

# His Bundle Pacing to Confirm a Para Hisian Pathway

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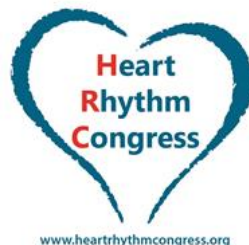
# Case Study

- **41 F**
- **Palpitations**
- **Structurally normal heart**
- **12 Lead ECG:**



# 12 Lead ECG

- **SR - delta wave**
- **Preexcitation by accessory pathway**
- **Wolff Parkinson White Syndrome**



# Accessory Pathway

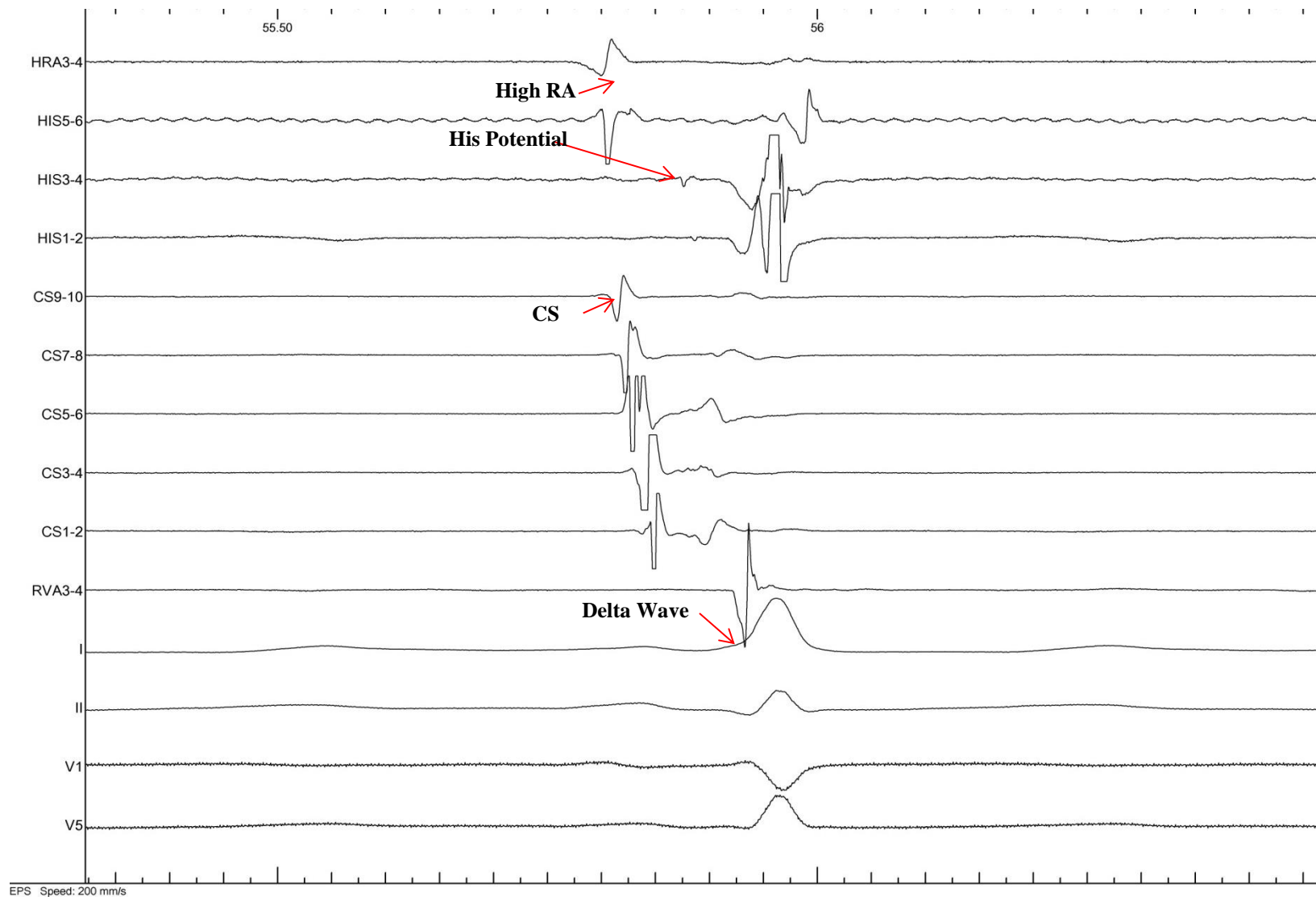
- **V1 negative (LBBB pattern) – right side**
- **Inferior delta wave axis – slightly more posterior / equivocal?**
- **Precordial transition V2 / V3 - septum**



# EP Study

- **Quadripolar – High Right Atrium**
- **Decapolar – Coronary Sinus**
- **His Hugger – His Bundle**
- **Quadripolar – Right Ventricular Apex**

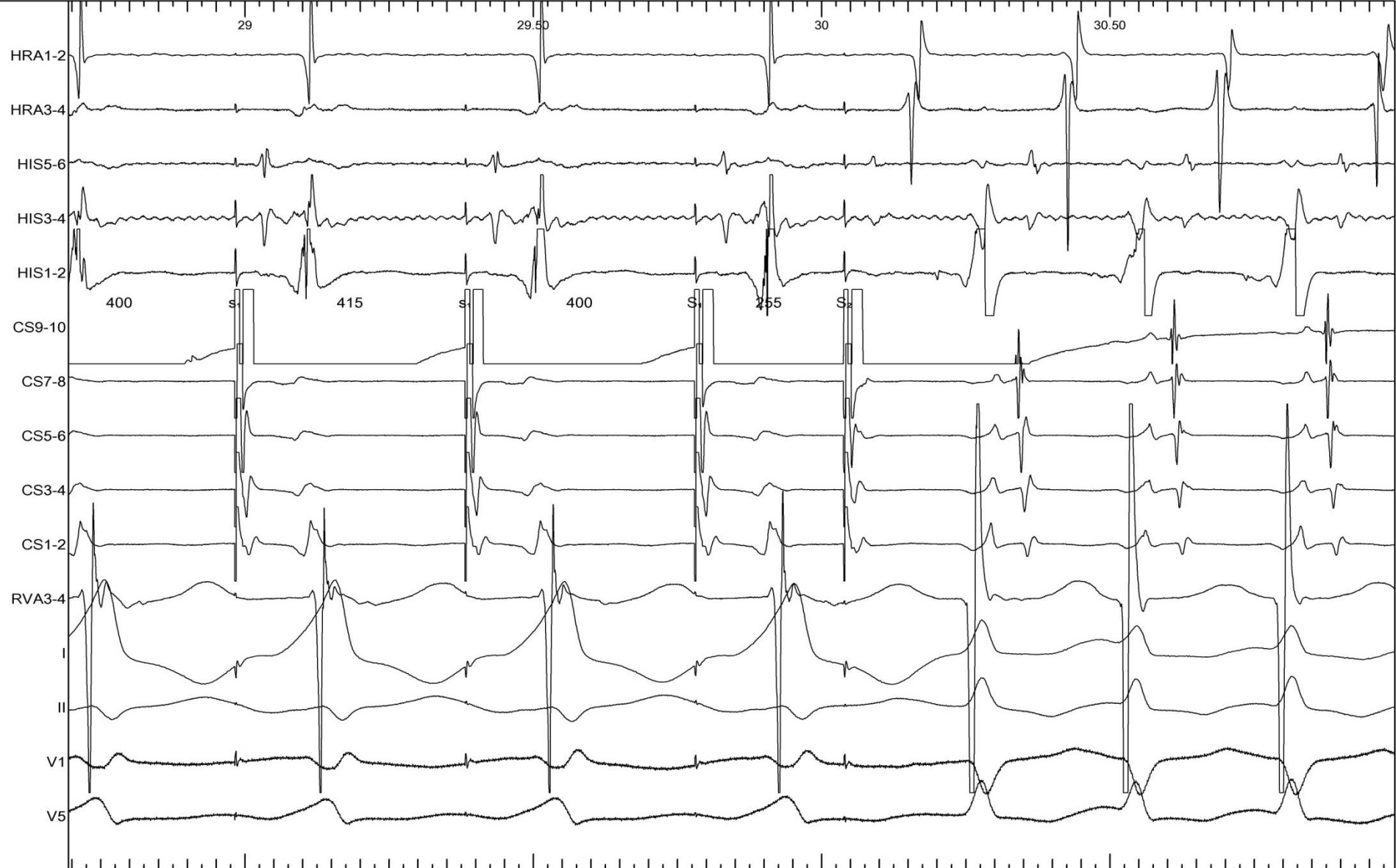


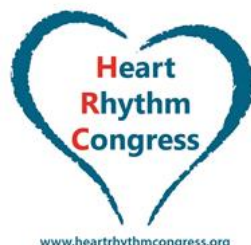
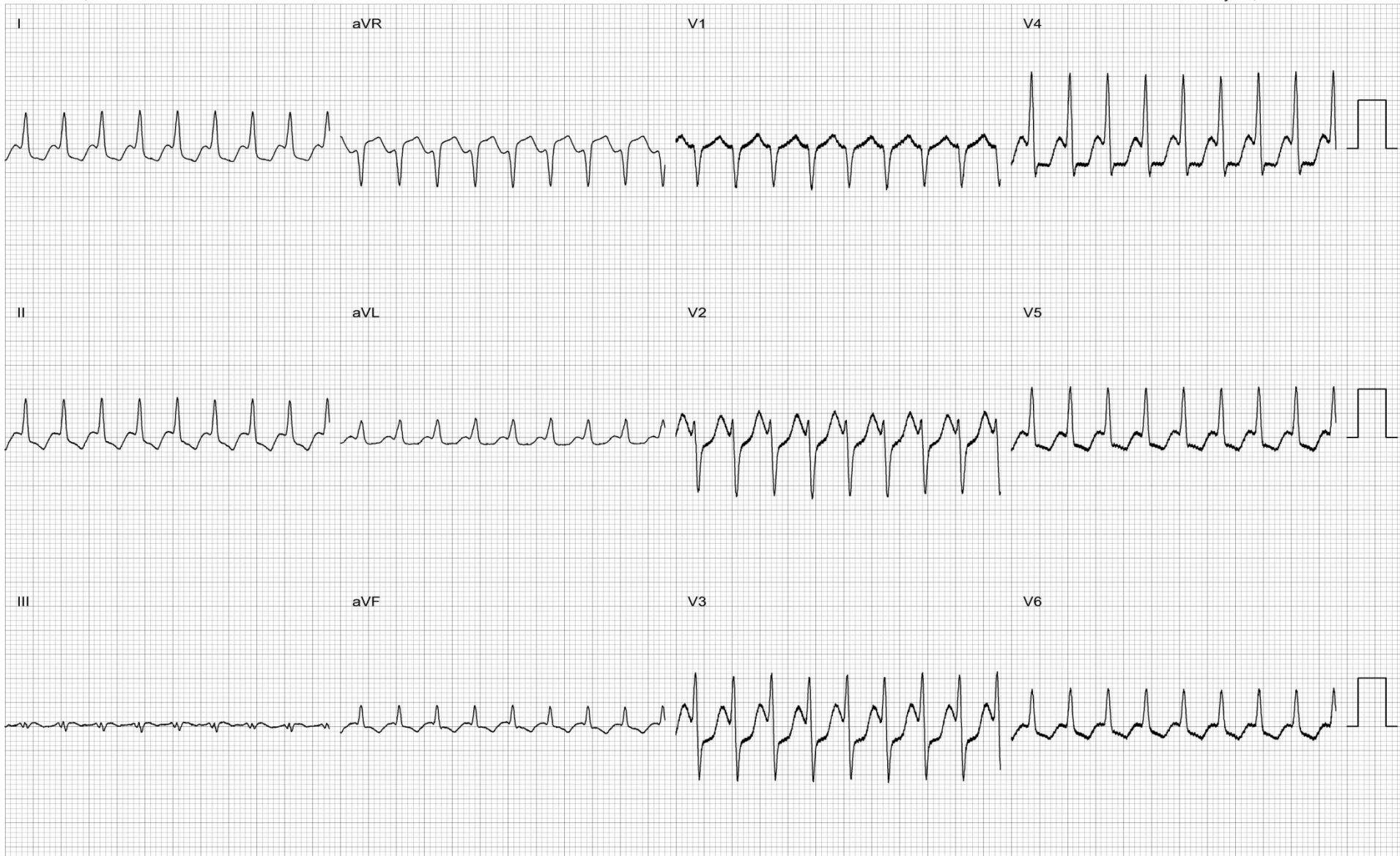


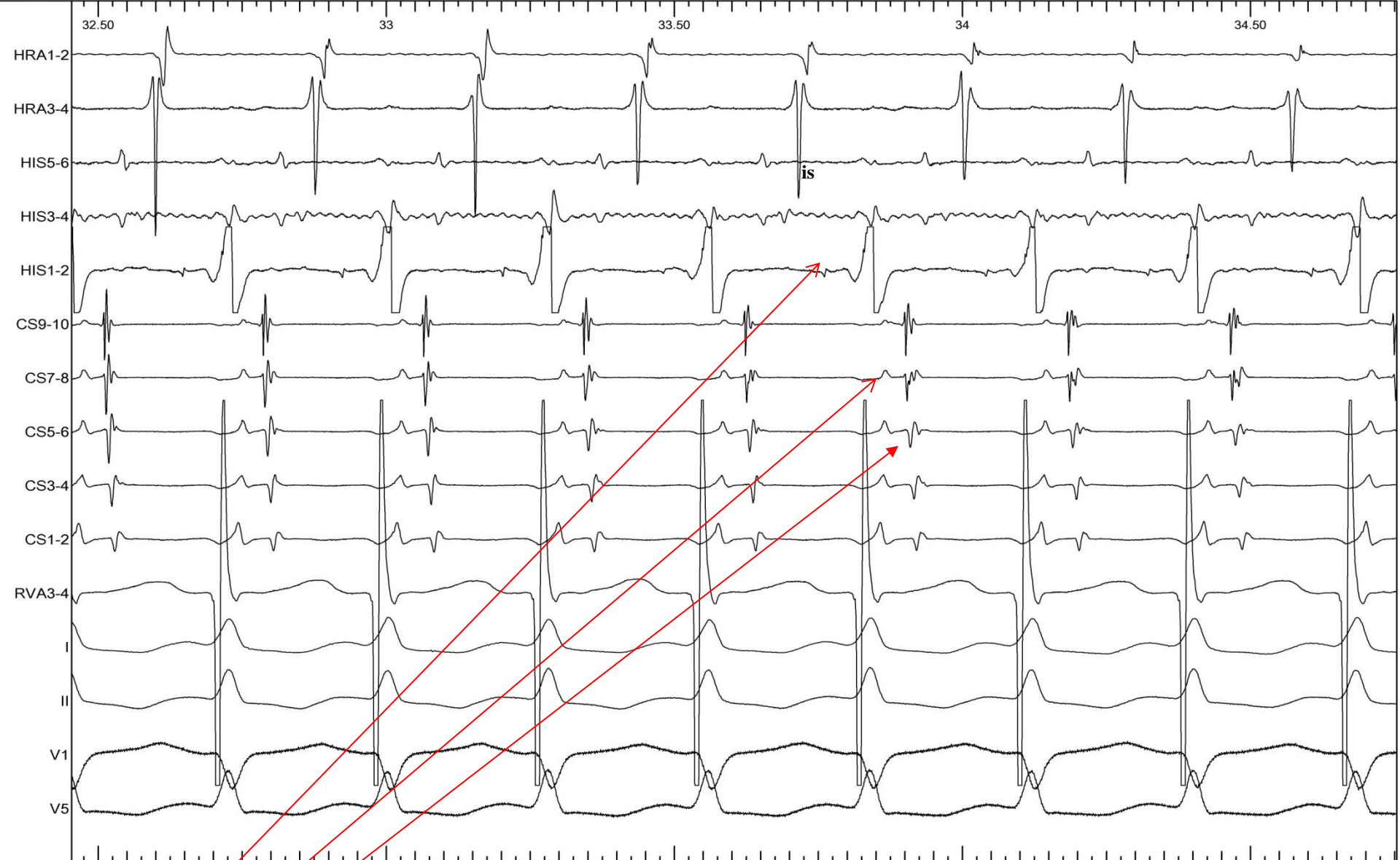
# EP Manoeuvres

- **V pacing at increasing rate**
  - **concentric VA conduction**
- **8 paced beats (400 ms) followed by early extra beat**
  - **Initiated narrow QRS complex tachycardia**
    - QRS changes – broad to narrow**
    - V → A → His → V pattern**









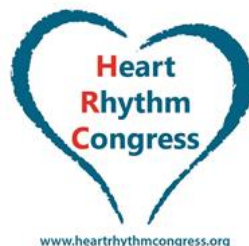
HIS  
V  
A



[www.heartrhythmcongress.org](http://www.heartrhythmcongress.org)

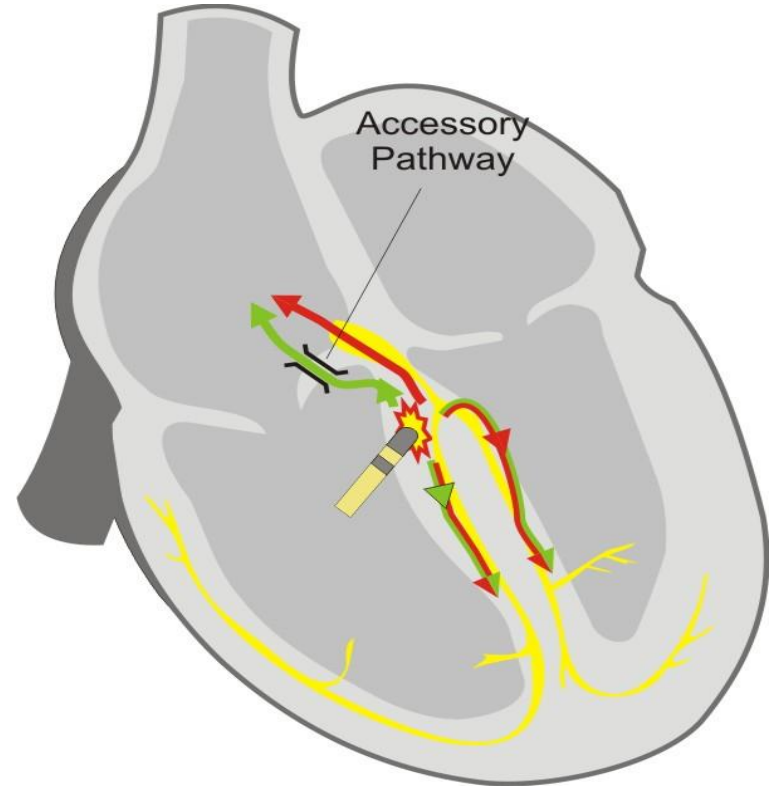
# Tachycardia

- **Suggests Atrio Ventricular Reentry Tachycardia likely (orthodromic)**
- **Unable to sustain tachycardia**
- **Unable to confirm AVRT**
  - **cannot perform HSPVC / entrainment of tachycardia**



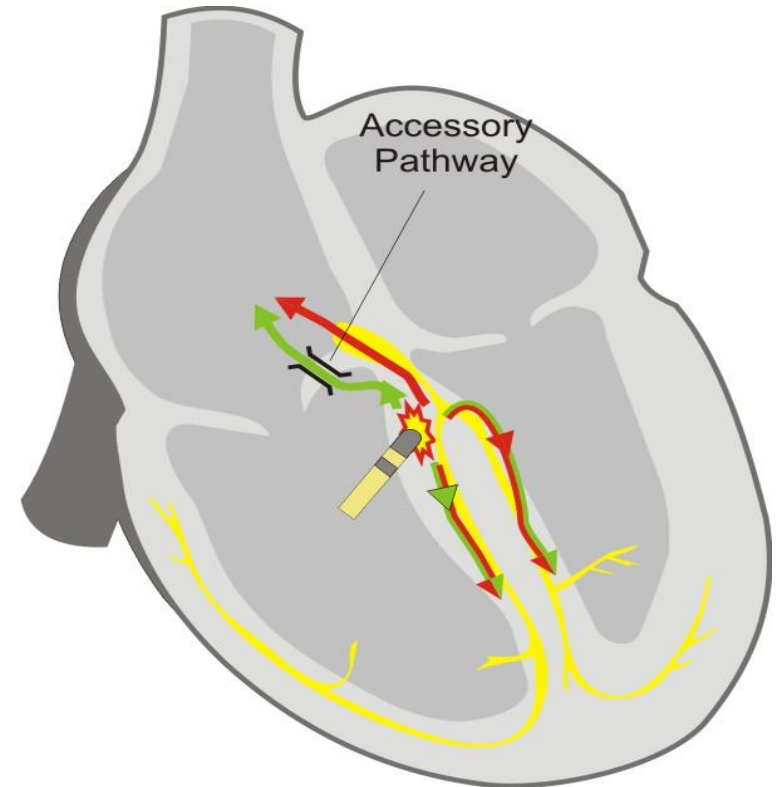
# His Bundle Pacing

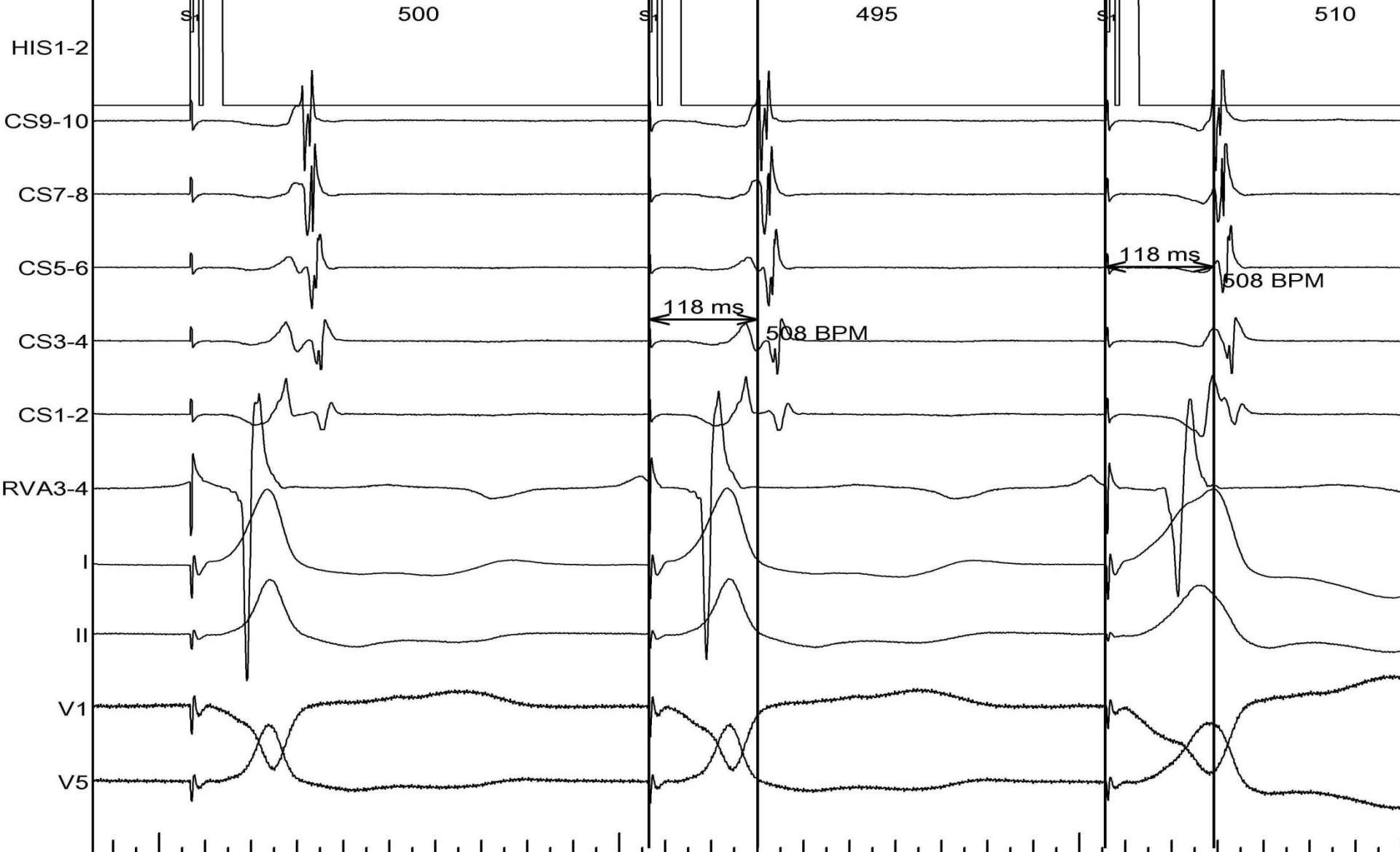
- **Pace His Bundle directly**
- **His capture threshold**
- **Septal myocardial threshold**
- **His > myocardial threshold usually**



# His Bundle Pacing

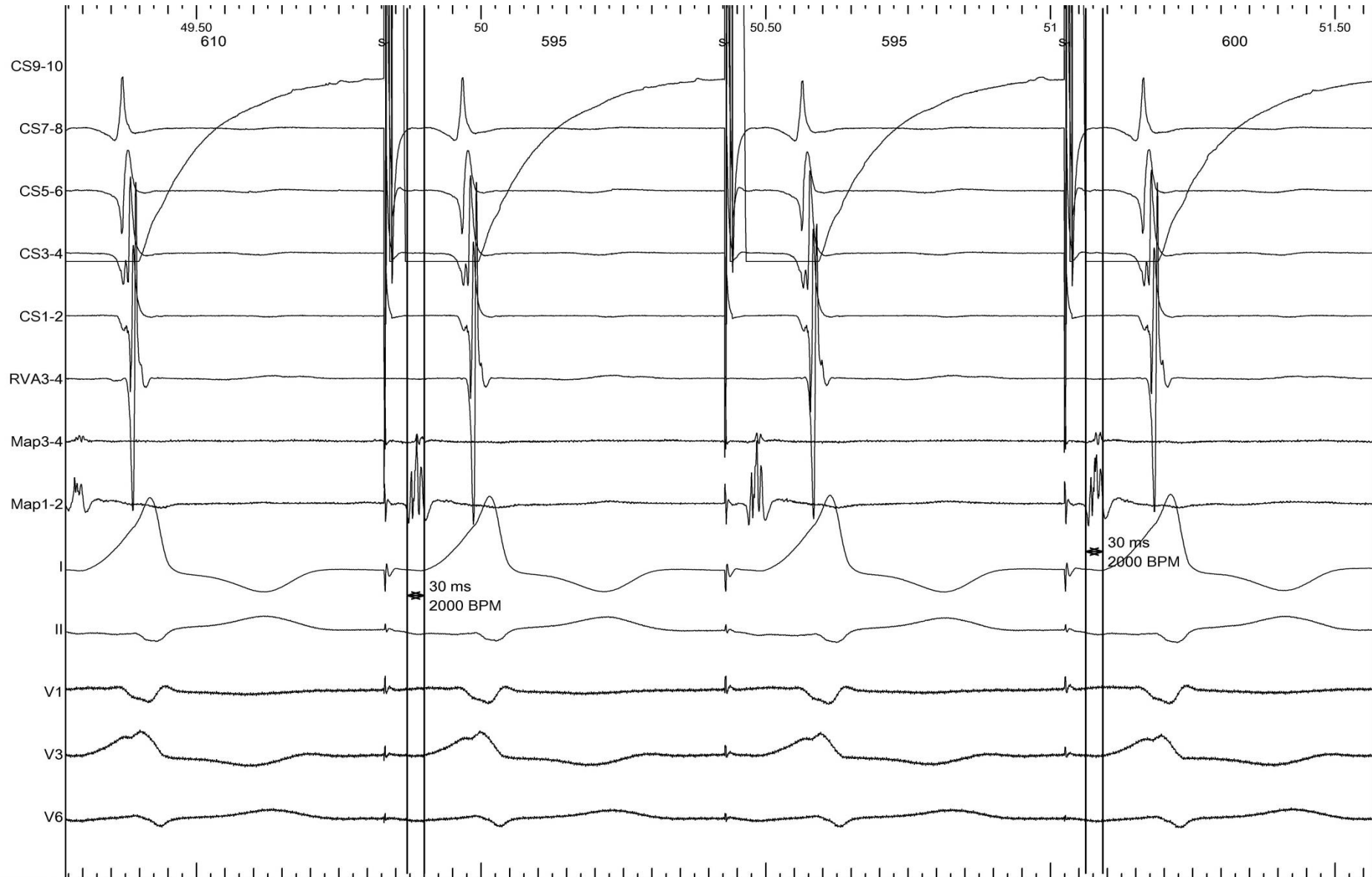
- **His Capture – relatively narrow QRS**
- **Short pacing stim to earliest A time**
- **Reduce output until QRS becomes broad – loss His capture but still myocardial capture**
- **Stim to A time constant with broad and narrow QRS – confirms Para Hisian AP**





# Ablation of AP

- **F Curve non irrigated 4 mm ablation catheter**
- **Mapped with atrial pacing**
- **Measured earliest V signal to delta wave**
- **Earliest – 30 ms at ‘lip’ of CS**
- **Ablation – loss of delta wave**

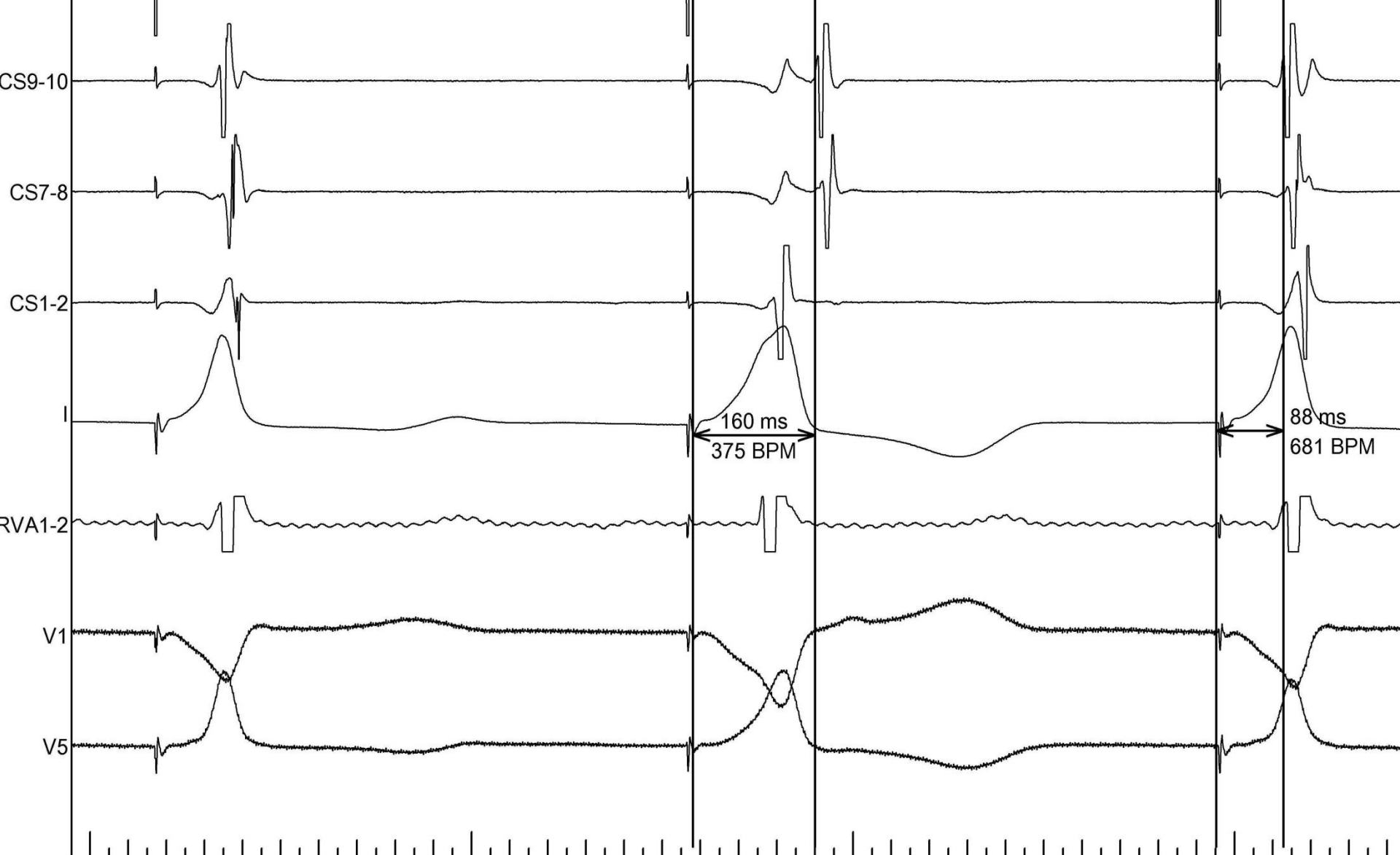




# **His Pacing to Confirm Successful Ablation of AP**

- **Demonstrate His capture (narrow QRS)**
- **Demonstrate His failure to capture (broad QRS) but with myocardial capture**
- **Stim to earliest A time – Broad > Narrow**
- **Loss of delta wave maintained**





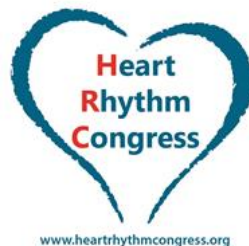


# Acknowledgements

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Arrhythmia Specialist**
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**Thank you.**  
**Any questions?**



# Notable Points with His pacing

- Invalid if atrium paced (check short stim to HRA time)
- Stim to RVA time –
  - Long if atrial capture only
  - Short if only ventricular septum captured
  - Relatively shorter if His bundle captured

