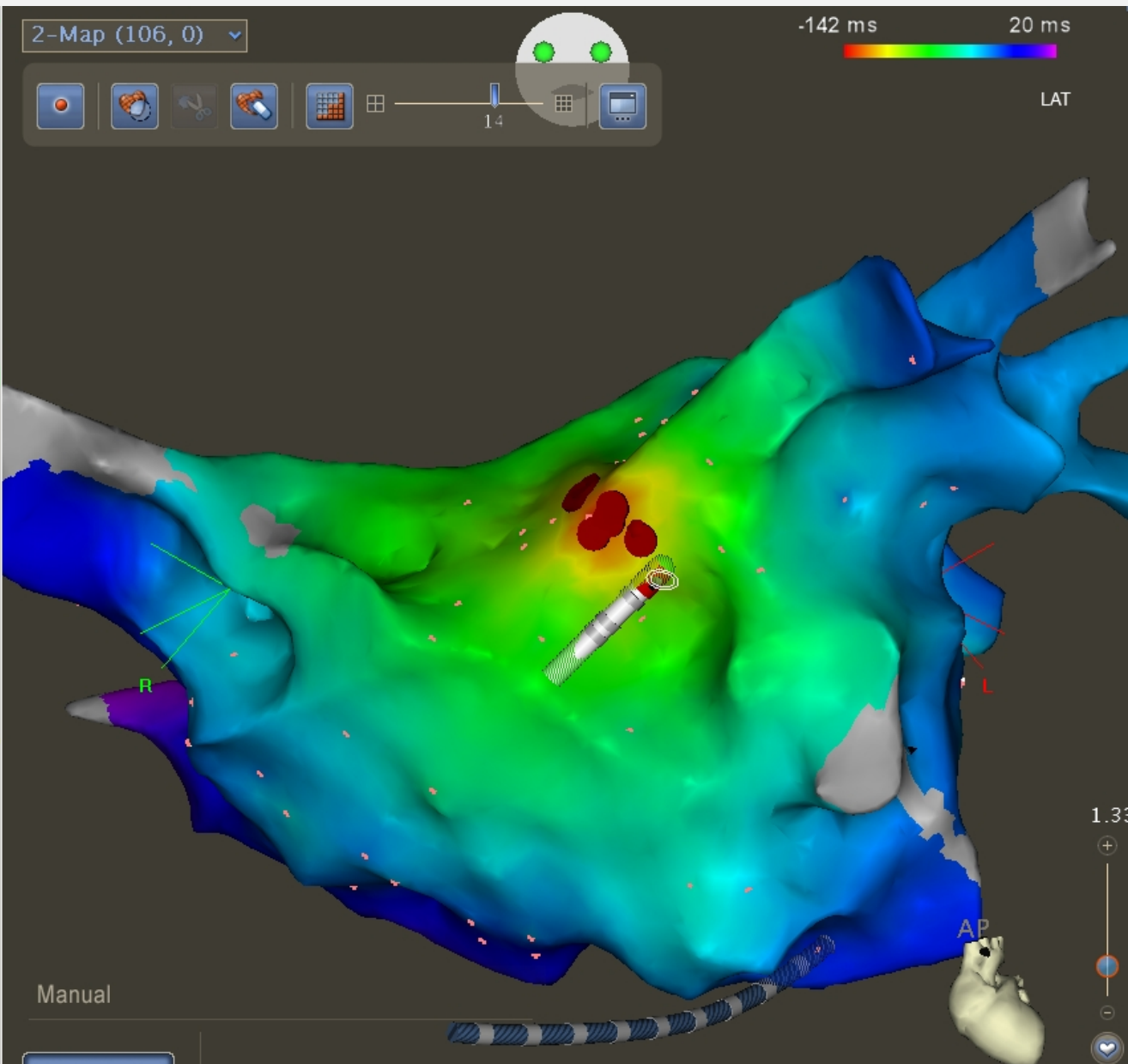
CL	LAT	Bi	Imp
1018	-23	0.7	N/A

1.33

Vertical control panel with zoom (+/-) and heart icons.

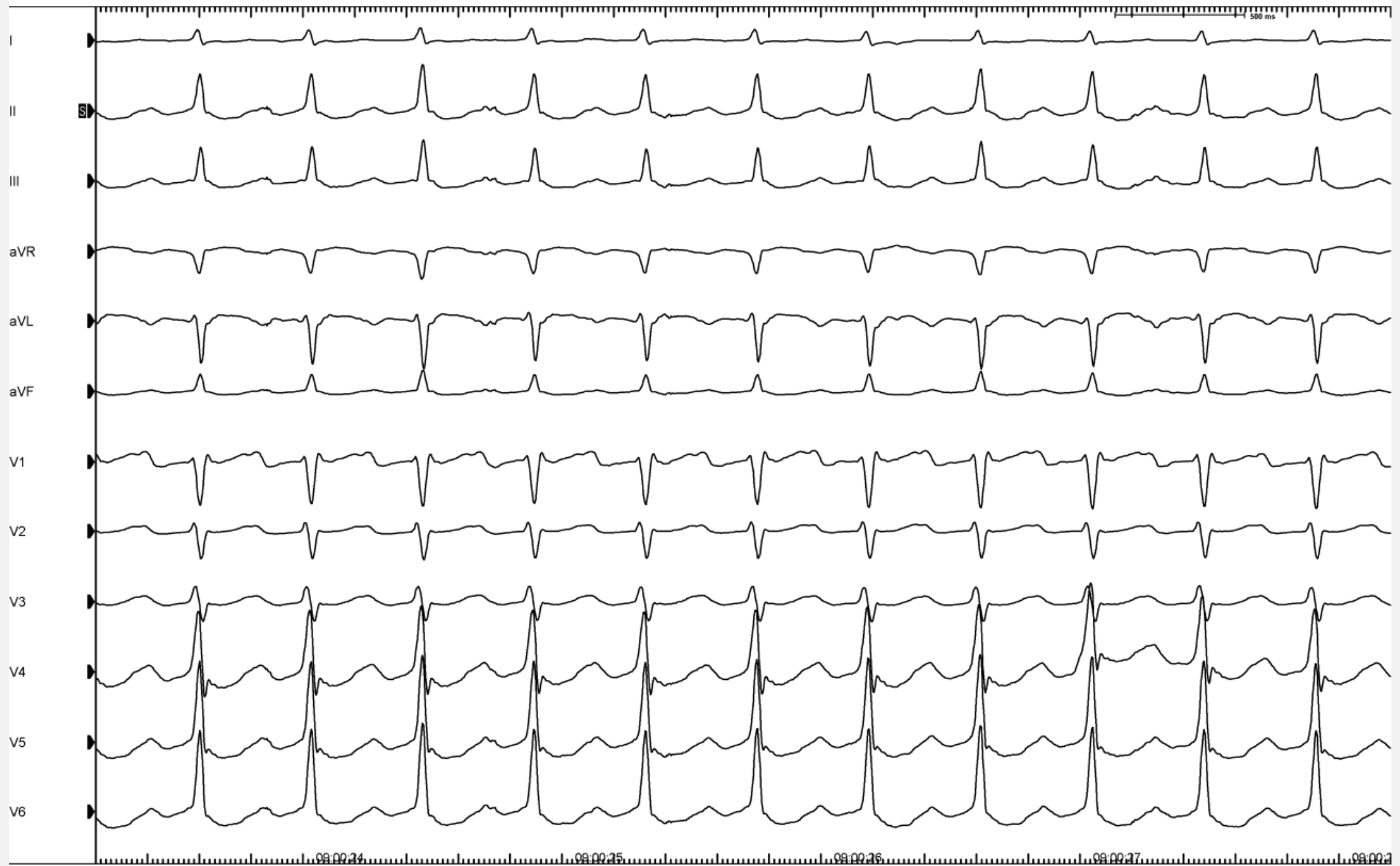


AP PA LAO RAO LL RL INF SUP

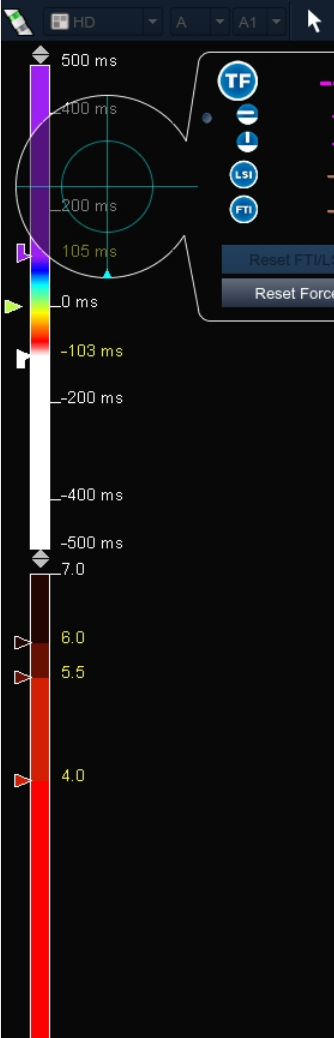


# FLUTTER ATYPIQUE

# ECG DEBUT







TF

LSI

FTI

Reset FT/LSI

Reset Force

Map1

LAT isochronal

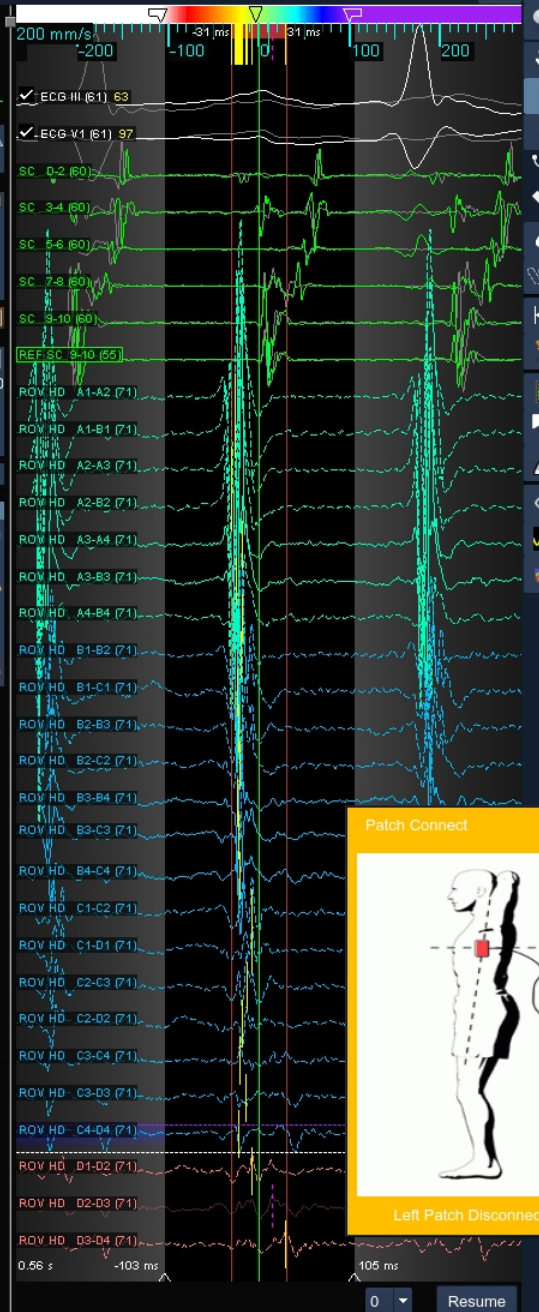
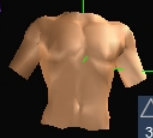
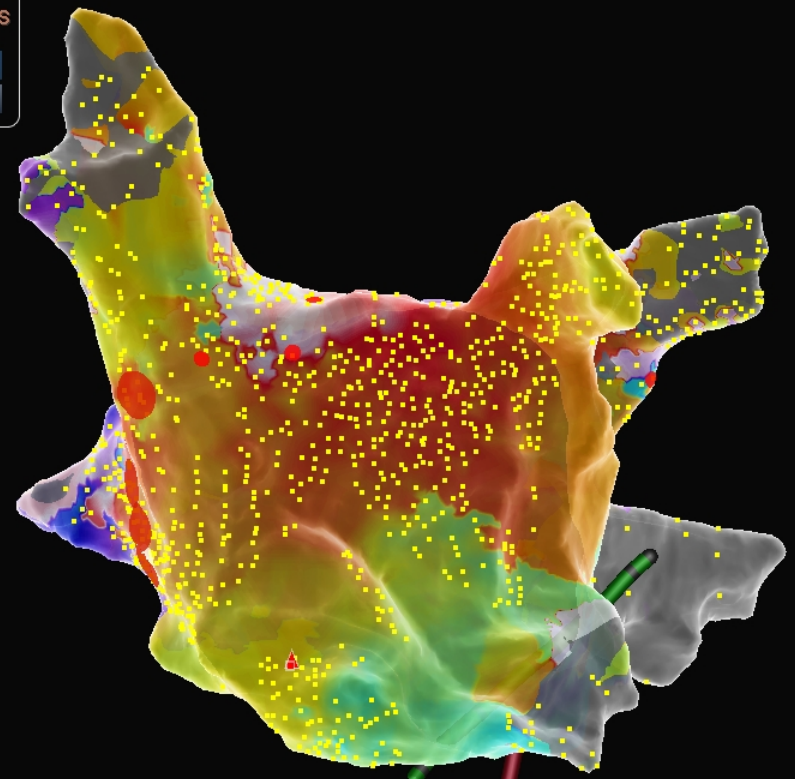
Power (W) 0

Temp (C) 999

Imp (ohm) --

RF Session Time (s) --

LSI --



Map1

Cardiac Triggered Reference

Map: LAT

Project Map to: Closest

Settings Points Model

Surfaces

- Left
  - LA
  - LSPV
  - RIPV
  - LIPV
  - RSPV
- Other
  - LAA
- Right
  - RA

Finish Model

From Active EnGuide Collect Points

Patch Connect

Name LA

Group Left

Type High Low OneModel

Fill 20

Force 10 50

Points None NavX SE

Delete Points Undo Delete

Discard Changes

Map Scaling

Compute Auto Apply

AutoMap

Start AutoMap Stop All

Velocity 50

Respiration 300

Distortion 20

No Contact Force catheter connected. Check catheter connection. Contact SJM Technical Support if problem persists.

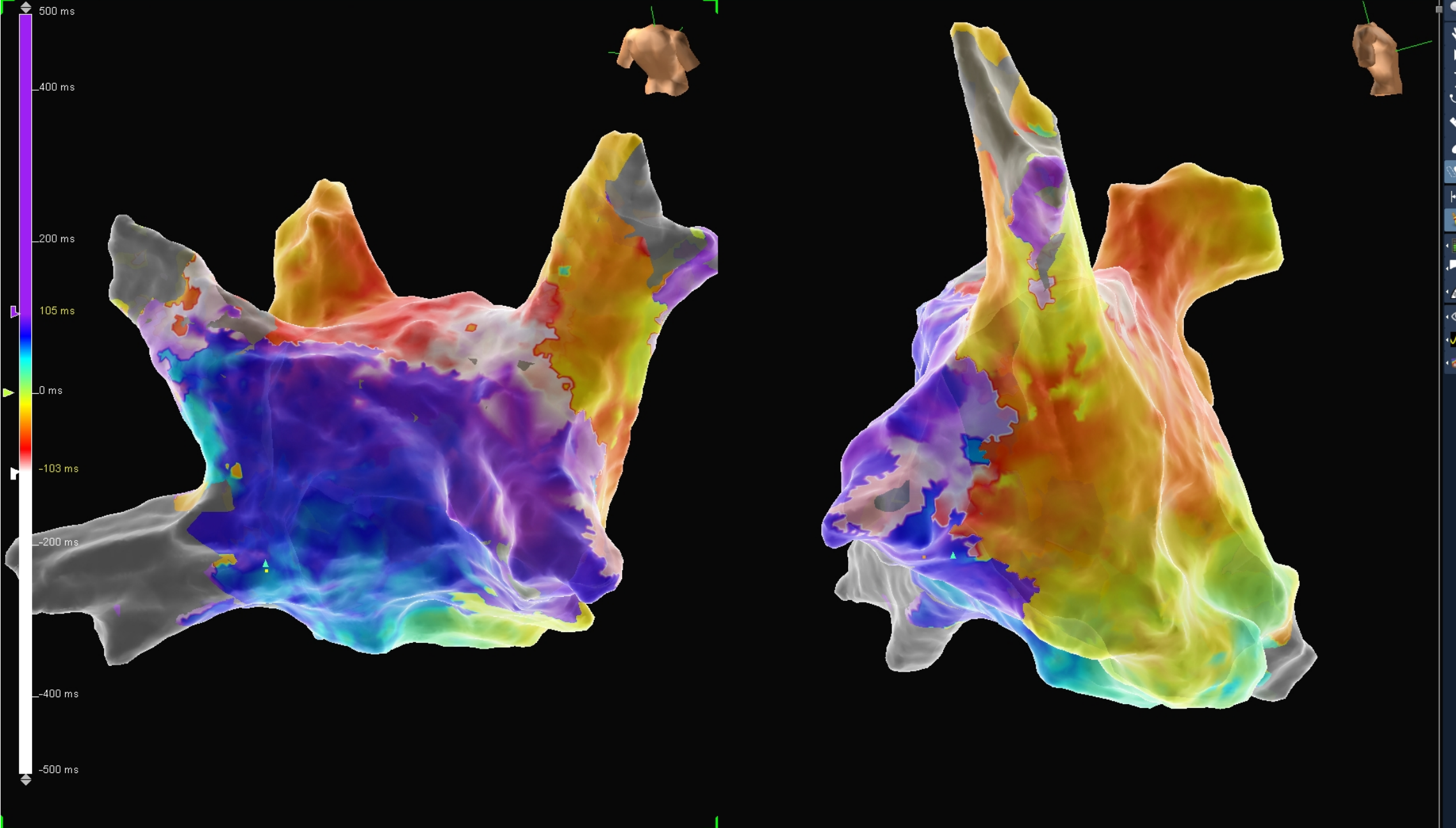
Score 81

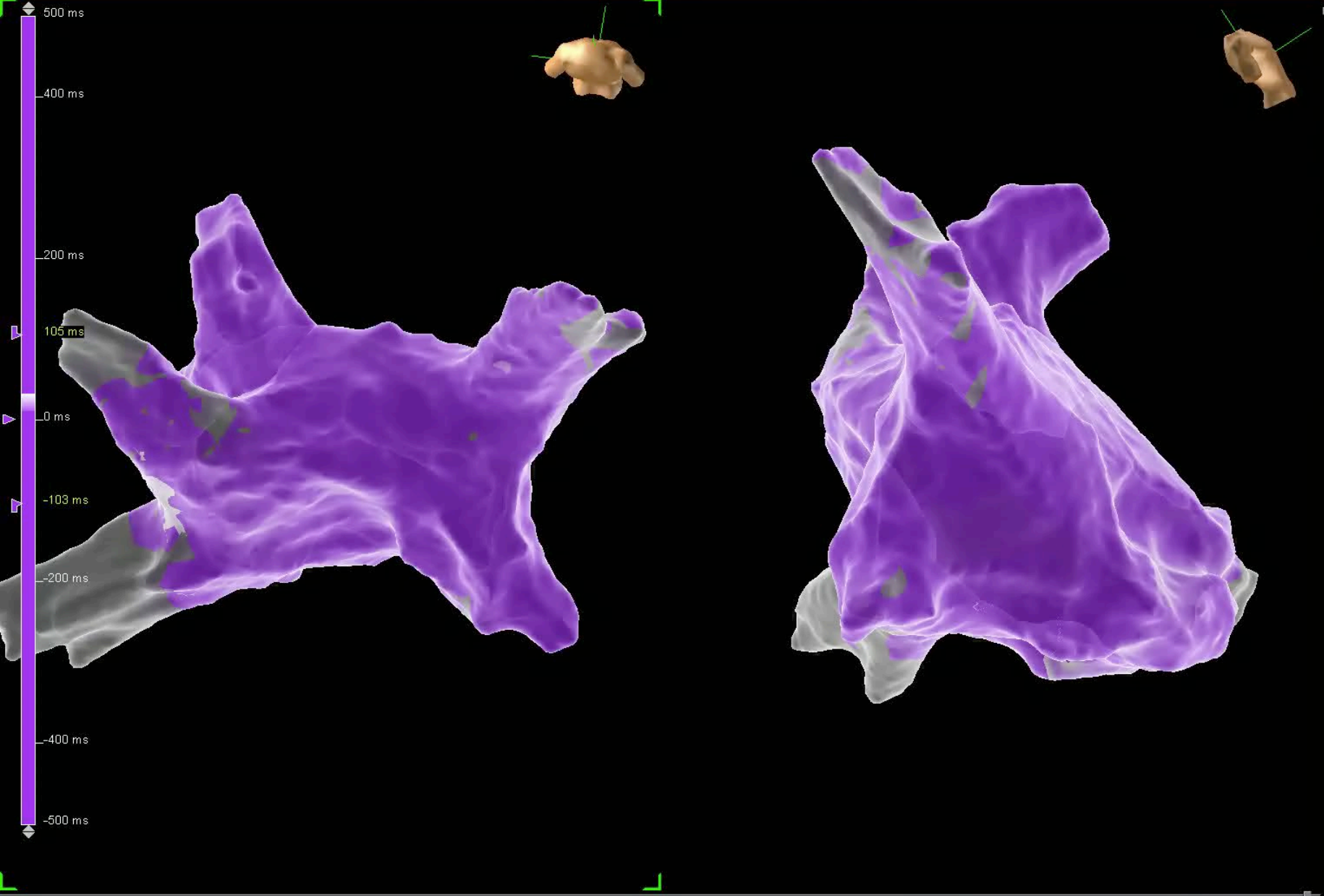
CL 209ms

LAT -23ms



None Catheter: SC Name: OESO





Map1  Cardiac Triggered Reference Unipole  
Map: LAT  
Project Map to: Closest

Settings Points Model

Low-V ID 0.100  
Fractionation Threshold 3

Map Display  
 Standard LAT  Reentrant Map  
 Propagation Map  
Stop 50  
Save Animation

Map Appearance  
Interior Projection 6  
Exterior Projection 5  
Interpolation 12  
 Use Last Duplicate  
 Use Best Duplicate

Points/Labels  
 Show Selected Points Only  
 3D Points 3D Labels  
 Surface Points  3D Annotations  
 Flash New Points

Appearance  
 Show Mapping Metrics Auto Color  
 Independent Scoring Interval  
 Show Scoring Interval Lines

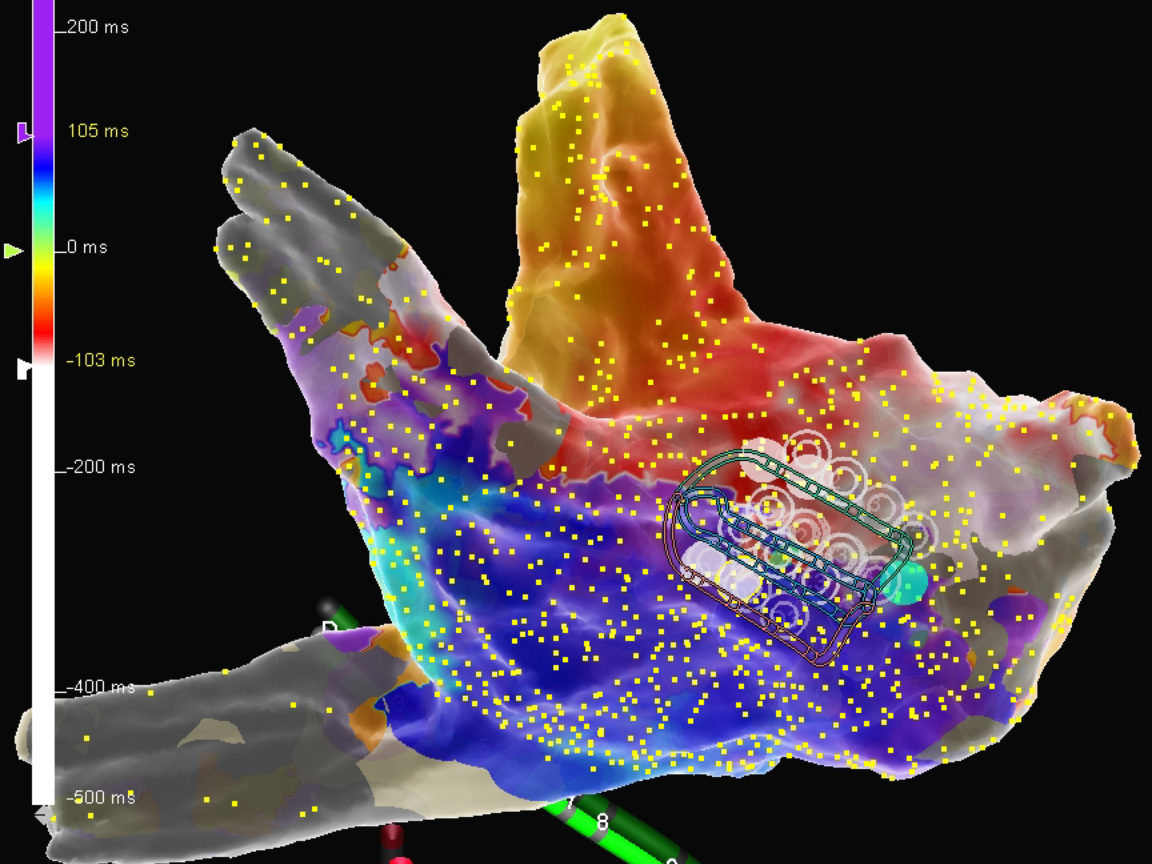
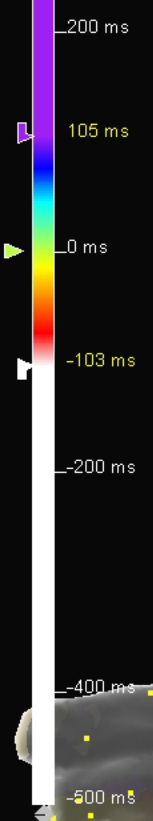
AutoMap  
Start AutoMap Stop All

38 g  
64 g  
--  
-- gs

Reset FT/LSI  
Reset Force

Power (W) Temp (C) Imp (ohm) RF Session Time (s) LSI

23 999



Velocity	Respiration	Distortion
50	300	20
25	100	10
0	0	0
-100	-5	-5
-200	-10	-10
-300	-15	-15
	-20	-20

Check Contact Force baseline.

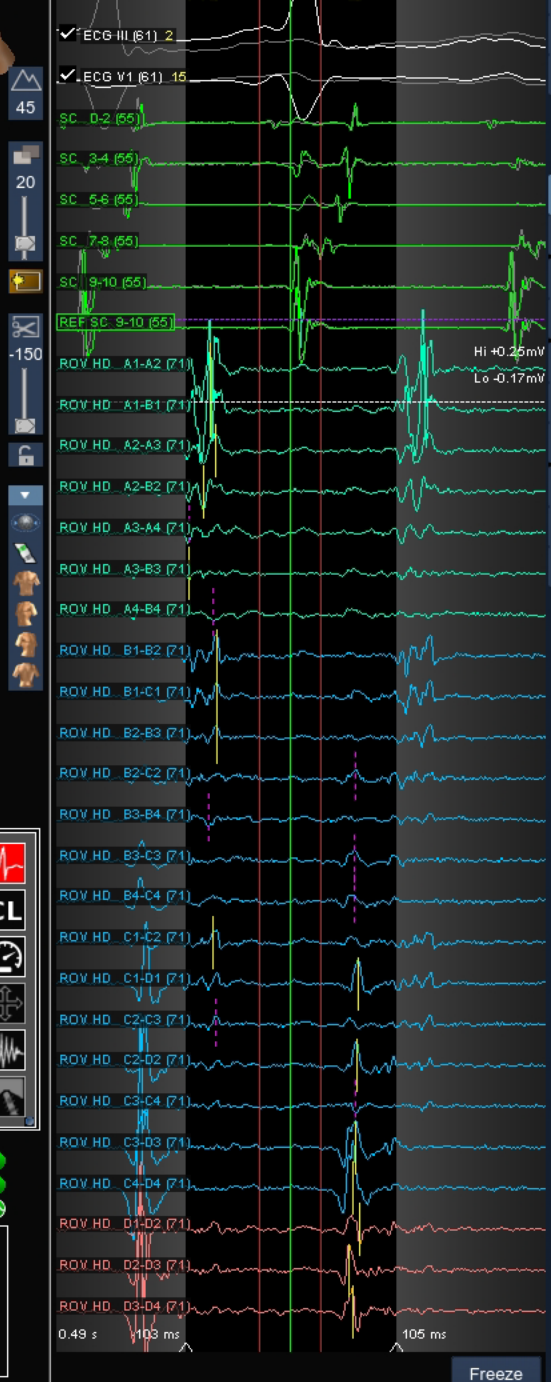
Score 9

CL 211 ms

LAT -80 ms

PRs-P  
PRs-A

HD @ 1-0  
ABL @ 2-0



Map1

Cardiac Triggered Reference Unipole

Map: LAT

Project Map to: Closest

Settings Points Model

Surfaces

Left	Other	Right
LA	LAA	RA
LSPV		
RIPV		
LIPV		
RSPV		

Finish Model

From Active EnGuide Stop Collecting Points

Name LA

Group Left

Type High Low OneModel

Fill 10

Force 10 50

Points None NavX SE

Delete Points Undo Delete

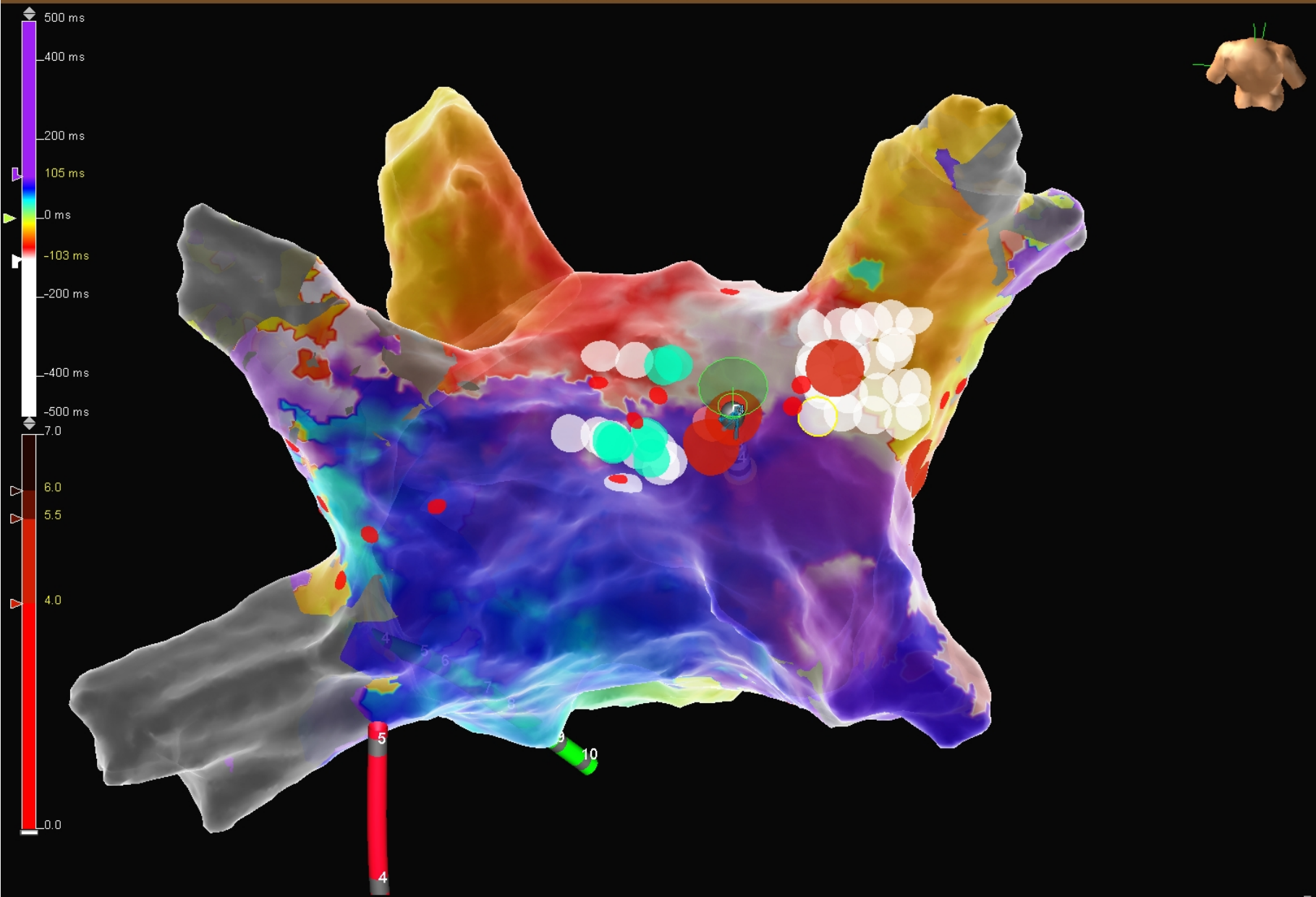
Discard Changes

Field Scaling

Compute Auto Apply

AutoMap

Stop AutoMap Stop All



Color Metric LSI  
Size Metric Same As Color

ID	LSI	Annotation
RF 1	12	
1	3	
2	8	2.9
RF 2	13	
1	6	2.9
2	2	
3	4	
4	1	
RF 3	10	
1	0	
2	8	4.7
RF 4	1	
1	1	
RF 5	16	
5	16	4.1
RF 6	11	
6	4	
7	4.5	
RF 7	30	
1	1	
7	8	2.9
5	5	
8	4	
0	0	
9	9	4.0
2	2	
RF 8	15	
10	15	5.1
RF 9	12	
1	1	
11	9	4.9
3	3	
RF 10	30	
0	0	
12	30	4.7
RF 11	12	
3	3	
13	7	5.4
3	3	
RF 12	9	

Show transitions Delete

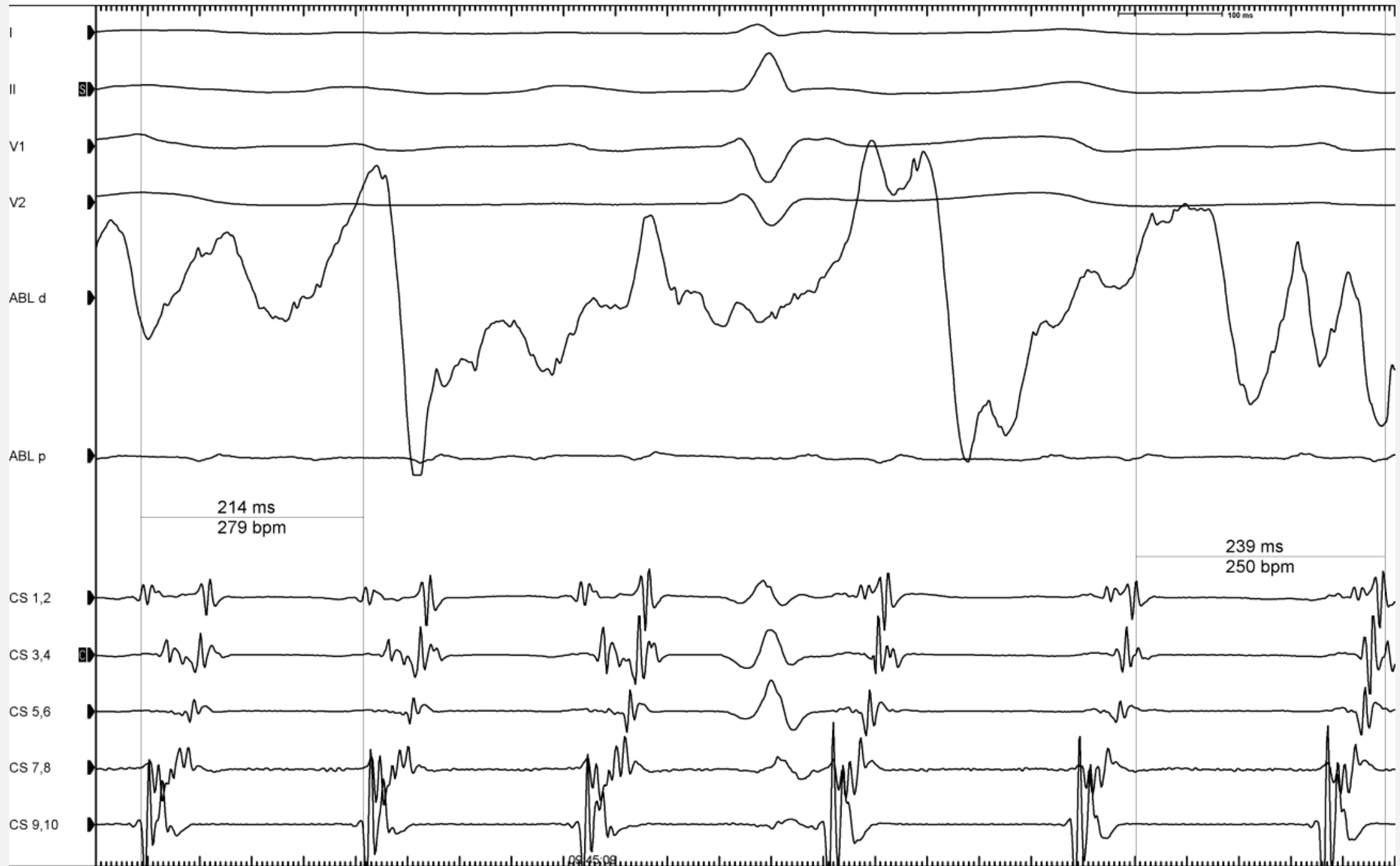
Show

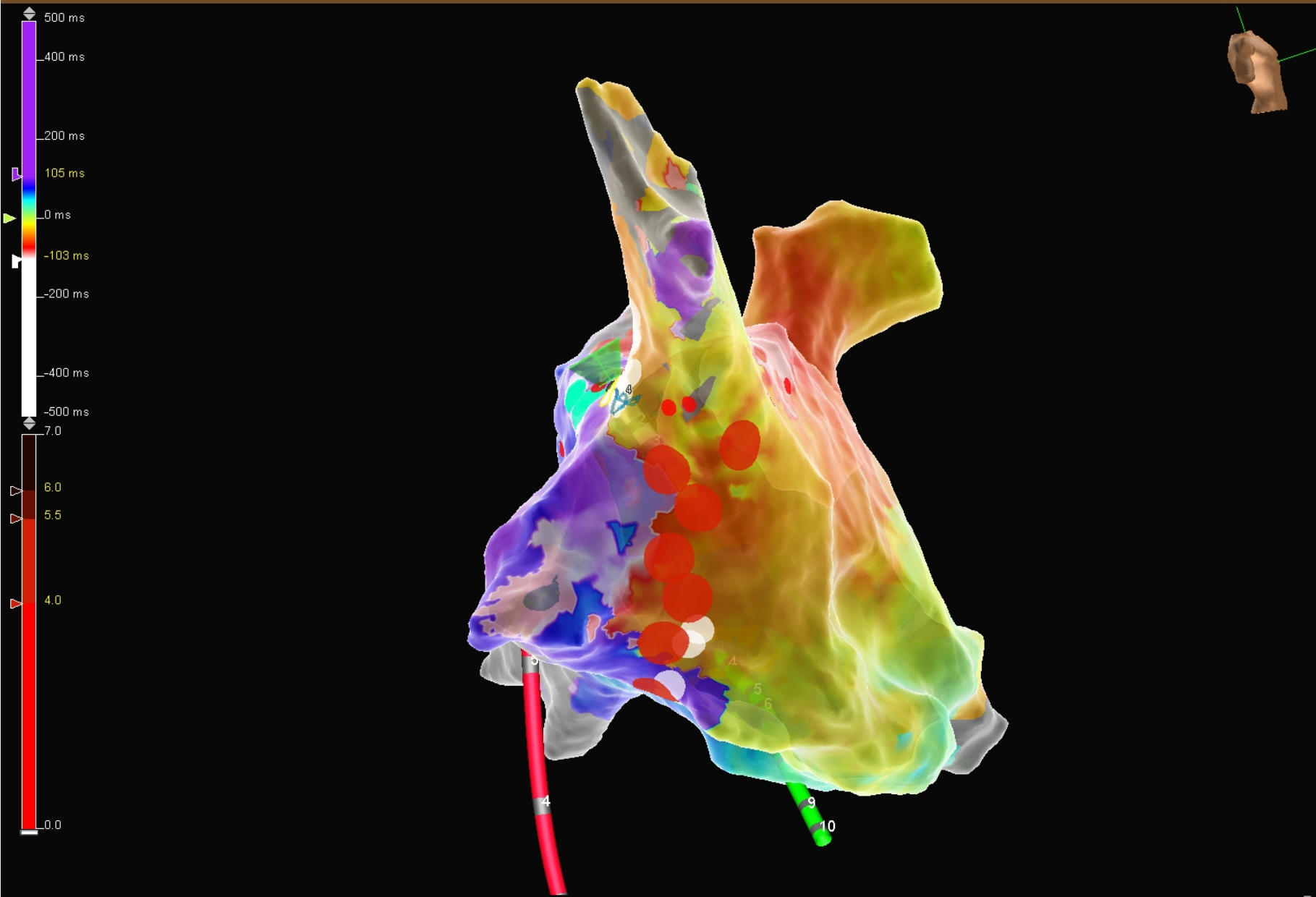
- Selected ID
- Selected AutoTrack
- Selected Value
- 3D Annotations

Project on Surface 20

Hide AutoMarks

# ALLONGEMENT PREMIERE BOUCLE





Order by Time

- 60: AutoSegment 0 min 10 s
- 61: Finish Model 0 min 10 s
- 62: Finish Model 0 min 10 s
- 63: End of Study 0 min 10 s

Mapping(1)

- Map1

Images(15)

- Before Validation
- Finish Model
- Finish Model
- Finish Model
- Finish Model
- Finish Model
- Finish Model
- Finish Model
- Finish Model
- Finish Model
- Finish Model
- Finish Model
- Finish Model
- Finish Model

Events(5)

- NavX Validation Succeeded
- NavX Validation Succeeded
- Respiration Compensation...
- Positional Ref Tool Enabled
- Reset Force

Ablation(56)

- RF 1 On
- RF 1 Off

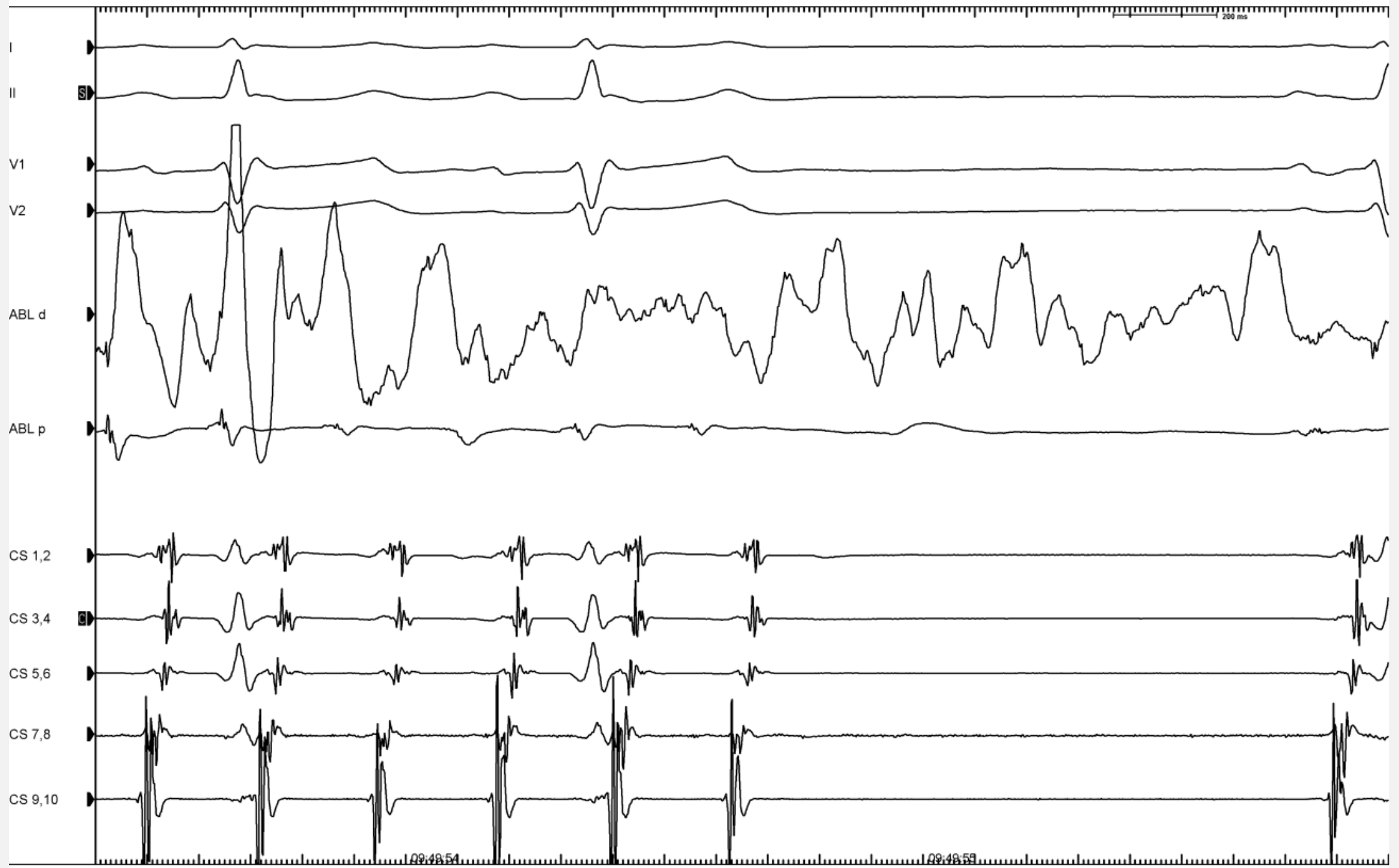
Load Edit Delete

Lesions:

No.	Annotation
20	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	

Show Delete

# SINUSAL



# ECG















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