

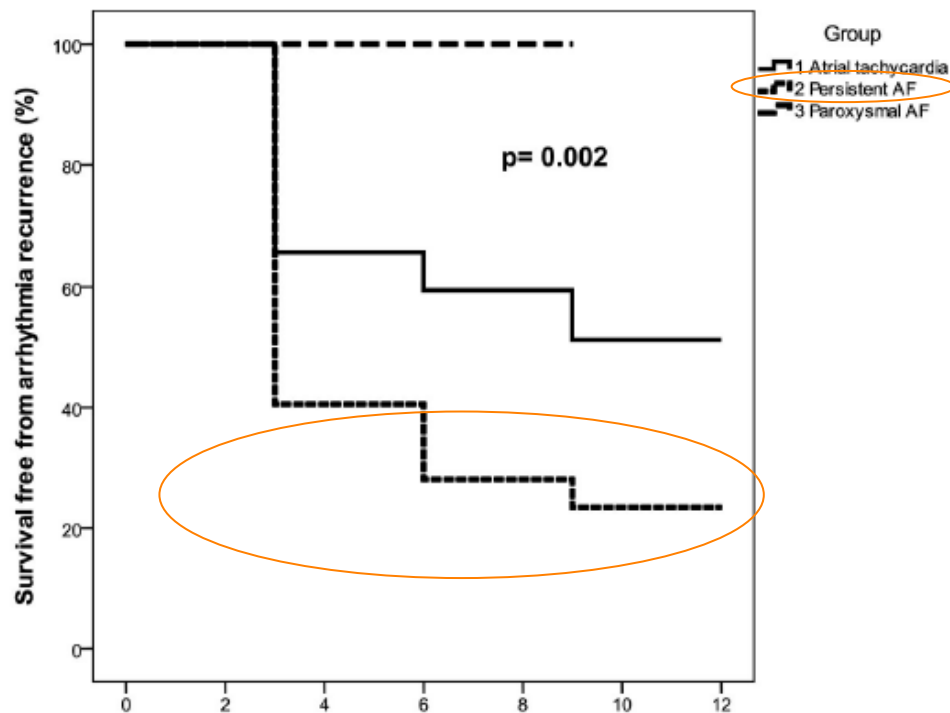
Redo AF ablation: my strategy

Sonia Busch

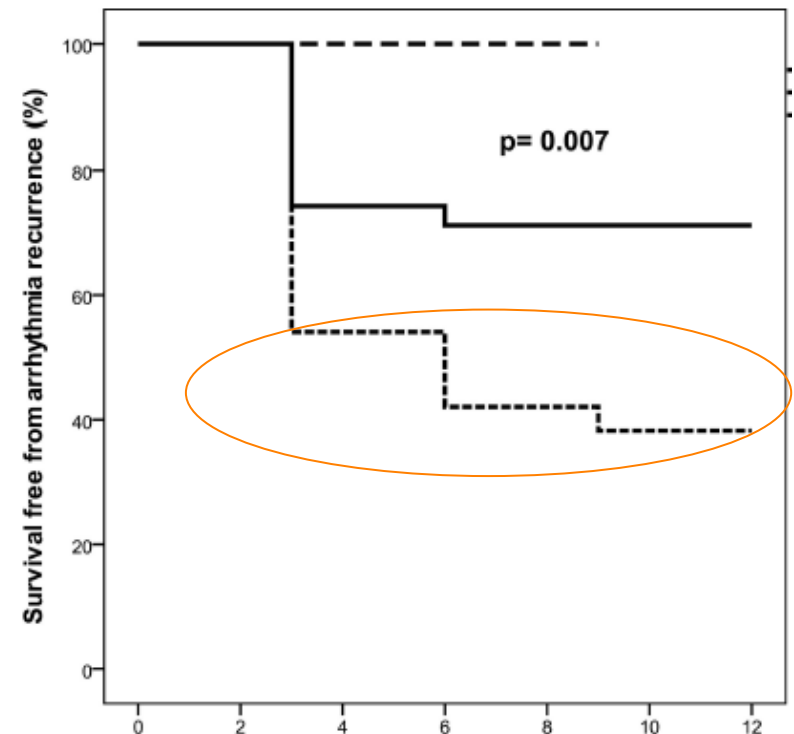
Coburg hospital. Germany.

Arrhythmia Type After Persistent Atrial Fibrillation Ablation Predicts Success of the Repeat Procedure

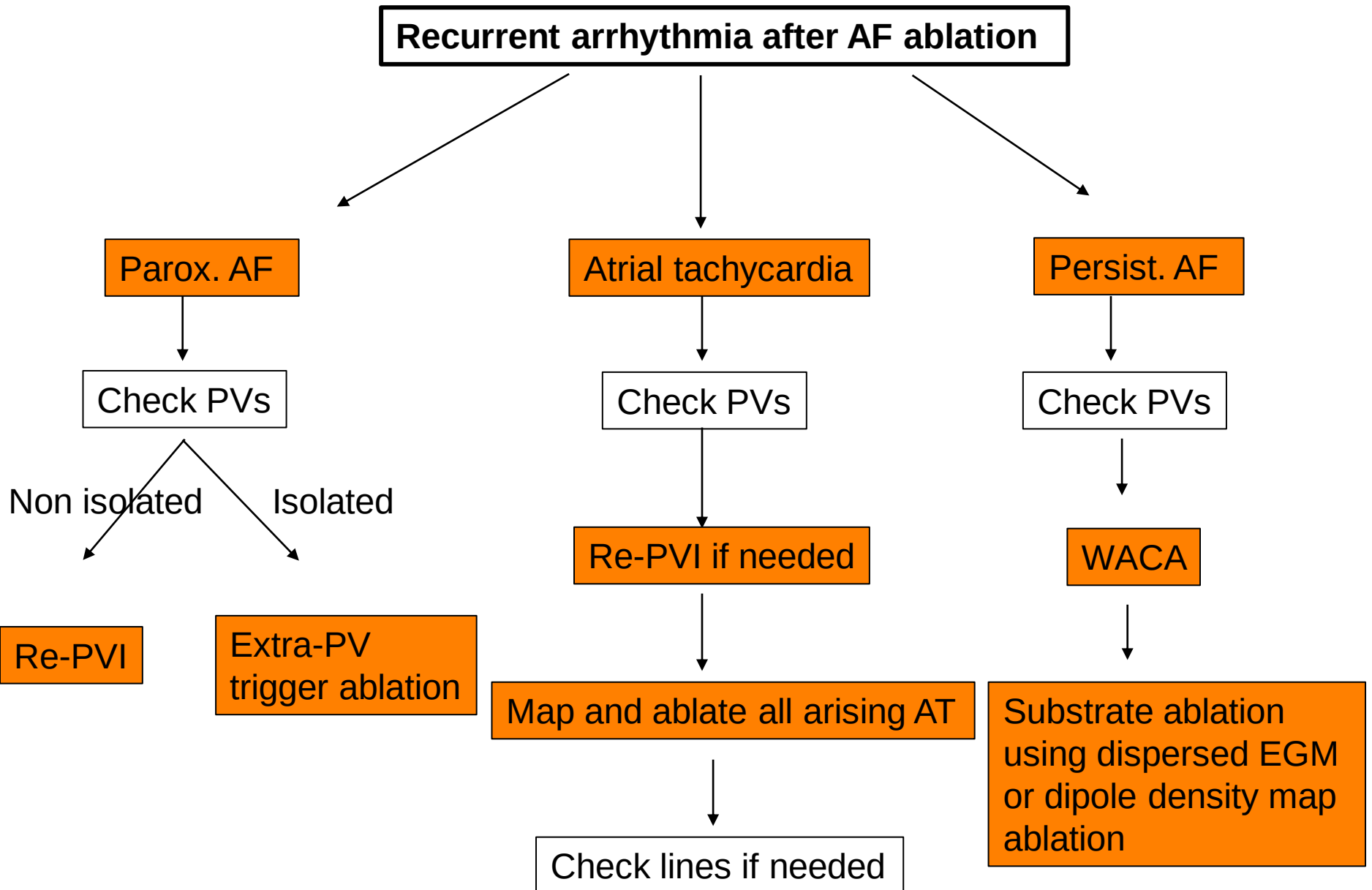
Sonia Ammar, MD; Gabriele Hessling, MD; Tilko Reents, MD; Stephanie Fichtner, MD; Jinjin Wu, MD; Pinjun Zhu, MD; Susanne Kathan, Dipl Biol; Heidi Louise Estner, MD; Clemens Jilek, MD; Christof Kolb, MD; Bernhard Haller, Dipl Stat; Isabel Deisenhofer, MD
(*Circ Arrhythm Electrophysiol.* 2011;4:609-614.)



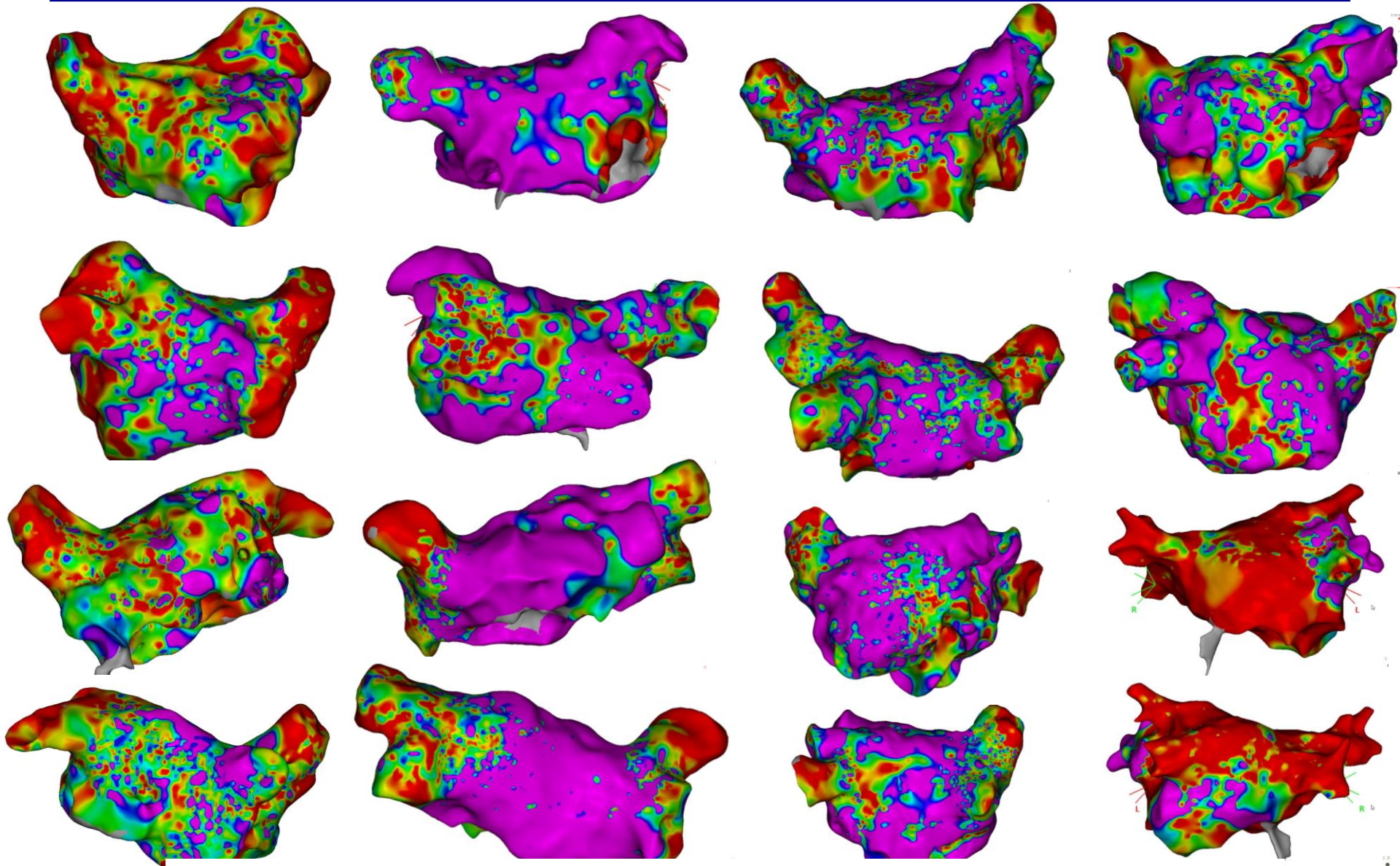
Survival free from atrial arrhythmia recurrence after a single repeat ablation procedures according to type of presenting arrhythmia for repeat ablation.



Survival free from atrial arrhythmia recurrence after multiple repeat ablation procedures according to type of presenting arrhythmia for repeat ablation.



Different AF substrates require An individualized ablation strategy



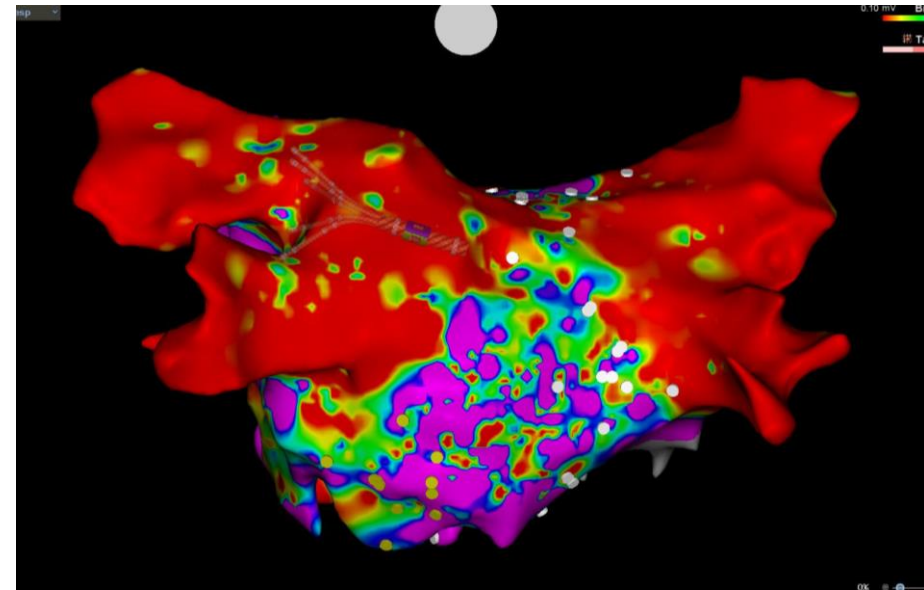
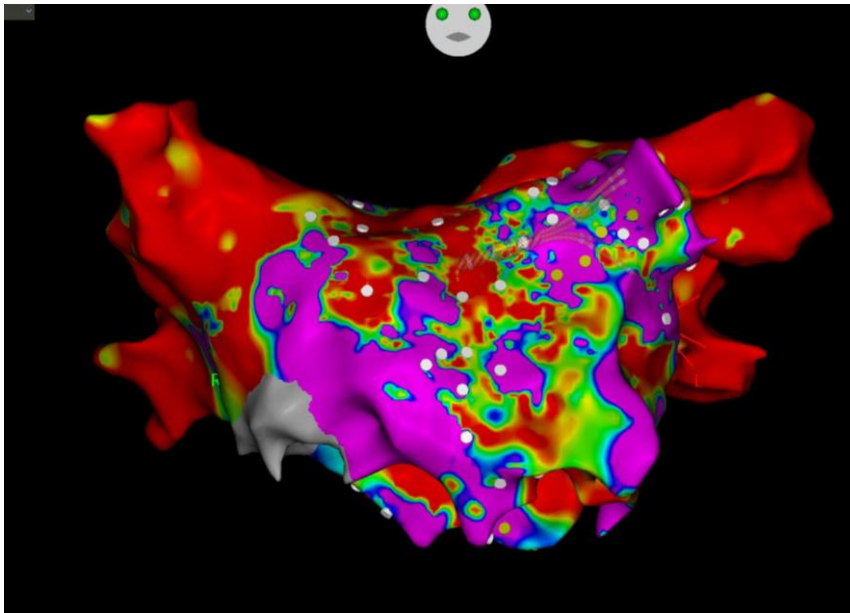
→ We have to adapt our strategy to the specificity of each atrium

Mapping and ablation of dispersed electrograms

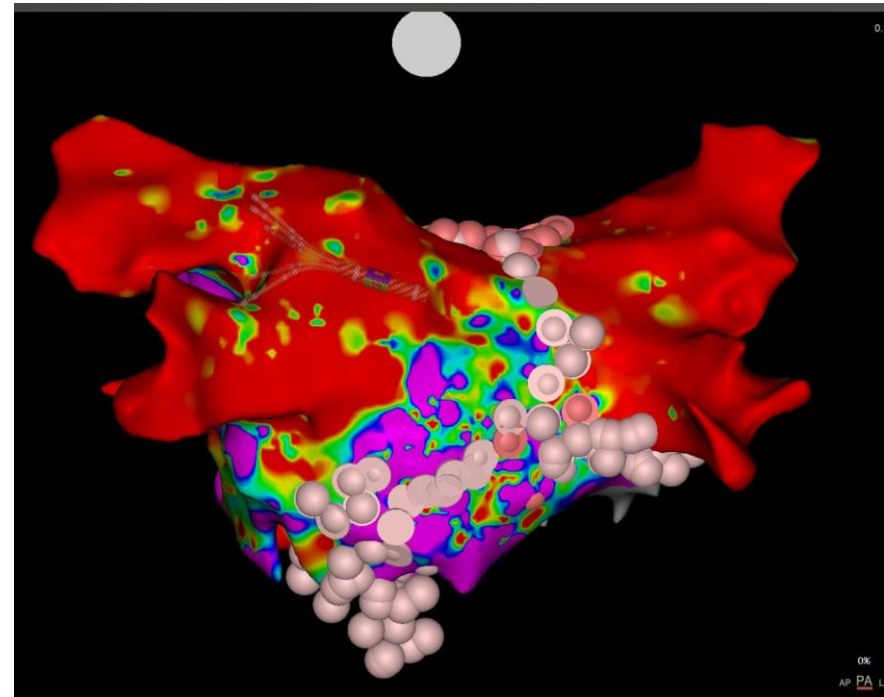
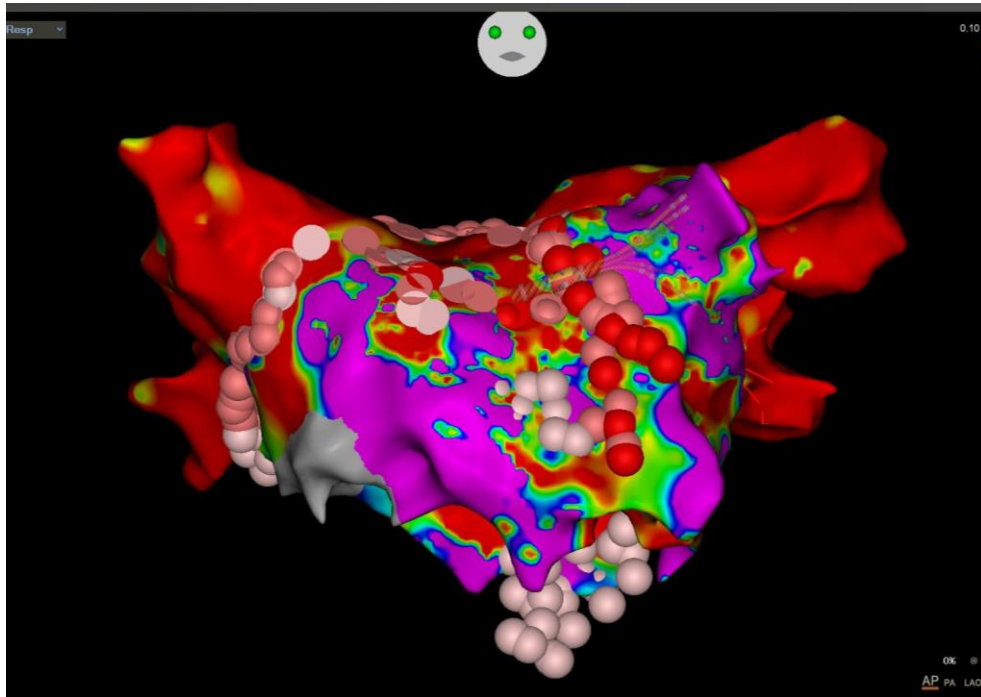


Case1: Redo ablation of dispersed electrograms

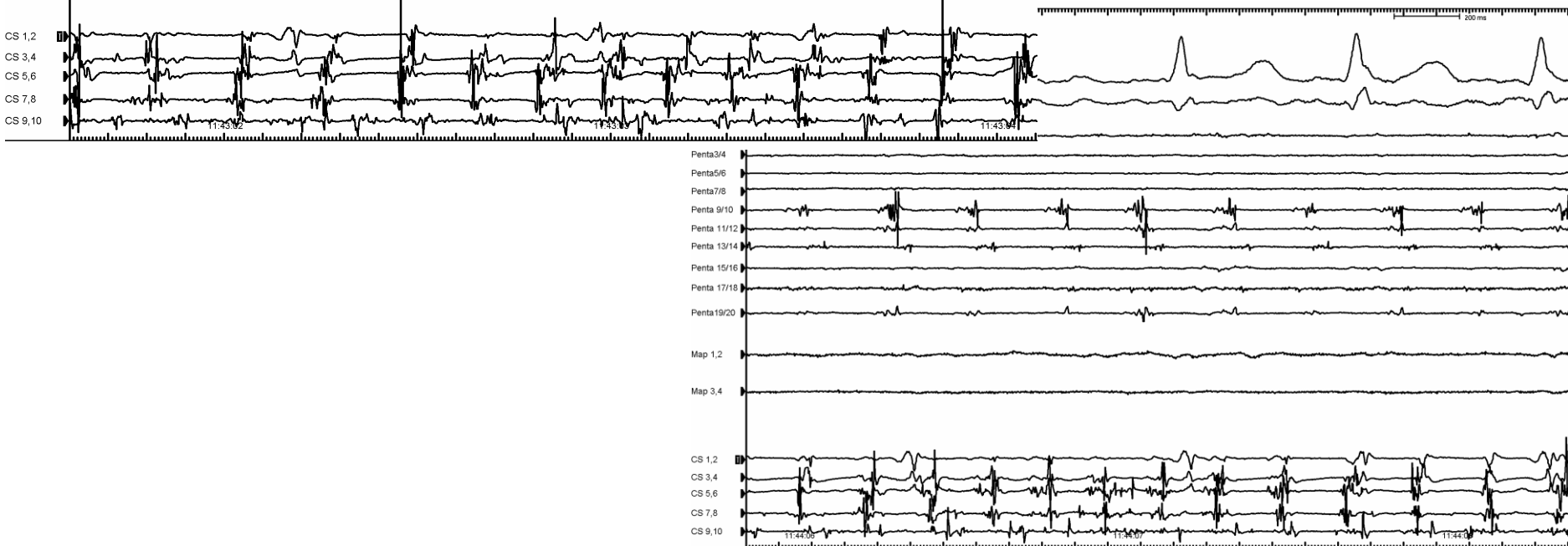
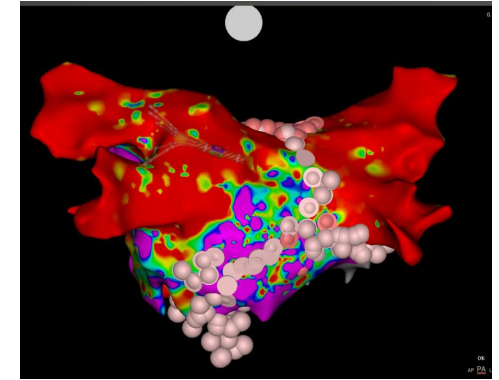
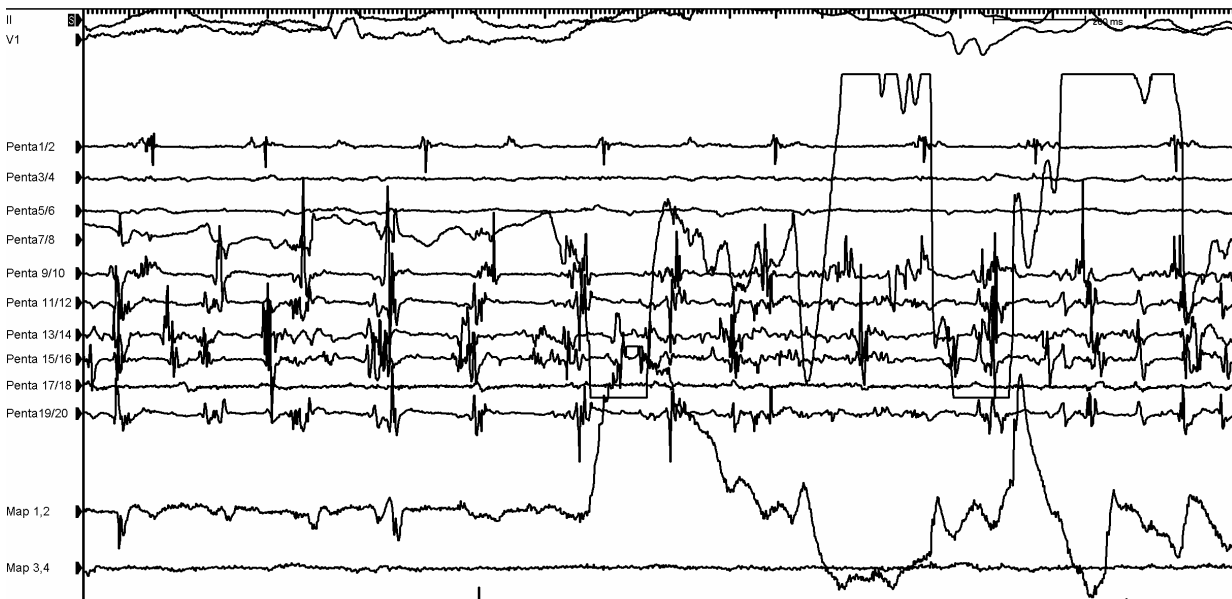
64 years, persist. AF since 2003, PVI 2013, Re-PVI with substrate ablation 2020, unsuccessful cardioversion



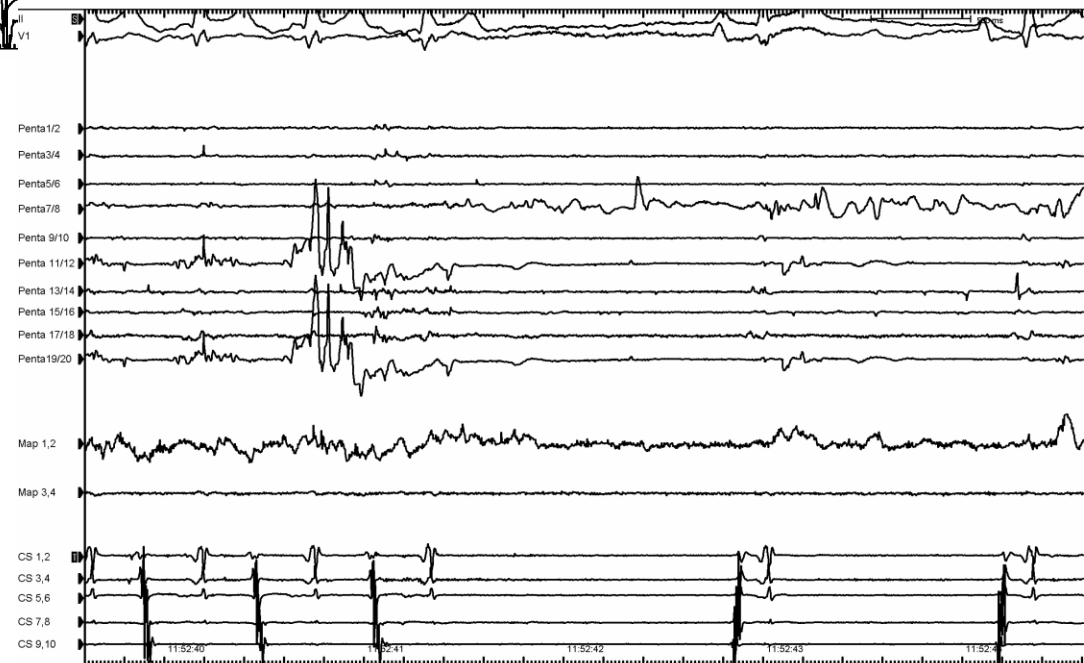
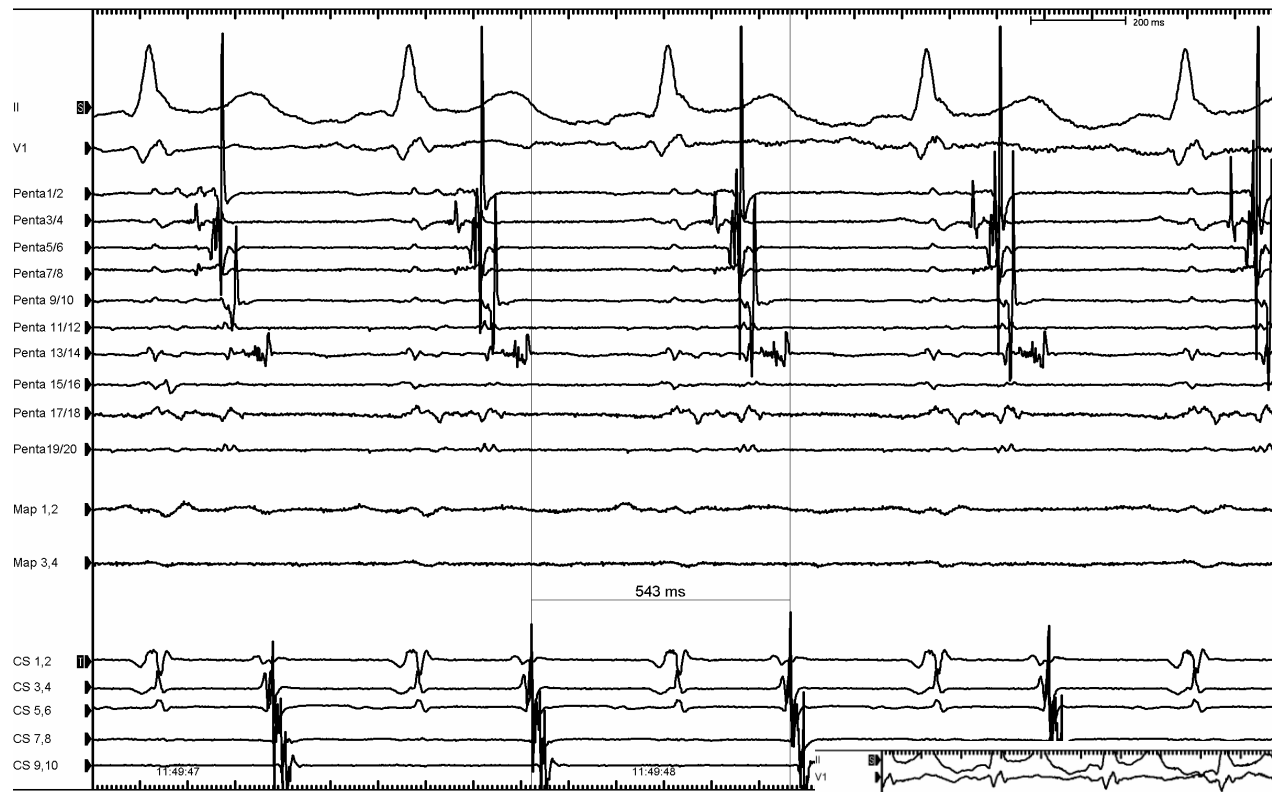
- Isolated PVs
- ***Combined voltage mapping and AI guided mapping of dispersed EGM:***
 - Extensive low voltage area
 - Dispersed EGM anterior, roof, inferior and posteroseptal



- Anterior and roof line, ablation inferior and septal
→ LAACL 150ms → 180ms

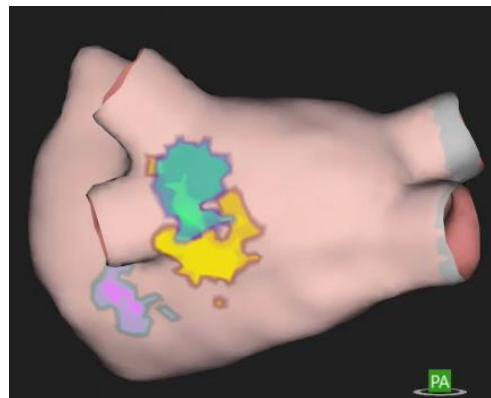


- Ablation posteroinferior LA → AFCL: 200ms, then ablation at CS ostium

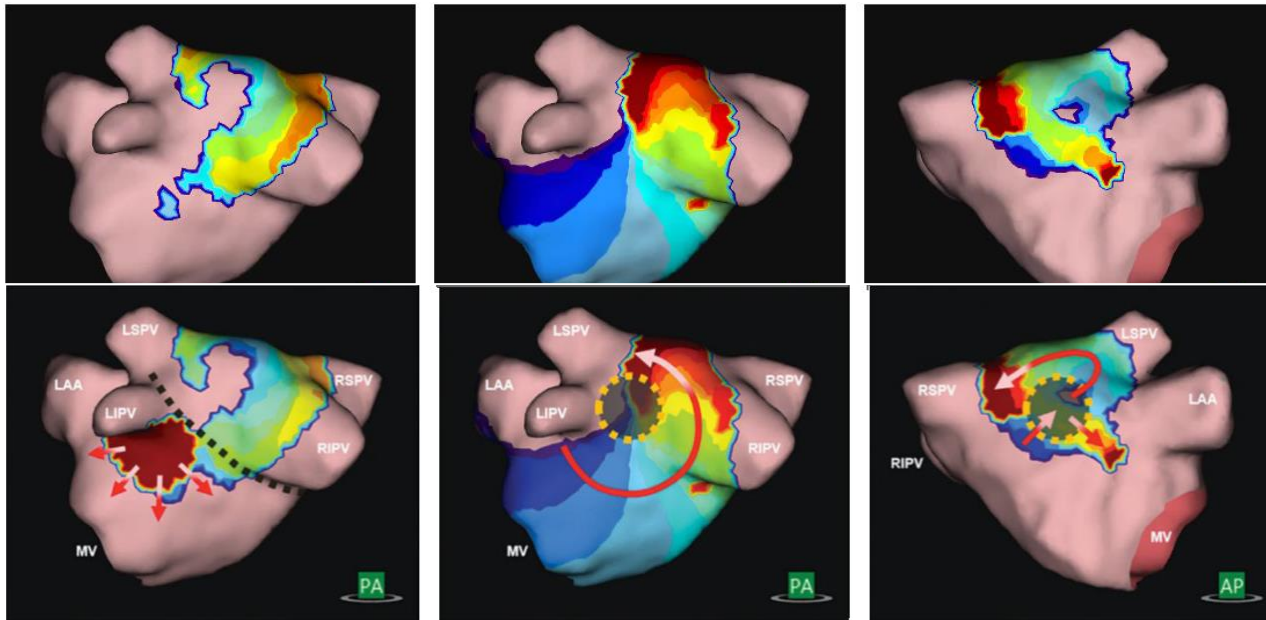


- Termination at the ridge

Dipole density mapping and core to boundary ablation approach



Identification of conduction patterns using dipole density mapping



Focal

Spreads radially from a single-point site with activation projecting outward in all directions from the center

Partial rotational

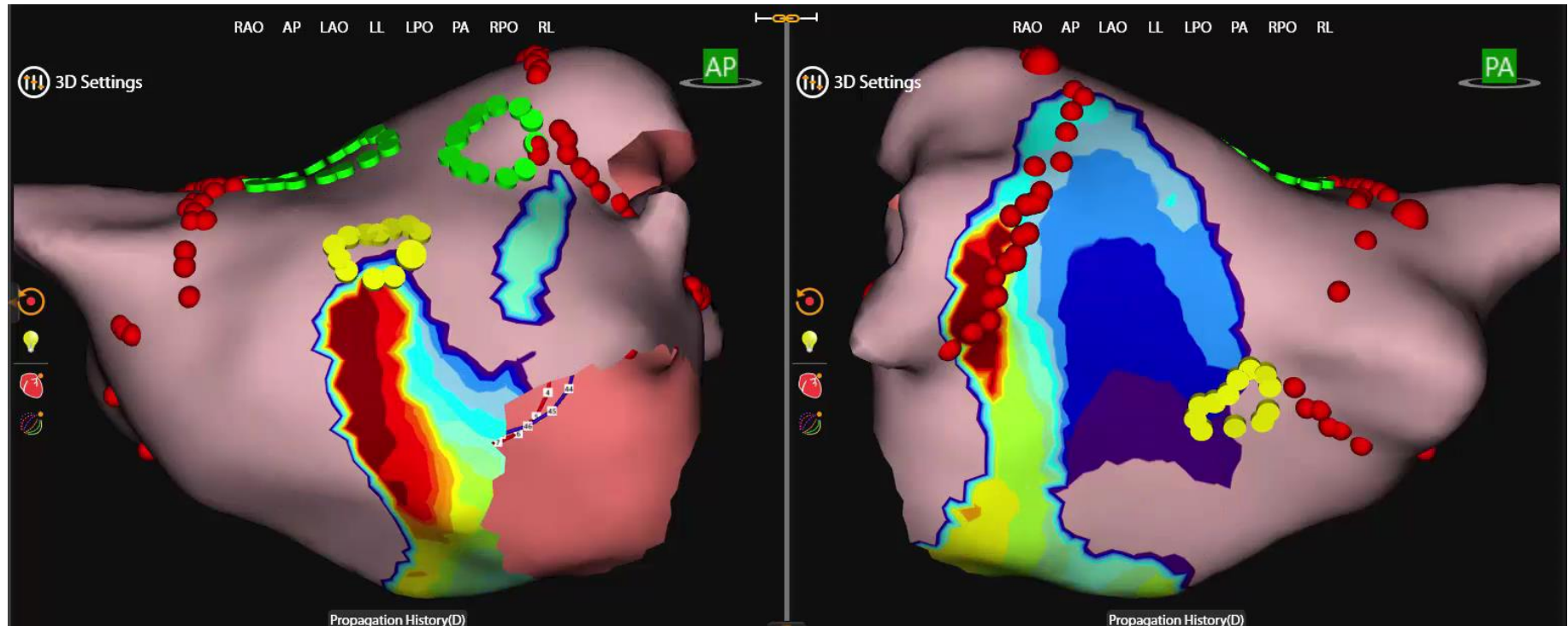
Local partial rotational activity (LPRA)
Shows rotational activation pattern around a small confined zone at least 270°

Irregular

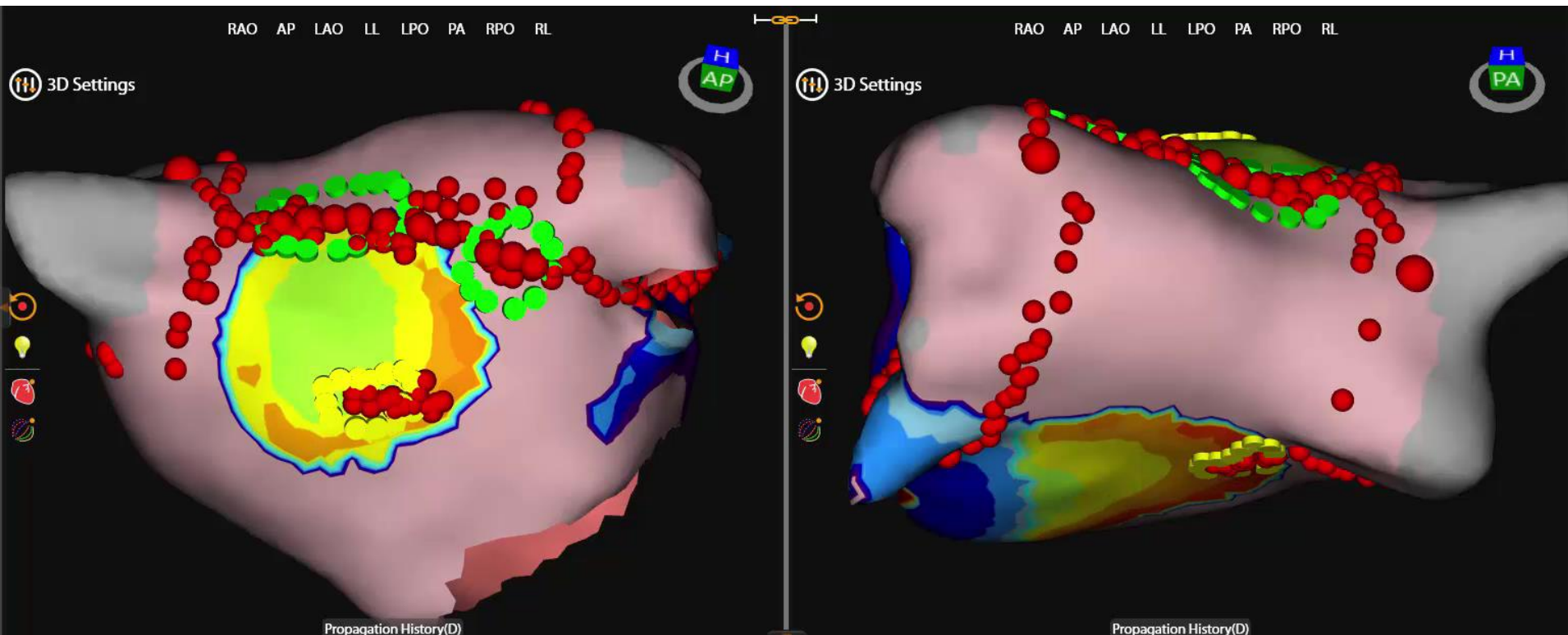
Local irregular activity (LIA)
Shows a pattern of multi-directional, irregular activation through a small confined zone

Case 2: Dipole density mapping and core to boundary ablation

Patient with recurrent persist. AF after PVI

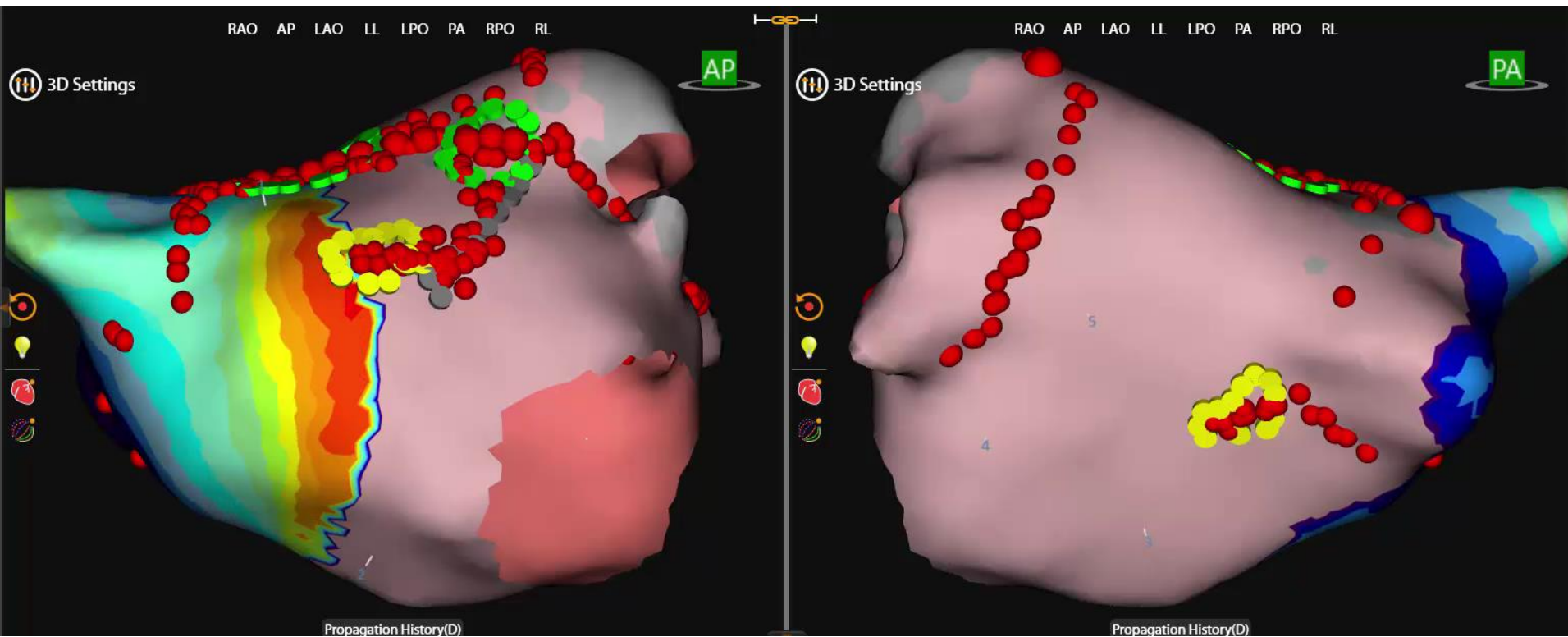


Map 1: LIA (yellow) anterior and posterior, LRA (green) on the roof.



Map 2: still LIA anterior with block of the roof line

Core-to-boundary strategy: core ablation lesions that are “anchored” to the nearest non-conducting boundary (PVI lesion set, mitral annulus).



Map 3: Termination to sinusrhythm

- Recurrence of persistent AF after AF ablation remains a challenge
- An individualized substrate ablation strategy, is necessary to improve long-term results.



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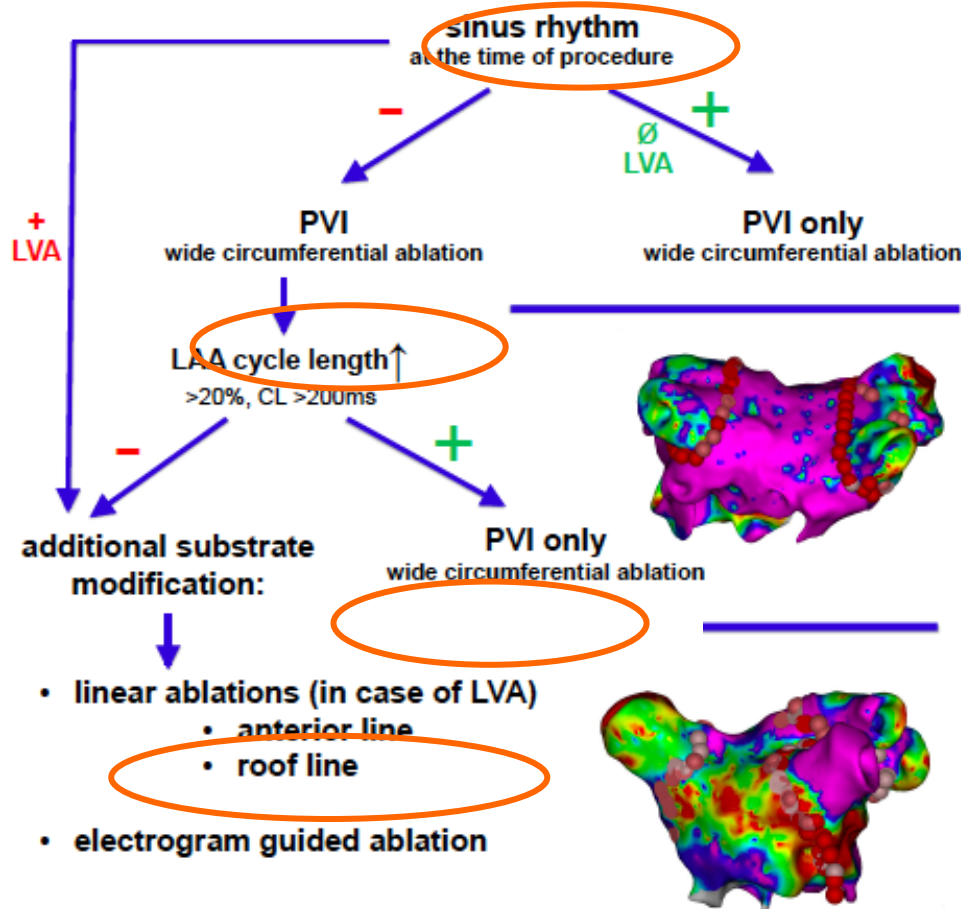
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Individualized ablation approach in Coburg

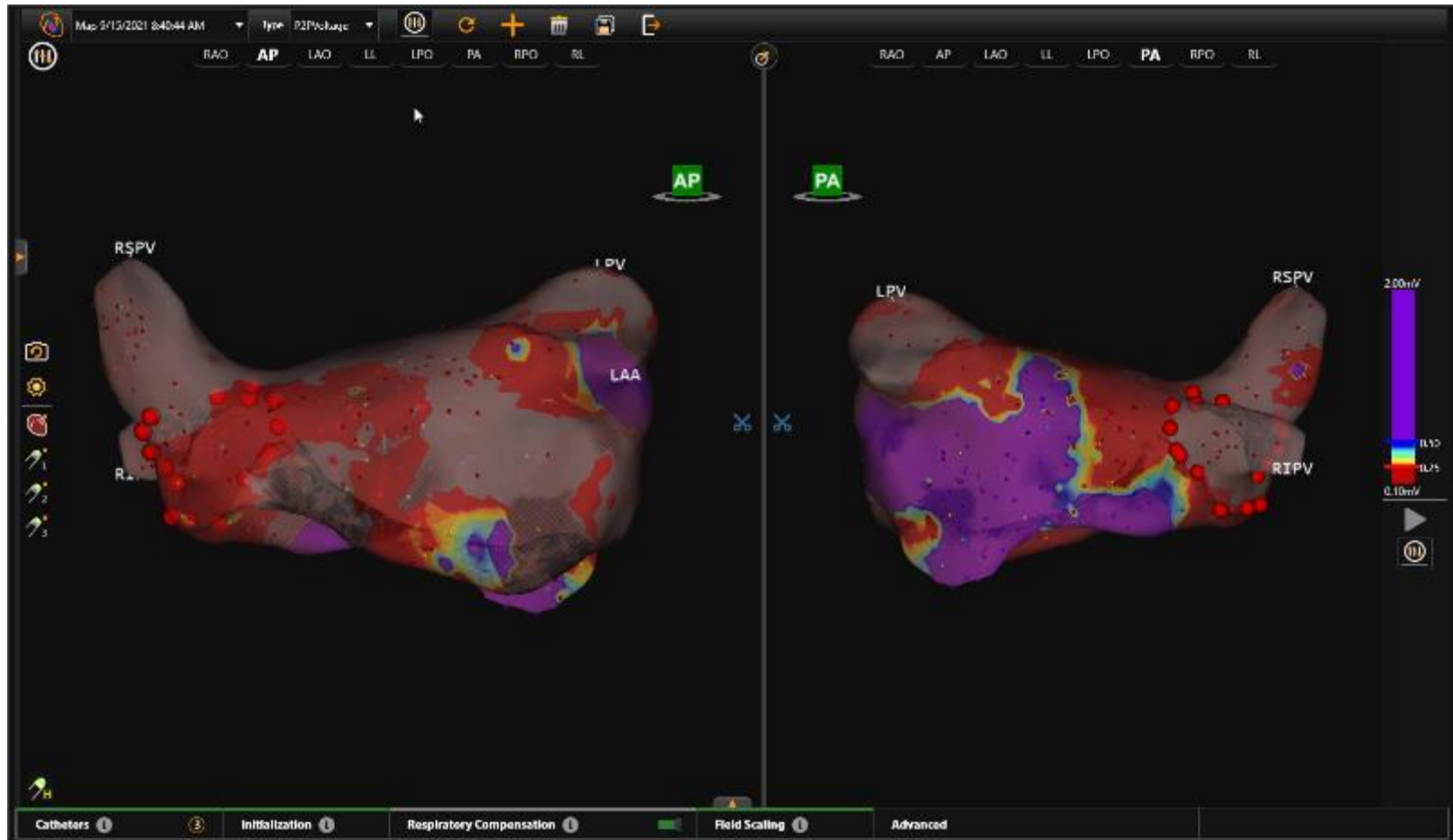


Ablation depending on:

- Rhythm at beginning of procedure
- Effect of PVI (AFCL prolongation, termination)
- Low voltage area.

Case 2

Patient with sympt. persis. AF. 3rd. Ablation (PVI + lines), presented in SR



Map 1 – Contact Map Left Atrium

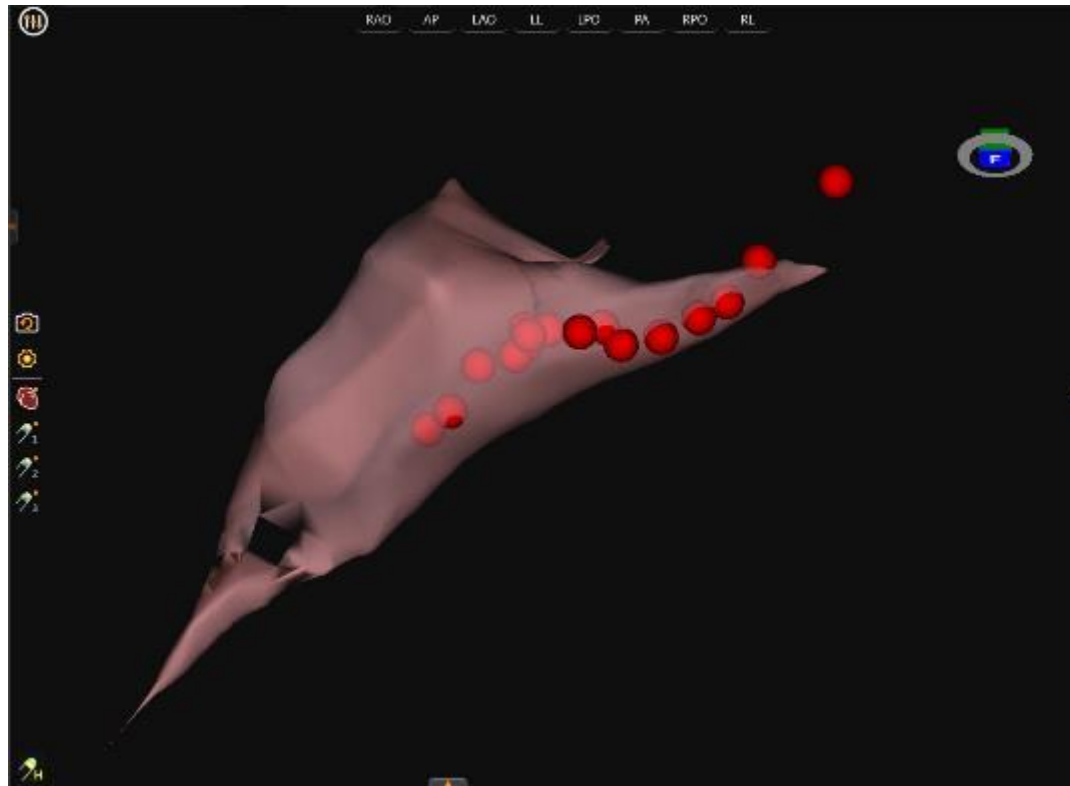
Extensive low voltage area, RIPV not isolated

Case 2

After Reisolation of RIPV -> Induction AF/AT

Stable AT (CL: 340 ms)

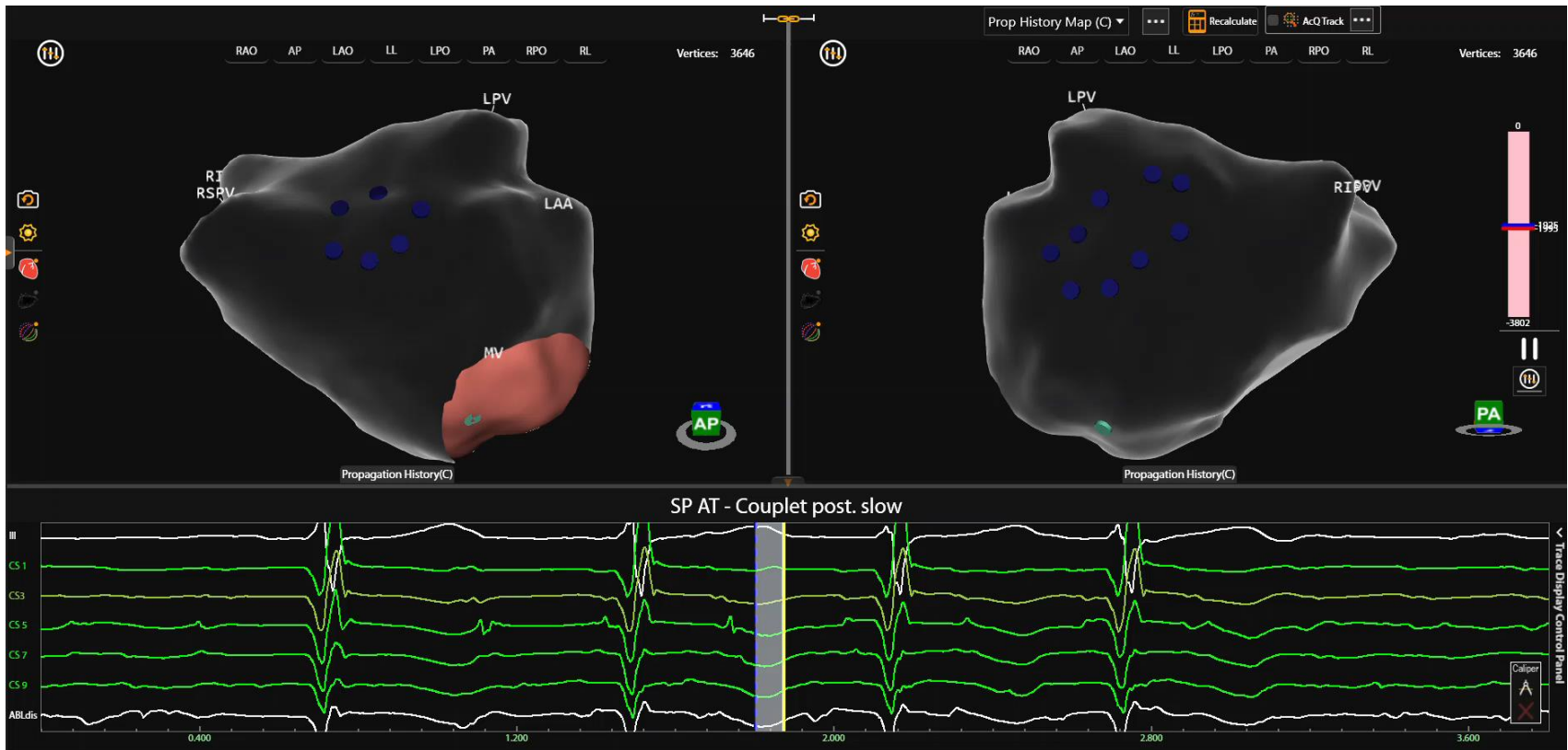
PPI CS distal > PPI CS proximal



Map 2 – Contact Map RA

CTI Ablation → Termination of typical flutter

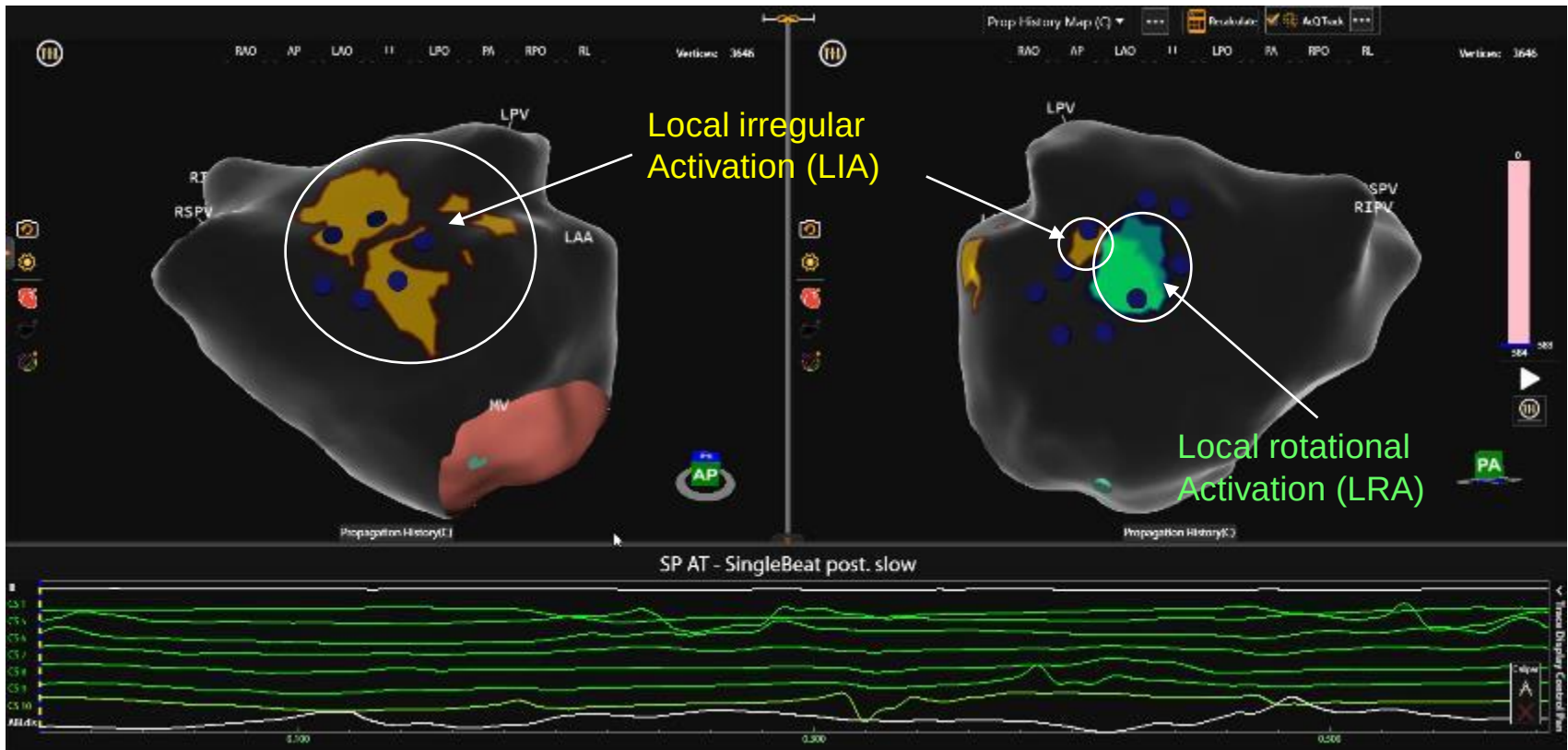
Case 2



Map 3 - Single Position Map in LA

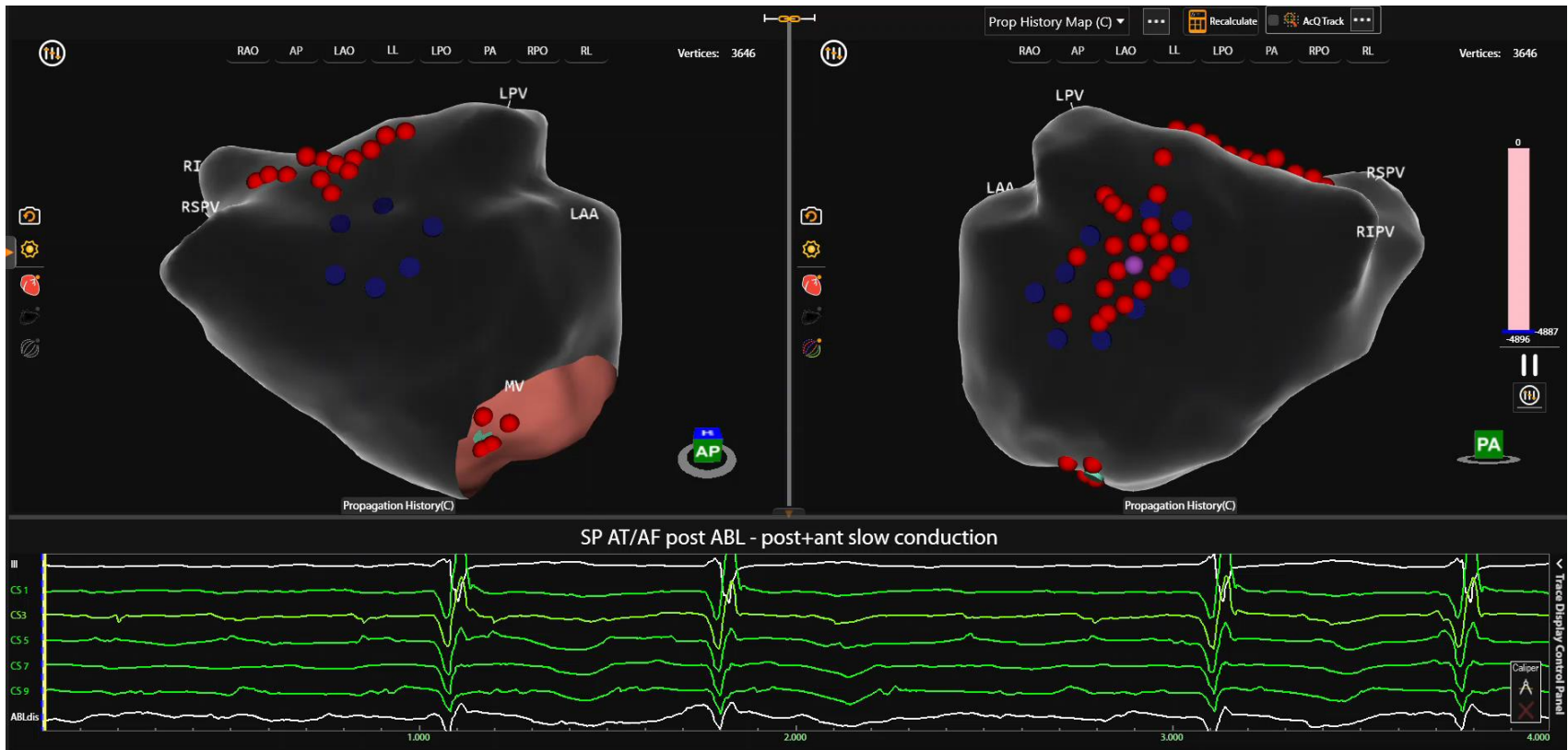
Afib Couplet -> posterior & anterior driver

Case 2



Map 3 - Single Position Map in LA
AcQTrack

Case 2



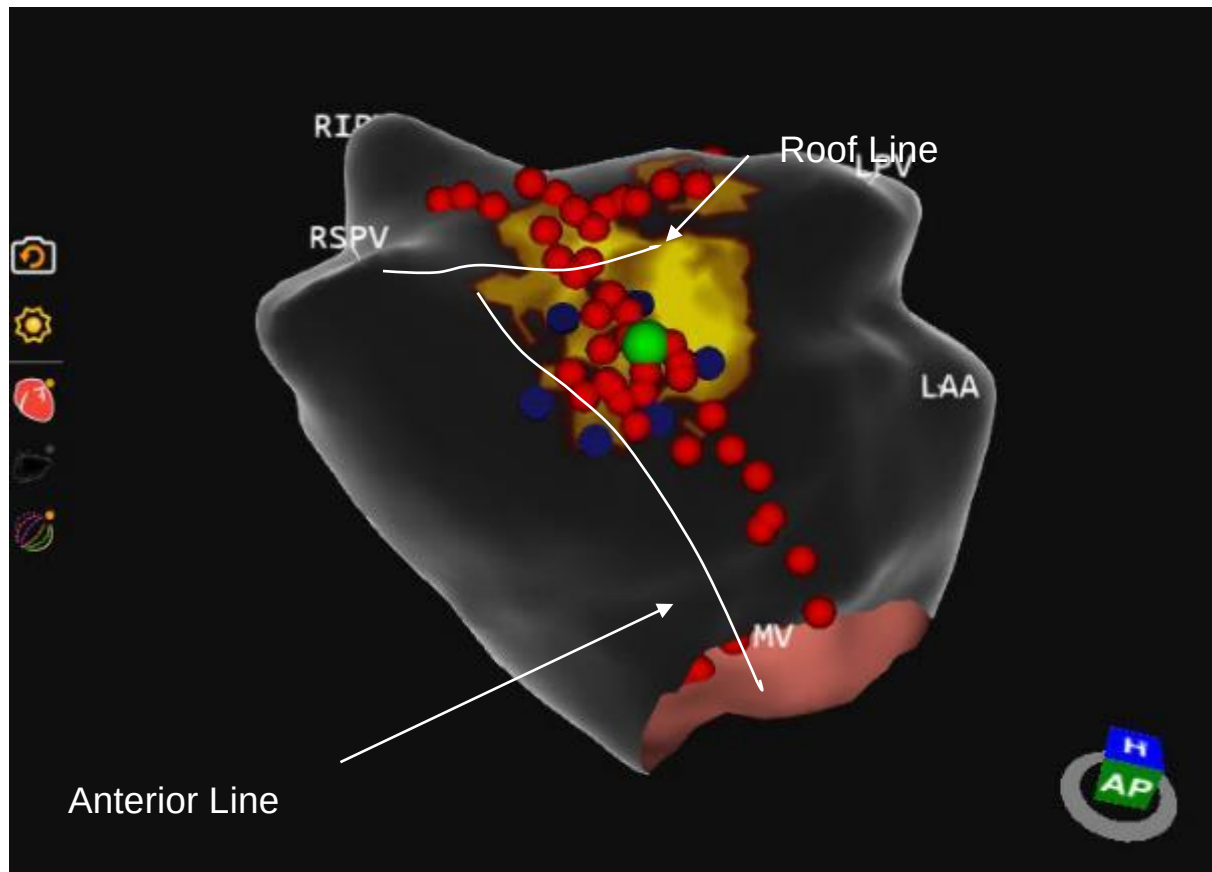
Map 4 - Single Position Map in LA

Afib after 1st ablation set (roof line & posterior CPC)

Map 4 - Single Position Map in LA

Lesions after Termination.

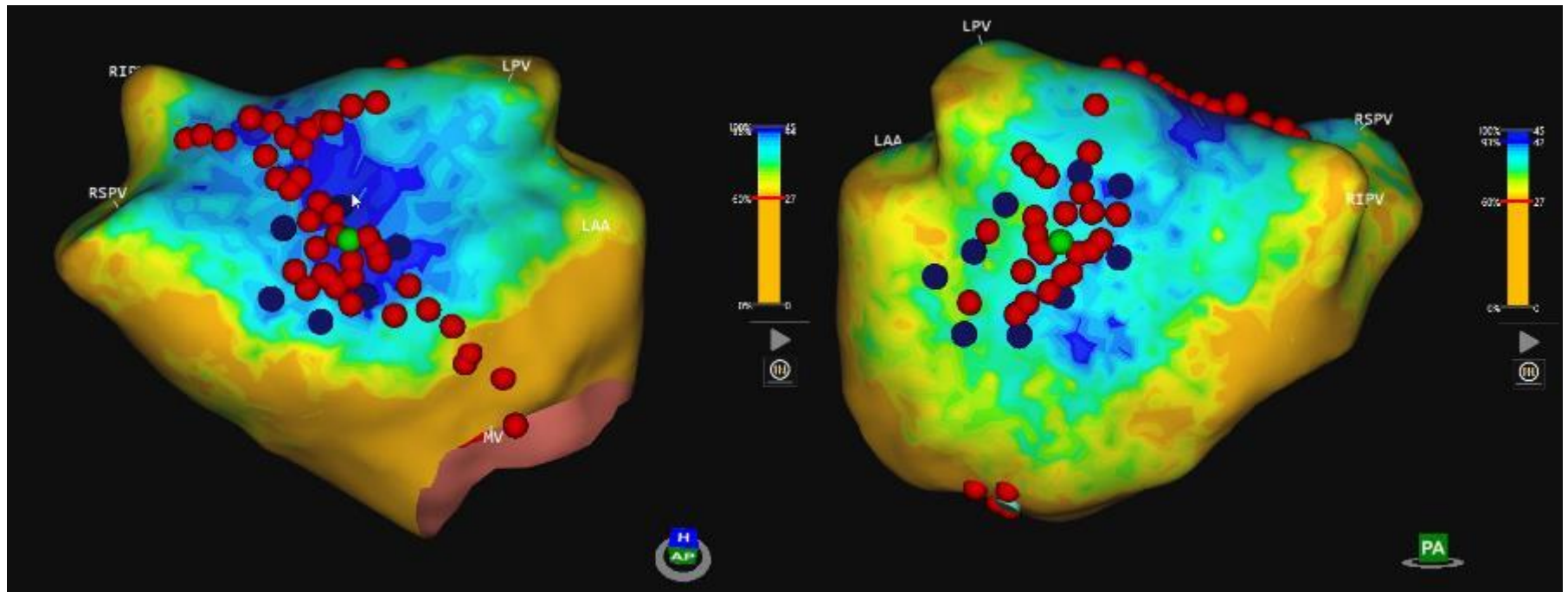
Case 2



Map 4 - Single Position Map in LA

LIA -> Roof Line & Anterior Line (in detail)

Case 2



Map 4 - Single Position Map in LA

Composite Map: blue displays a slow zone.

