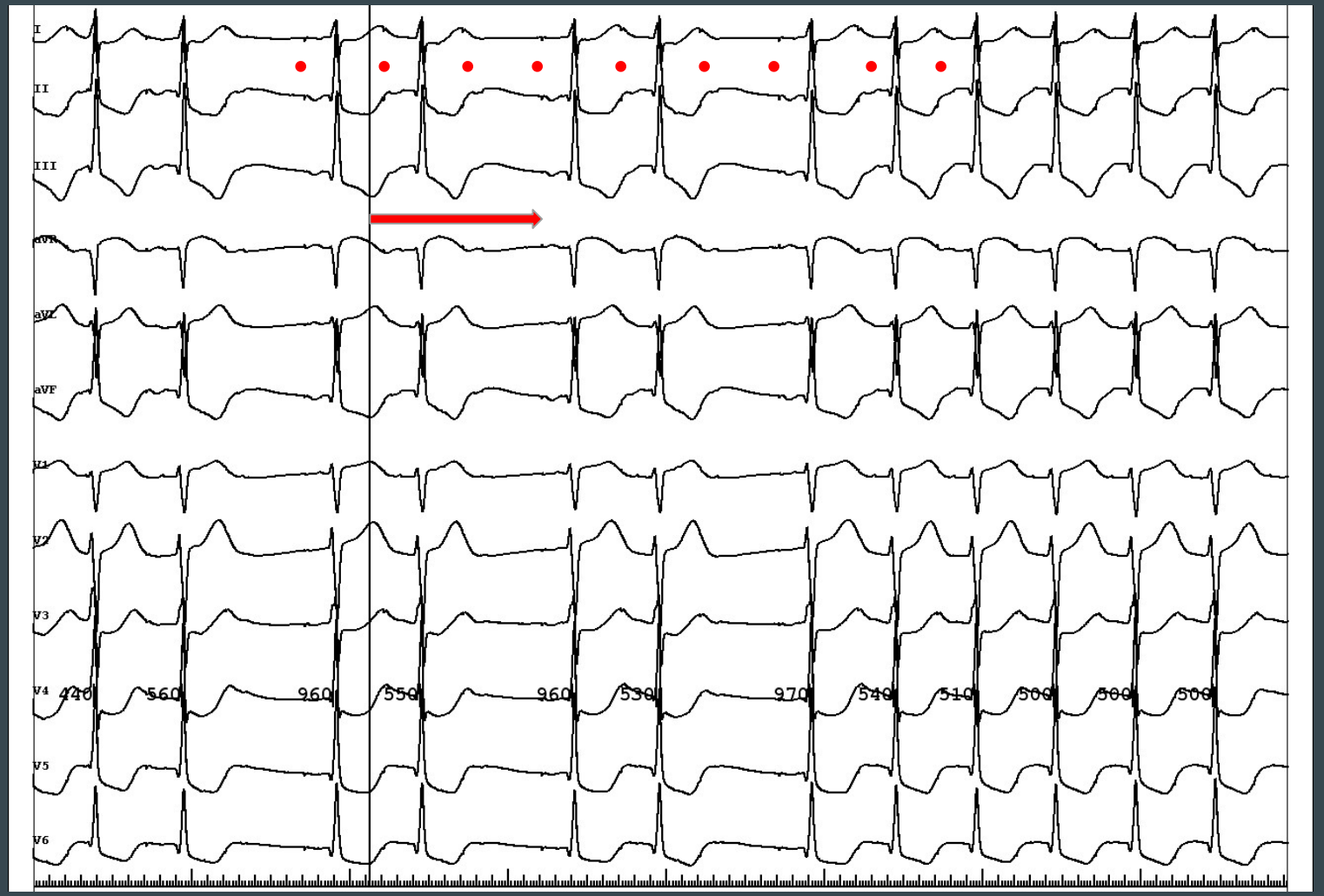
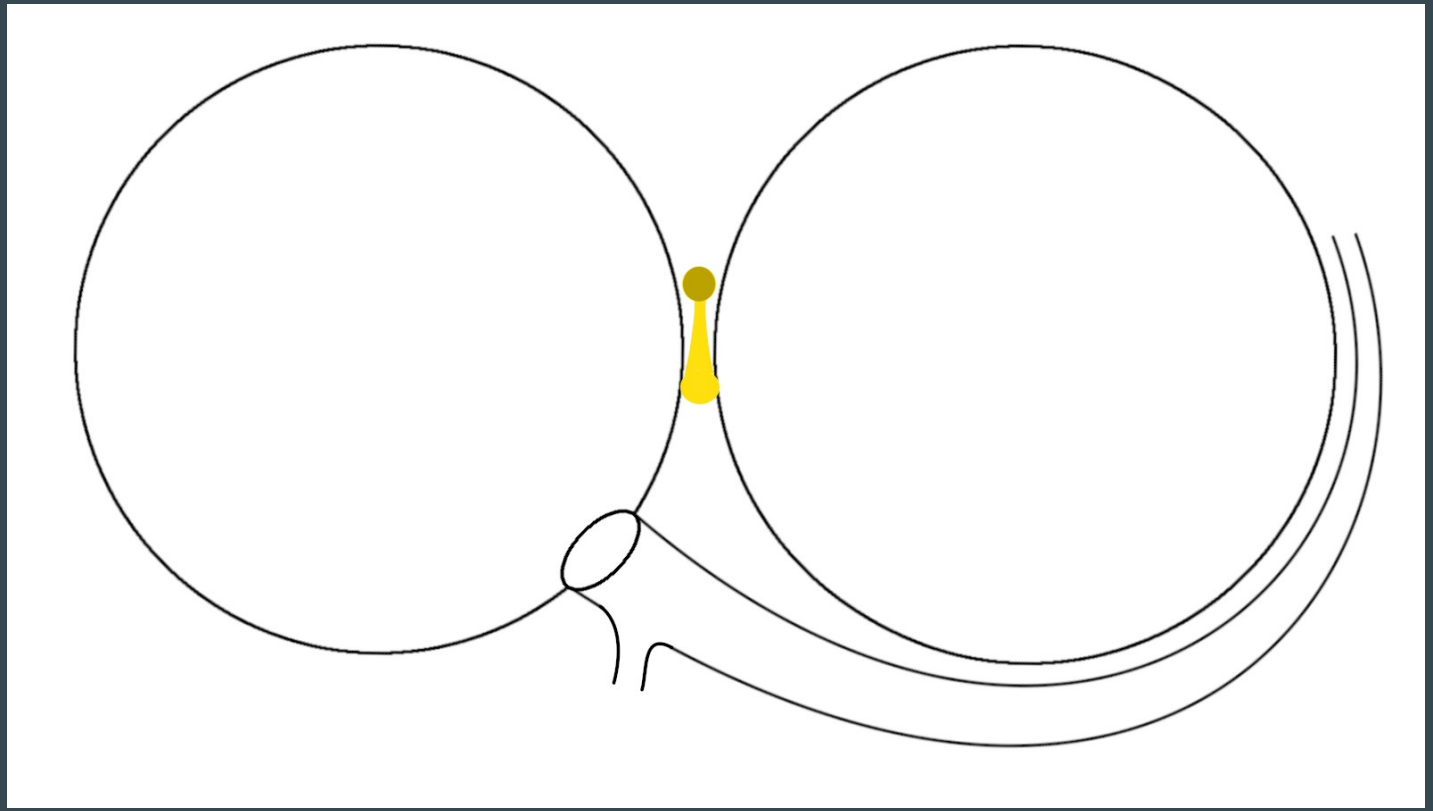
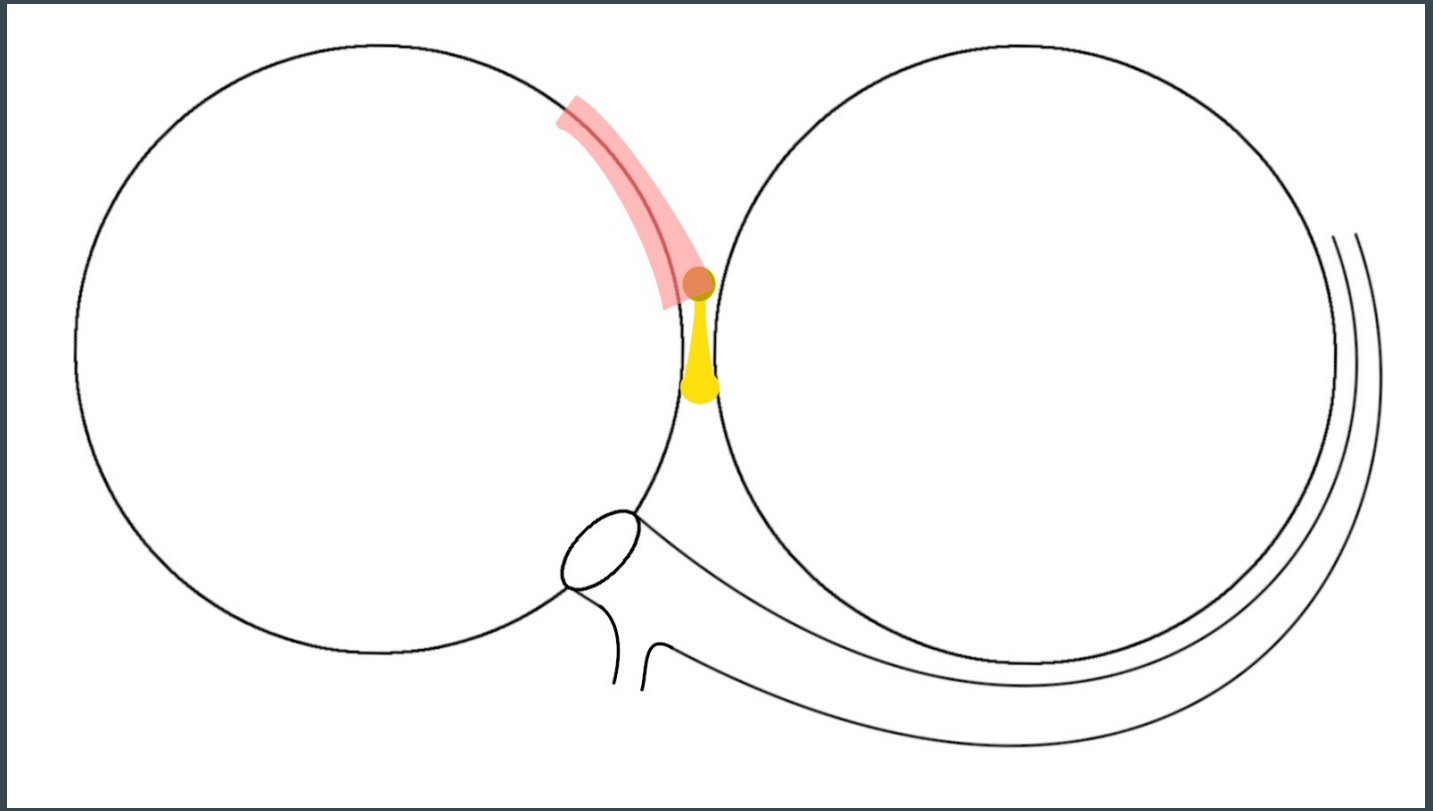
Paraseptal pathway ablation

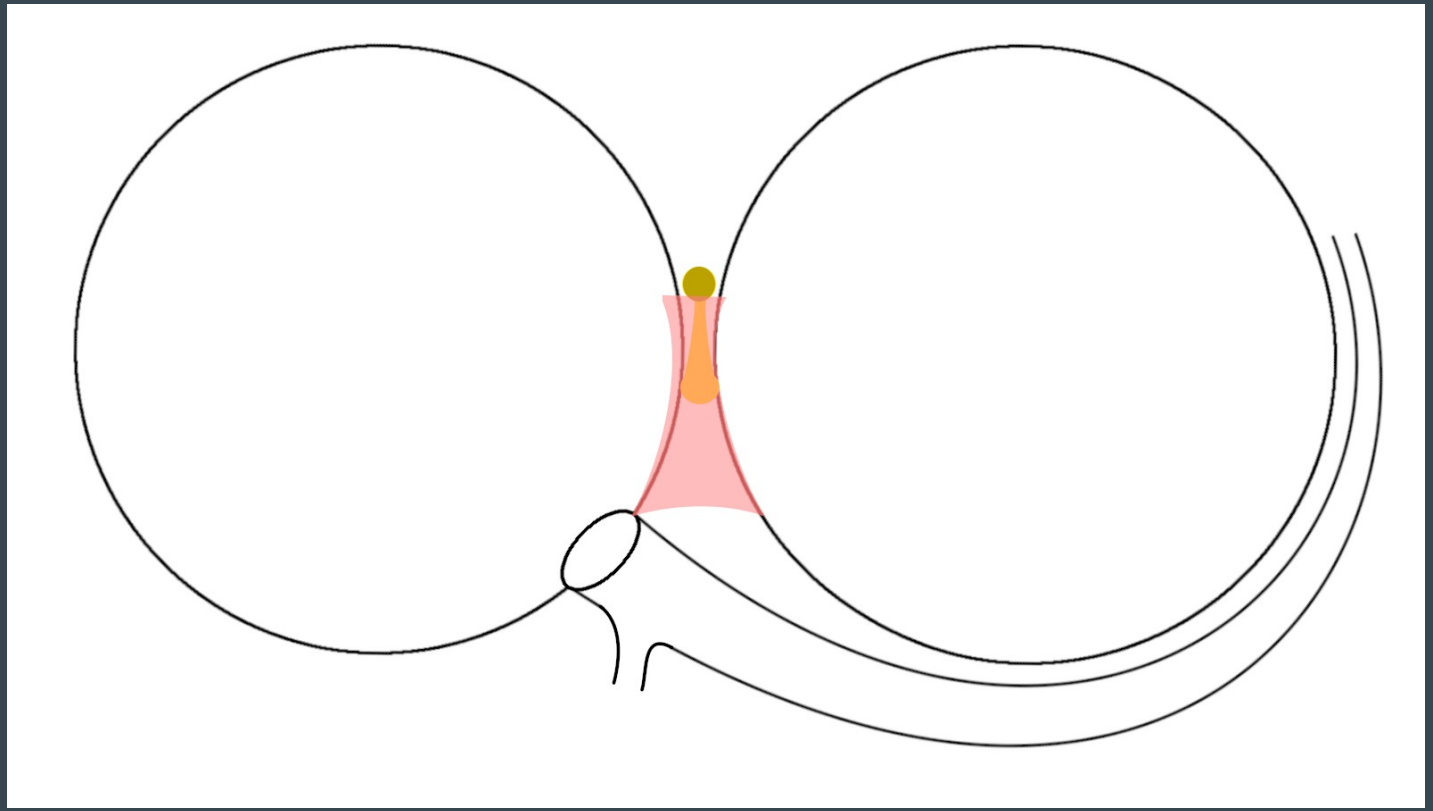
Raja Selvaraj
Professor of Cardiology
JIPMER, Puducherry

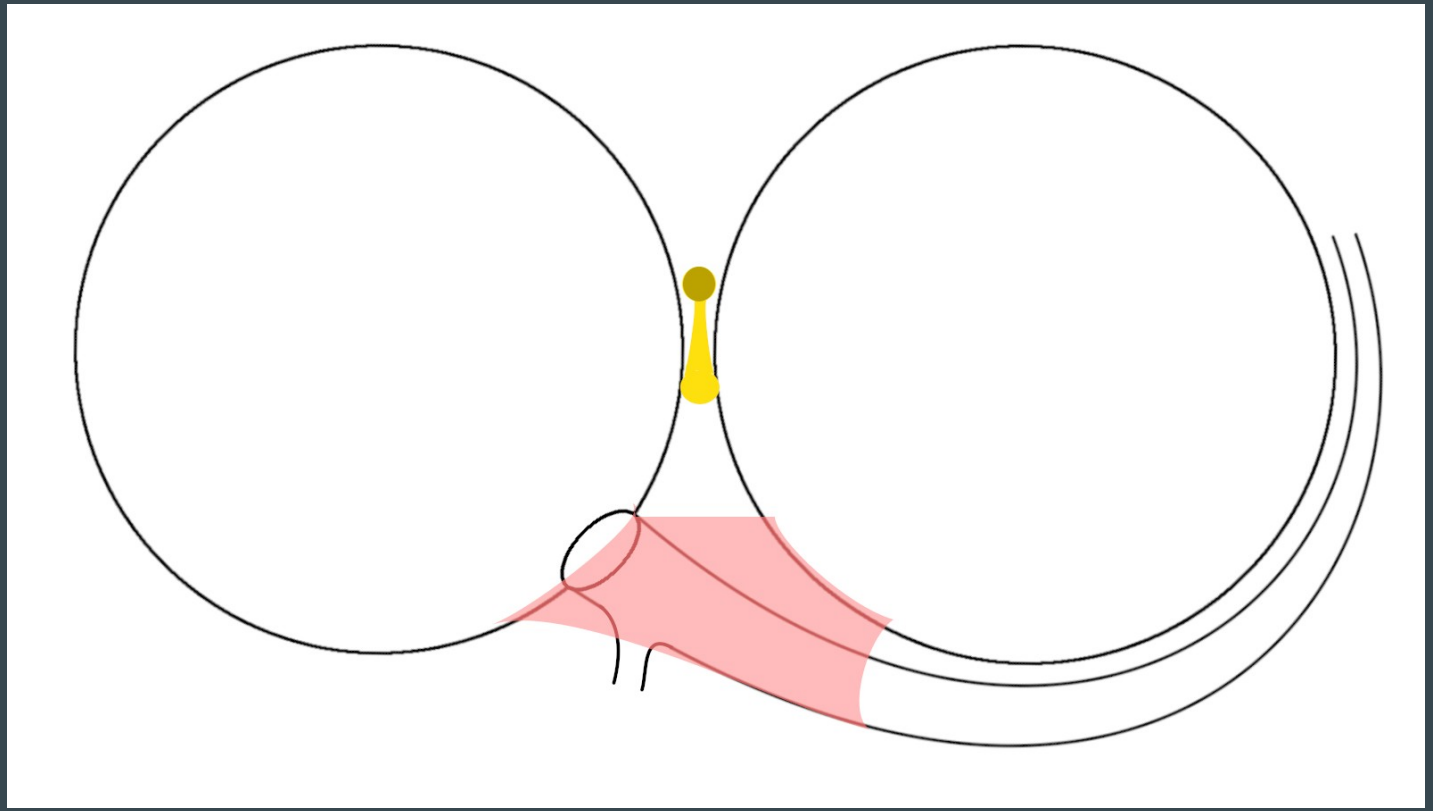

I
II
III
aVR
aVL
aVF
V1
V2
V3
V4
V5
V6
440
560
960
550
960
530
970
540
510
500
500
500

Anatomy and Terminology



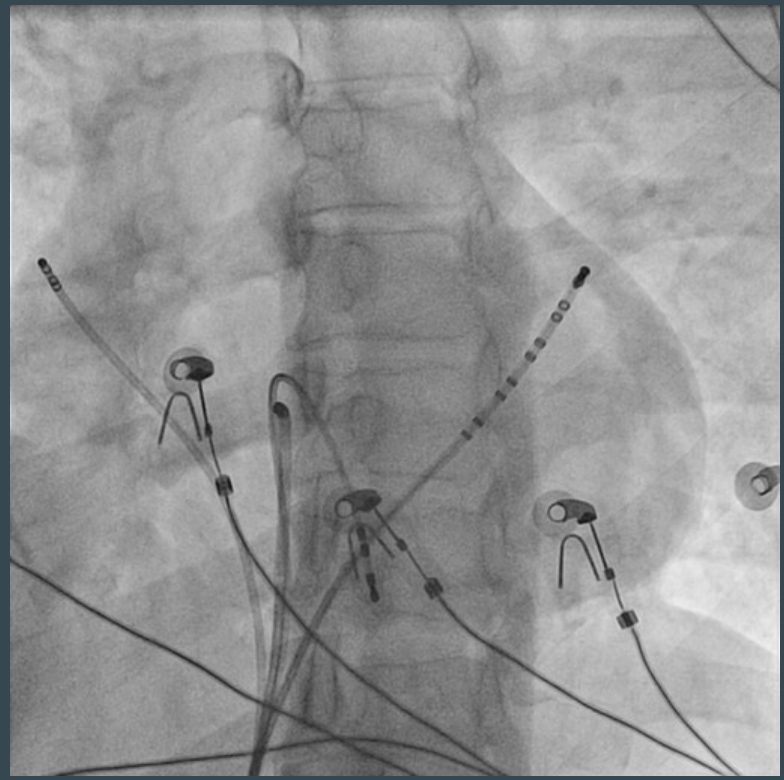




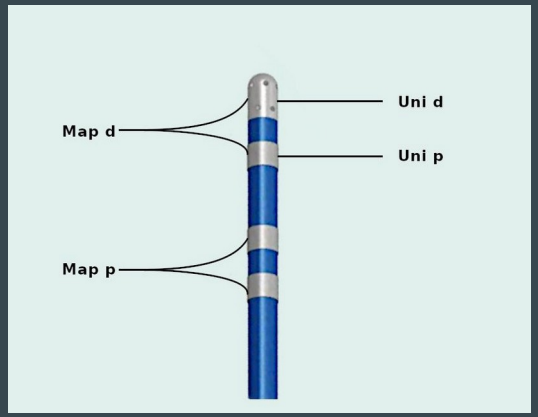


Mapping set up

Four catheters - Don’t skip the RA

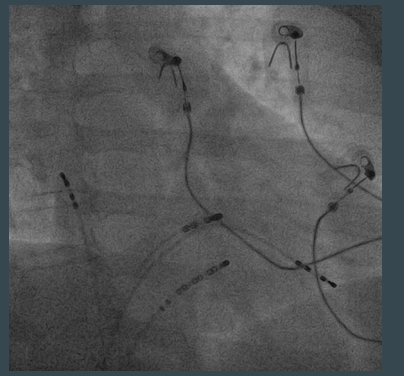


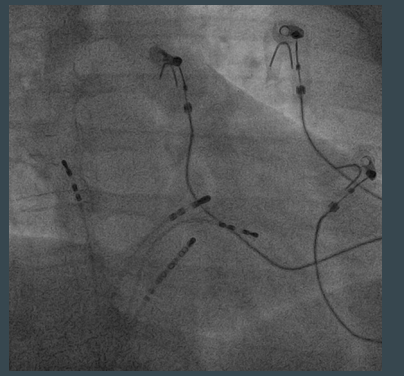
Four signals

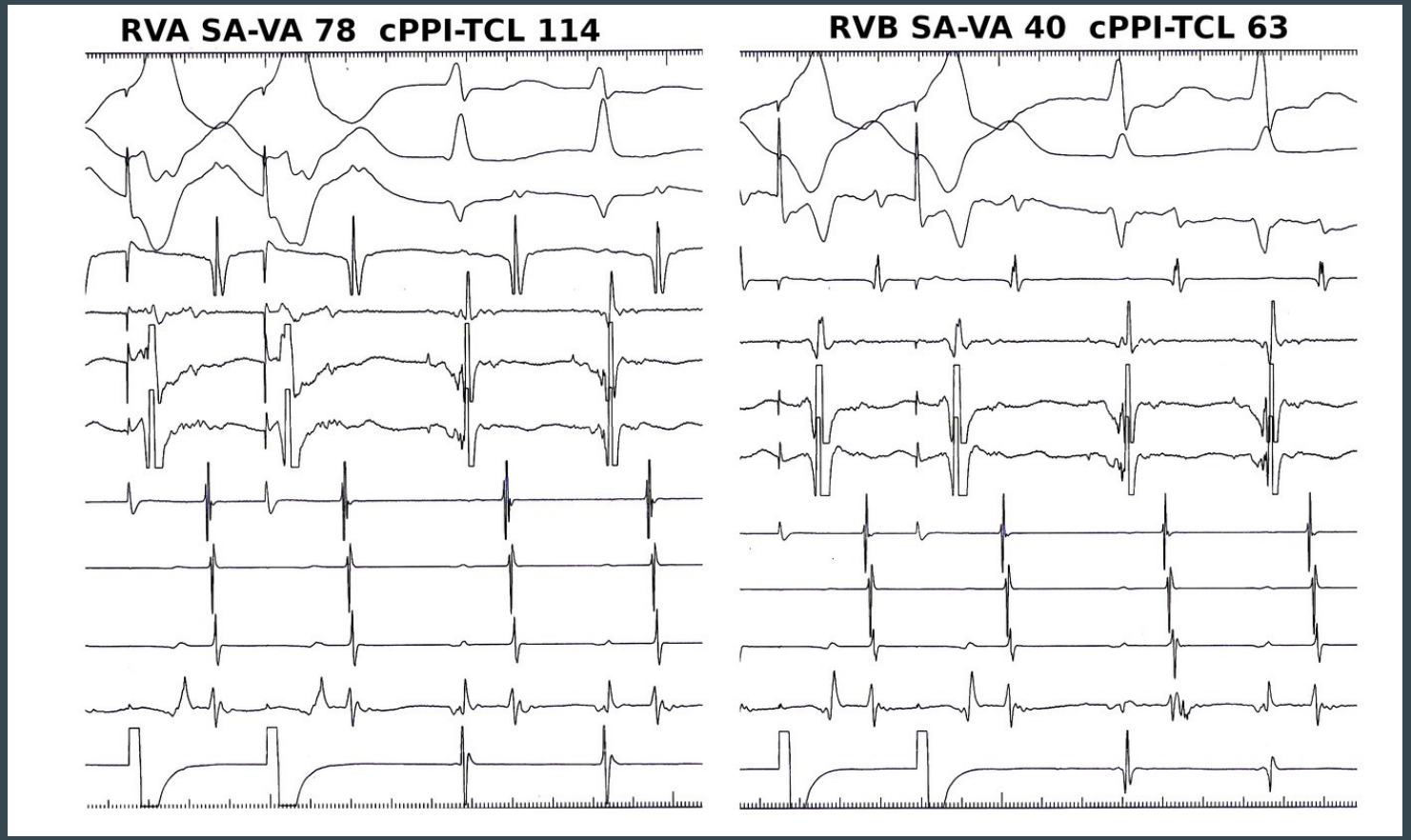


Triggered mode

RV catheter closer to base



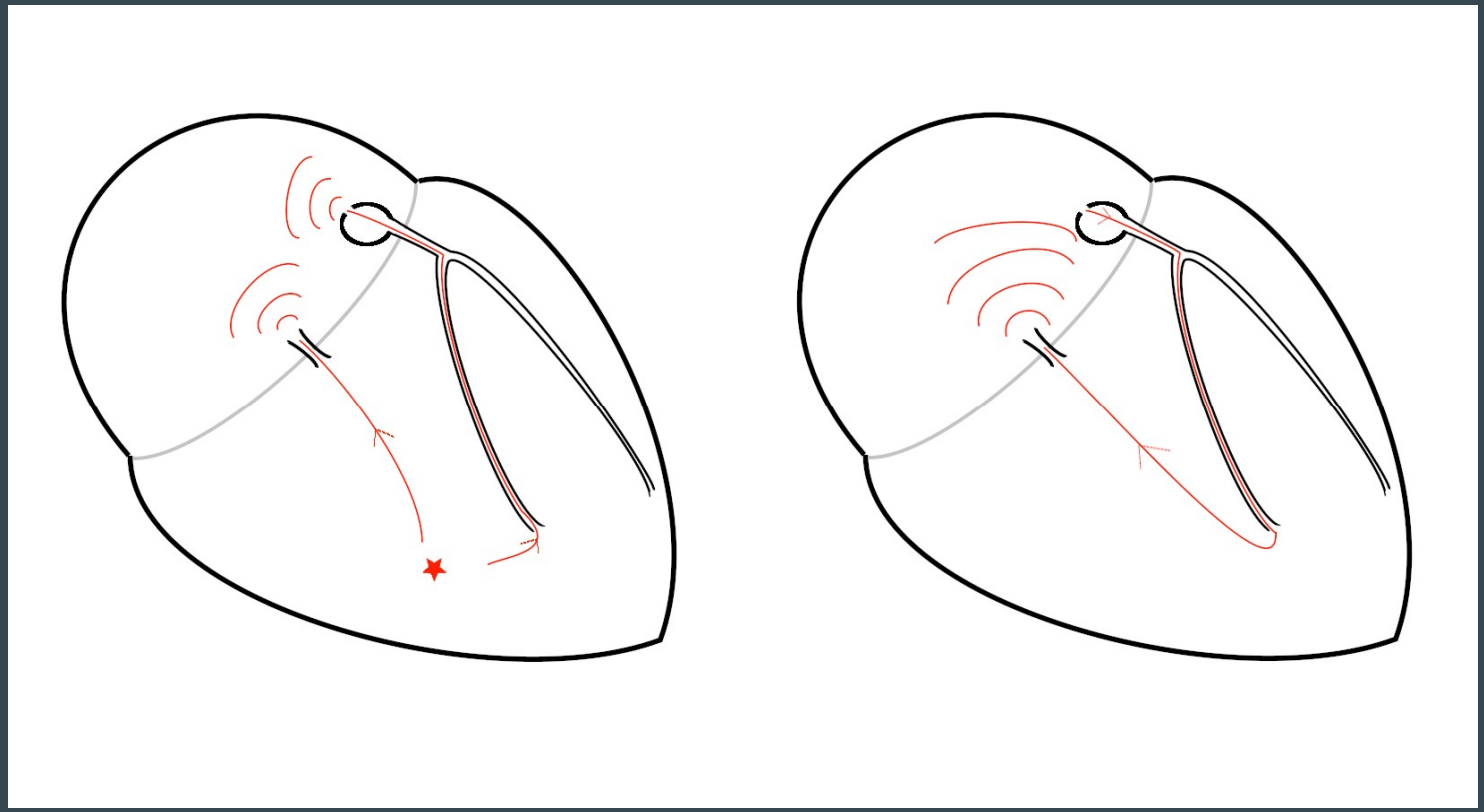




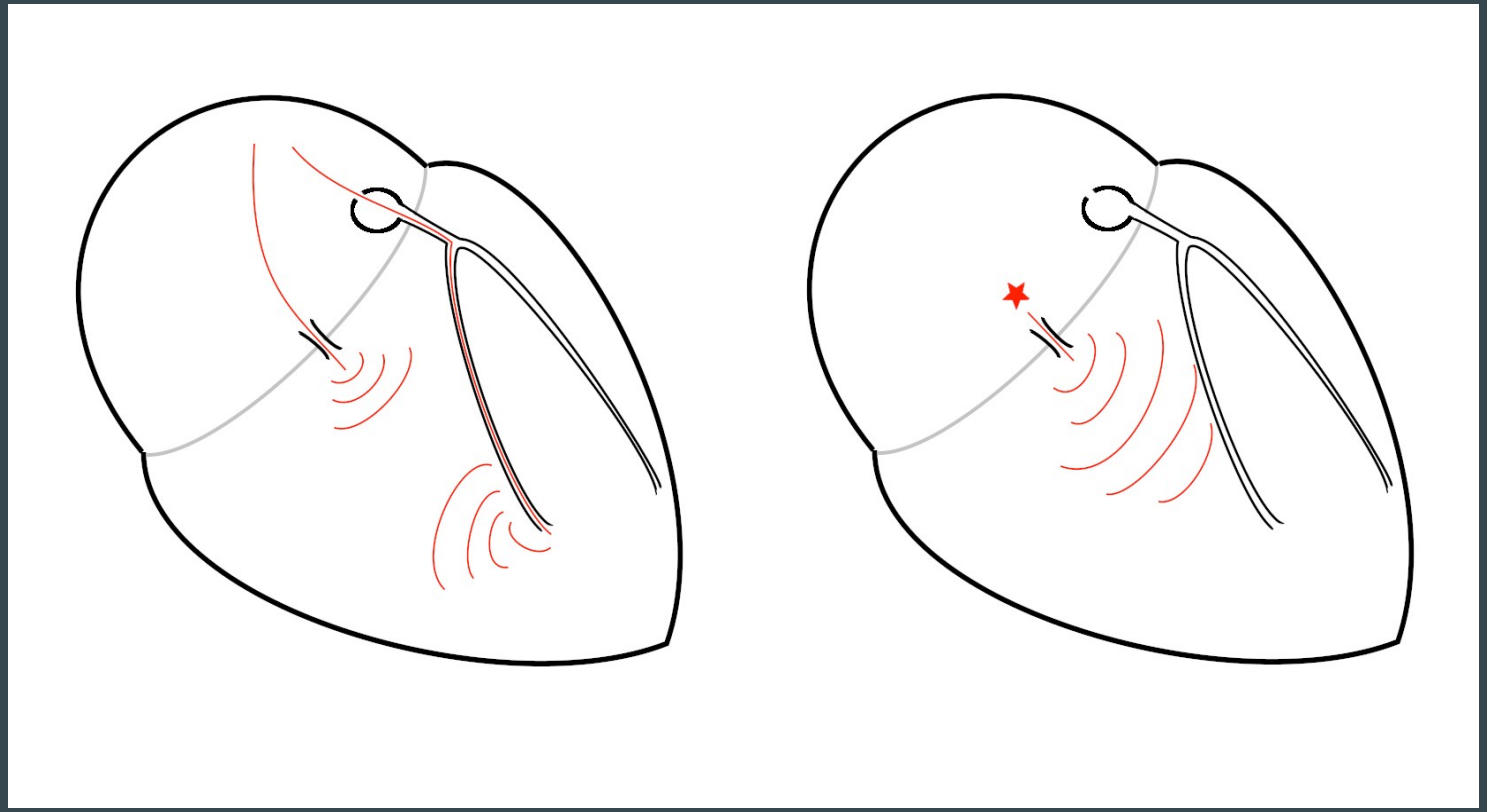
AP potential more important than early signal

Mapping - Which insertion?, which rhythm?

Atrial insertion

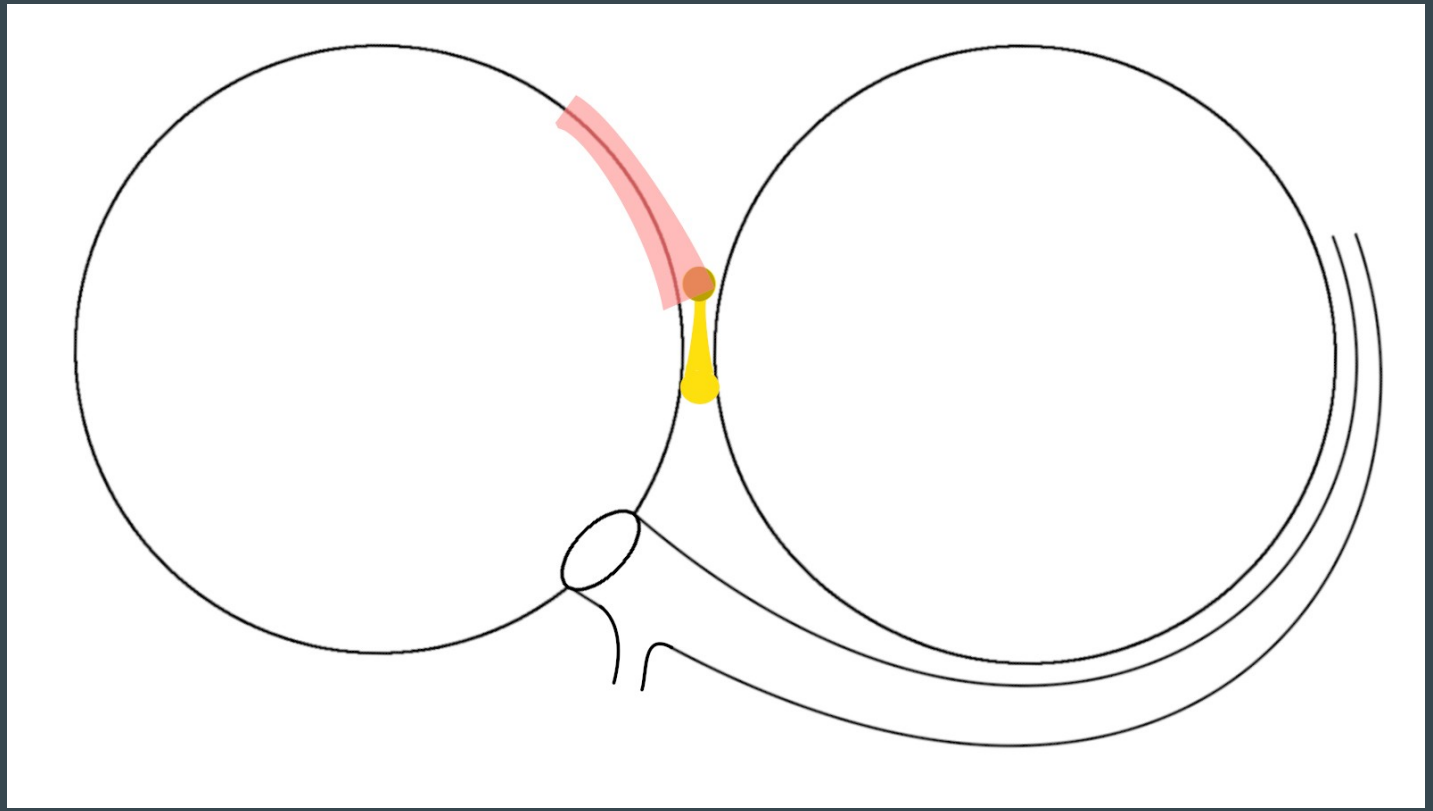


Ventricular insertion

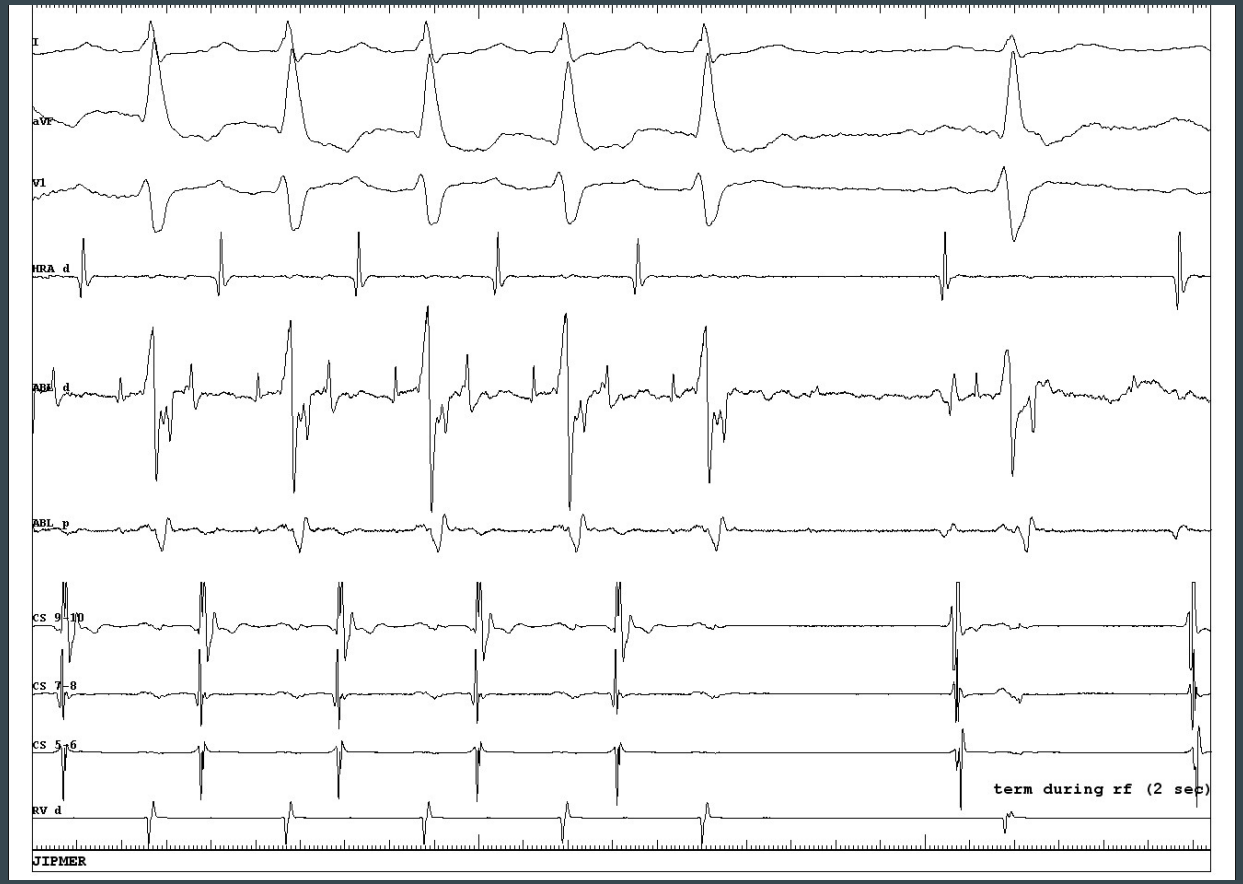


General rules

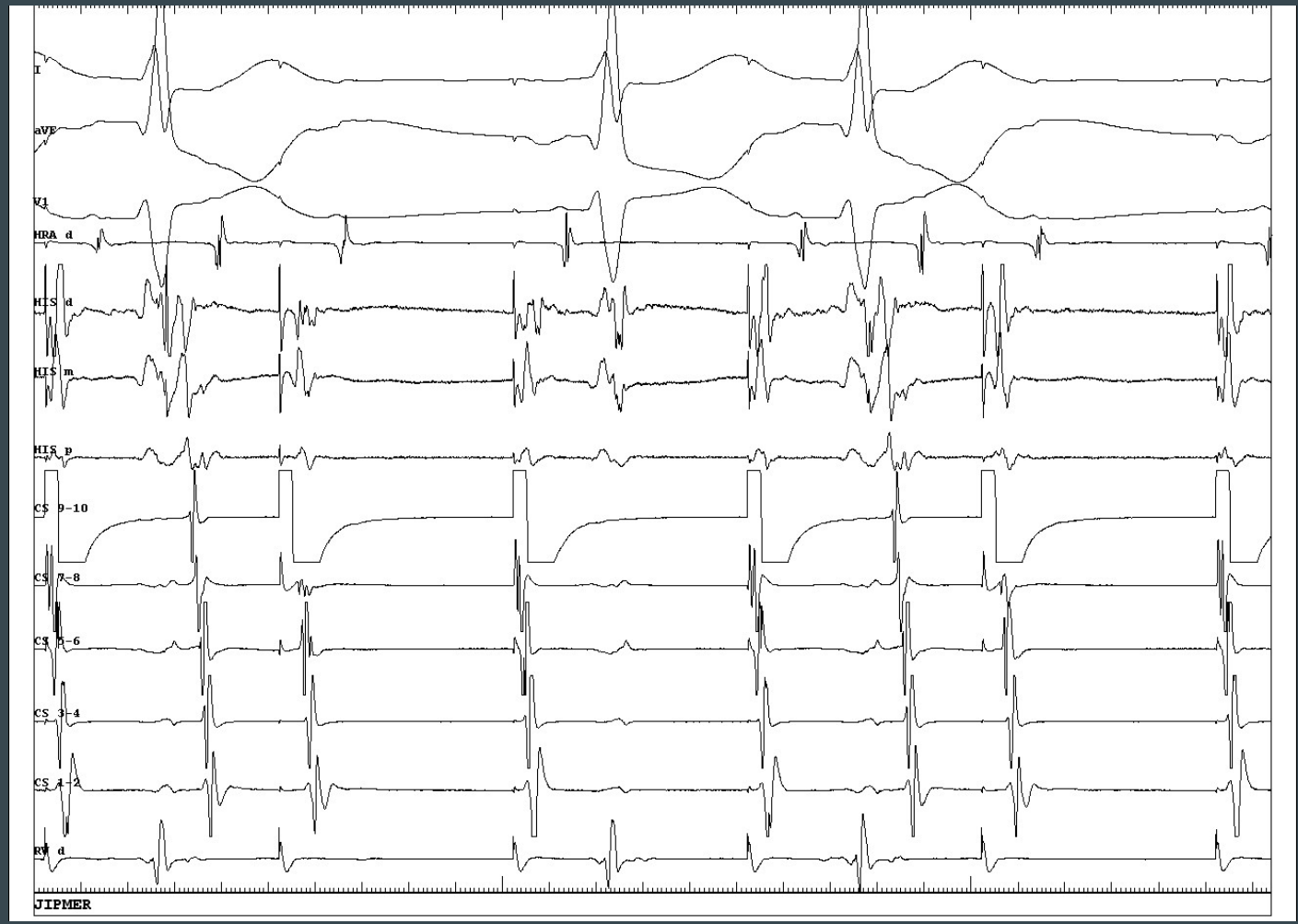
- Risk of AV block - Map and ablate during ORT
- Consider also mapping the ventricular insertion (maybe in safer location)
- Intermediate preexcitation (sinus) better than full preexcitation (A pace) if risk of AV block
- Maximum preexcitation if low risk of AV block and to avoid fusion
- ORT for atrial insertion to avoid fusion in atrium



Ablation during ORT - Parahisian AP



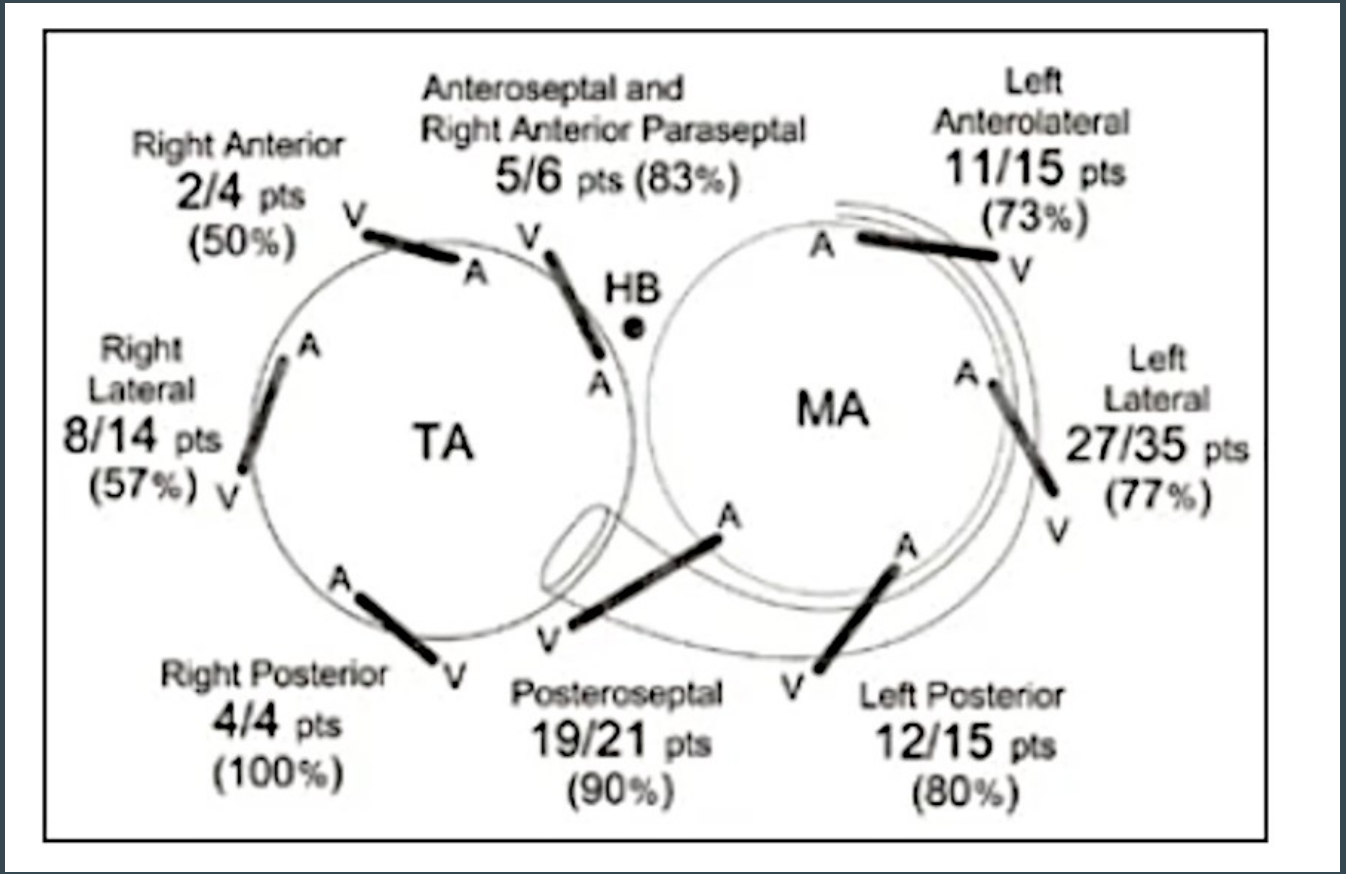
Anteroseptal AP mapped during echo beats



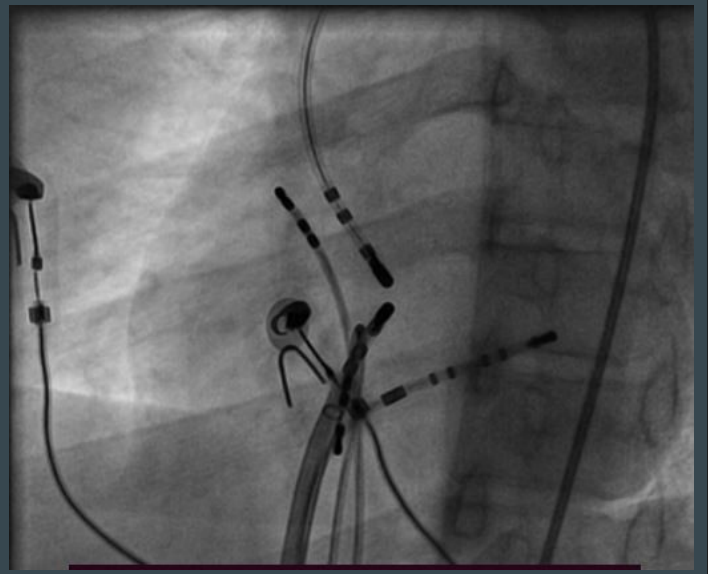
Ablation

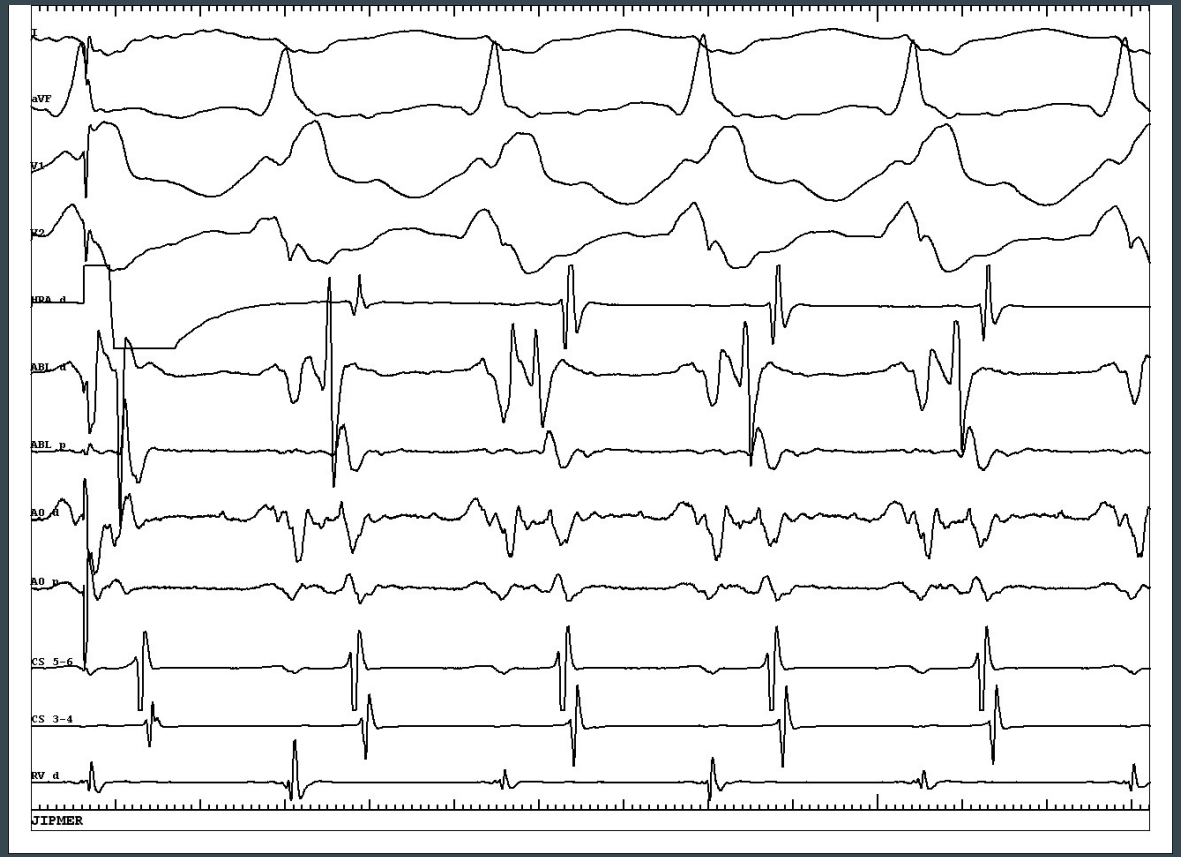

I
aVF
V3
HRA d
HIS d
HIS m
HIS p
CS 9-10
CS 7-8
CS 5-6
CS 3-4
CS 1-2
RV d
echo
JIPMER

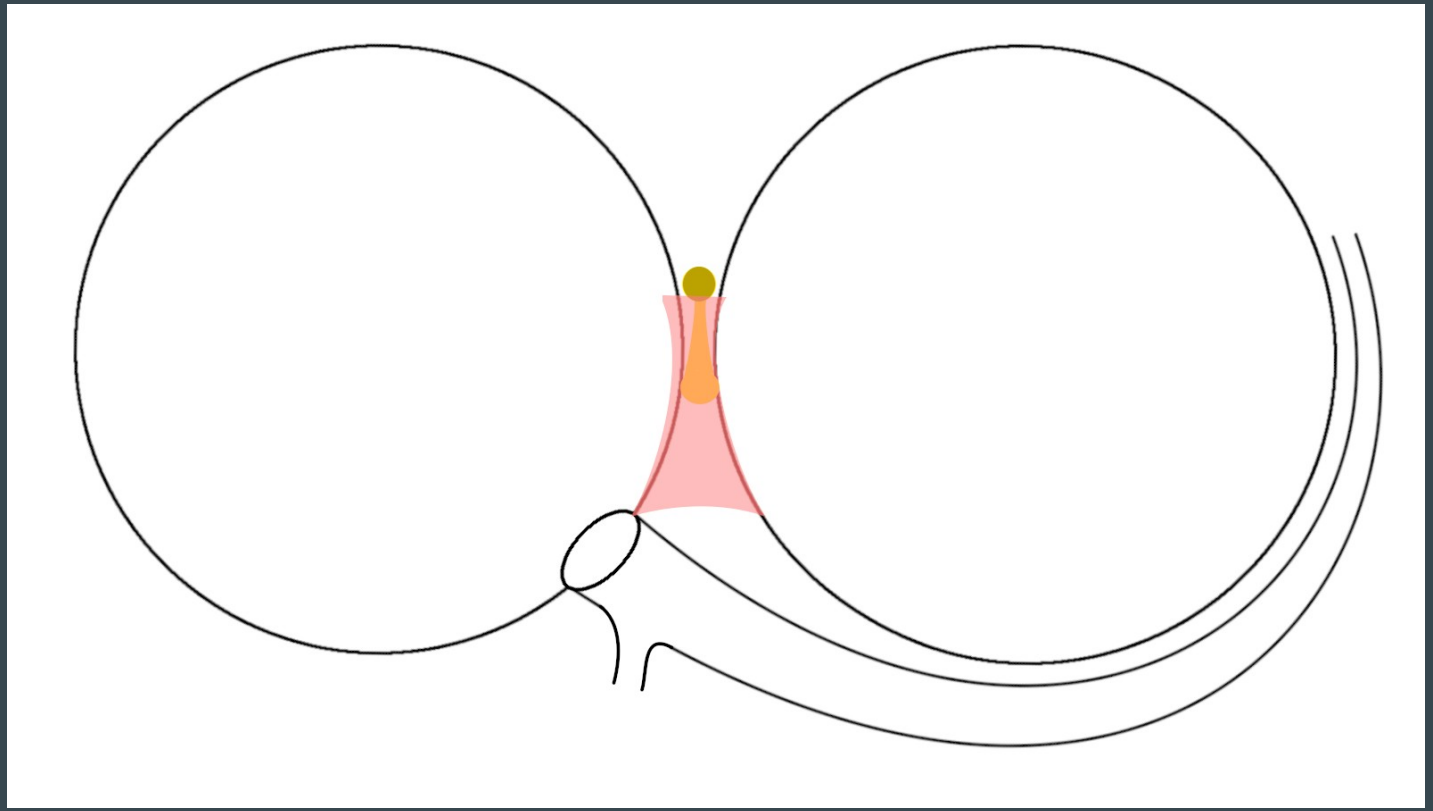
“Anteroseptal pathway” can be ablated in anterior / anterolateral location (V insertion)



Ablation from NCC





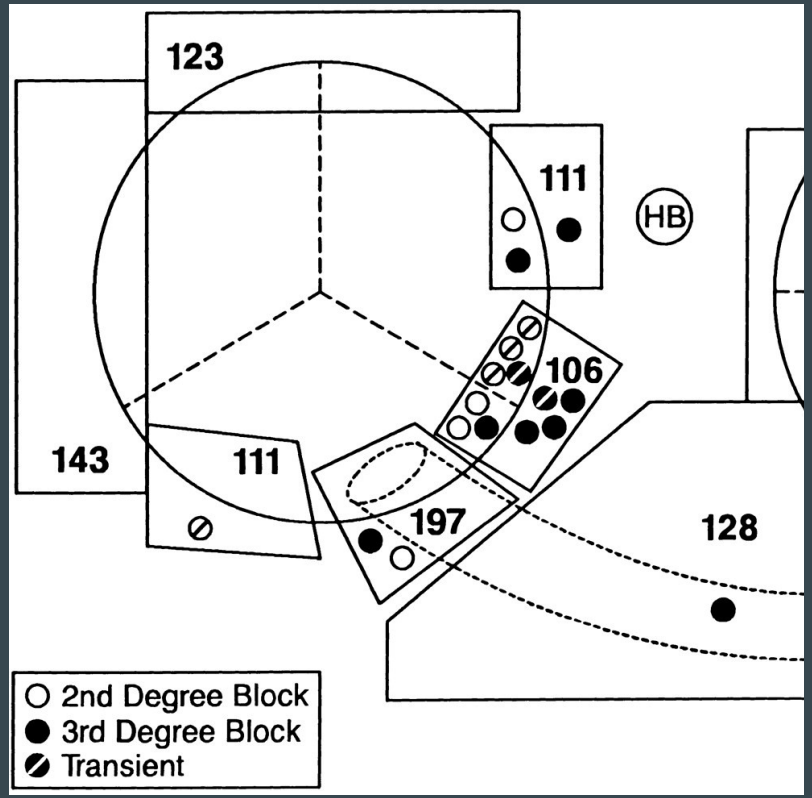


AV block in pediatric AP ablation

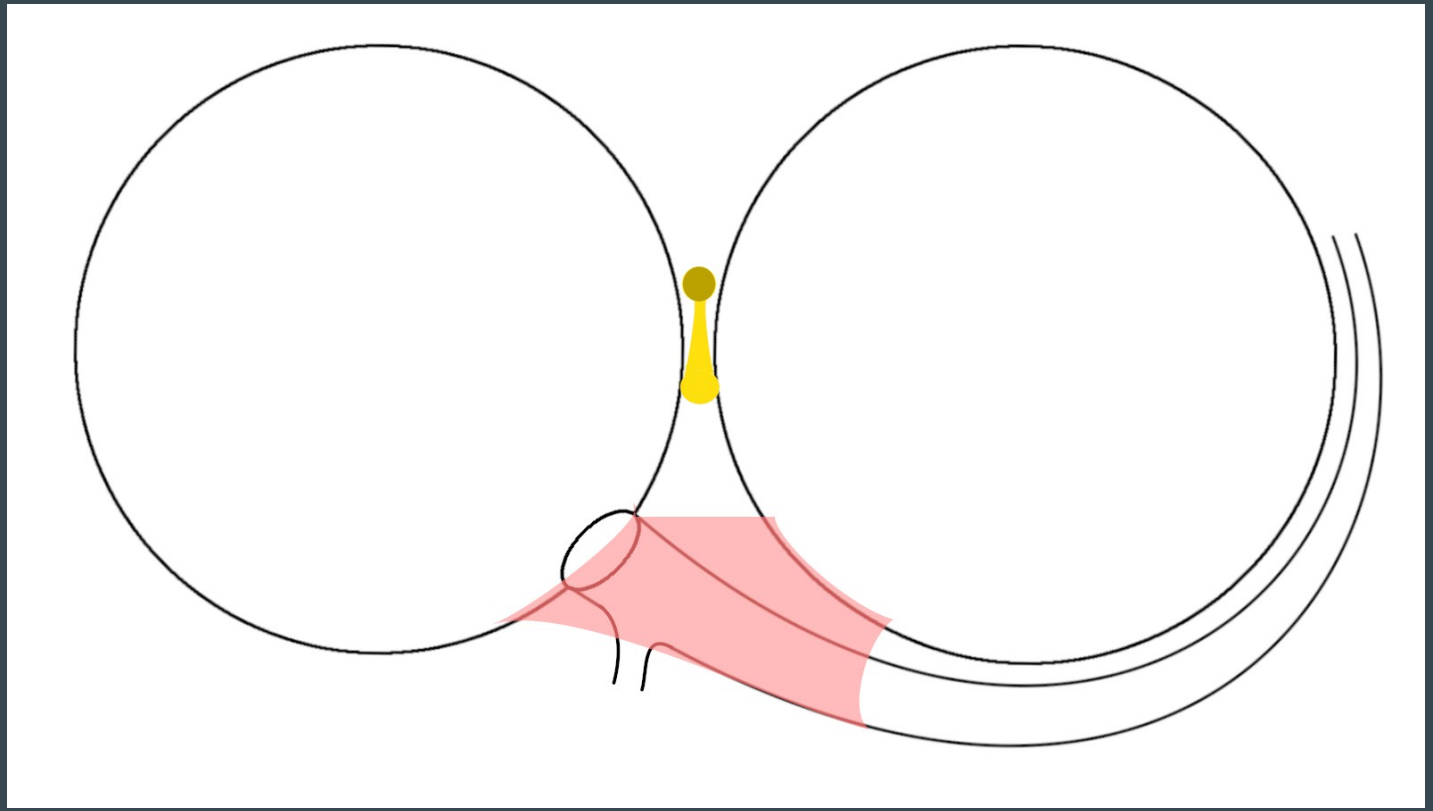
Anteroseptal - 2.7%

Midseptal - 10.4%

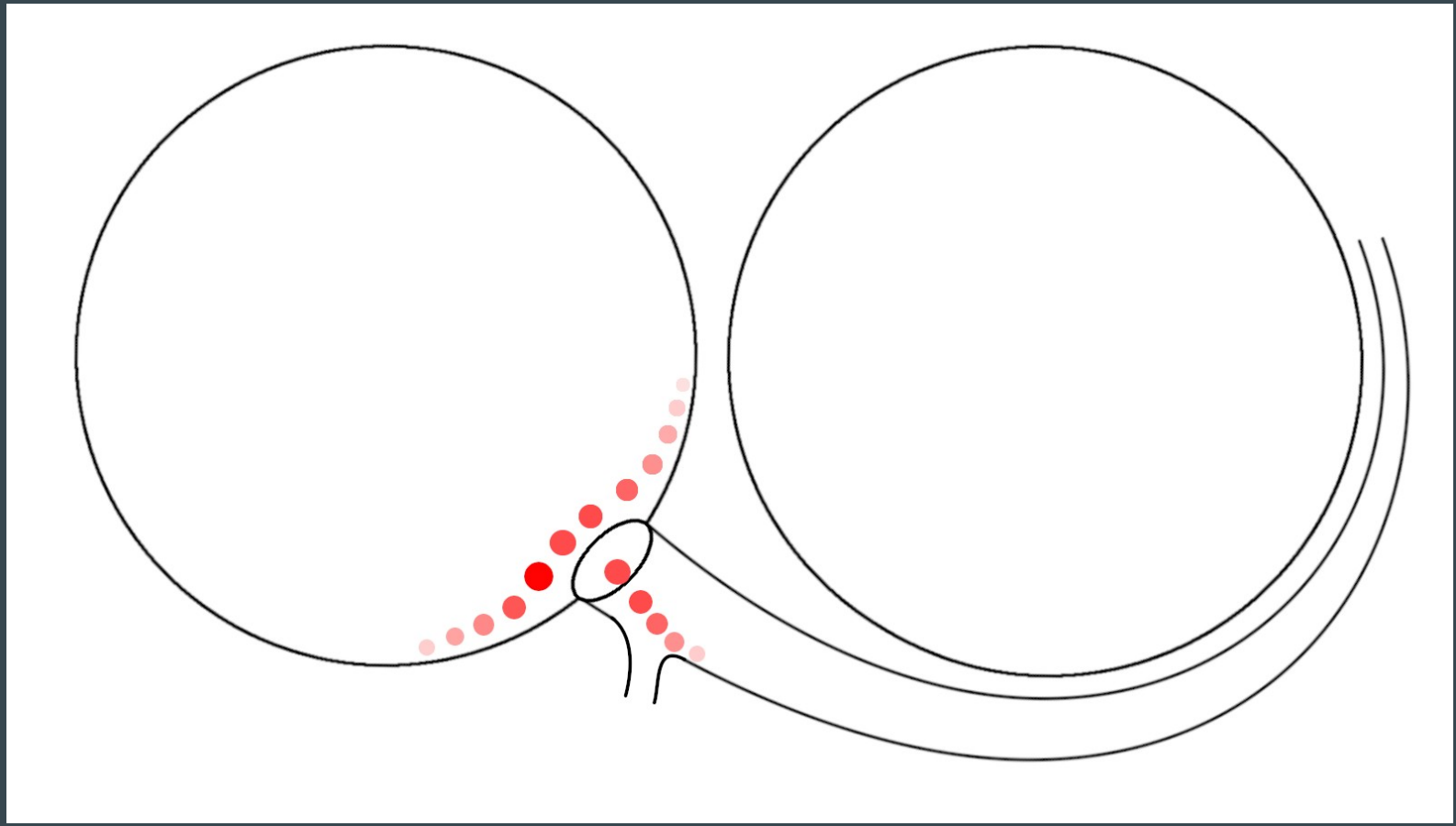
Posteroseptal - 1%



Schaffer MS, Silka MJ, Ross BA, Kugler JD. Inadvertent atrioventricular block during radiofrequency catheter ablation. Results of the Pediatric Radiofrequency Ablation Registry. Pediatric Electrophysiology Society. Circulation. 1996 Dec 15;94(12):3214-20.



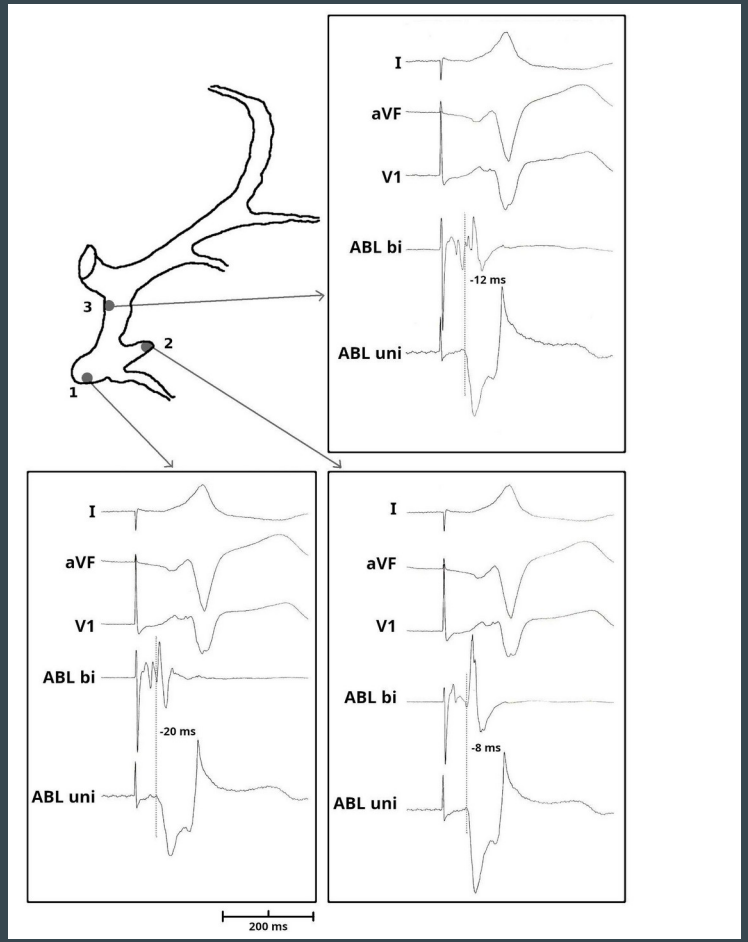
Systematic mapping

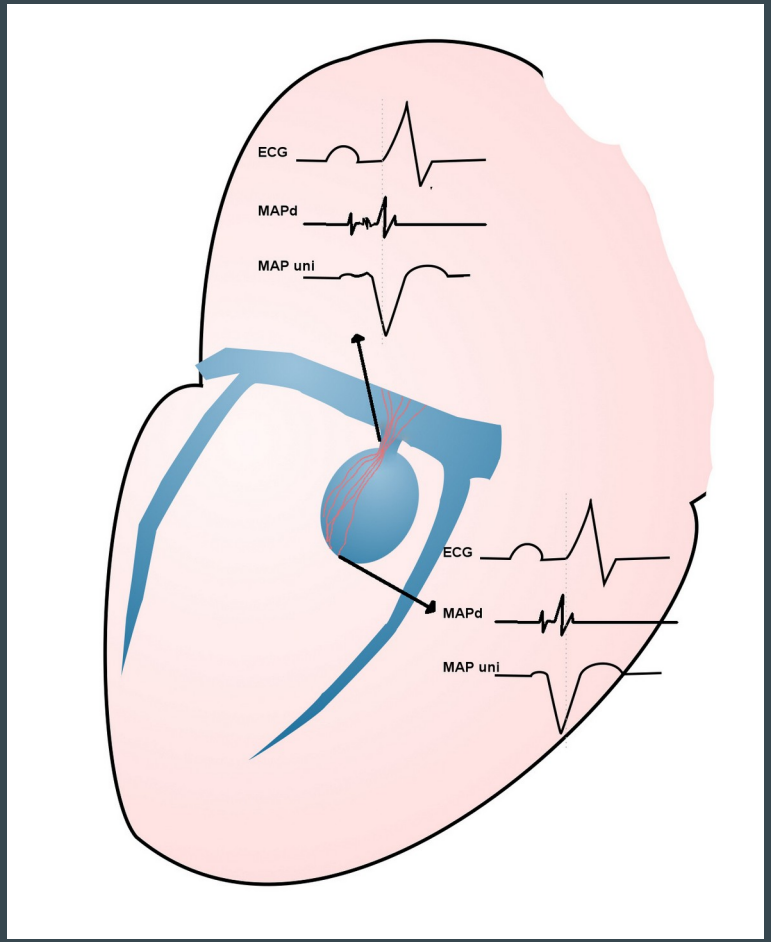


Suspect CS pathway

- Previous failed ablation
- Atrial fibrillation
- Steep negative delta in lead II

Selvaraj RJ, Sarin K, Singh VR, Satheesh S, Pillai AA, Kumar M, Balachander J. Radiofrequency ablation of posteroseptal accessory pathways associated with coronary sinus diverticula. J Interv Card Electrophysiol. 2016 Nov;47(2):253-259.


I
aVF
V1
ABL bi
-12 ms
ABL uni
3
2
1
I
aVF
V1
ABL bi
-20 ms
ABL uni
I
aVF
V1
ABL bi
-8 ms
ABL uni
200 ms


ECG
MAPd
MAP uni
ECG
MAPd
MAP uni

Summary

- Paraseptal pathways can be challenging to ablate
- Avoiding AV block is a key concern
- Precise mapping is important
- Understanding of anatomy and alternate vantage points important