



## Delayed Pericarditis after Radiofrequency Catheter Ablation for Manifested Posteroseptal Accessory Pathway



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# Korean Heart Rhythm Society

## COI Disclosure

*Eujae Lee*

The authors have no financial conflicts of interest  
to disclose concerning the presentation



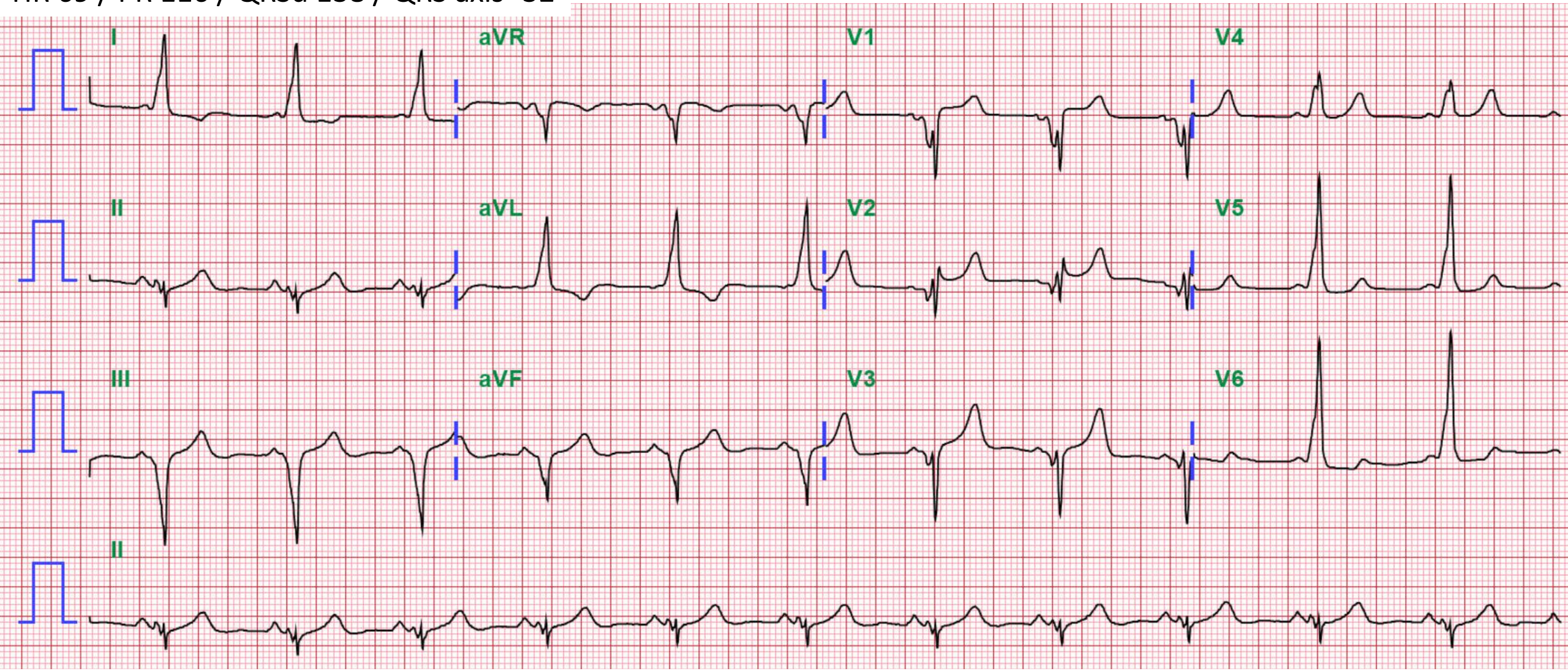
## Case Summary

- ◆ Female, 56 year old
- ◆ Recurrent palpitation, 4-5 years ago
- ◆ Symptom persists 10-20 minutes (average) ~ 1 hour (maximum)
- ◆ 2-3 times in a year
- ◆ Recently, she visited local clinic to check → Refer to our hospital due to baseline ECG abnormality
- ◆ Hypertension, dyslipidemia, s/p breast augmentation surgery

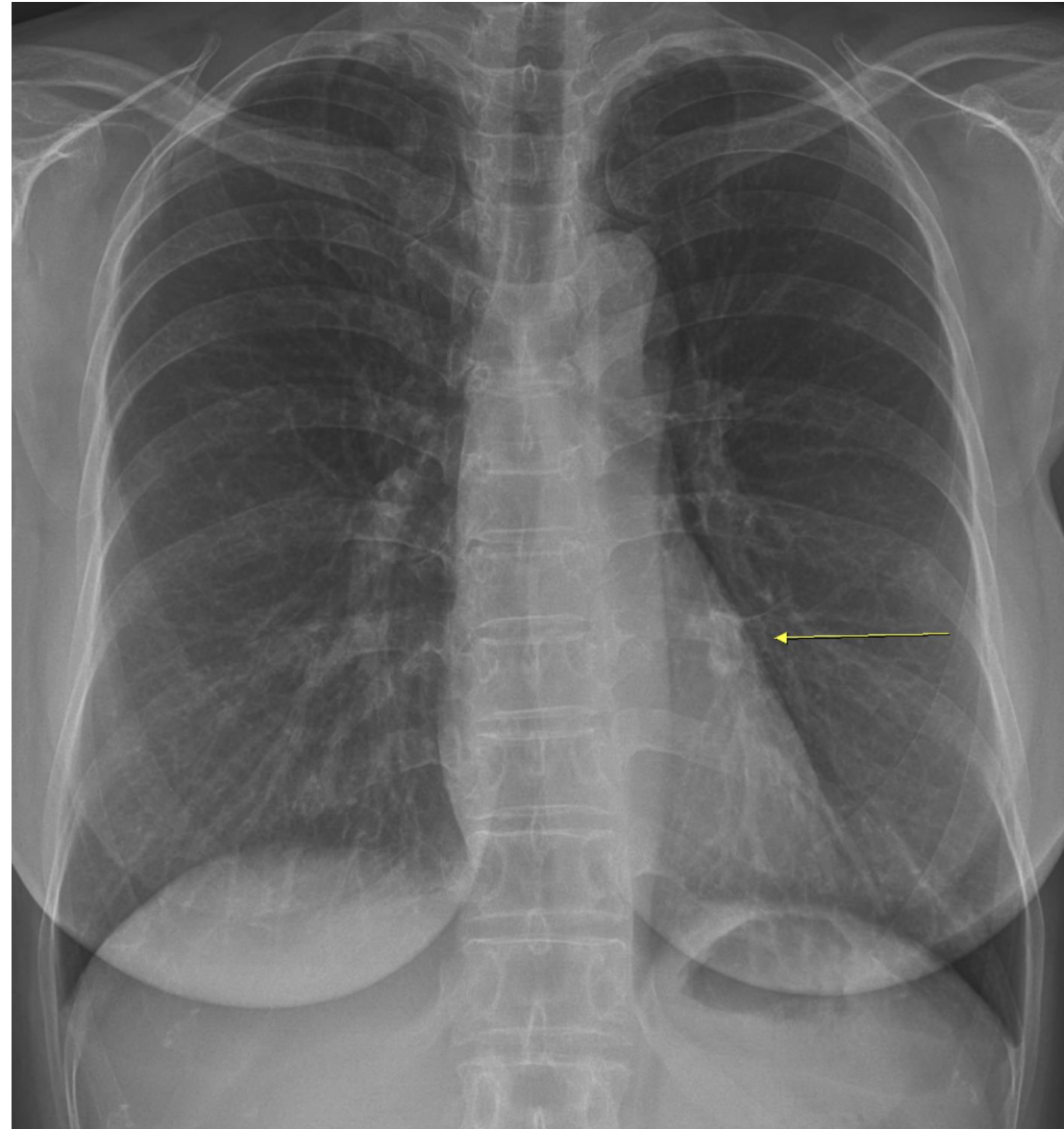


# Baseline ECG (2021-05)

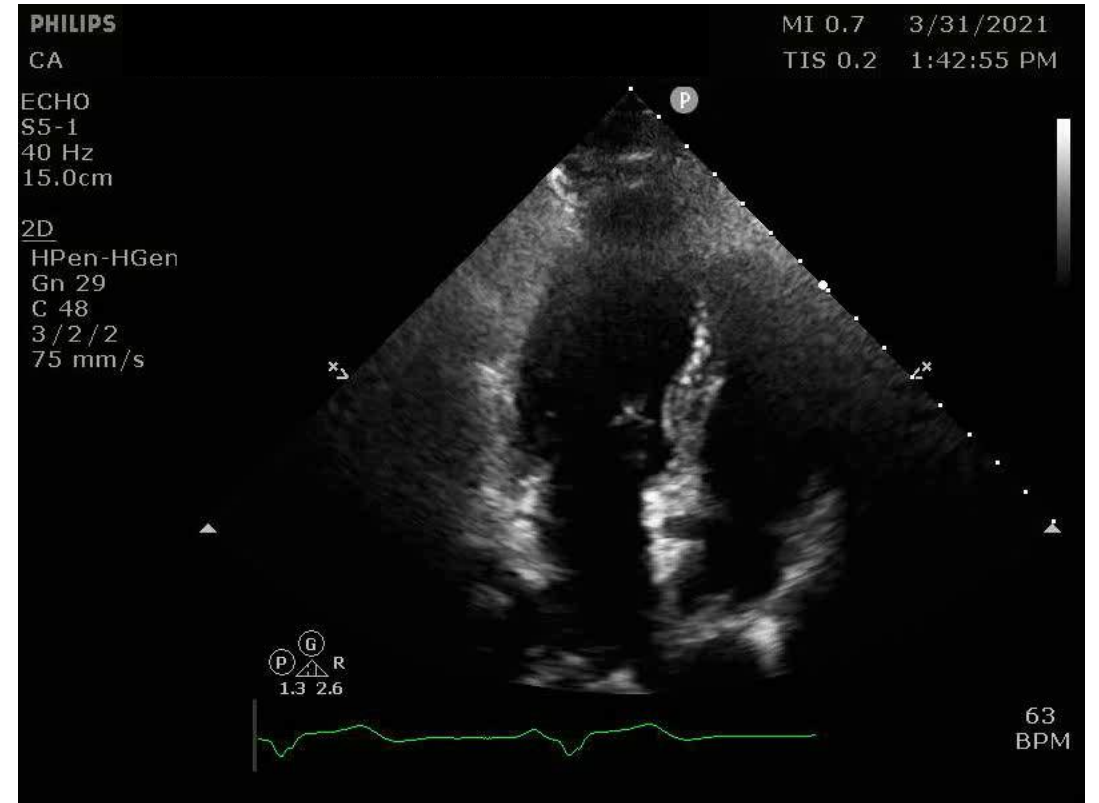
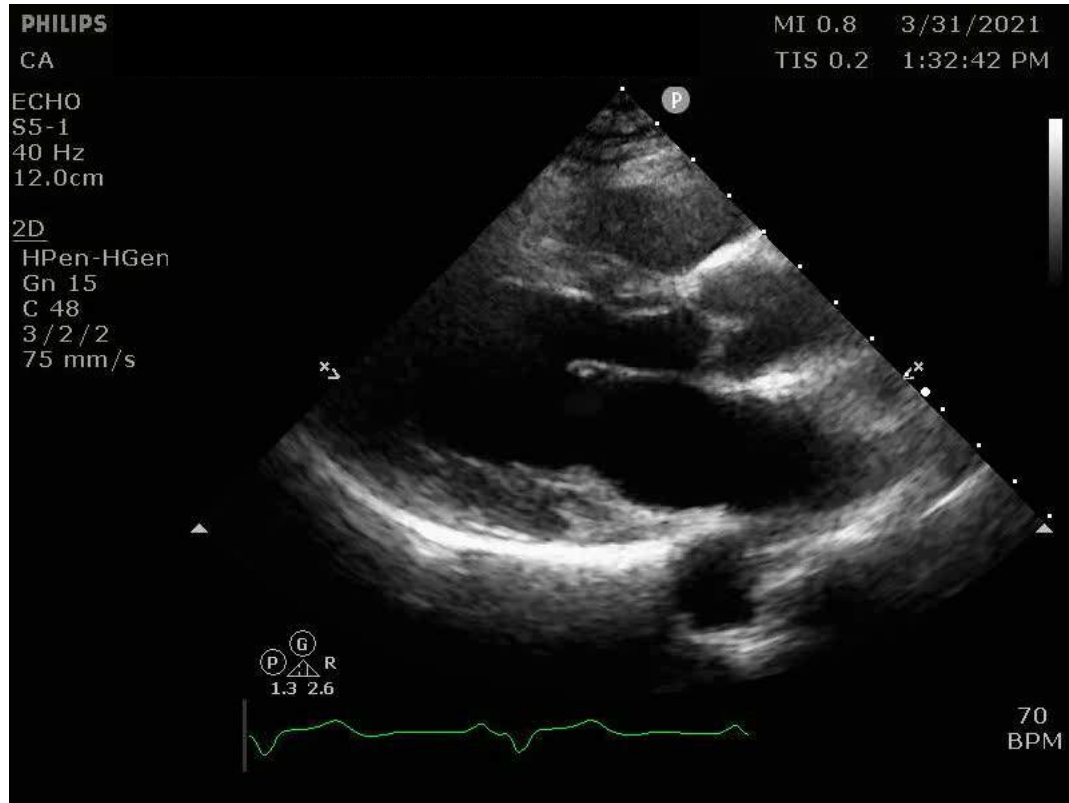
HR 69 / PR 116 / QRSd 138 / QRS axis -32



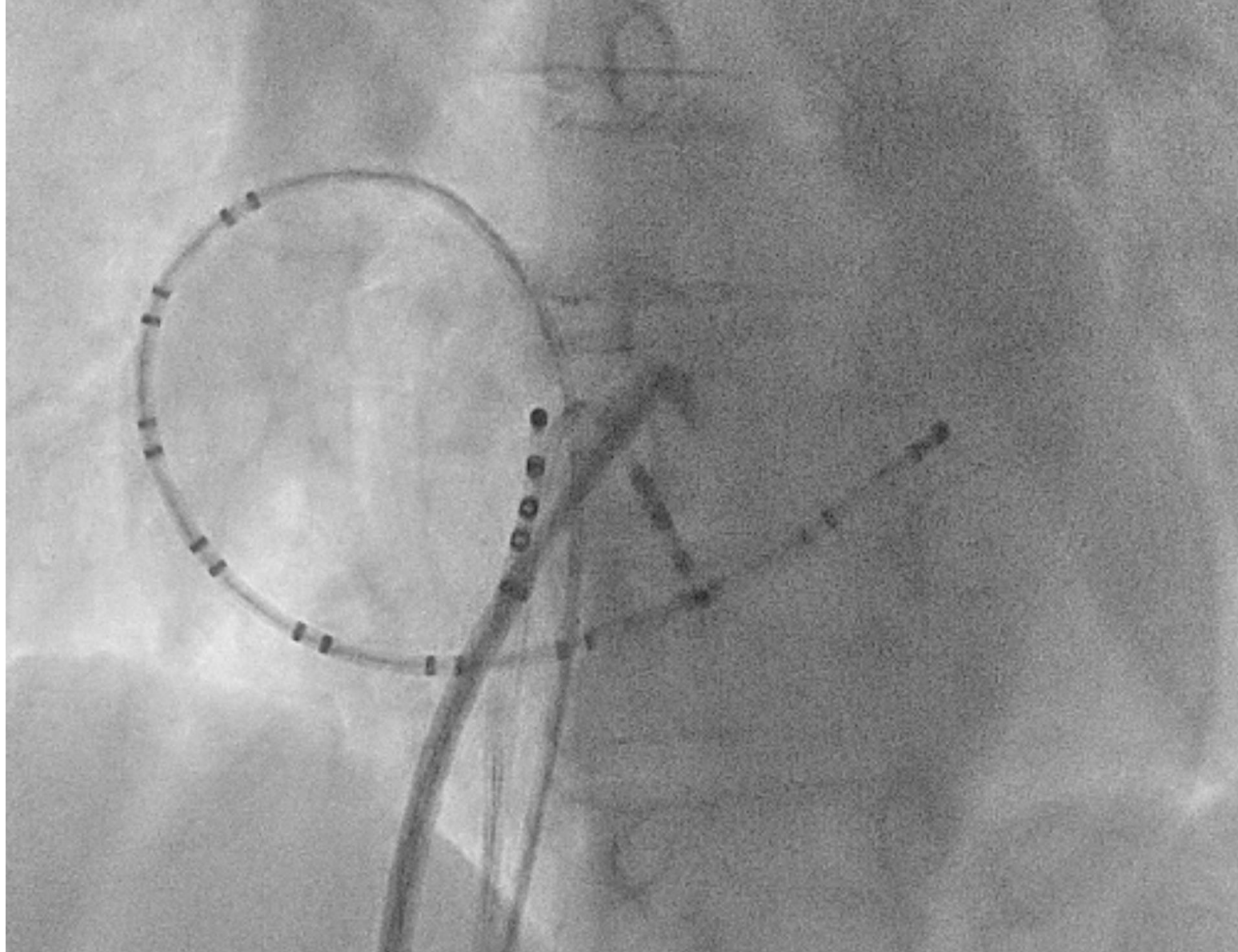
## Chest PA (2021-05)



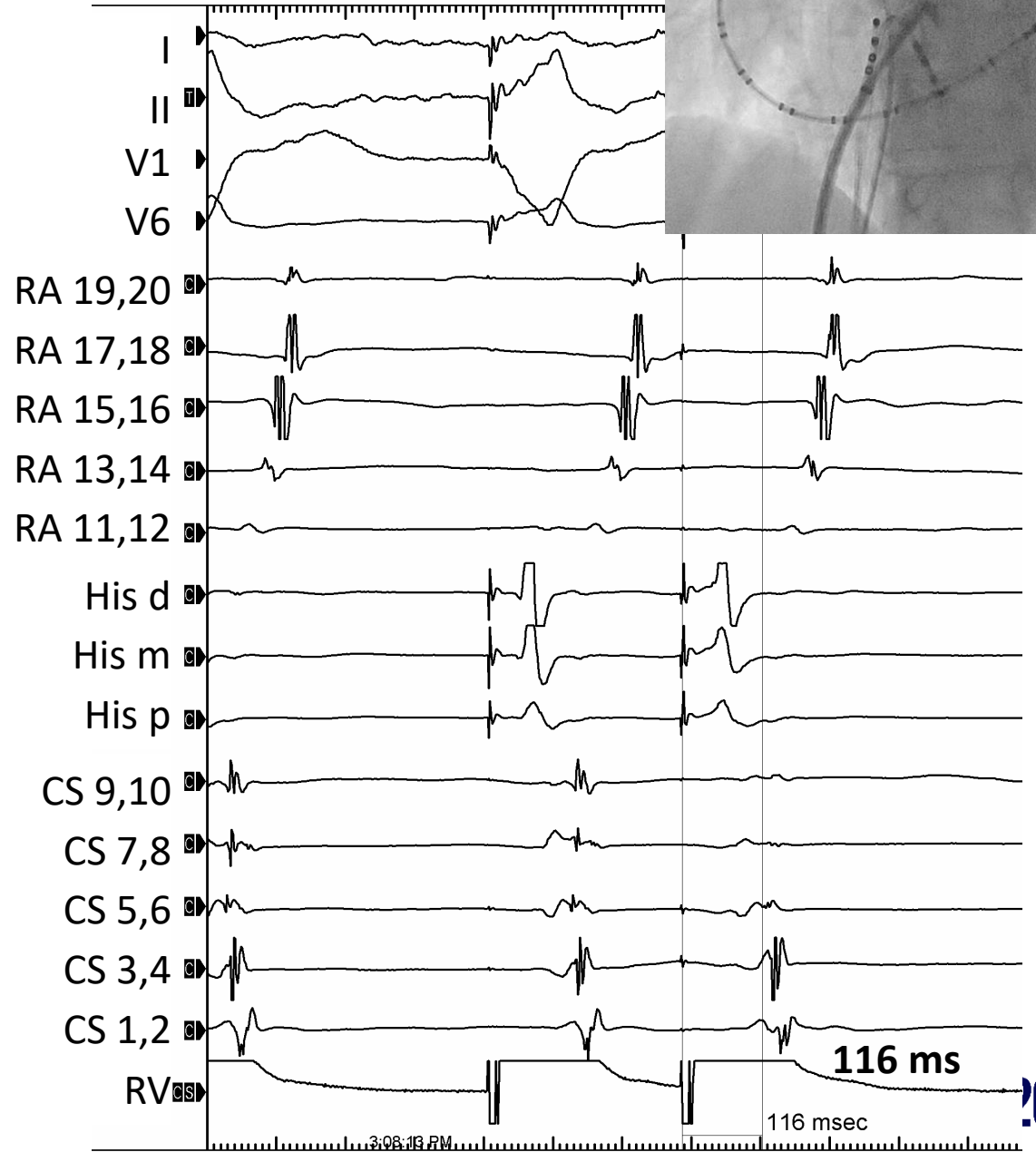
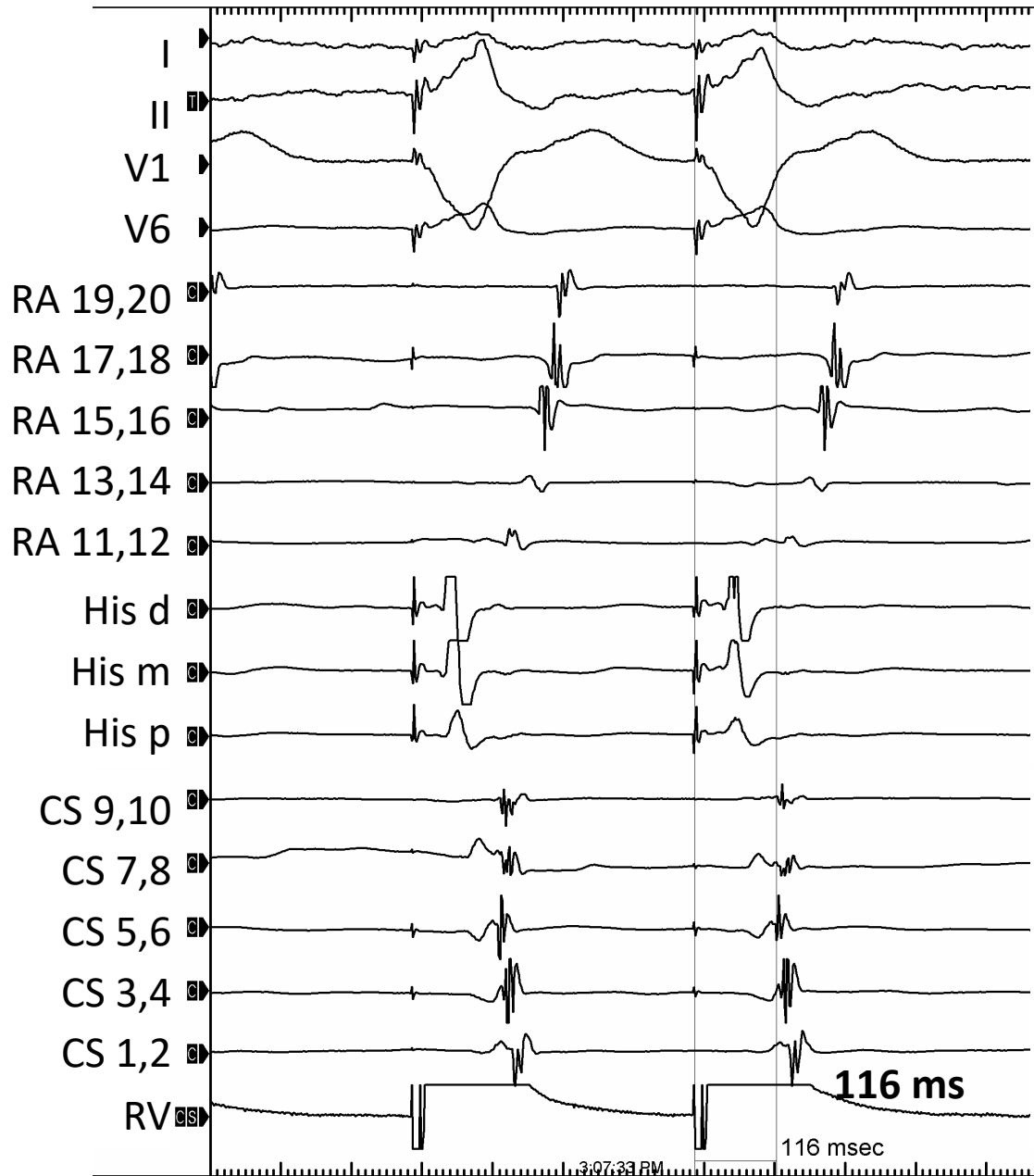
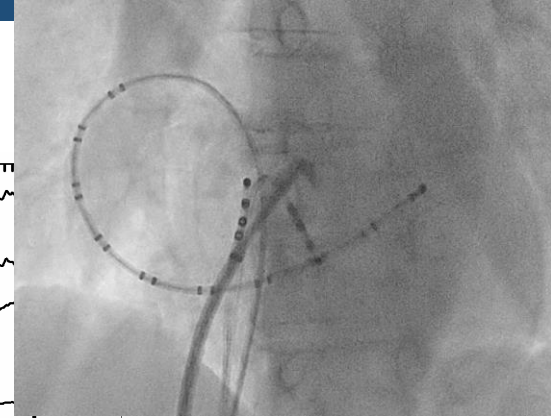
# Echocardiography (2021-05)



# EPS: Catheter Position (2021-06)

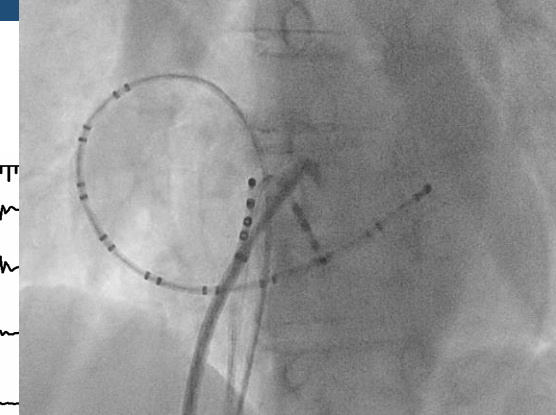
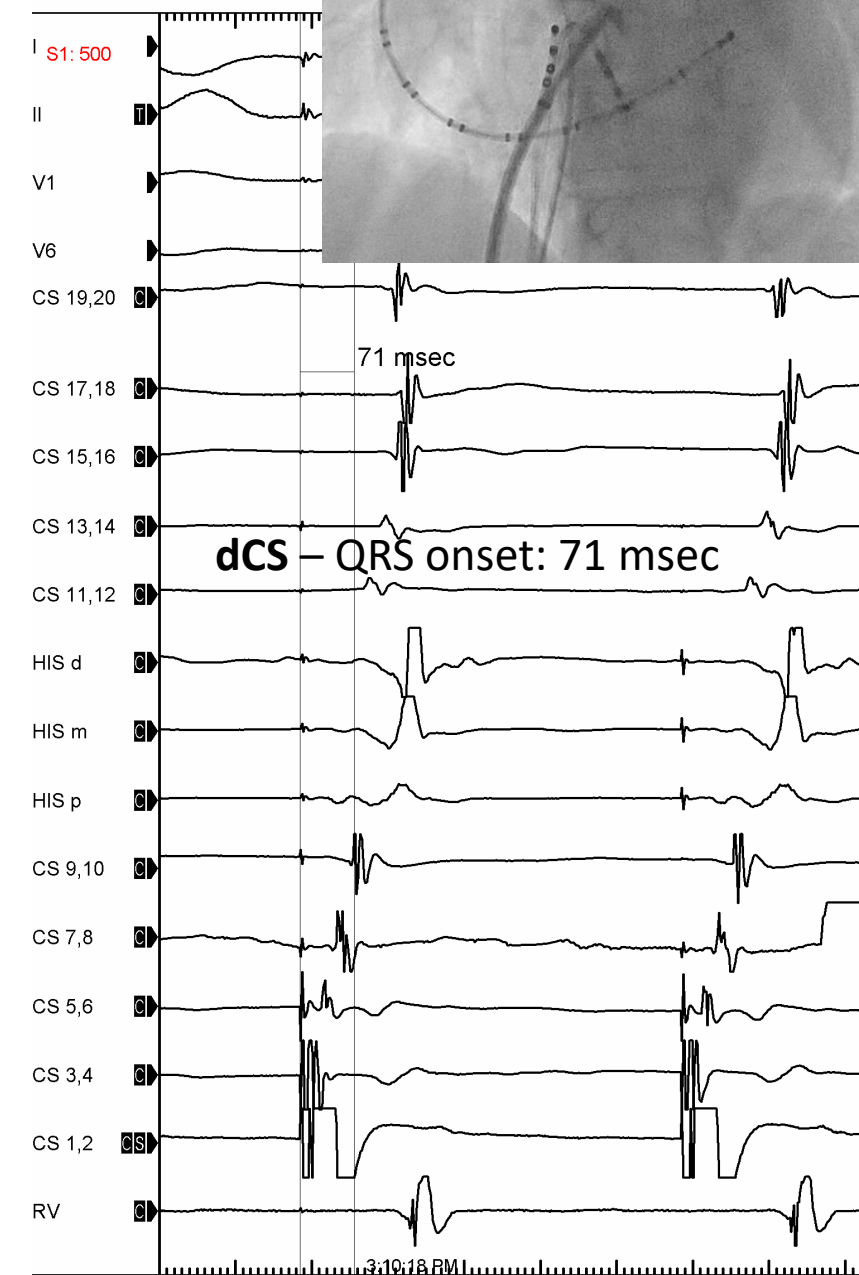
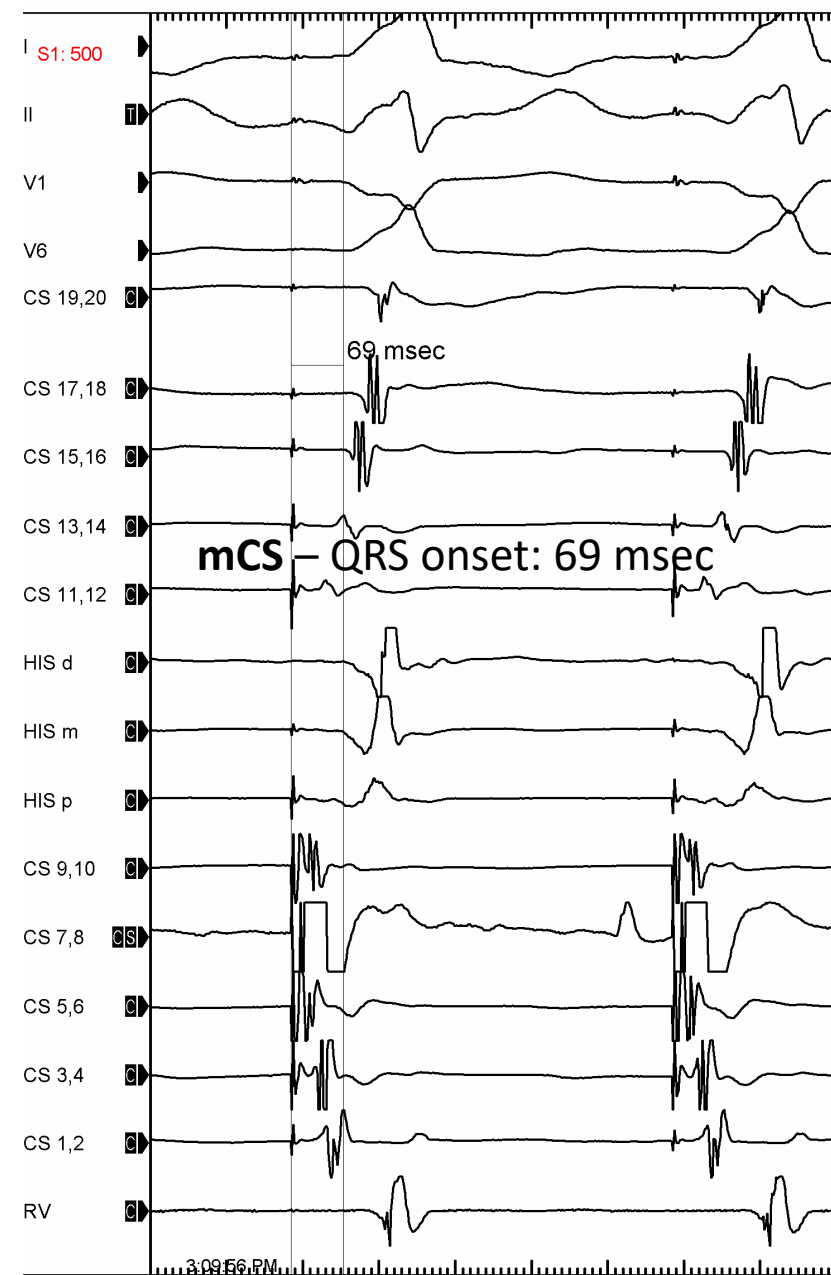
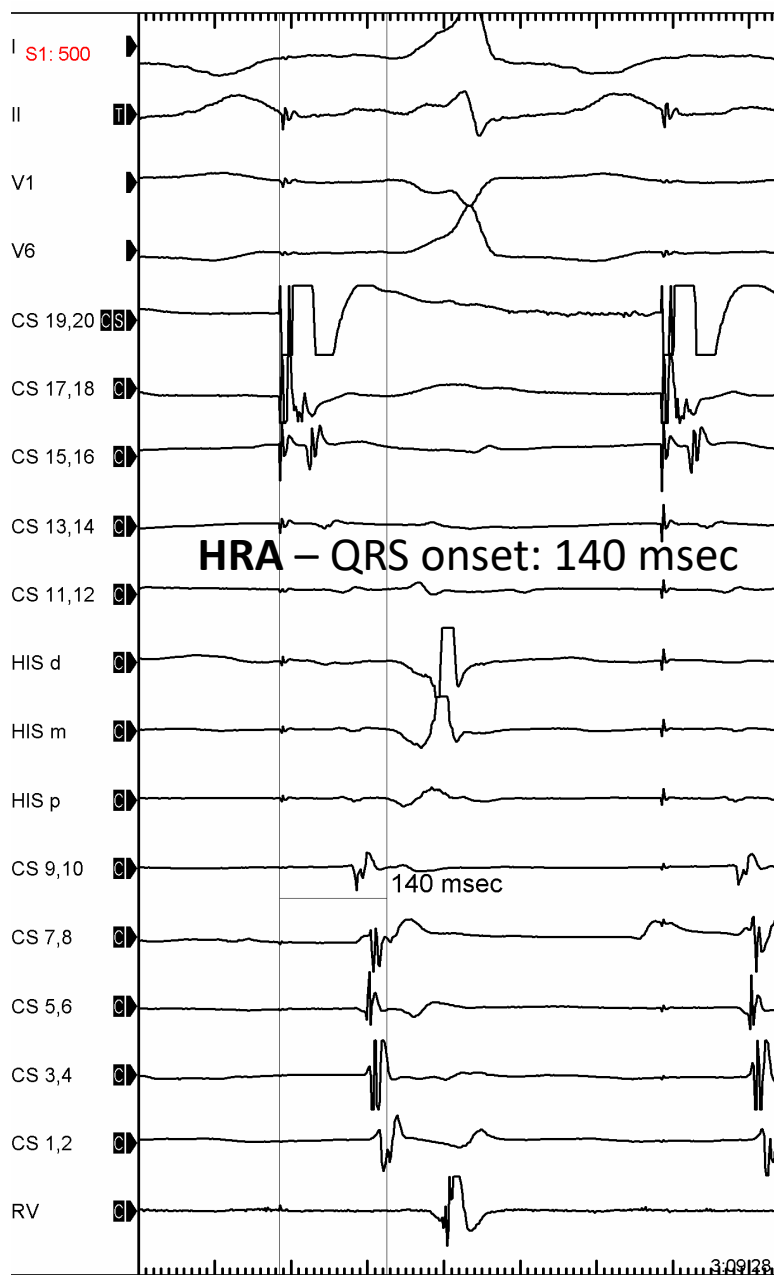


# V500/400 vs. V500/280 --> No decremental property

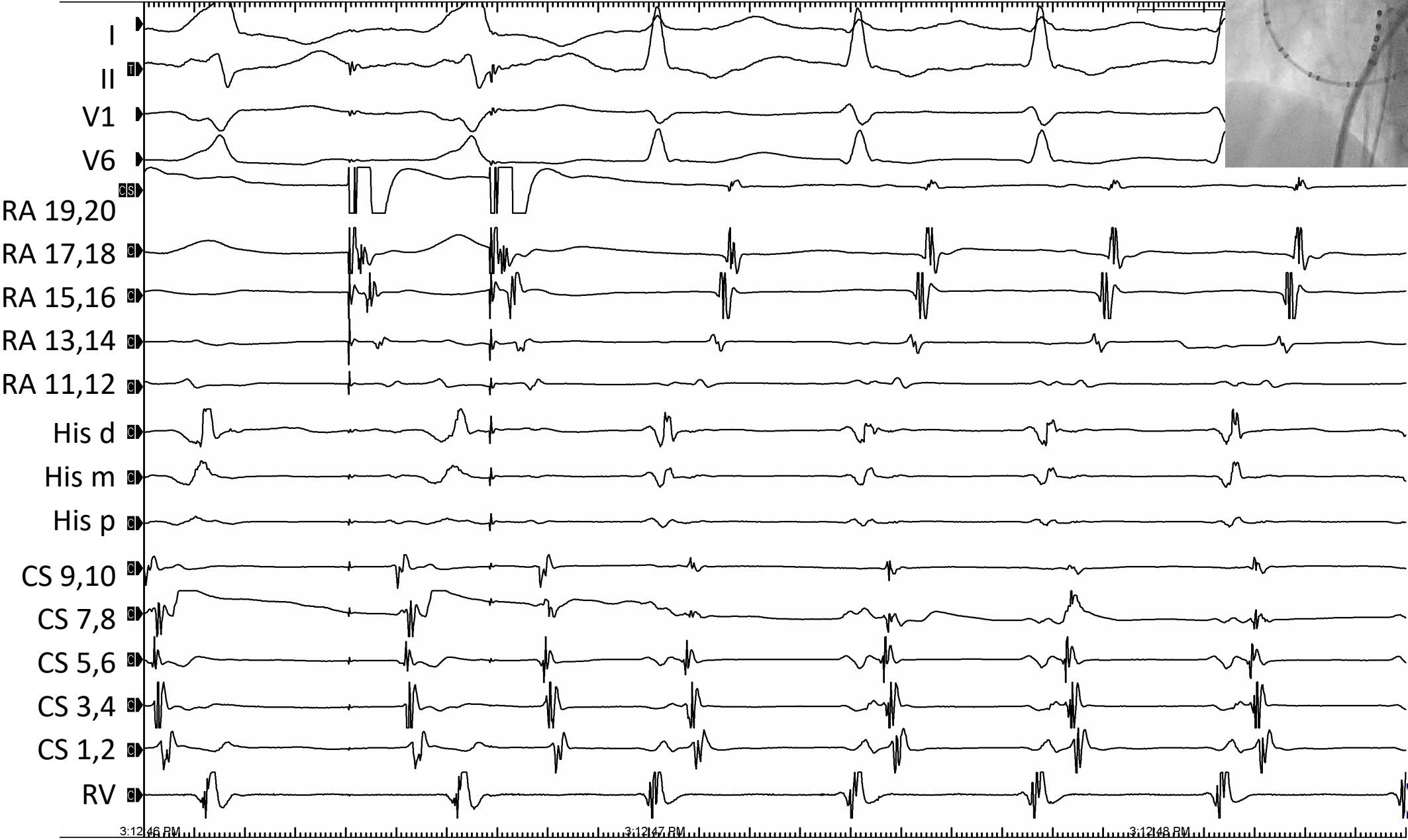
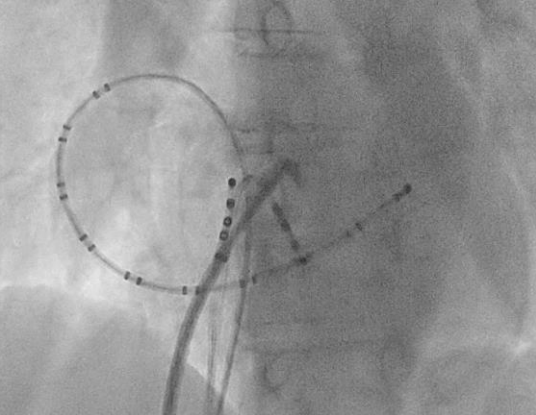




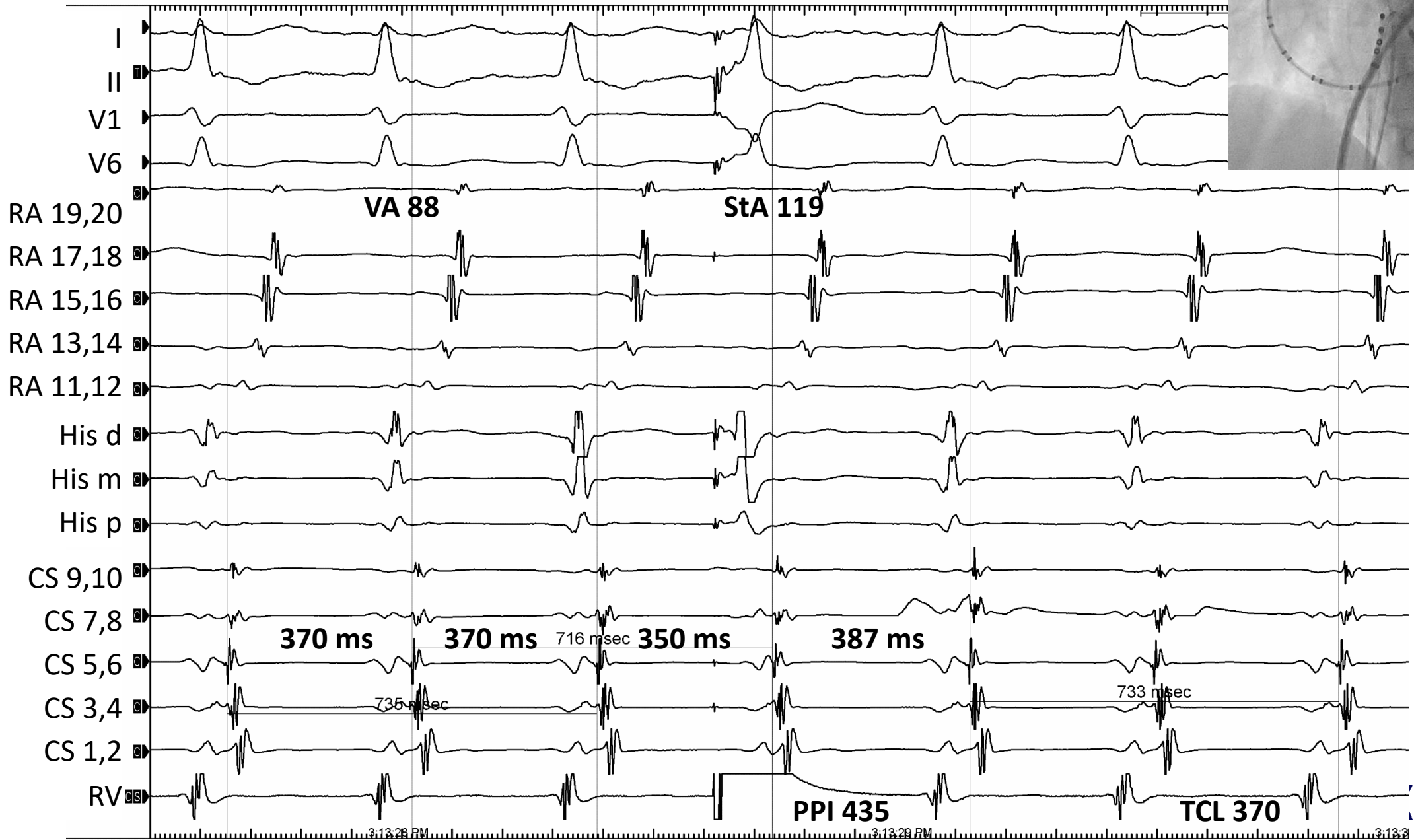
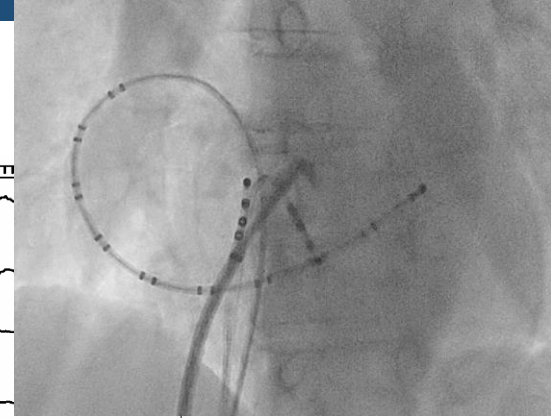
# Atrial differential pacing



# A500/280: Induction



# HRPVC



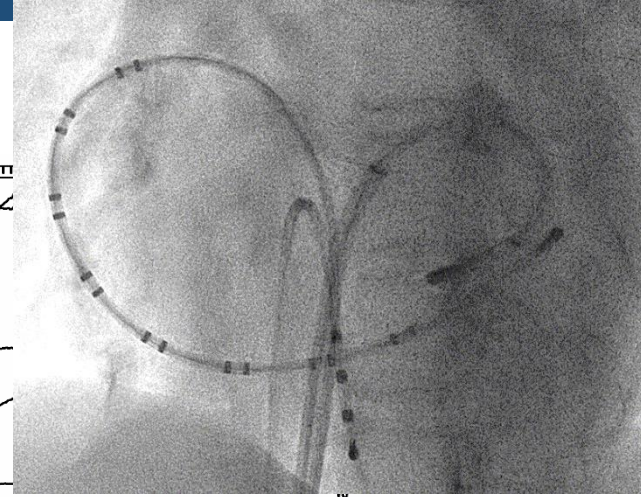
## EPS result

- ◆ Sinus rhythm with delta wave
- ◆ [dCS-QRS<sub>interval</sub> < RA-QRS<sub>interval</sub>]
- ◆ Concentric VA activation without decremental property
- ◆ Narrow QRS tachycardia
- ◆ Reset response by His-refractory PVC
- ◆ PPI – TCL <115 msec & StA – VA <85 msec

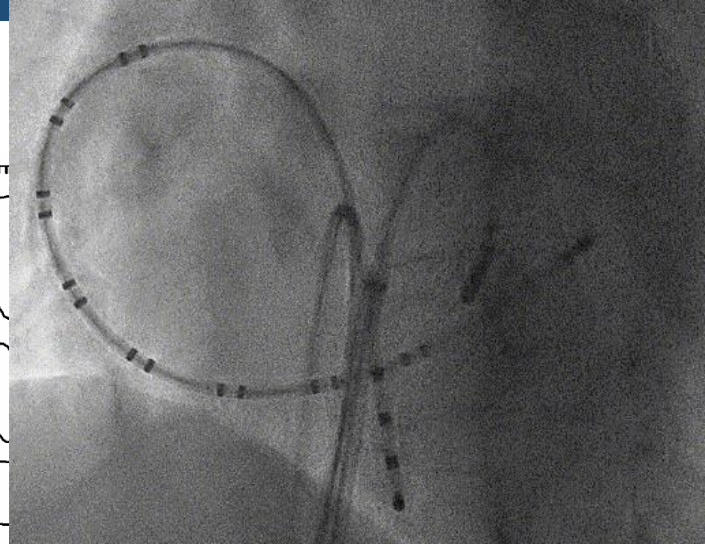
Conclusions: Manifest left septal AP, orthodromic AVRT using left septal AP



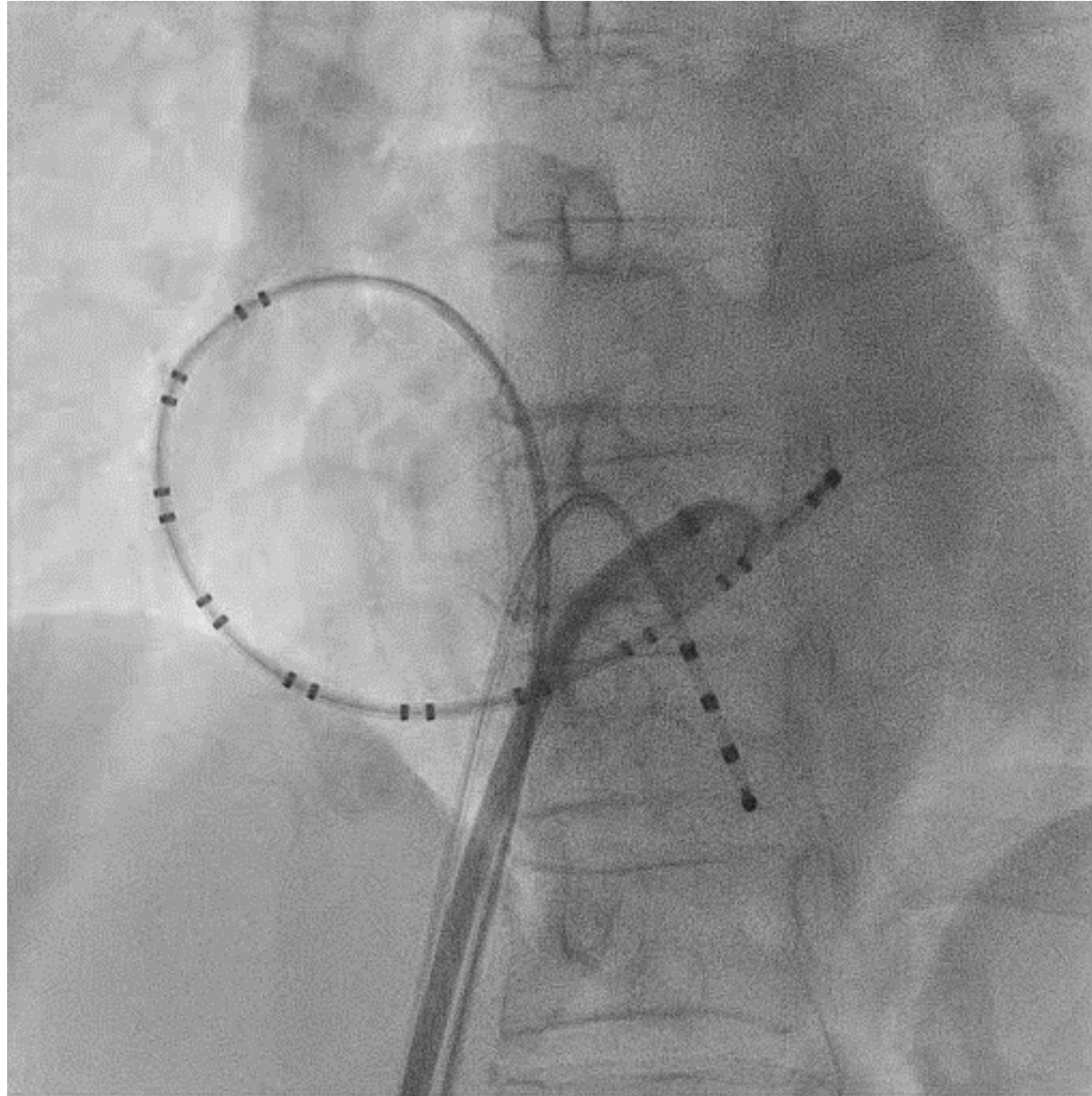
# 1<sup>st</sup> ablation signal



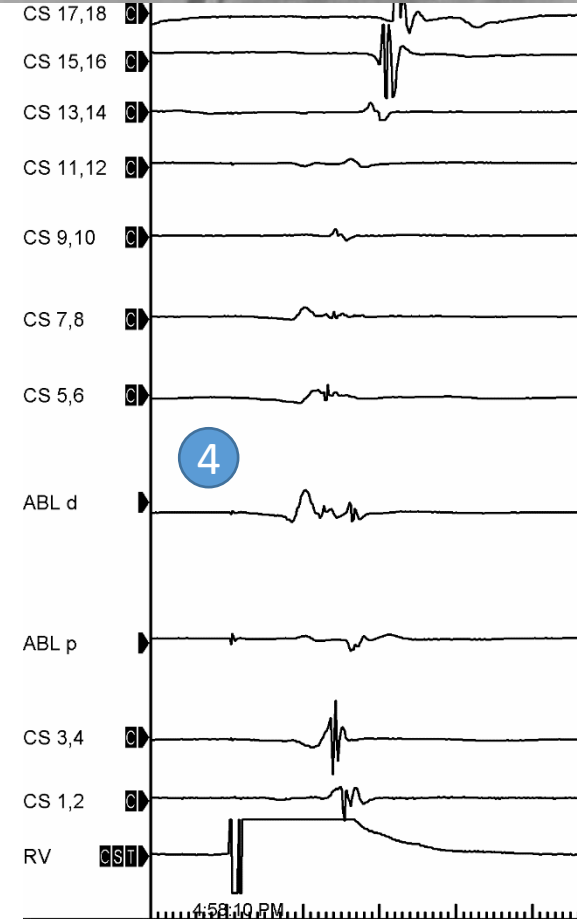
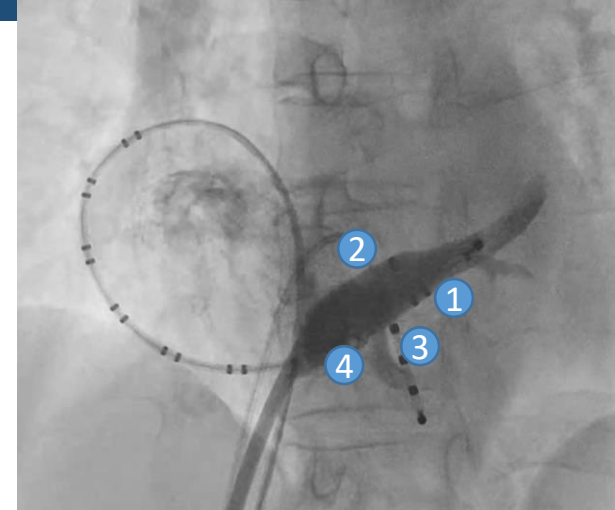
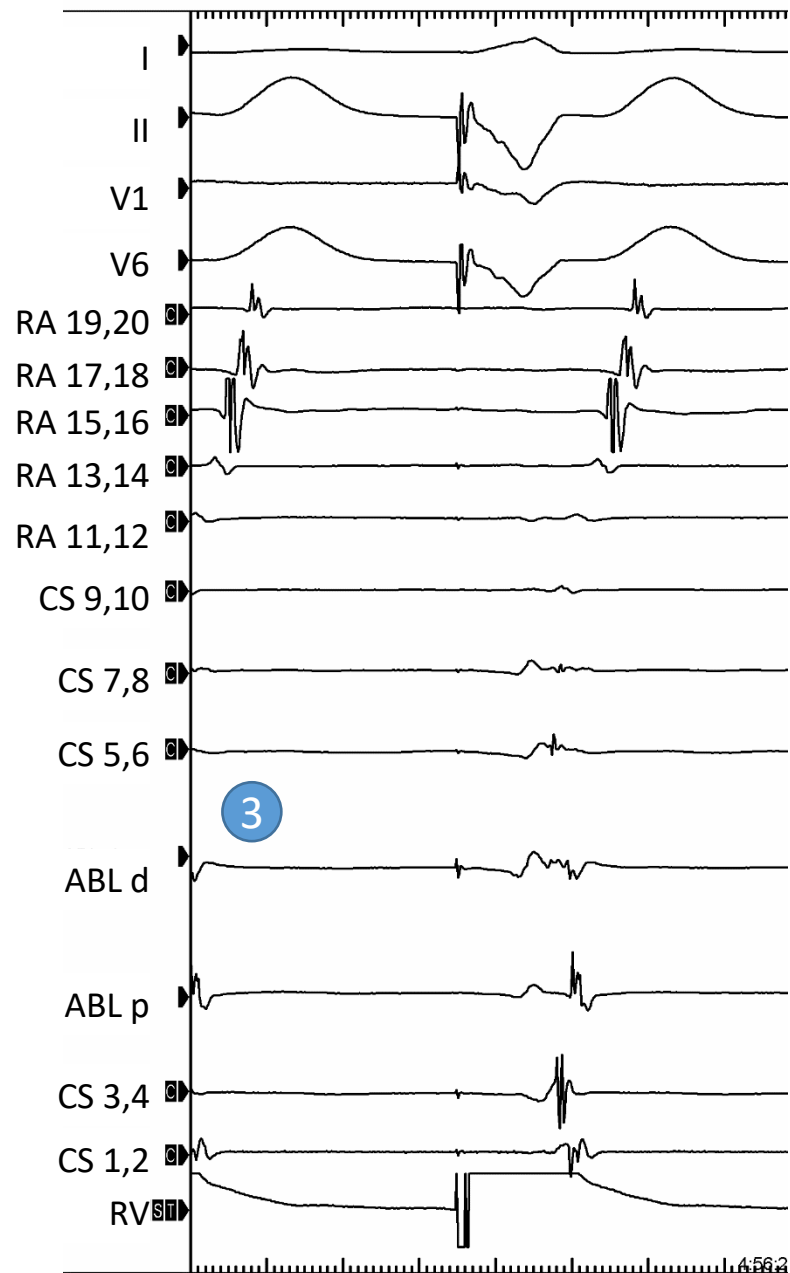
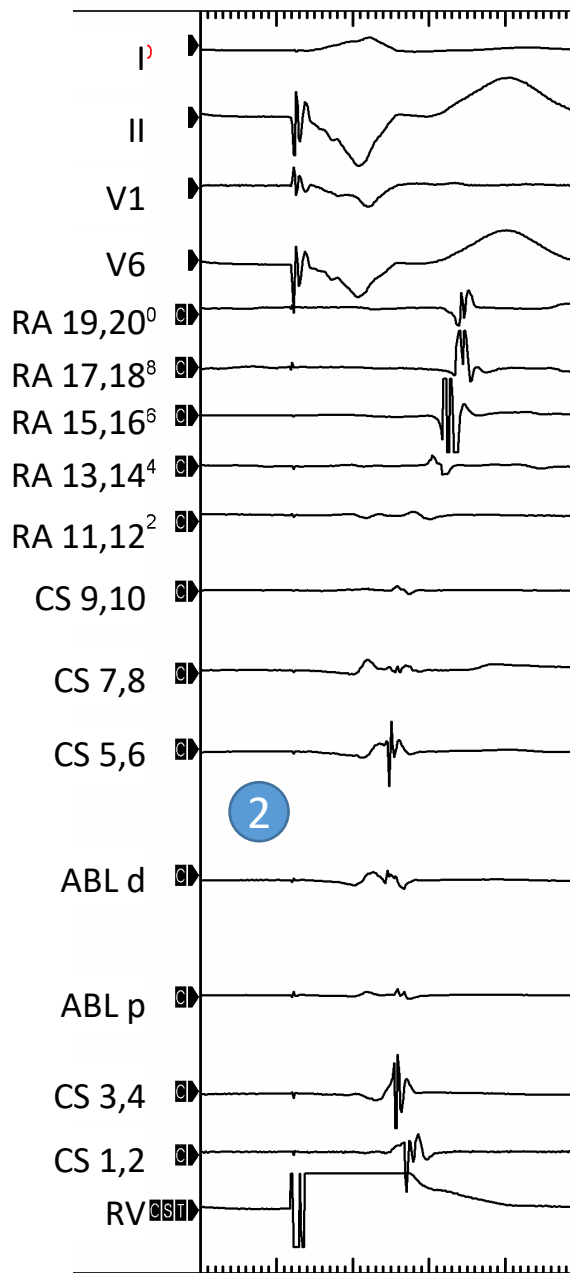
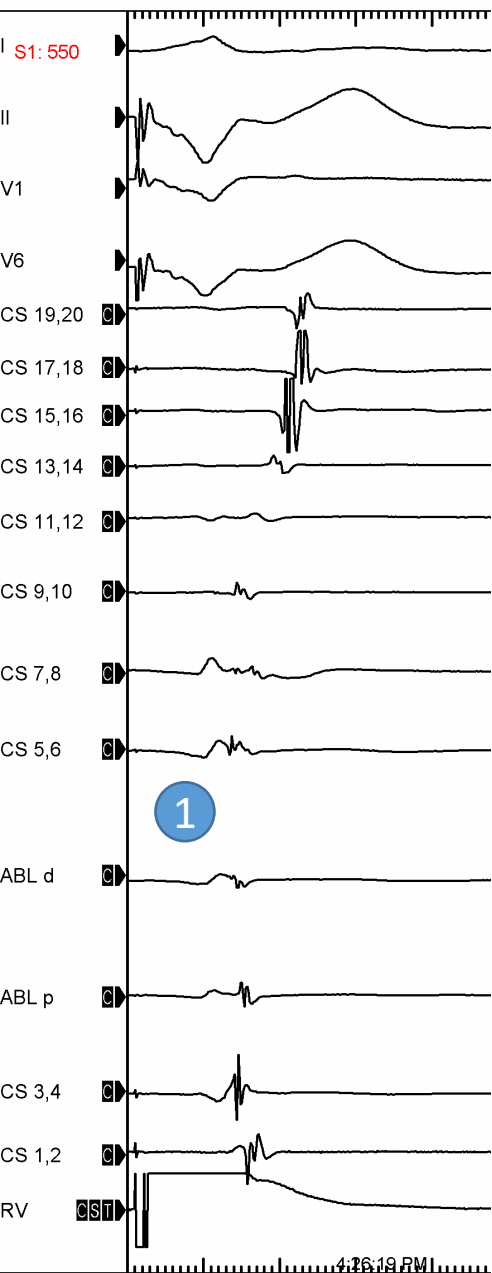
# 4<sup>th</sup> ablation signal



# CS angiogram

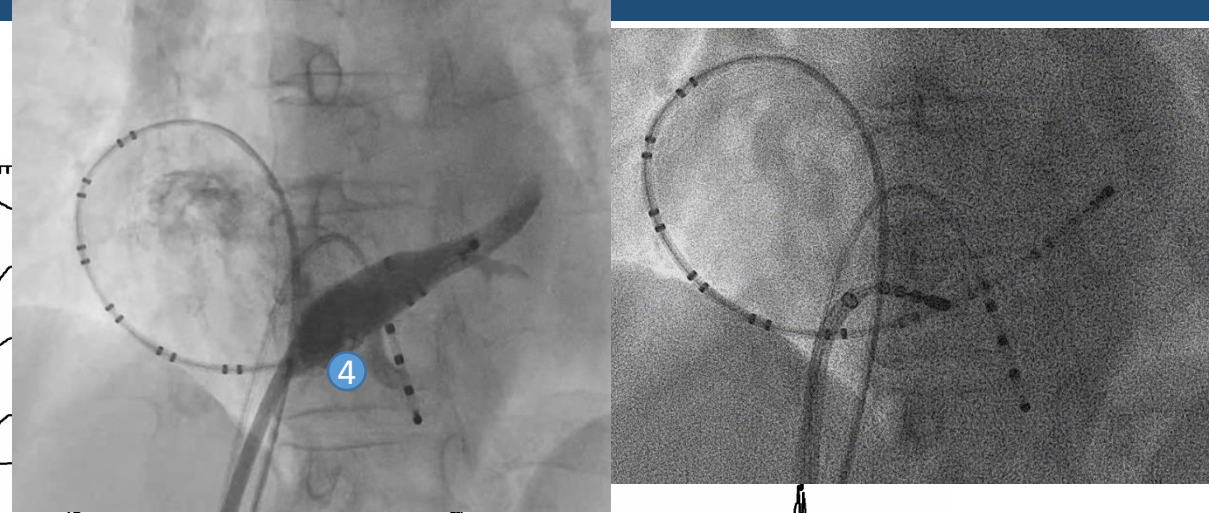
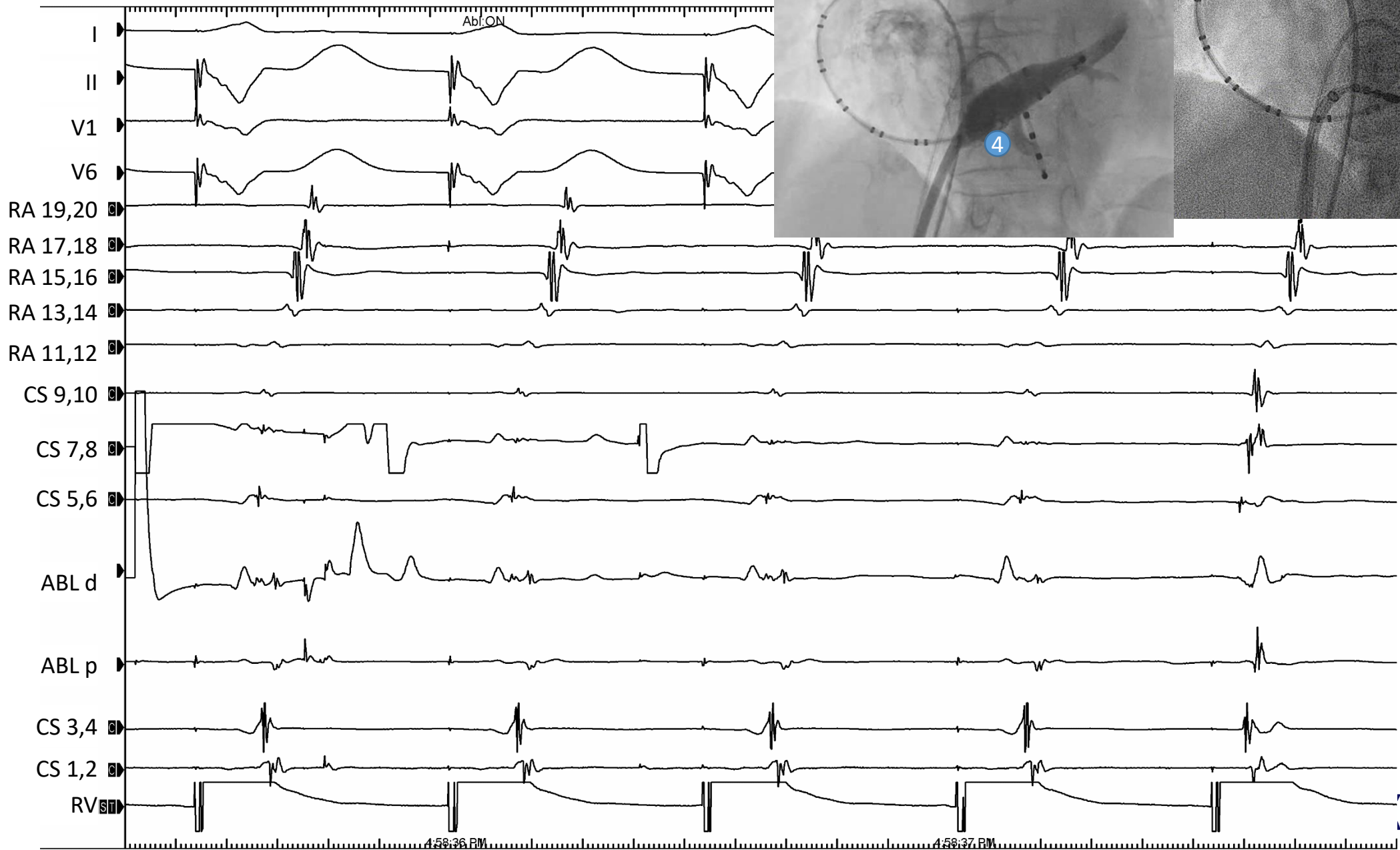


# Signals in CS





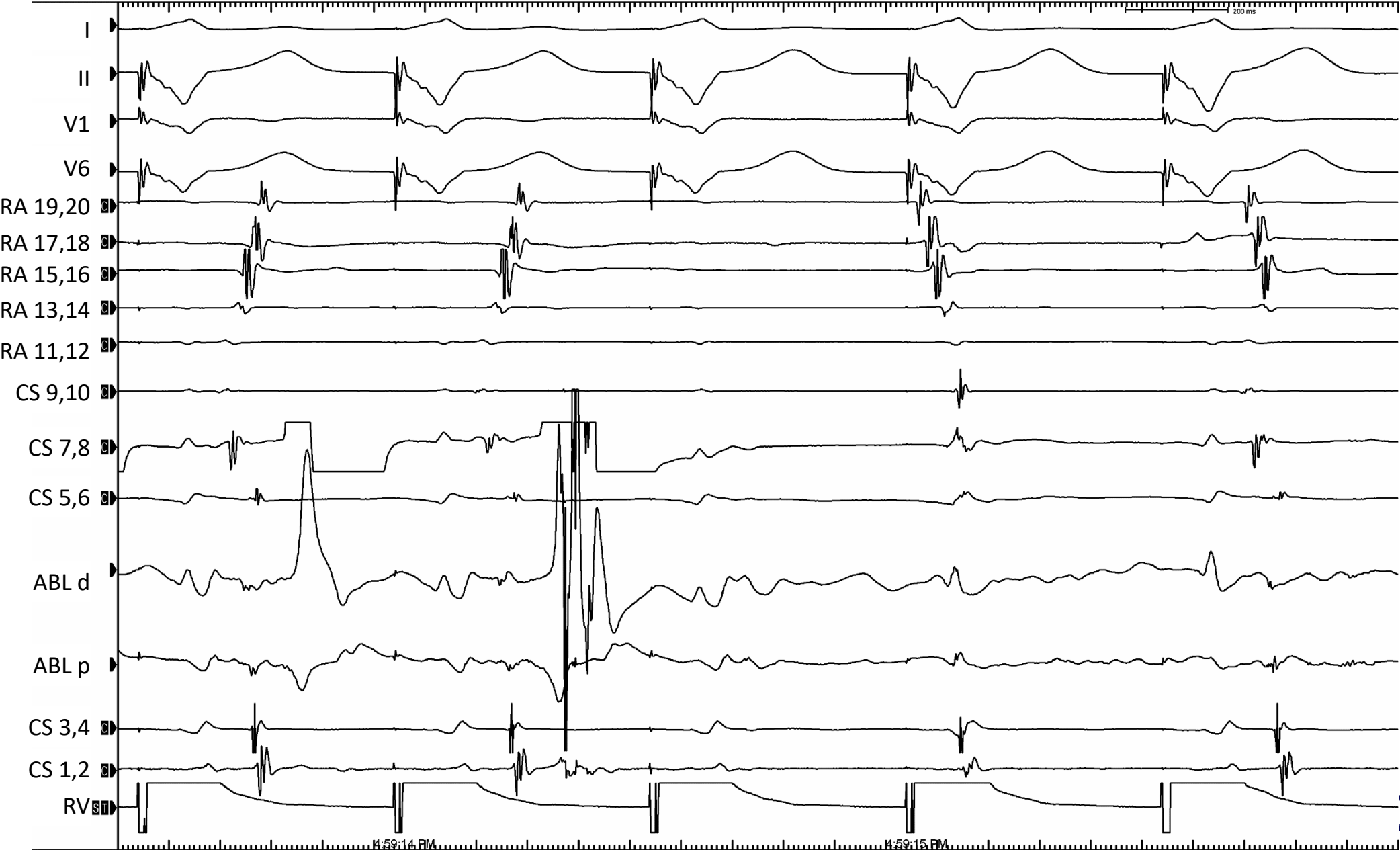
# MCV os ablation (5 times)



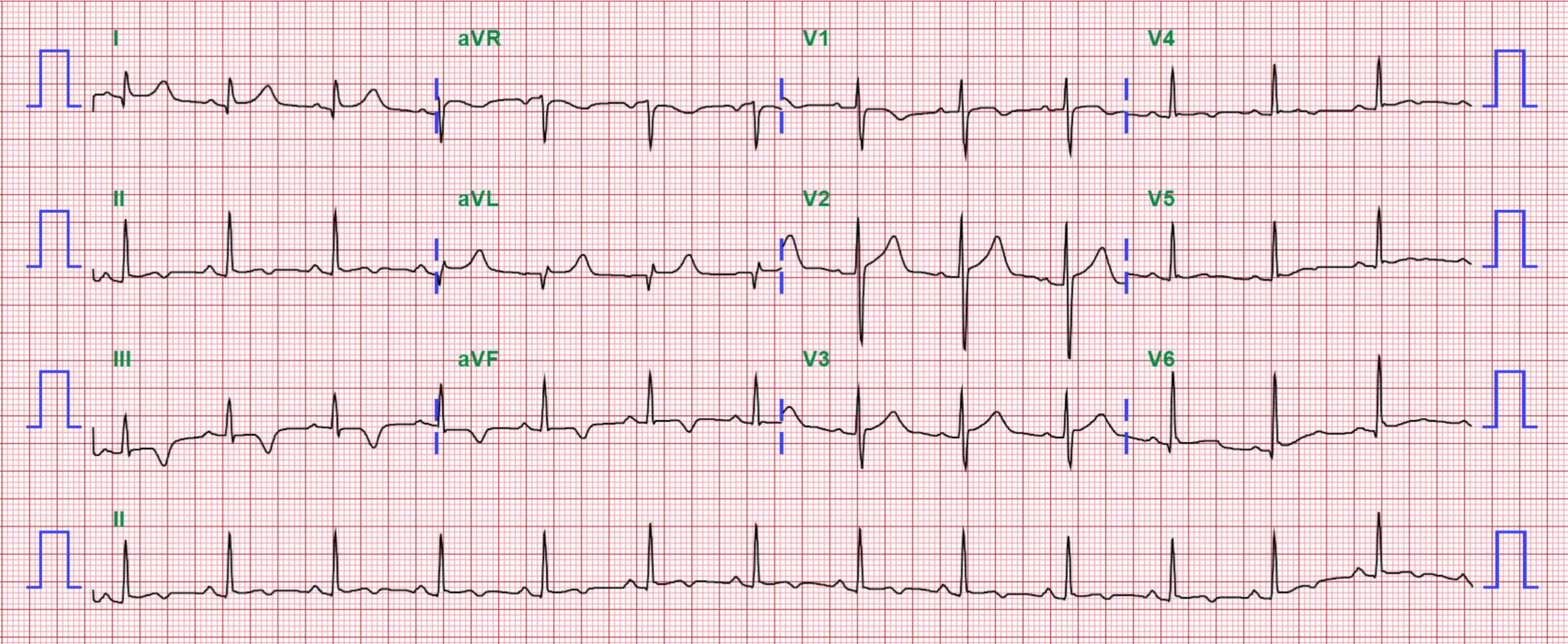
# AP conduction block during ablation (10 seconds)



# VA dissociation



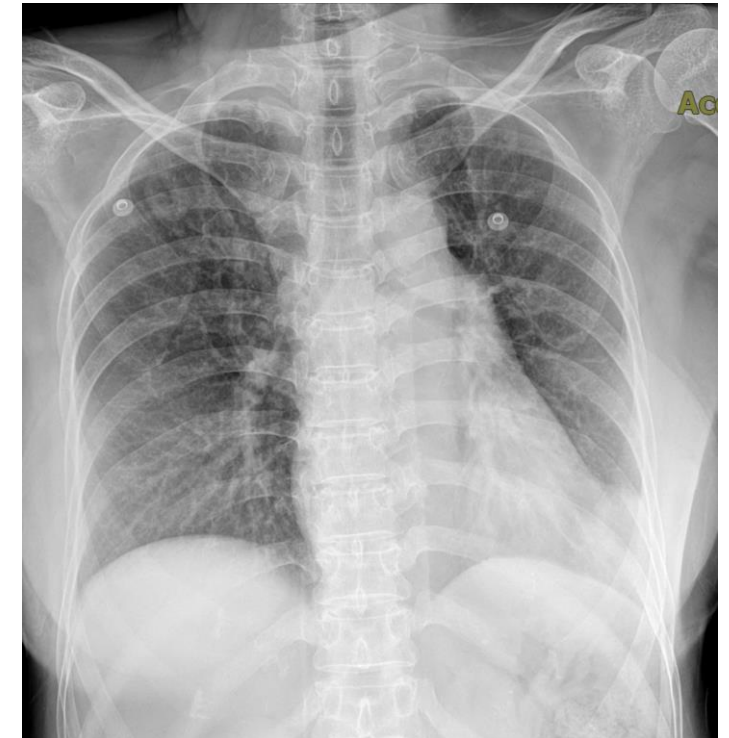
# ECG (immediately after RFCA)



# Cardiac tamponade → Failed pericardiocentesis

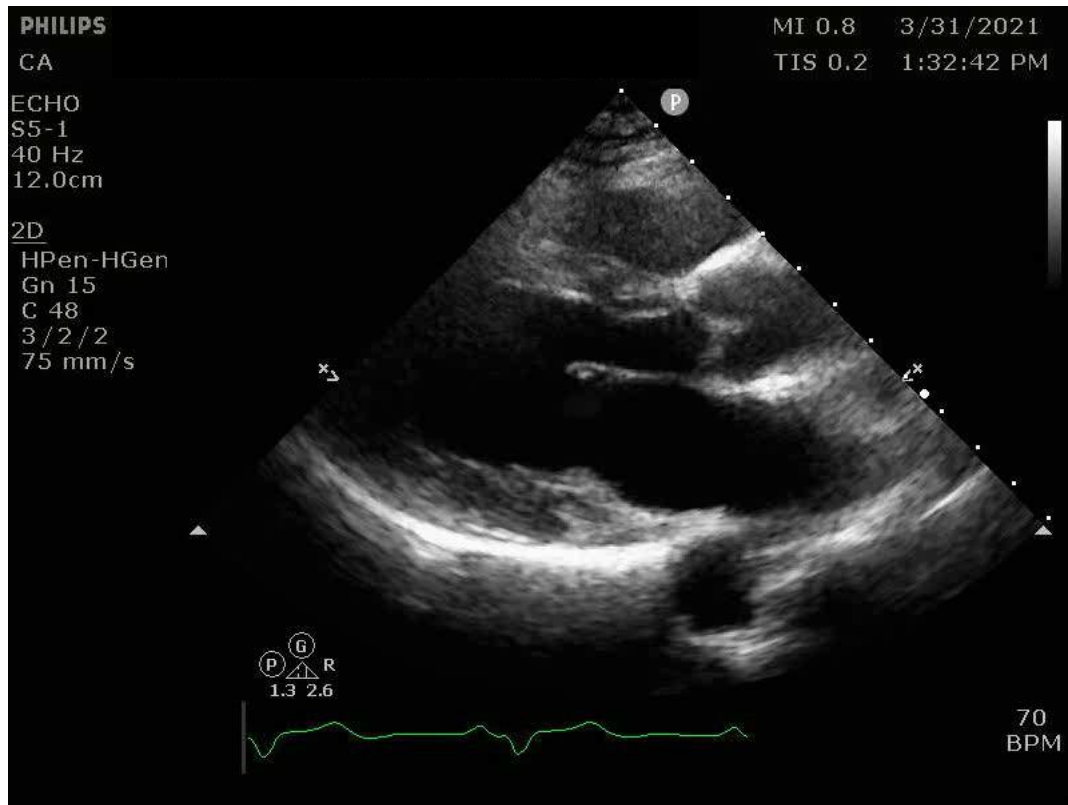
- ◆ Hypotension in recovery room
- ◆ Bed-side echo: pericardial effusion (no images)
- ◆ Failed pericardiocentesis because of poor sonic window (breast implants)
- ◆ Pericardial effusion was sequestered into pleural cavity

Post-RFCA chest x-ray (AP view)

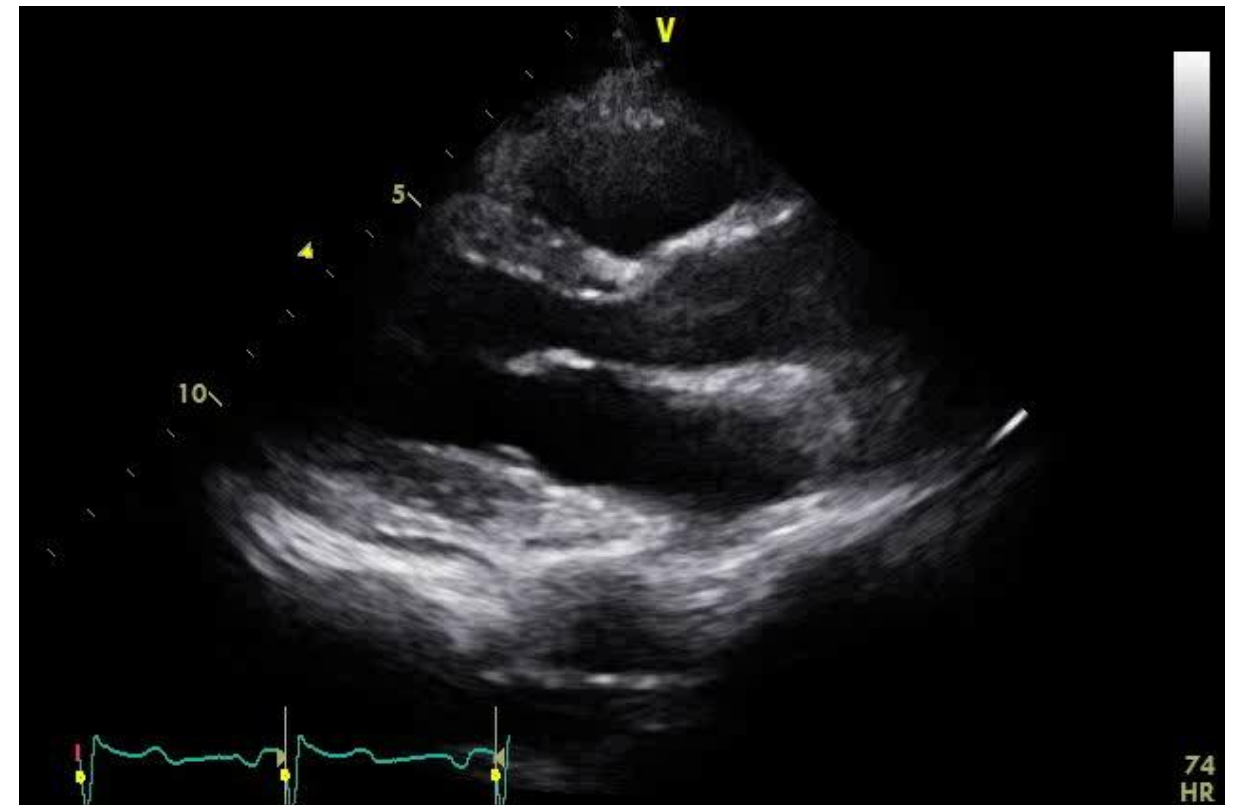


# Post echocardiography

## Baseline Echo



## Post-RFCA Echo

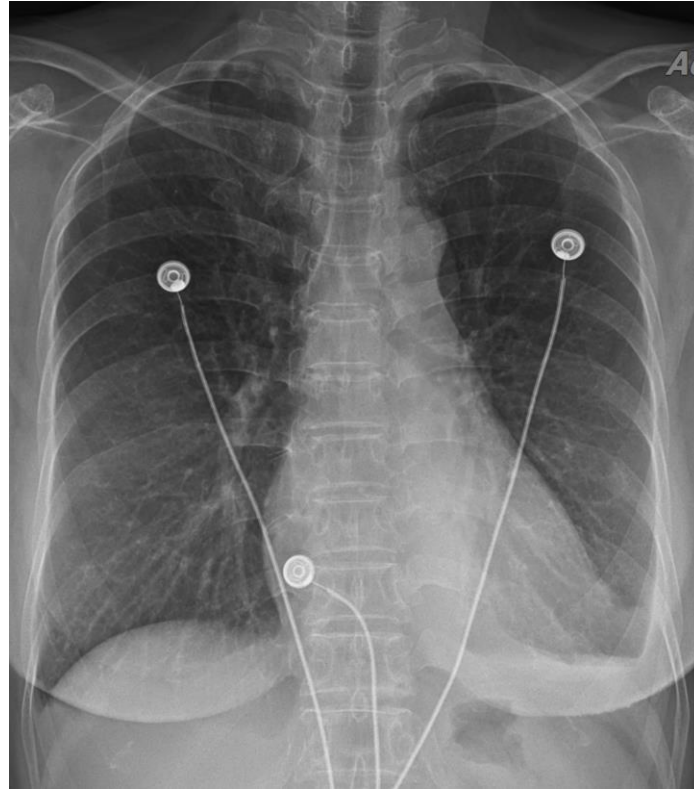


# Chest PA f/u

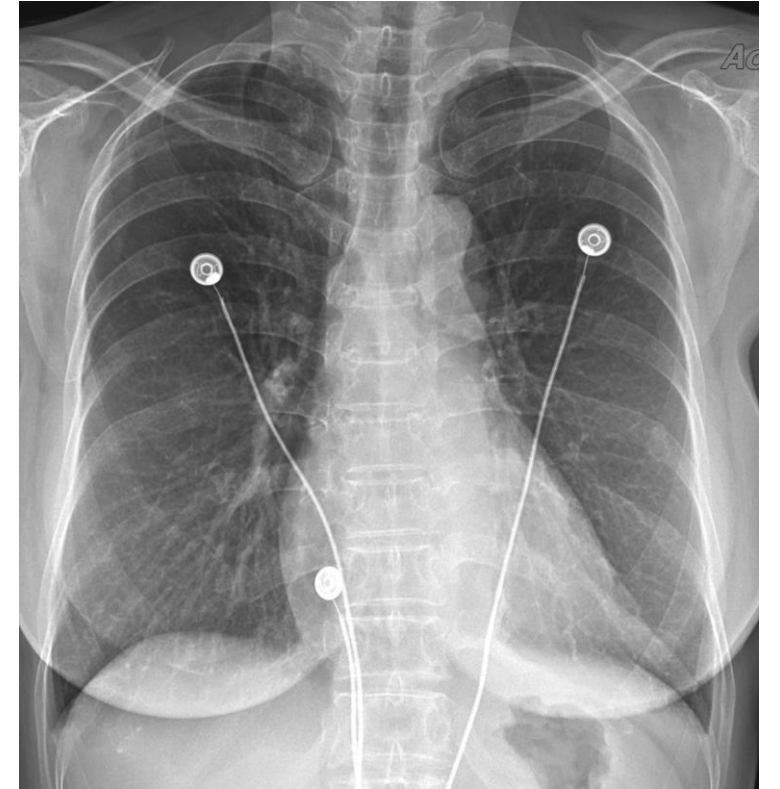
POD 1



POD 2



POD 4

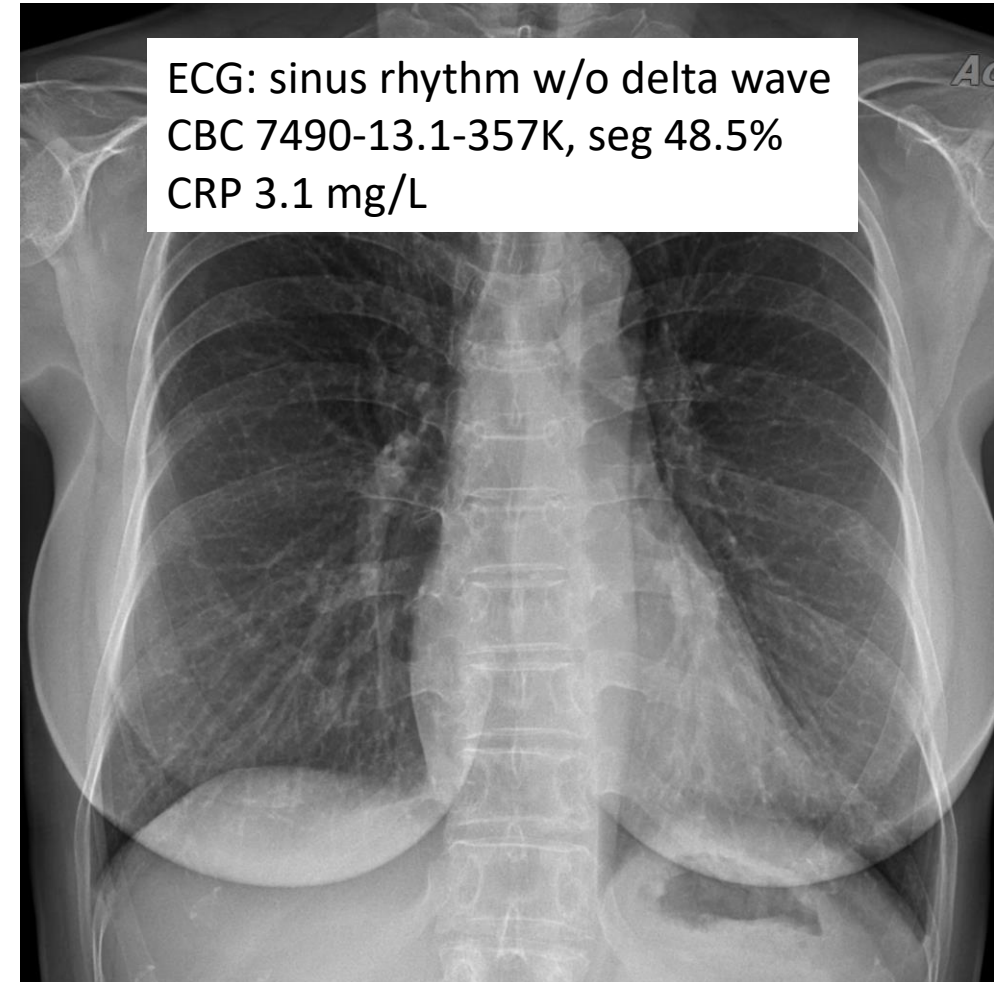


# Discharge (POD 6) → First OPD f/u (POD 13)

POD 6



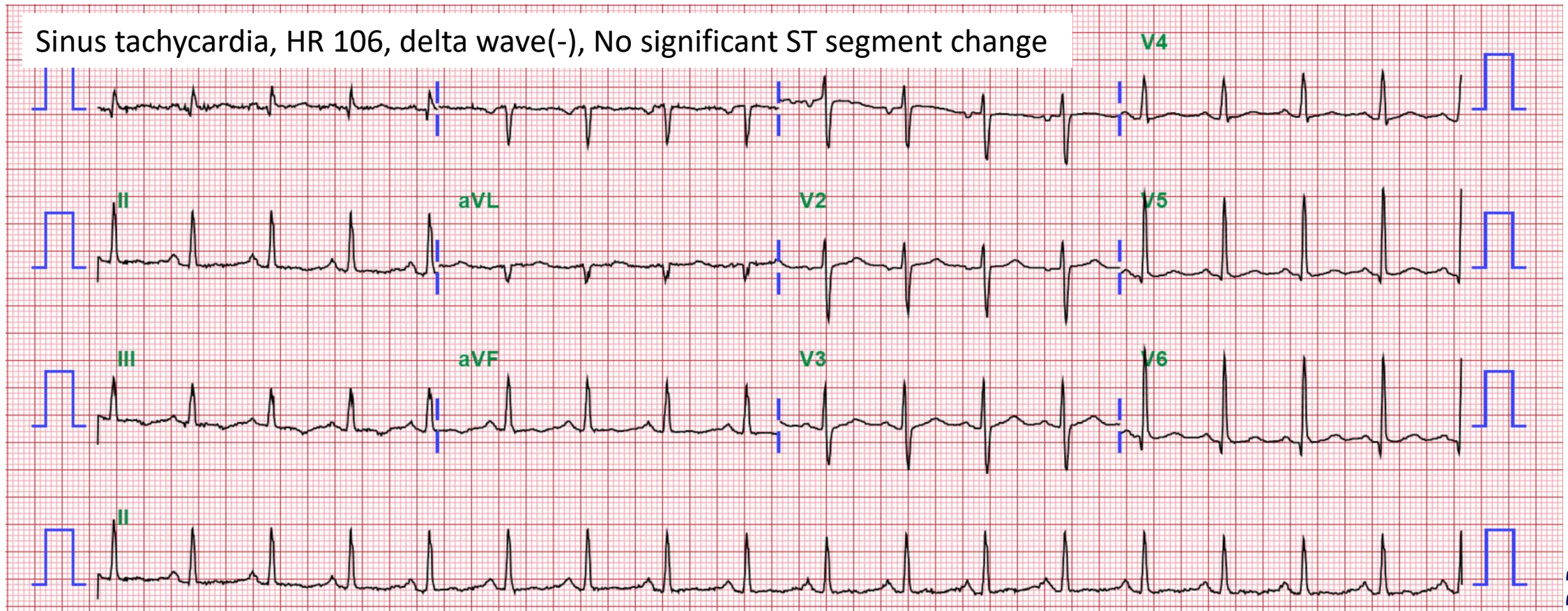
POD 13





# Early OPD visit (POD 48)

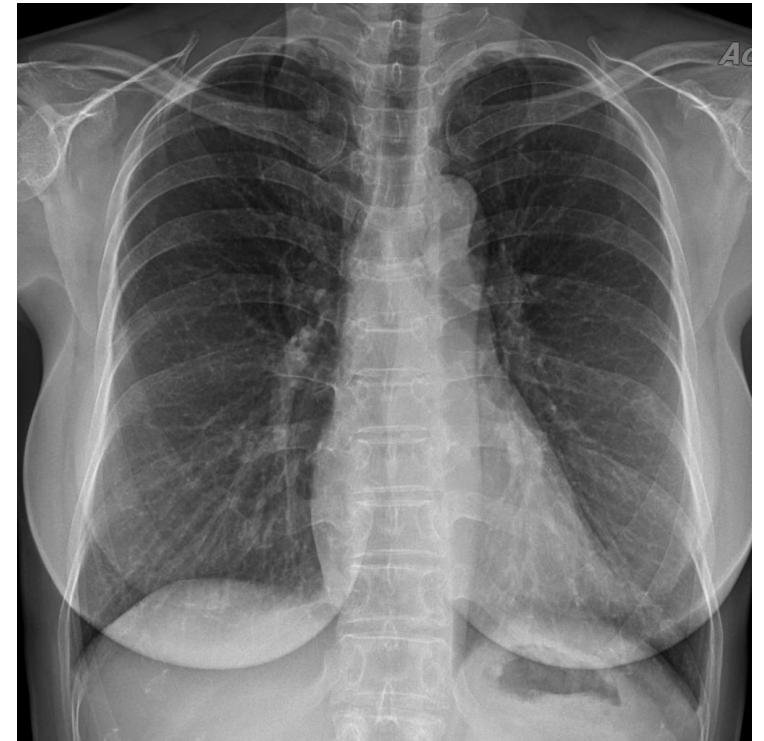
- Palpitation, easy fatigue during exercise
- Regular heart rhythm w/o murmur



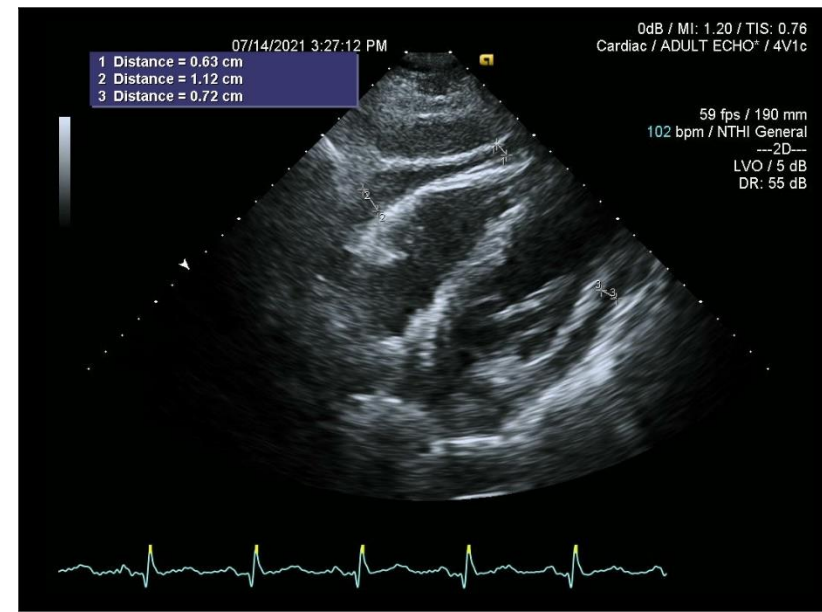
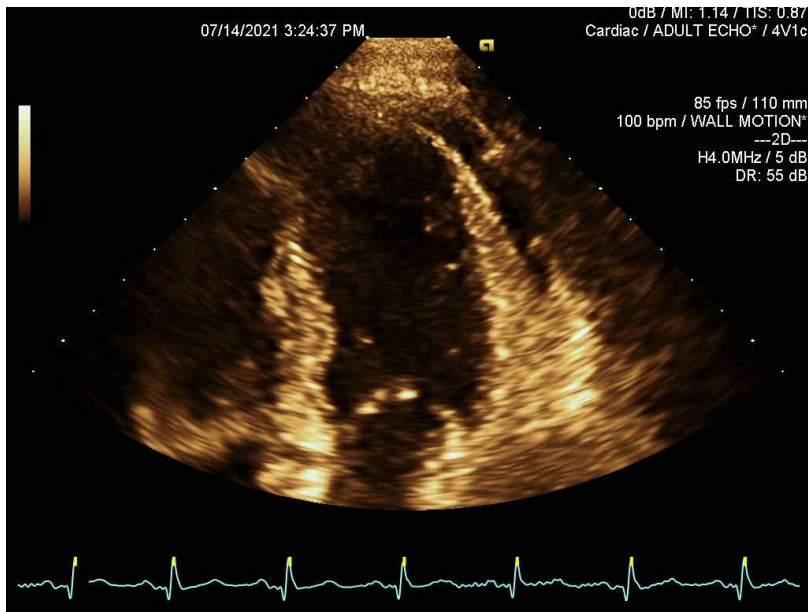
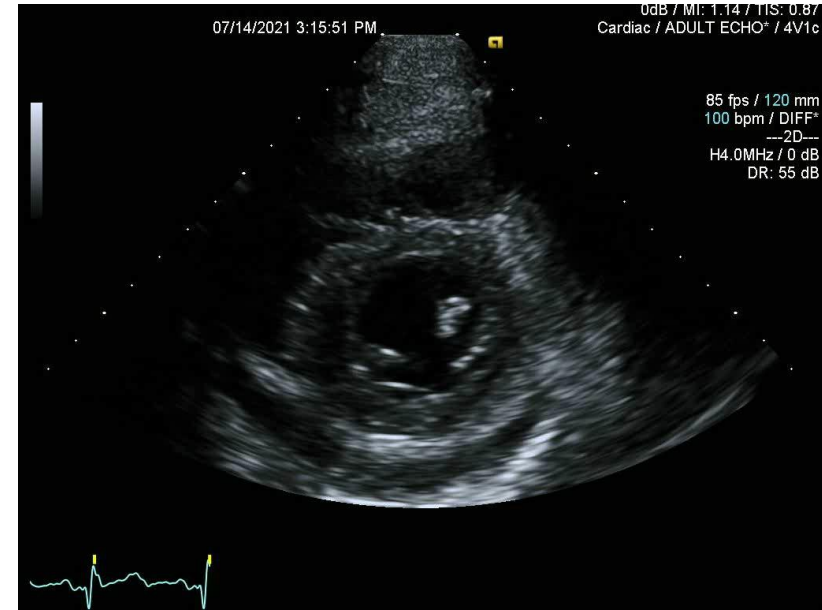
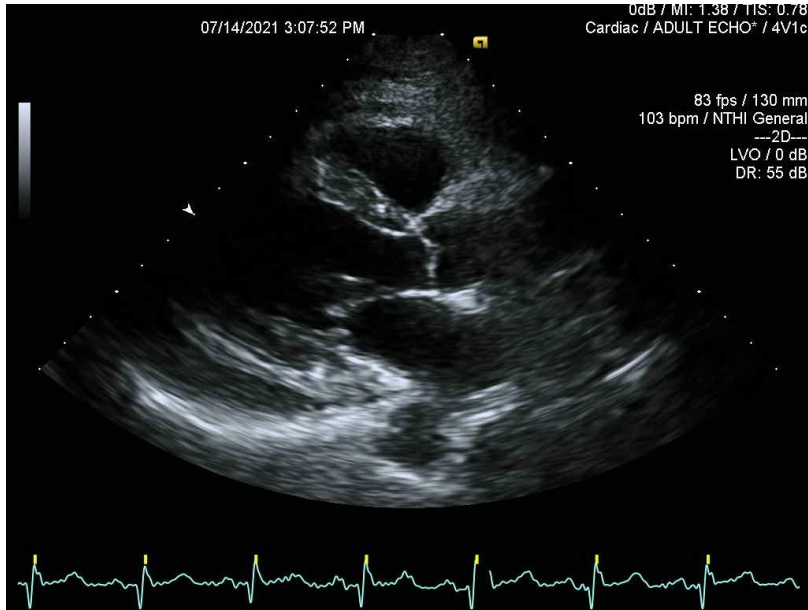
# Chest PA (POD 48)



POD 13



# Echocardiography (POD 50)



## Medical management

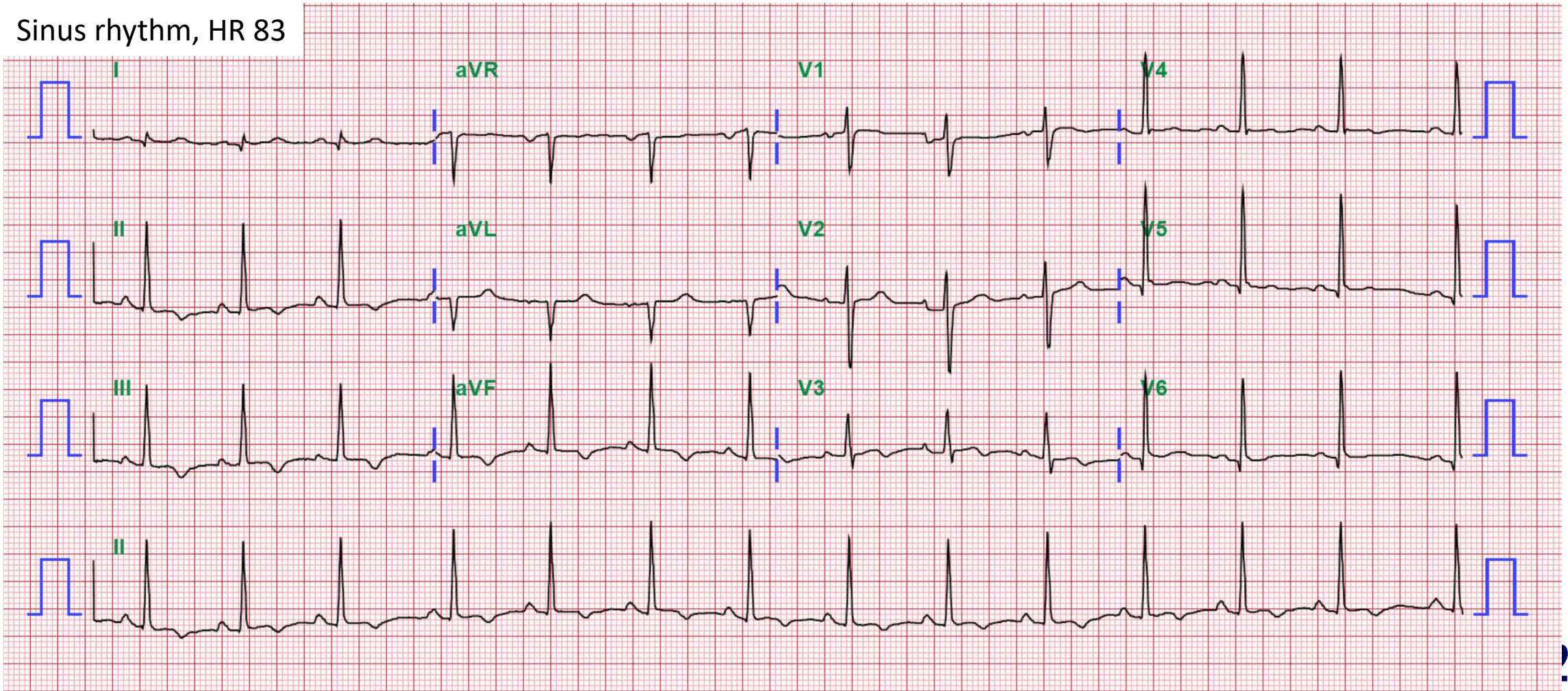
- ◆ Vital sign: 116/76 – 117 – 20 – 36.9°C
- ◆ CBC 8260-11.6-540K, seg 73.0%; CRP 31.4 mg/L
- ◆ Normal saline, Ibuprofen 600mg bid, Colchicine 0.6mg qd
  
- ◆ CRP 31.4 (ADM 1) → 20.9 (ADM 3) → 17.5 (ADM 6)
  
- ◆ No symptom aggravation. Discharge at Day 7 with po medication.



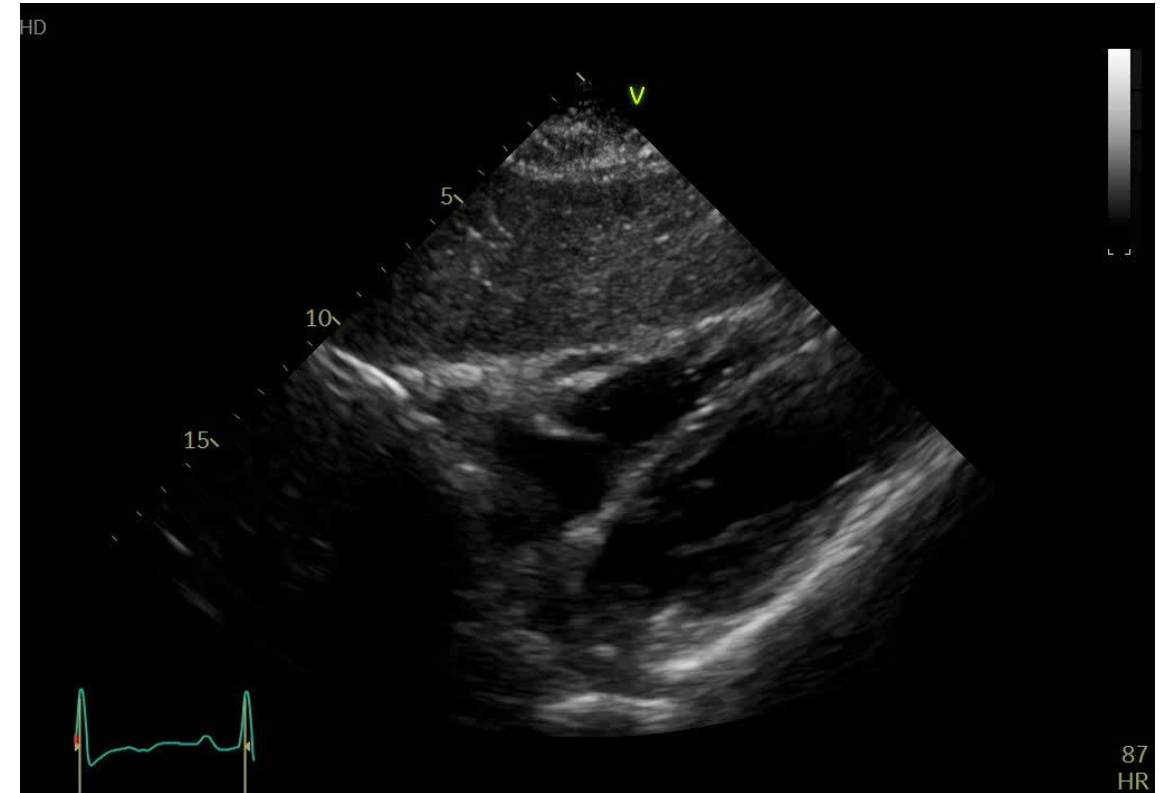
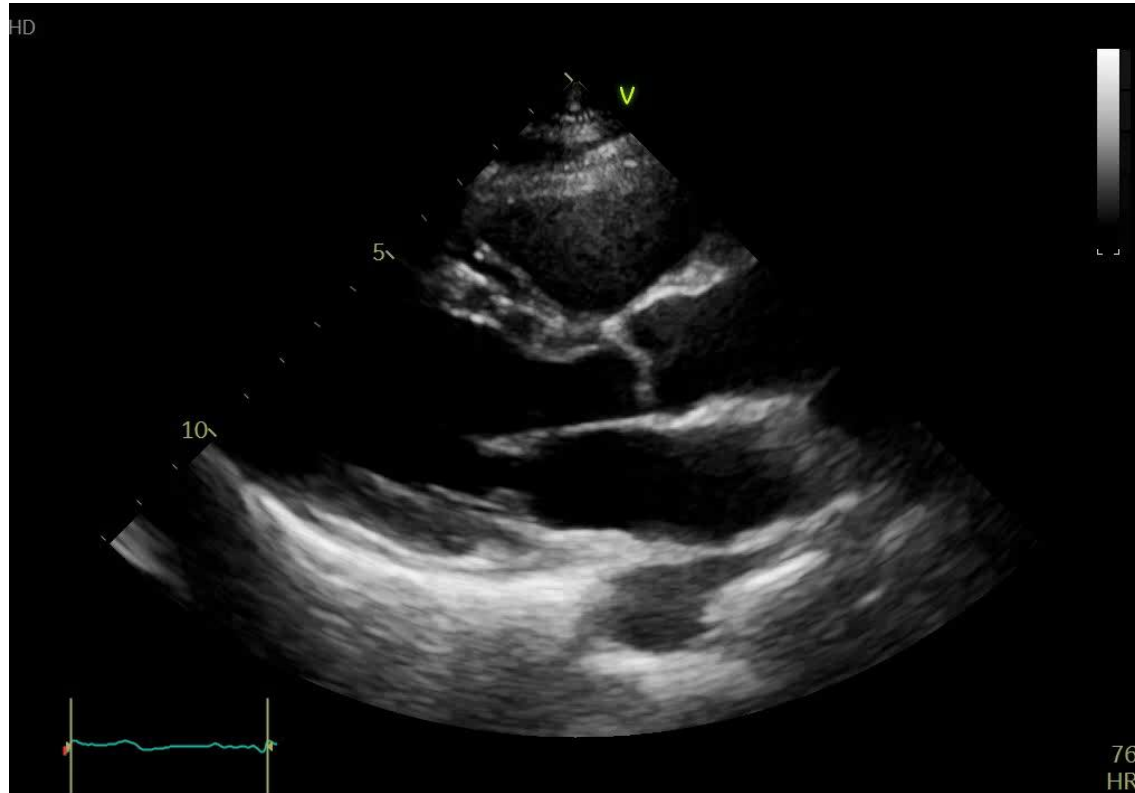
# OPD f/u (POD 108, Colchicine day 60)

- ◆ Slightly improved symptom. Fast walking (O), running (X)

Sinus rhythm, HR 83



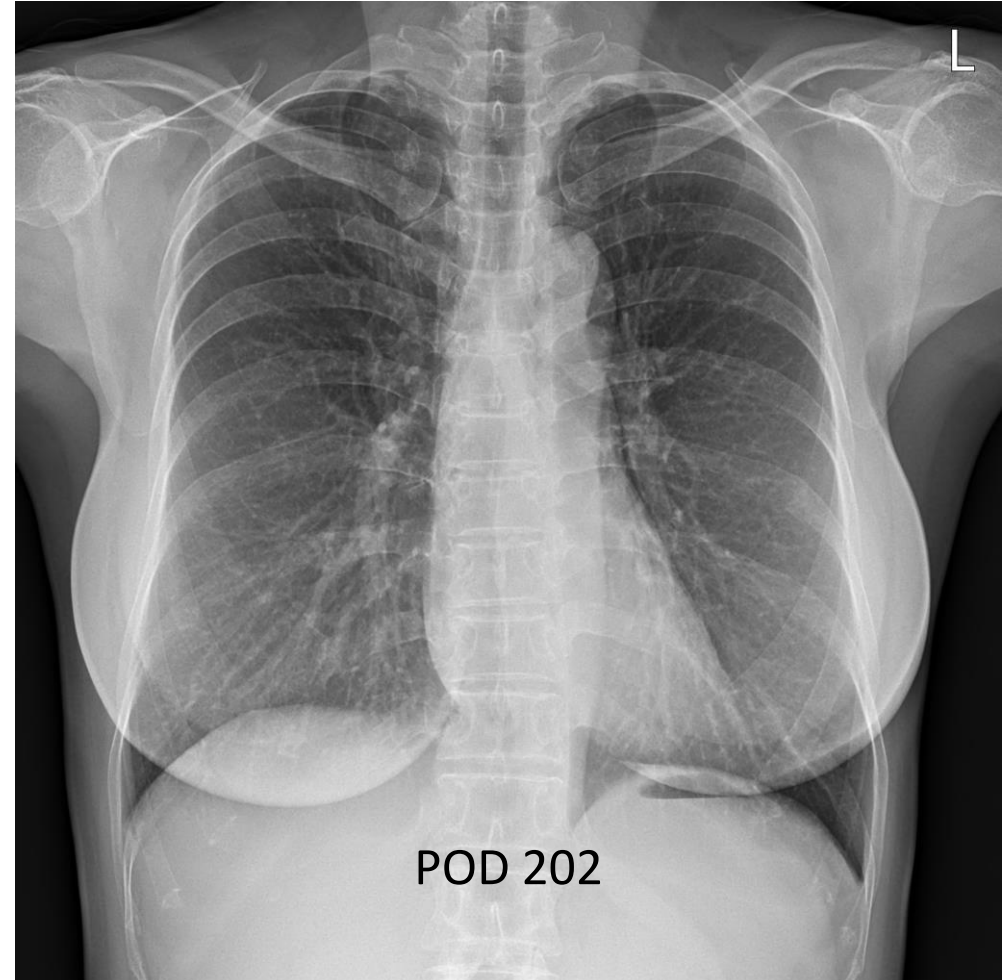
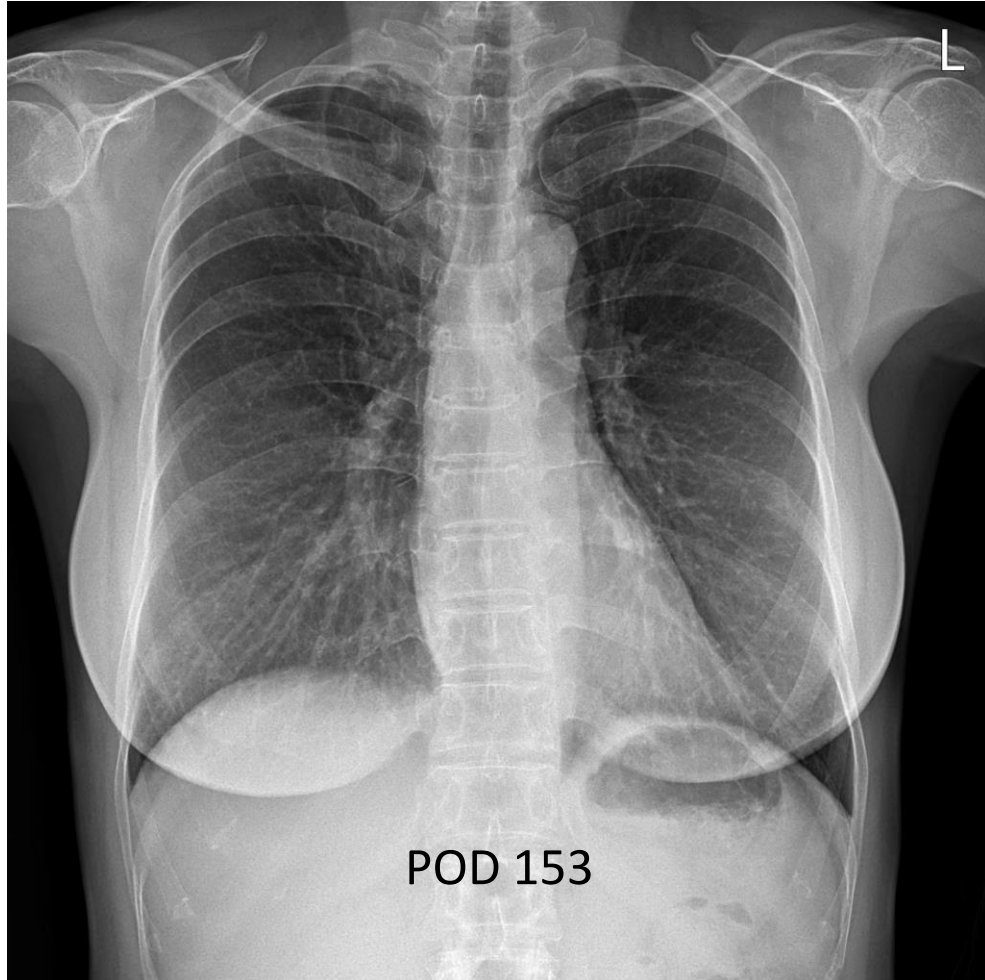
## F/U Echo (POD 108, Colchicine day 60)



- ◆ Scanty amount of pericardial effusion
- ◆ Colchicine 1 month (total 3 months)

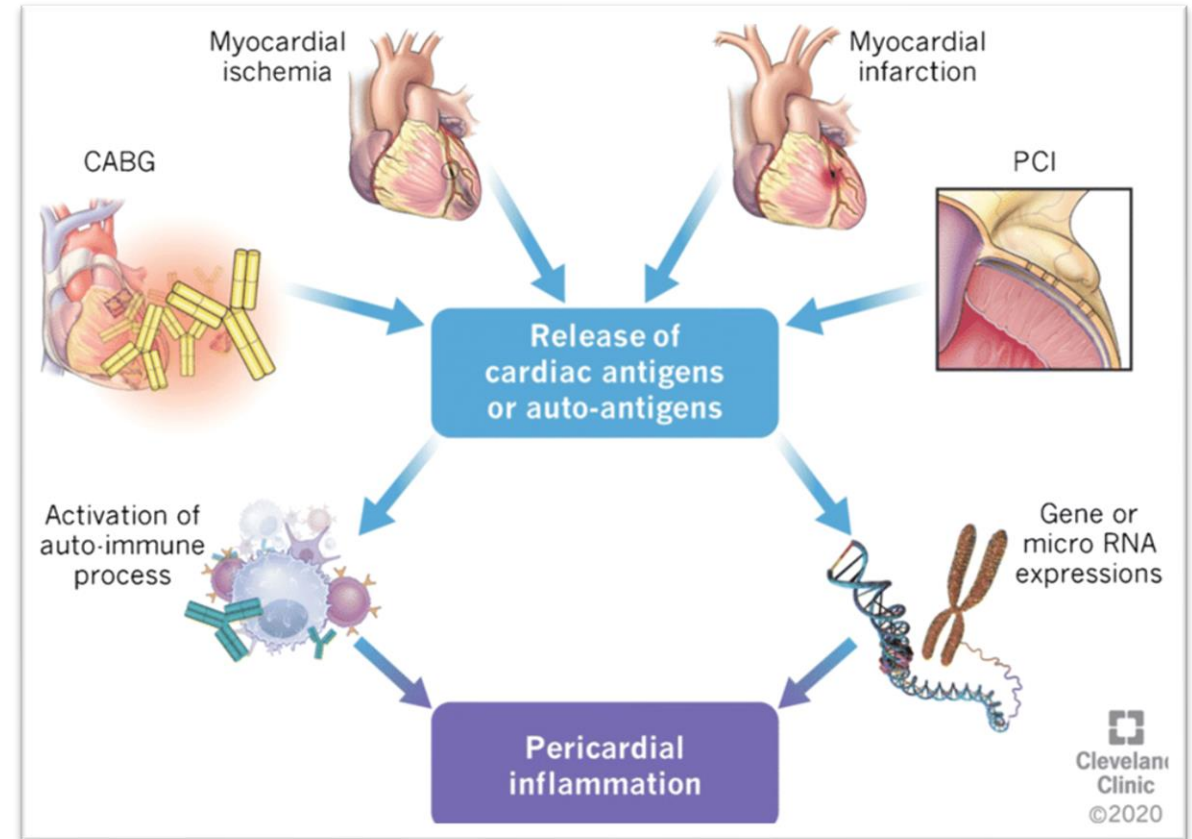


# Chest x-ray (POD 153 & 202)



# Post Cardiac Injury Syndrome

- ◆ After cardiac surgery, myocardial infarction, coronary intervention, as well as EP procedures.
- ◆ Inflammatory response of myopericardial tissue  
→ Pericarditis





# Incidence: Not uncommon as we think

- ◆ Incidence is variable among different cohorts

- ◆ Single center AF ablation (N=2215)
- ◆ Suspected acute pericarditis  
→ **10.2% (N=226)**

PCIS	Incidence (%)
Post-MI	
Early (<7 days)	3%
Late (>7 days)	<1%
Post-cardiac surgery (PPS)	1%–15%
Percutaneous procedures	
PCI	0.5%
CIED implantation	<1% to 5%
Post-traumatic pericarditis	0.5% to 5%

**Table 2** Post-AF ablation acute pericarditis (N = 226)

ECG changes	44 (19.5)
Pericardial effusion	21 (9.3)
Fever	9 (4.0)
Drug choice	
Colchicine	149 (65.9)
Prednisone	66 (29.2)
Ibuprofen	43 (19.0)
Multiple drugs	57 (25)

Values are given as n (%).

AF = atrial fibrillation; ECG = electrocardiography.



## Risk factors

- ◆ Younger patient [OR 0.95 (0.937 – 0.971)]
- ◆ Female gender [OR 1.42 (1.21 – 1.65)]
- ◆ Higher BMI >30 [OR 1.48 (1.22 – 1.79)]
- ◆ Anemia, coagulopathy, hypertension, rheumatoid arthritis, ...
  
- ◆ Extensive ablation, ablation in small CS branch, epicardial ablation ...



# Diagnosis & Management

## Diagnosis

- ◆ Same as idiopathic pericarditis
- ◆ Pleuritic chest pain, friction rub
- ◆ Diffuse ST elevation, PR depression
- ◆ New or increased pericardial effusion or cardiac tamponade

## Management

- ◆ Minimize pericardial inflammation
  - NSAID: ibuprofen 600-800mg tid
  - Colchicine: 0.6 mg bid or qd
  - Steroids (refractory, intolerant)
  - Immunosuppressant
- ◆ Surgical pericardiectomy



## Summary

- ◆ WPW syndrome with Left posteroseptal (MCV) AP
  - ➔ Several RF ablations in small CS branch.
- ◆ Successful AP ablation but acute pericarditis and cardiac tamponade.
  - ➔ Conservative management during acute period.
  - ➔ ? Anti-inflammatory treatment should have done...
- ◆ Delayed pericarditis developed unexpectedly on POD 7 weeks.
  - ➔ More long & frequent monitoring should be needed than usual case.
- ◆ Pericarditis resolved with proper medical treatment (NSAID + colchicine) and no recurrence.

