

Present your most challenging case: Rising stars and more

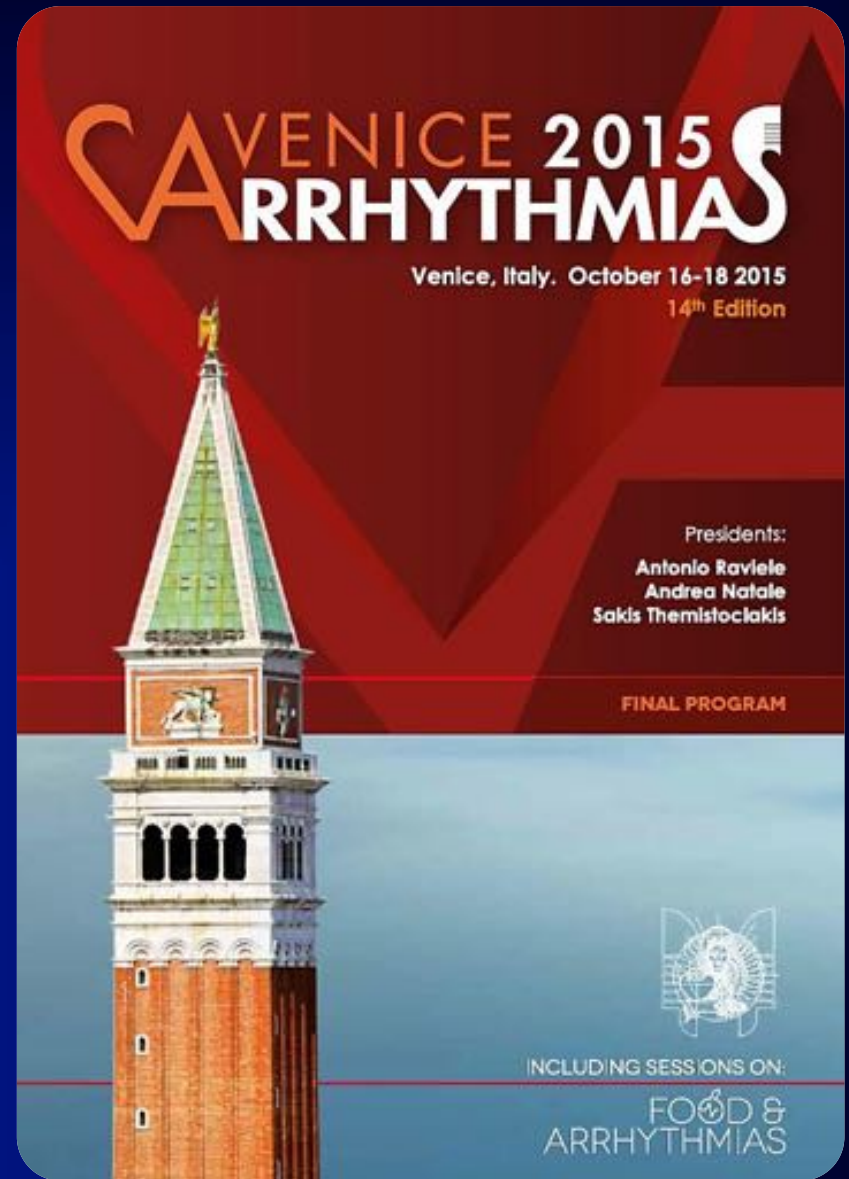
A difficult case of atrial tachycardia / left atrial flutter

M. Tritto, MD

Division of Electrophysiology

Istituto Clinico Humanitas Mater Domini

Castellanza (VA) - Italy





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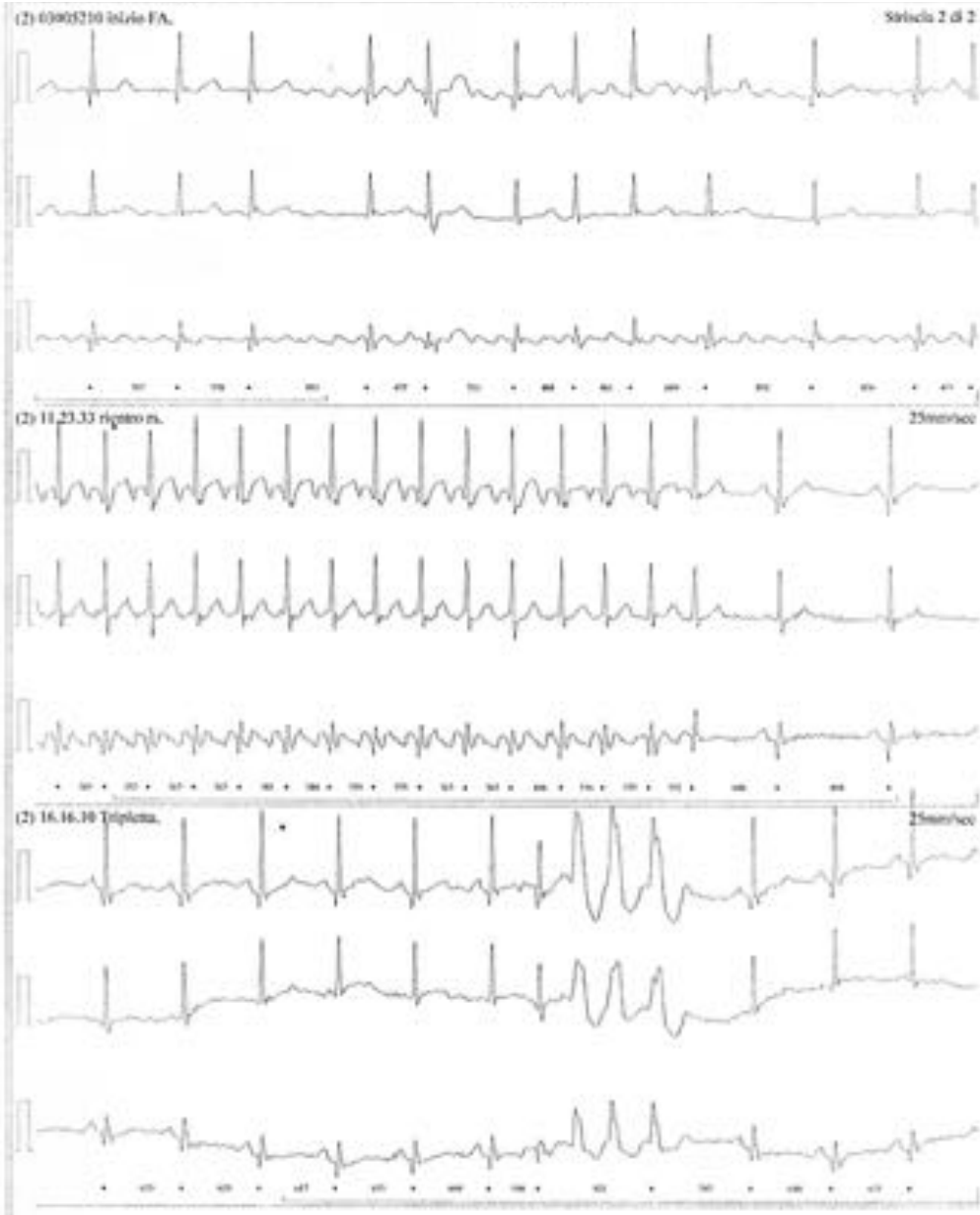


**NO CONFLICT OF
INTEREST TO
DECLARE**

Case study

- ↘ Mr NB, 45 yrs old
- ↘ Familiar history: negative
- ↘ Cardiovascular history:
 - High blood pressure (tx with ARBs)
 - 2009: symptomatic (palpitations) paroxysmal AFib episodes, unresponsive to Flecainide (100 mg bid)
 - Holter monitoring: frequent unimorphic PACs, multiple AFib episodes

24 h Holter monitoring

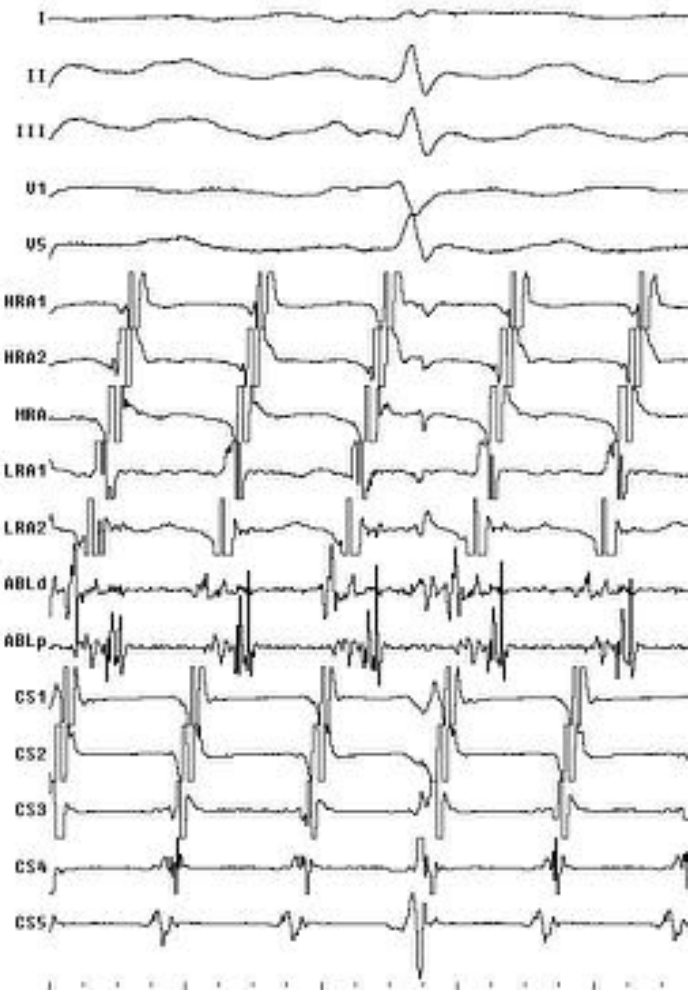


Case study

↳ Cardiovascular history (cont):

- 2/2010 and 6/2010 (AFib and AFl recurrences): CPVA plus linear lesions (CTI, LA roof, posterior LA, MI, left interatrial septum, CS)
- AFl recurrence despite tx with Amiodarone (200 mg o.d.) and Flecainide (50 mg b.i.d.)
- 10/2010: pt was referred to our Institution for re-evaluation

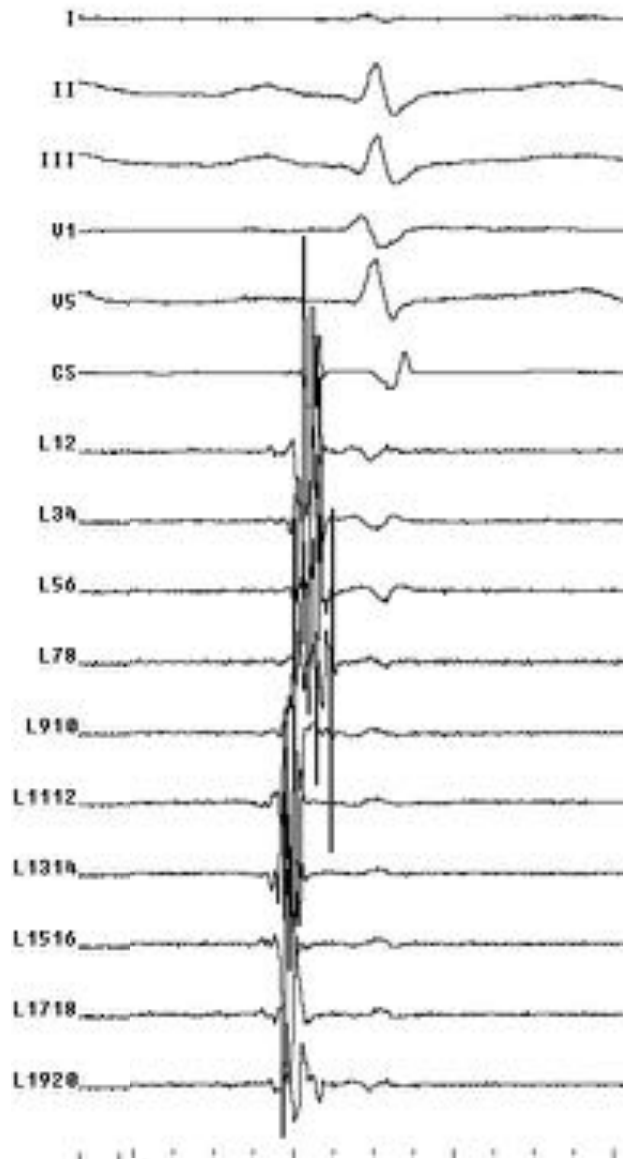
Typical CW AFI



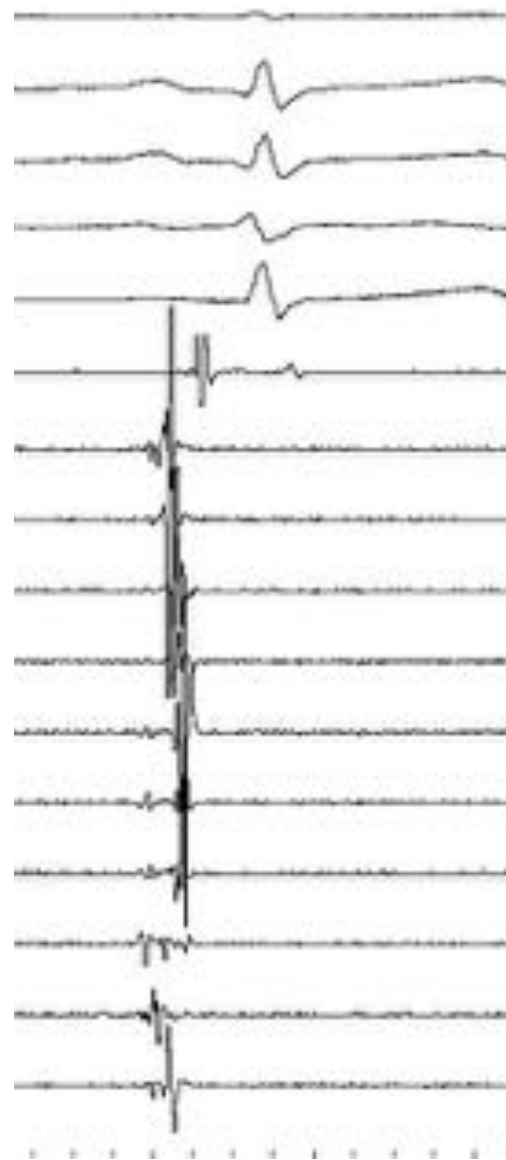
CTI ablation



Left common PV (baseline)



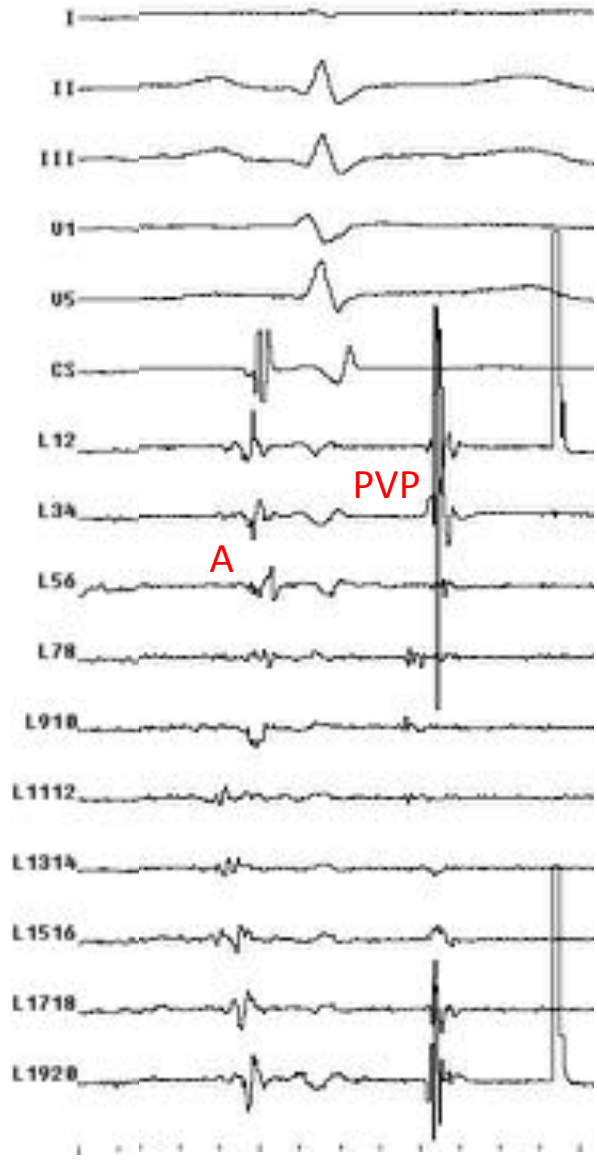
RS PV (baseline)



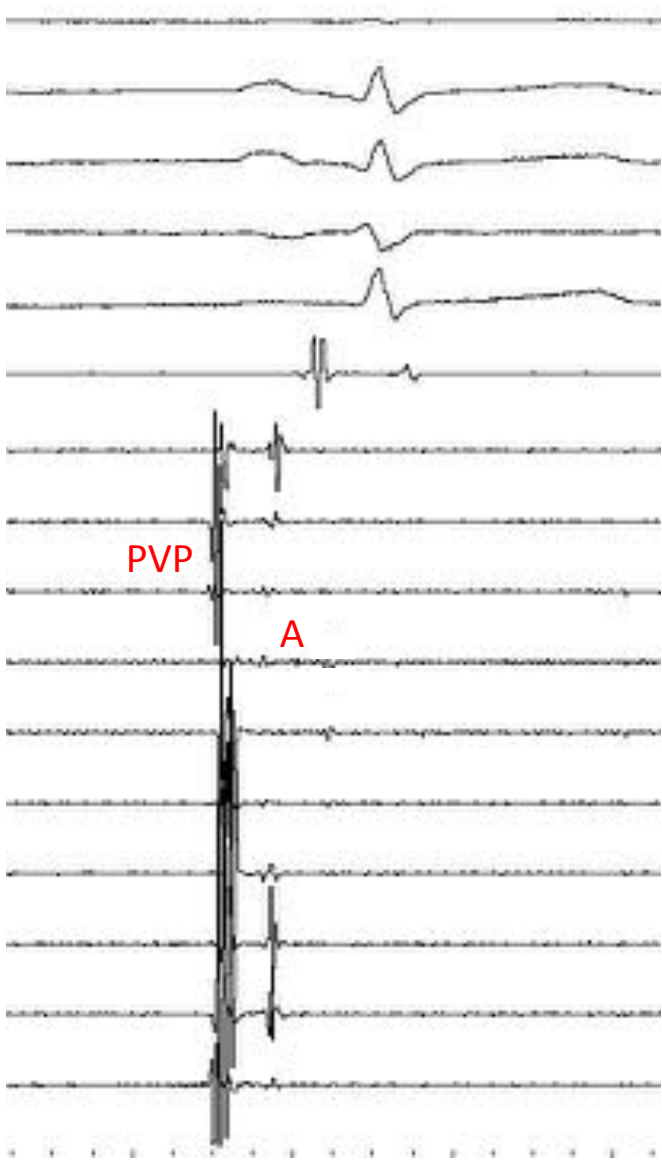
RI PV (baseline)



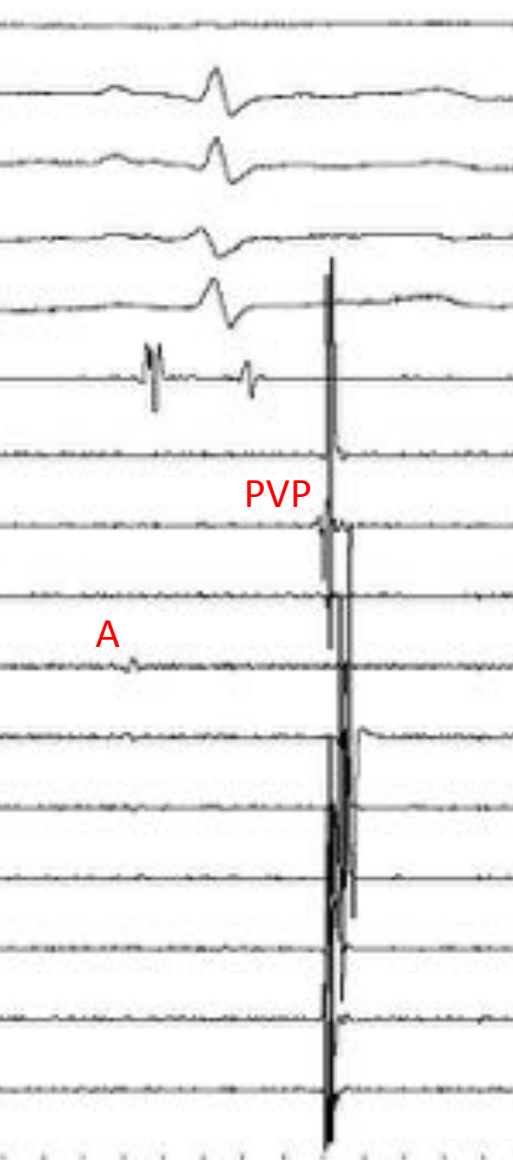
Left common PV (post abl)



RS PV (post abl)



RI PV (post abl)



Case study

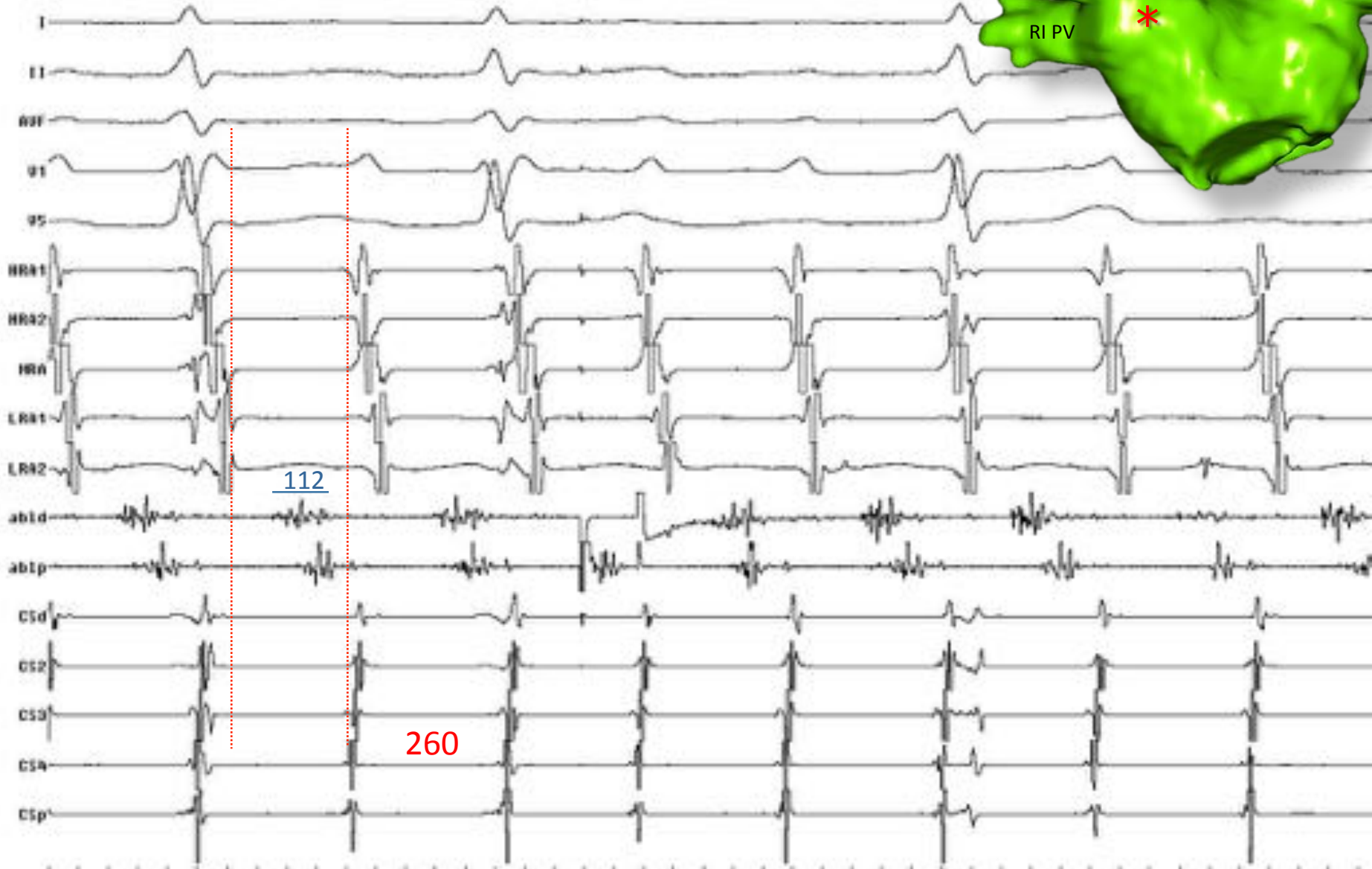
↘ Cardiovascular history (cont):

- Discharged on Warfarin (6 mos), no AADs
- 2012: atypical AFI recurrences terminated with Amiodarone iv or ECV, Propafenon SR 325 mg bid started
- 1/2013: two syncopal episodes (the first during effort); ECG: wide QRS tachycardia @240 bpm terminated by urgent ECV (1:1 AFI); stop Propafenon, Bisoprolol 2.5 mg b.i.d. started
- 3/2013: re-admitted at our Institution for re-ablation

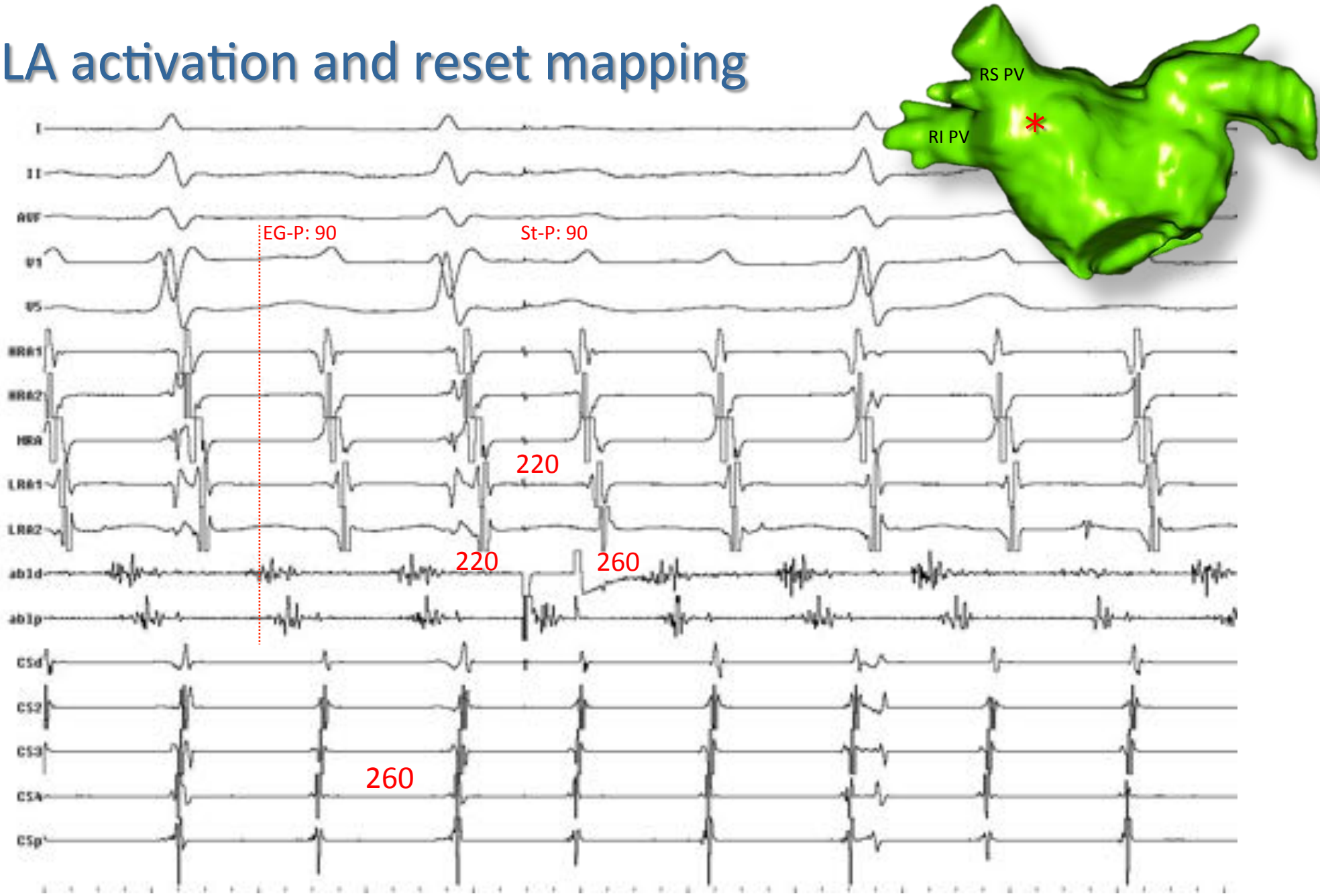
12-lead ECG



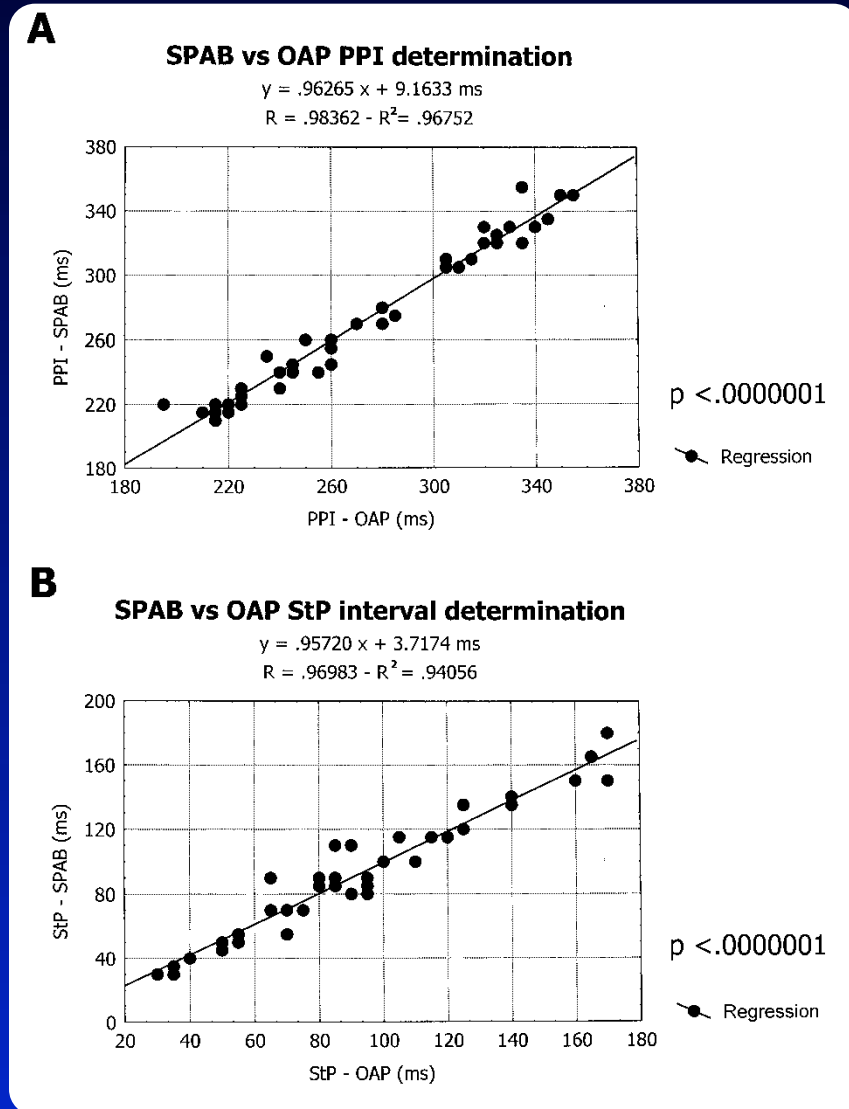
LA activation and reset mapping



LA activation and reset mapping



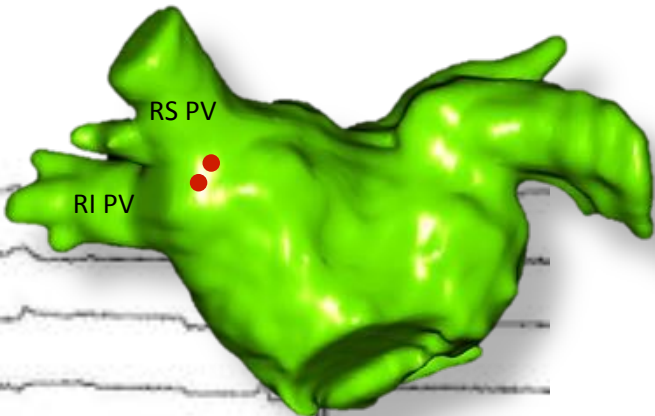
Left atrial flutter ablation: entrainment vs reset mapping



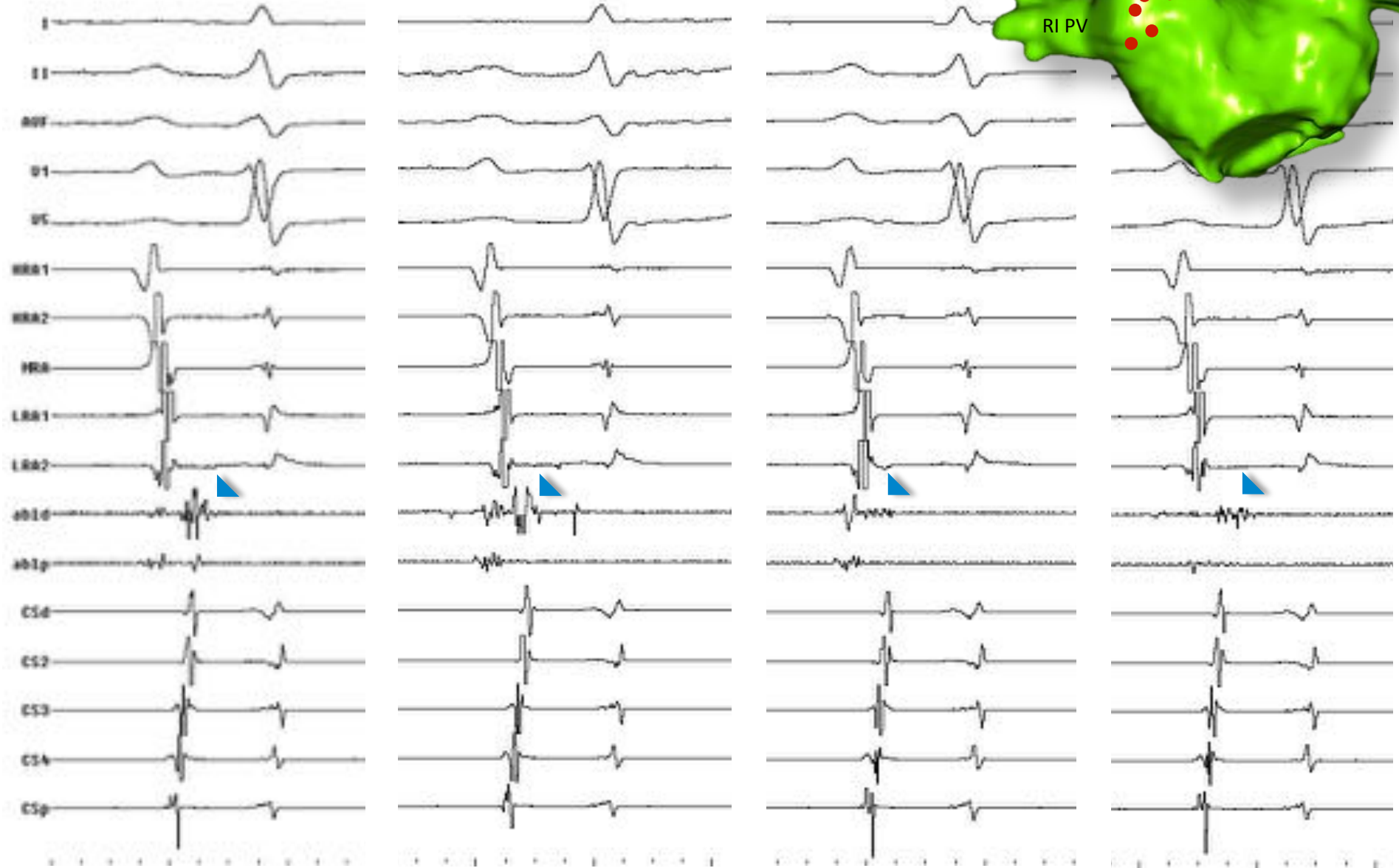
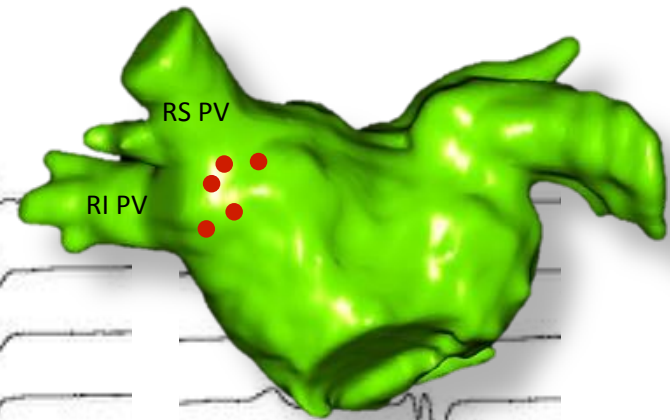
- Similar information in identifying the isthmus of protected conduction in MRATs
- Significantly decreased risk of MRAT interruption or transformation with SPB stimulation

Tritto M et al, Am J Cardiol 2003;91:1485

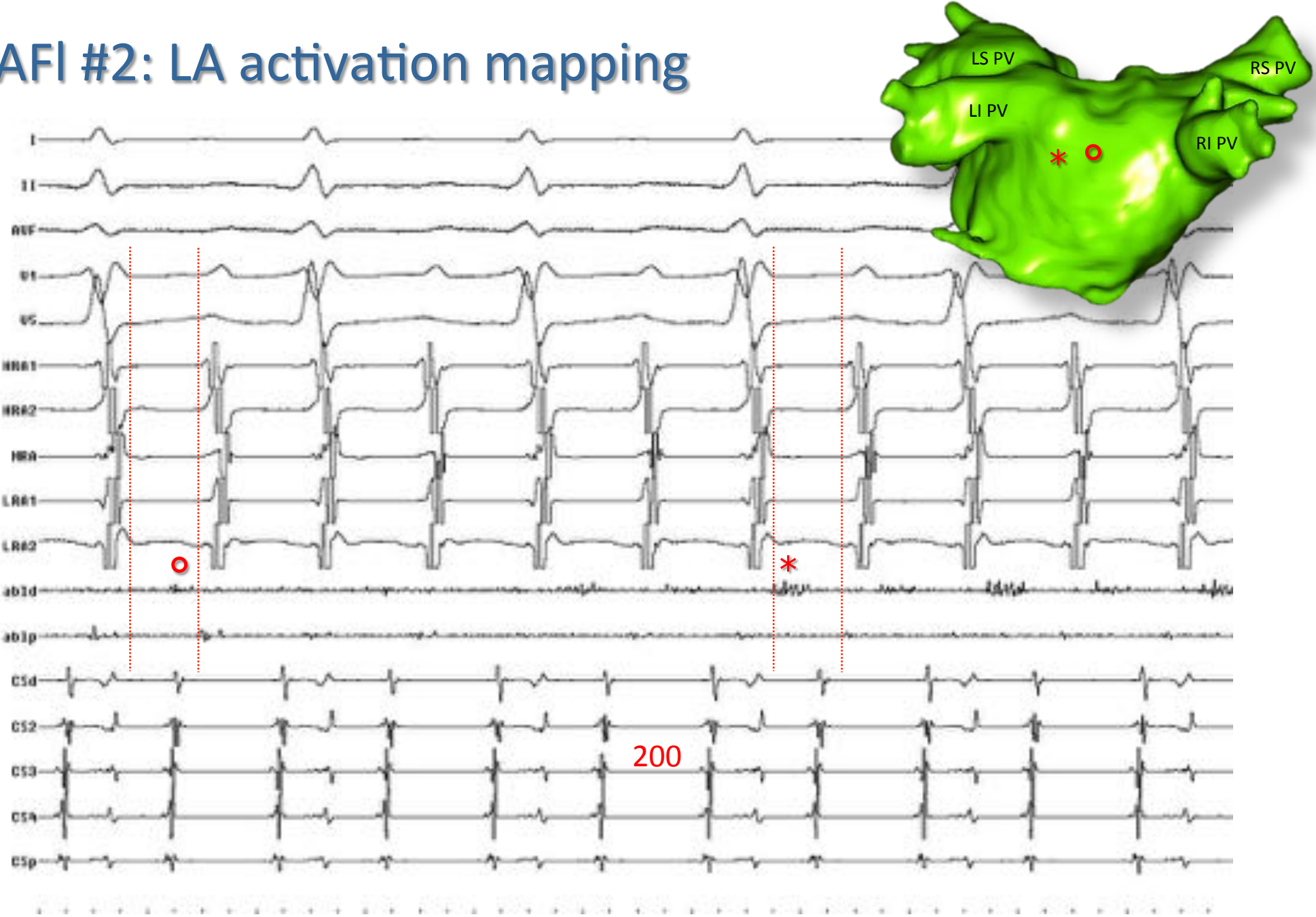
Irrigated RF ablation



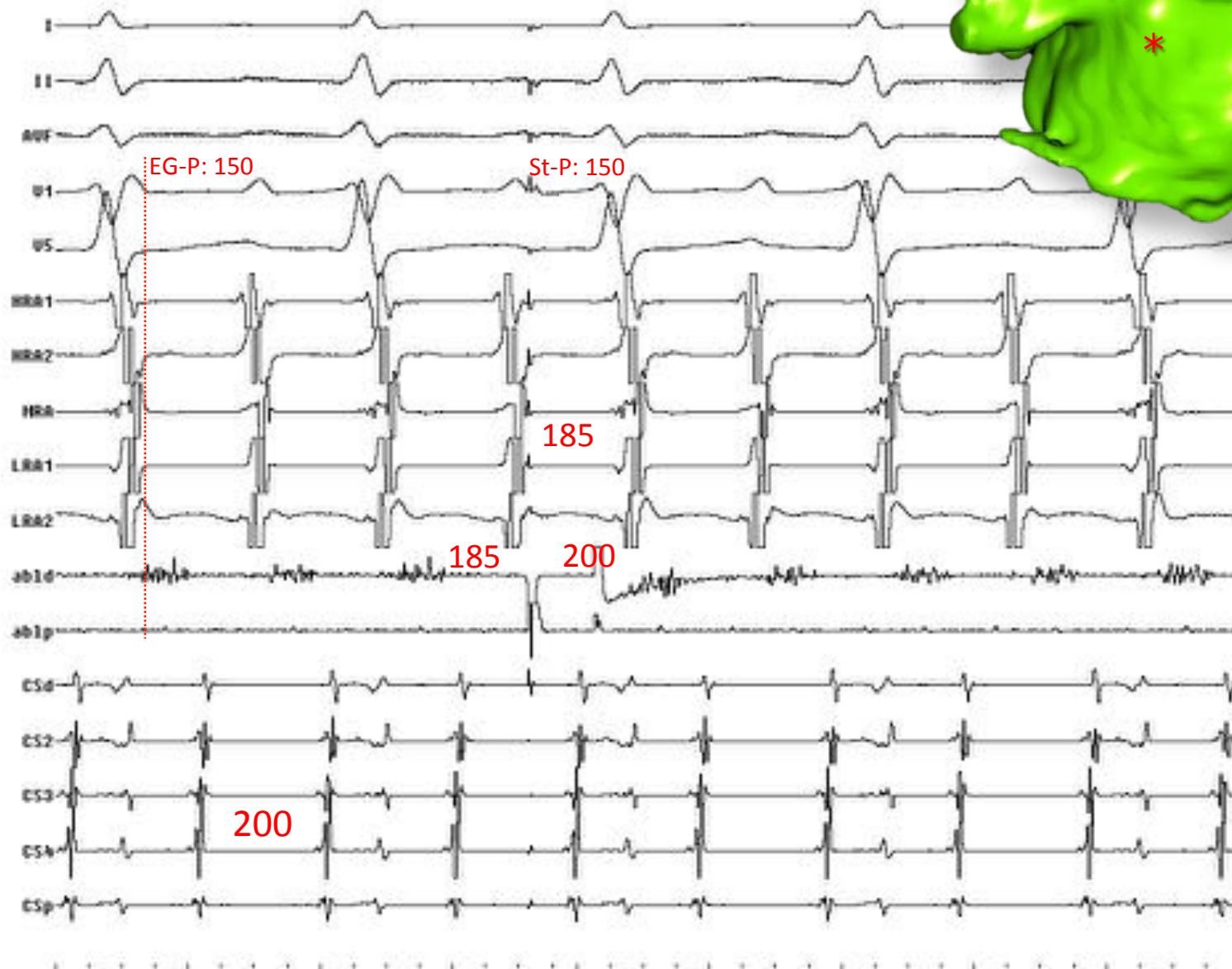
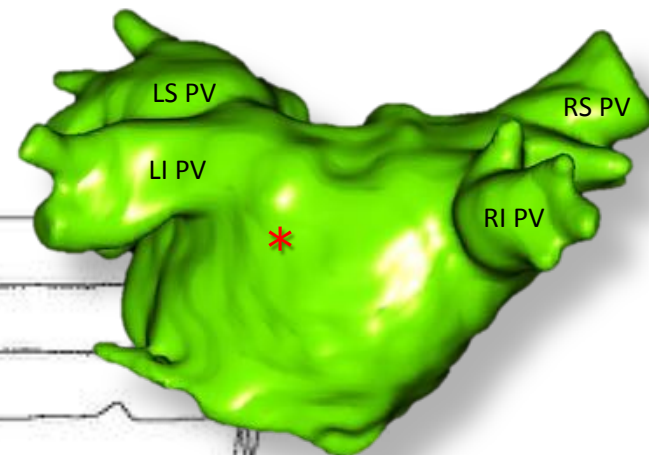
«Abnormal» LA potential ablation



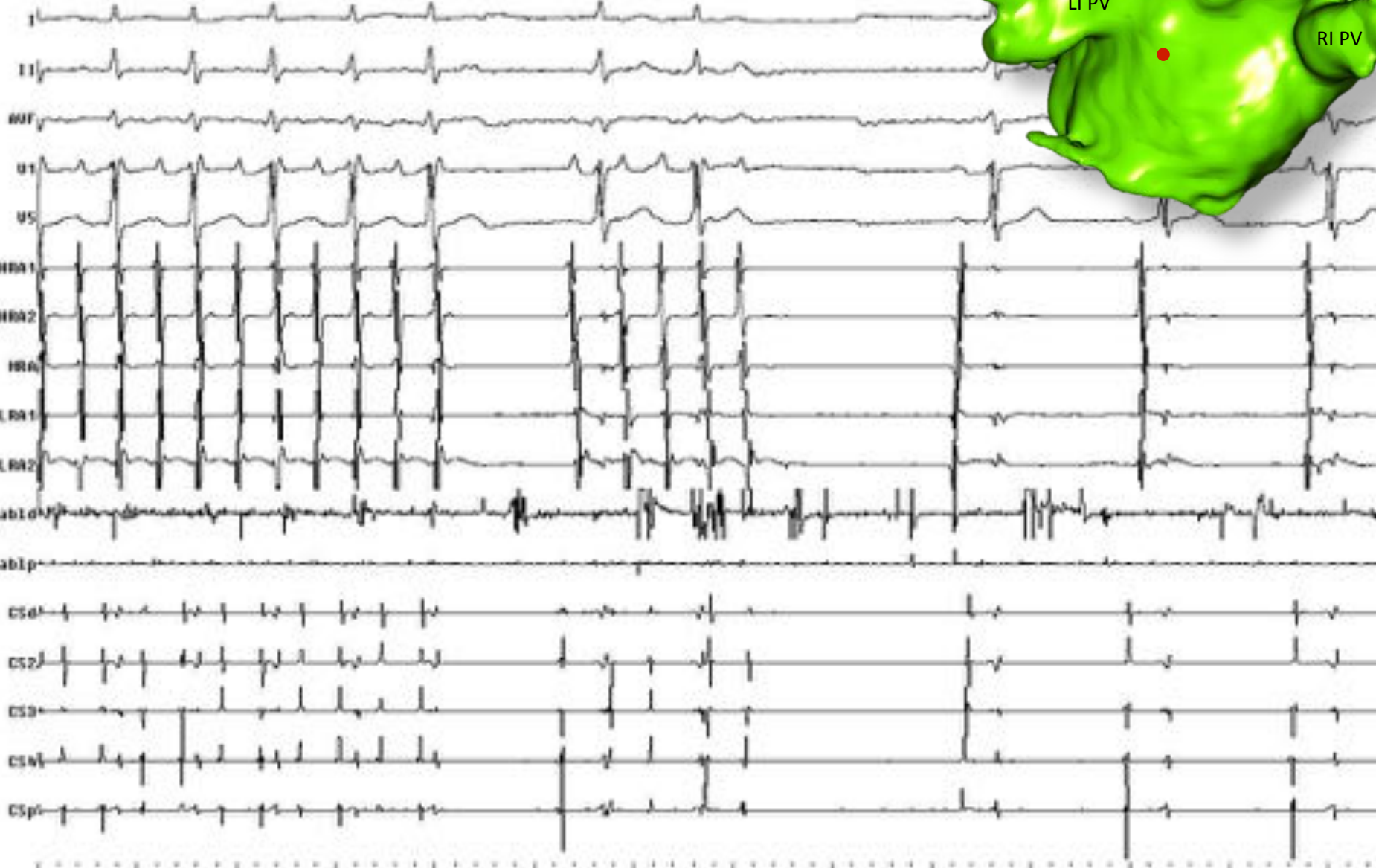
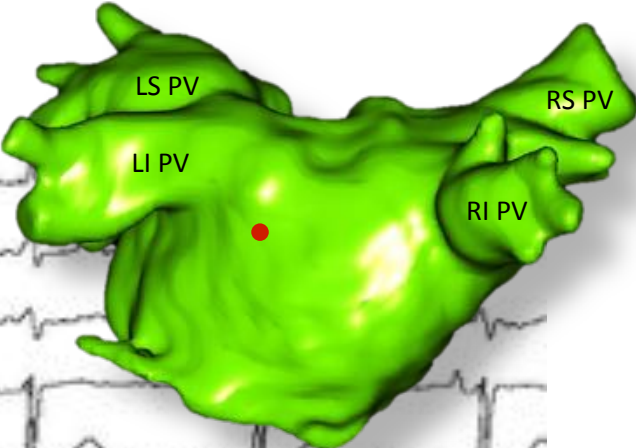
AFI #2: LA activation mapping



AFI #2: reset mapping



Irrigated RF ablation



«Abnormal» LA potential ablation



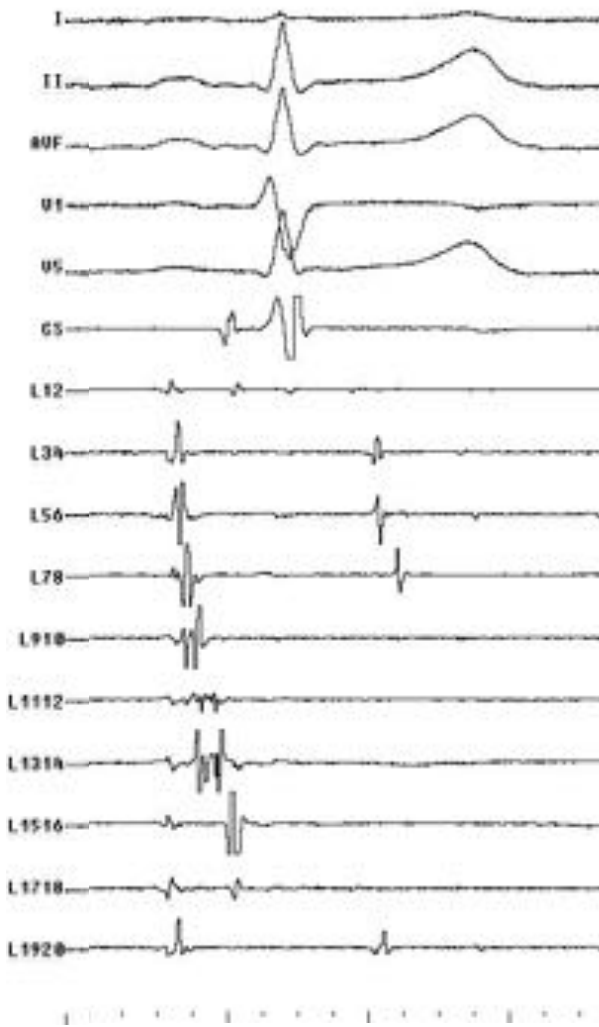
Left PVs mapping

Baseline

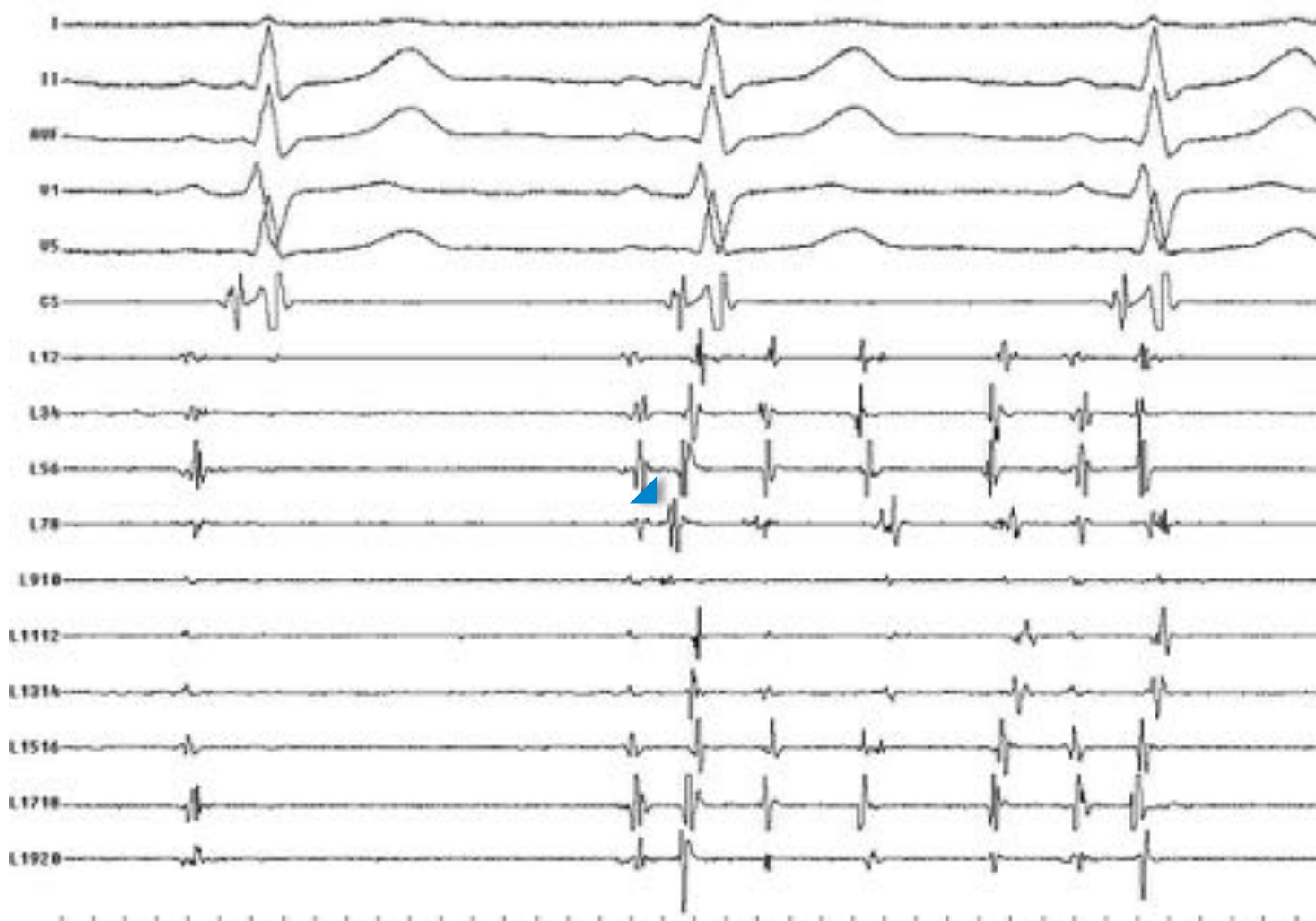


Right superior PV mapping

Baseline

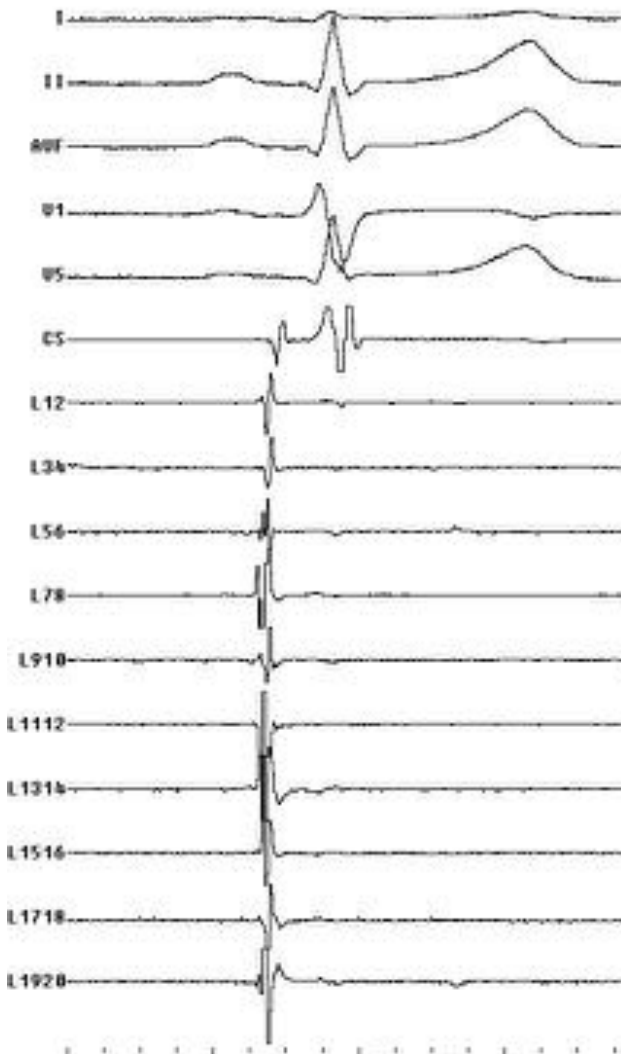


Post ablation

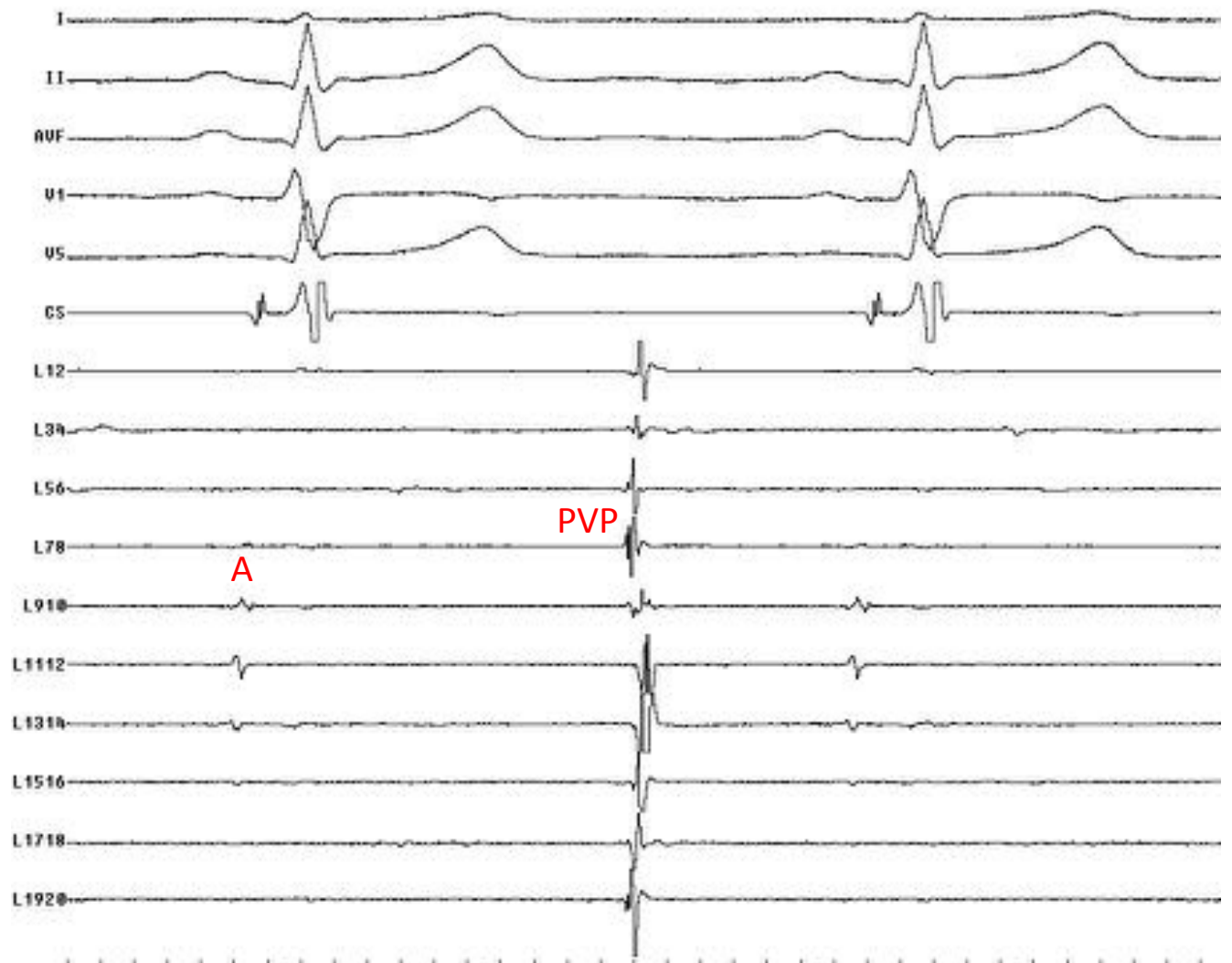


Right inferior PV mapping

Baseline

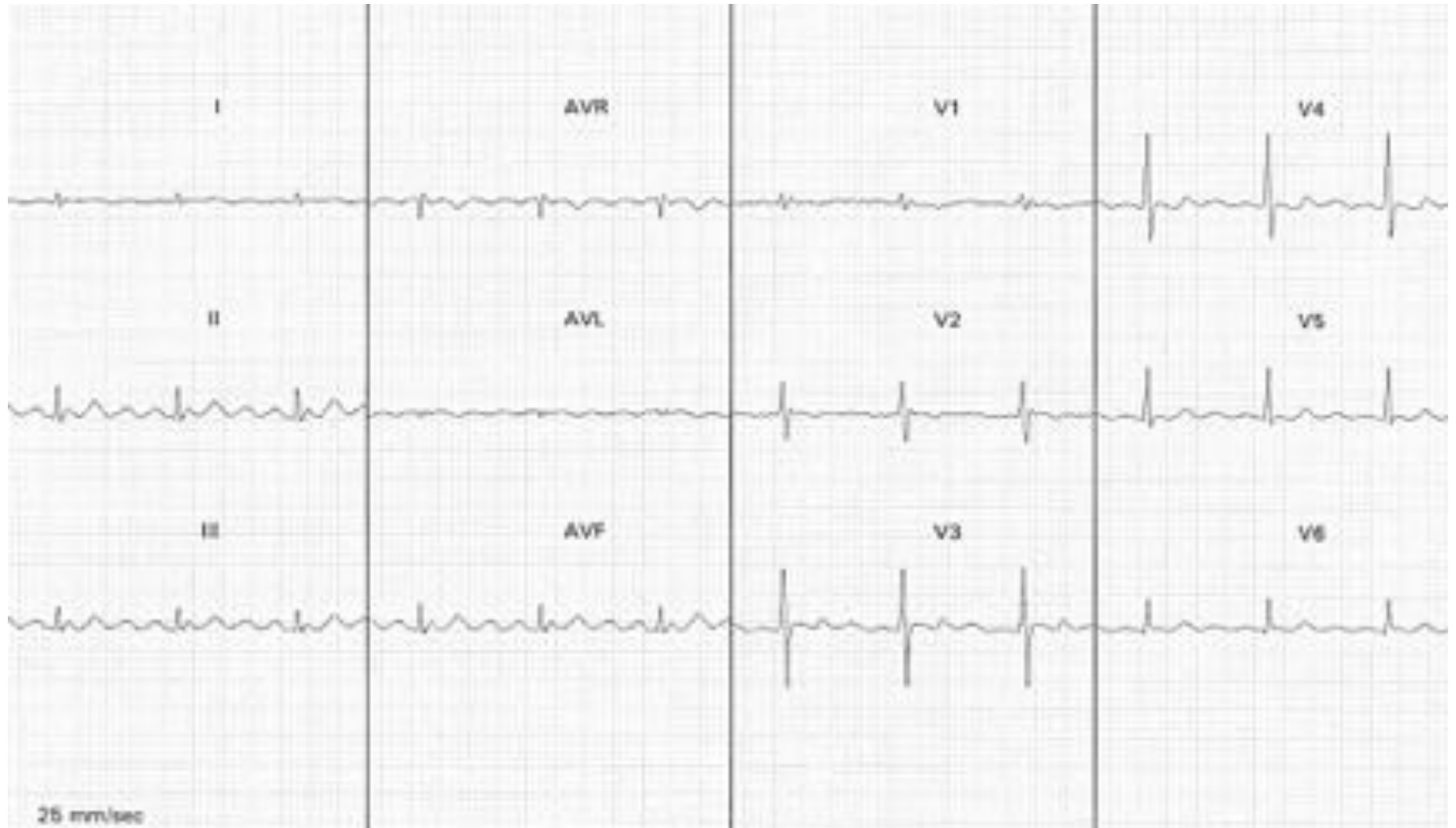


Post ablation

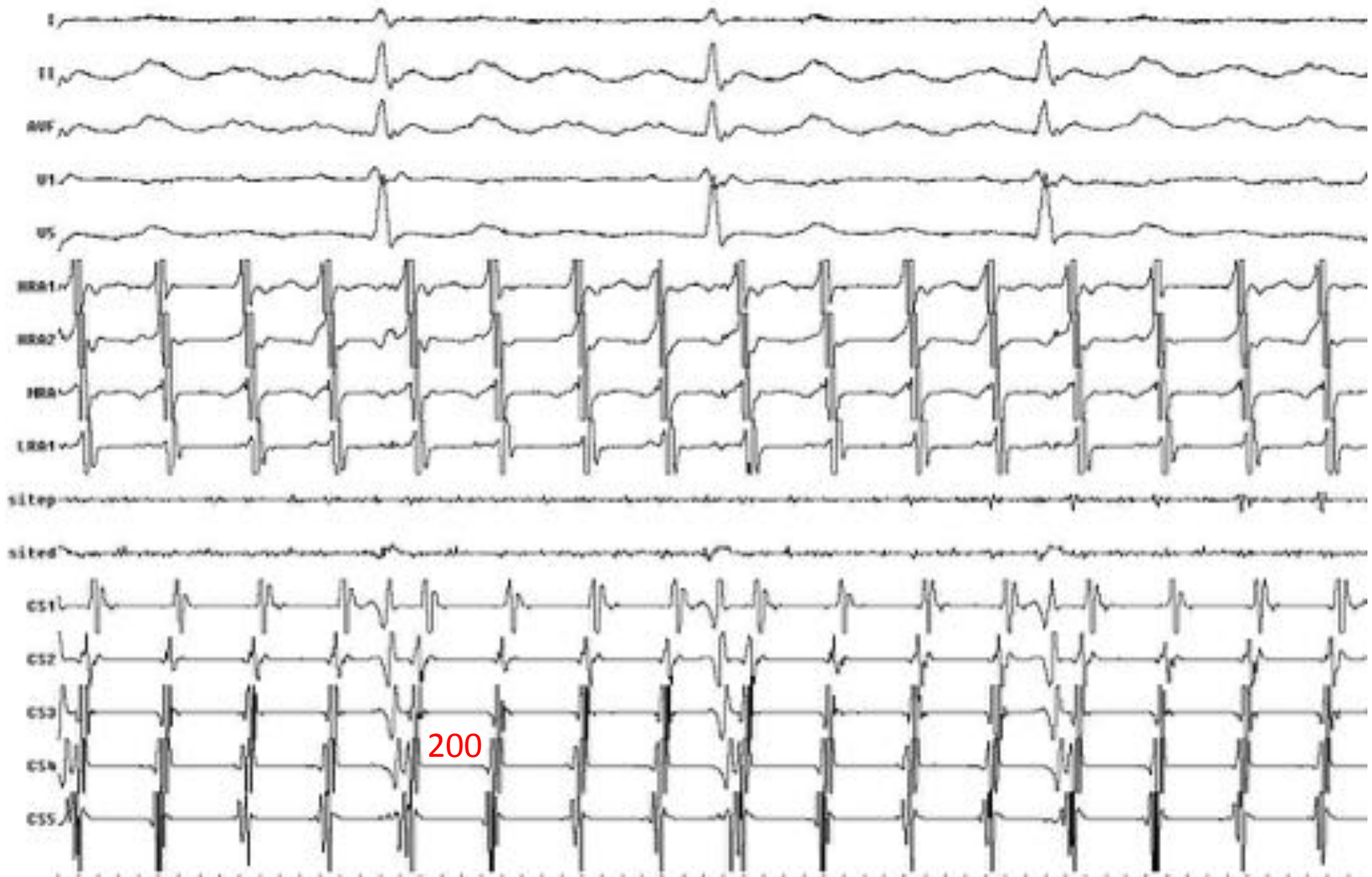


- No further arrhythmias were induced by programmed atrial stimulation (S3 and rapid bursts from RA and LA) on baseline conditions and isoprenaline iv
- Discharged on Warfarin (6 mos), no AADs

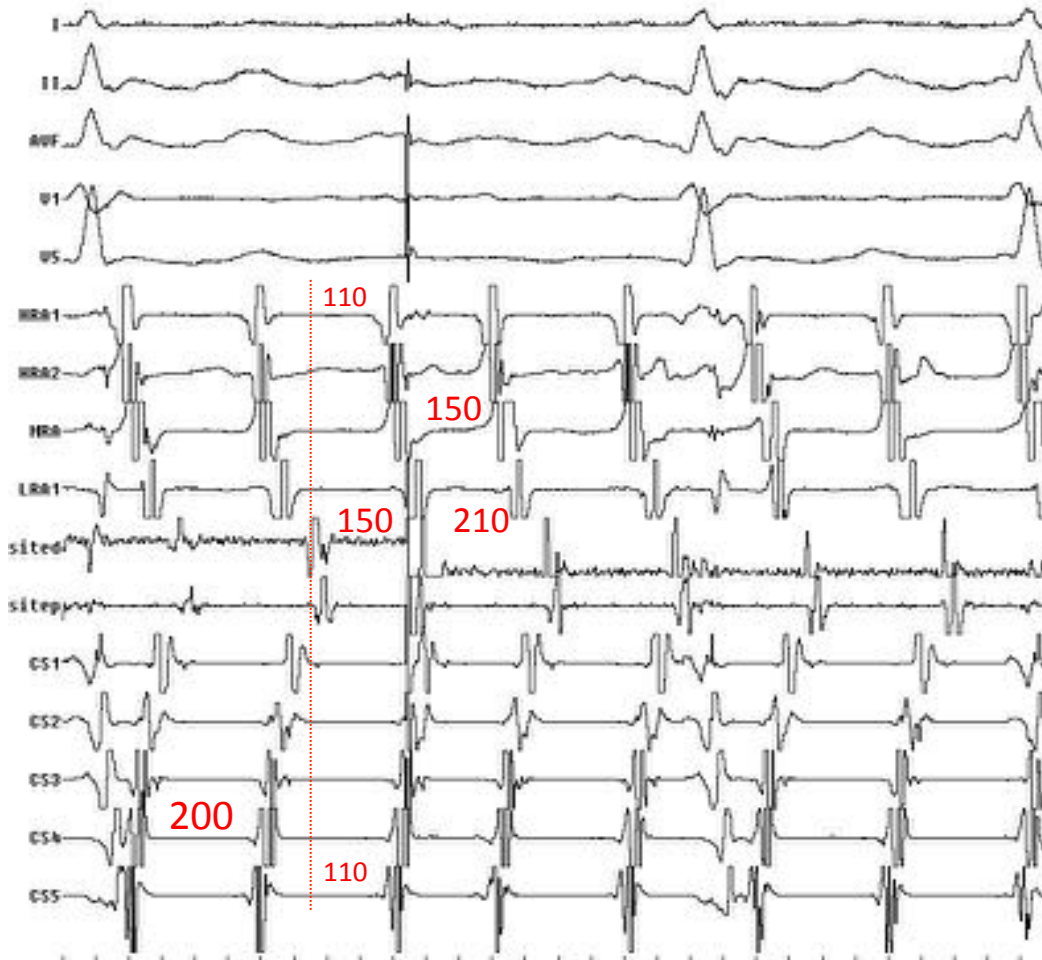
1 year later....



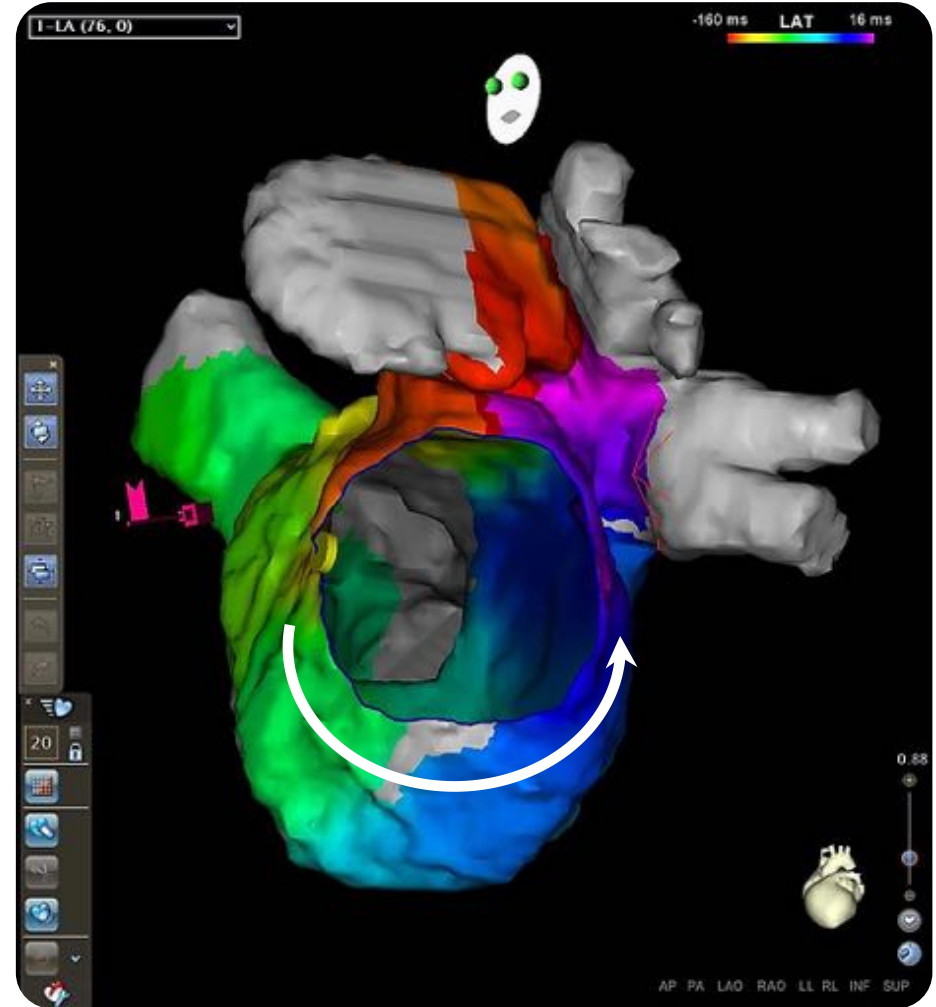
RA activation mapping



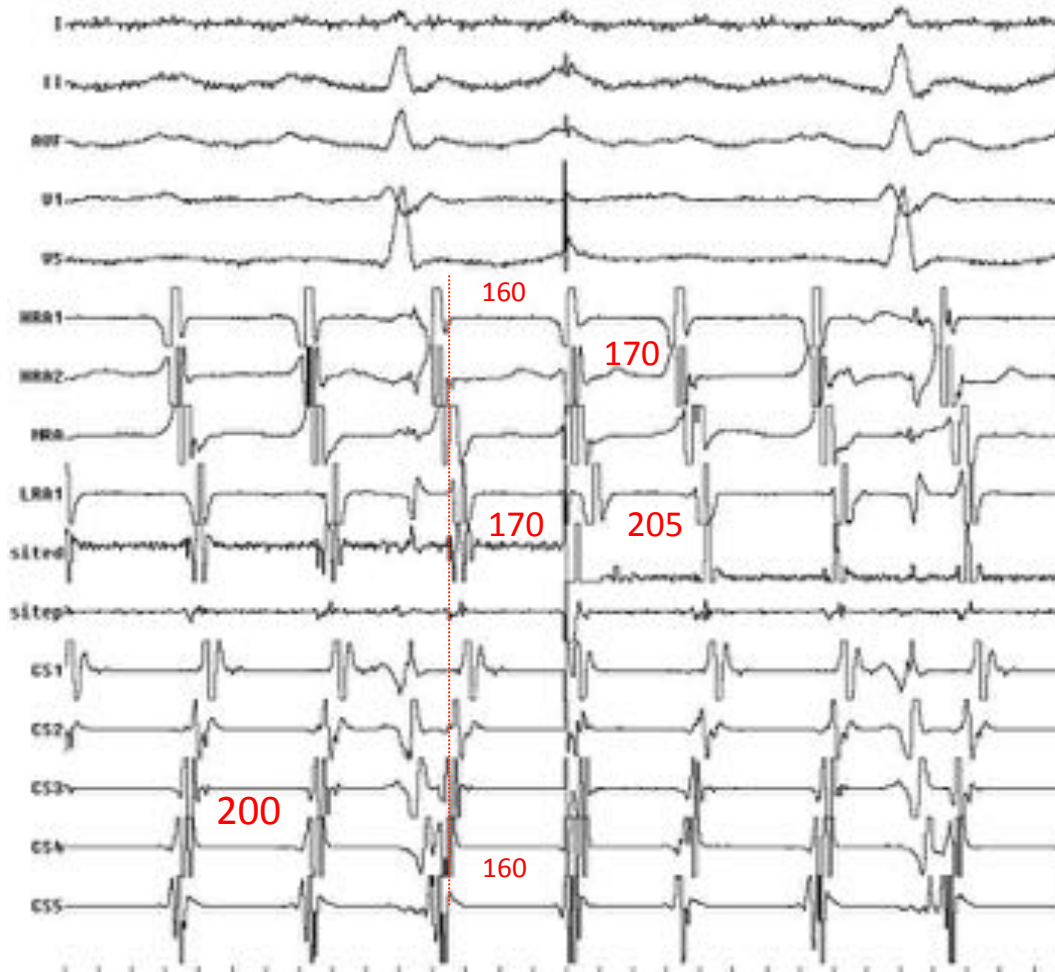
AFI reset mapping (MA 1)



LA activation mapping



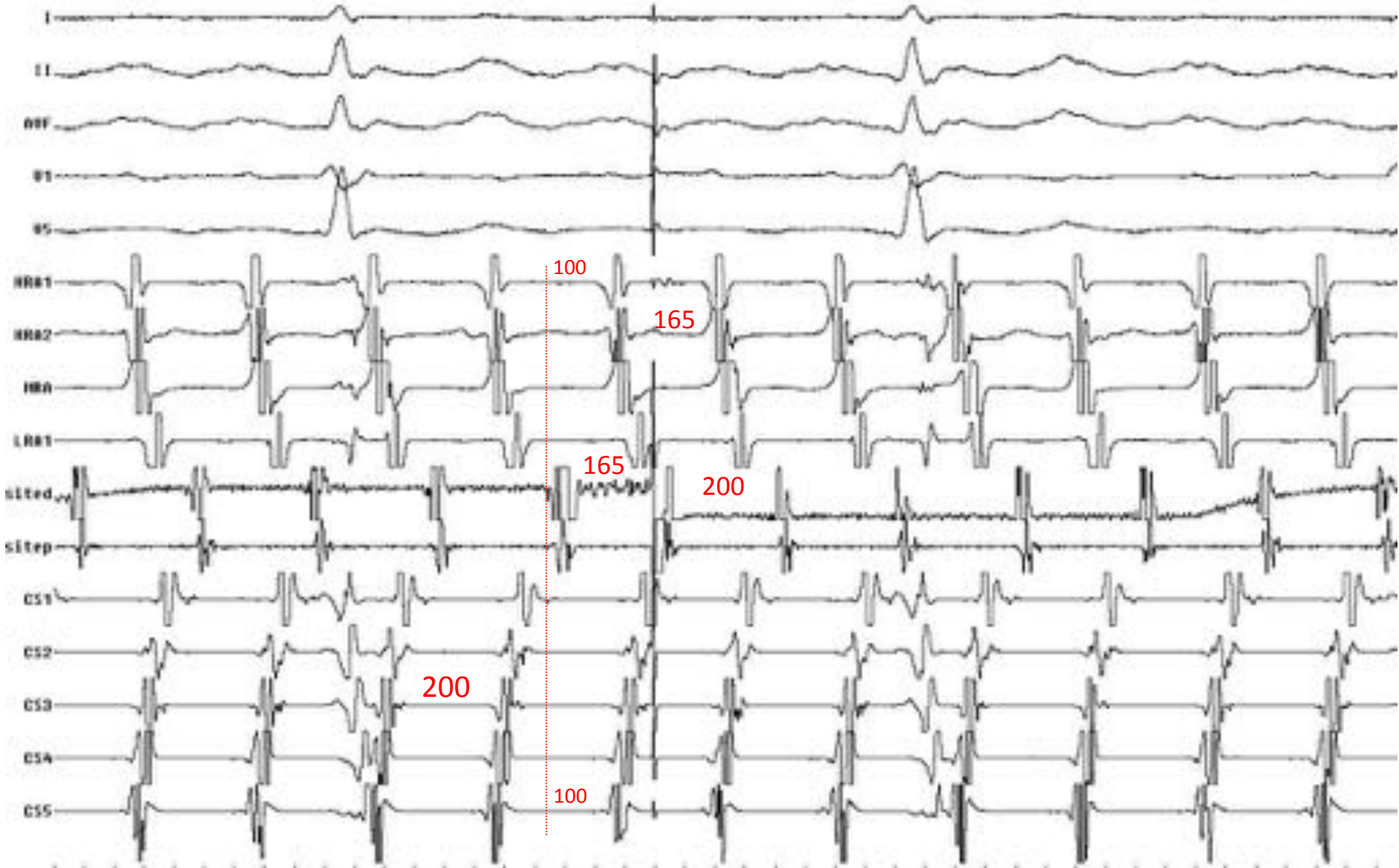
AFI reset mapping (MA 3)



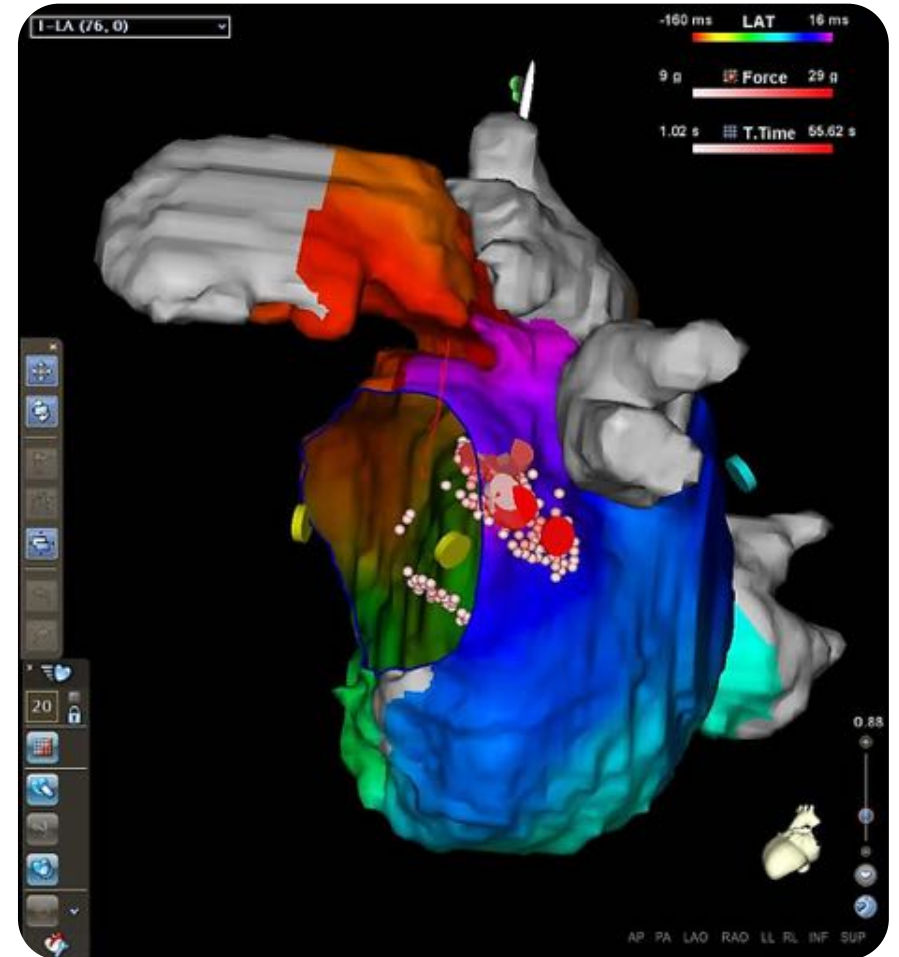
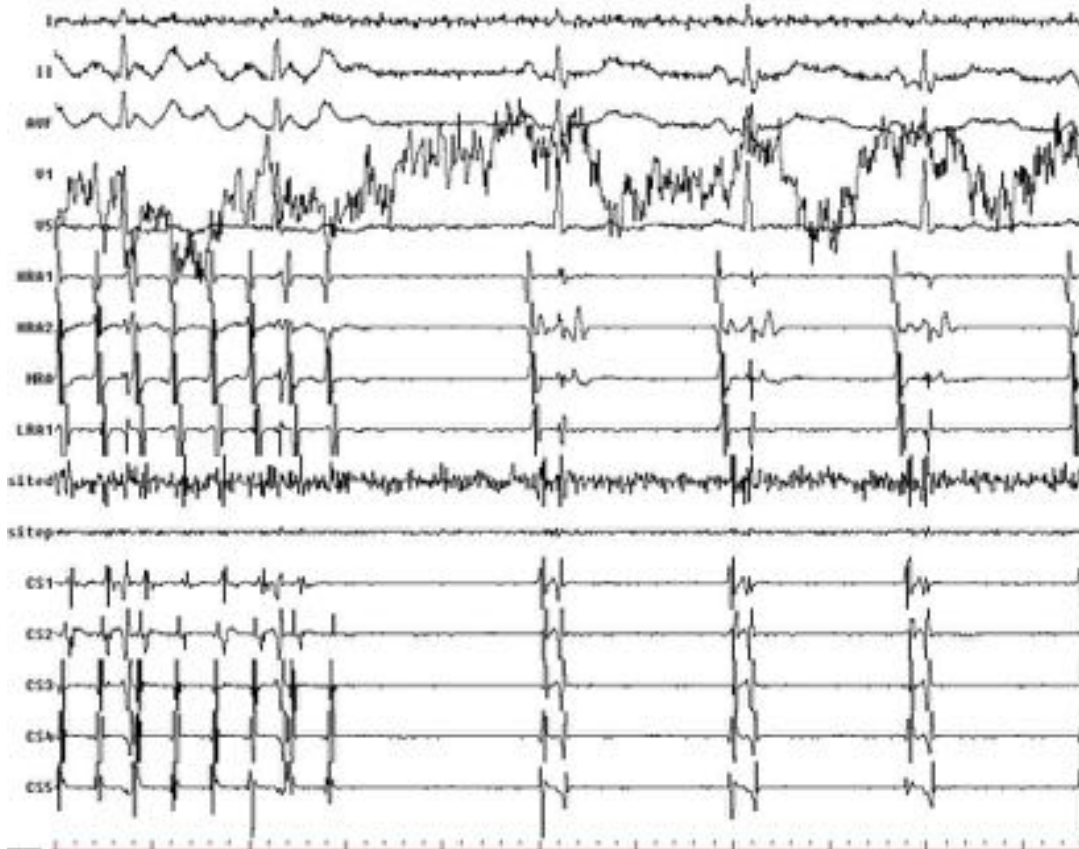
LA activation mapping



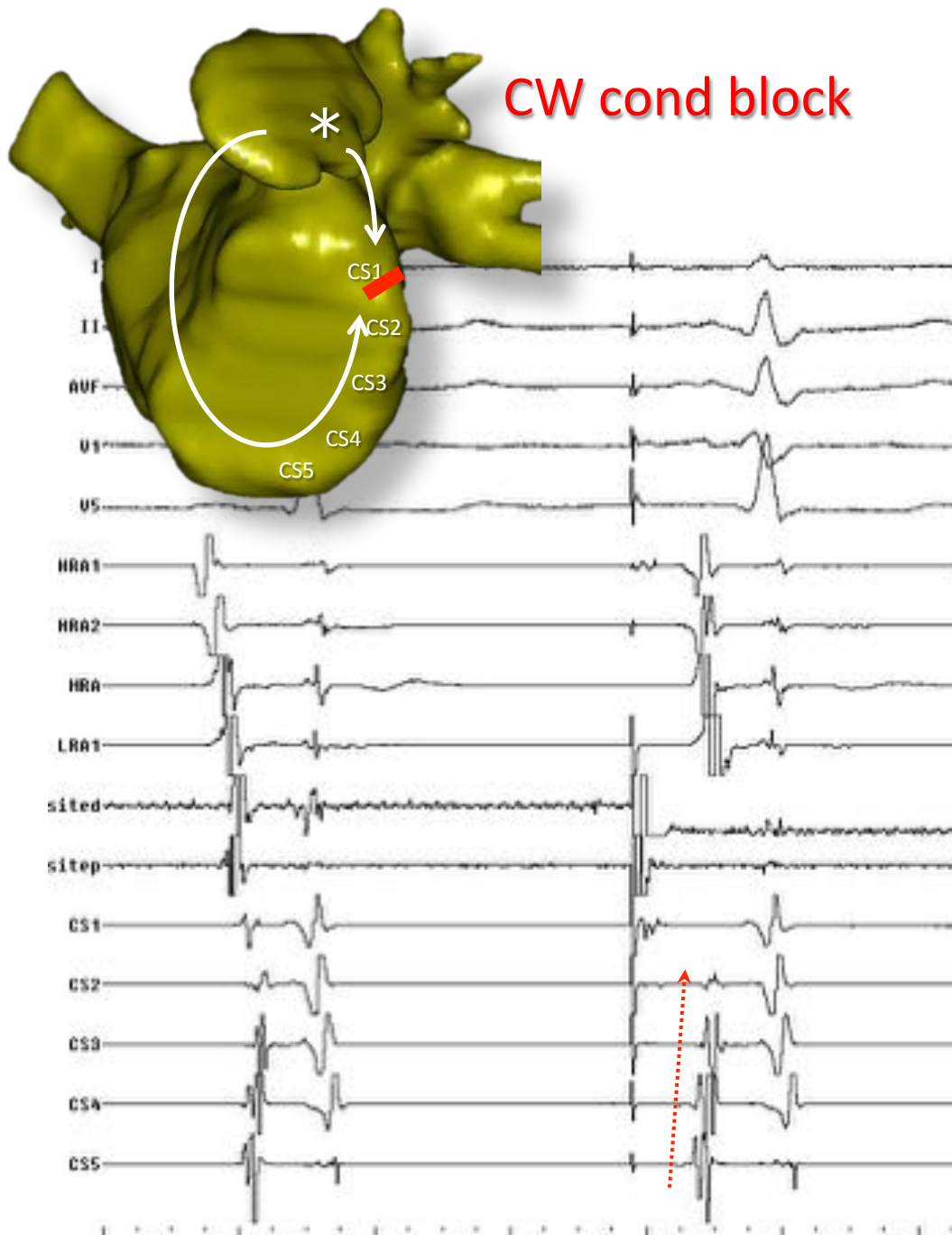
AFI reset mapping (LI PV-MA)



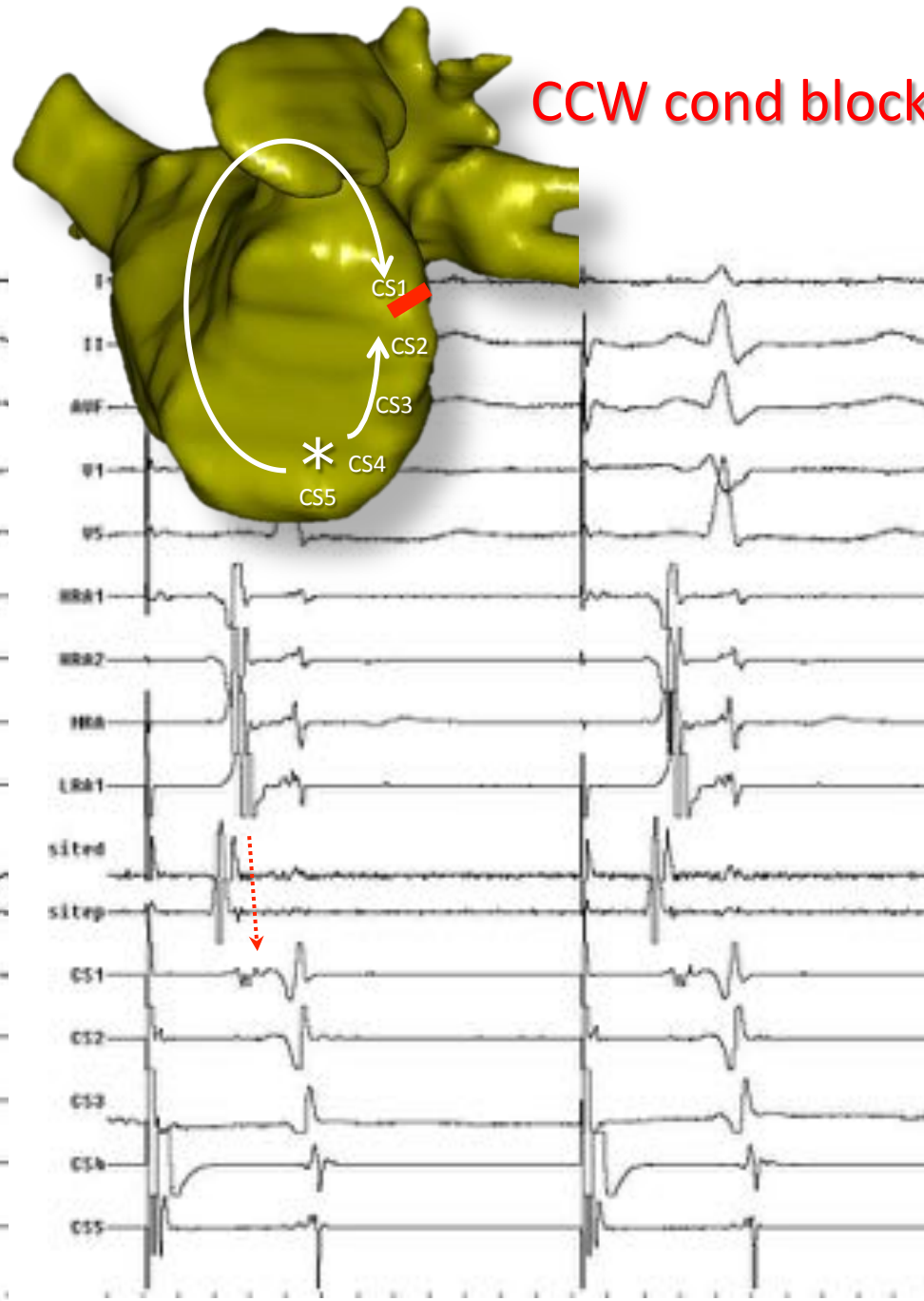
Irrigated RF ablation



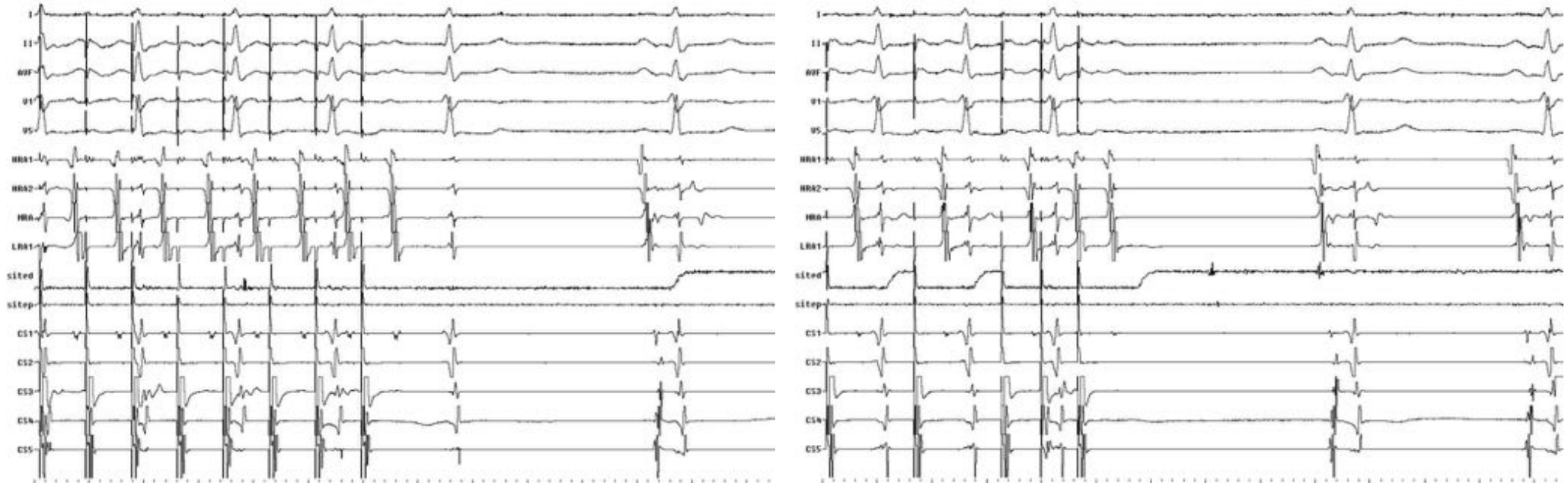
CW cond block



CCW cond block



Programmed electrical stimulation



No further arrhythmia recurrences
at 9 month FU (no AADs)

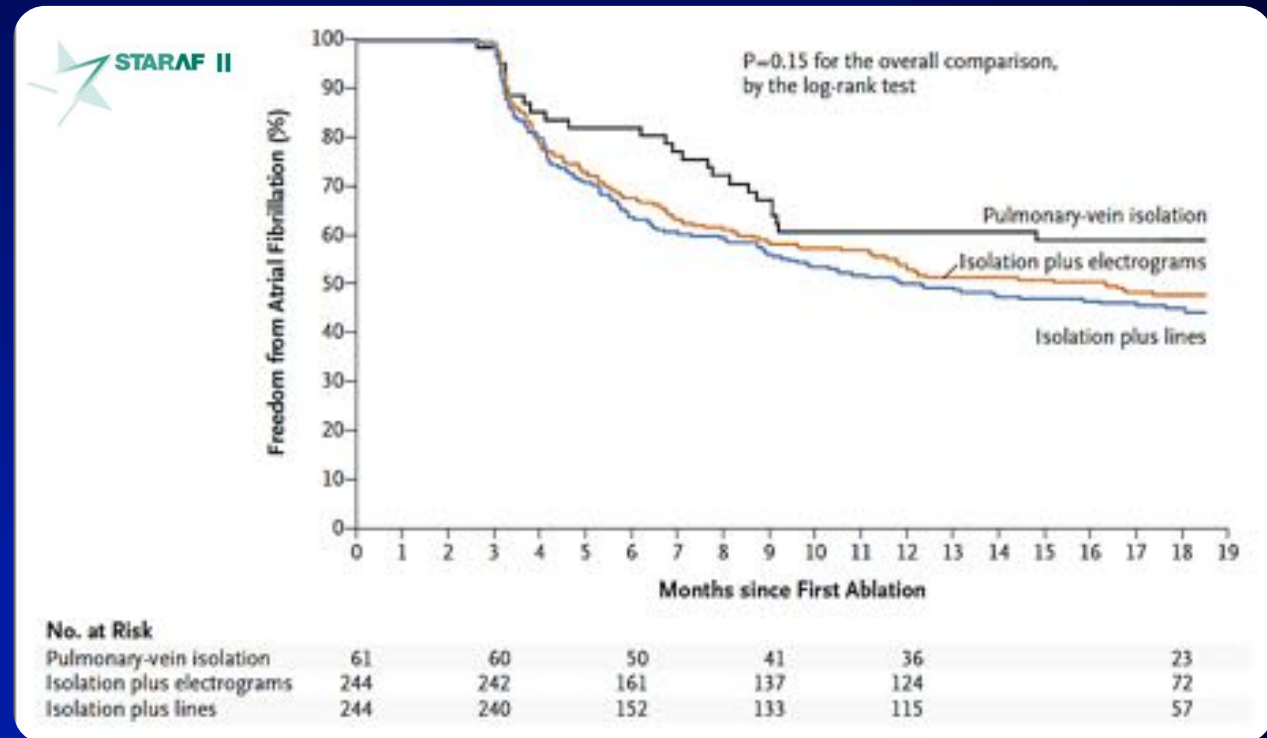
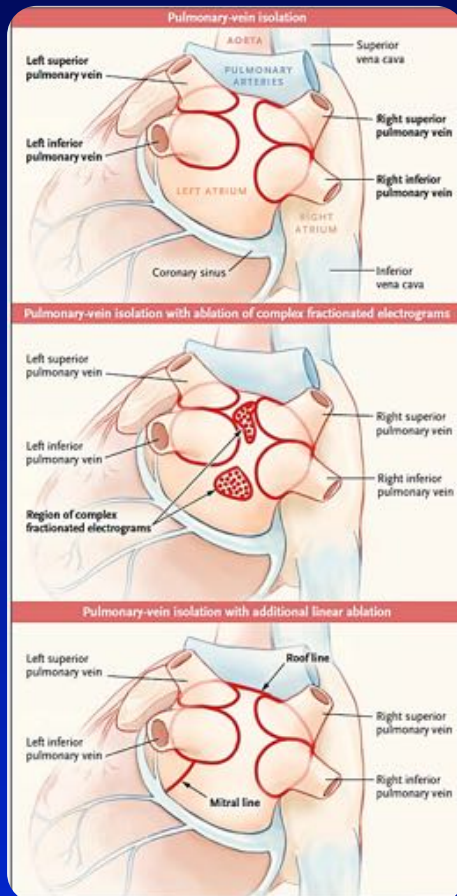
Were these atypical AFIs related to the ablation set-up?

| | PVI | | PVI + Lines | | CPVA | | CFAE |
|--------------------|------|-------------|-------------|----------------|-----------------------------|------------------|------|
| Gerstenfeld (2004) | 2.9% | Jais (2004) | 12% | Pappone (2004) | 10% 3.9% (+lines) | Nademanee (2004) | 8.3% |
| Cum (200) | | | | | | | 6 |
| Shah (200) | | | | | | | |
| Sator (2008) | 3.0% | | | Chae (2007) | 10% | | |
| | | | | Sawhney (2010) | 41% | | |

Reentry circuits localized close to the circular or linear lesions

Left atrial flutter ablation

Is extensive LA ablation (i.e. linear lesions) useful in AFib ablation?



Verma A et al, N Engl J Med 2015;372:1812-22

Could a more aggressive ablation strategy (i.e. MI conduction block during re-do preprocedures) have reduced the AFI recurrences?

- ↘ lateral or anterior mitral isthmus conduction block is feasible, but not easy to be obtained (failure in 12-35% of the cases)
- ↘ late conduction recovery through the linear lesion is frequent (44-58%)
- ↘ no clinical documentation of peri-mitral AFI