

Ventricular Tachycardia in Ischemic Heart with Low Ejection Fraction

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Case 1: Electric Storm with ECMO



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Patient Information

- 58-years-old male
 - History of STEMI with OHCA → VT/VF → CPR
 - Post CABG (D3) → several VT episodes (3-4/day)
 - Amiodarone + Lidocaine/ECMO+ IABP support
 - Decrease of VT burden (1-2/day)
 - ICD implantation → frequent ICD shocks

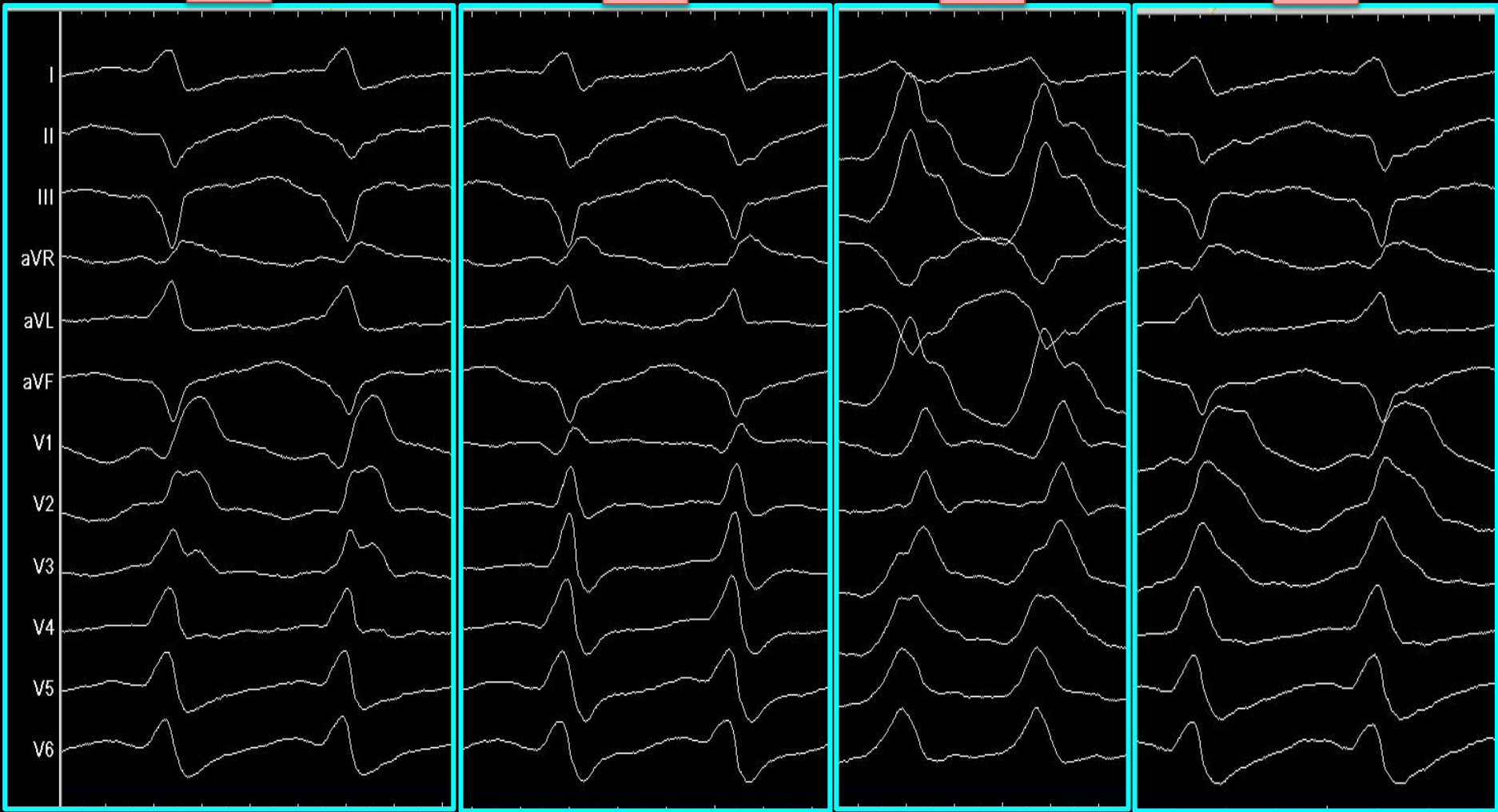
Multiple Monomorphic and Pleomorphic VTs

VT1

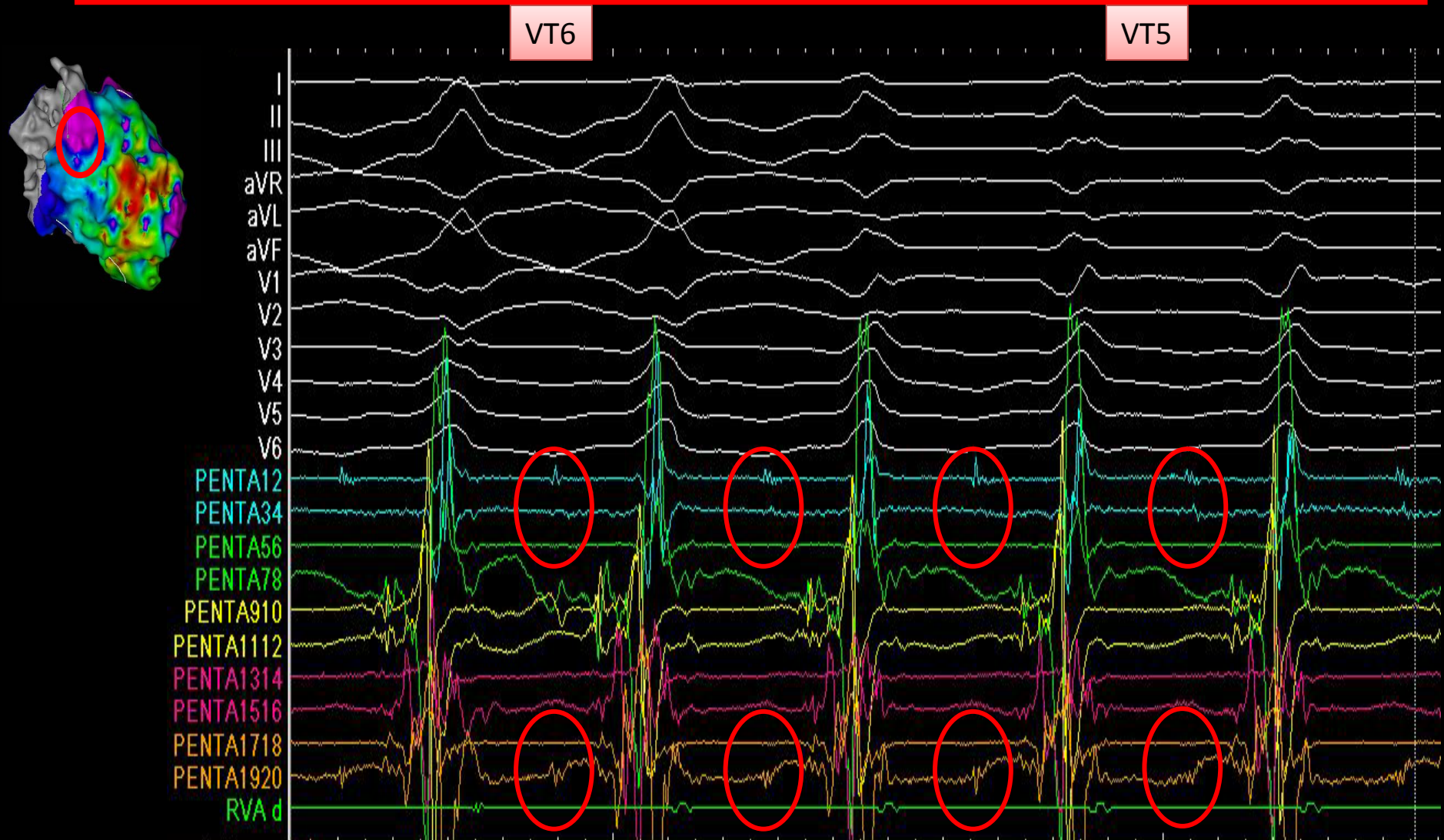
VT2

VT3

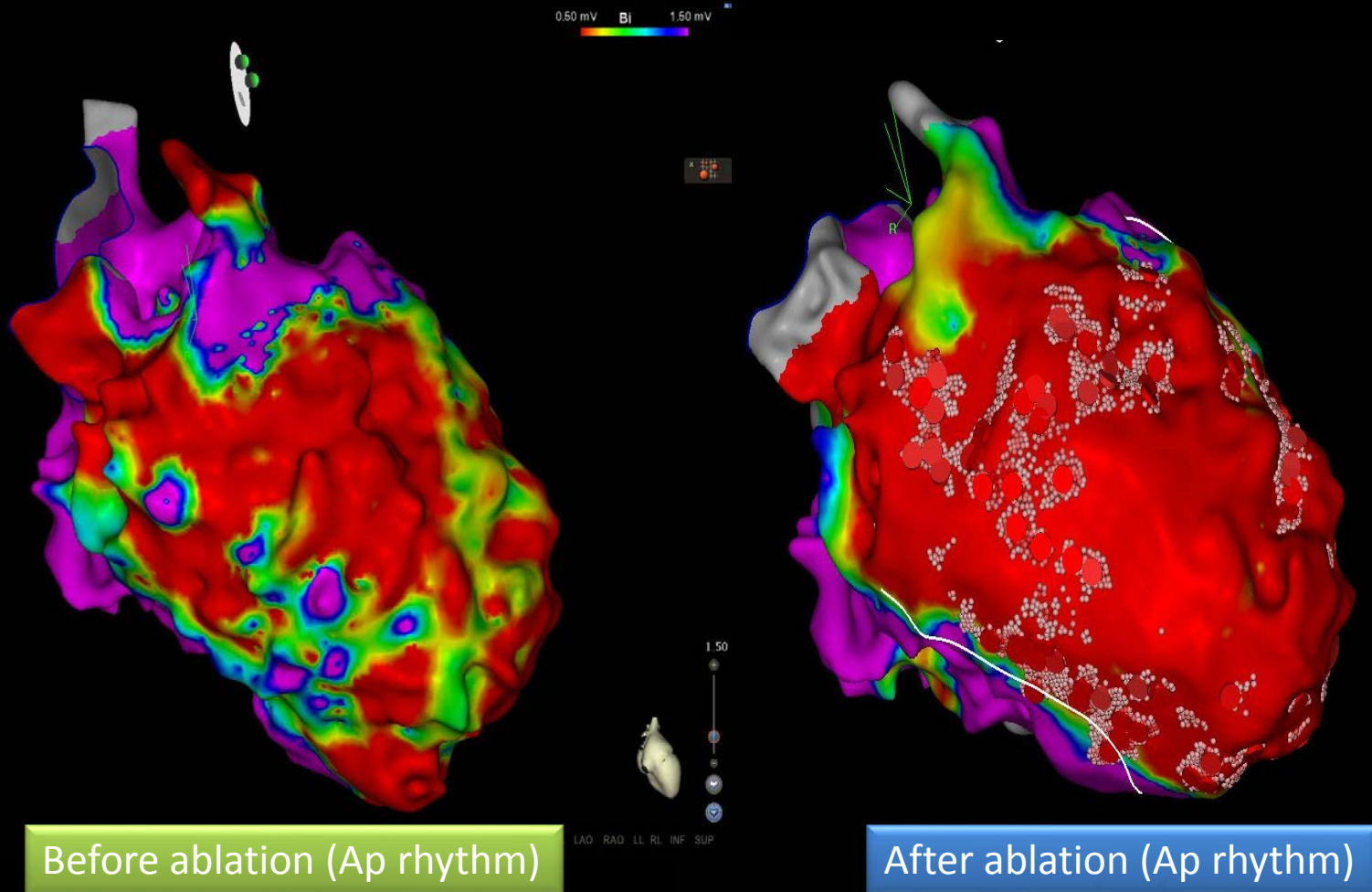
VT4



Diastolic Potential with VT Changing During Activation Map



Completed Core Isolation



Final Inducibility (3 Extrastimuli)



No more ICD shock till now
ECMO and IABP were removed successfully

Case 2: Electric Storm with Cyberheart Ablation

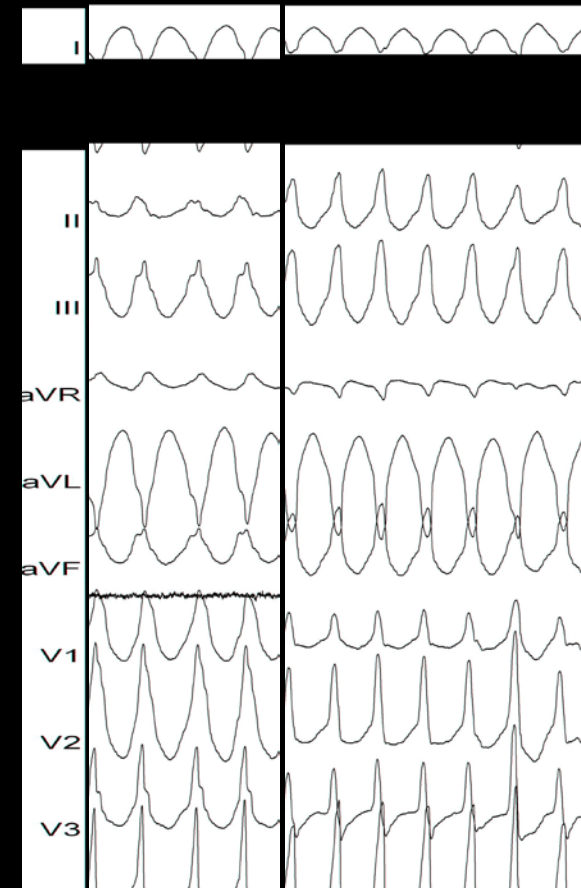
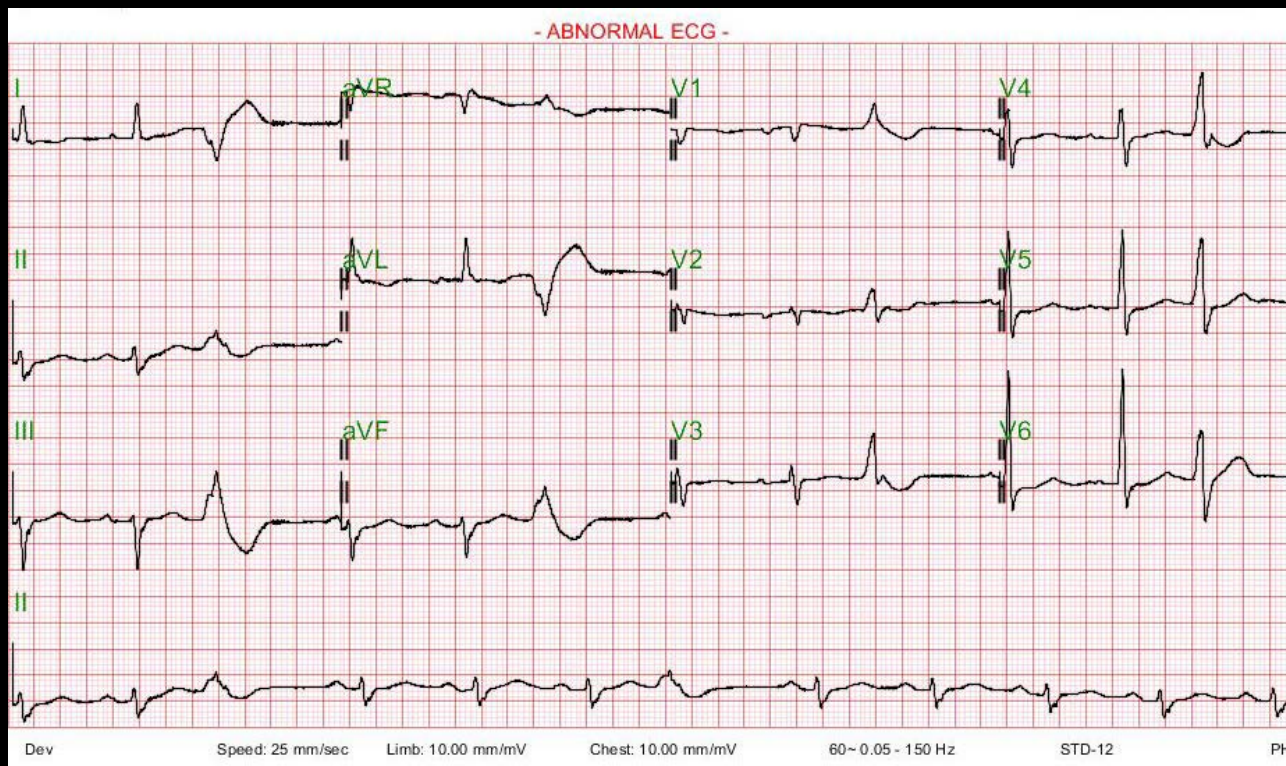


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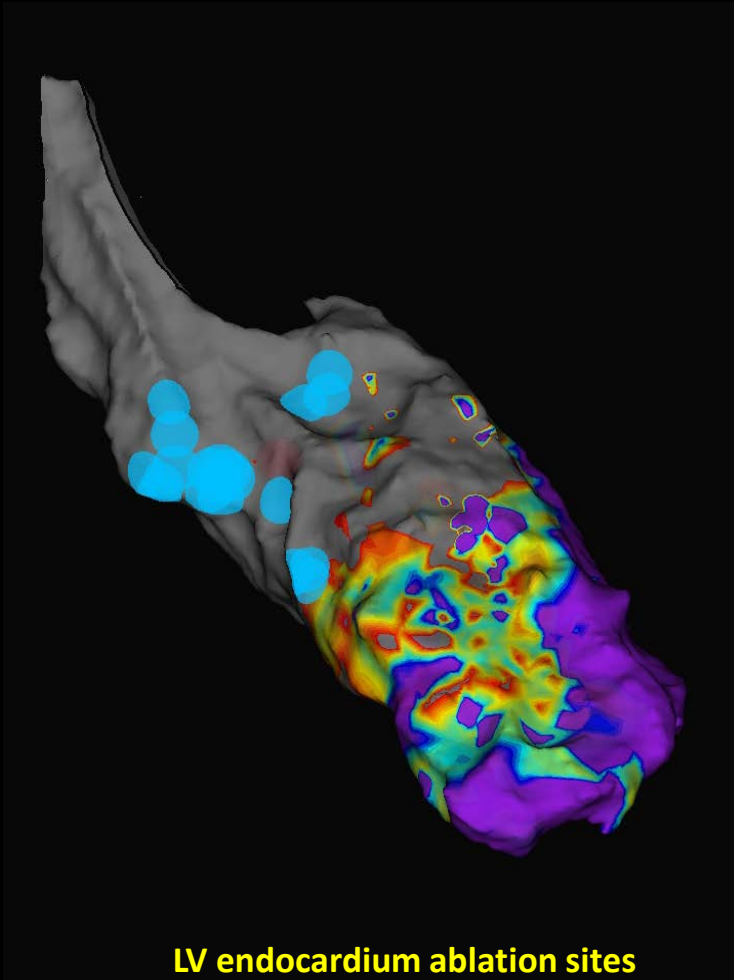
Patient Information

- Age: 65-year-old male
- Underlying disease:
 1. Sustained ischemic ventricular tachycardia, s/p ICD implantation on 2018-1-15
- Other underlying disease:
 1. Coronary artery disease s/p PCI with DES x2 in 2014.
 2. Type 2 diabetes.
 3. Hypertension

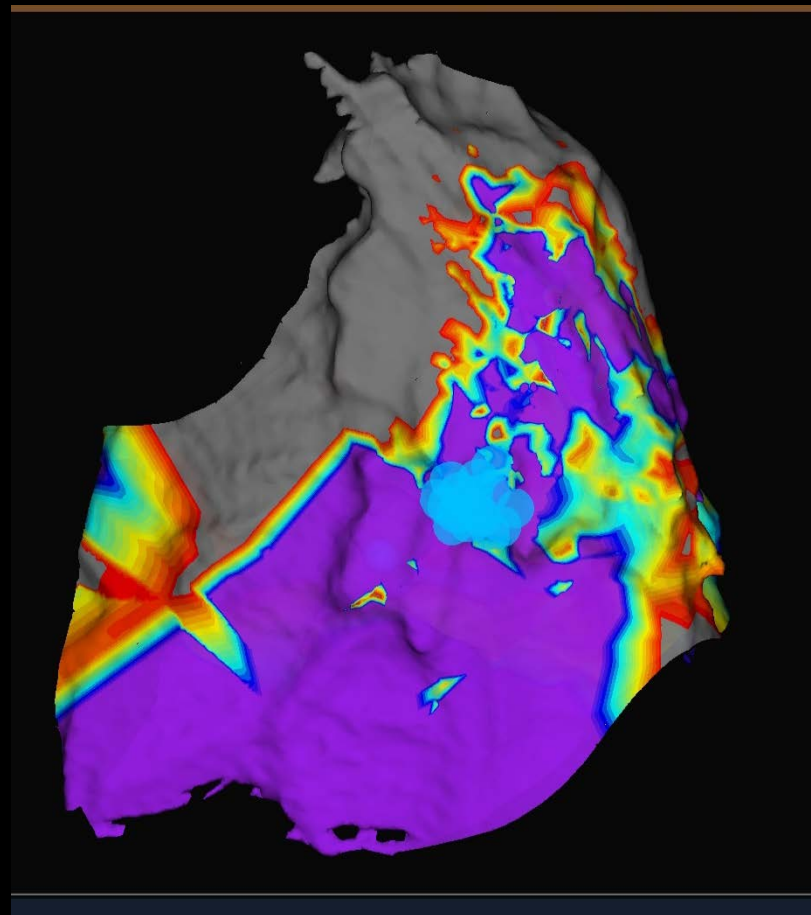
Surface ECG 2018-SR with VPC and Electric Storm



Epi-Endo Ablation Eliminated VT/VF



LV endocardium ablation sites
(septal and LVS)



LV epicardium ablation sites
(LVS)

Time Line

NIPS
Induction (+) 2018/7/5
S1S1:280ms; S1S2: 330ms; S2S3: 280ms; S3S4: 220ms
CL:330 ms; Burst*3 then 35J CV shock to terminated the episode

Ablation

ICD
Implant

Cyber Heart
Radiotherapy



Jan Feb Mar Apr May Jun Jul Aug

2018/1/15-2018/1/26

2018/1/26-2018/3/2

Electric storm

36 VT episodes: 330ms-400ms

5 VT episodes: 340ms-400ms

ATP*1: 14 ATP*2: 6

35J Shock: 4 Monitor: 1

ATP*3: 3 ATP*4: 3

All shock terminated

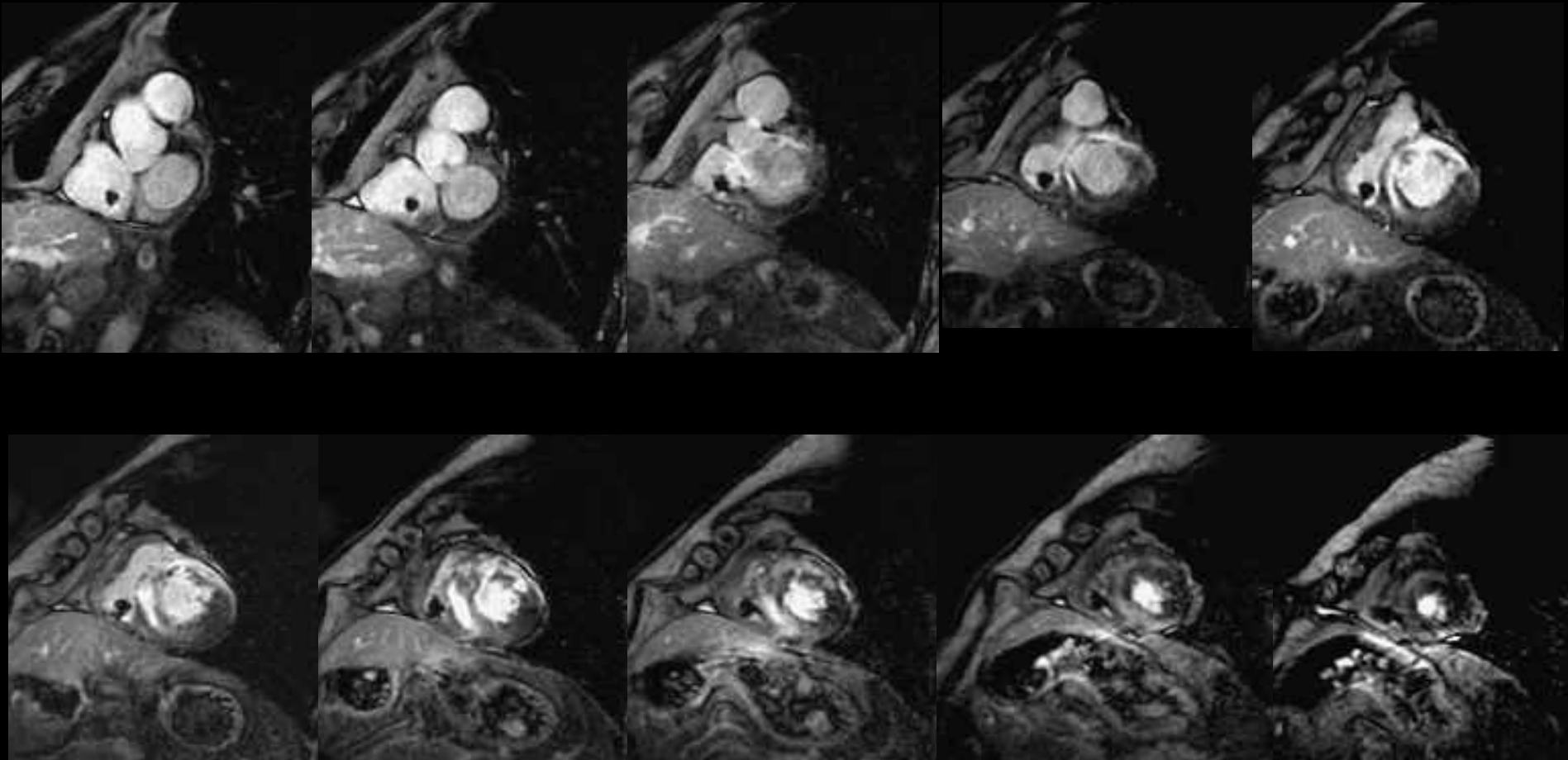
ATP*6: 1 35J Shock: 1

Monitor: 8

Paced terminated :96.5%

5 months after ablation, electric storm again

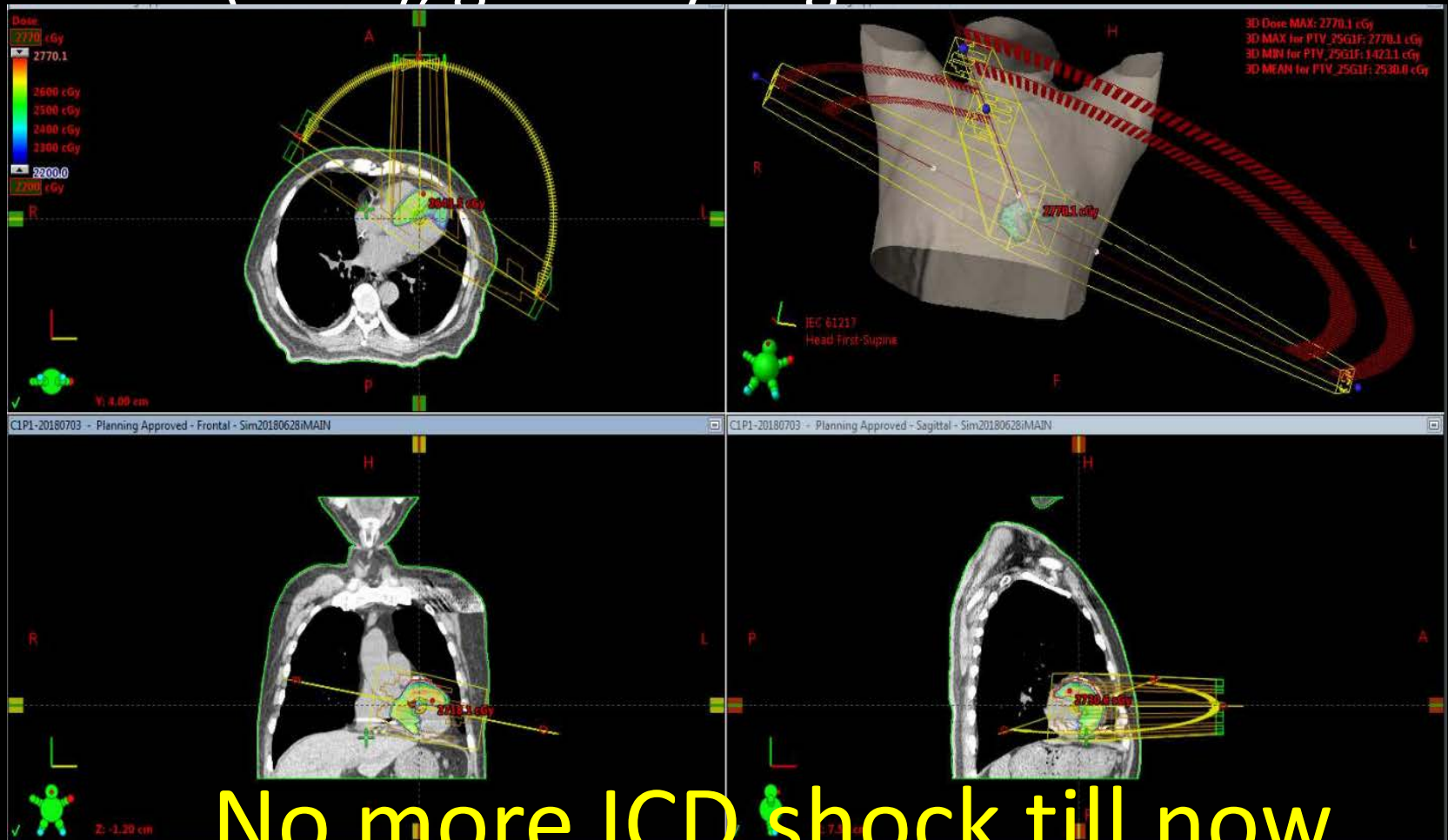
CMR (LGE)



LGE MRI identify the scar in the septum and anterior wall

Cyberheart Ablation for Recurrent Storm

- Treated under deep inspiratory breath hold(DIBH), gated by AlignRT™ surface-



No more ICD shock till now