

## **ABLAZIONE DELLA FIBRILLAZIONE ATRIALE: HOT NEWS**

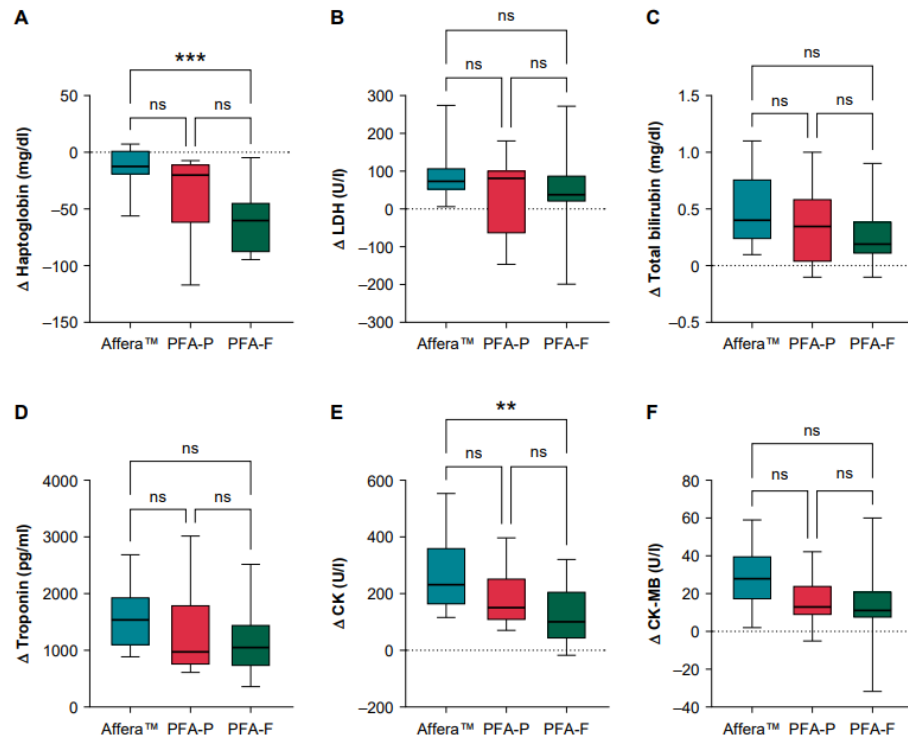
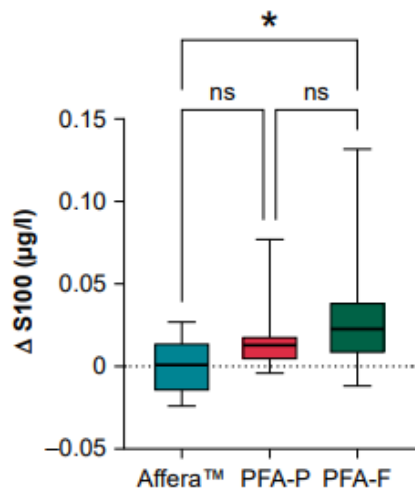
**PFA o RF: vantaggi, applicazioni e la possibilità di decidere direttamente durante la procedura con un catetere a ampia superficie**

**Giovanni B. Perego**

**IRCCS Auxologico S. Luca**

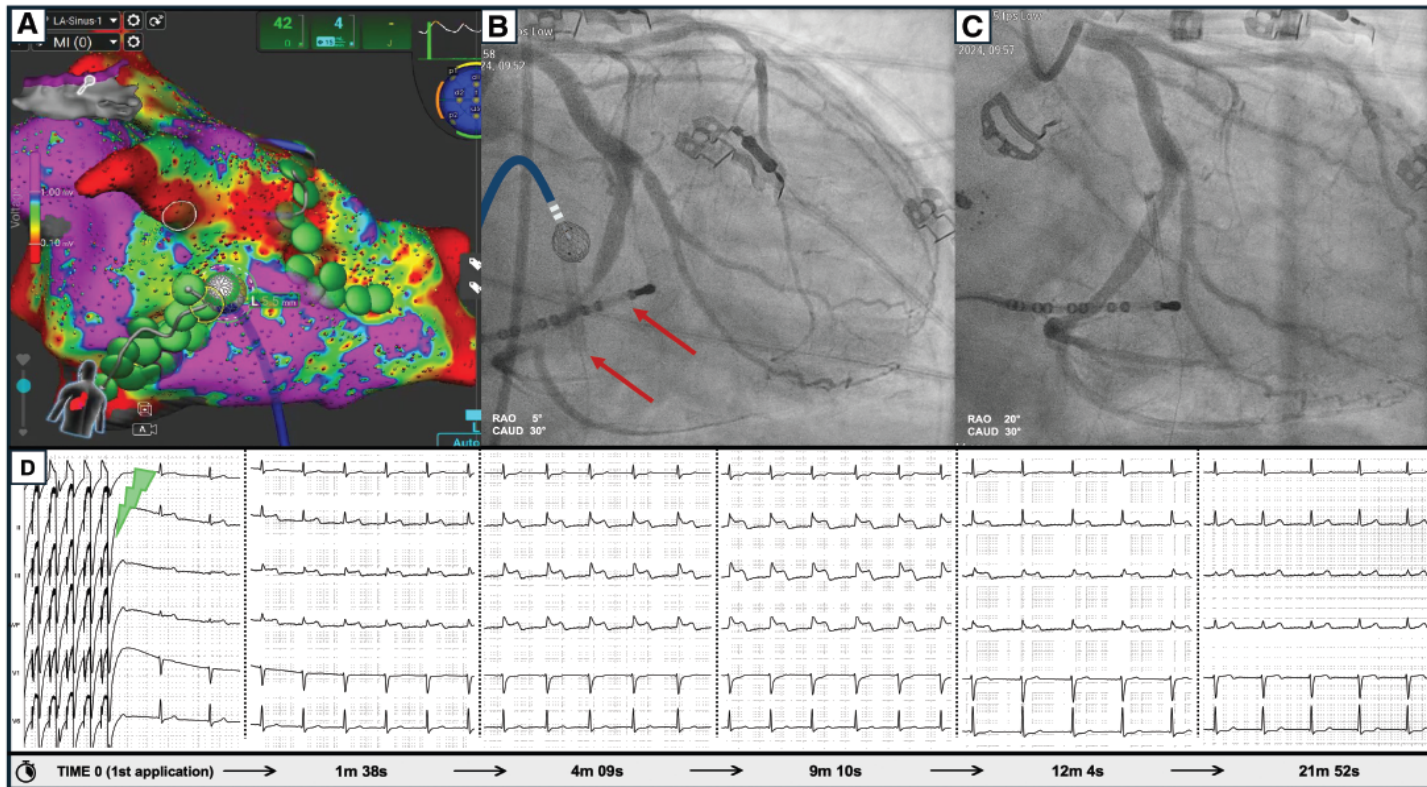


## Haemolysis and myocardial and neural injury after monopolar pulsed field ablation using a novel lattice-tip catheter to treat atrial fibrillation

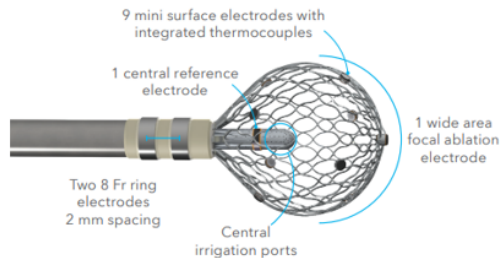


Europace (2025) 27, euaf210  
<https://doi.org/10.1093/europace/euaf210>





*Circ Arrhythm Electrophysiol.* 2024;17:e012923. DOI: 10.1161/CIRCEP.124.012923



## Pulsed Field

Proprietary unipolar, biphasic waveform

Lesion size

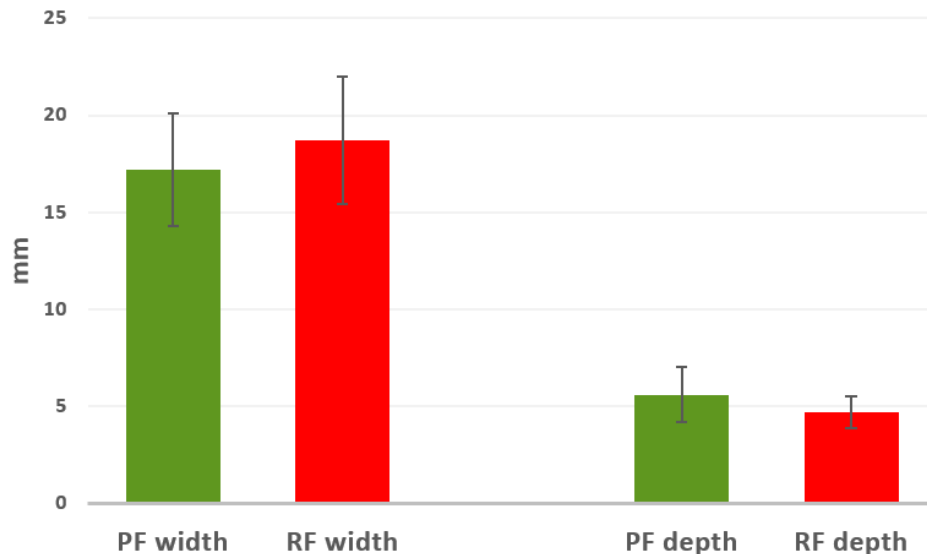
- Width:  $17.2 \pm 2.9$  mm
- Depth:  $5.6 \pm 1.4$  mm

## Radiofrequency

Settings -  $75^\circ\text{C}/5$  s

Lesion size

- Width:  $18.7 \pm 3.3$  mm
- Depth:  $4.7 \pm 0.8$  mm

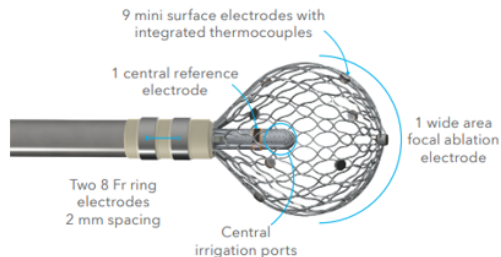


[Circulation: Arrhythmia and Electrophysiology \(ahajournals.org\):](https://doi.org/10.1161/CIRCEP.121.010375)

<https://doi.org/10.1161/CIRCEP.121.010375>

<https://doi.org/10.1161/CIRCEP.118.007090>





## Pulsed Field

Proprietary unipolar, biphasic waveform

Lesion size

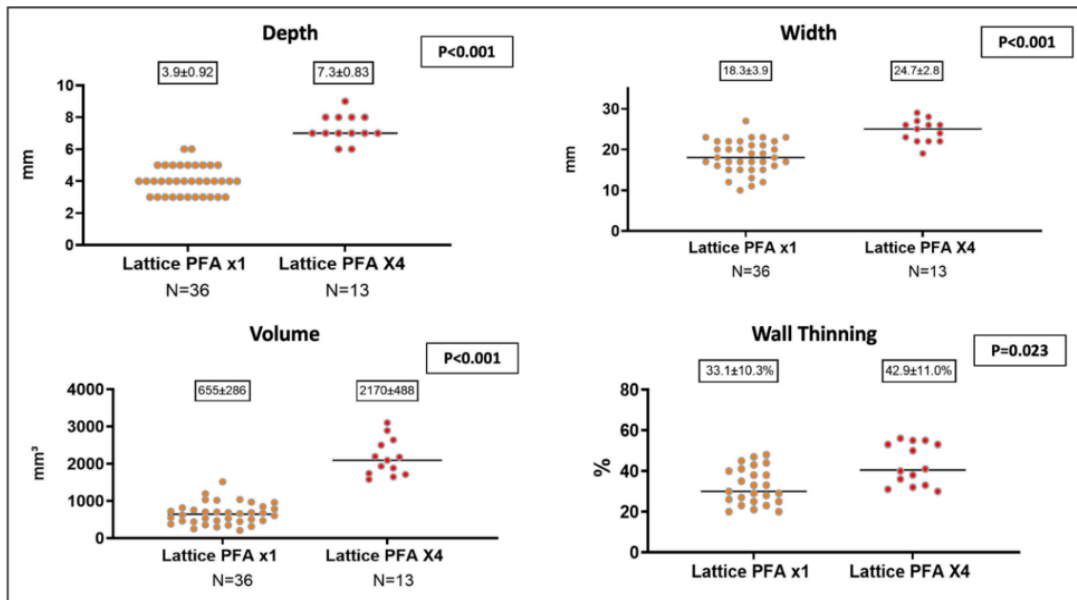
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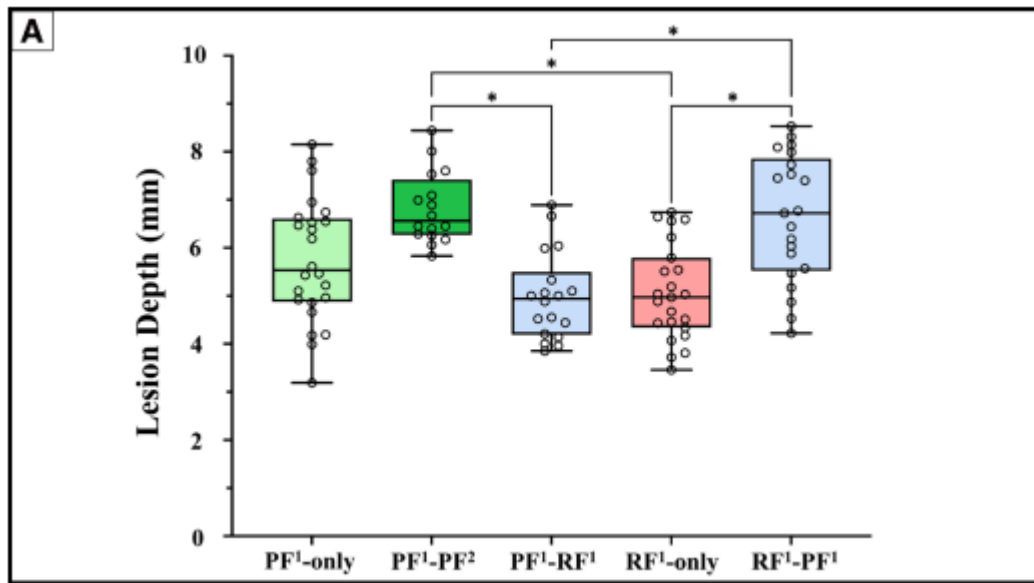
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## Maximizing Lesion Depth With the Lattice-Tip Catheter: A Preclinical Comparison of Single, Double, and Mixed Pulsed-Field and Radiofrequency Applications

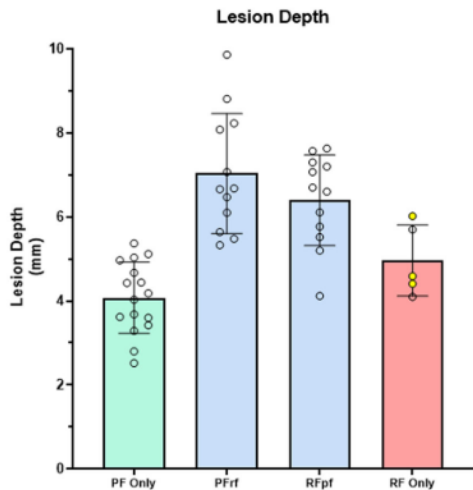
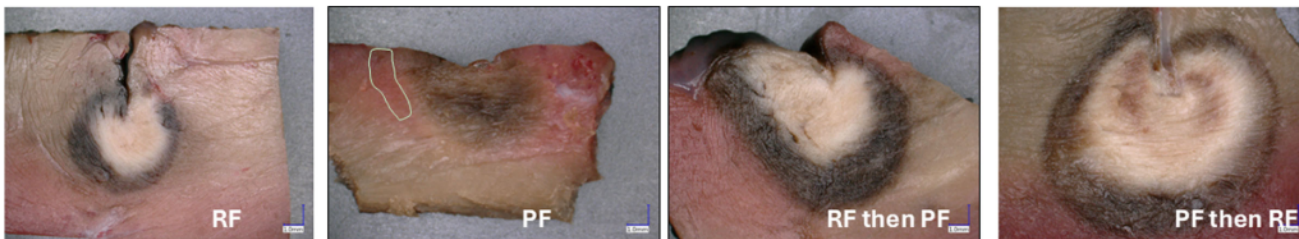


“unless one wishes to use RF for a specific reason such as avoiding vasospasm at annular sites or for assured autonomic modulation at sites with epicardial ganglionated plexi, we think there remains **little advantage to combining RF and PF for the sole purpose of improving depth in the atria**. The pathological assessment of the outer rim of the combined sequence lesions indicated changes consistent with PF effects, which would suggest that any additional depth obtained with RF1-PF1 could just as easily be provided by an additional PF application, as seen with PF1-PF2.”

Circ Arrhythm Electrophysiol. 2026;19:e014799. DOI: 10.1161/CIRCEP.125.014799



# RF & PFA sequential application

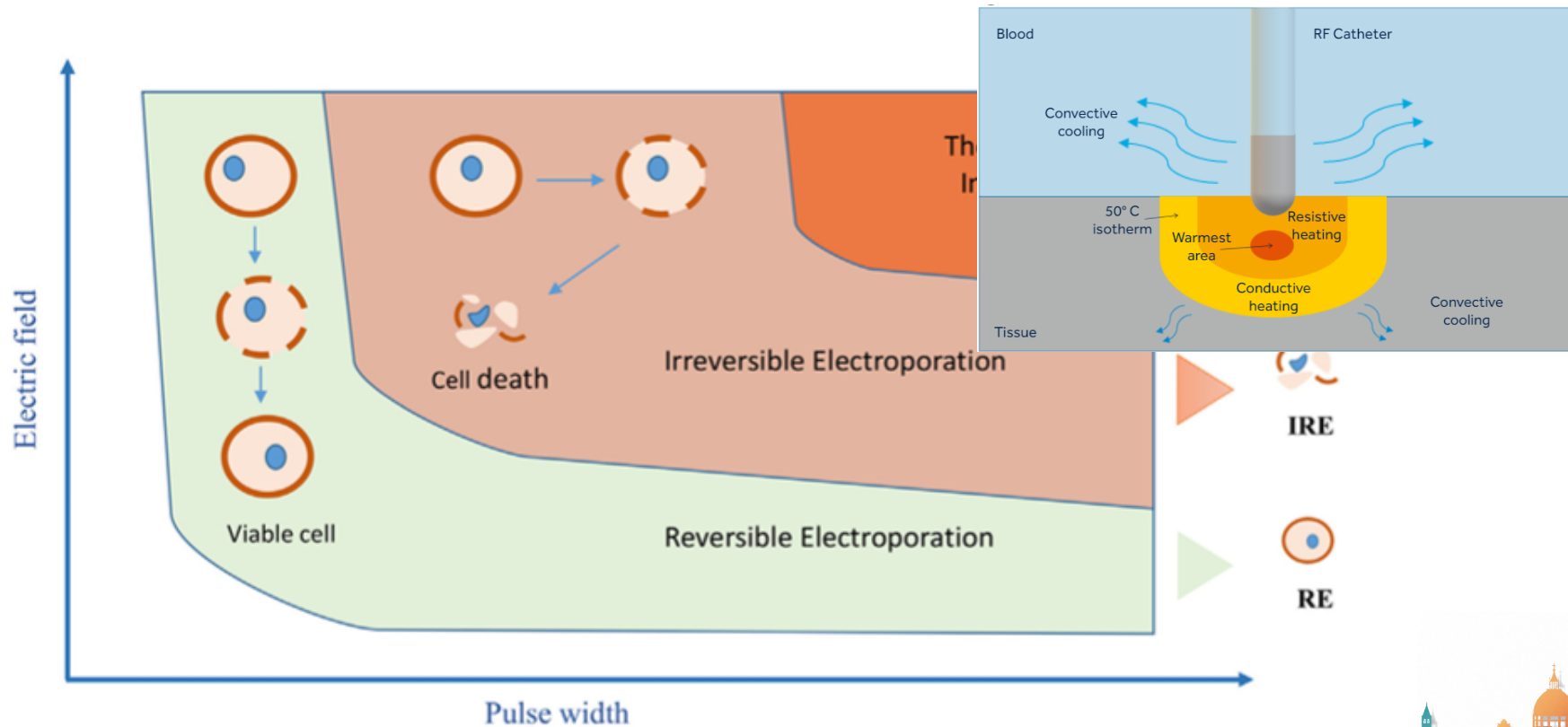


- RF followed by PF ablation in the same location creates lesions that are deeper than PF alone.
- PF followed by RF ablation in the same location also creates lesions that are deeper than PF alone.
- The histology of both lesions is characterized by a central zone of coagulative, thermal necrosis (typical of RF) surrounded by a hemorrhagic zone and pale zone of apoptosis typically seen after PF ablation.

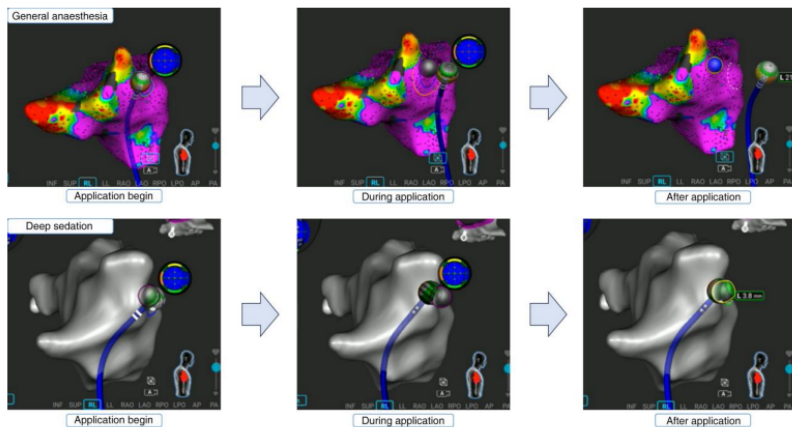
Verma A et al.. Circulation: Arrhythmia and Electrophysiology. 2025;18:e013143. DOI:



# Reversible electroporation



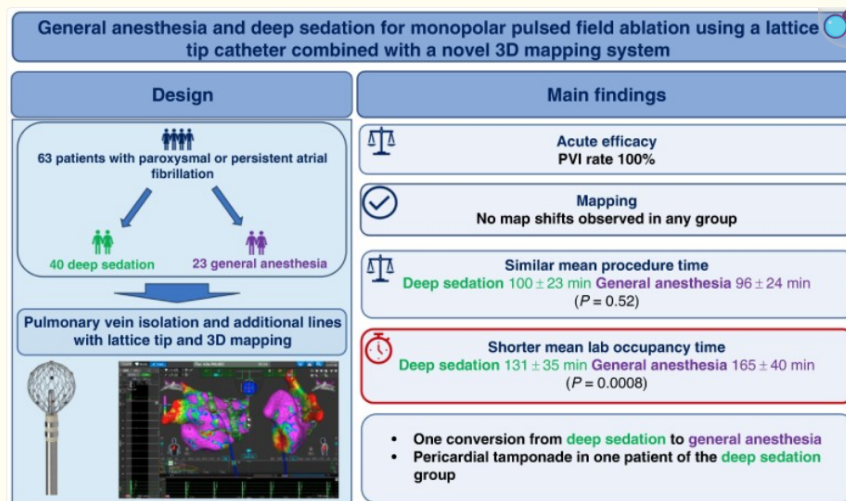
## Initial real-world data on catheter ablation in patients with persistent atrial fibrillation using the novel lattice-tip focal pulsed-field ablation catheter



**Figure 4** Comparison of the catheter stability on the three-dimensional mapping system during an application between deep sedation (upper) and general anaesthesia (below). The catheter position dislocated forward due to a diaphragm contraction and subsequent coughing in the procedure under deep sedation.

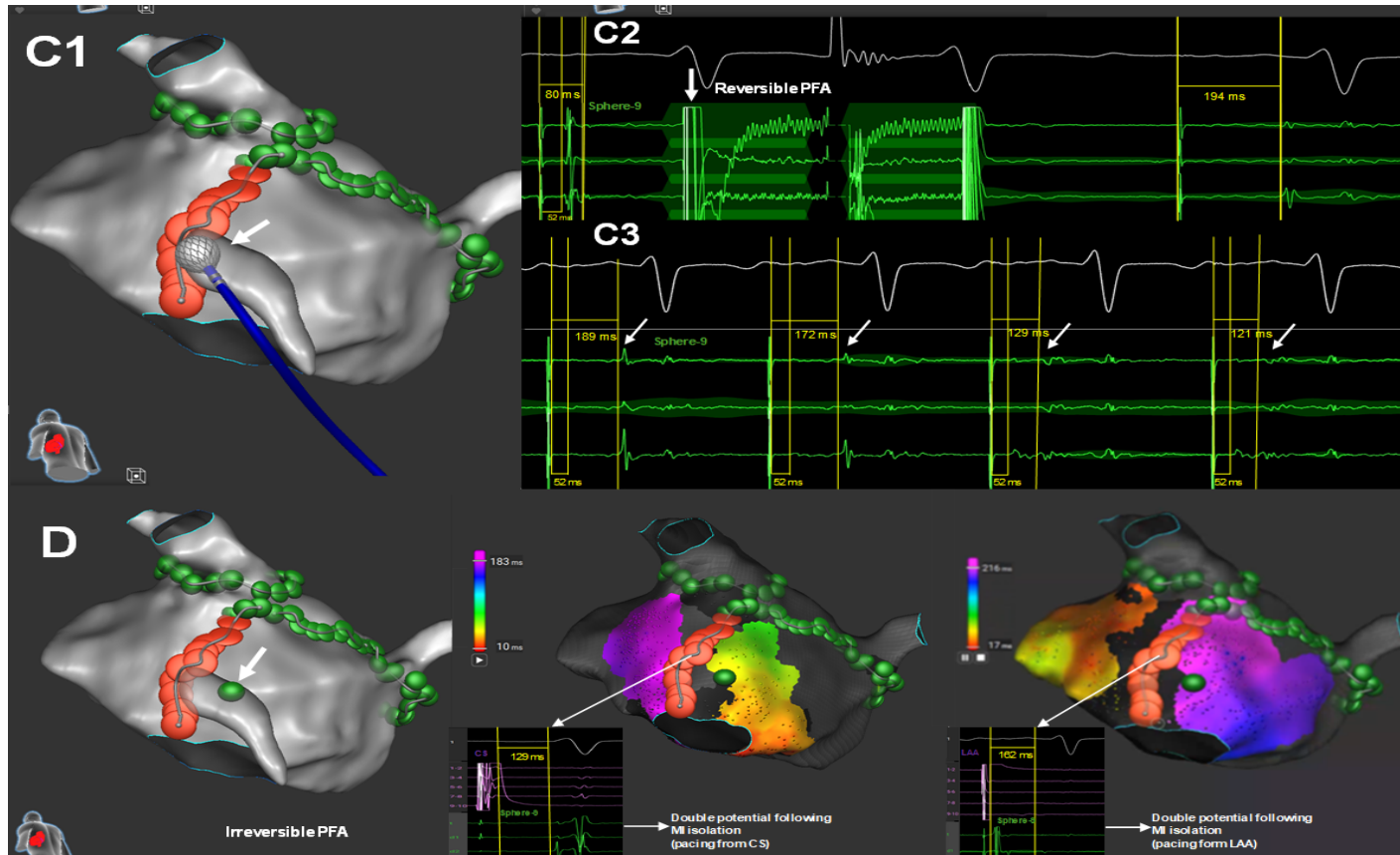
Europace (2024) doi.org/10.1093/europace/euae129

## General anaesthesia and deep sedation for monopolar pulsed field ablation using a lattice-tip catheter combined with a novel three-dimensional mapping system



https://doi.org/10.1093/europace/euae270

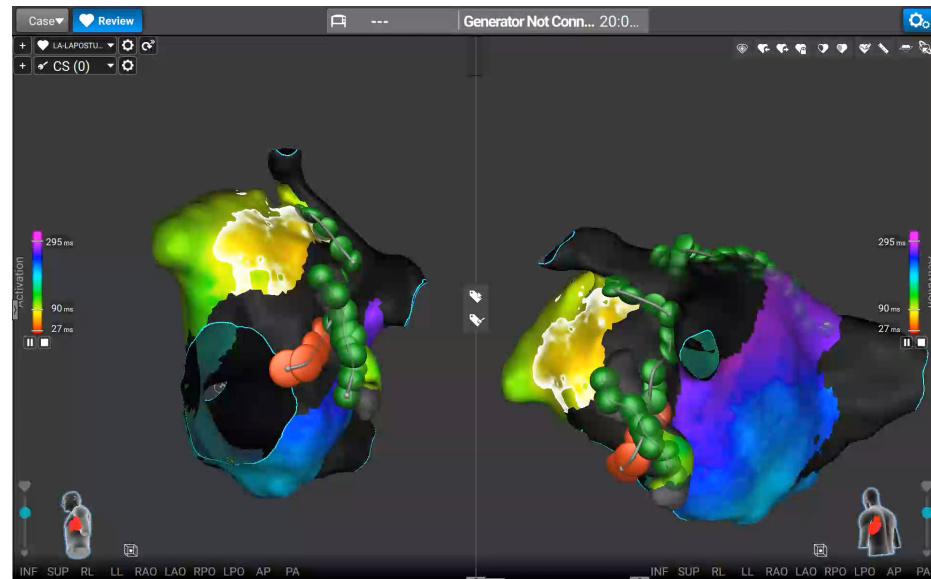
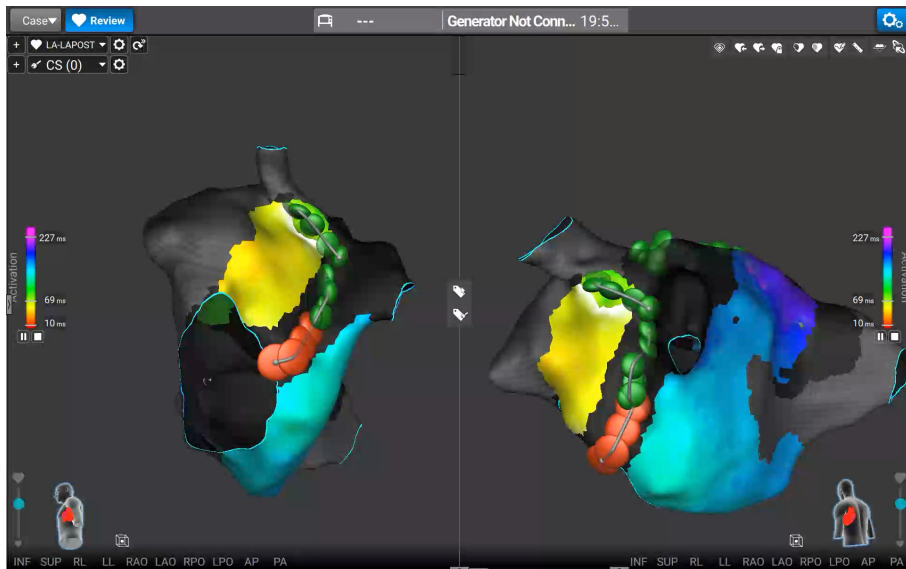
# Mitral Isthmus



**Reversible  
PFA**



## Endocardial Ablation



... + CS Ablation

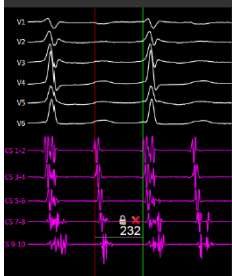
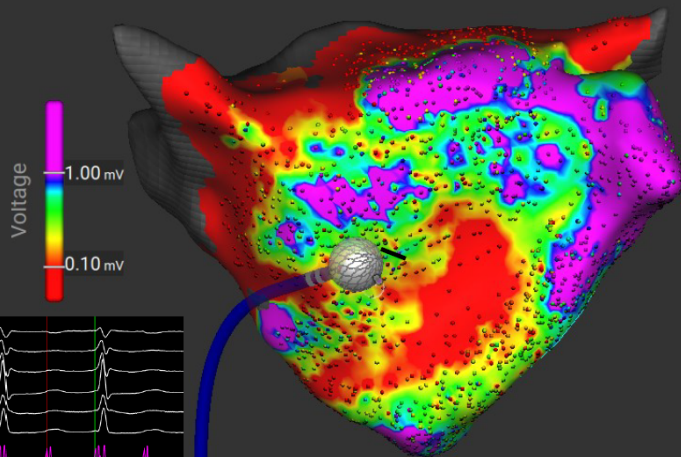


# Changing strategy

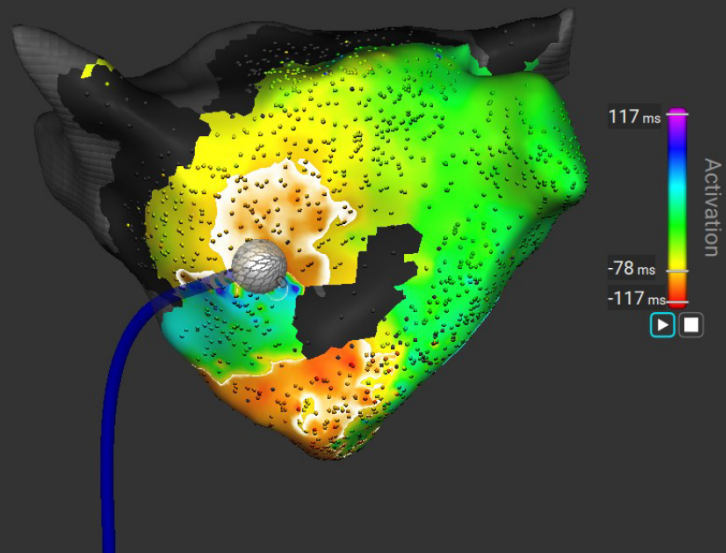


Atypical AFL (TCL = 230 ms) following bilateral WACA and posterior box

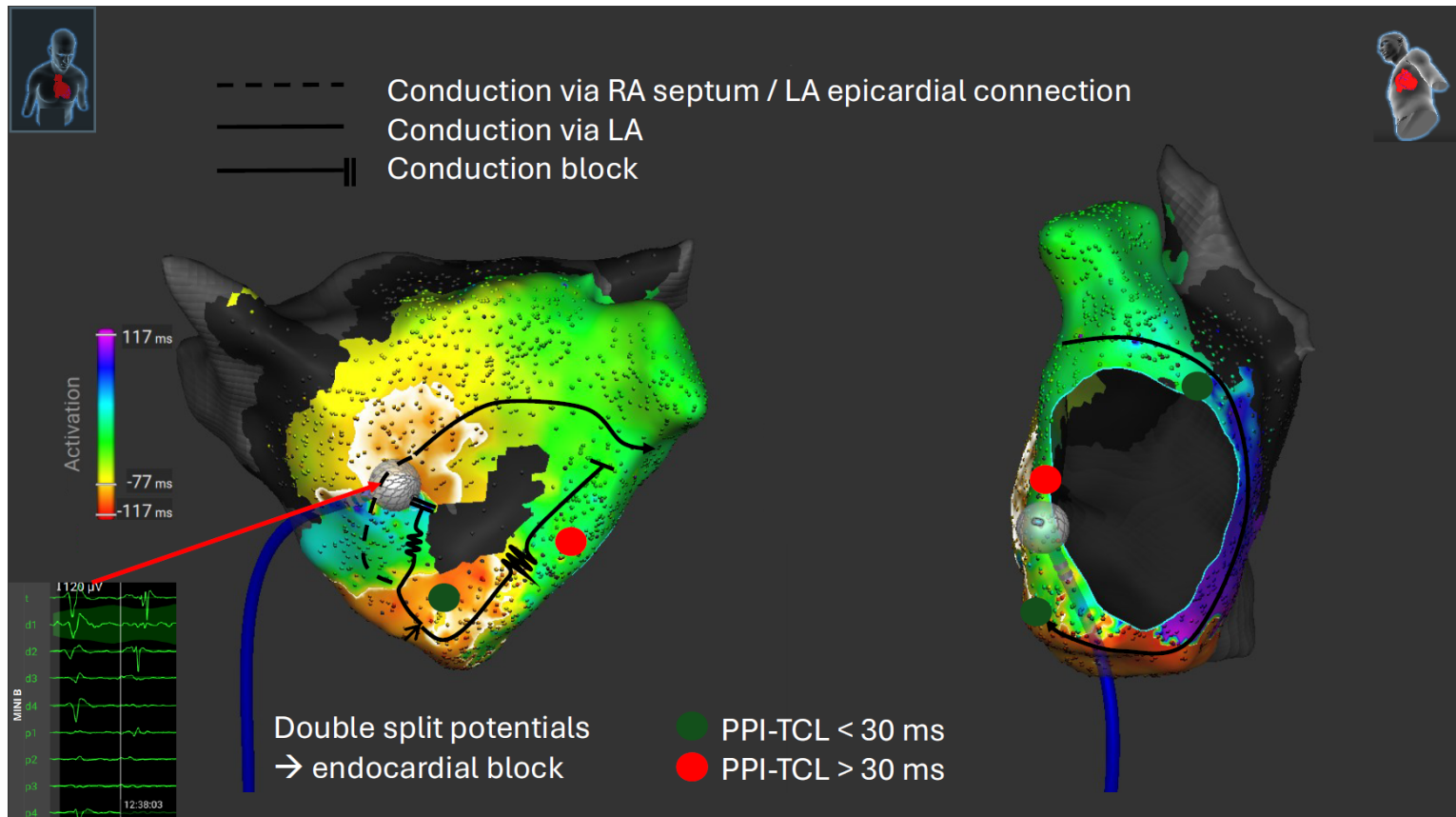
Voltage map



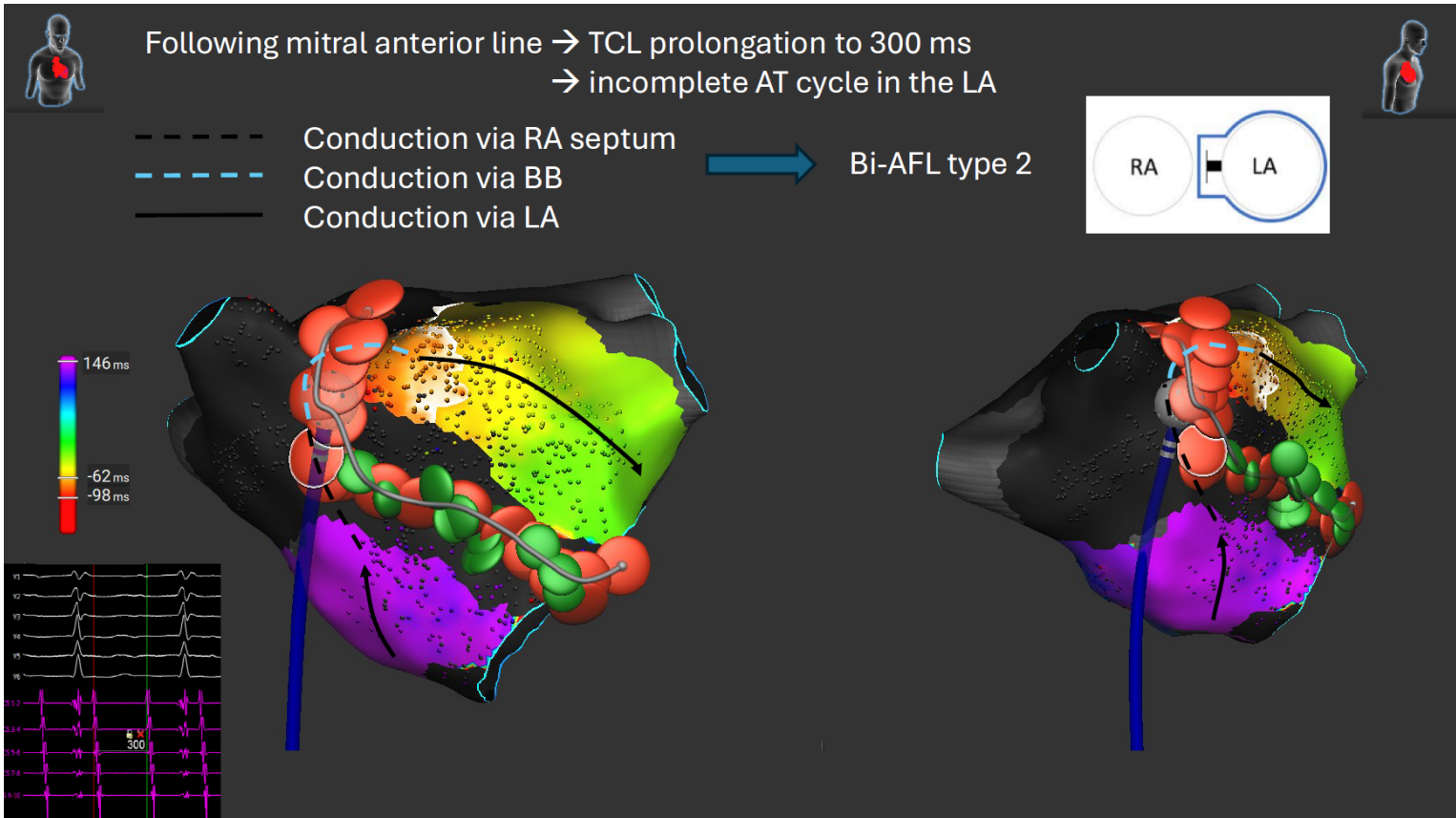
Activation map



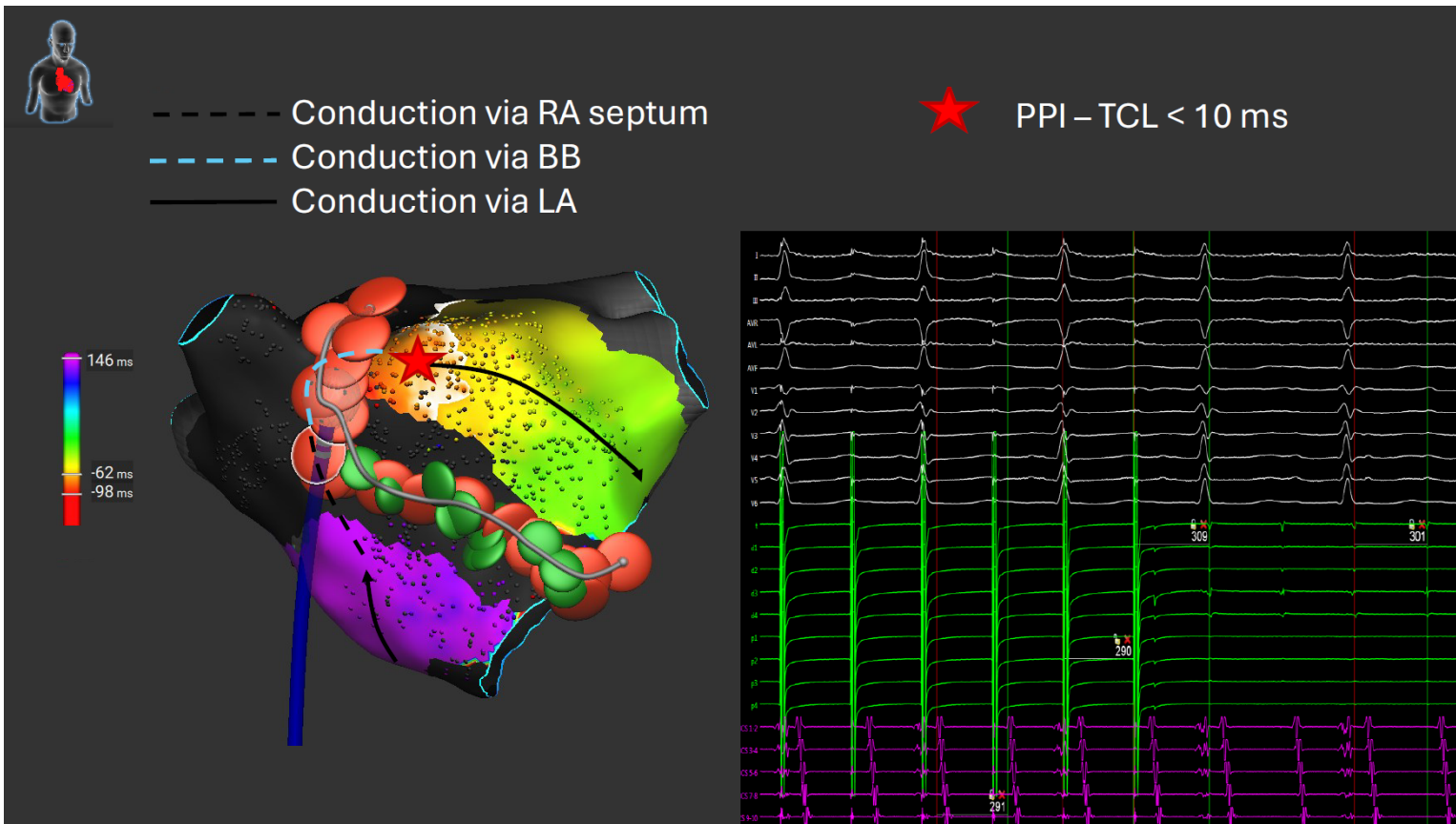
# Changing strategy



# Changing strategy



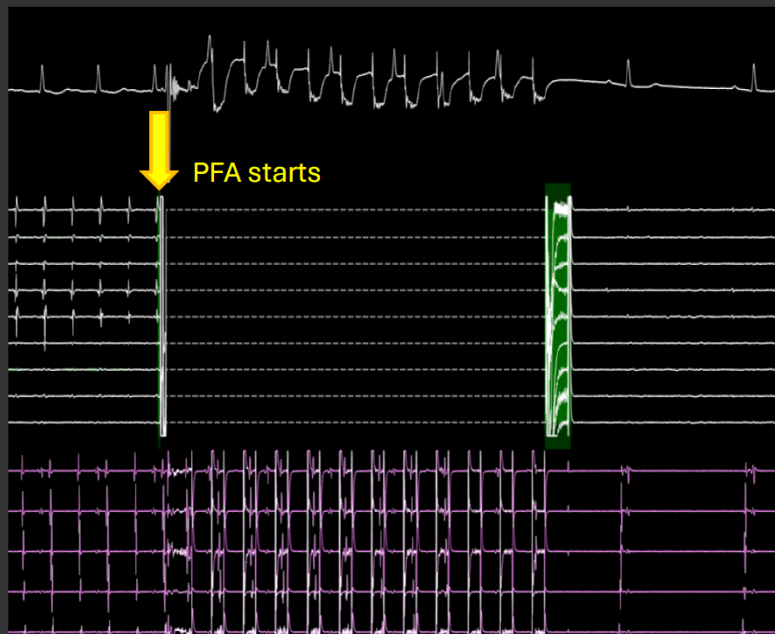
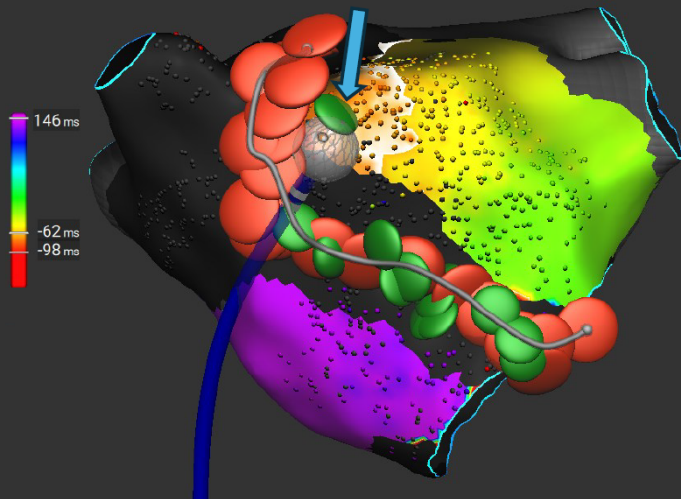
# Changing strategy



# Changing strategy

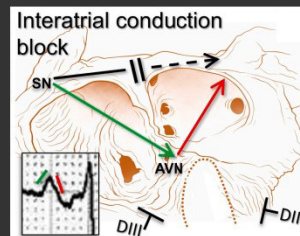
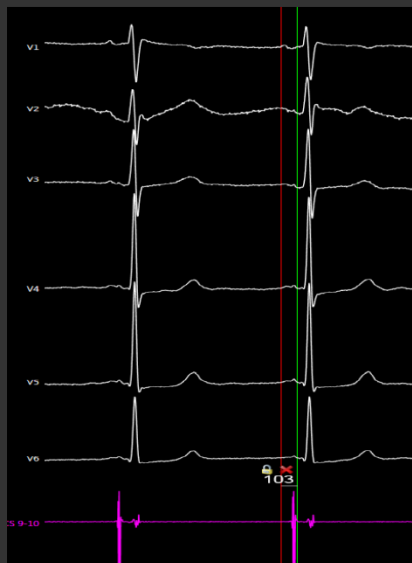


→ SR restoration after the first pulse



# Changing strategy

→ P wave morphology change and prolongation following BB block



**Grazie**

