

# VT Symposium 2017



INNOVATION  
EWHA

2017-11-04

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**College of Medicine**  
**Ewha Womans University**



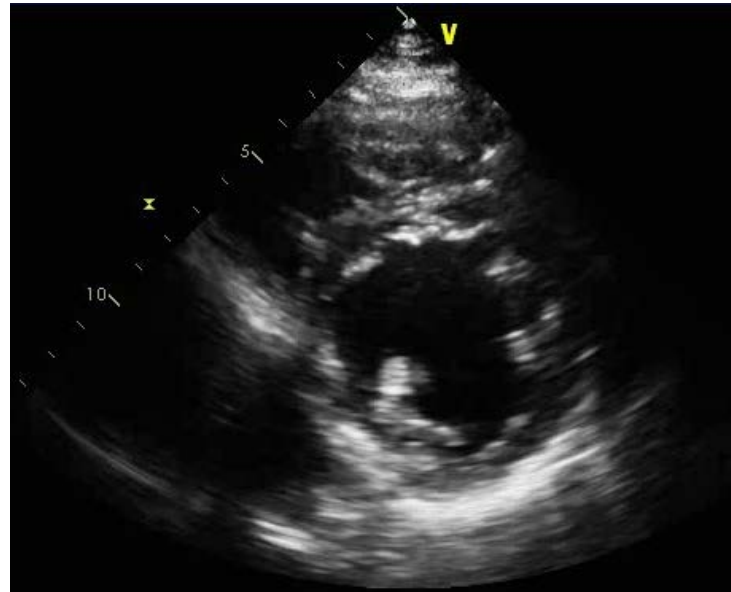
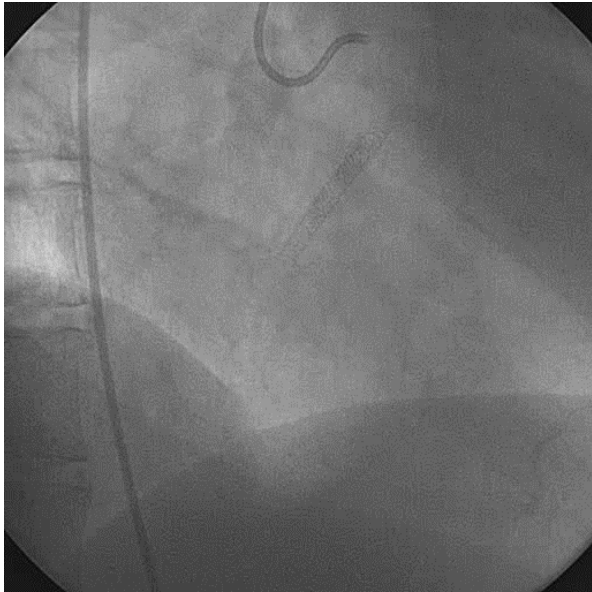
이화여자 대학교 의료원  
EWHA WOMANS UNIVERSITY MEDICAL CENTER

# Present Illness

- M/53
- Coronary :
  - 2001년 5월 CAG c PTCA c stent insertion at p-m RCA 시행.
  - 2012년 7월. Chest pain. f/u CAG상 ISR at RCA 소견 보여 Cutting balloon
- Tachycardia :
  - 2005년 palpitation으로 ER 내원, PSVT 진단하 adenosin, verapamil, amiodarone 투여하였으나 호전없어 DC cardioversion 2012.2월까지 cordarone 복용하다가 중단.
  - 2012.7월 palpitation으로 ER 내원, IV adenosin 투여받고 증상 호전 후 Rytronorm 300mg bid로 시작.
- CC: 1년 전부터 palpitation 및 후끈 올라오는 느낌 하루에 5-6번 정도 증상 있었으며 최근에는 빈도가 더 심해짐.



# CAG / Echo / Cardiac MRI

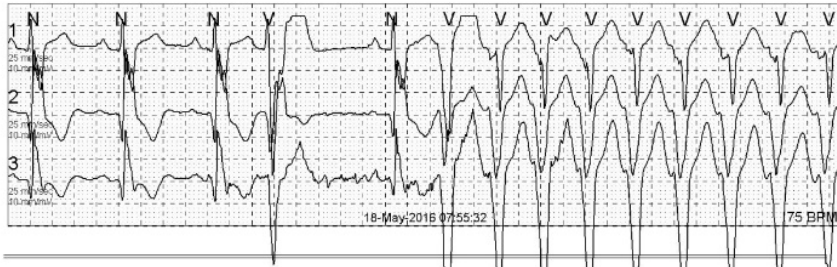


RWMA : RCA territory  
EF 40%

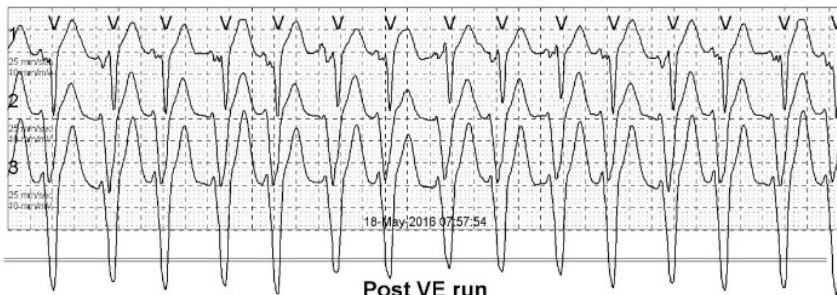


# Holter

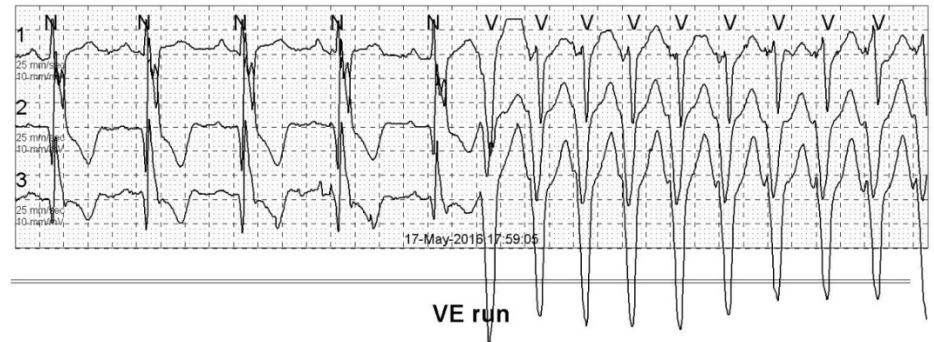
Pre VE run



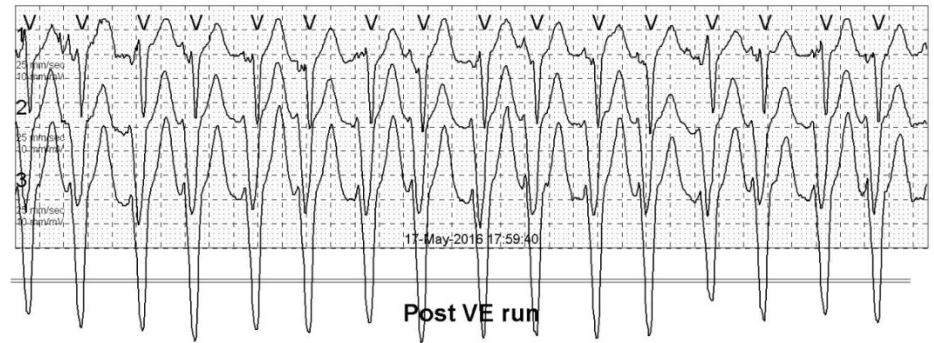
VE run



Post VE run



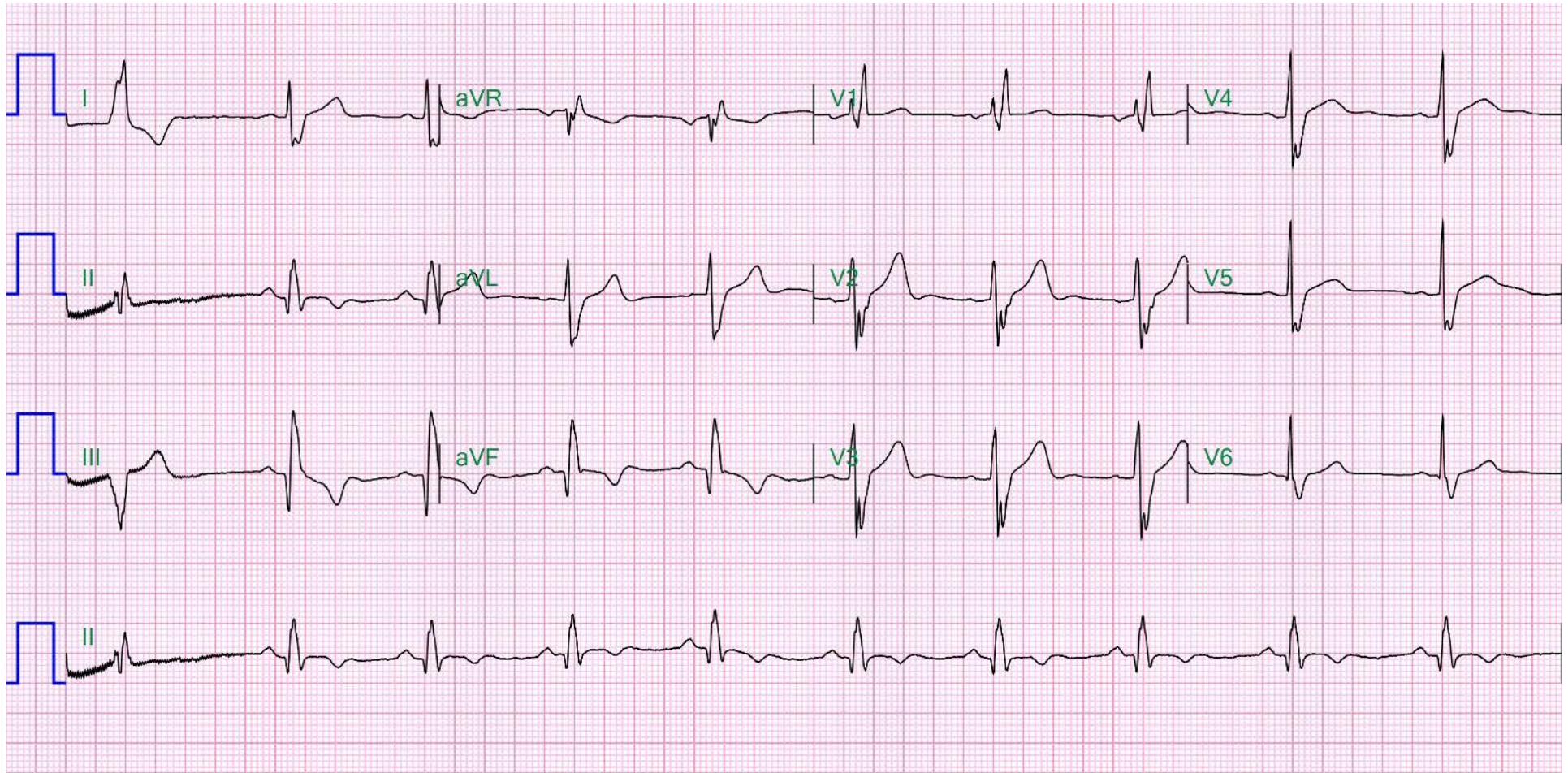
VE run



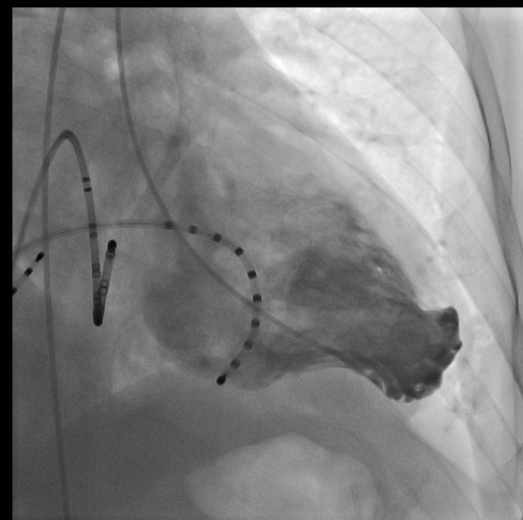
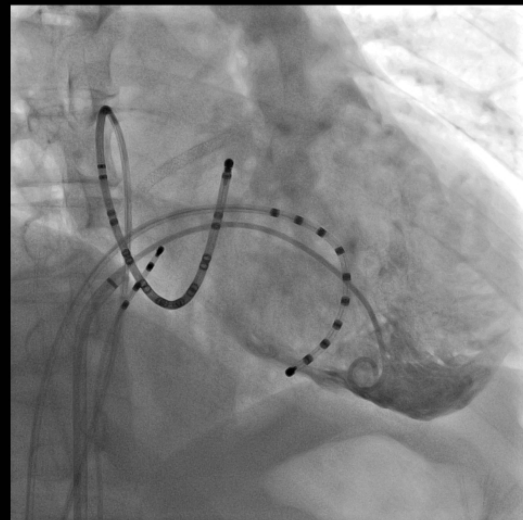
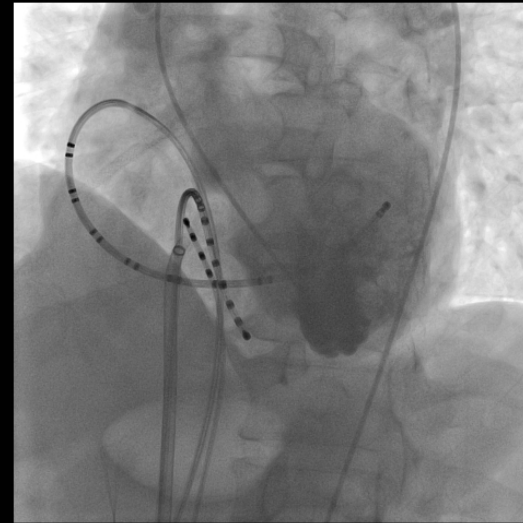
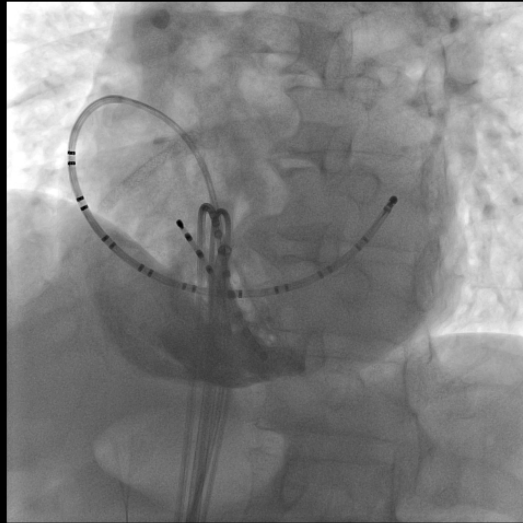
Post VE run



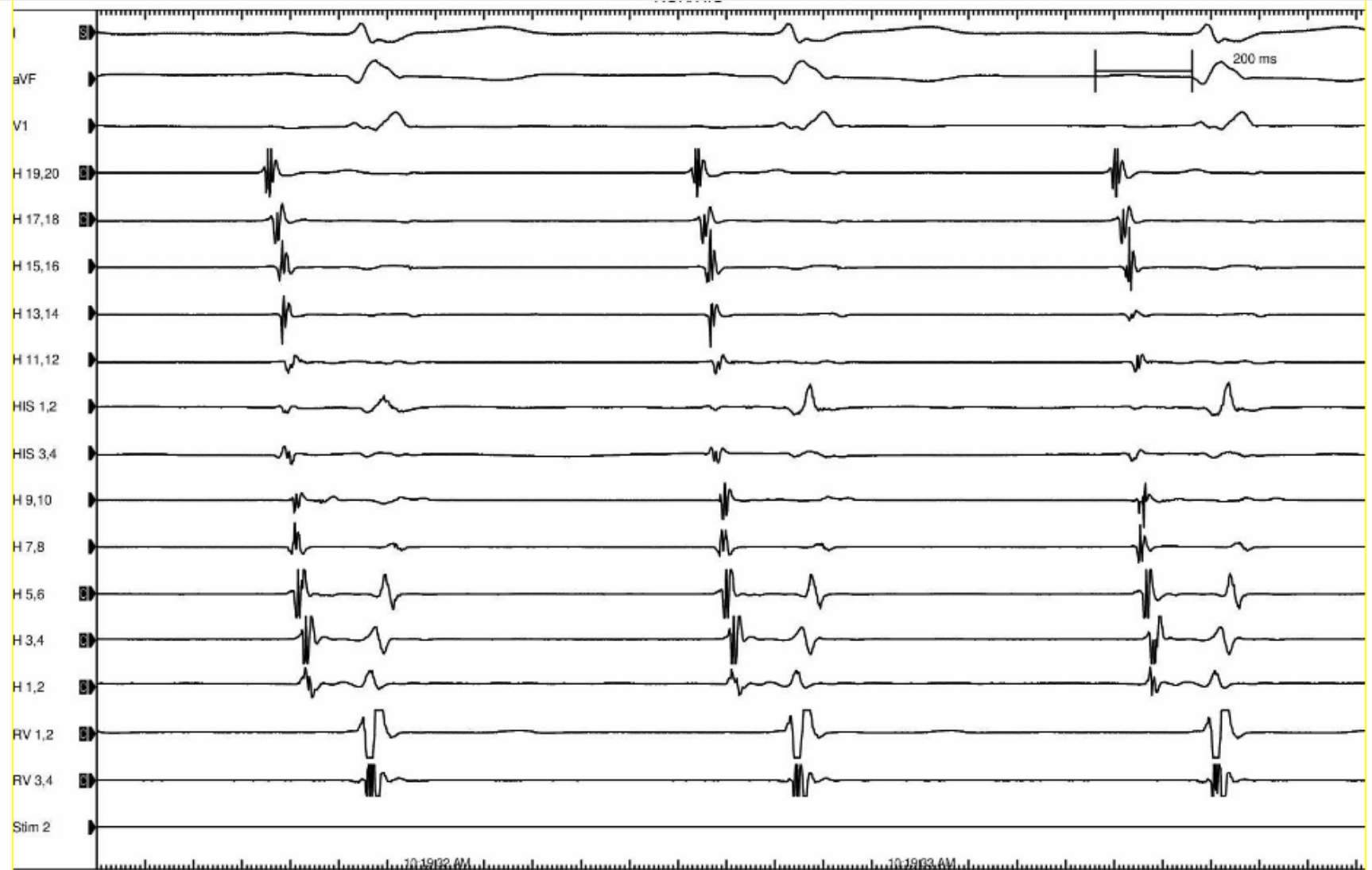
# Initial EKG



# Catheter position / RV & LV angiography



# Normal sinus rhythm (TCL 847, AH 95, HV 43, QRS 145)



# Initial VAD (RVP 600)





# Concentric VA conduction during isoproterenol 1ug

## Long RP interval

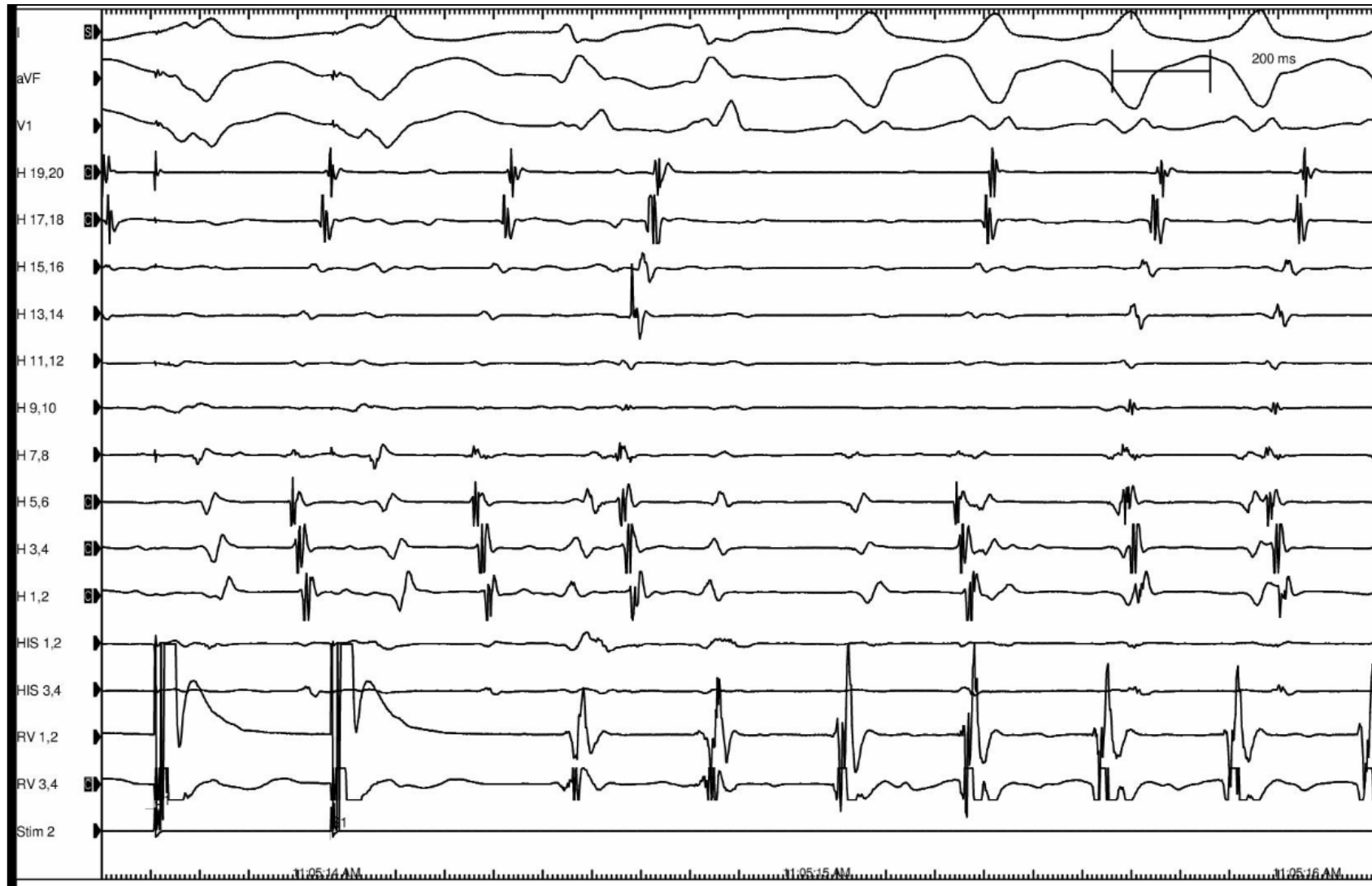


RVP 420ms

VABCL : RVP 400ms



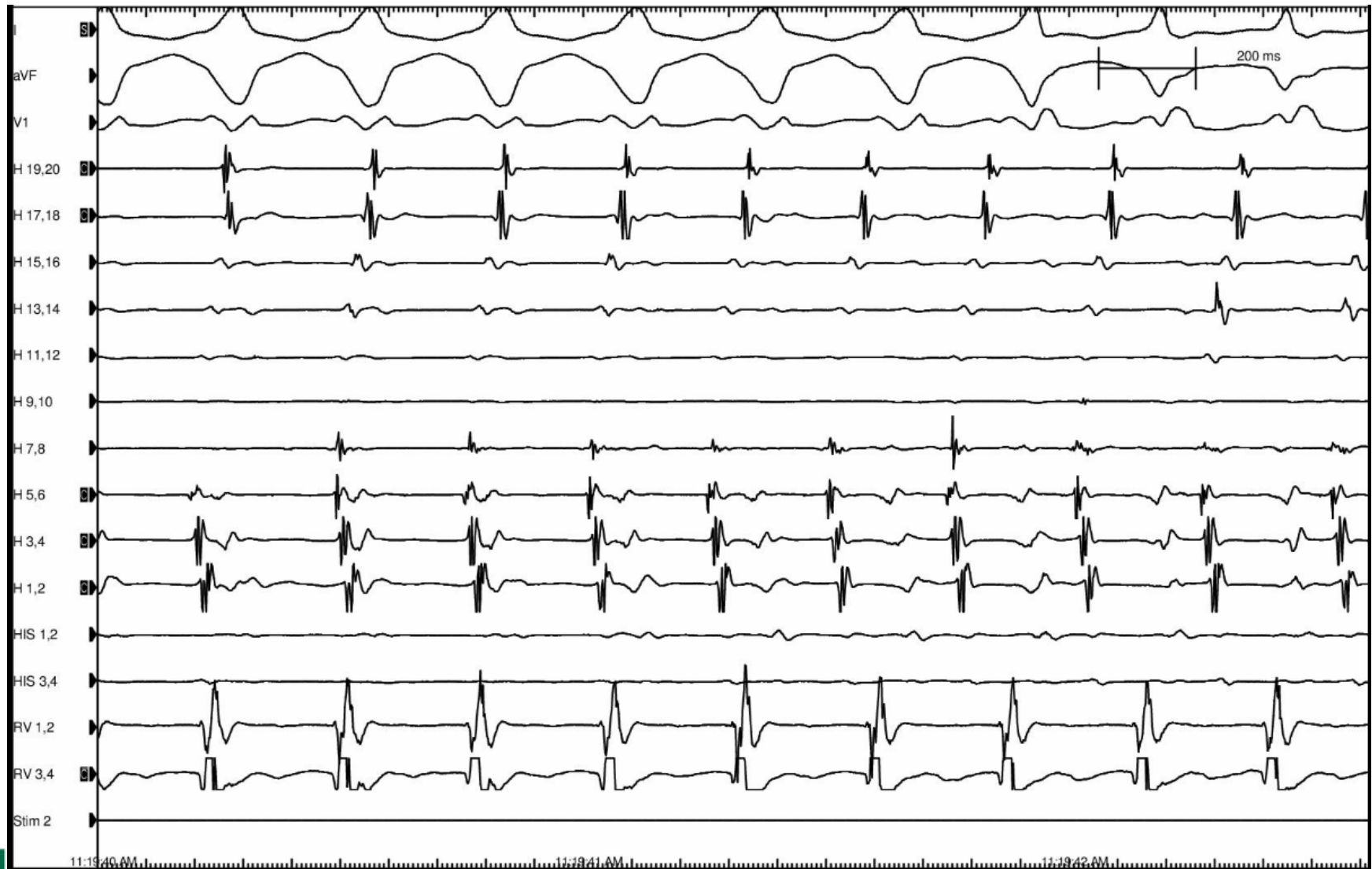
# Induction during RVP 360 with isoproterenol 3ug



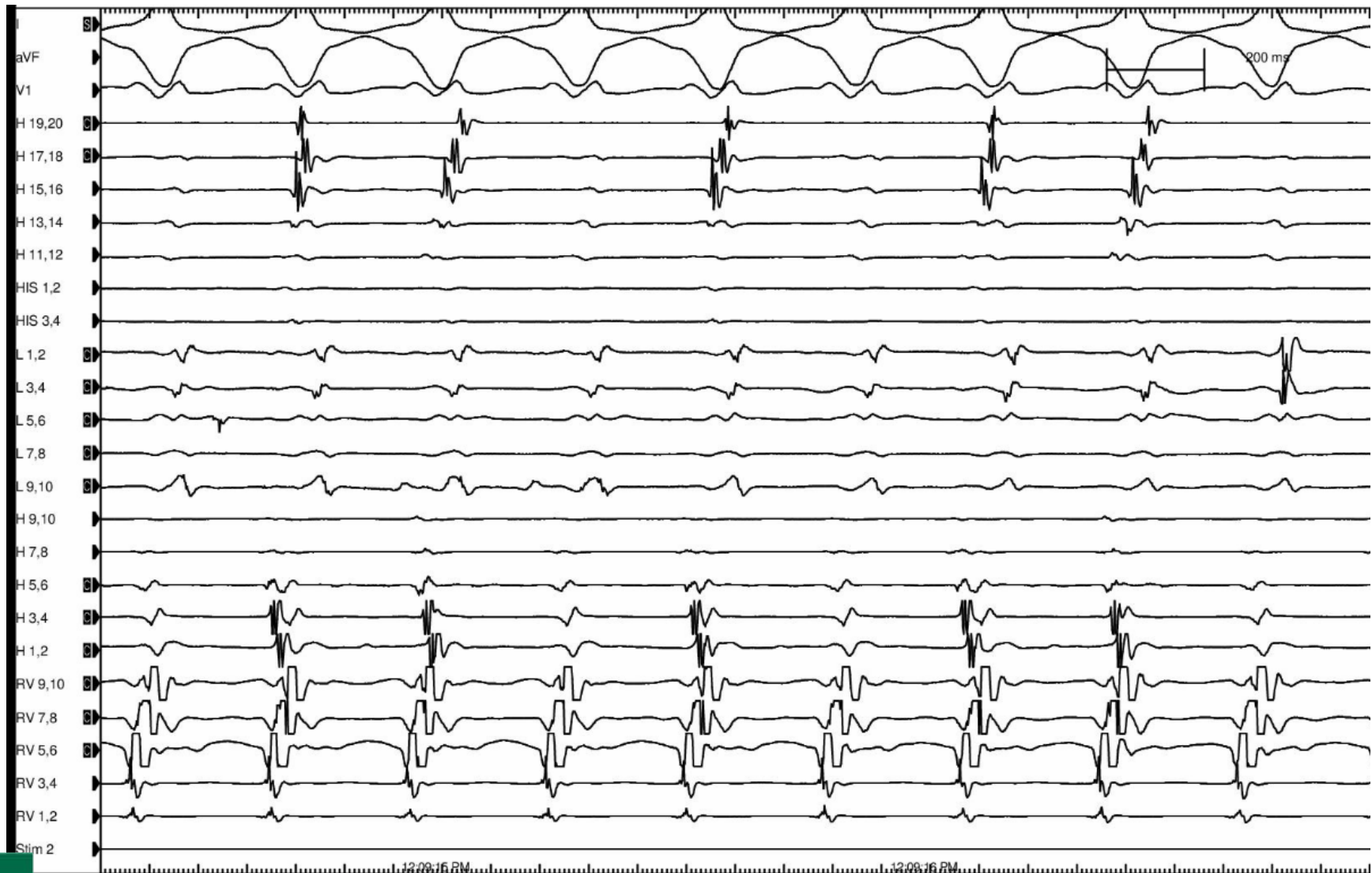
# VA dissociation and intermittent VA conduction



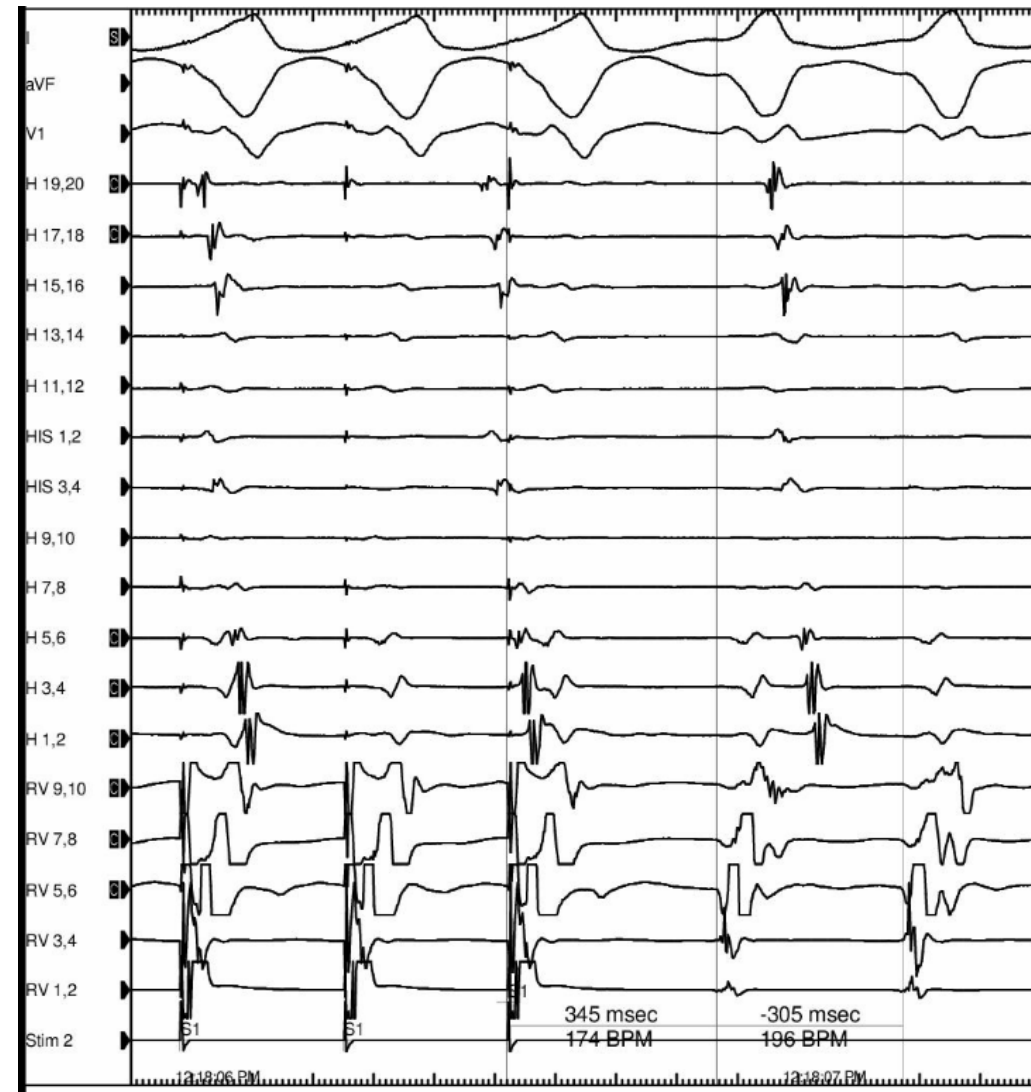
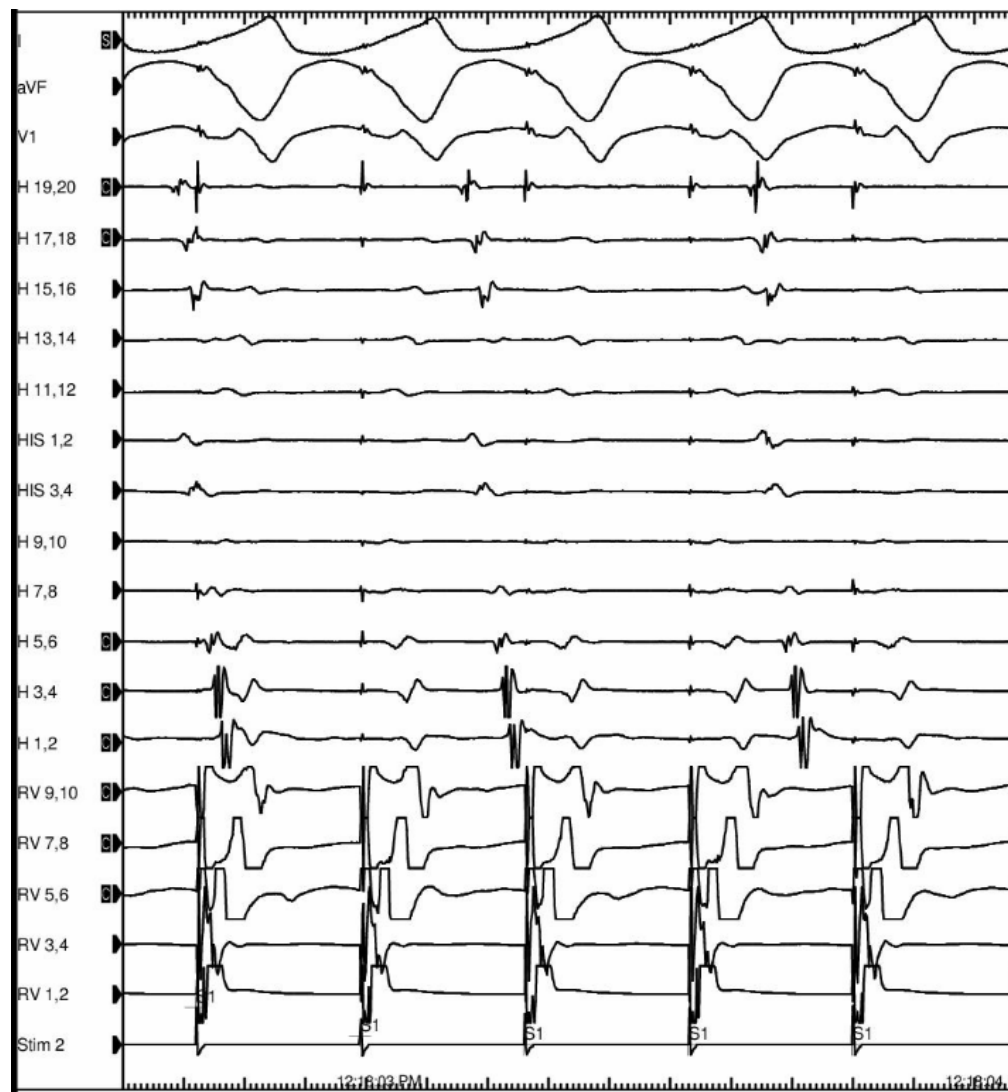
# 1:1 VA conduction(?) or dissociation(?)



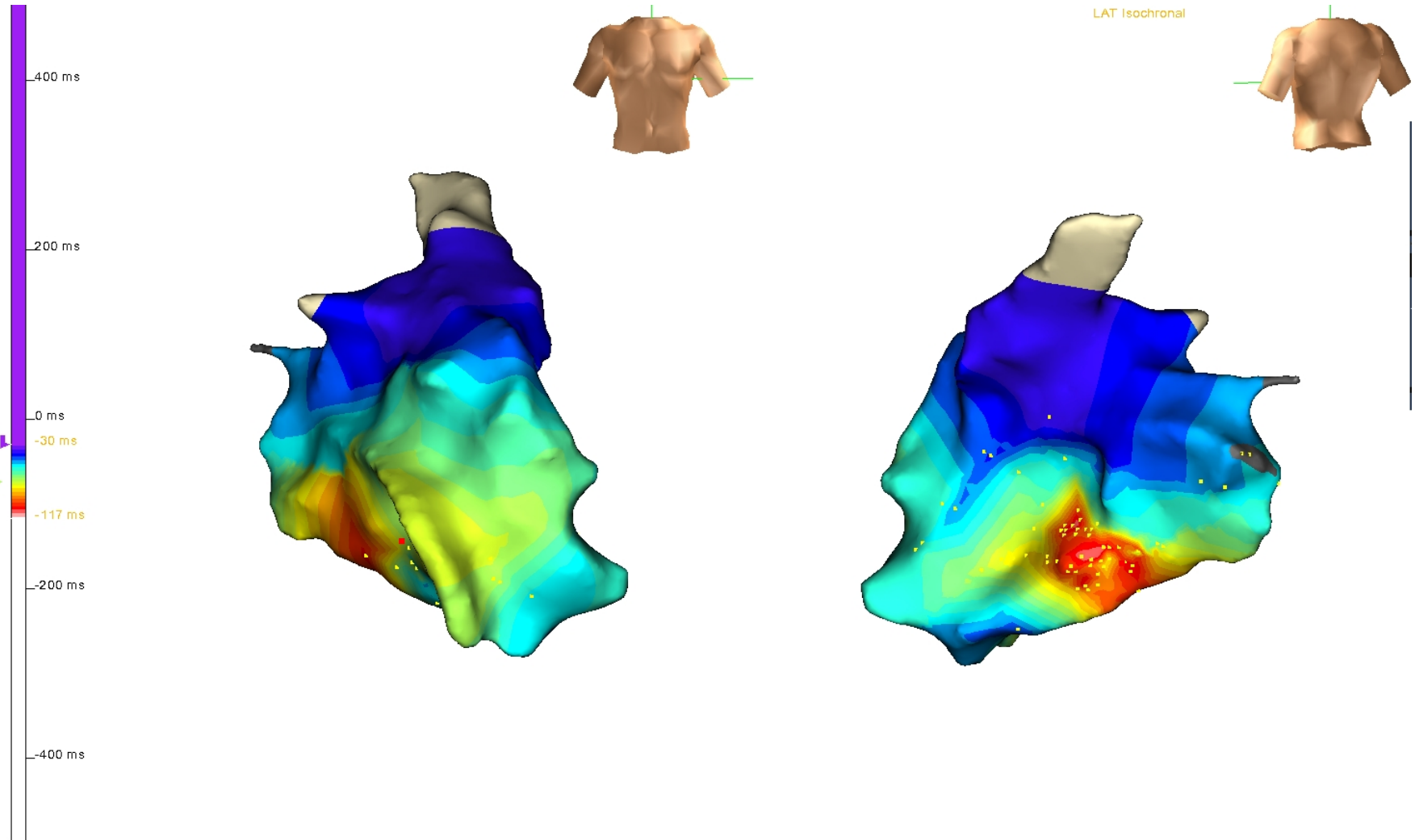
# RVOT (Not fast)



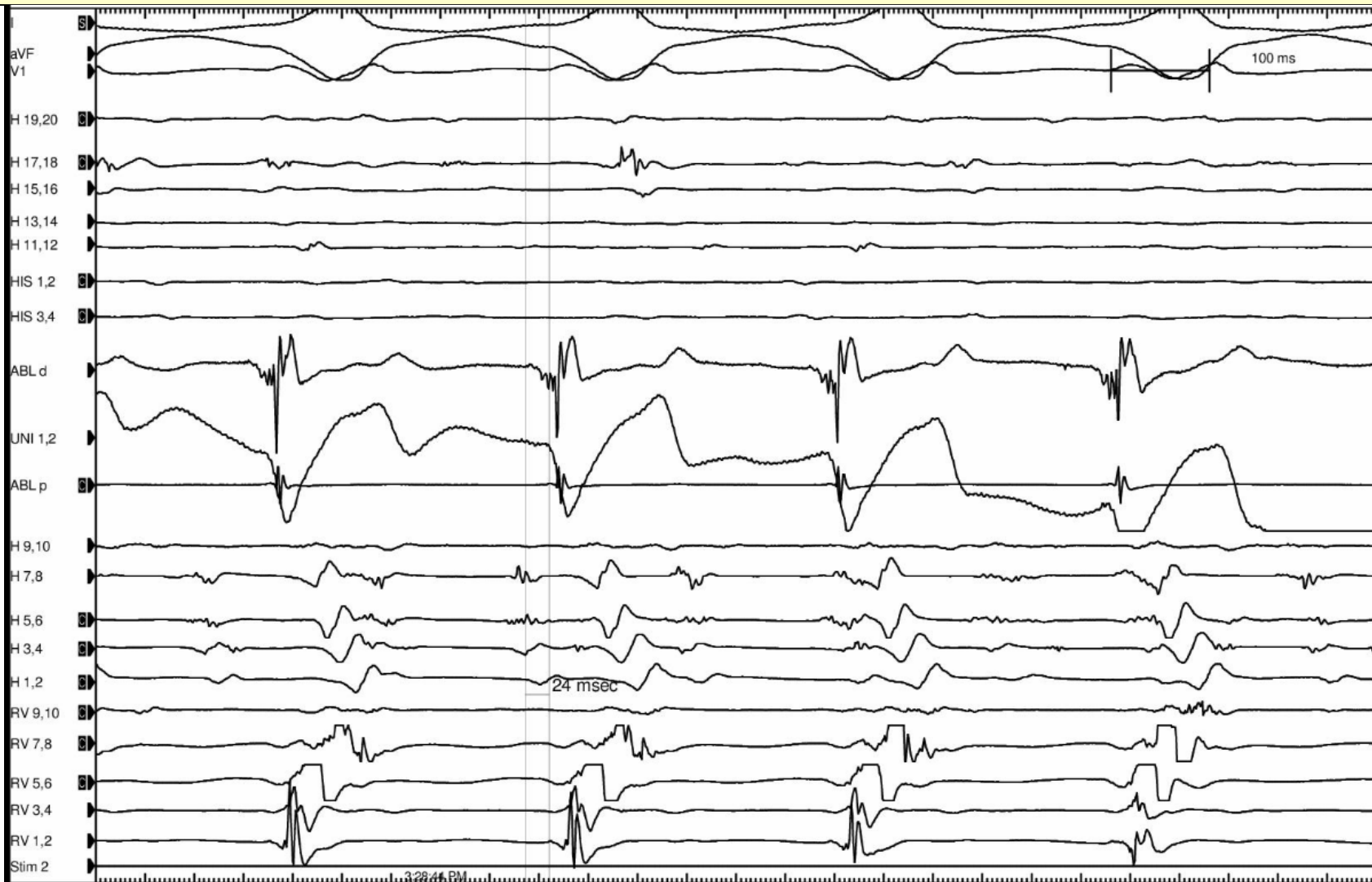
# Entrainment of RV apex (PPI-TCL=40ms)



# RV activation mapping



# Map 24ms fast / fragmented Potential / Unipolar



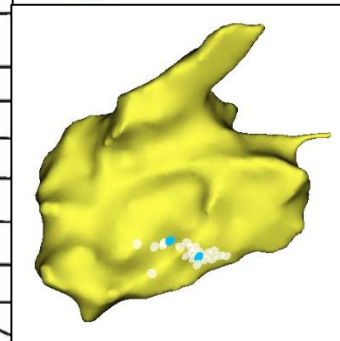
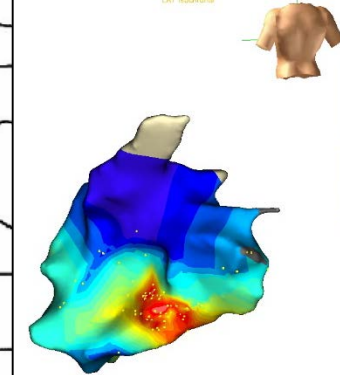
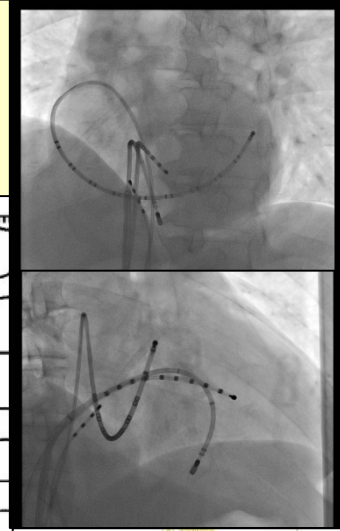
CardioLab v6.9.0



GE Healthcare  
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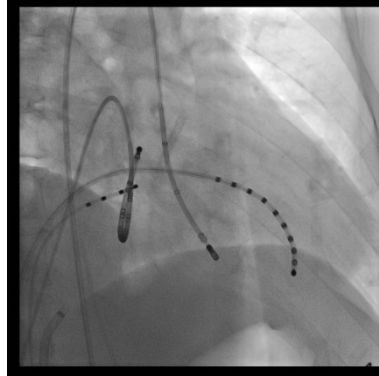
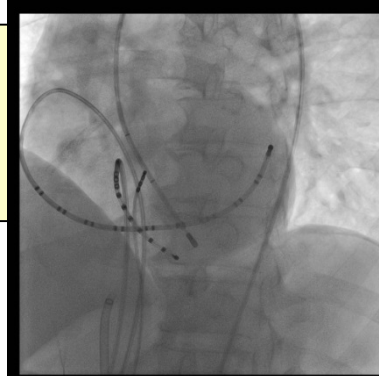
# RFA and termination



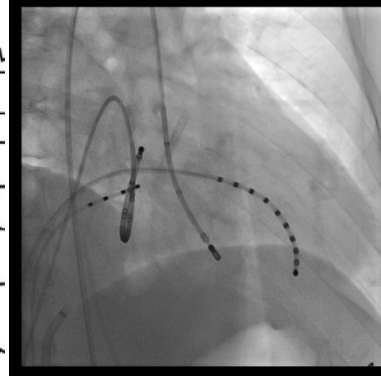
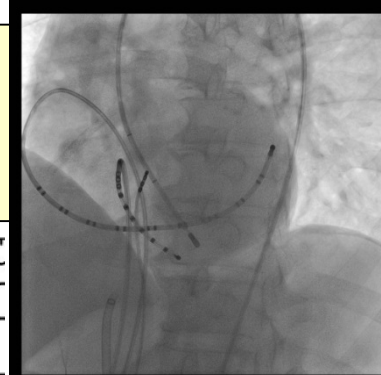
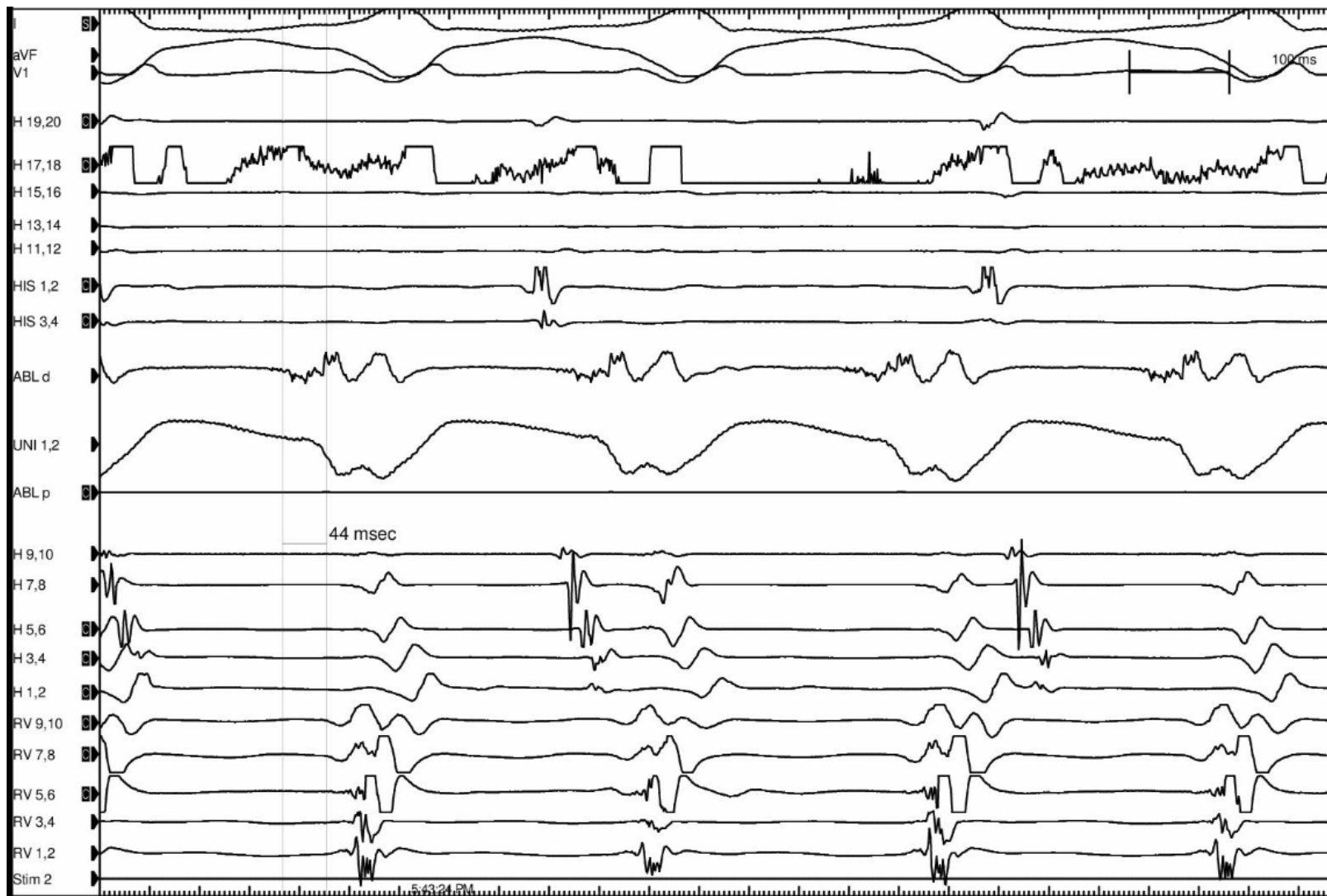
# Re-induction by RVP with isoproterenol 5ug



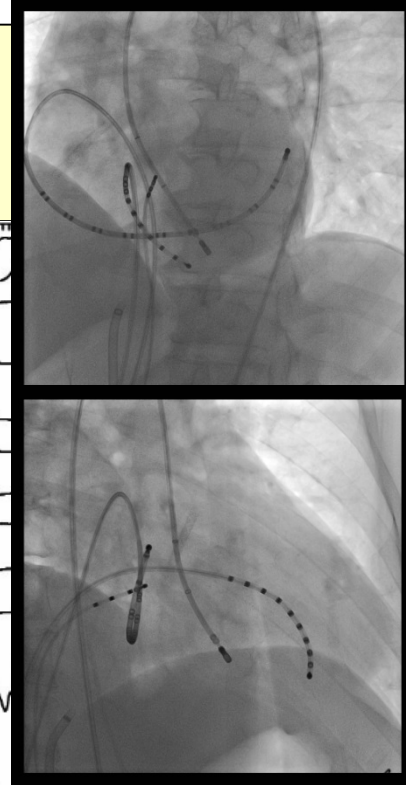
# LV mapping (fragmented potential / 47 ms fast)



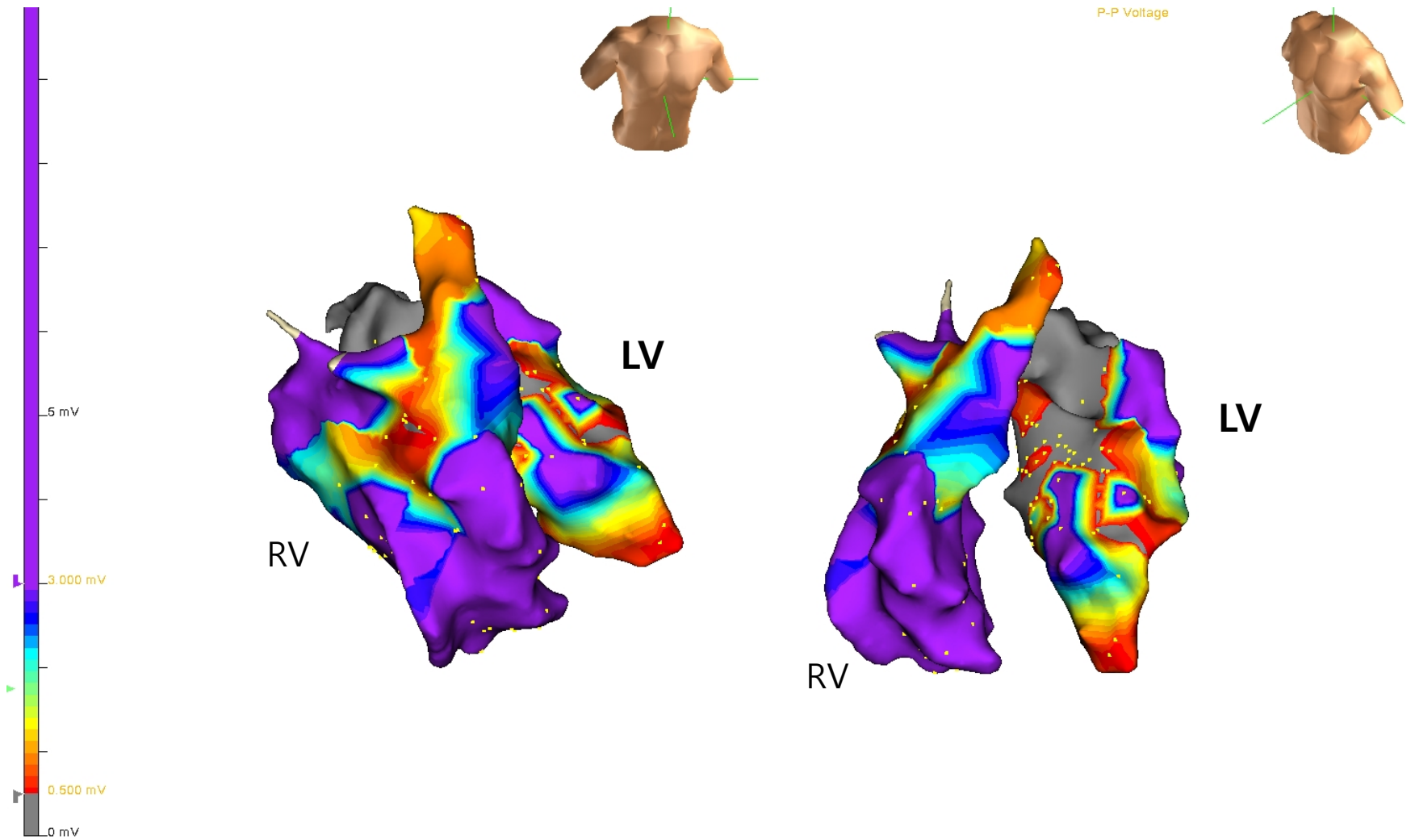
# LV mapping (fragmented potential / 44 ms fast)



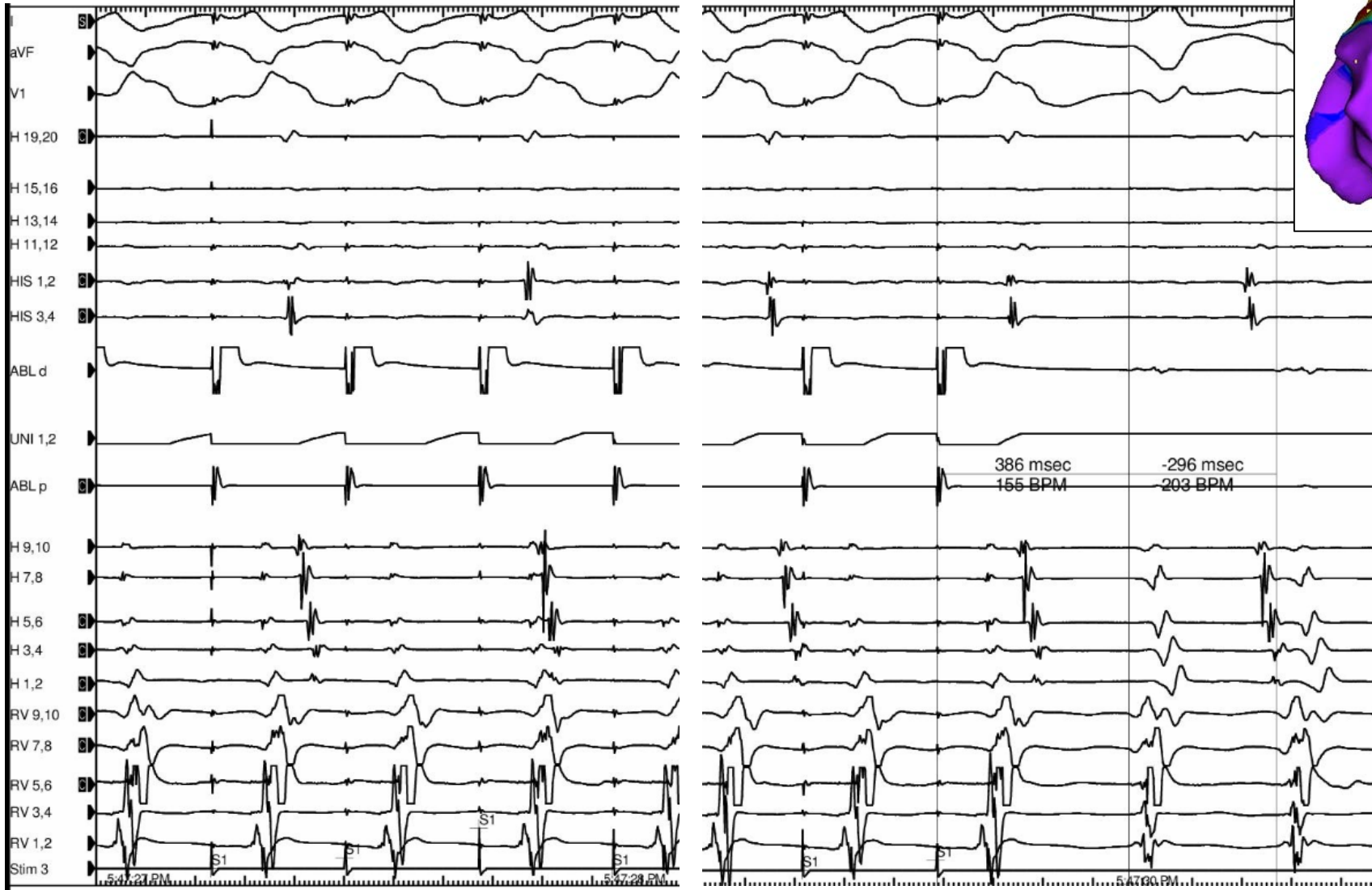
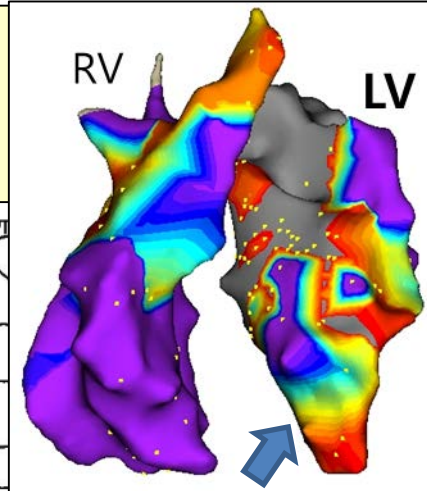
# LV mapping and termination



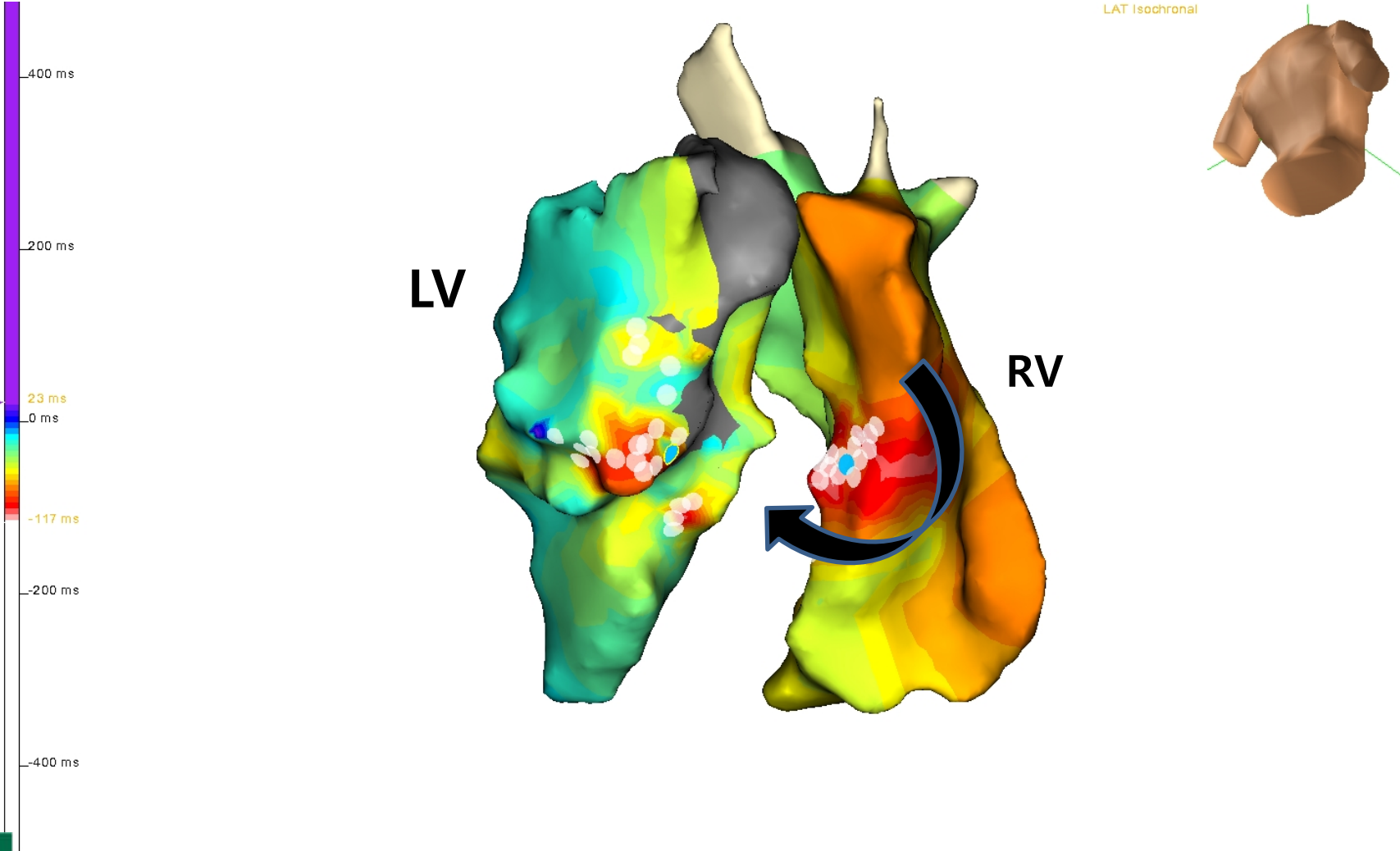
# LV Voltage mapping (low voltage area / 0.5mV)



# Entrainment (LV apex) (PPI-TCL 90ms)

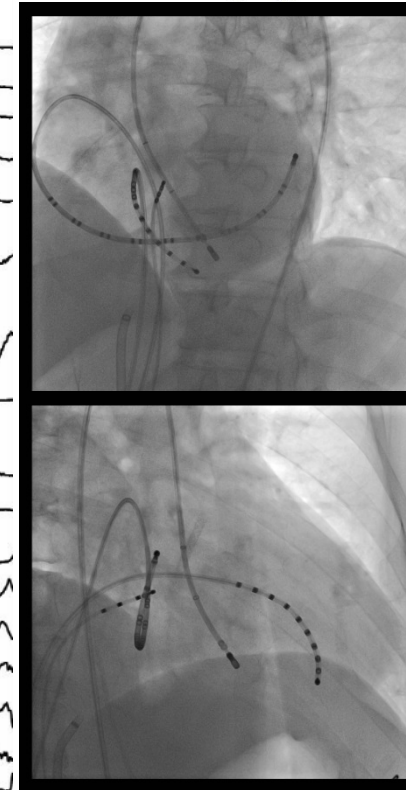
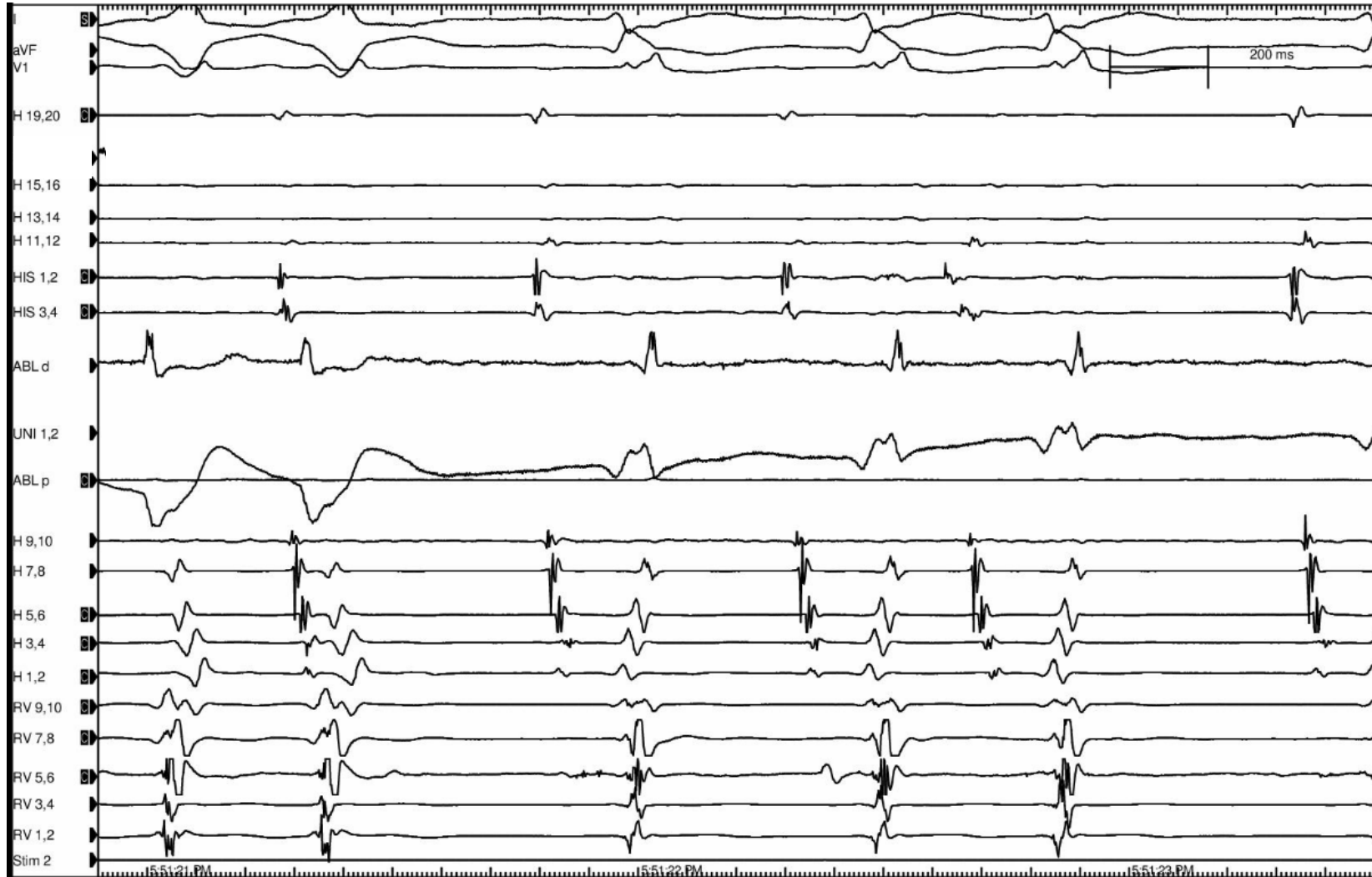
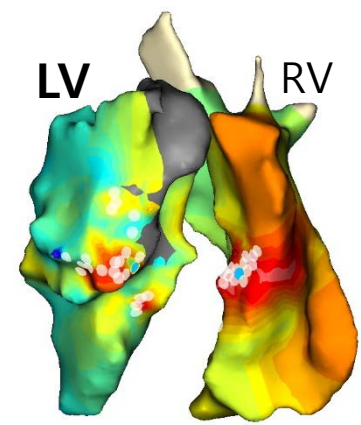


# Activation map at LV / RFA between low voltage area

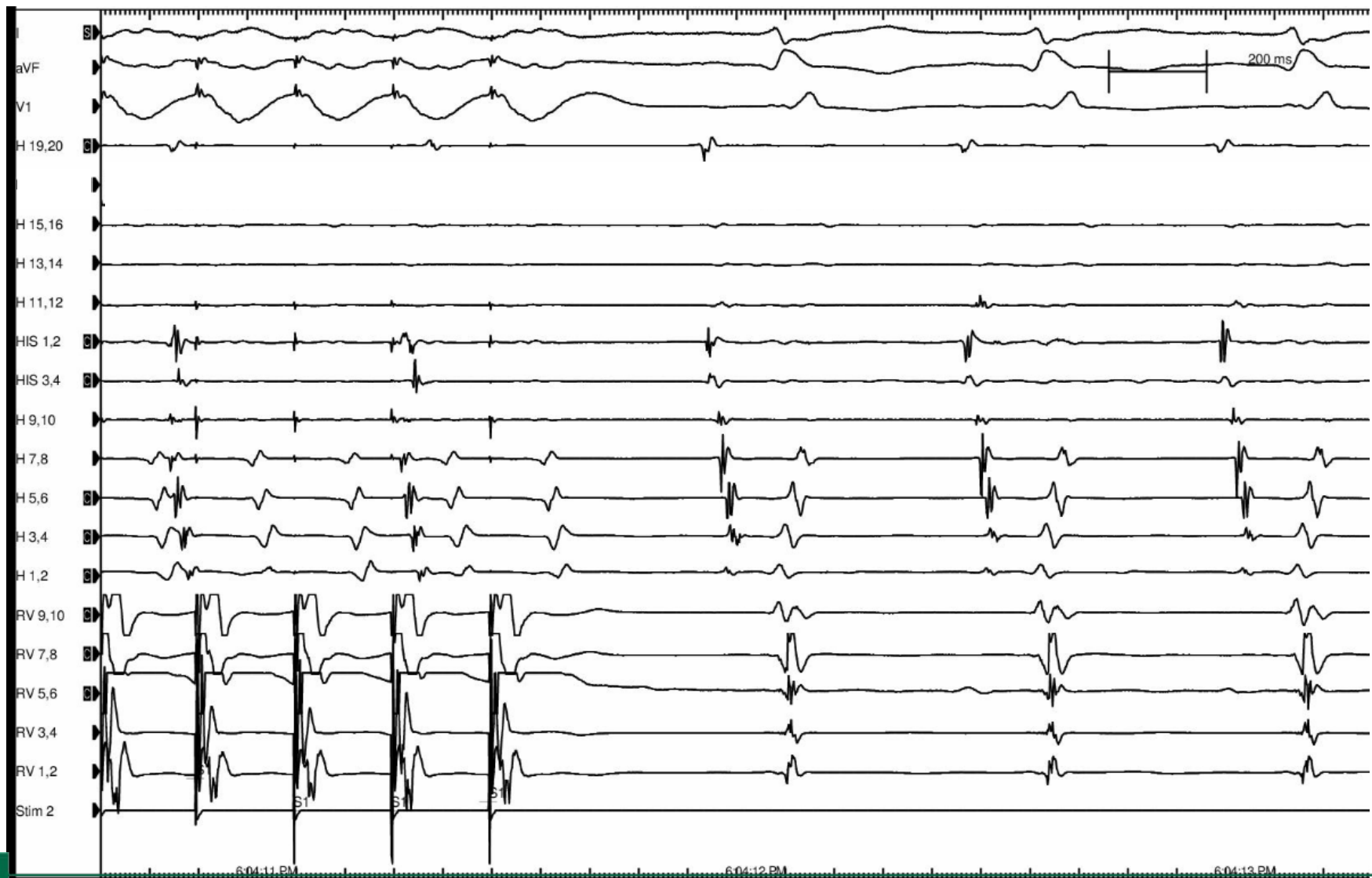




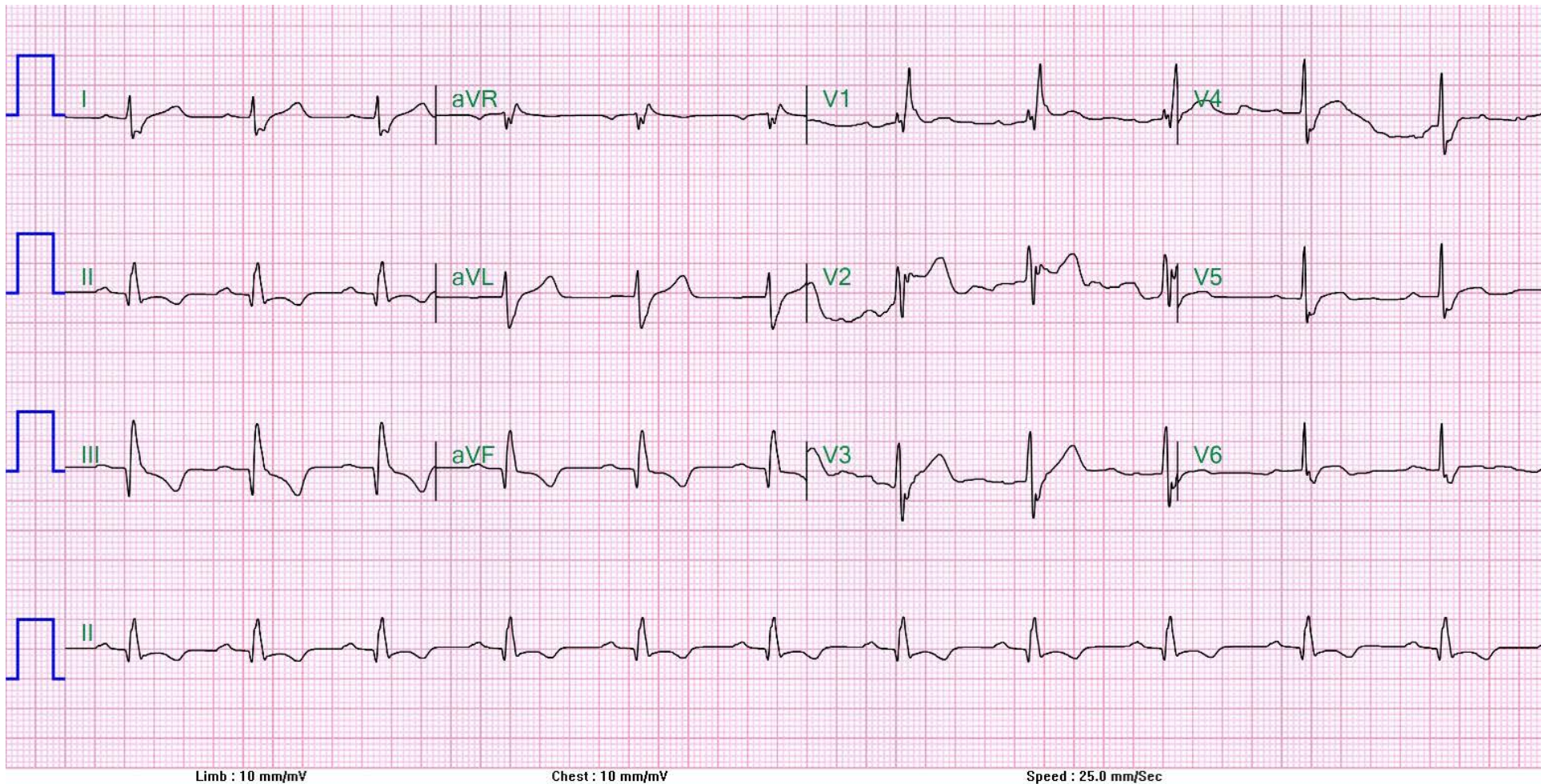
# VT was terminated during RFA



# No induction by RVP and isoproterenol 5ug



# Final EKG



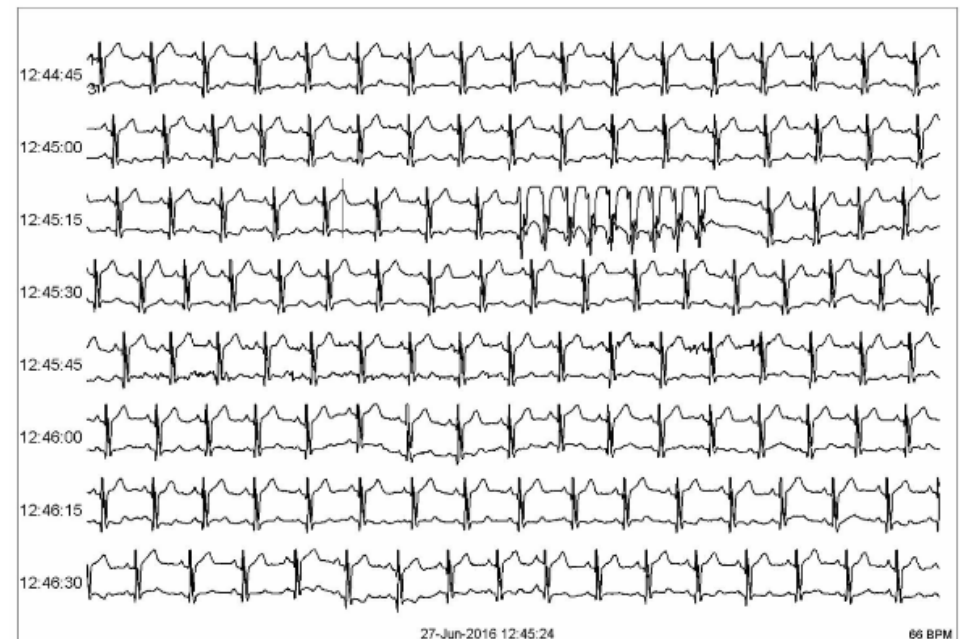
# Treatment Plan

- No clinical Sx (post RFA 1month)
- Serial TMT at post RFA 1 year : ok
- Holter at post RFA 1 year  
=> Non-sustained VT
- Beta blocker and observation

Patient Event, Palpitations

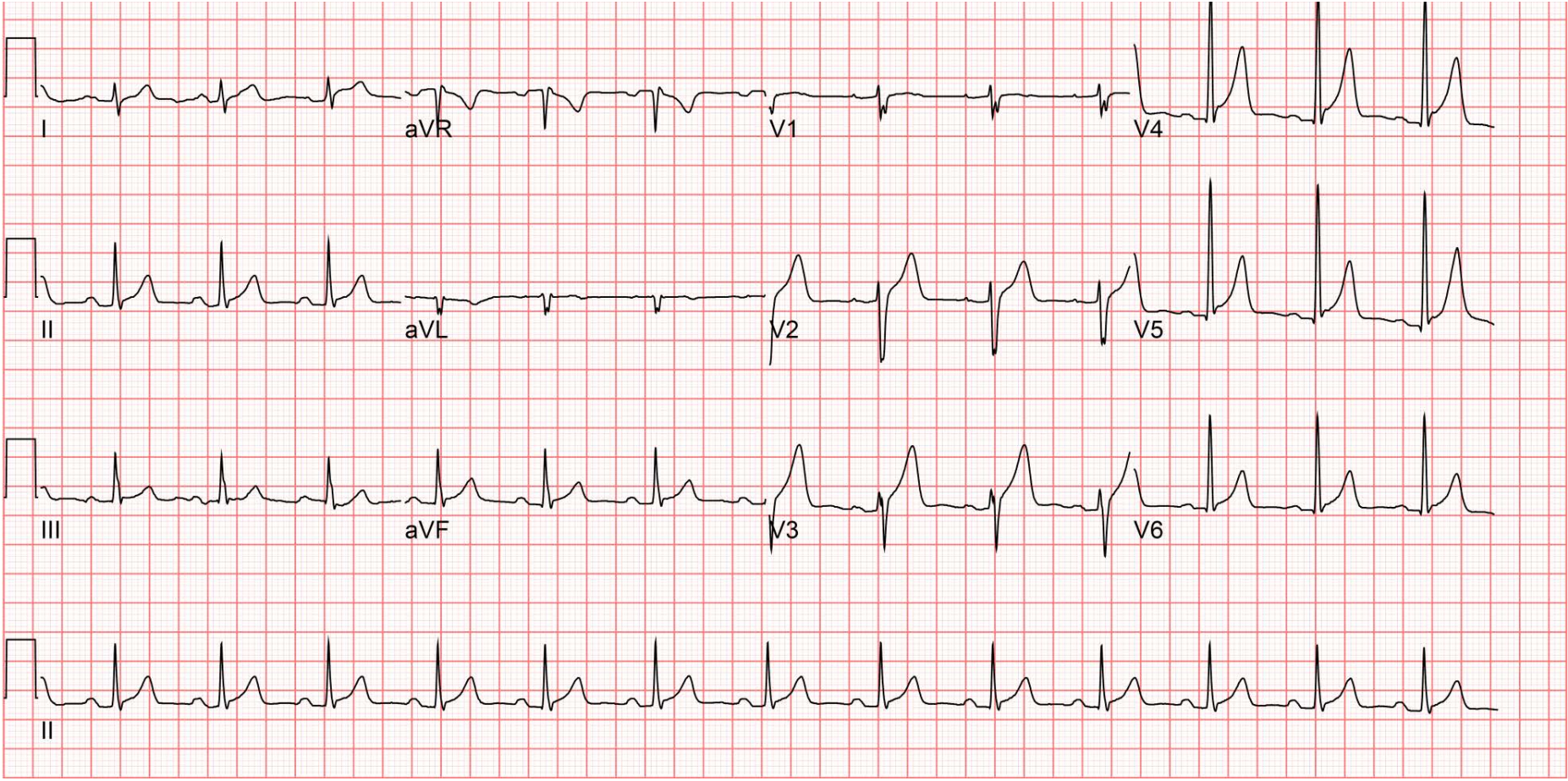


Patient Event, Palpitations



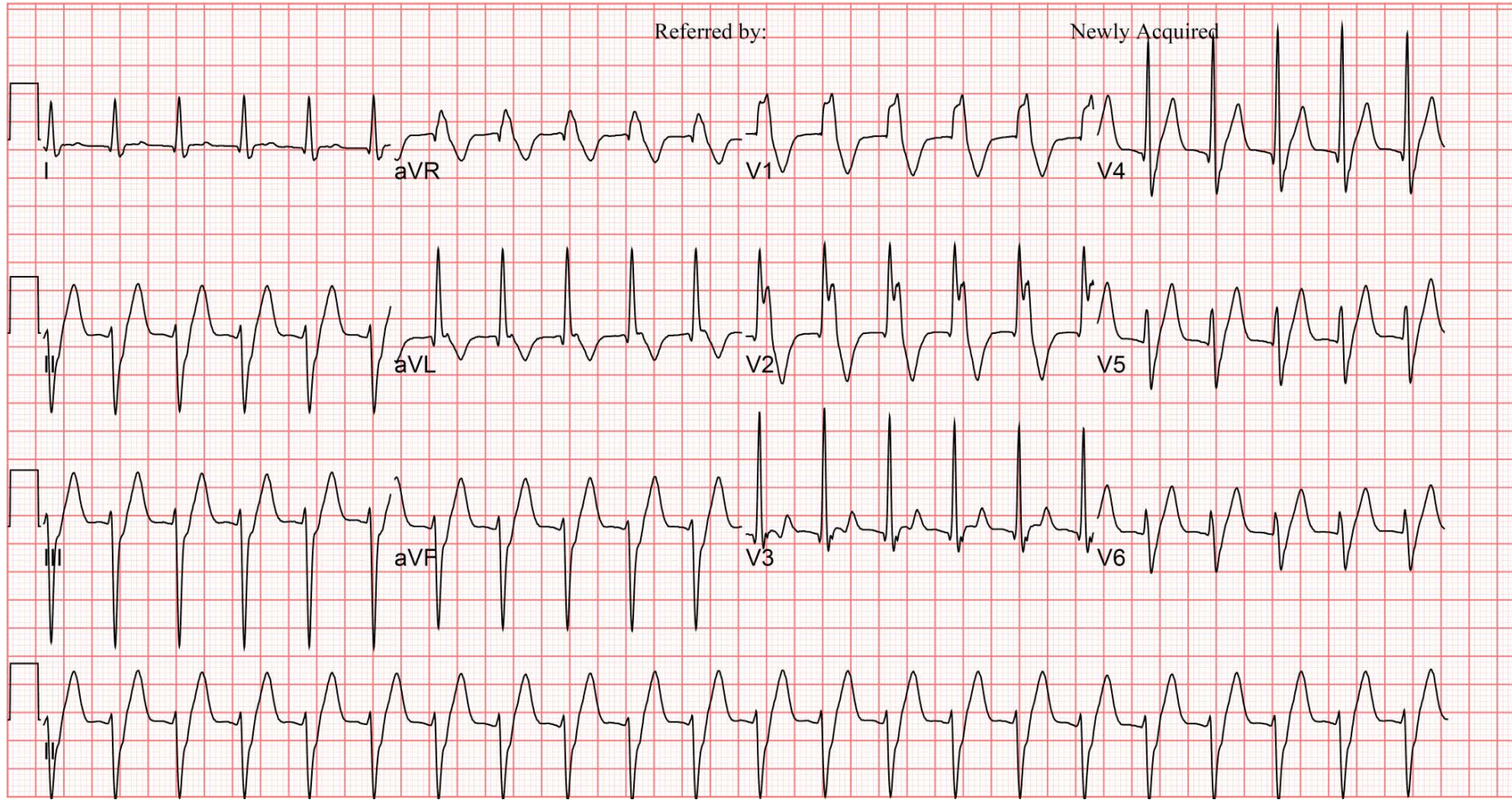
## **CASE II. Recurrent palpitation (ER)**

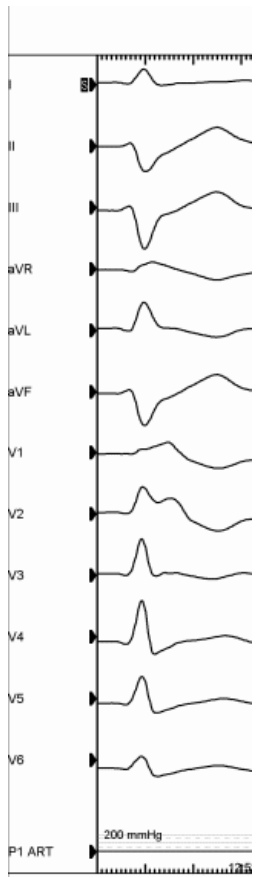




# M/21, Sudden palpitation (ER)

## No response on adenosine, Termination on Verapamil

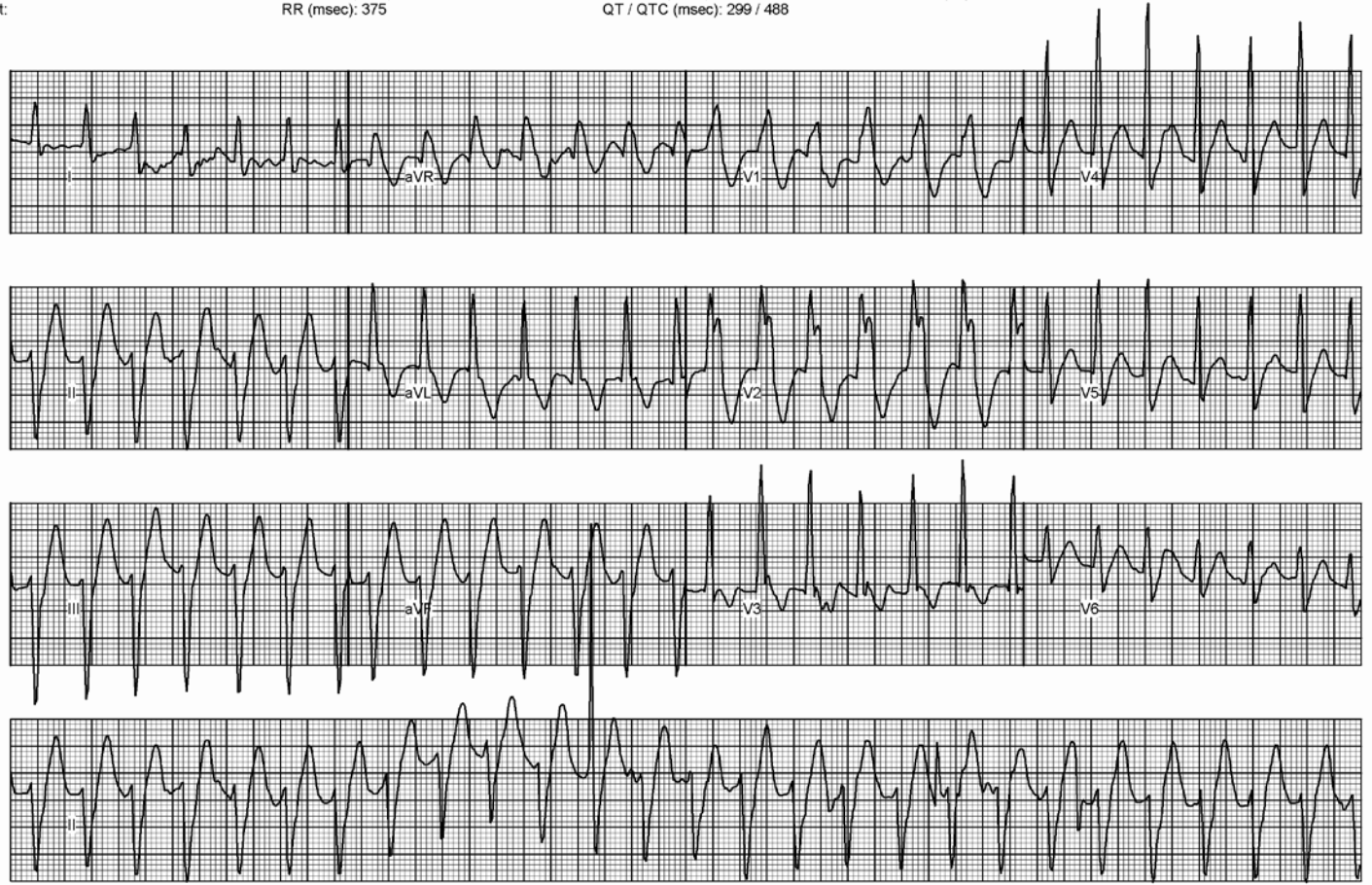




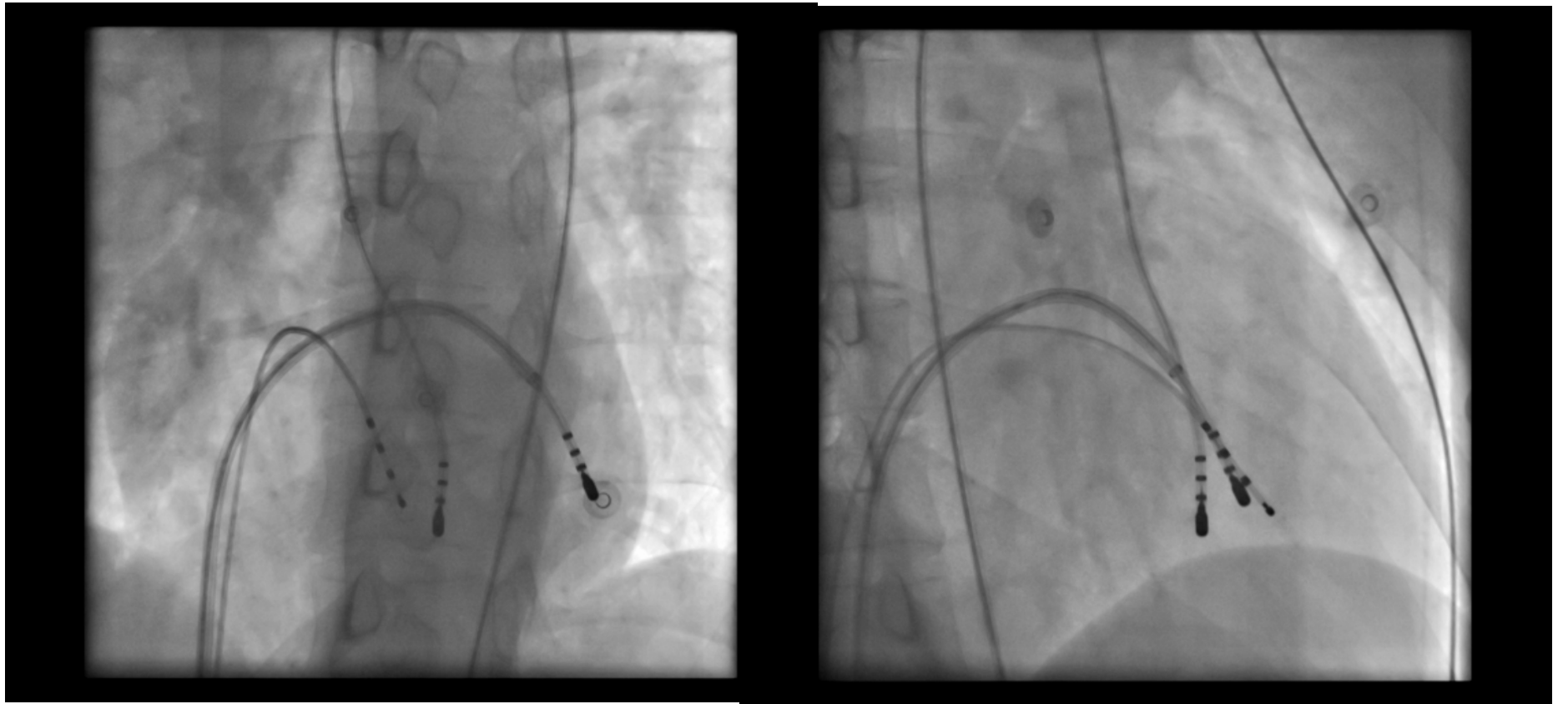
Height:

RR (msec): 375

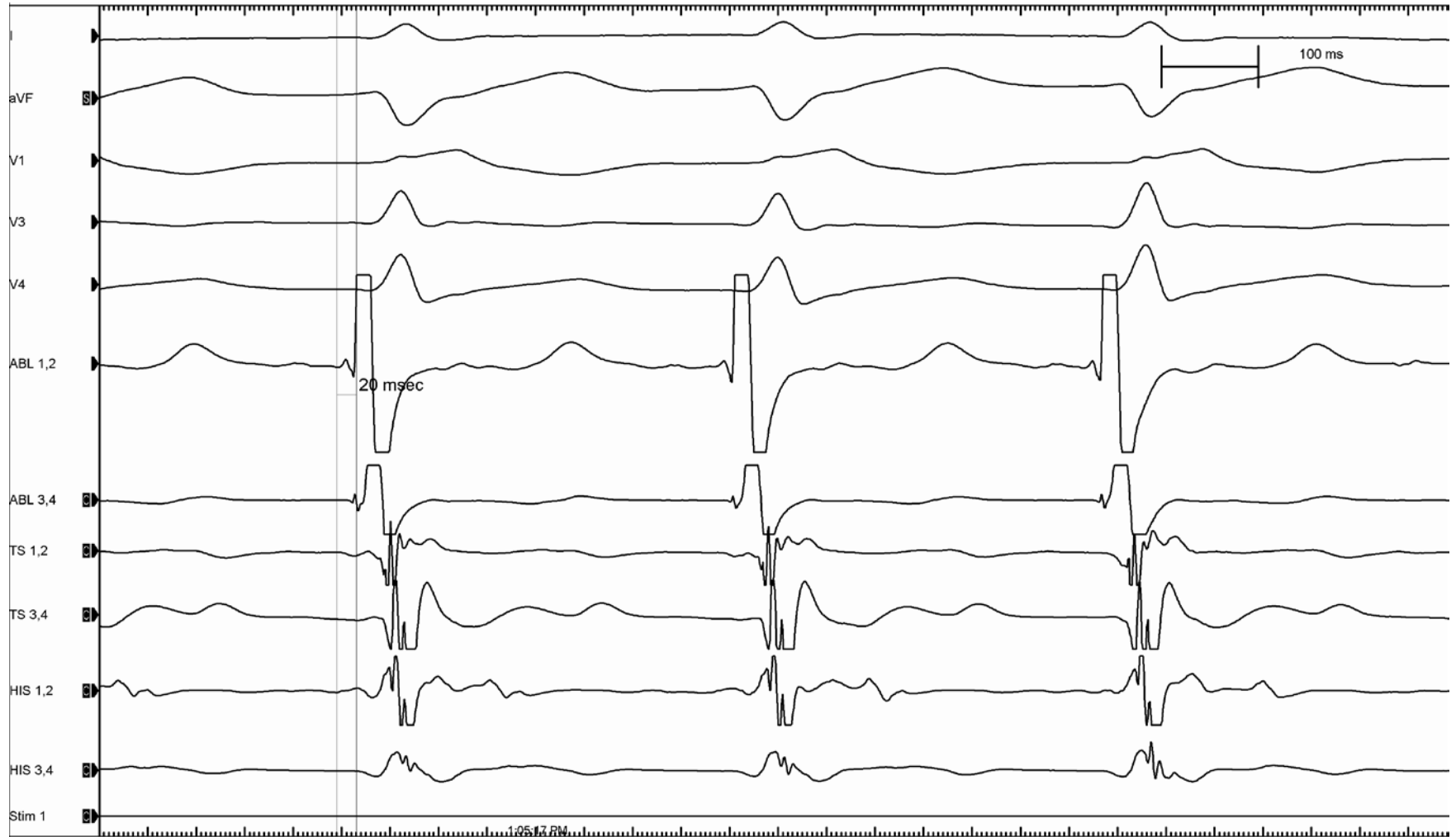
QT / QTC (msec): 299 / 488



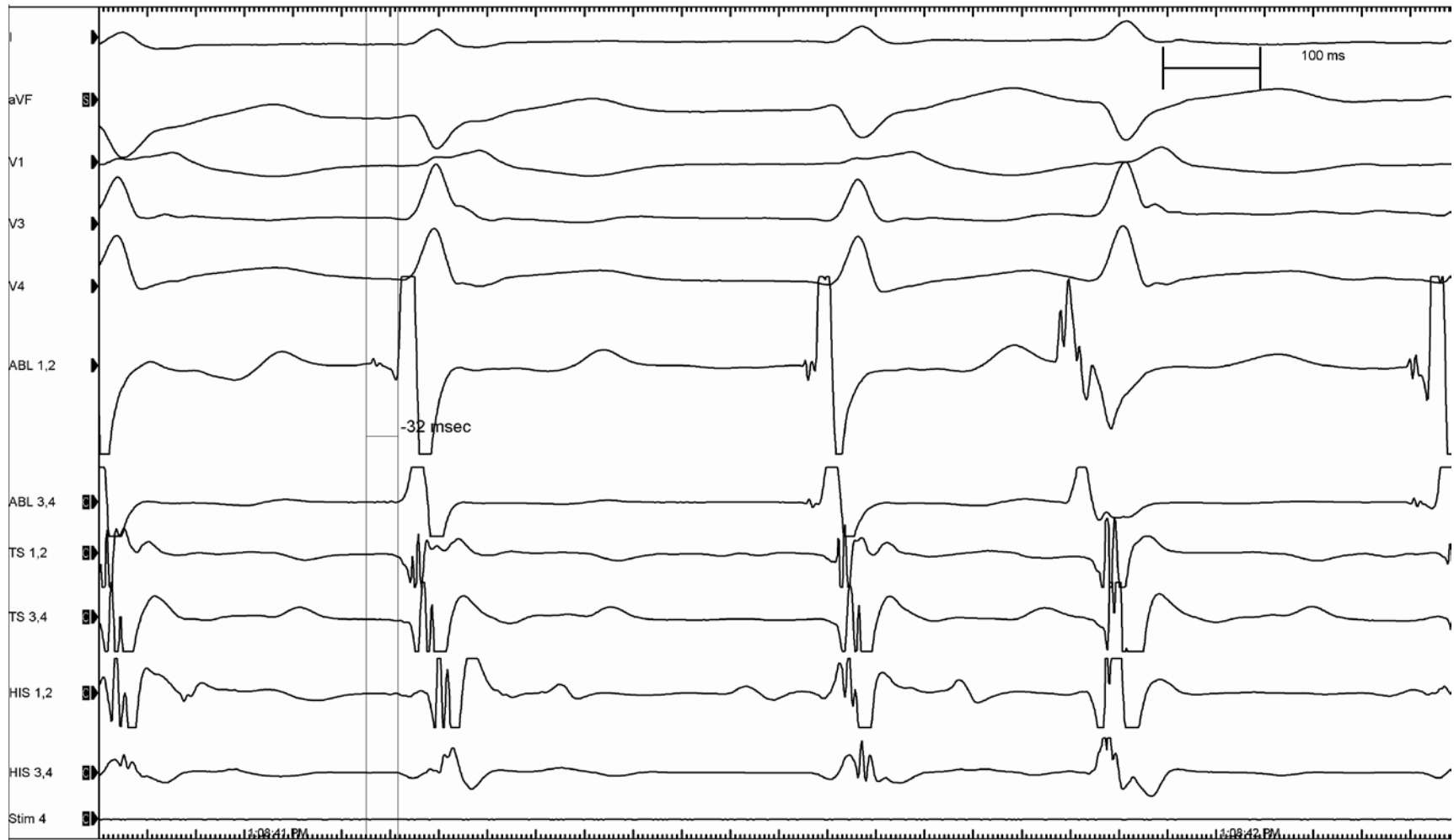




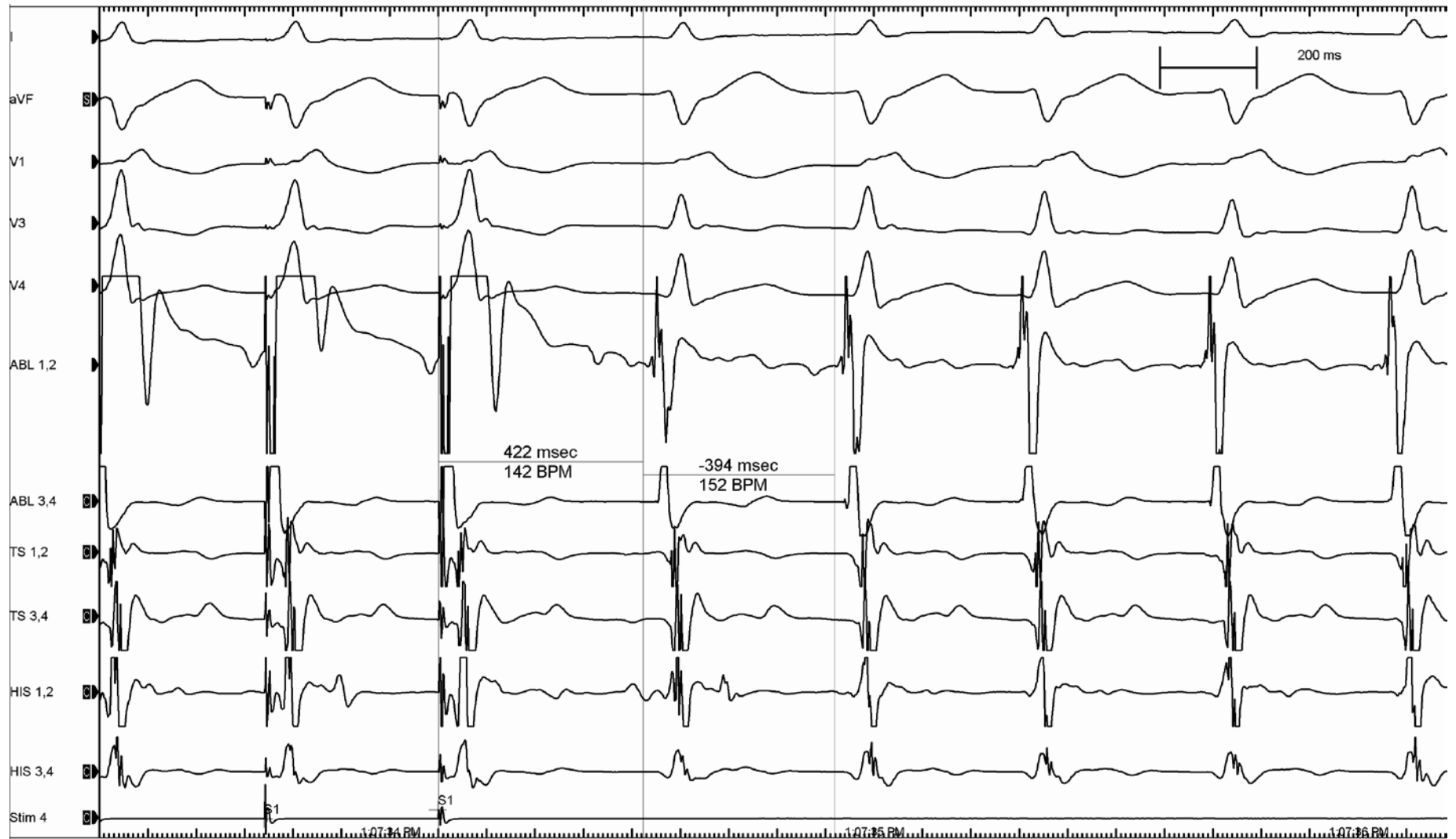
# 20ms Fast



# 32ms Fast

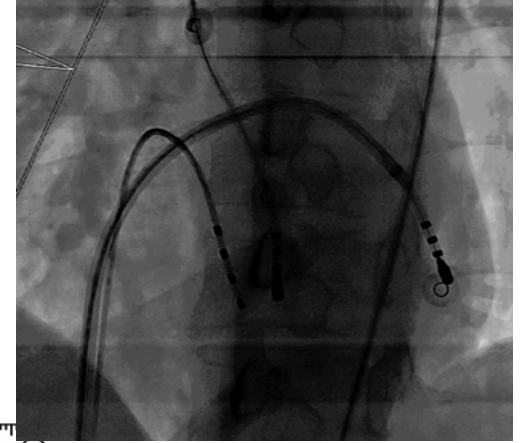


# PPI-TCL=28ms





# RF#2



Abl:ON

100 ms

1:28:43 PM

# Termination (3sec)



# Final (NSR)



## **CASE III. Recurrent palpitation (ER)**





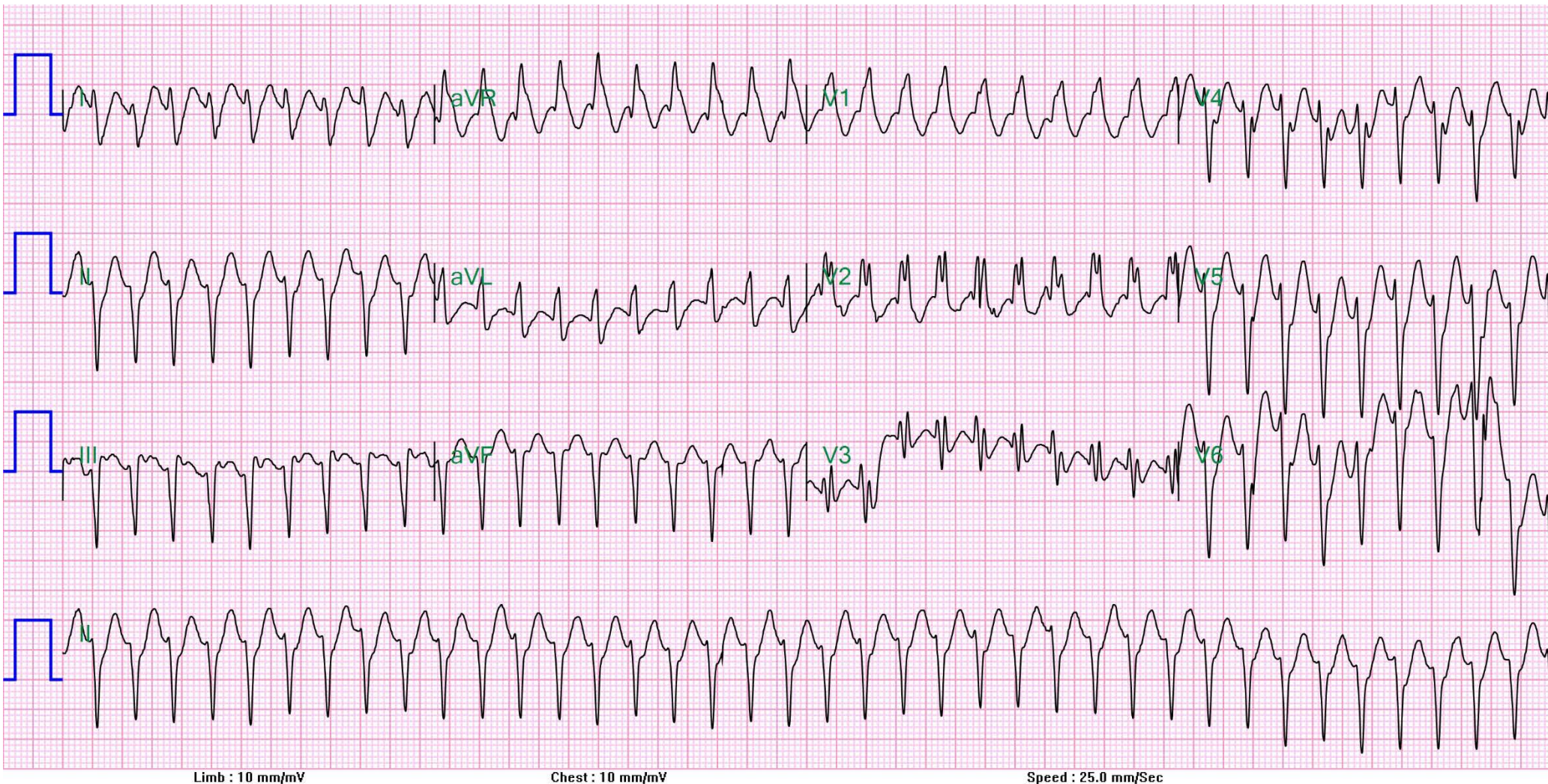
# Recurrent palpitation (ER)

- F/47
- Cc: recurrent palpitation
- Echo : EF 68%, No abnormal finding



# ER.

## No-response (adenosine), Termination by verapamil



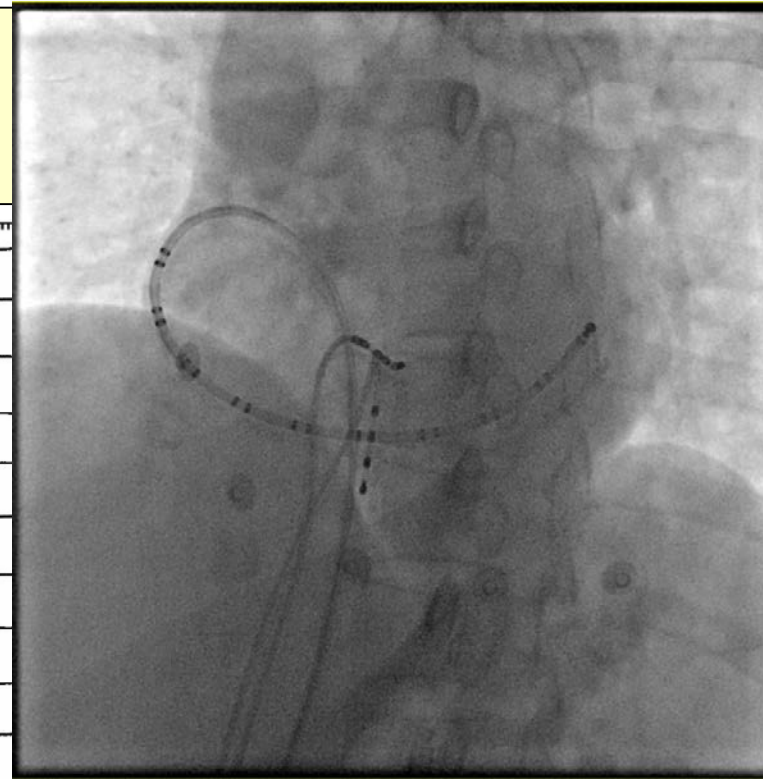
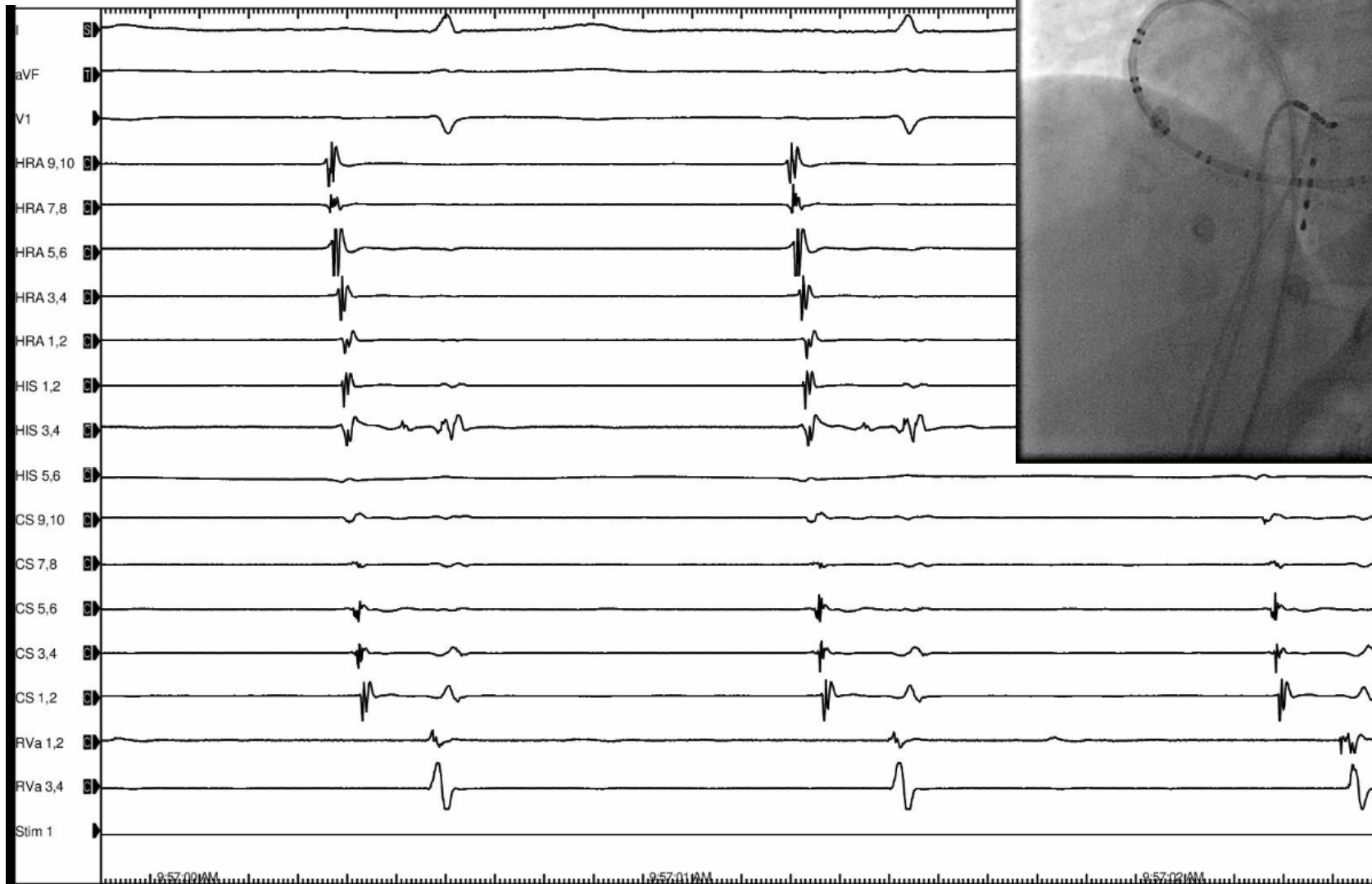
Limb : 10 mm/mV

Chest : 10 mm/mV

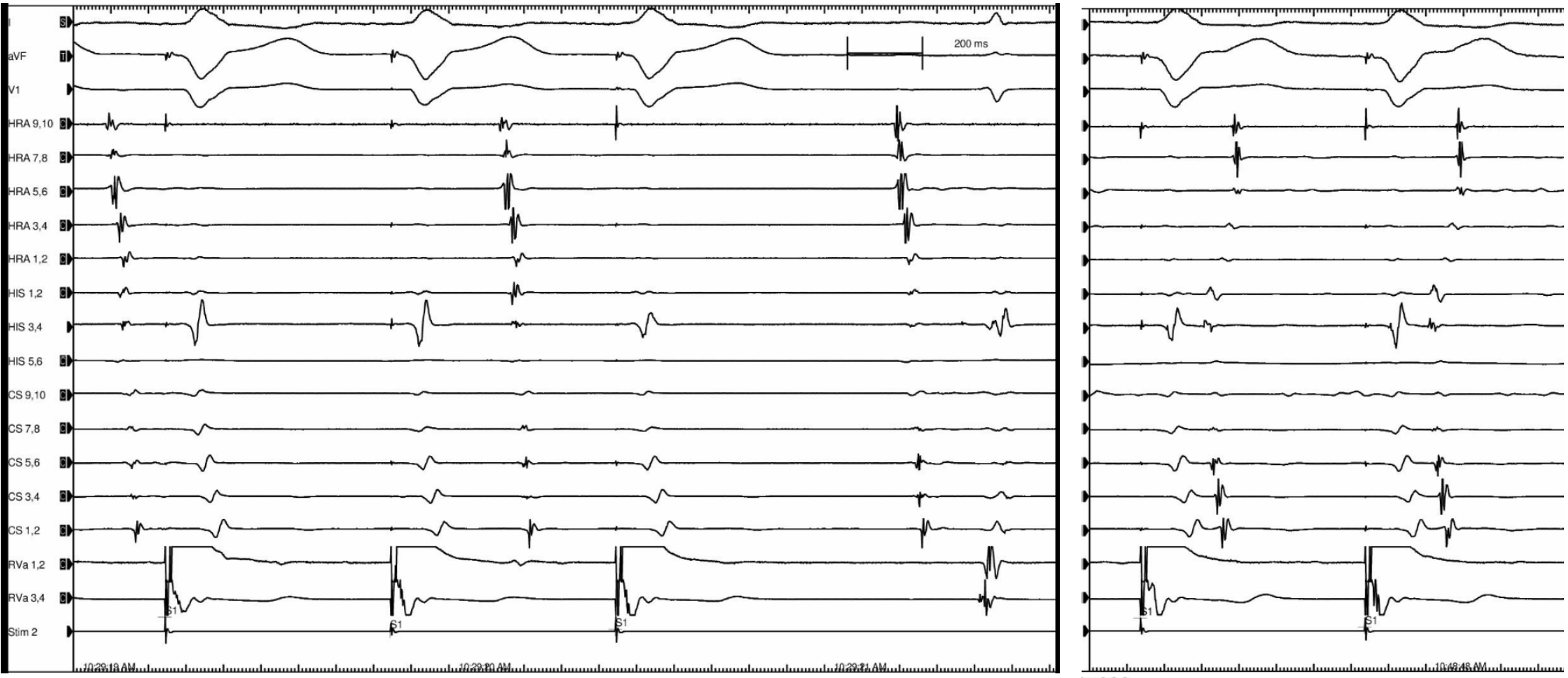
Speed : 25.0 mm/Sec



# Catheter position and NSR



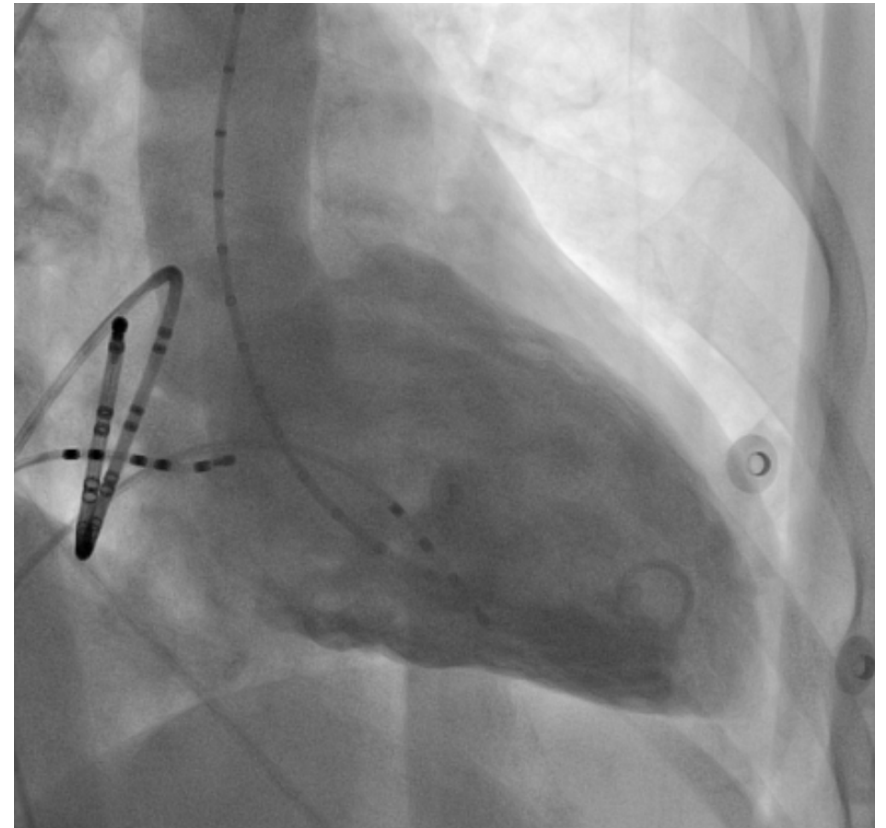
# VA conduction (RVP 600) after isoproterenol 1ug

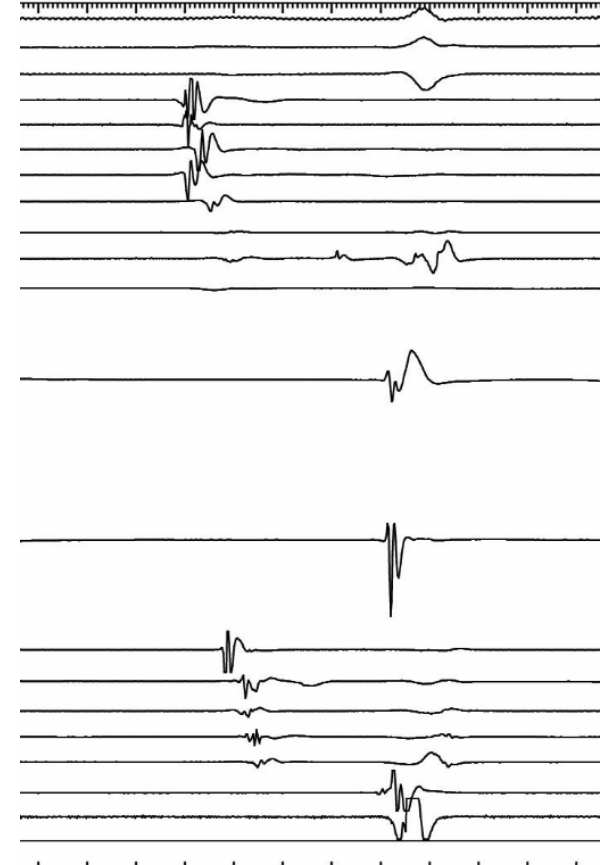
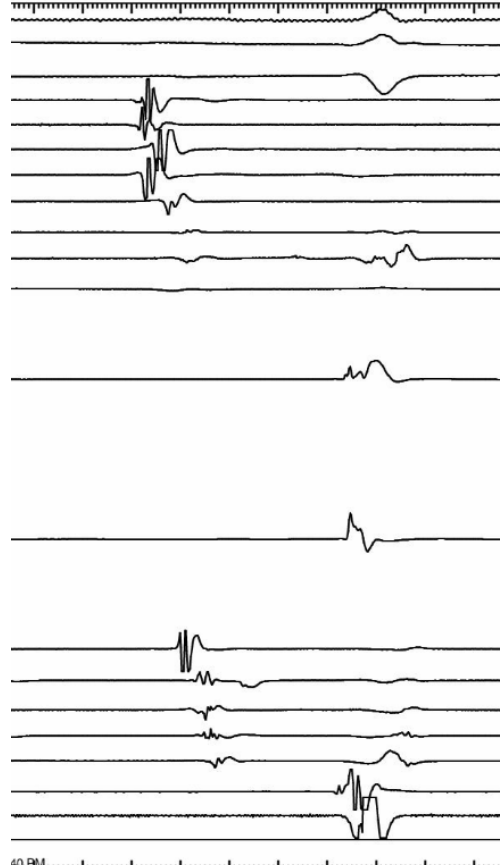
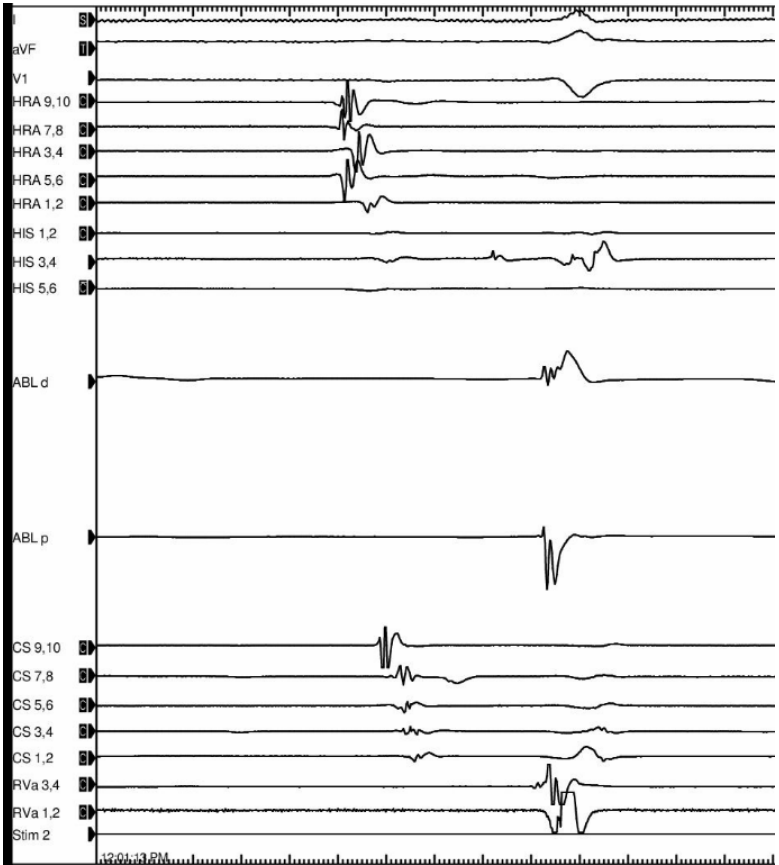
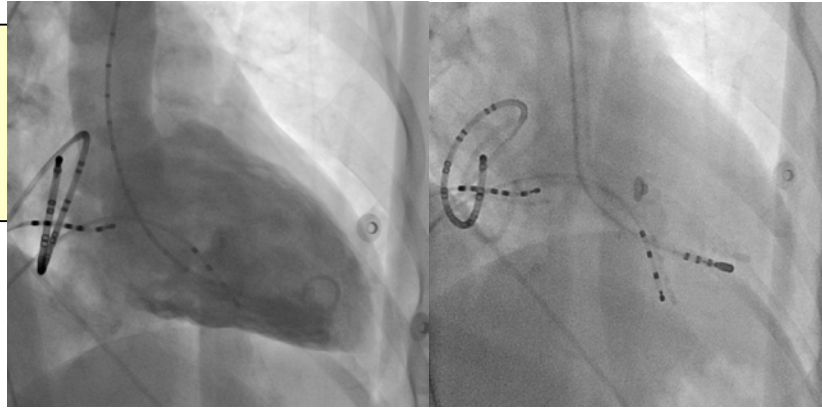
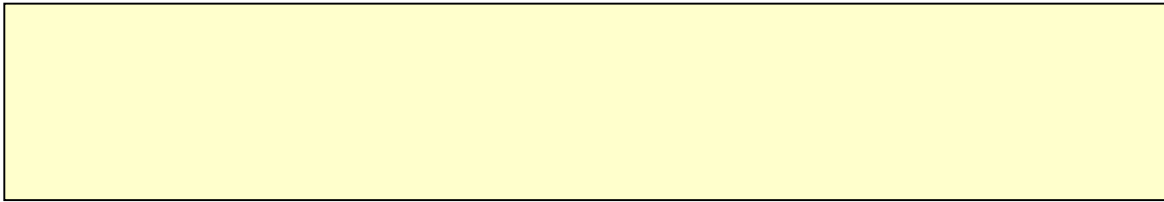


**No Tachycardia induction**

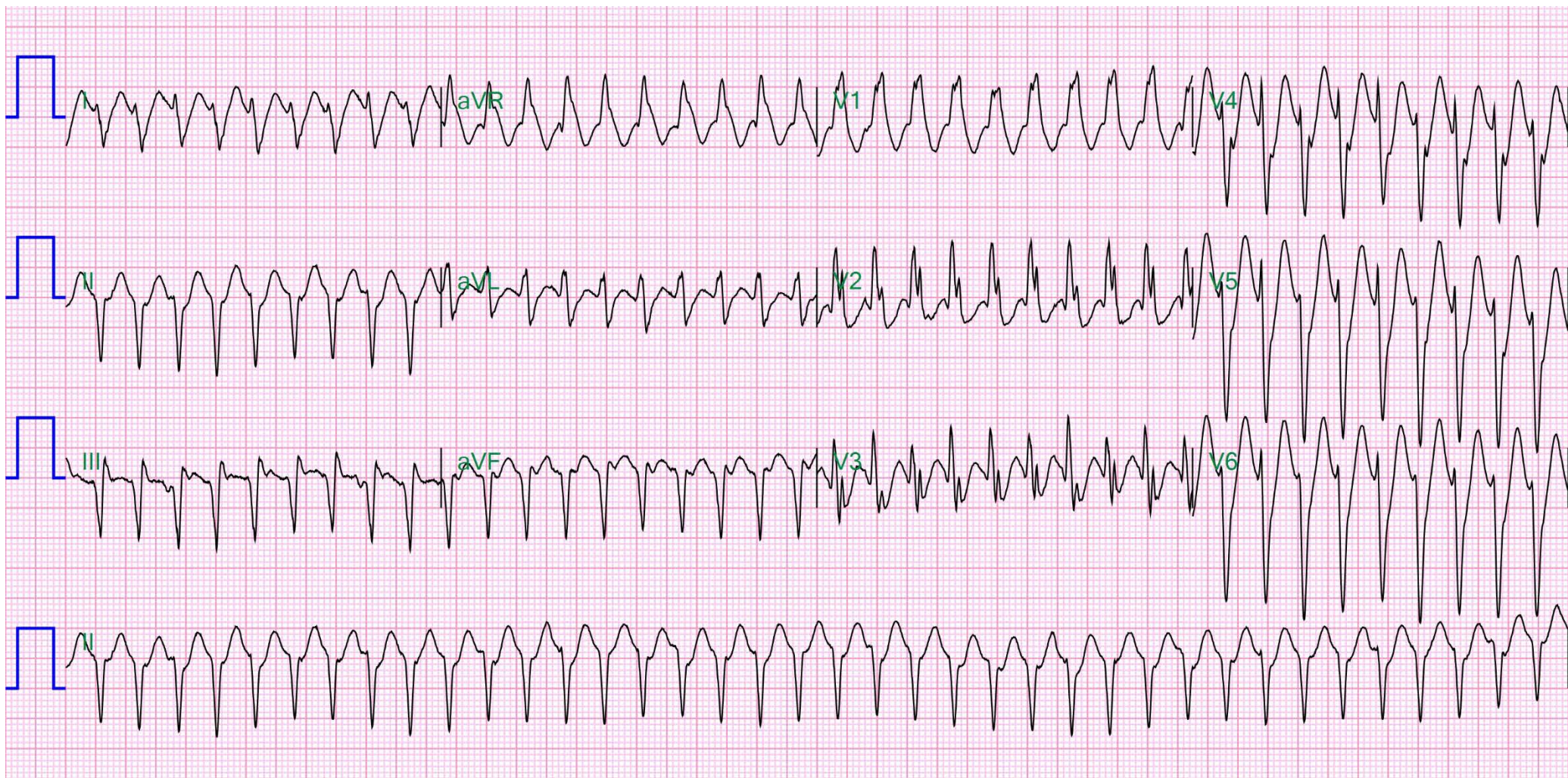


# LV angiography





# ER (3 month later)



Limb : 10 mm/mV

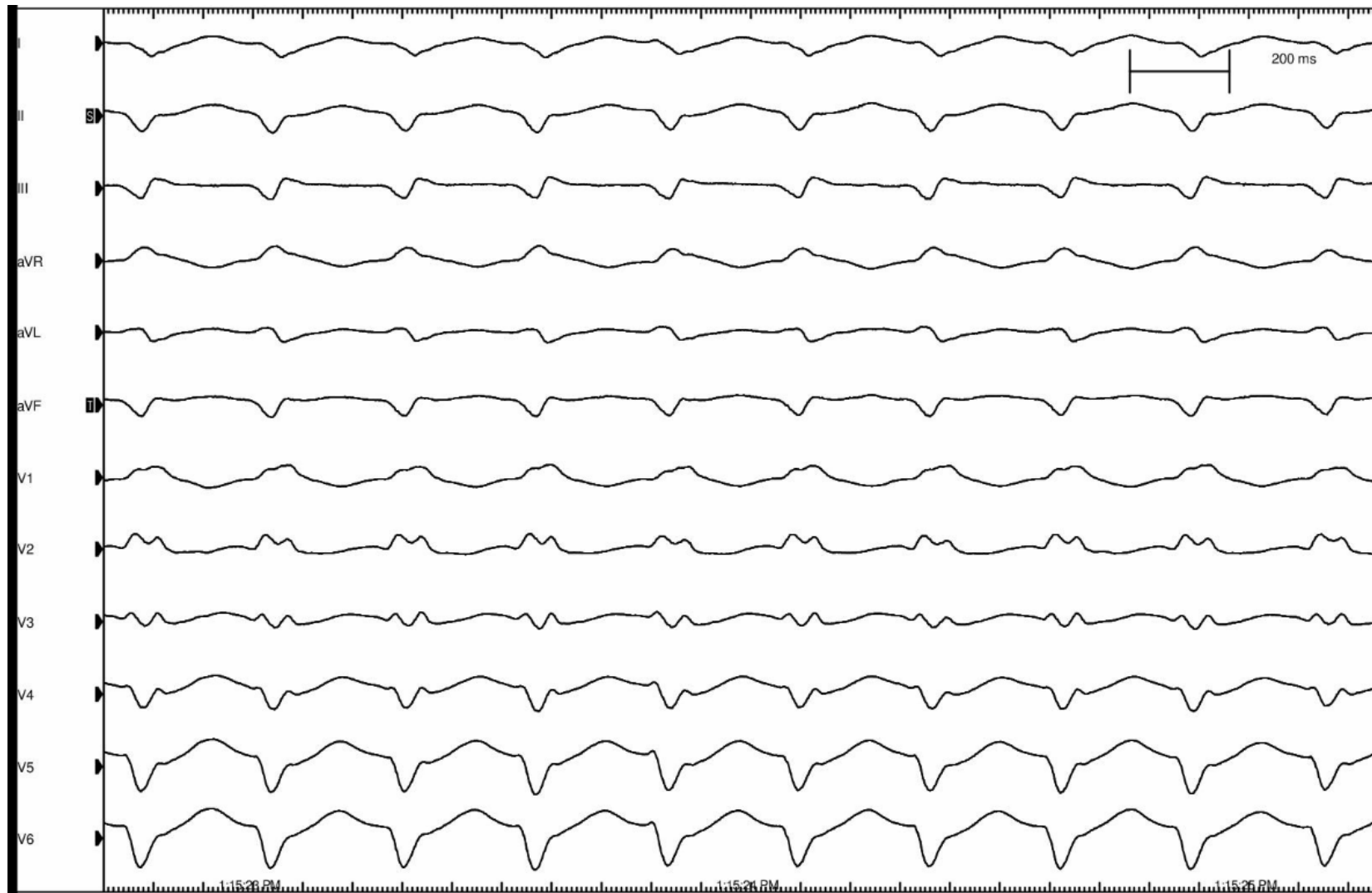
Chest : 10 mm/mV

Speed : 25.0 mm/Sec

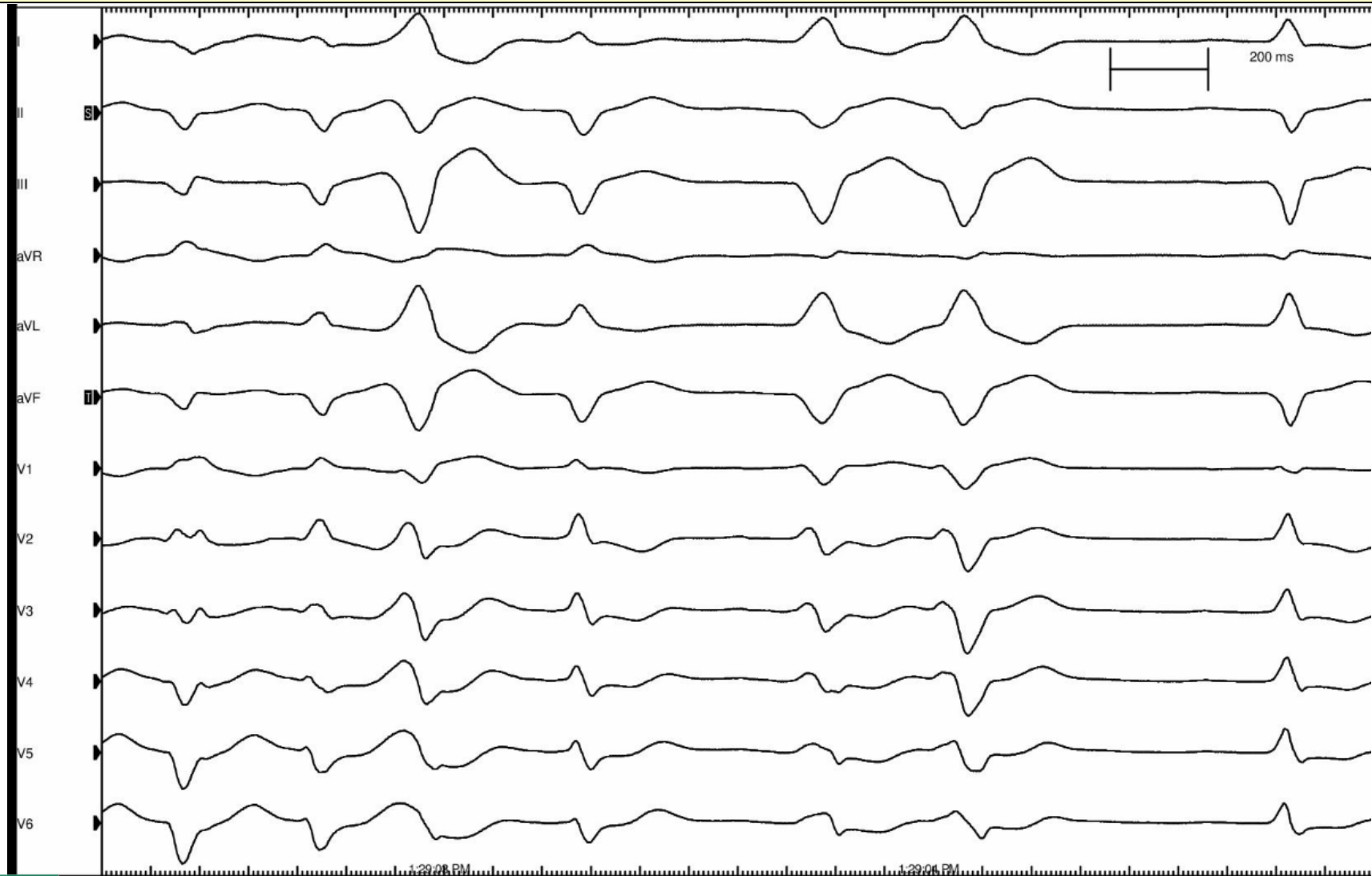


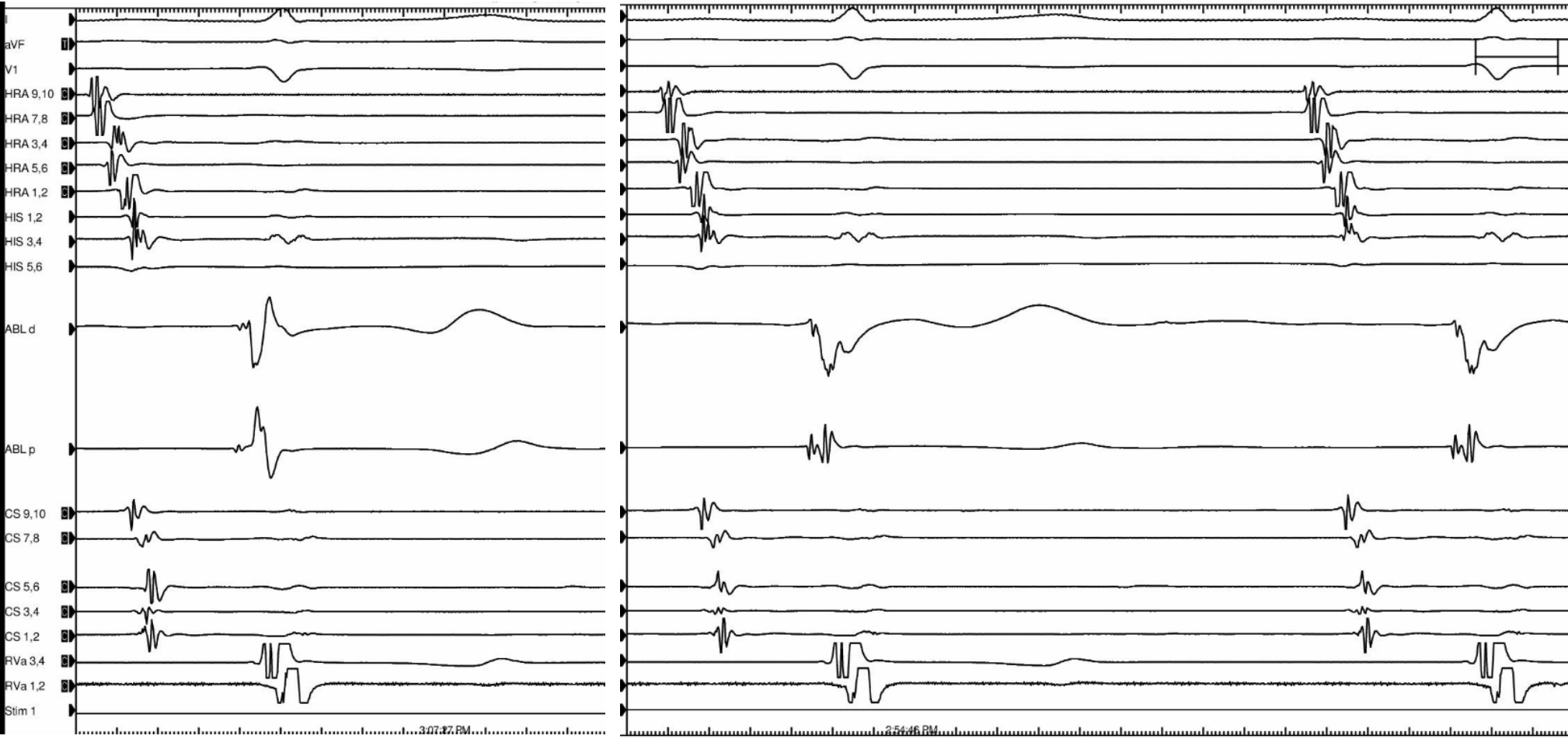


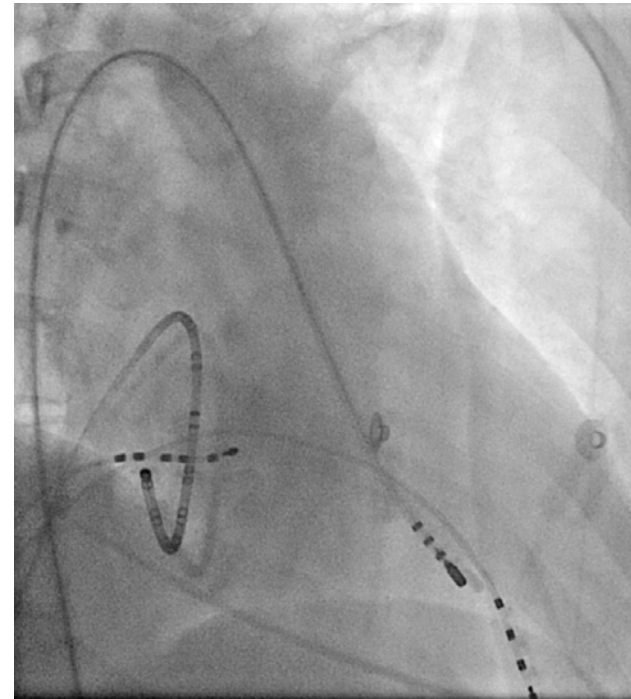
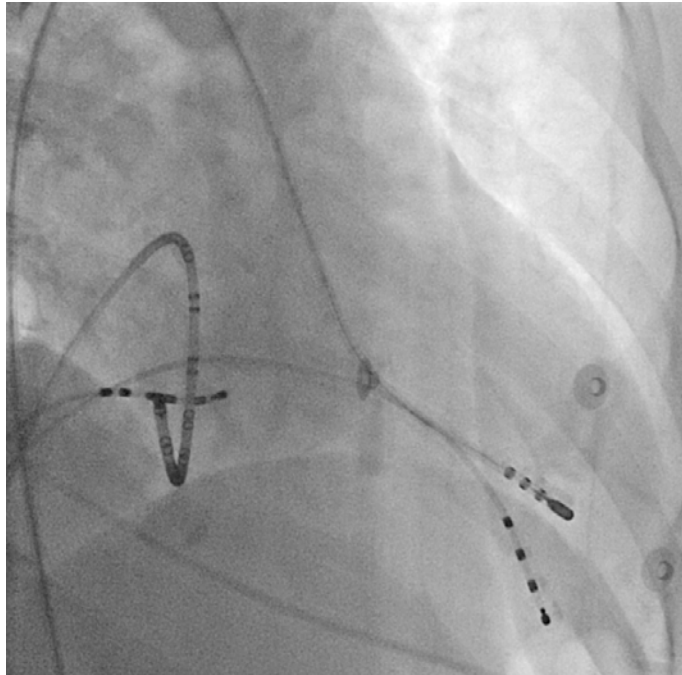
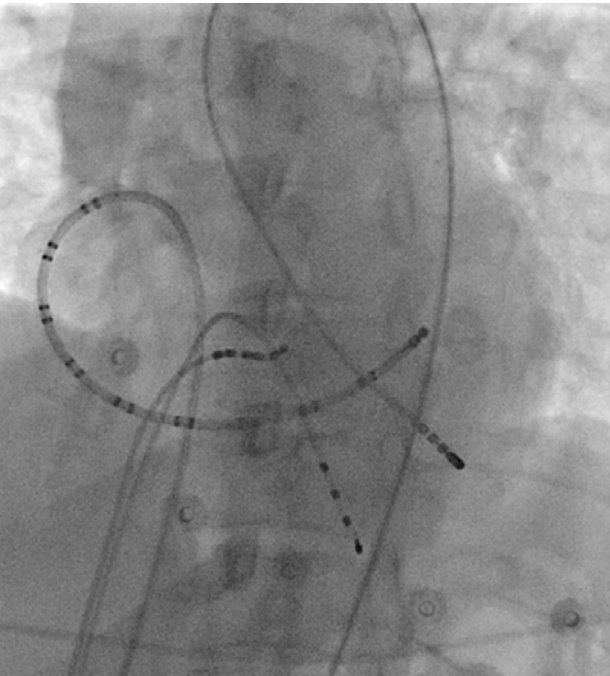
# EGM



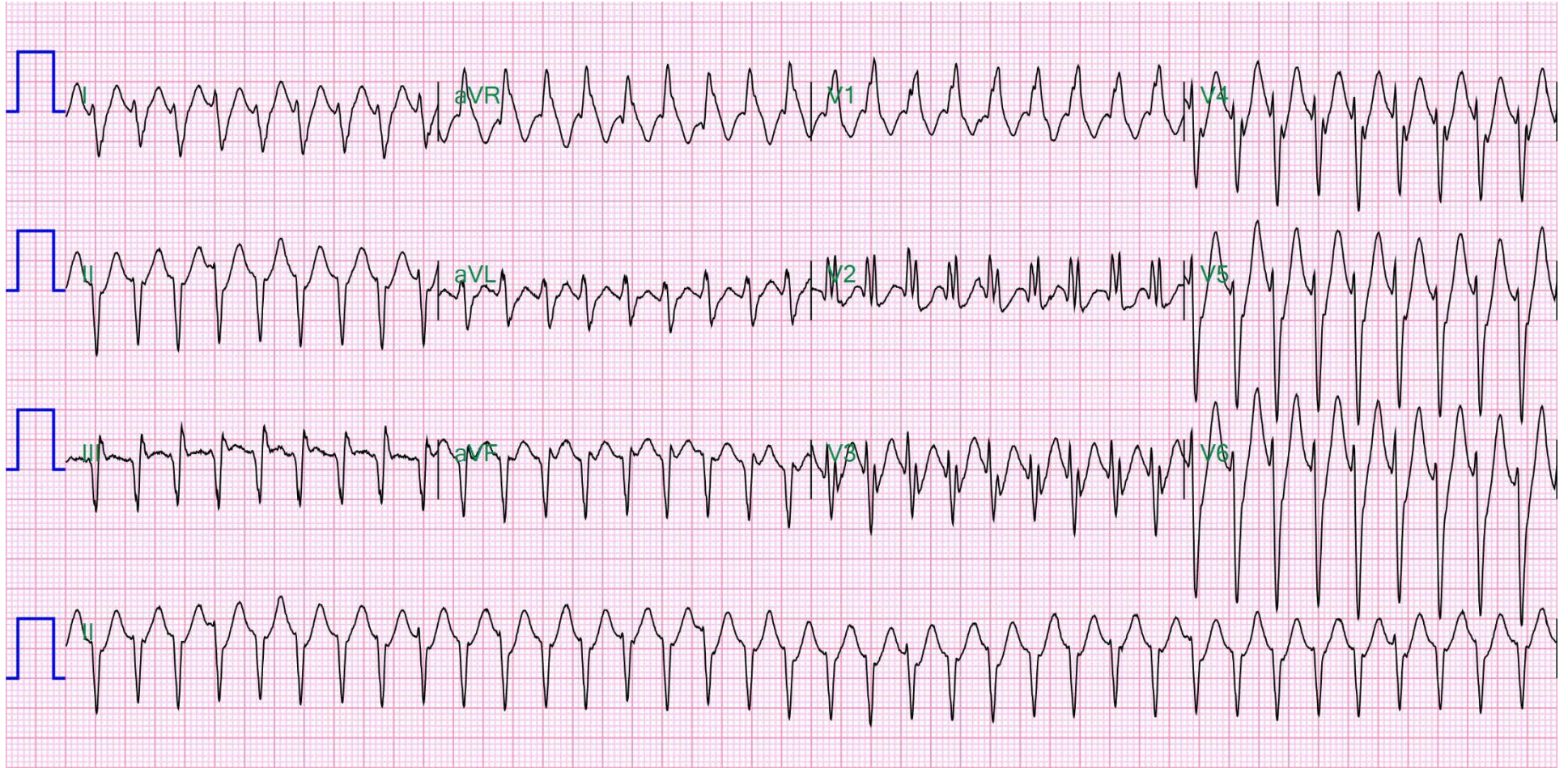
# Termination







# ER



Limb : 10 mm/mV

Chest : 10 mm/mV

Speed : 25.0 mm/Sec



# Plan?

- Isoptin
- Redo?



경청해 주셔서 감사합니다.

*Thank you, light of healing*