

Challenging VT/PVC

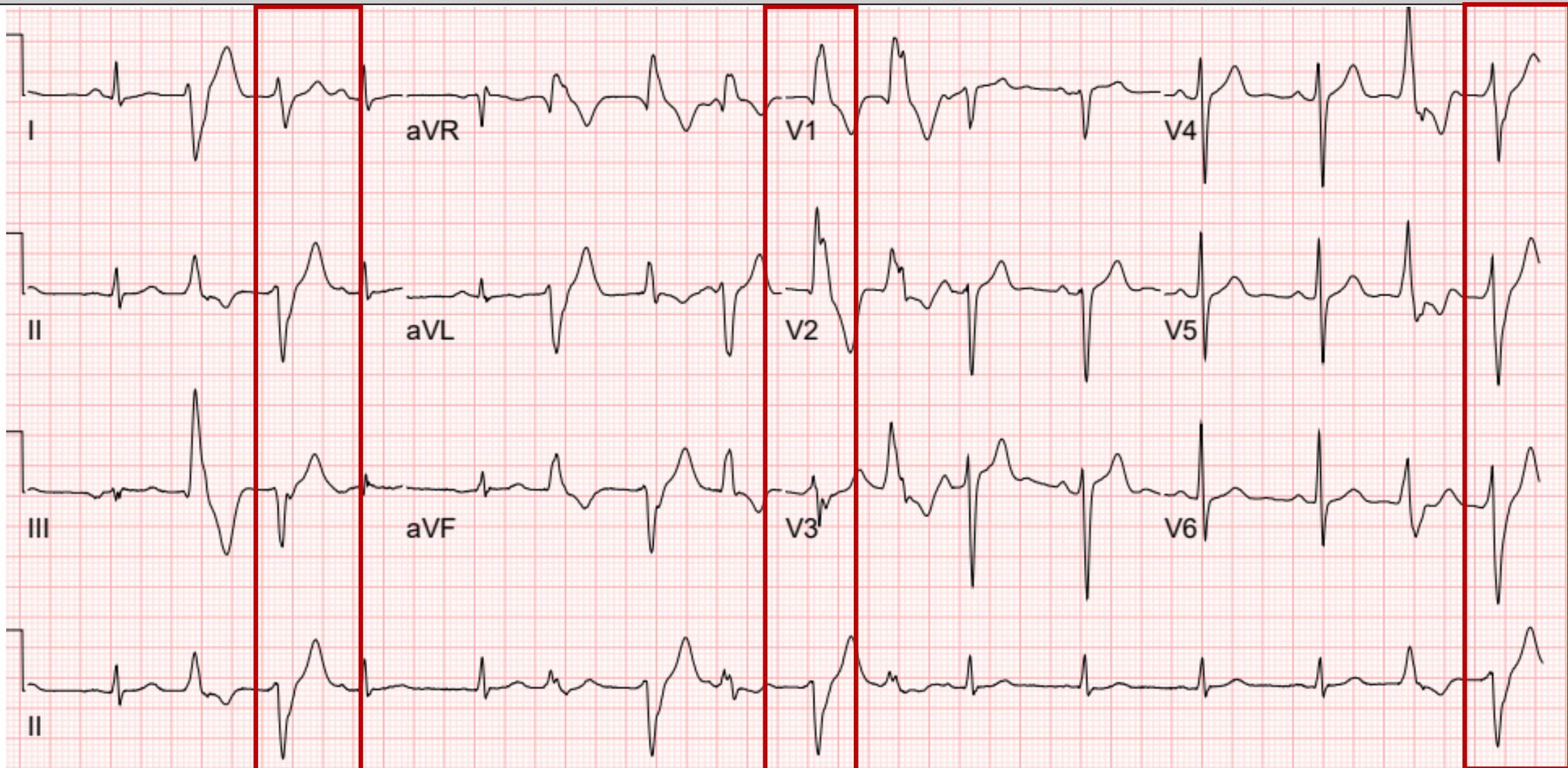
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Yonsei University College of Medicine

53 year, Male, Palpitation

- 53-year-old male
- C/C: palpitation
- Previous patient's history: hypertension, dyslipidemia, interstitial lung disease
- Previous medication
 - Bisoprolol 5mg qd
 - Rosuvastatin 10mg qd
 - Telmisartan 40mg qd
 - Amiodarone 100mg qd

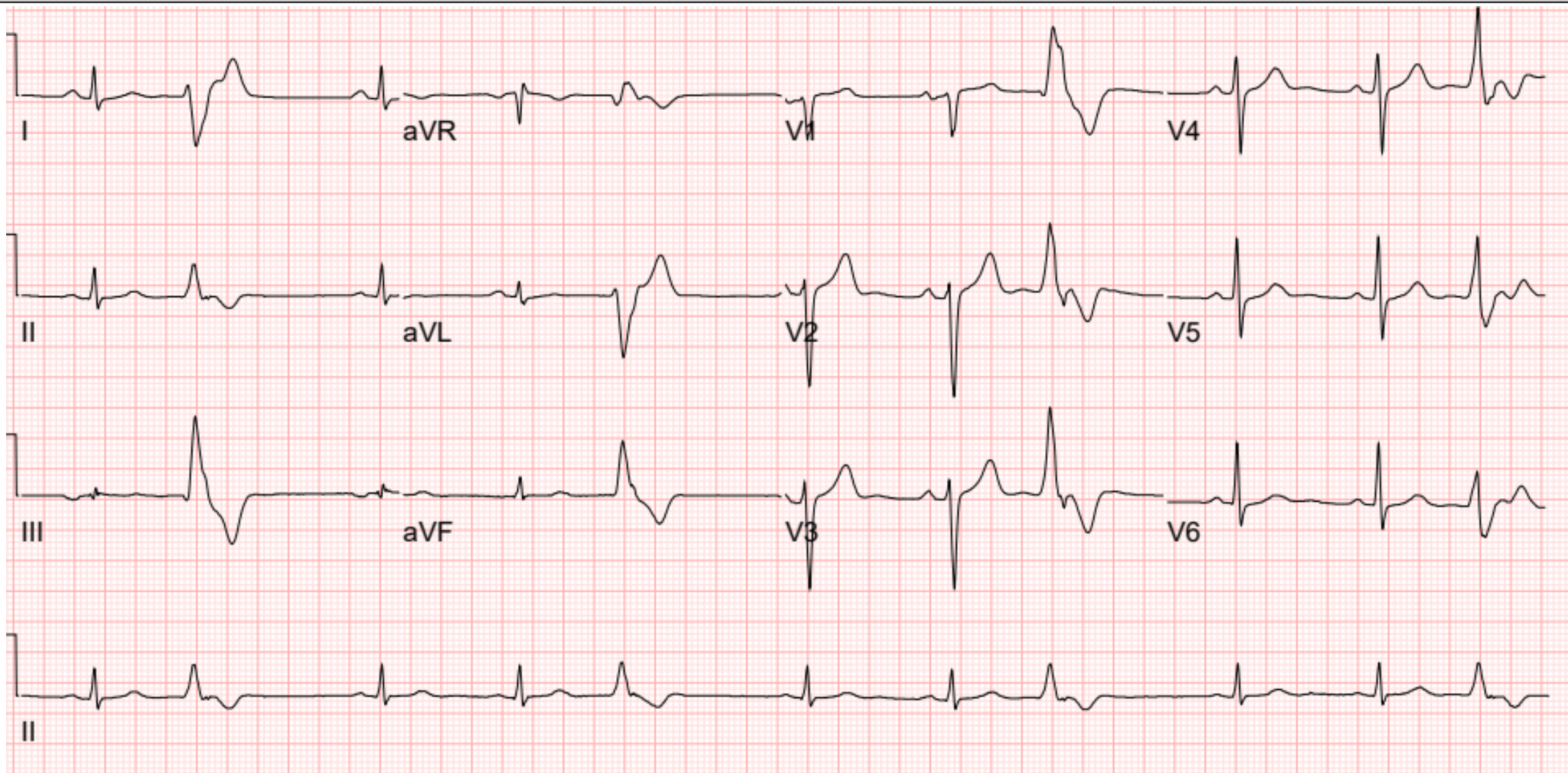
ECG

: PVC1

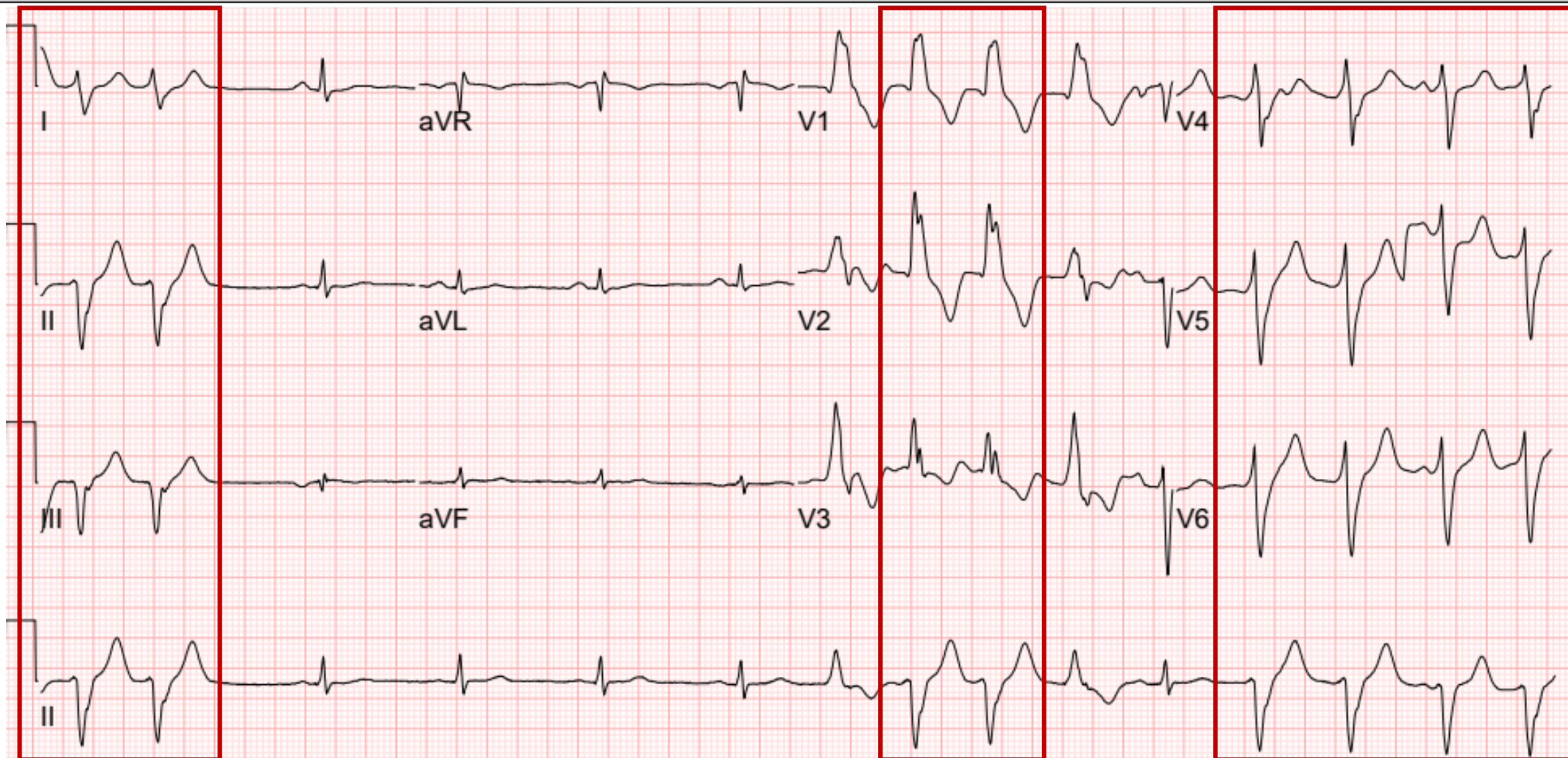


ECG

: PVC2

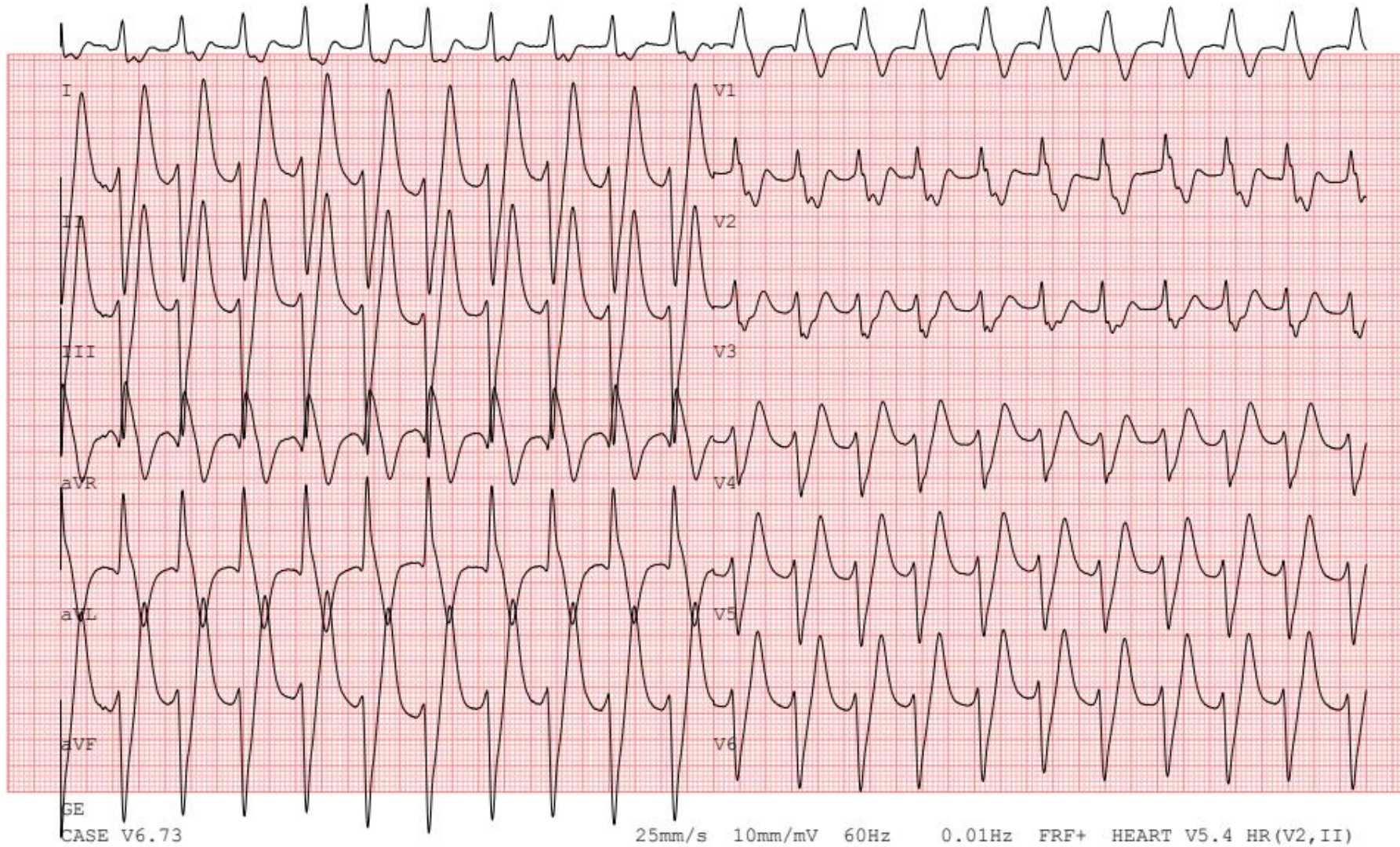


ECG



TMT

: Recovery phase



24-hour Holter

General

99285 QRS complexes
49789 Ventricular beats (50%)
 7 Supraventricular beats (< 1%)
 < 1 % of total time classified as noise

Ventriculars (V, F, E, I)

15279 Isolated
 5497 Couplets
 1283 Bigeminal cycles
5938 Runs totaling 23516 beats
 22 Beats longest run 90 bpm 18:43:06 15-Dec
 3 Beats fastest run 132 bpm 00:38:54 16-Dec

Heart Rates

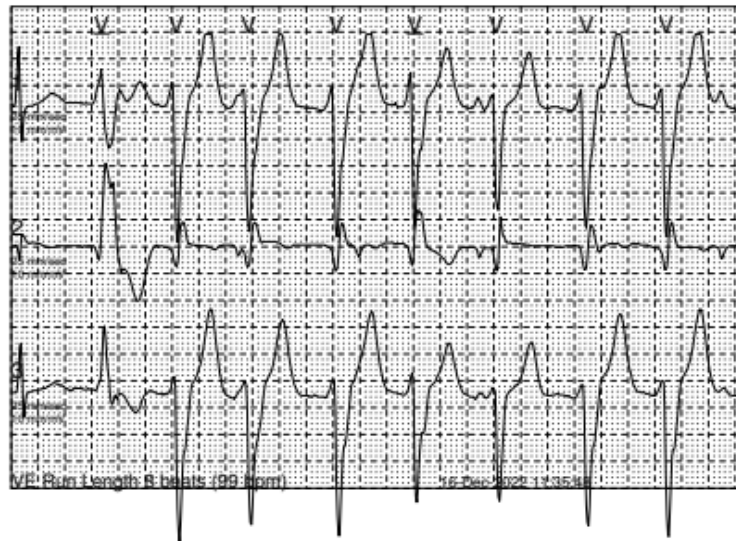
57 Minimum at 18:01:09 15-Dec
 63 Average
 96 Maximum at 07:02:21 16-Dec
 0 Beats in tachycardia (≥ 100 bpm), 0% total
 0 Beats in bradycardia (≤ 50 bpm), 0% total
 1.88 Seconds Max R-R at 02:24:25 16-Dec

Supraventriculars (S, J, A)

5 Isolated
 1 Couplets
 0 Bigeminal cycles
 0 Runs totaling 0 beats



Modified V5



Modified V1

Modified aVF



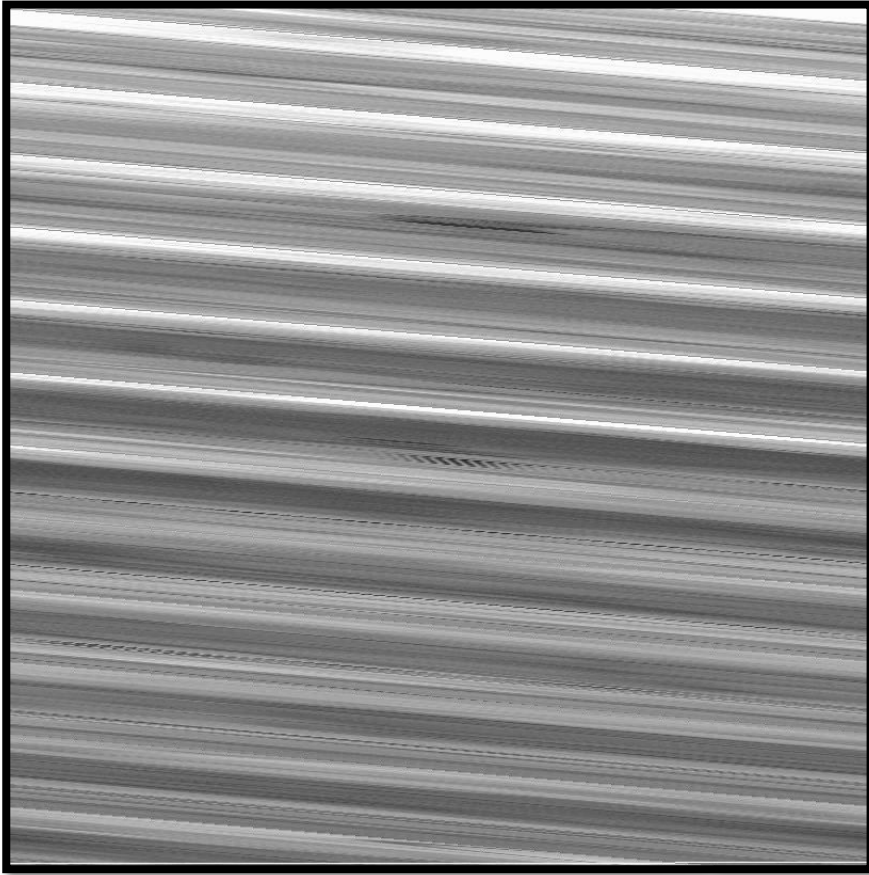
CXR



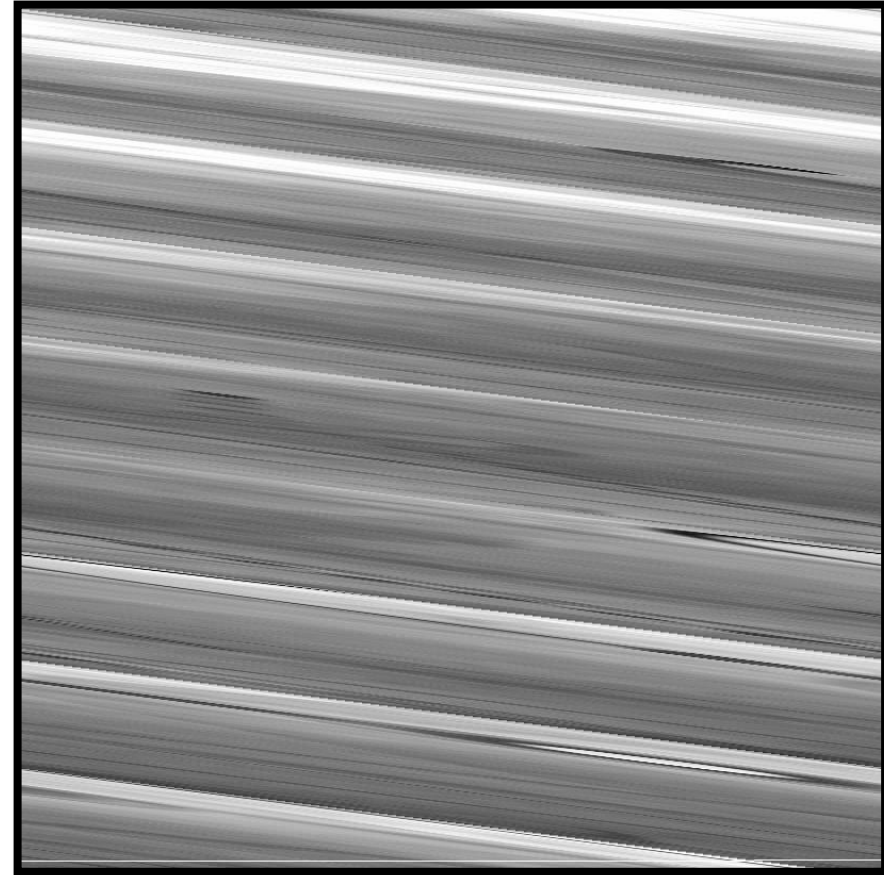
Other studies

- Echocardiography: LVEF=64%, no RWMA, LAVI = 34.7 mL/m²
- Heart MRI: Homogenous myocardial perfusion and no LGE, LVEF=58%, no RWMA
- Coronary angiography: no significant stenosis on both coronary systems
- Laboratory findings: no significant abnormalities

LV angiography



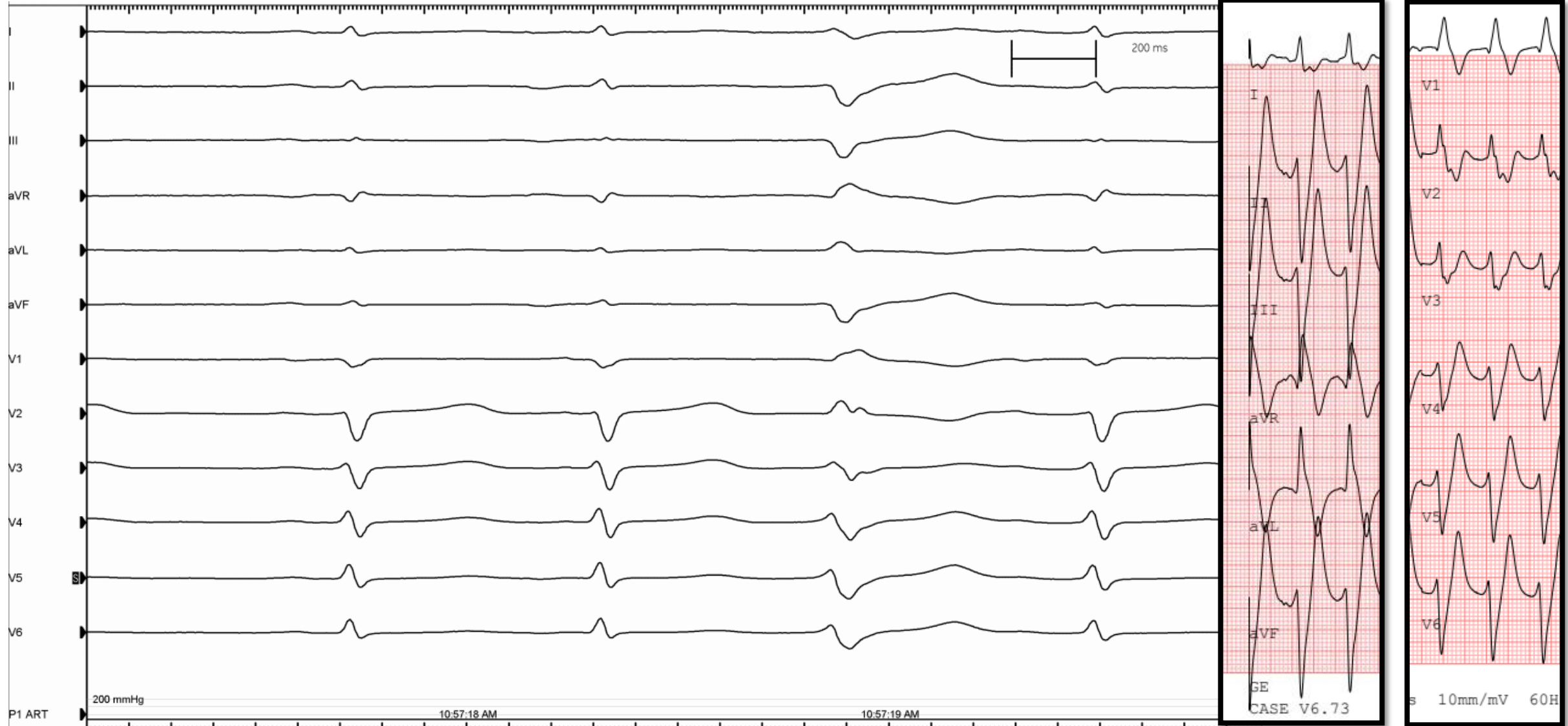
LAO 35



RAO 35

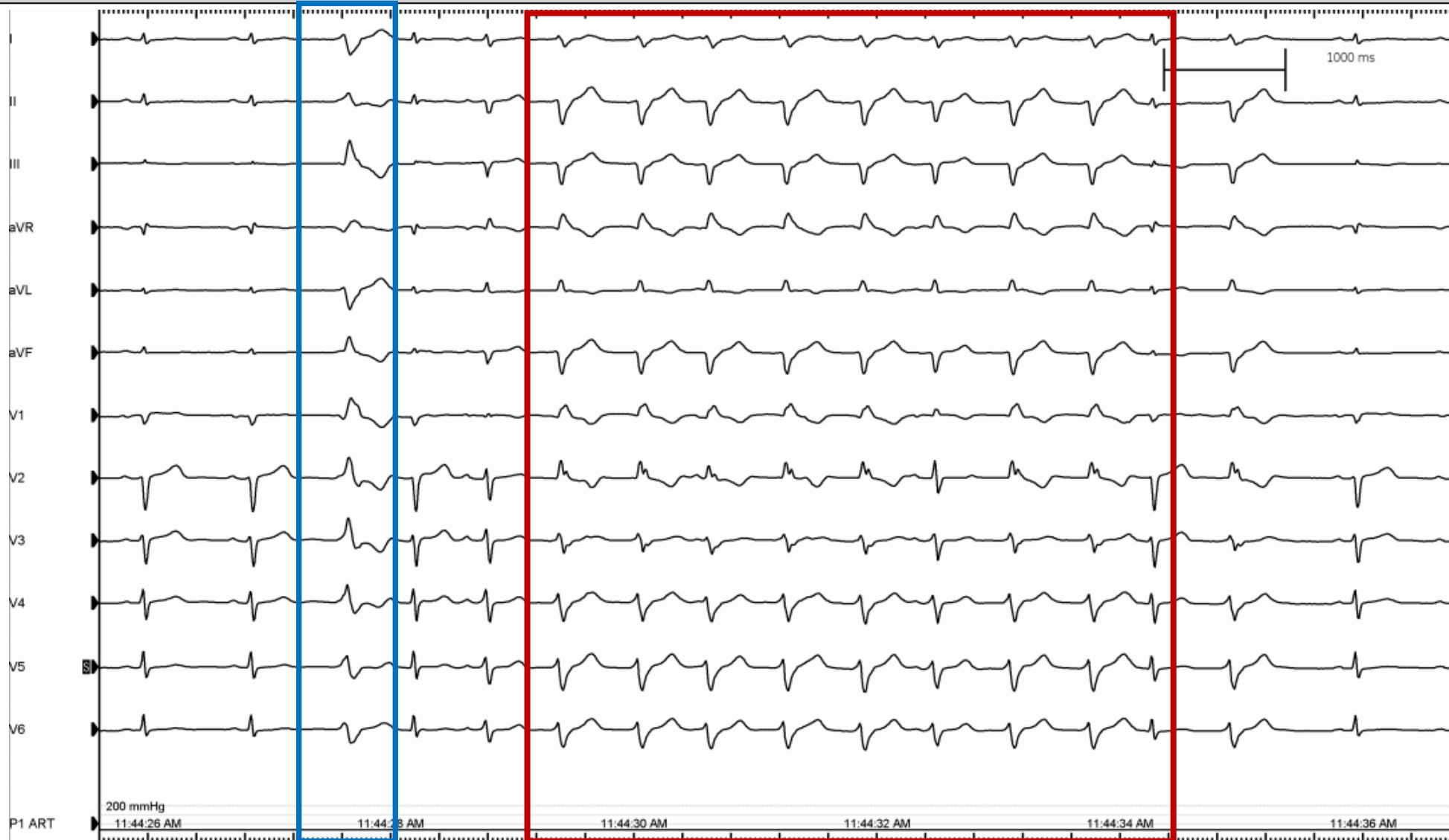
Initial PVC 1

: Target PVC/NSVT with RBBB and superior axis



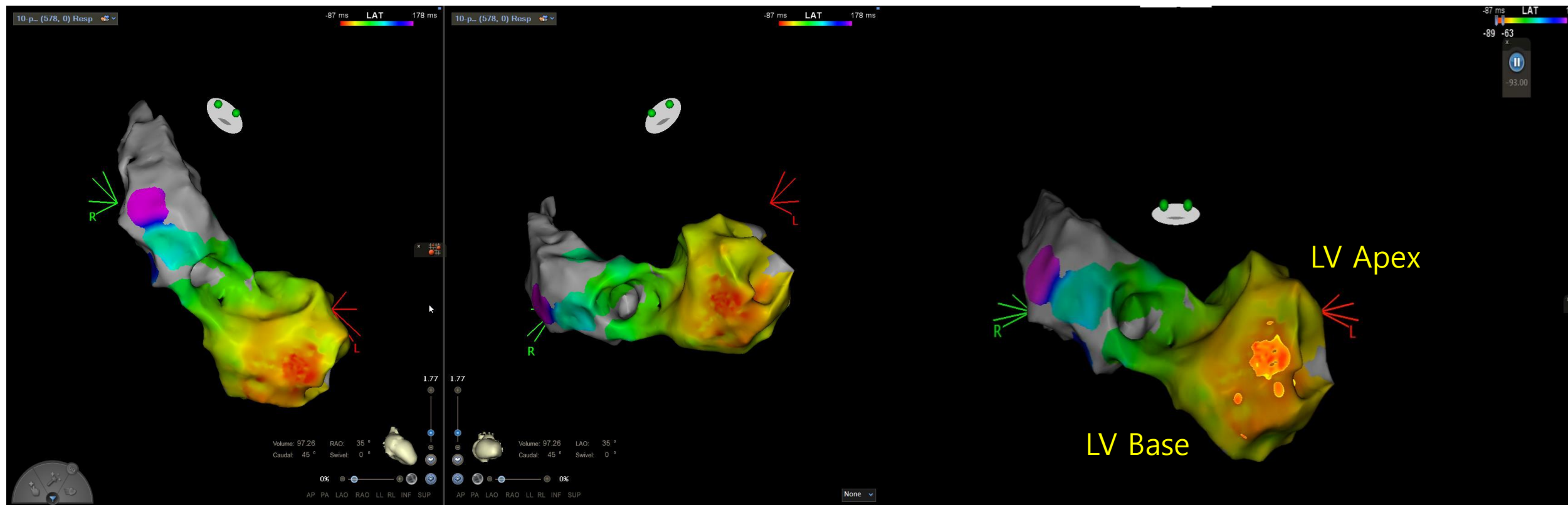
Initial PVC & NSVT

: Target PVC/NSVT with RBBB and superior axis



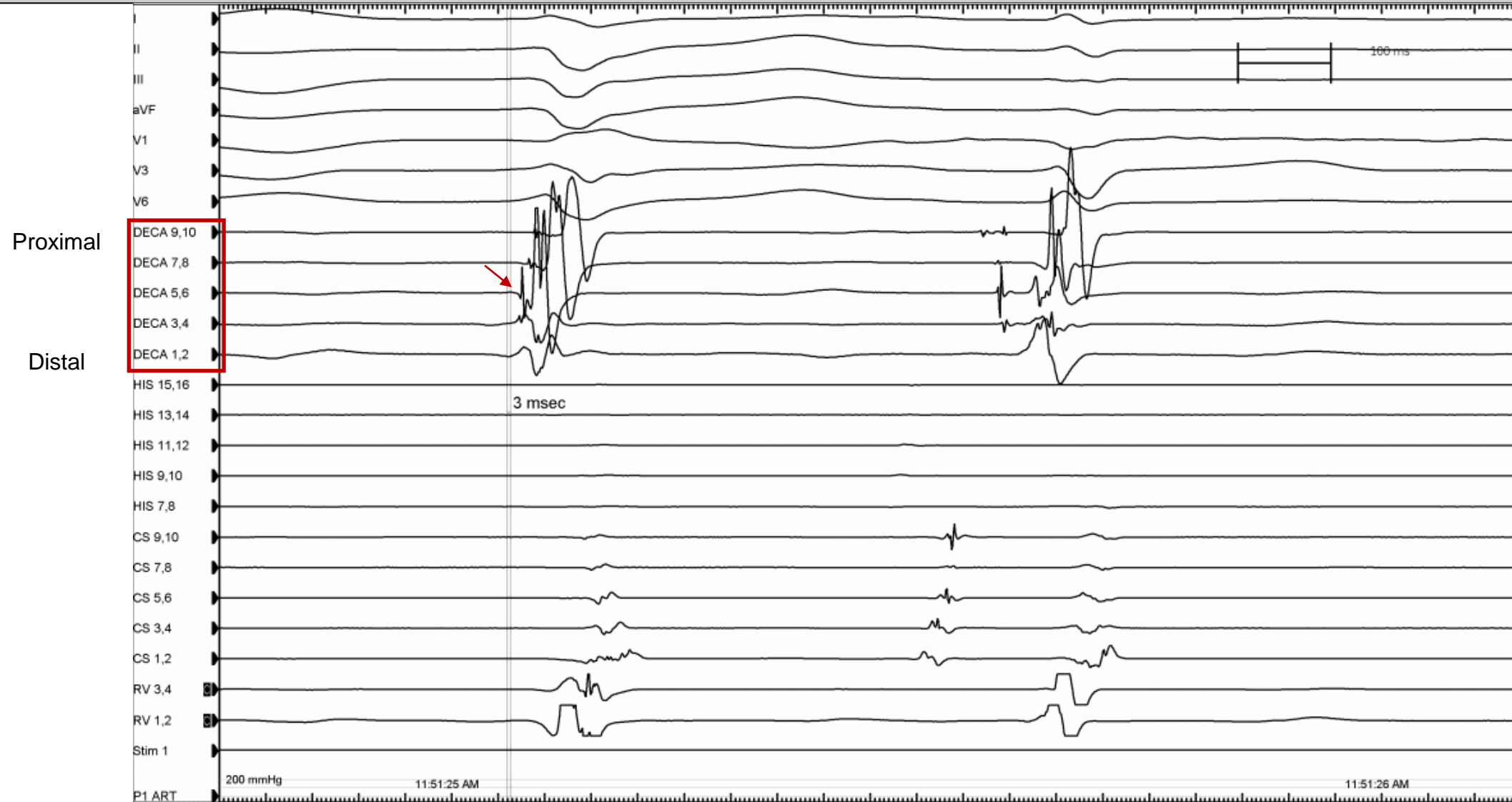
LV mapping

: 3D activation map using DECANAV



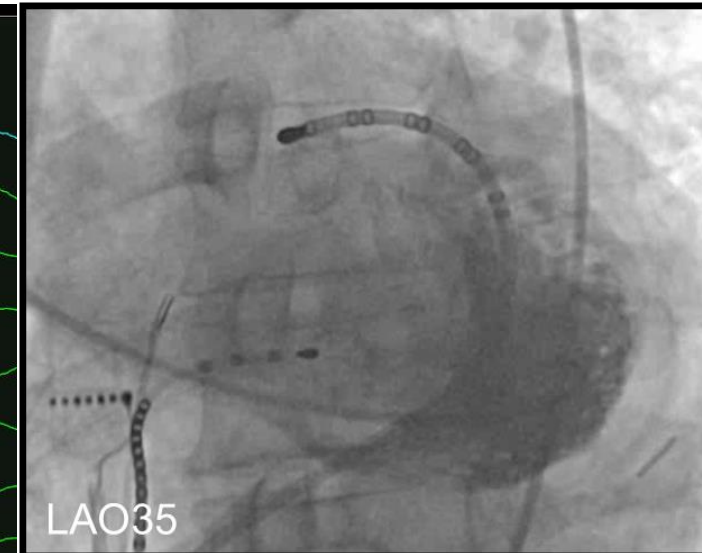
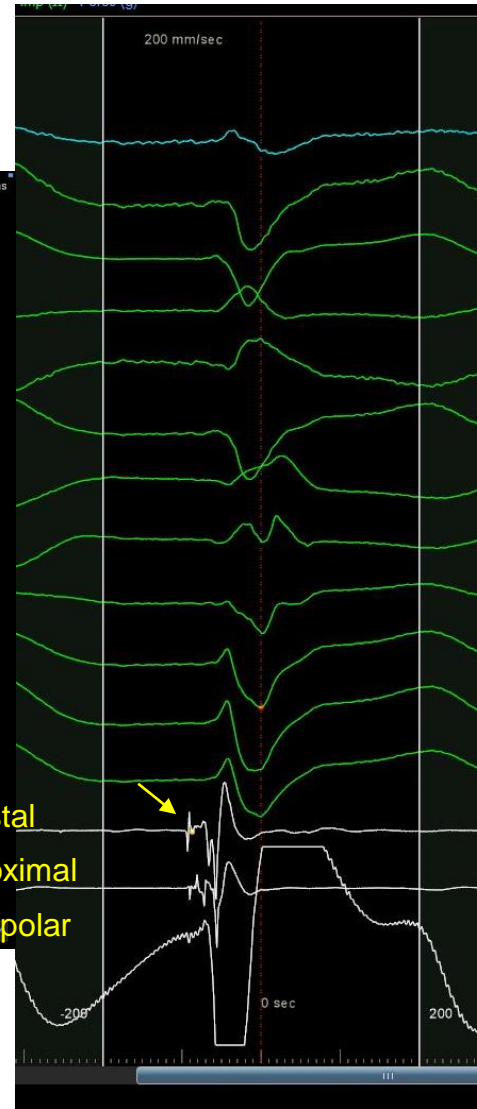
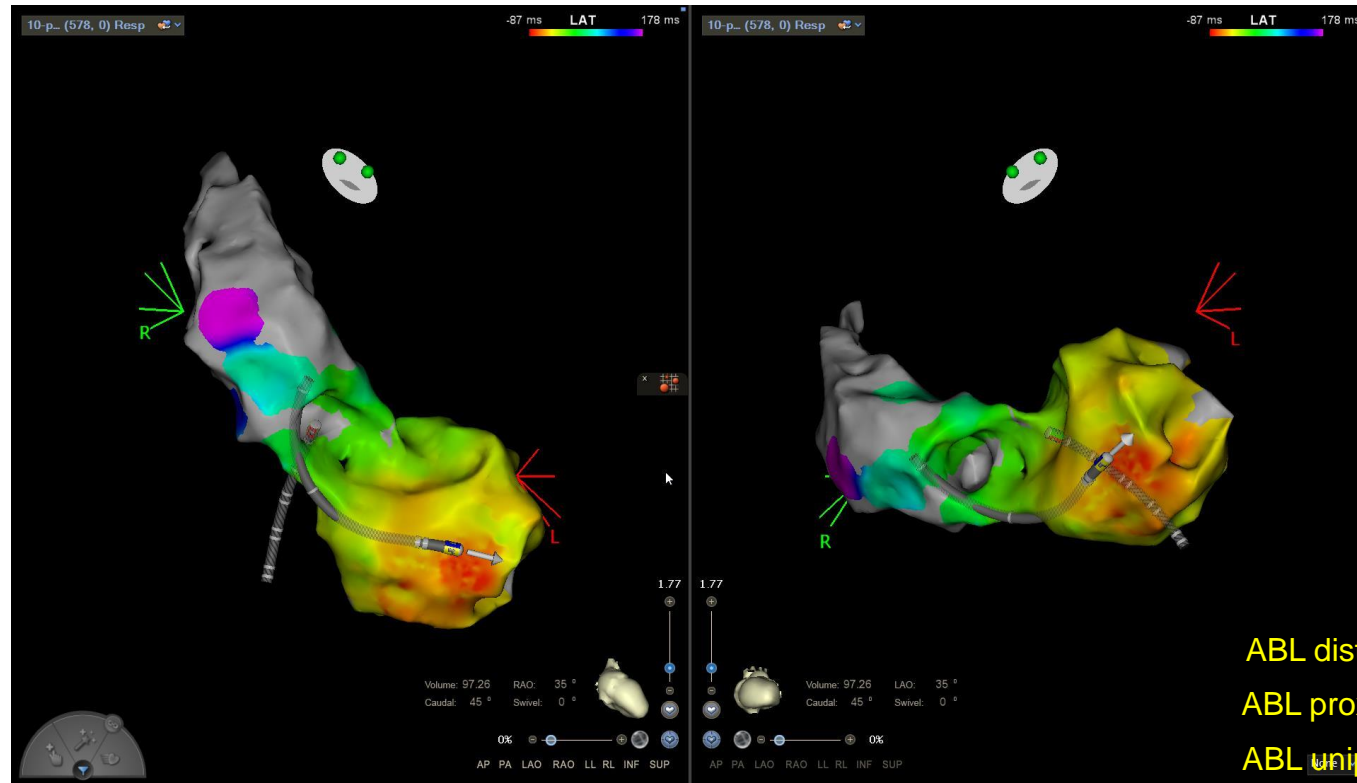
LV mapping

: DECANAV 5,6 at posterior papillary muscle, Purkinje potential with 3ms earlier



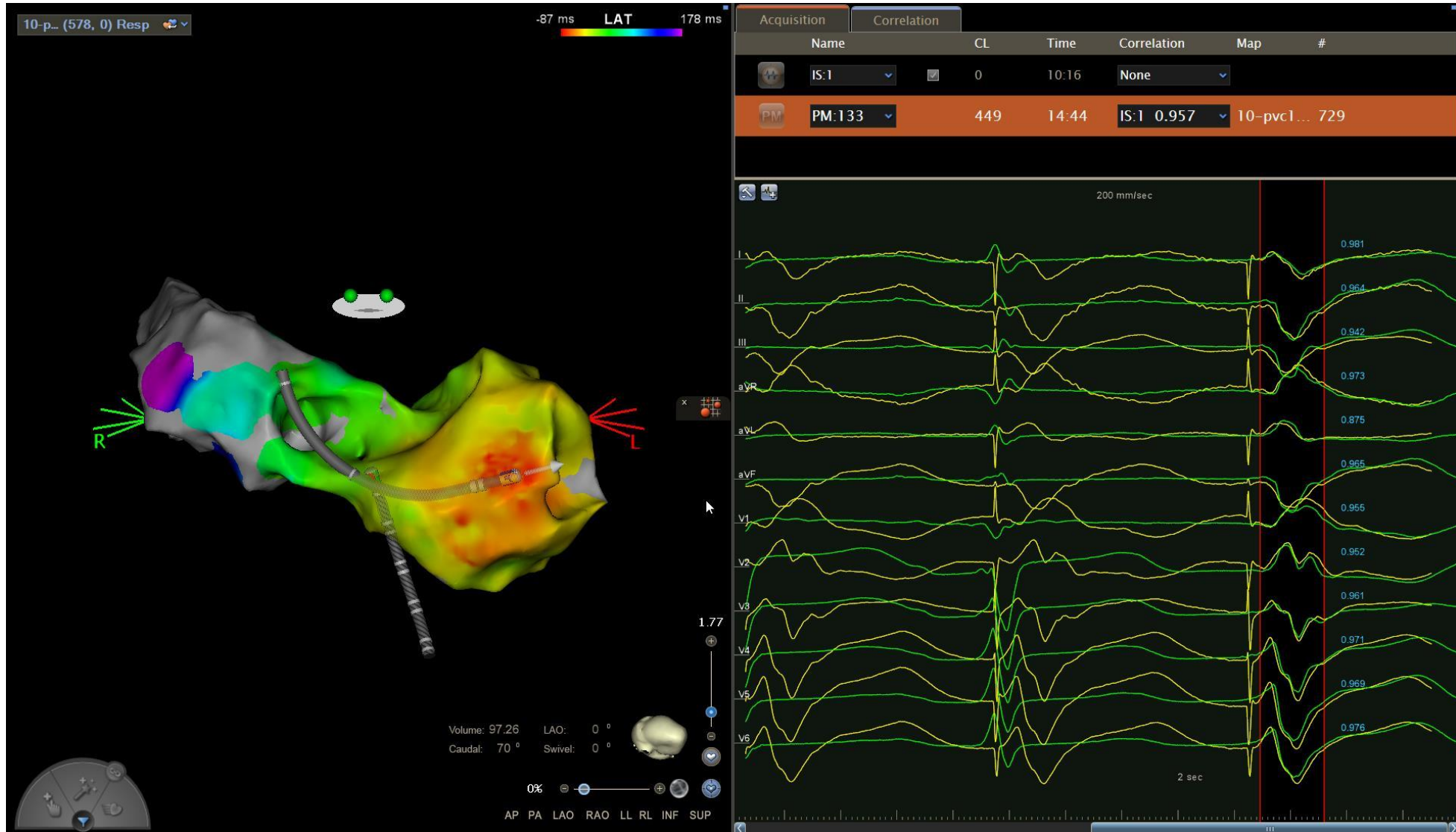
LV mapping

: Ablation catheter at middle (body) of posterior papillary muscle,
Purkinje potential



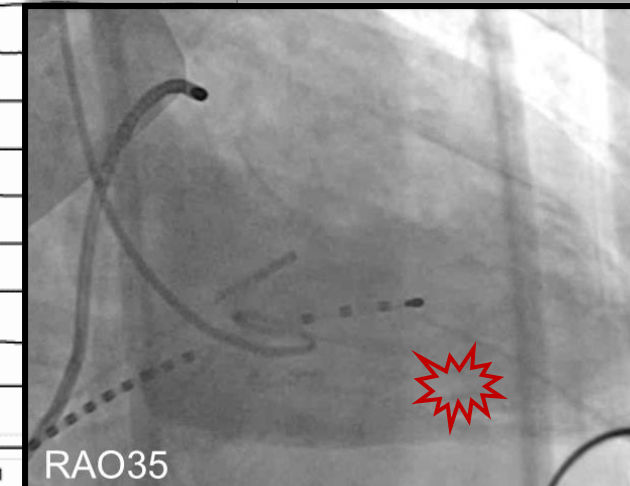
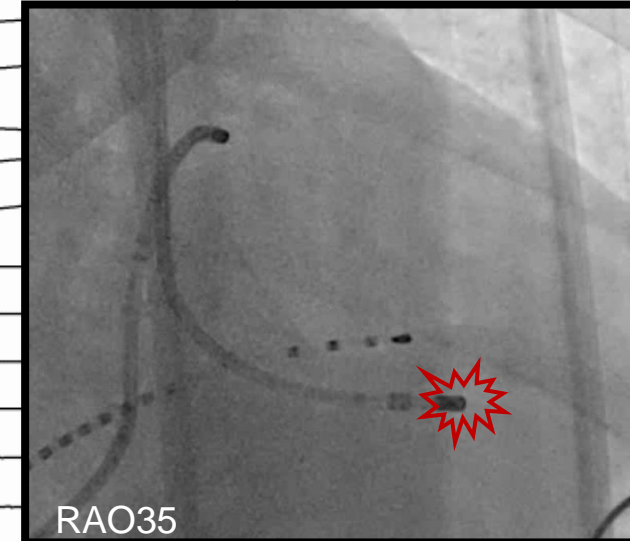
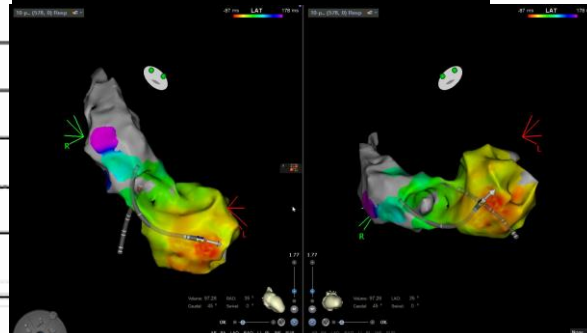
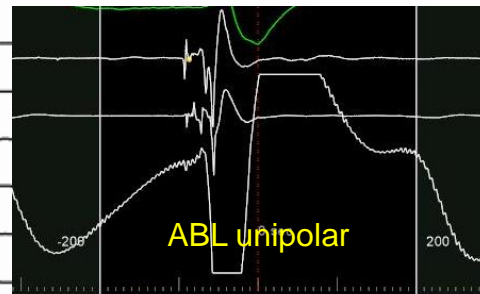
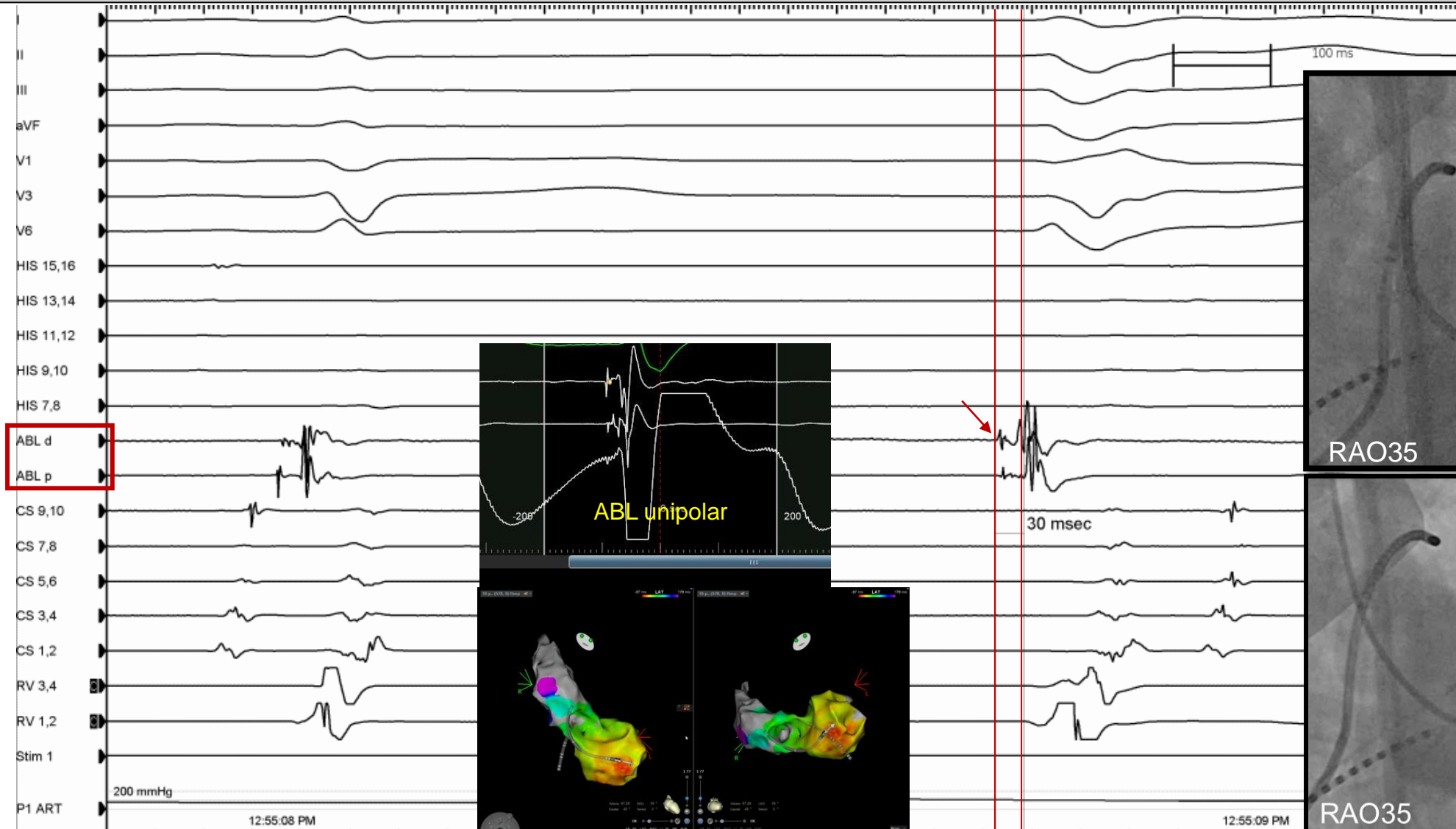
LV mapping

: PASO, 95.7%



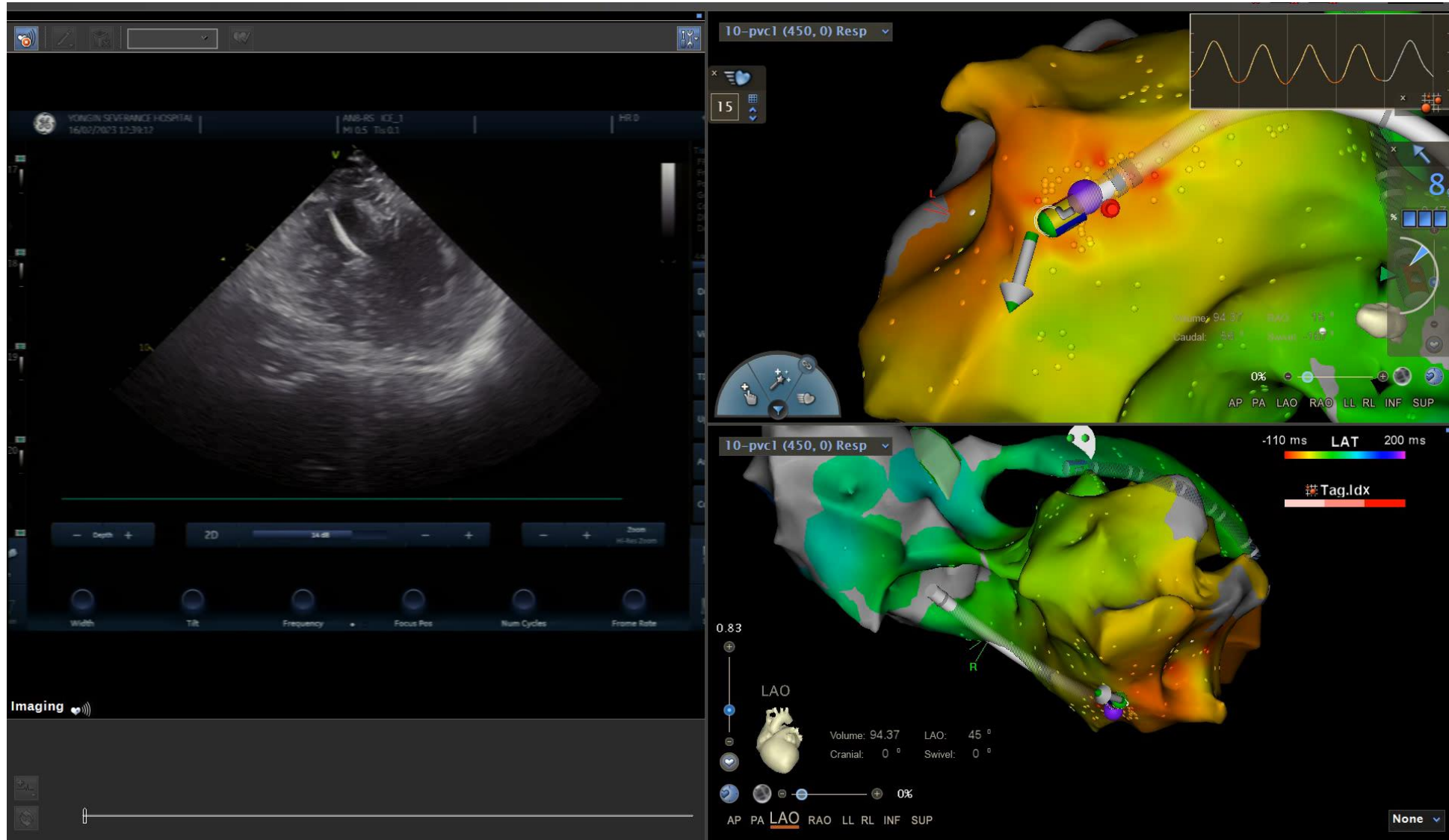
LV mapping

: Ablation catheter at middle (body) of posterior PM,
Purkinje potential, 30ms earlier



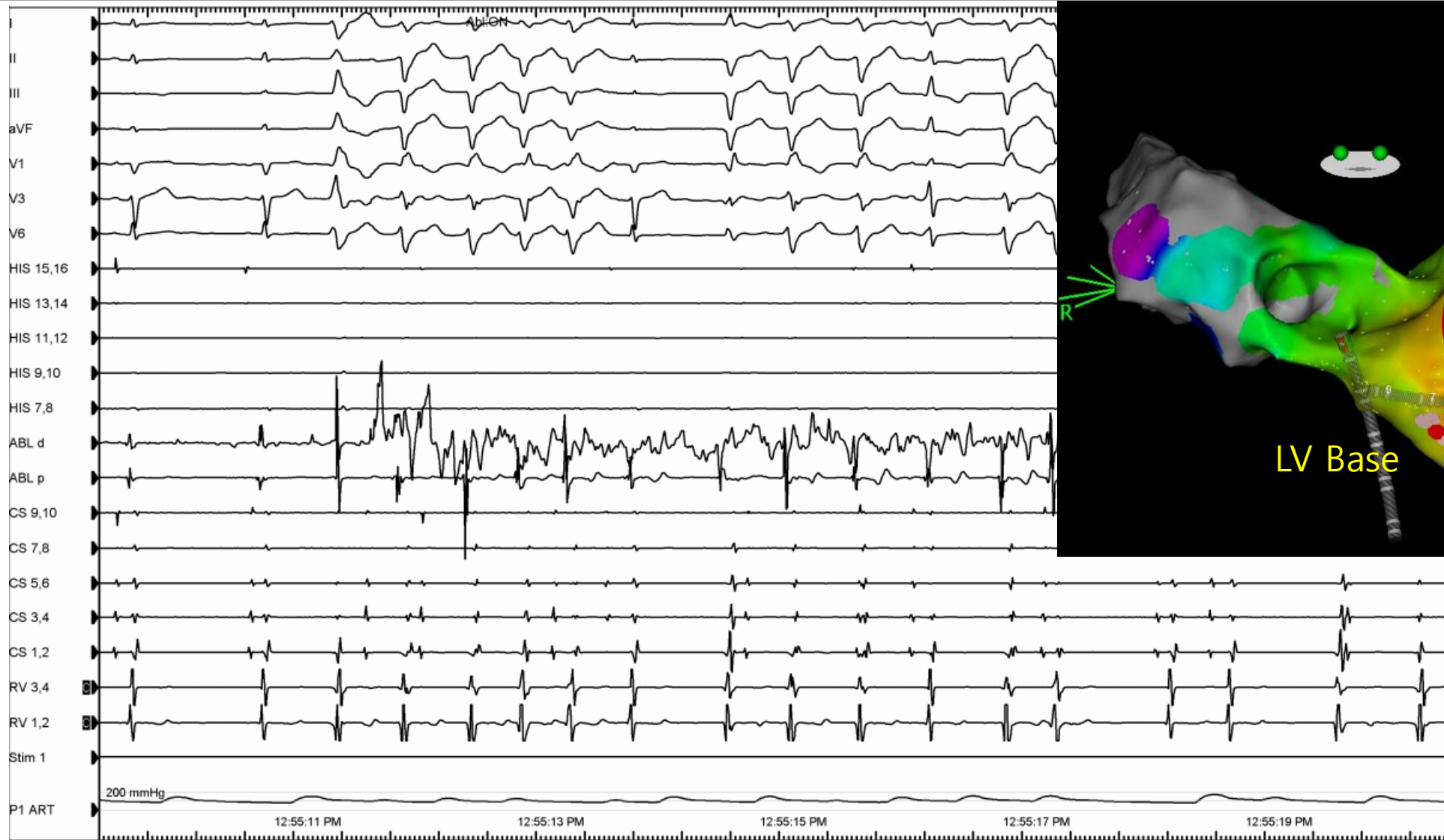
RFCA #1, but no effect

: Ablation catheter at middle (body) of posterior papillary muscle



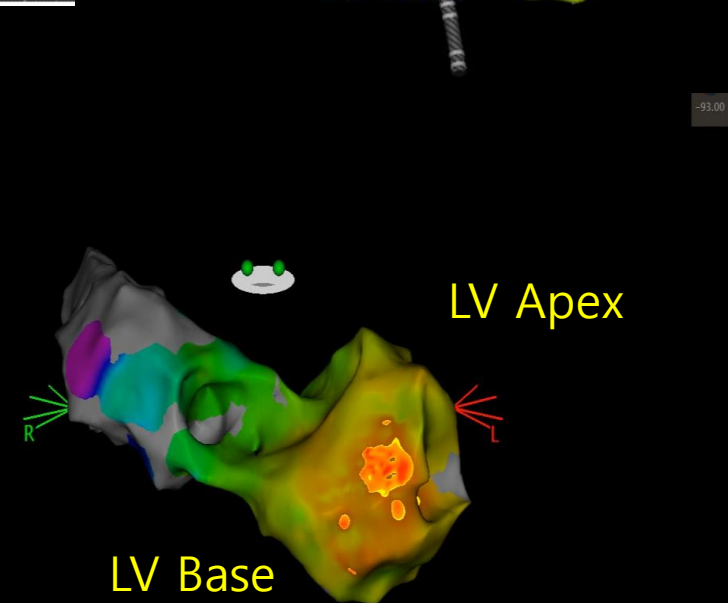
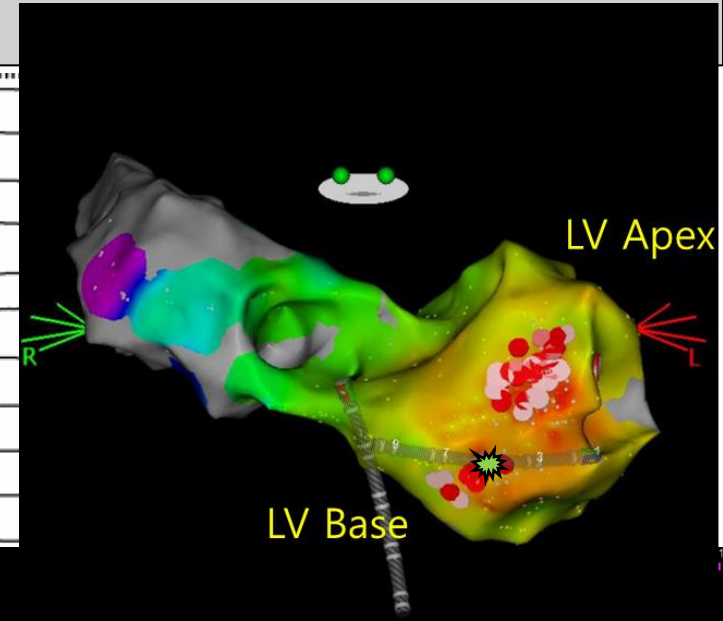
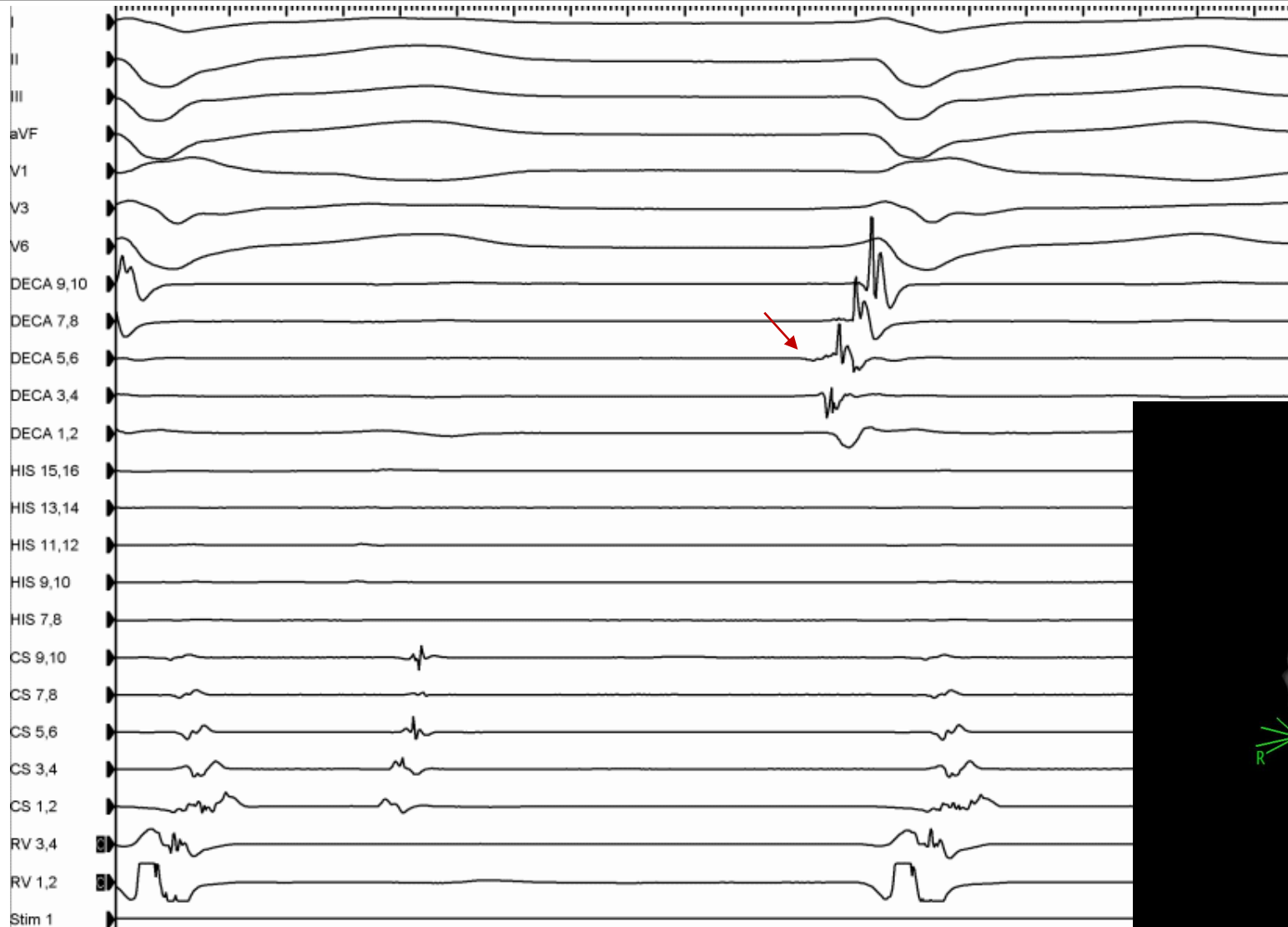
RFCA #1, but no effect

: Ablation catheter at middle (body) of posterior papillary muscle



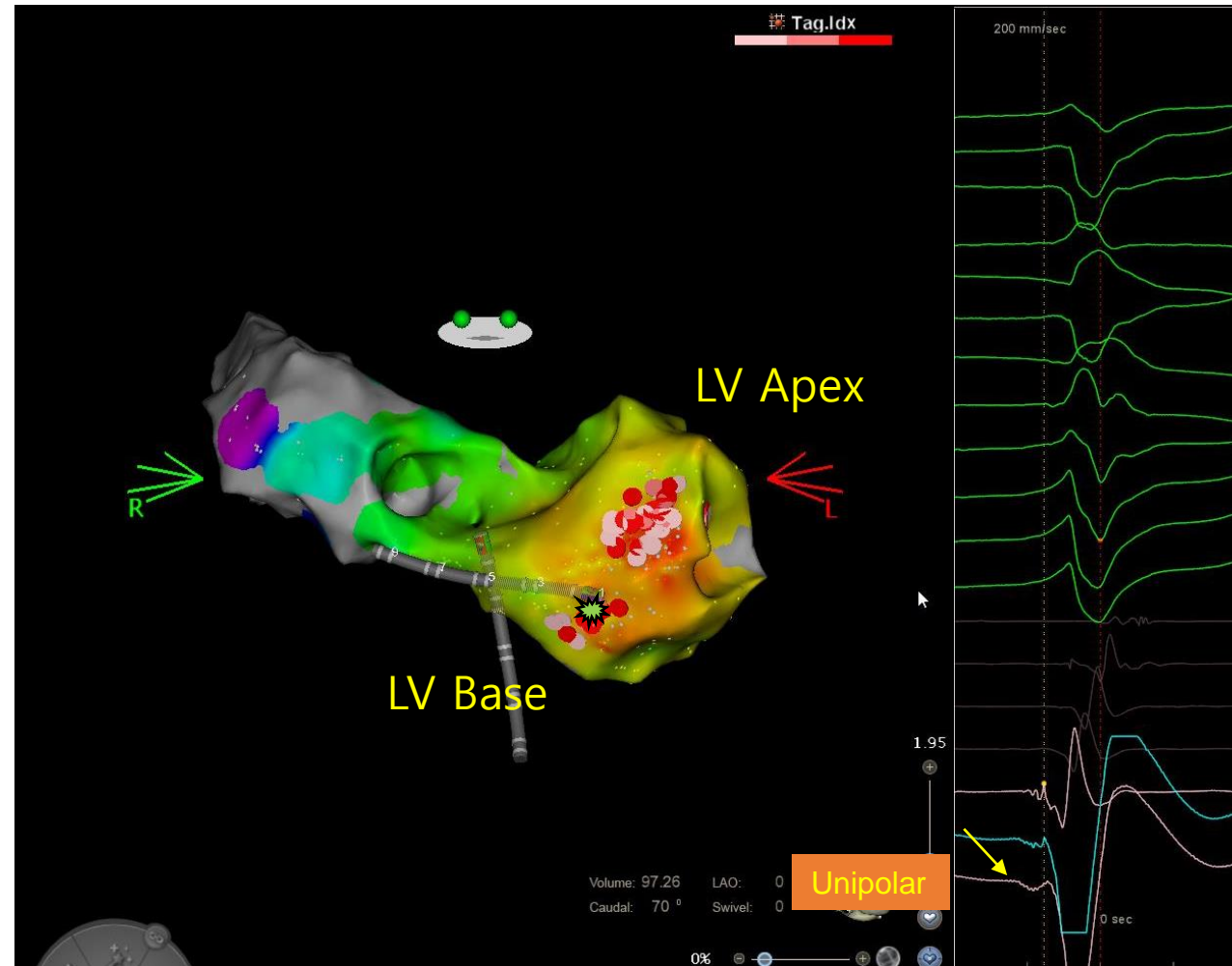
Re LV mapping

: DECANAV 5,6 at distal (tip) area of posterior papillary muscle, far field potential



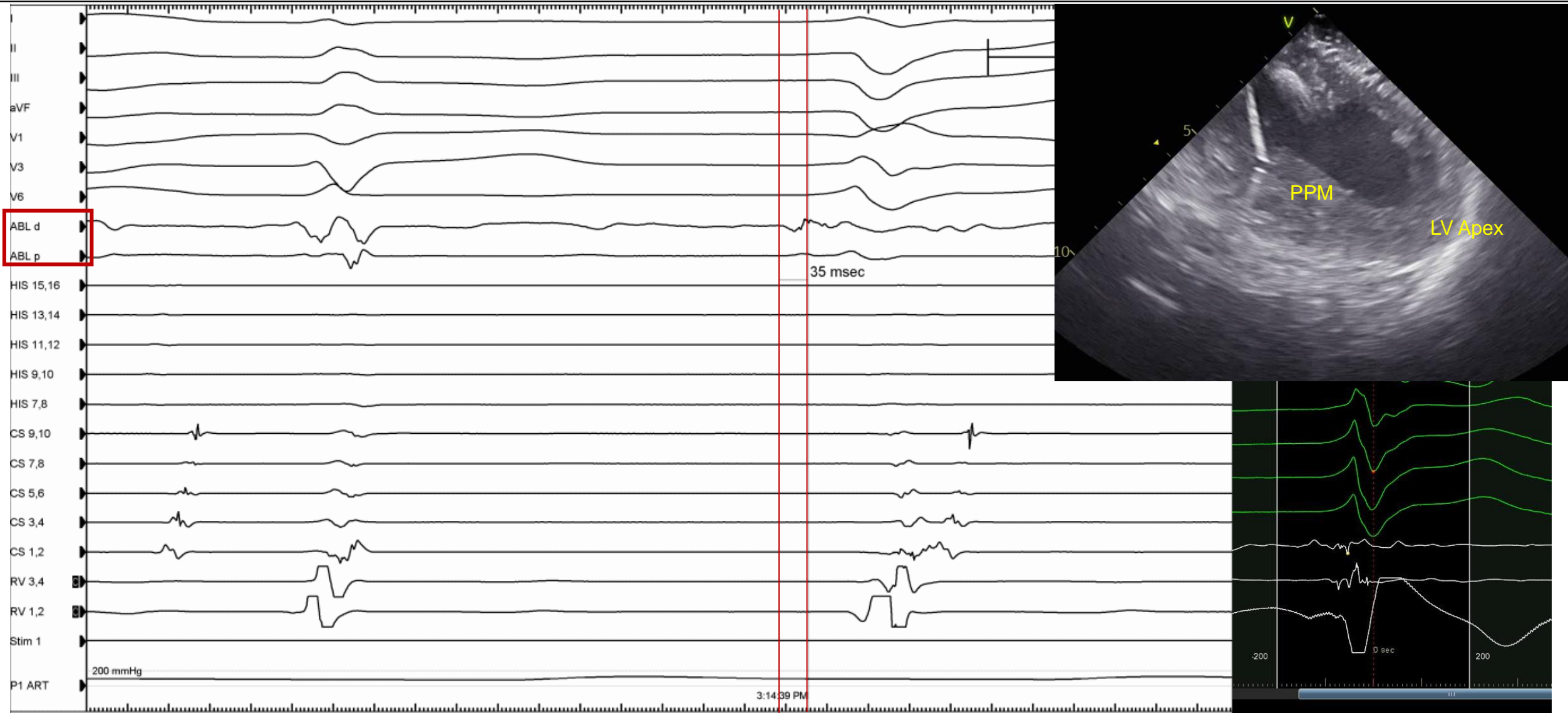
Re LV mapping

: DECANAV 1,2 at distal (tip) of papillary muscle, far field potential and QS pattern in unipolar



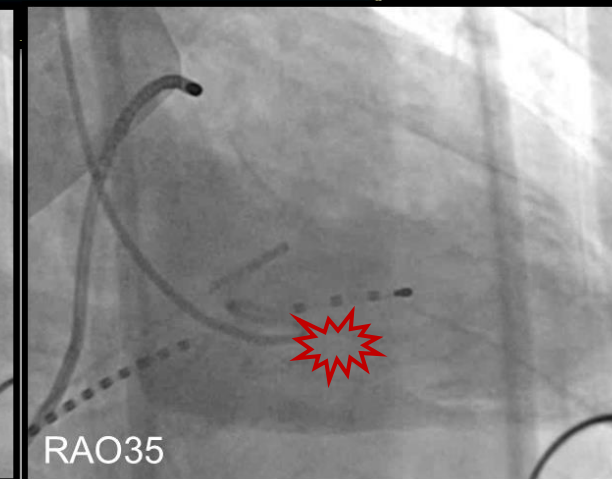
RFCA #2

: Ablation catheter, distal (tip) area of posterior papillary muscle, 35ms earlier



RFCA #2

: Distal (tip) of posterior papillary muscle, 45~50W, 45~60 sec at each point, PVC1 was disappeared

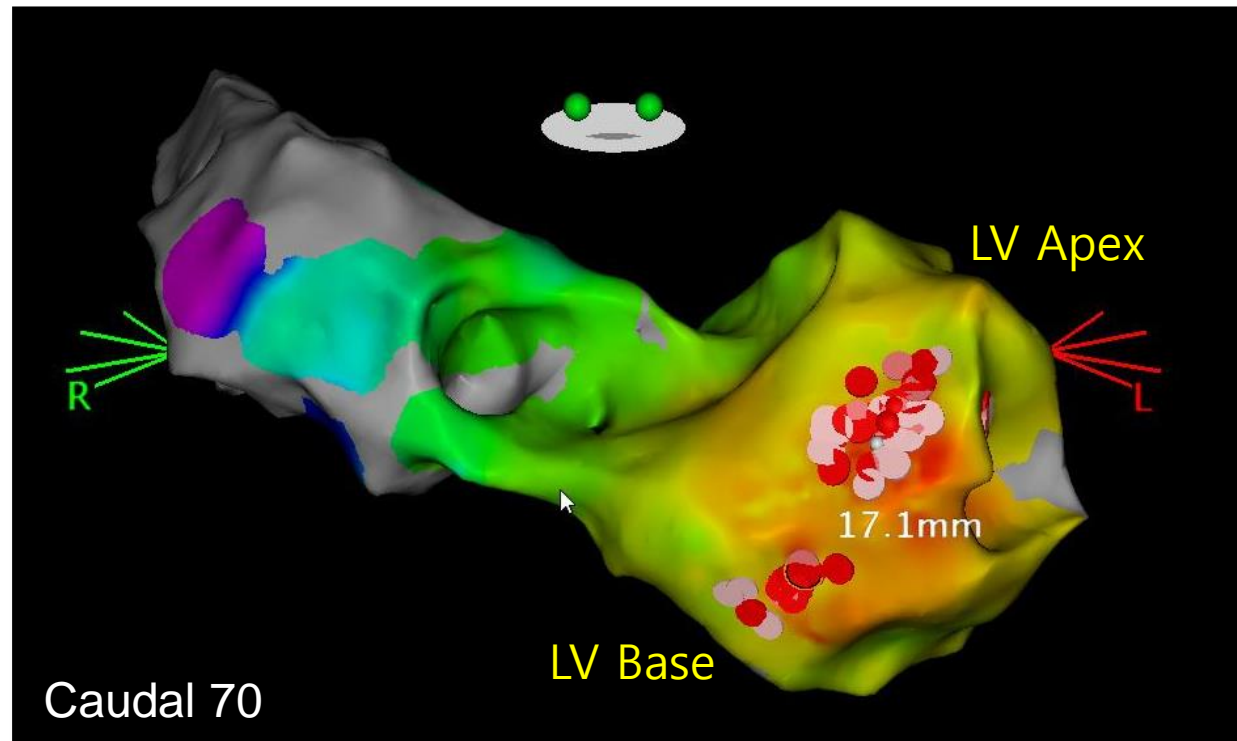


ECG after RFA

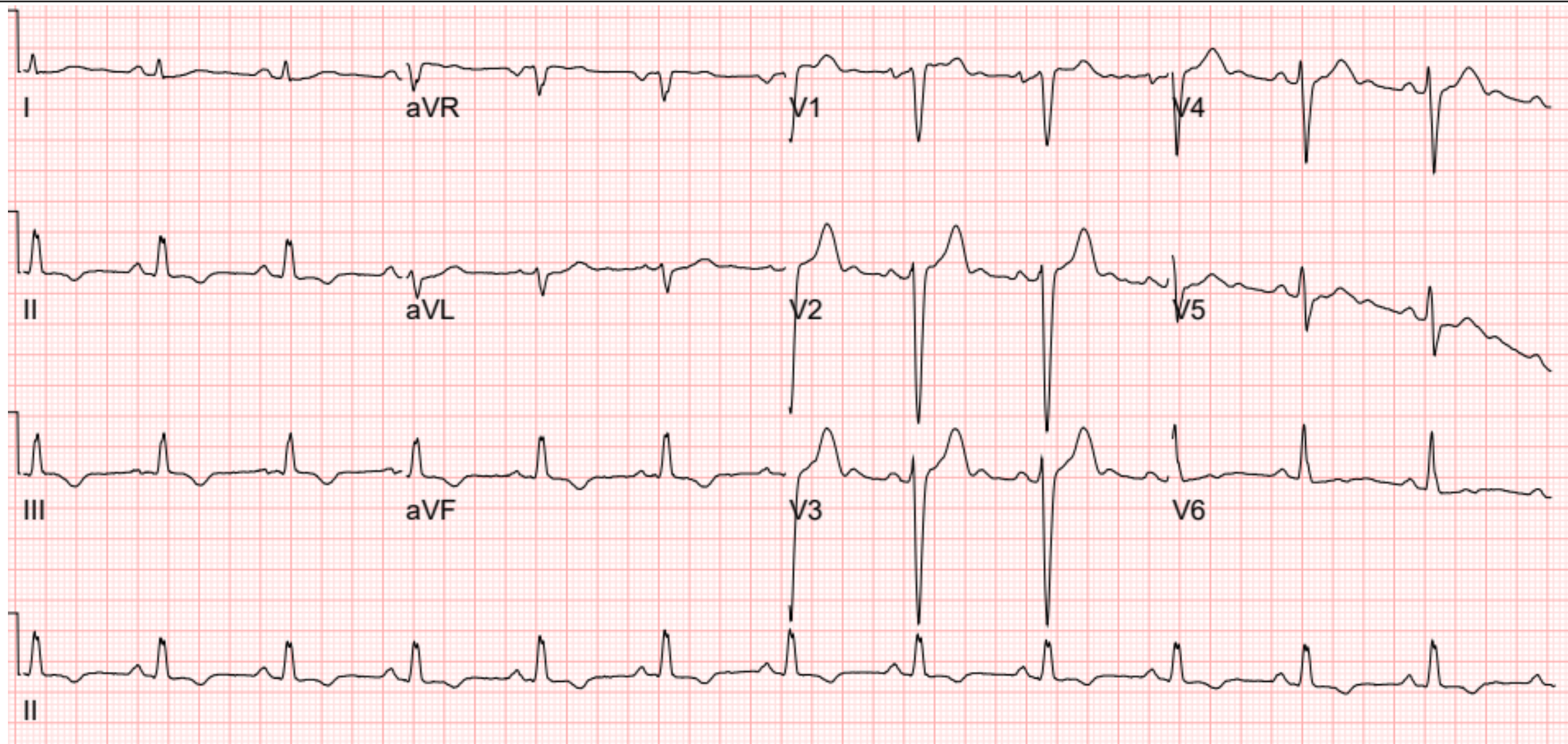
: Disappeared PVC/NSVT1, unmappable frequent PVC2



Final ablation site



ECG after RFA



PVC and NSVT burden

Before RFCA

General

99285 QRS complexes
49789 Ventricular beats (50%)
7 Supraventricular beats (< 1%)
< 1 % of total time classified as noise

Heart Rates

57 Minimum at 18:01:09 15-Dec
63 Average
96 Maximum at 07:02:21 16-Dec
0 Beats in tachycardia (≥ 100 bpm), 0% total
0 Beats in bradycardia (≤ 50 bpm), 0% total
1.88 Seconds Max R-R at 02:24:25 16-Dec

Supraventriculars (S, J, A)

5 Isolated
1 Couplets
0 Bigeminal cycles
0 Runs totaling 0 beats

Ventriculars (V, F, E, I)

15279 Isolated
5497 Couplets
1283 Bigeminal cycles
5938 Runs totaling 23516 beats
22 Beats longest run 90 bpm 18:43:06 15-Dec
3 Beats fastest run 132 bpm 00:38:54 16-Dec

1 months after RFCA

General

96255 QRS complexes
22072 Ventricular beats (23%)
607 Supraventricular beats (< 1%)
< 1 % of total time in AF/AFL
2 % of total time classified as noise

Heart Rates

57 Minimum at 22:20:31 23-Mar
67 Average
152 Maximum at 13:09:17 24-Mar
170 Beats in tachycardia (≥ 100 bpm), < 1% total
0 Beats in bradycardia (≤ 50 bpm), 0% total
1.8 Seconds Max R-R at 23:25:45 23-Mar

Supraventriculars (S, J, A)

549 Isolated
27 Couplets
3 Bigeminal cycles
1 Runs totaling 4 beats
4 Beats longest run 136 bpm 12:22:18 24-Mar
4 Beats fastest run 136 bpm 12:22:18 24-Mar

Ventriculars (V, F, E, I)

22068 Isolated
2 Couplets
1493 Bigeminal cycles
0 Runs totaling 0 beats

Thank you for your attention

