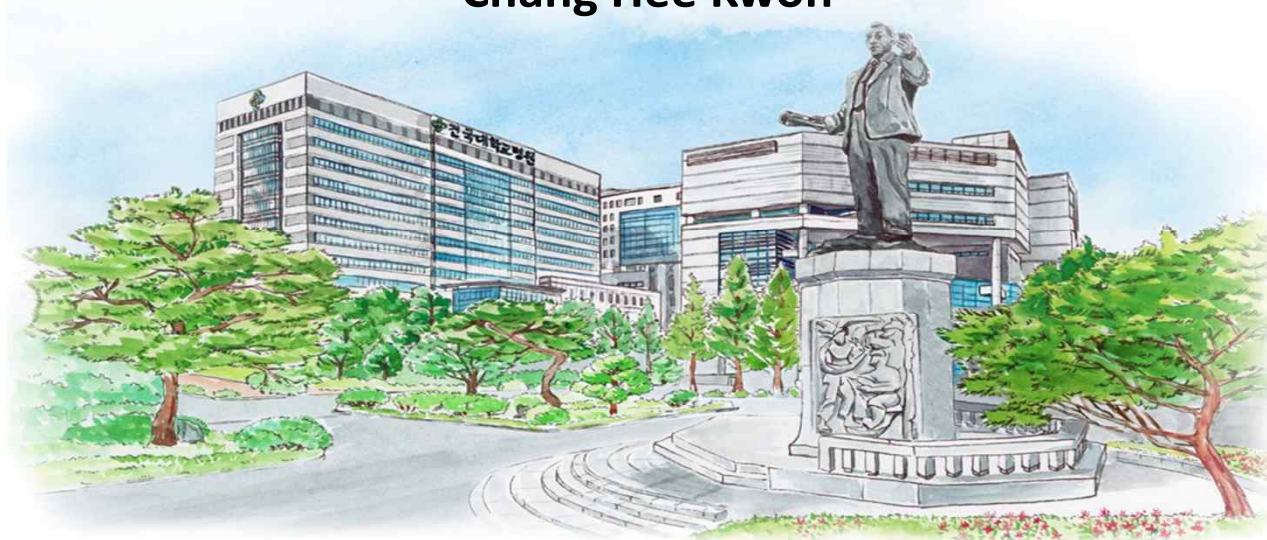




# Malignant PVC triggered VF

Arrhythmia & Electrophysiology, Division of Cardiology,  
Department of Internal Medicine, Konkuk University Medical Center  
**Chang Hee Kwon**

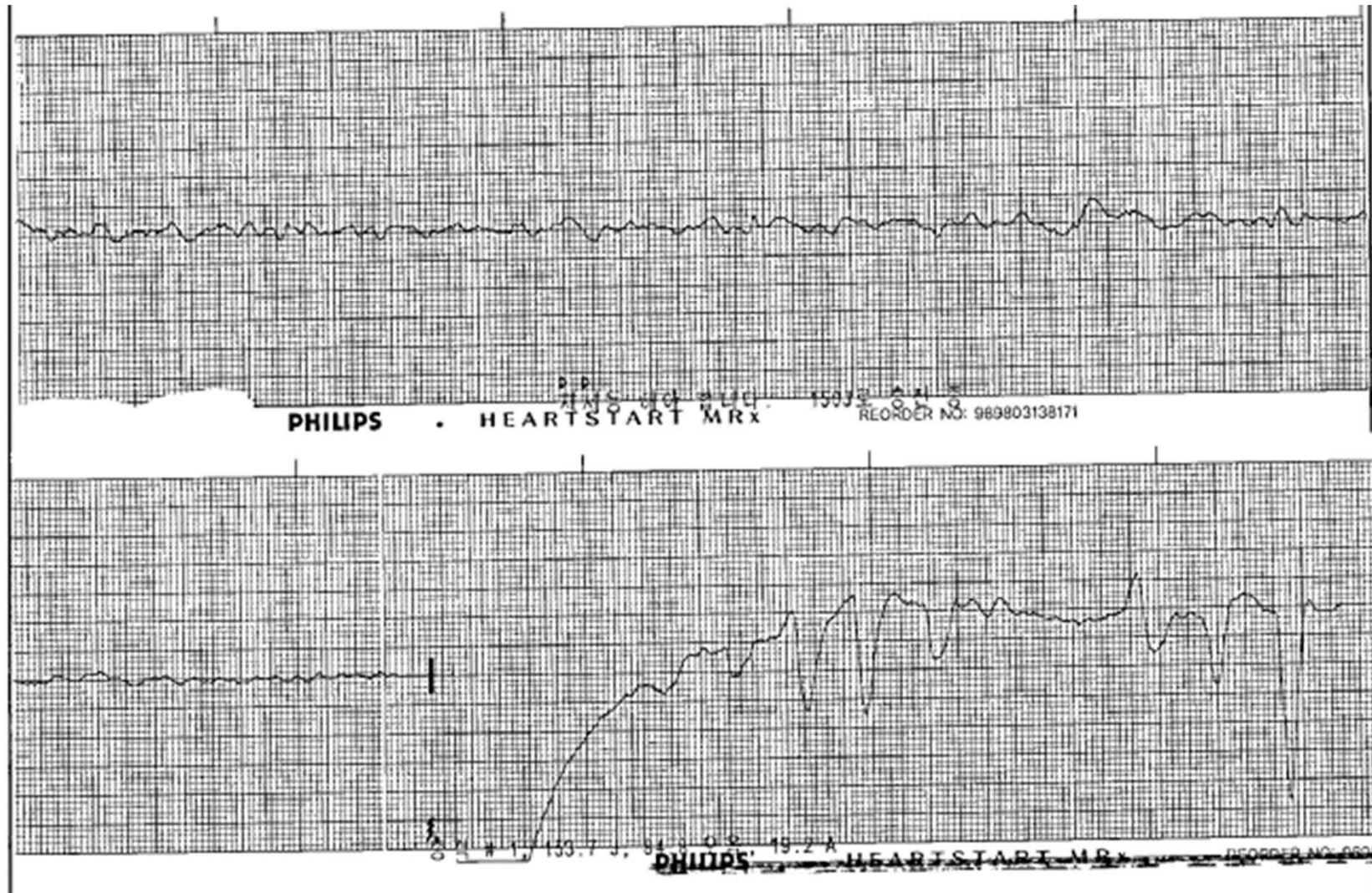


# Case M/31

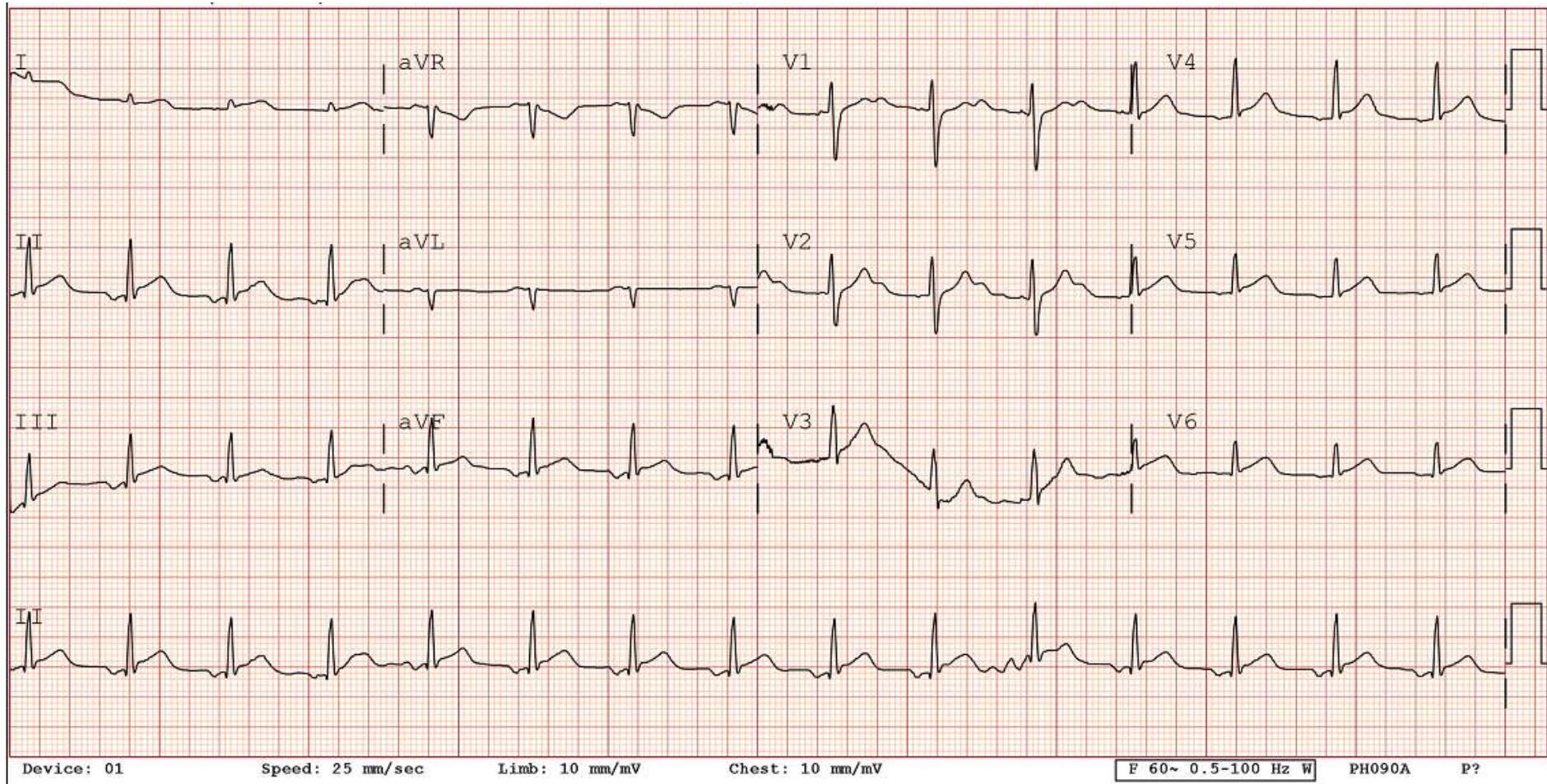
---

- 2017.5.30.
- VF arrest → 119 defibrillation → transfer to our hospital

# Documented VF ECG



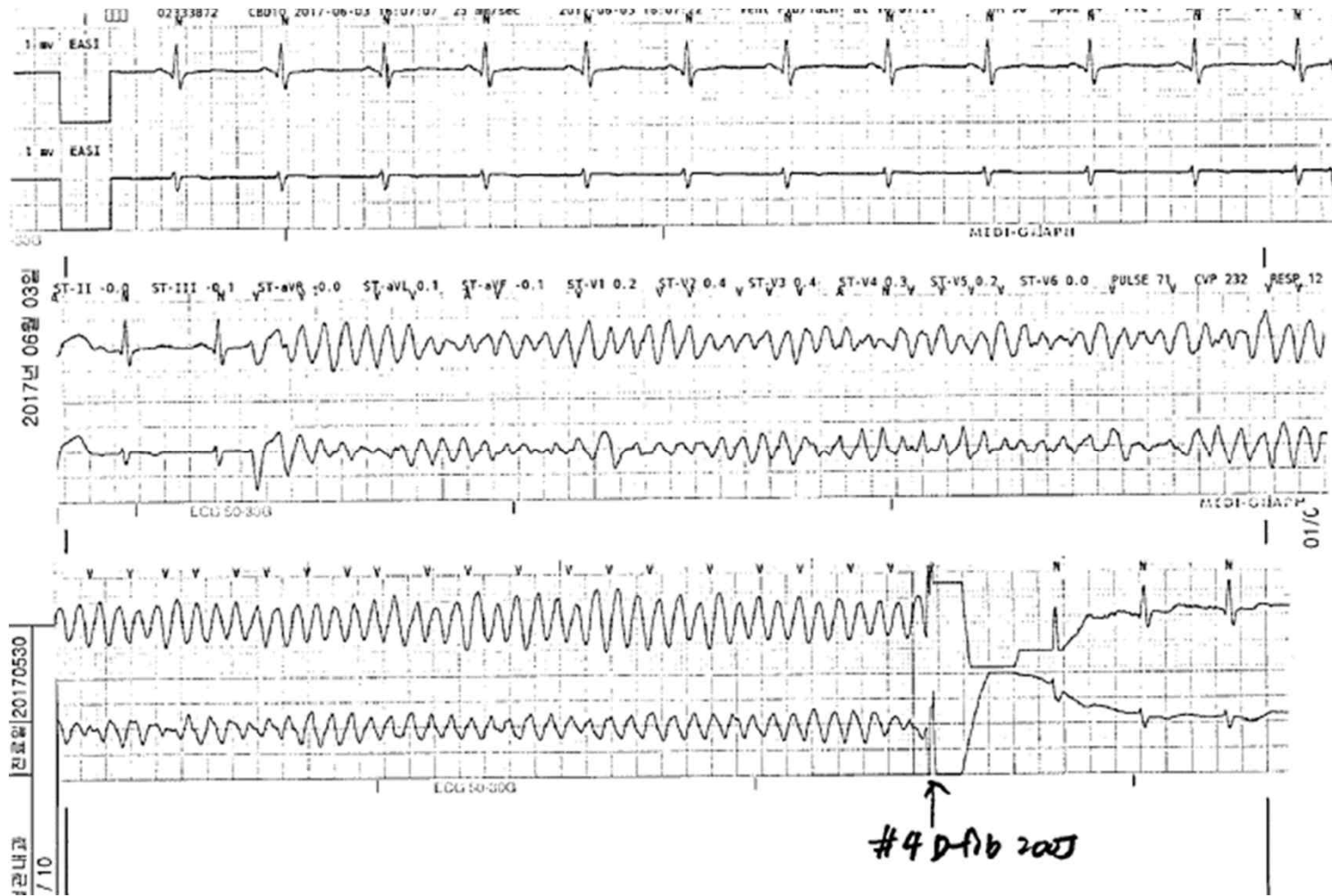
# Baseline ECG



# PVC triggered VF at HD #2



# PVC triggered VF at HD #5



# Patient's course

---

- Lidocaine IV
- Quinidine PO
- Amiodarone PO
- ICD implantation at HD #15
- Discharge with amiodarone and dilatrend

1. s/p CPR survivor due to VF arrest ('17.5.30.)
  - s/p ICD (M<sub>A</sub>T, DDD 40) ('17.6.13.)
  - Ec (N 71) ('17.6.9.)
  - amiodarone d/t PVC induced VF storm ('17.6.4.~ )
2. AKI on HD due to VF arrest ('17.6.)
  - Cr 5.5

# Follow-up

---

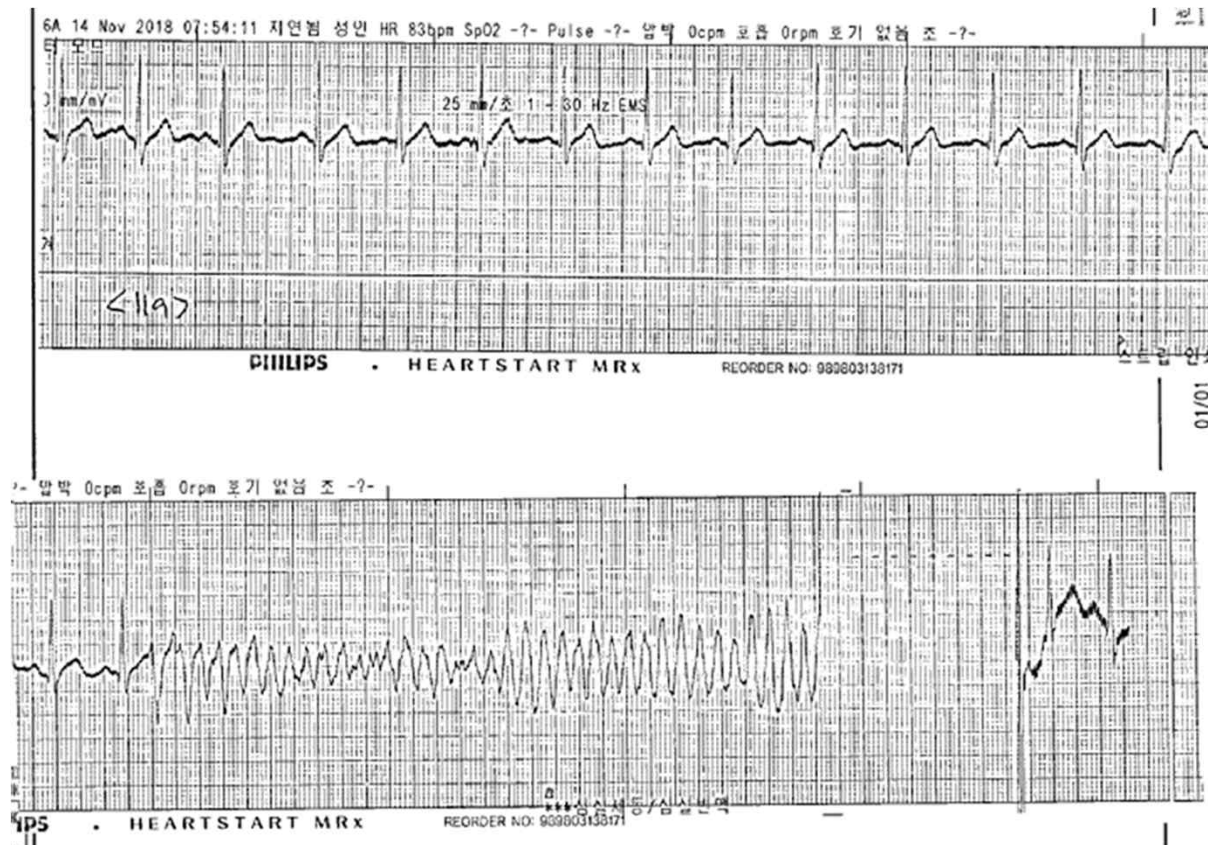
- Hypothyroidism d/t amiodarone -> amiodarone d/c
- Dilatrend PO 유지

1. s/p CPR survivor due to VF arrest ('17.5.30.)
  - s/p ICD (M사, DDD 40) ('17.6.13.)
  - Ec (N 71) ('17.6.9.)
  - amiodarone d/t PVC induced VF storm ('17.6.4.~ )
2. AKI on HD due to VF arrest ('17.6.)
  - Cr 5.5->1.4
3. Subclinical hypothyroidism d/t amiodarone ('17.7.17.)
  - amiodarone 중단 ('17.7.17.)

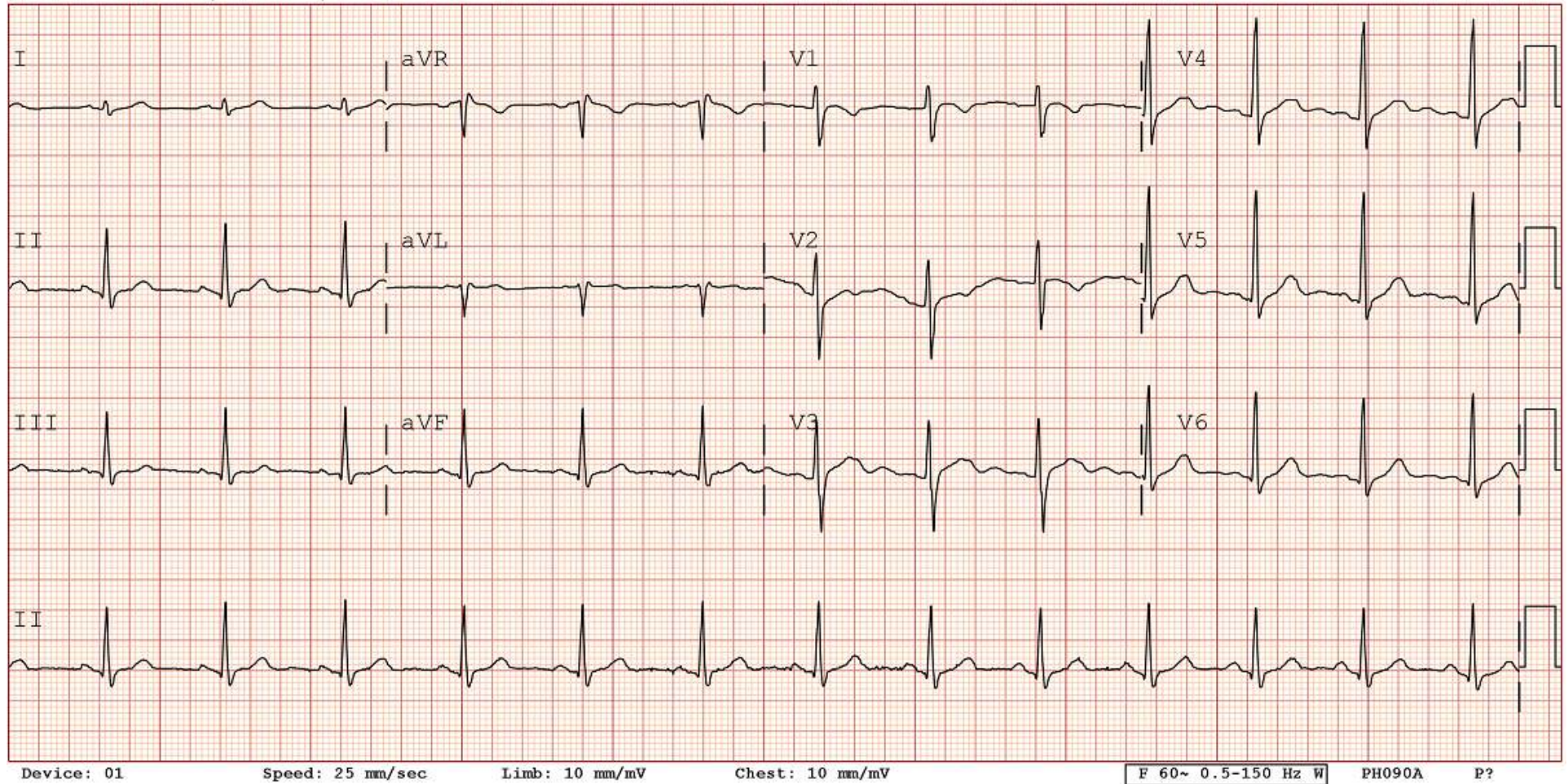


# 2018.11.14. (FU 17 months later)

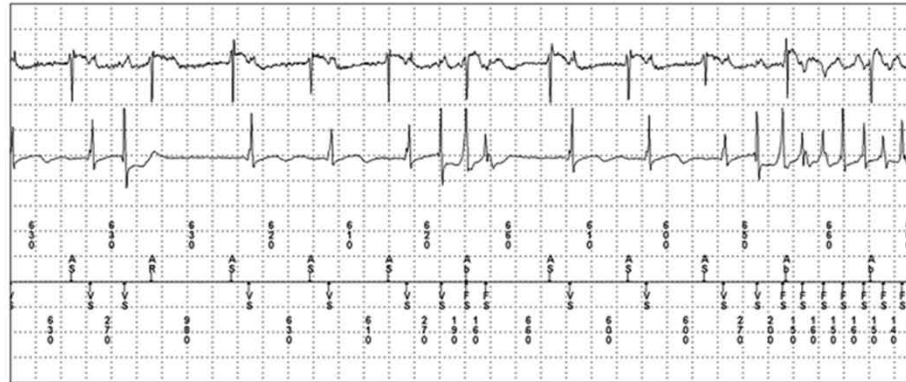
- 아침 샤워 중 recurrent shock 3차례 발생
- 119 이송 모니터링



# Baseline ECG



# ICD interrogation



SW033 Software Version 8.2 (4.1) Copyright © Medtronic, Inc. 2015

14-Nov-2018 10:16:02 Page 1

## -11-14 응급의학과 Interface 용 서식지 19

### Treated VT/VF Episode #16

Device: Evera MRI XT DR DDMB2D4

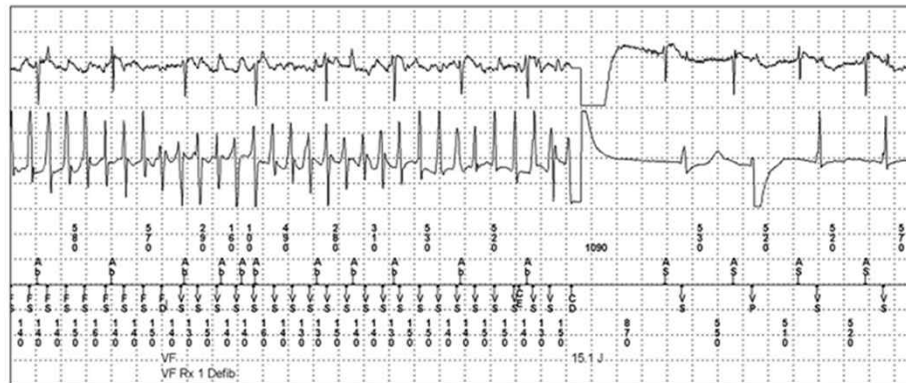
Serial Number: PGZ618717S

Date of Visit: 14-Nov-2018 09:49:37

Patient: SHIN, HYUNGGYU

ID: 02333872

Episode #16 - VF Chart speed: 25.0 mm/sec



# HD #1

- IV amiodarone start
- Echo - normal
- Holter – PVC number 7

Heart Rates		Rate Depen	
Min :	61 BPM at 22:41:00-1	Bradycardia Runs :	
Max :	94 BPM at 12:49:50-2	Longest :	0 b
Avg :	72 BPM	Min Rate :	0 E

Ventricular Events			
Total Beats :	7	Couplets :	0
% Beats :	0.01	Triplets :	0
Forms :	3	Bigeminy Runs :	0
AIVR/IVR Runs :	0	Trigeminy Runs :	0
Longest :	0 beats at		
Min Rate :	0 BPM		
V Tach Runs :	0		
Longest :	0 beats at		
Max Rate :	0 BPM		
Max VE/Minute :	3 beats at	00:58:00-2	
Max VE/Hour :	4 beats at	01:00:00-2	
Mean VE/Hour :	0.3		
VE/1000 :	0.1		

# HD #2

---

- 일반 병동 전실
- Cardiac CT (delayed contrast image) – normal
- 저녁부터 ICD shock 지속 반복 (total 15번)
- CCU 전실
- IV amiodarone + IV lidocaine 추가
- IV sedation



# HD #3 RFCA try

---

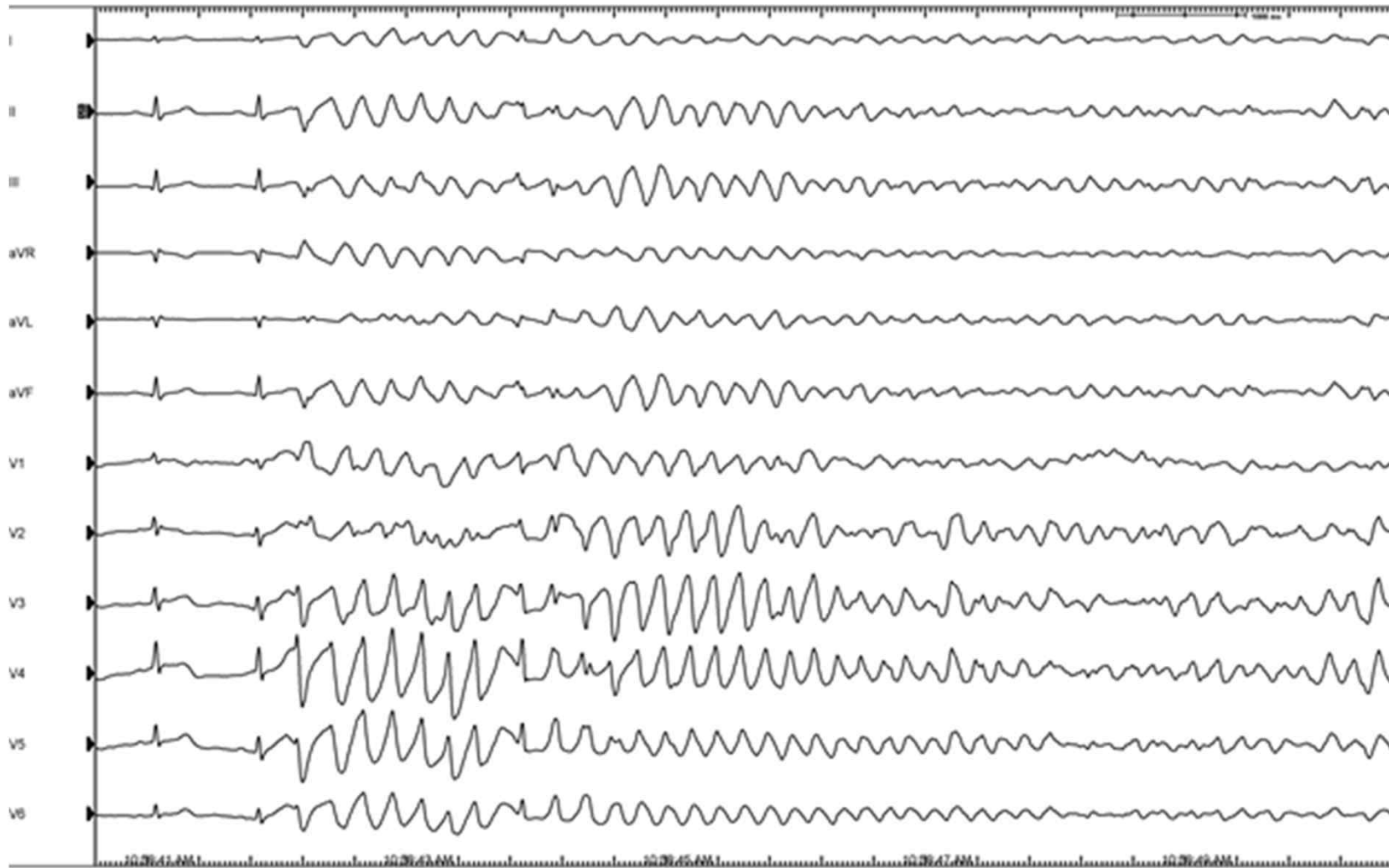
- Carto system
- Carto SoundStar ICE
- 8Fr Thermocool SmartTouch (DF curve) ablation catheter
- 7Fr Pentaray catheter

# Clinical PVC (main) PVC #1

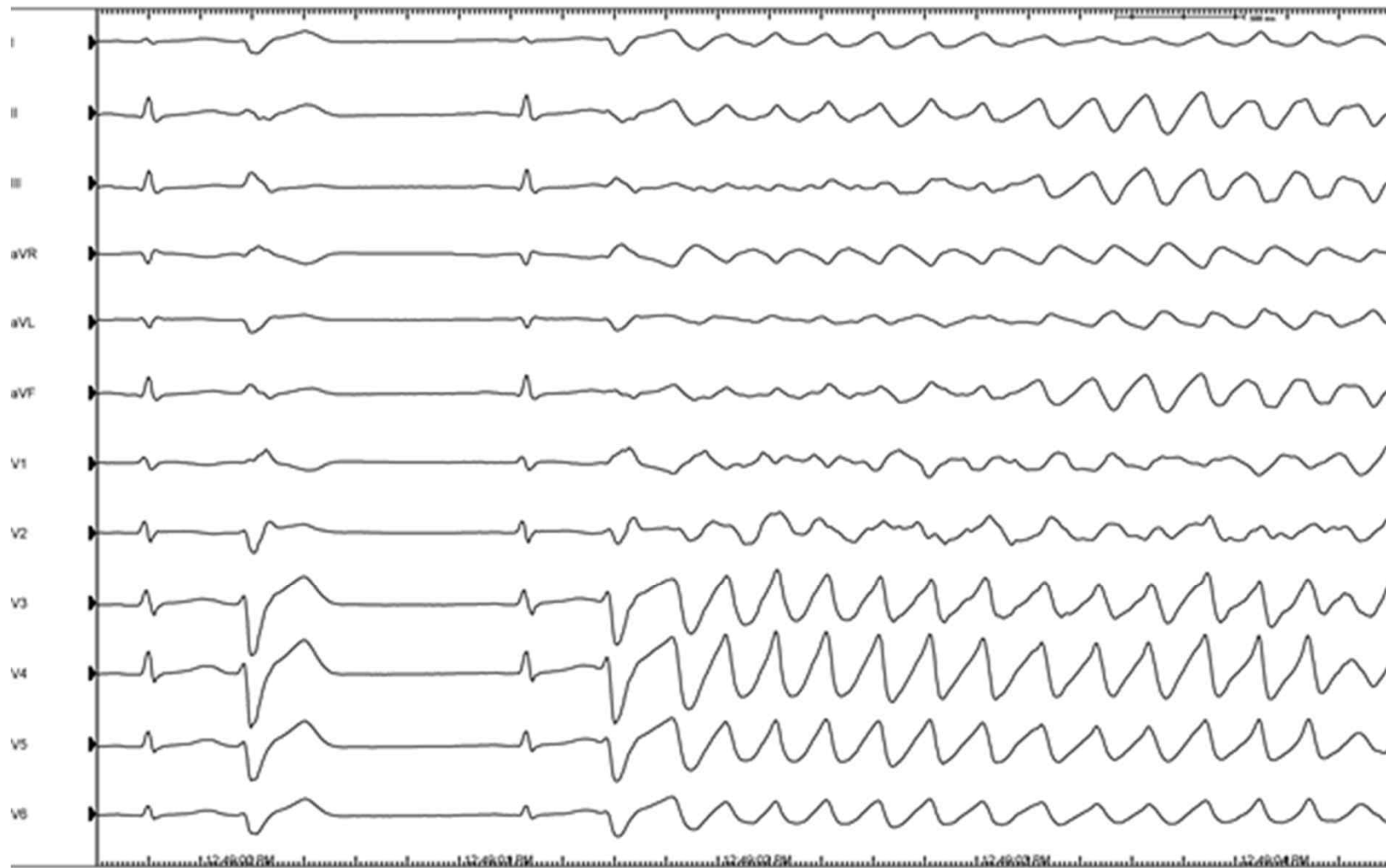




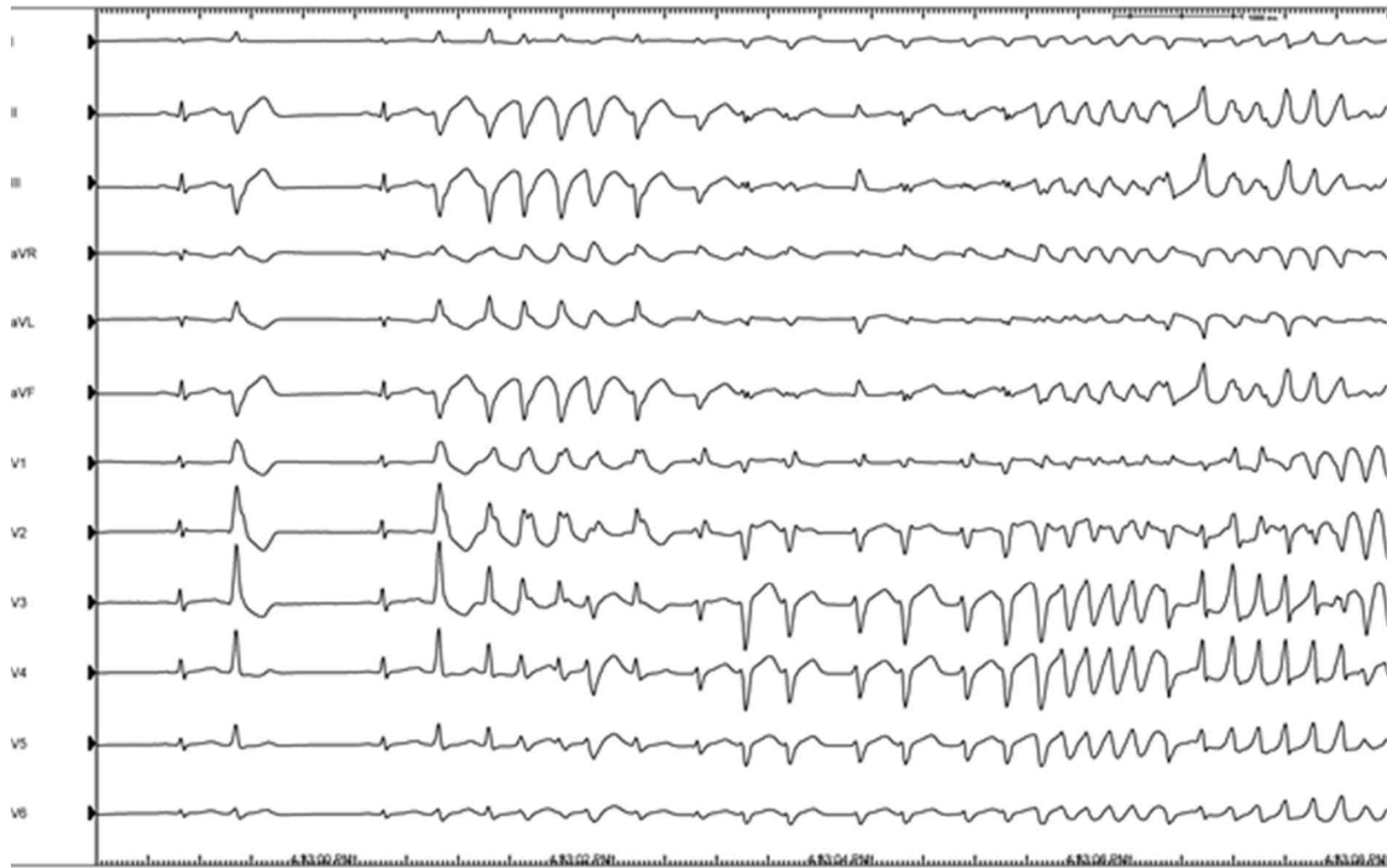
# PVC #1 triggered VF



# PVC #2 triggered VF

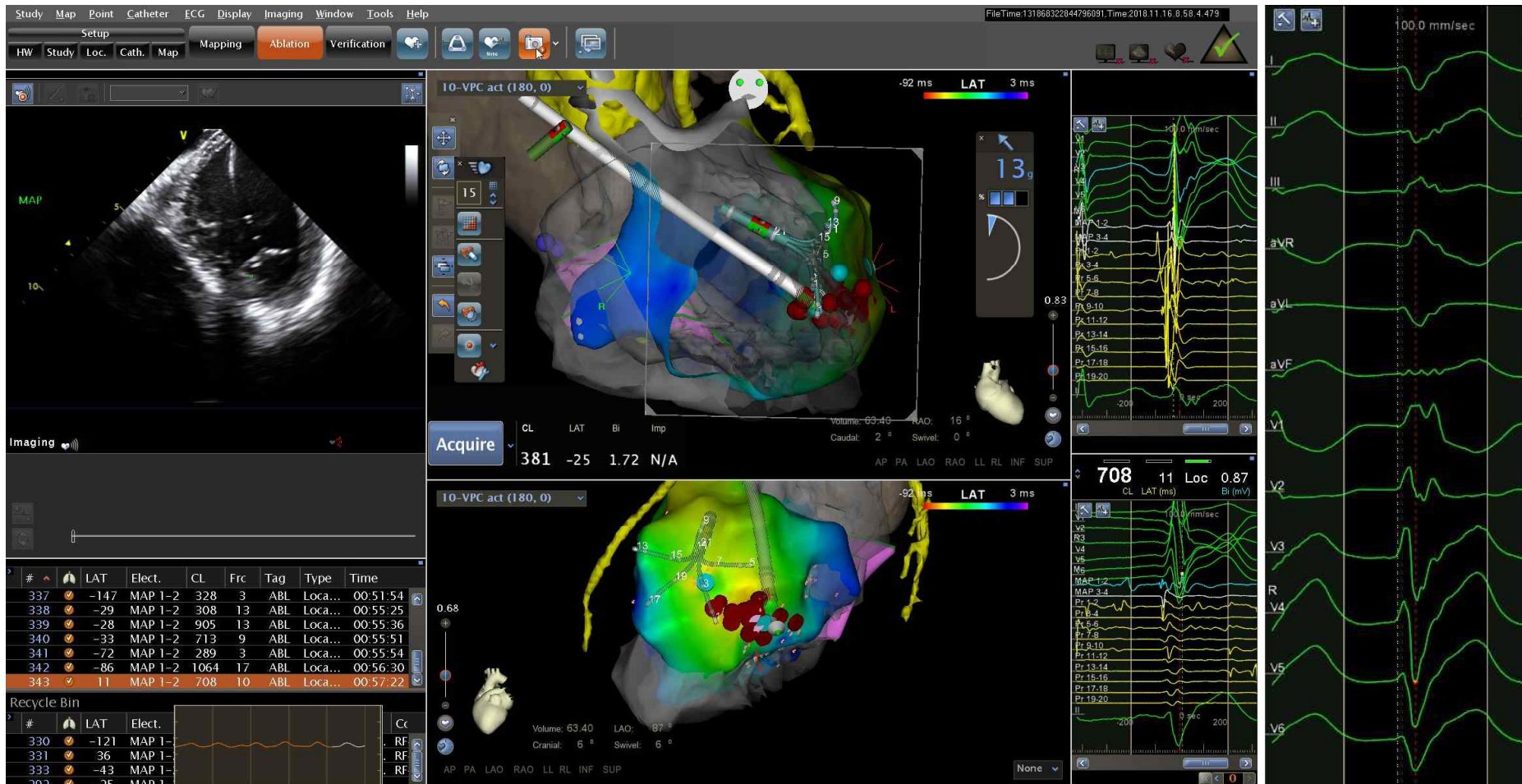


# PVC #3 triggered VF

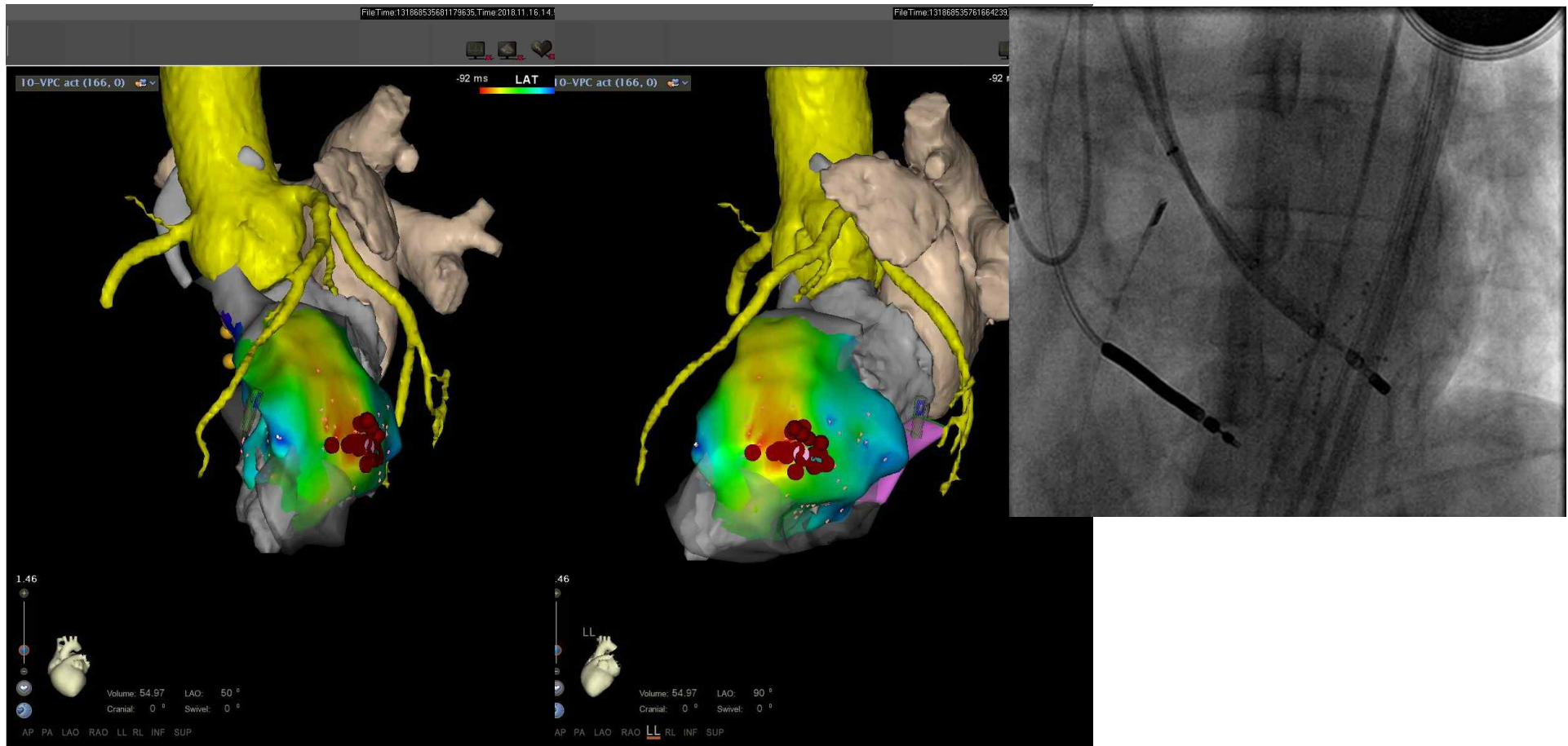


# Activation map for PVC #1

- LV apical free wall area (anterolateral PM base)

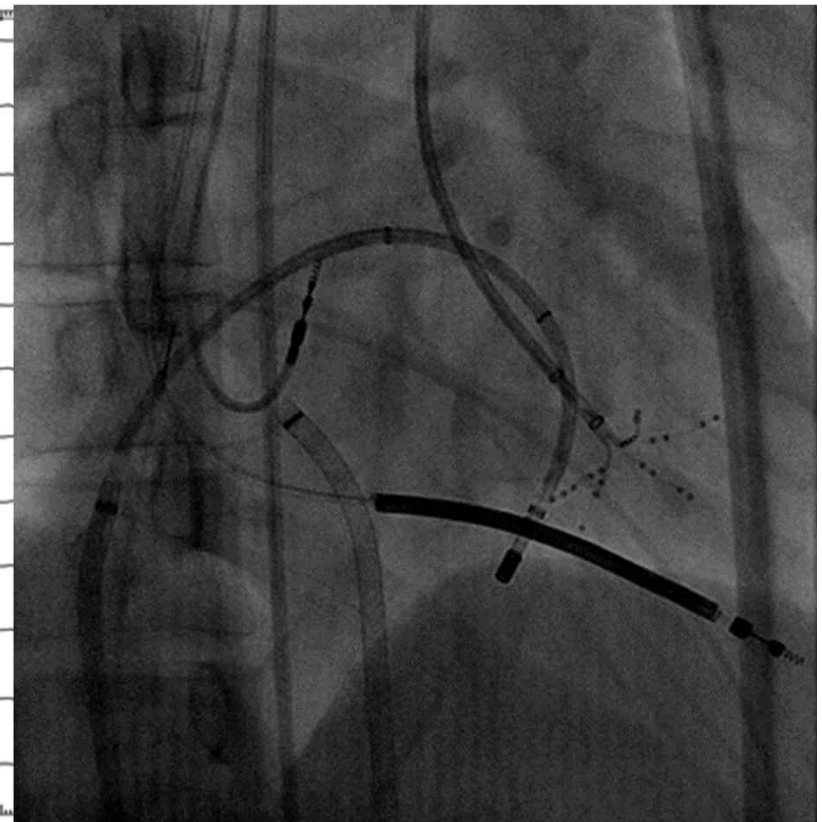


# RFCA site for PVC #1



# RFCA for PVC #2

- RV basal inferior septum area
- Pace map 11/12

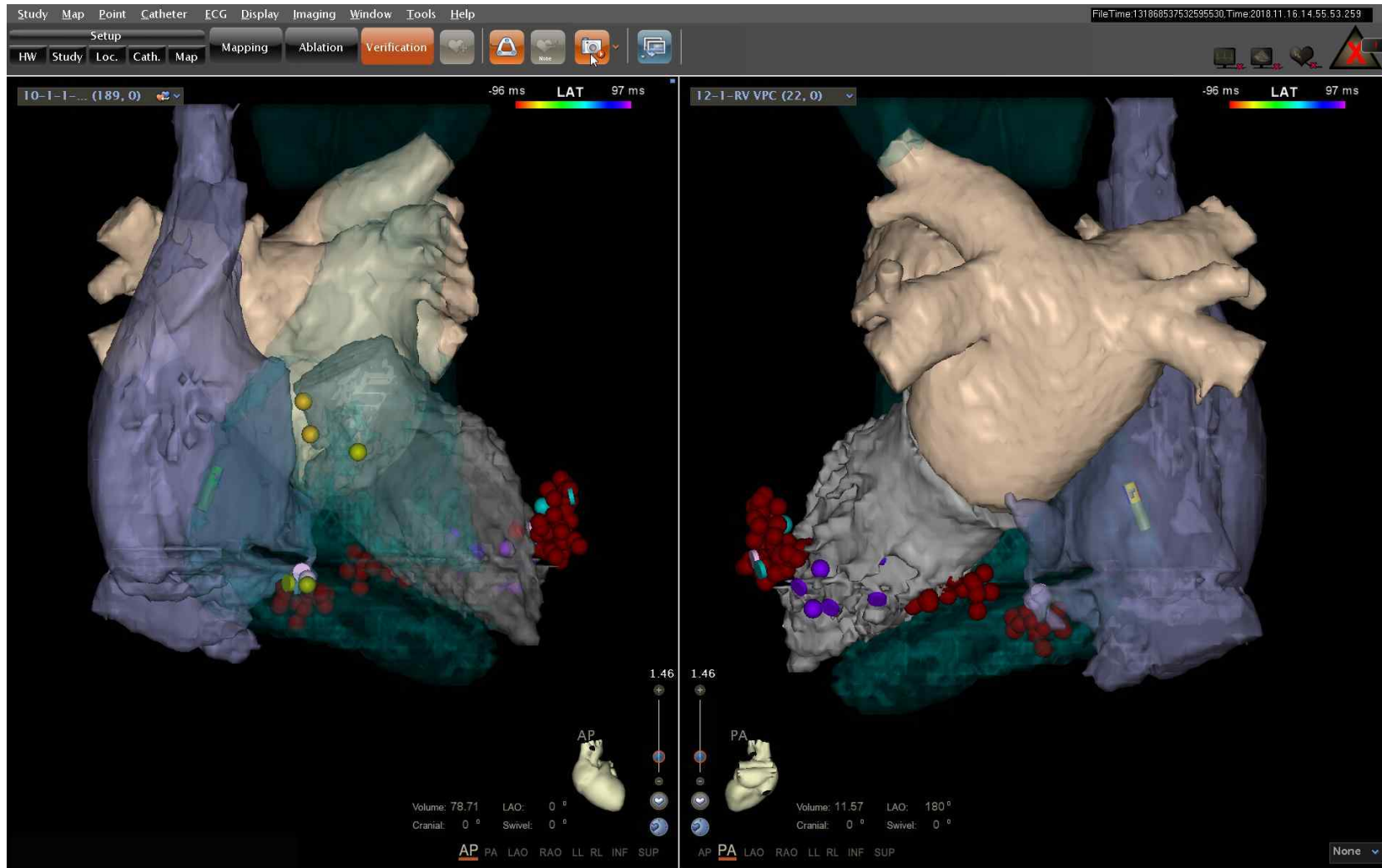


# Pace mapping PVC #3

- LV basal inferior septum
- Pace map 11/12



# Final ablation site





# 1<sup>st</sup> RFCA summary

---

- PVC #2 and #3 는 successful ablation
- But, failed RFCA for PVC #1
- 시술 도중 VF degeneration 이 도저히 조절되지 않아 deep sedation 위해 intubation and ventilation
- 마취과 의뢰
  - Lt. carotid satellite ganglion block (mepivacaine 400mg)
- IV amiodarone and lidocaine restart
- External shock 50 여 차례 시행
- PVC #1 ablation 실패하여 medical response 기다리고 반응 없을 시 이식 대기 계획하고 시술 마침.

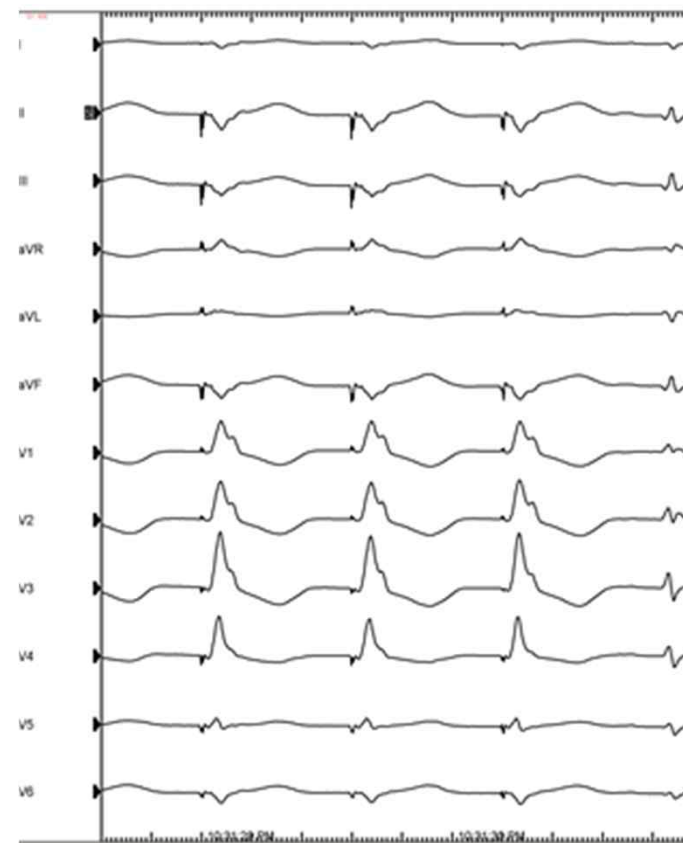
# Emergent ECMP and 2<sup>nd</sup> RFCA

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- CCU 전실 후 한 시간 정도 별다른 event 없다가 1시간 이후부터 1분마다 recurrent VF arrest and external shock 반복
- ECMO 시행 후 주말 지나 heart transplantation 위해 전원 계획하고 응급 ECMO 시행
- ECMO 시술 중에도 recurrent VF 지속됨.
- ECMO 시행 후 PVC #1 에 대해 마지막으로 trans-septal approach 통해 pace map 이용하여 RFCA 하기로 마음 먹음.

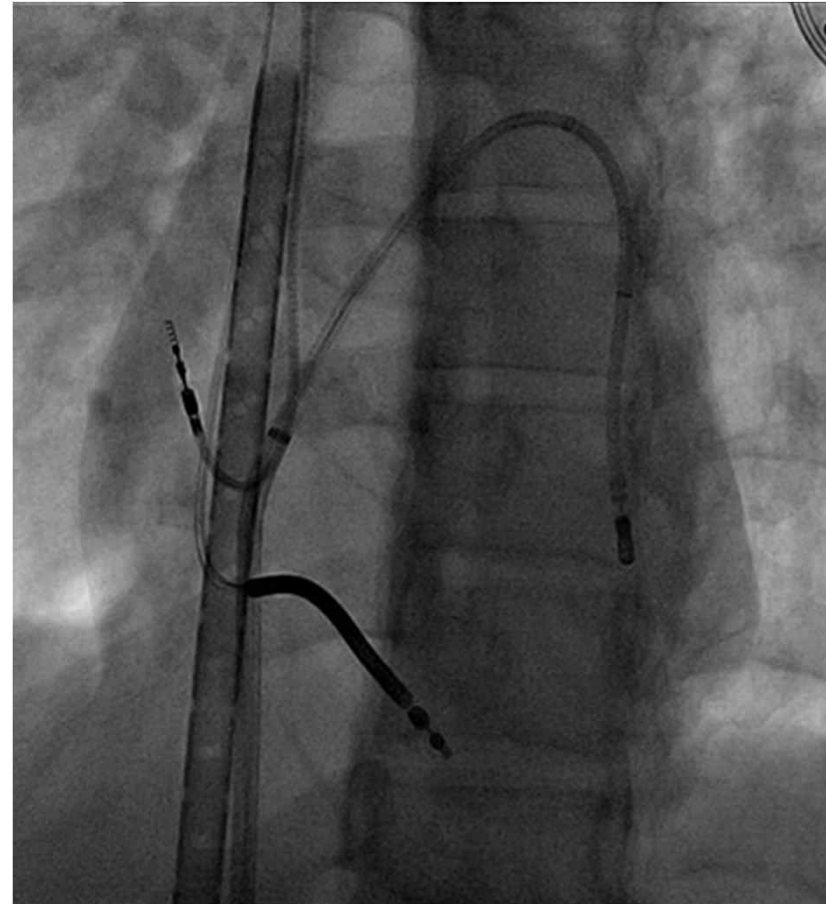
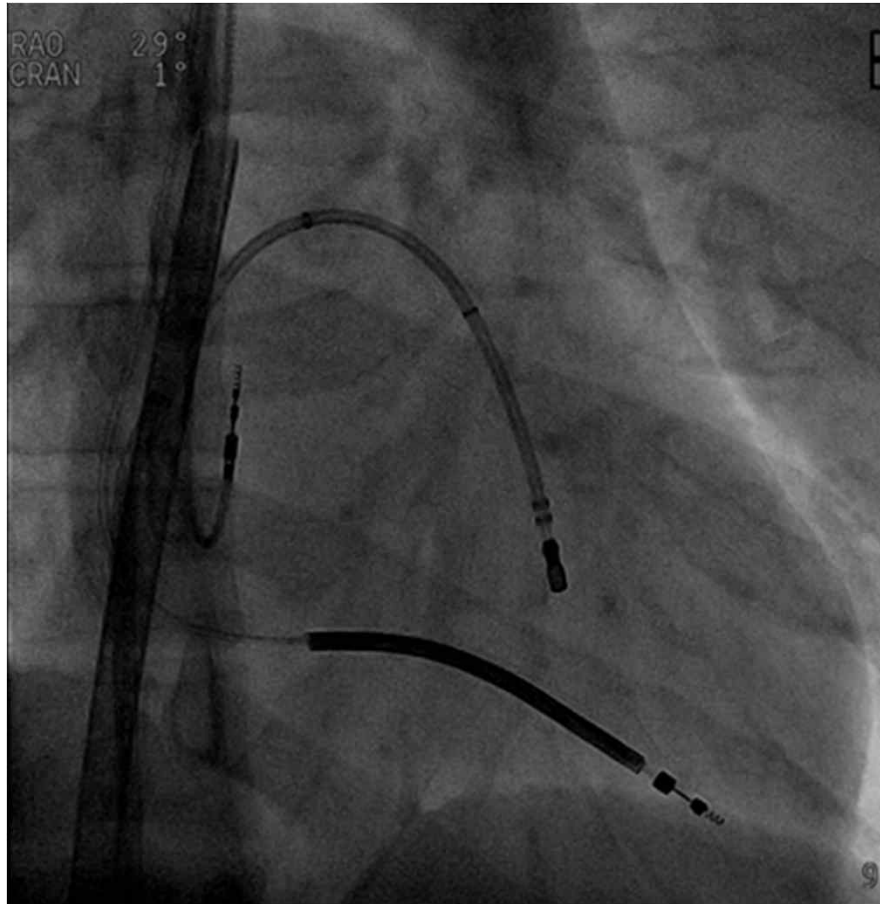
# 2<sup>nd</sup> RFCA for PVC #1

- LV mid lateral area
- Pace map - limb leads (6/6)



# 2<sup>nd</sup> RFCA for PVC #1

- 50 watt 90 seconds



## 2<sup>nd</sup> RFCA summary

---

- Trans-septal approach 통해 LV anterolateral PM 부위 contact 을 좋게 함.
- 50watt for 60-90 seconds 으로 power 높임
- Total ablation number and time = #9, 634 seconds
- Ablation 후 30 분 동안 PVC 소견 없어 CCU 전실
- 다음날까지 PVC 없어 ECMO weaning and removal
- Amiodarone and concor PO 중

# FU until last OPD ('19.9.23.)

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- Hereditary arrhythmic disease gene test
  - No disease-related variant
- No ventricular event
- Current medication – concor 2.5mg qd

# Thank you for your attention!

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