

# Parahisian Pacing

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# Principles

- Used mainly to determine if a 'central' pattern of retrograde activation is due to conduction over:
  - (a) AV node alone
  - (b) AV node and accessory pathway
  - (c) Accessory pathway alone

# Alternatives

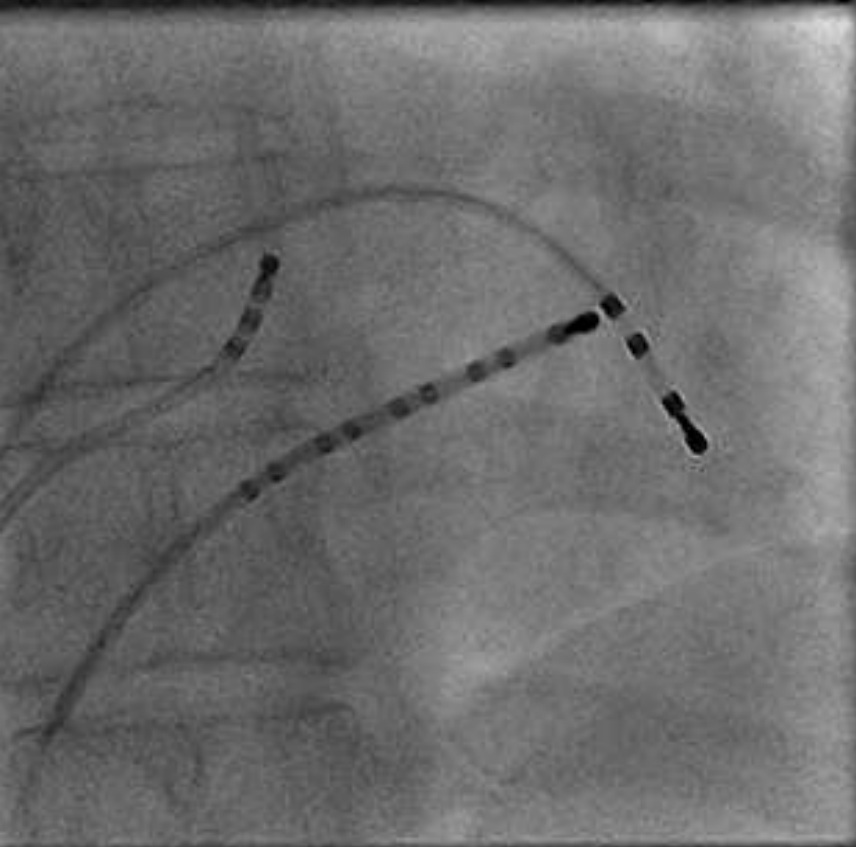
- Adenosine – with ventricular pacing looking for a change in retrograde activation pattern
  - septal pathways more often adenosine sensitive
- Differential ventricular pacing – pacing from the RV apex, the base (just over tricuspid valve into ventricle) and the RVOT region (above the His)

# Method

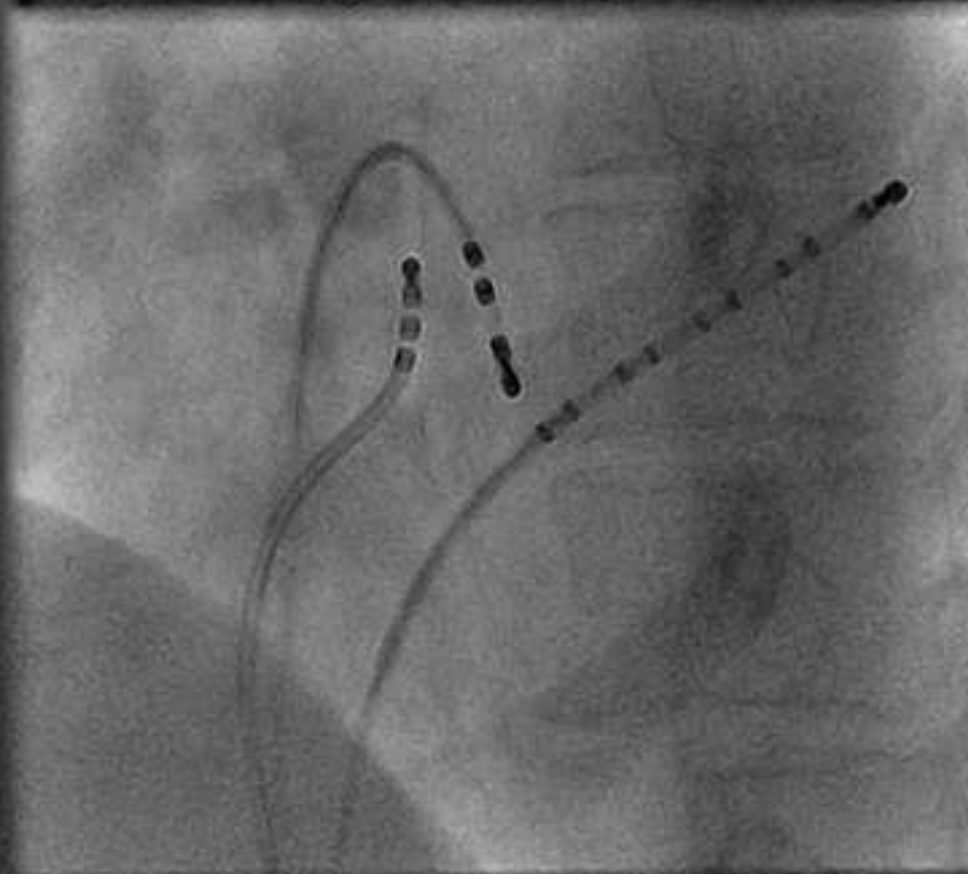
- Pace at cycle length of around 600ms from His distal
- Good His on catheter but no 'A'
- Start at high output (ensuring His capture with narrow QRS) and gradually reduce until lose His capture

# Catheter Positions

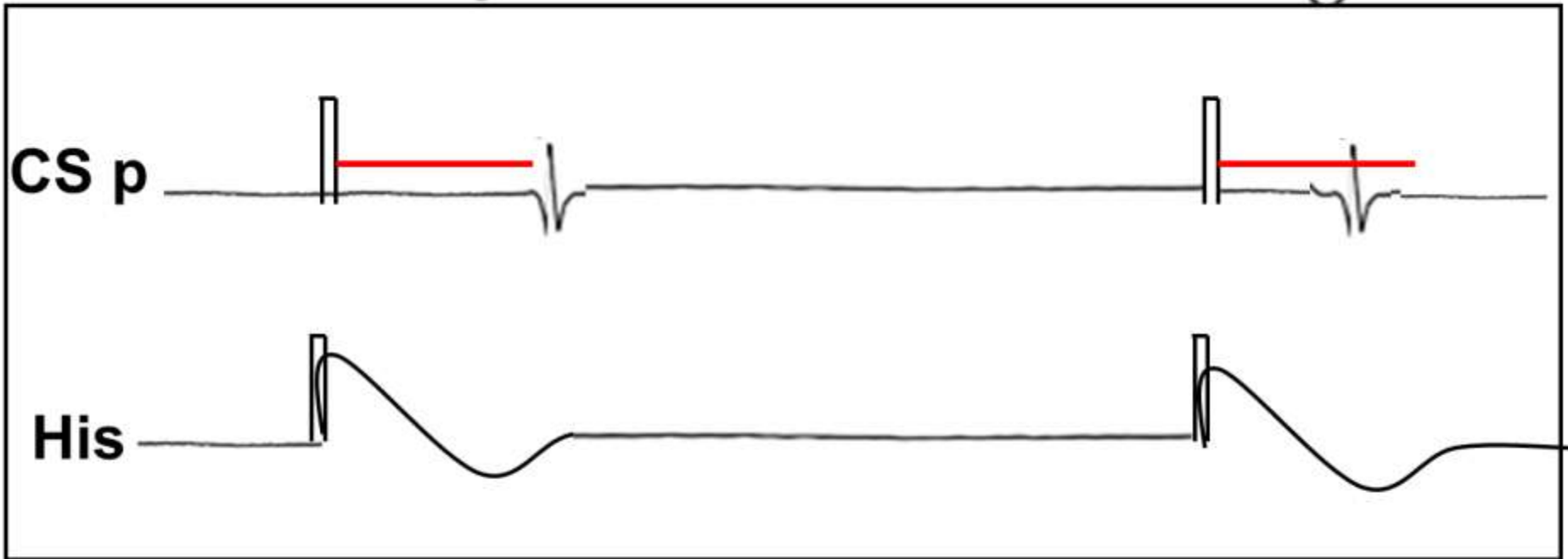
AP



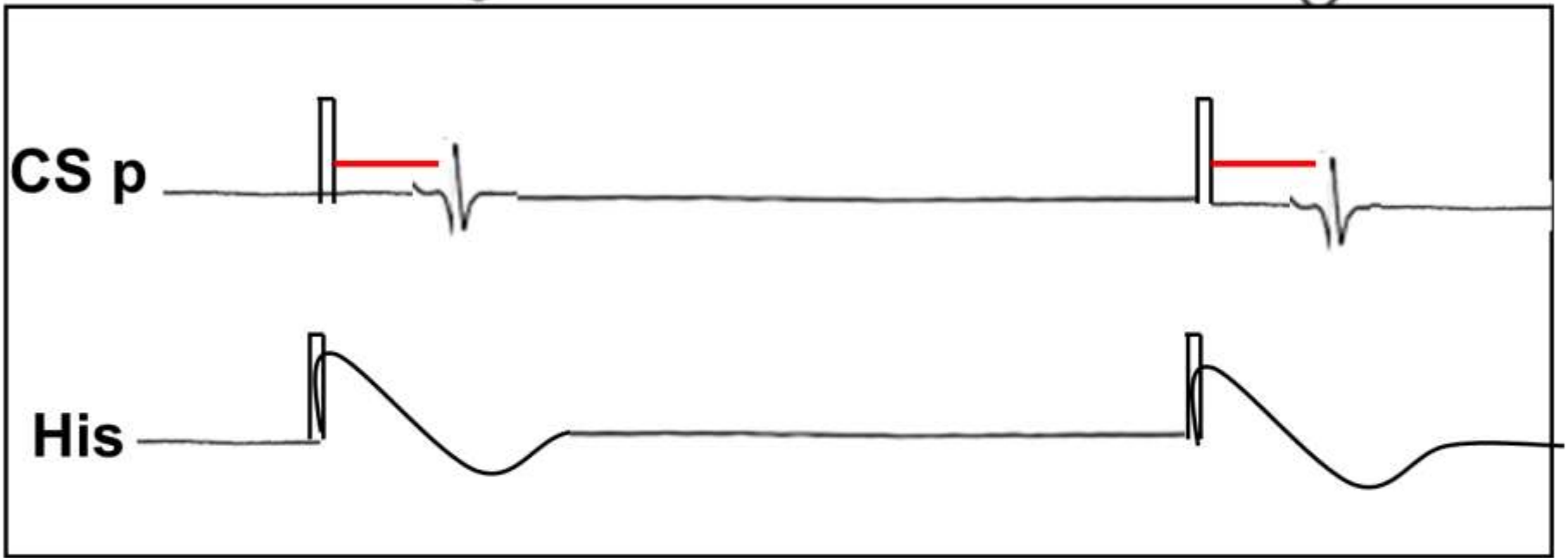
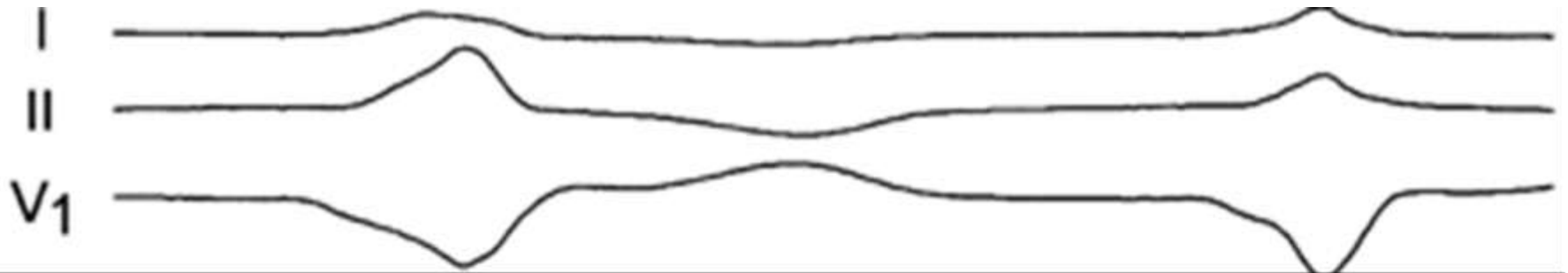
LAO



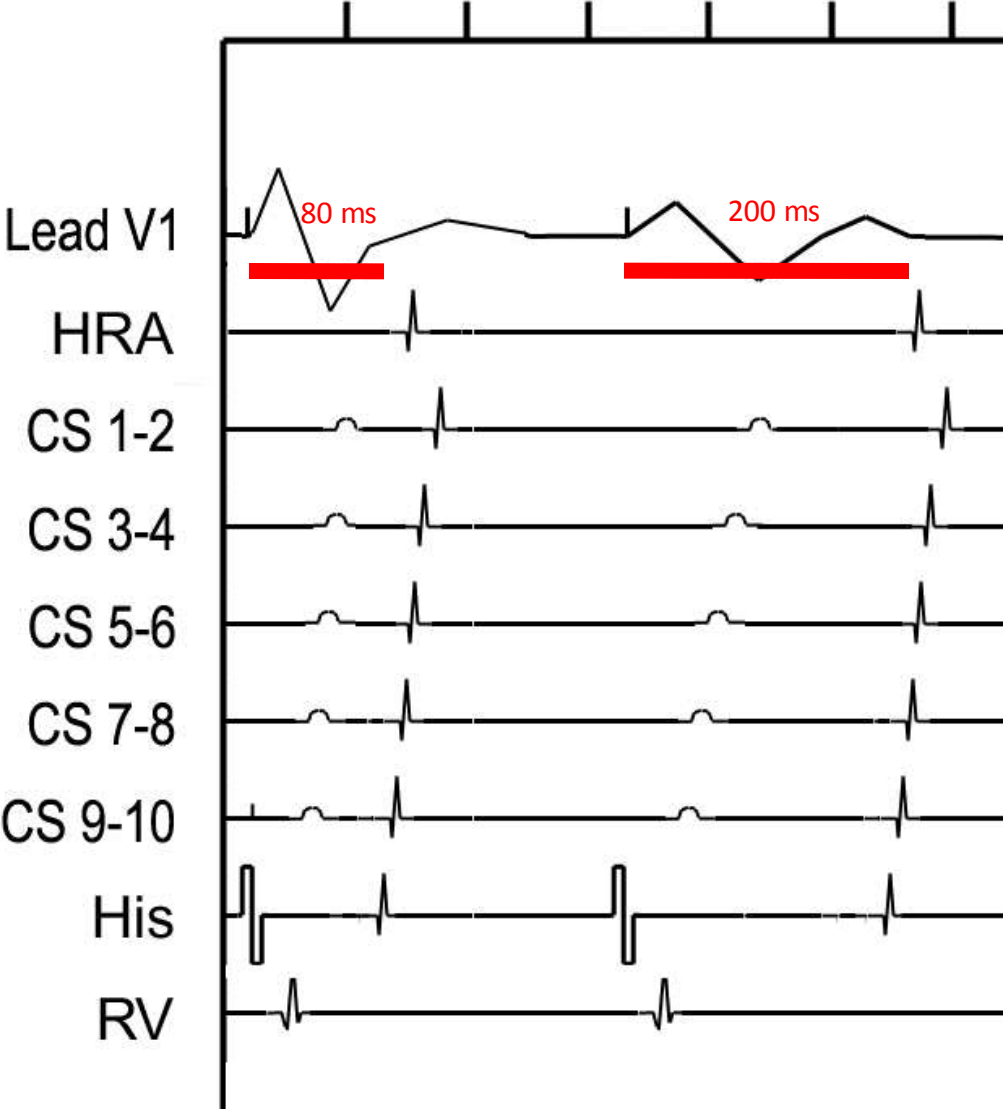
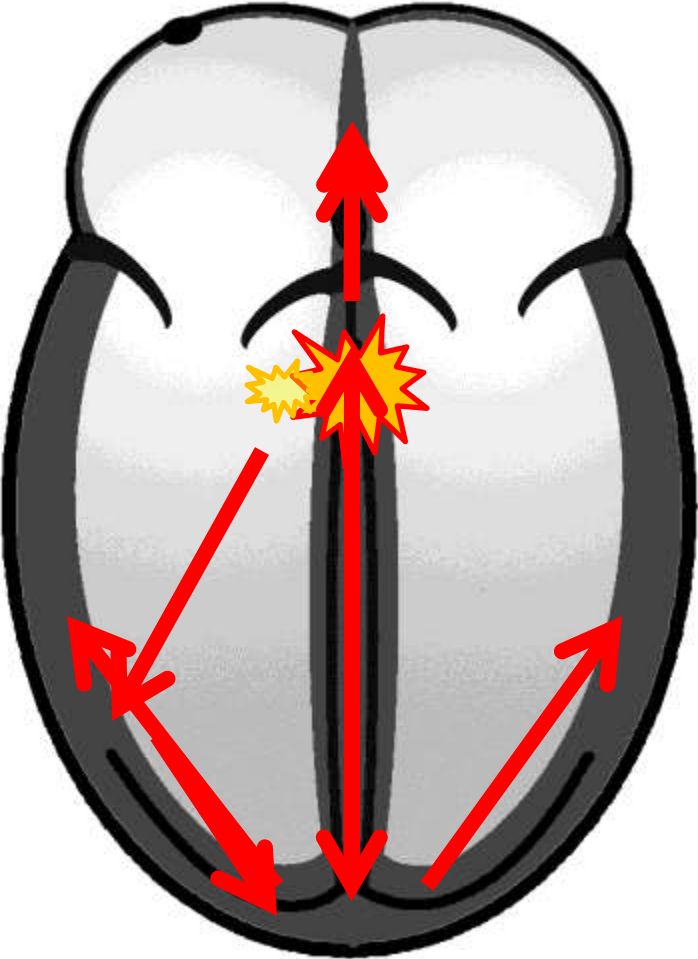
# AV node only



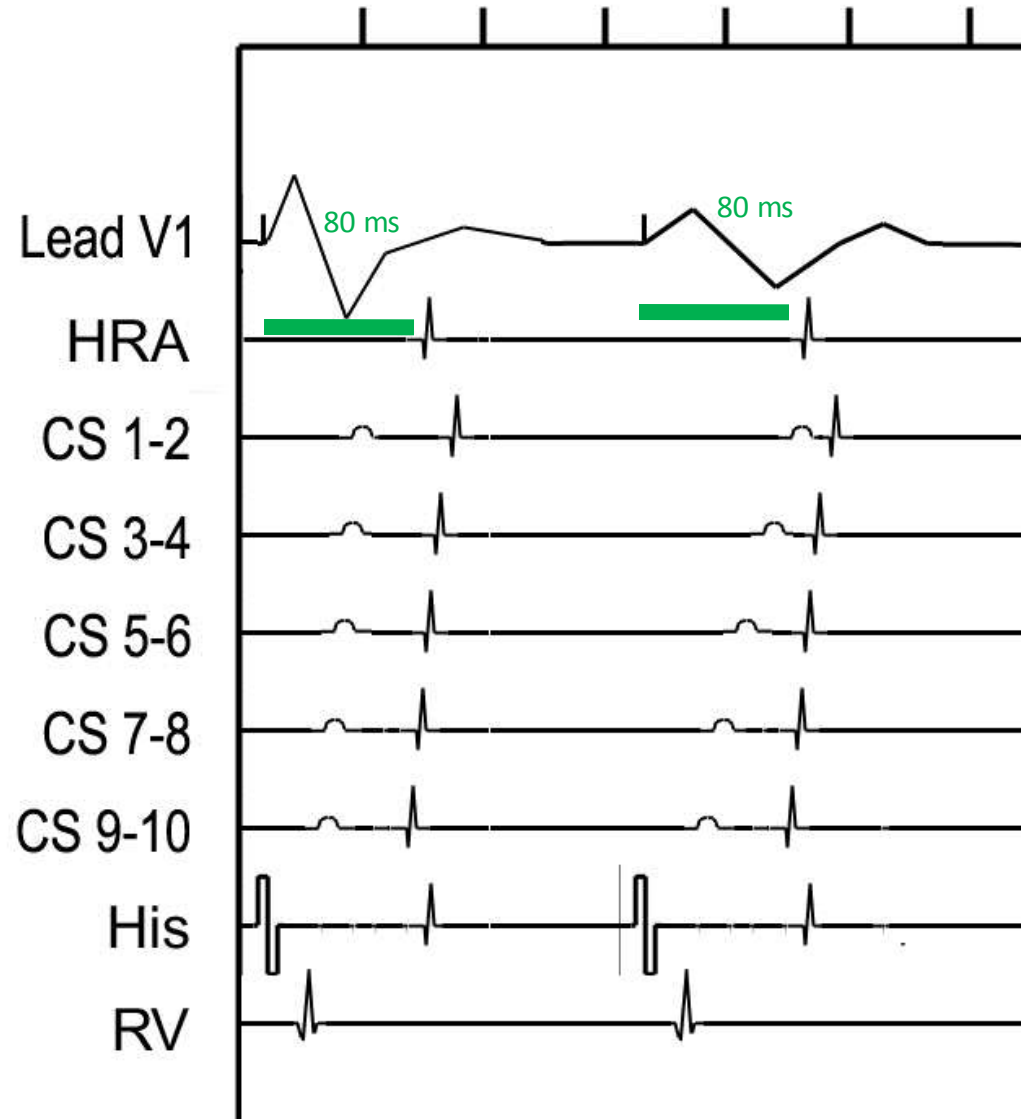
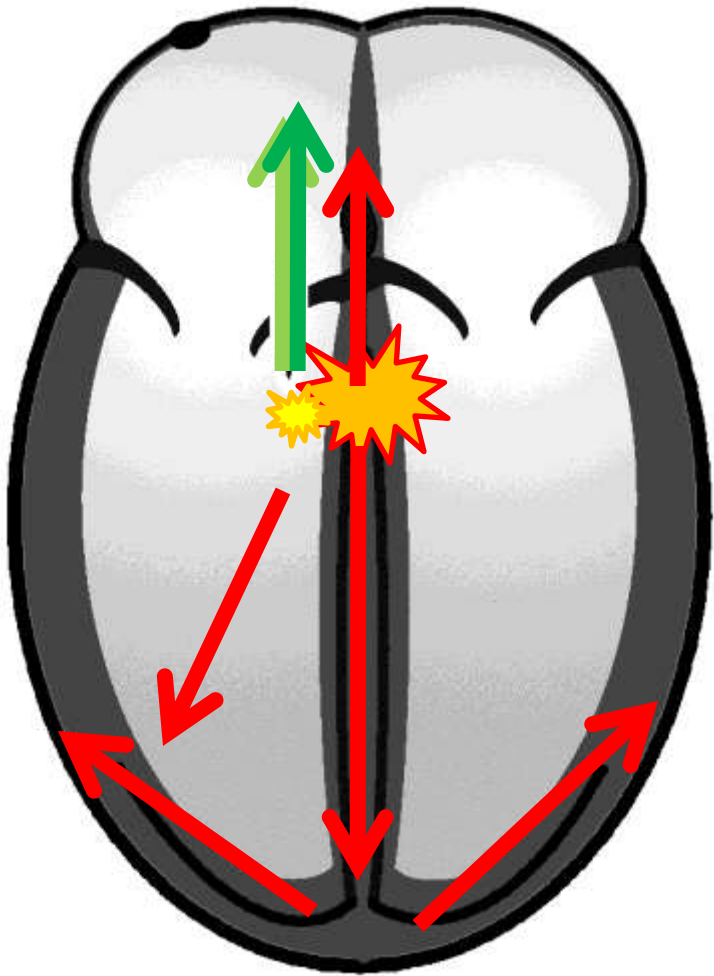
# Pathway



# AV node conduction – no pathway

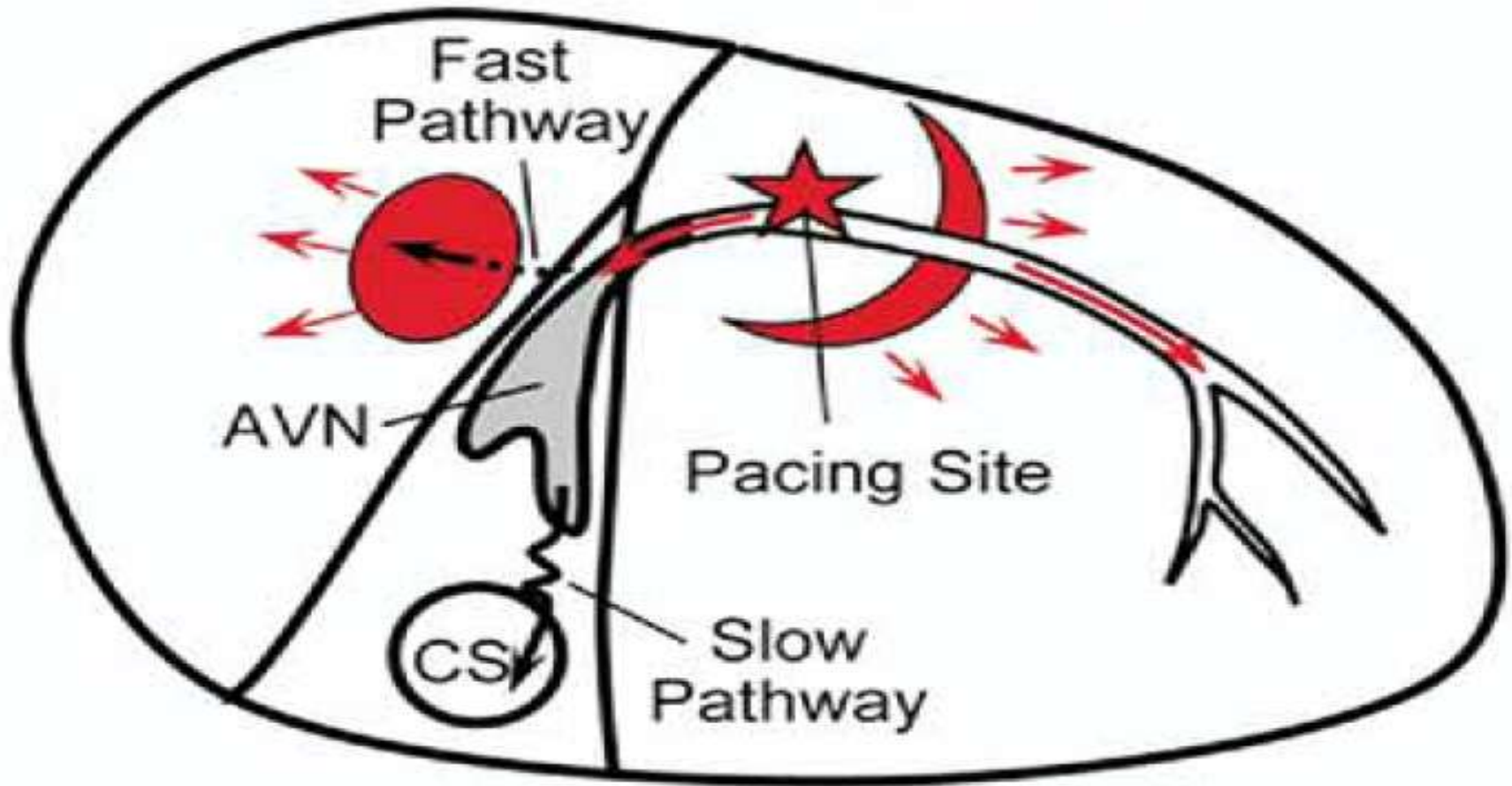


# Septal AP present



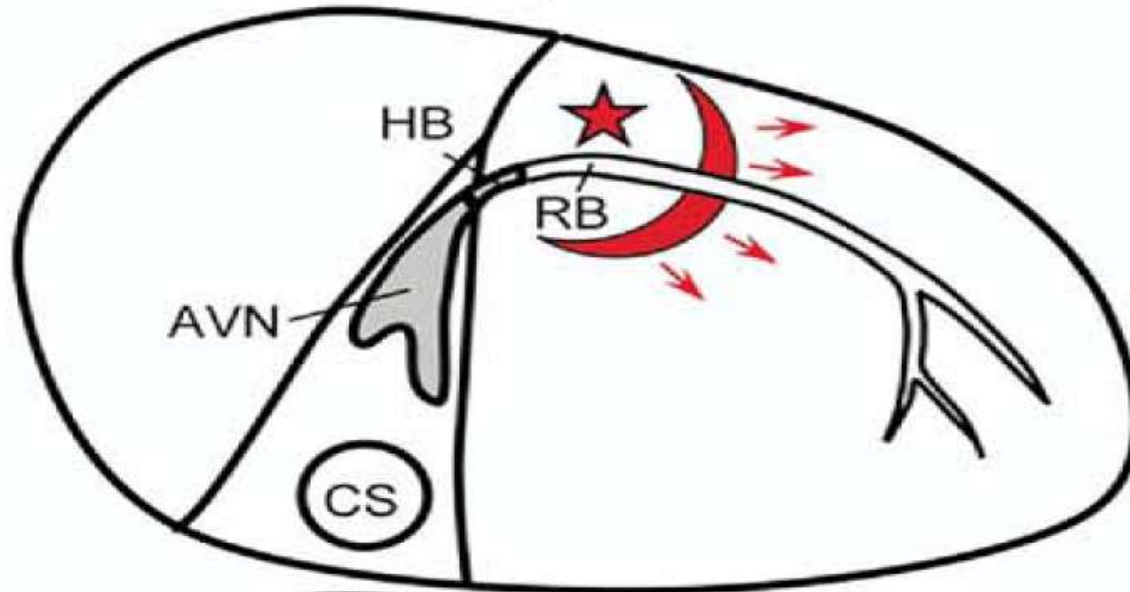
# AV node only – high output His capture

## RV + HB-RB Capture

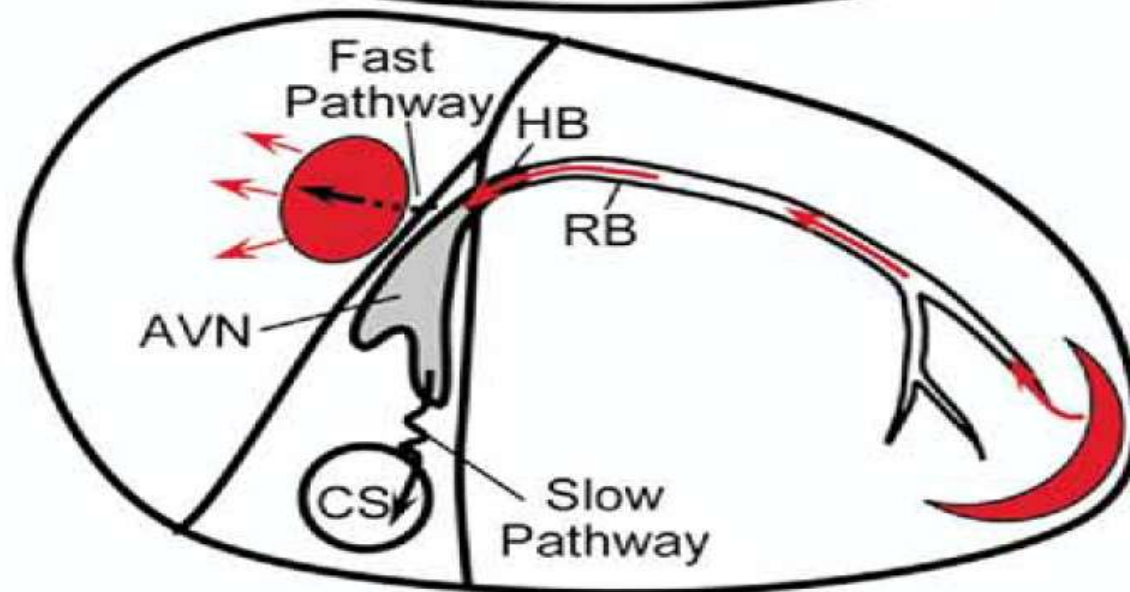


# RV Capture

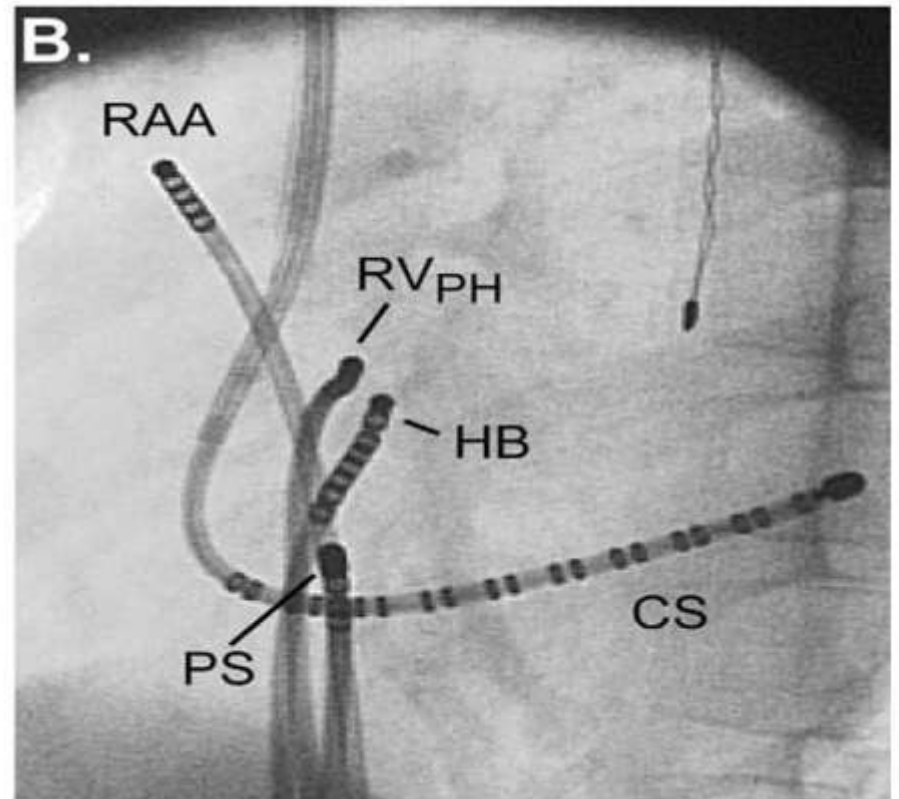
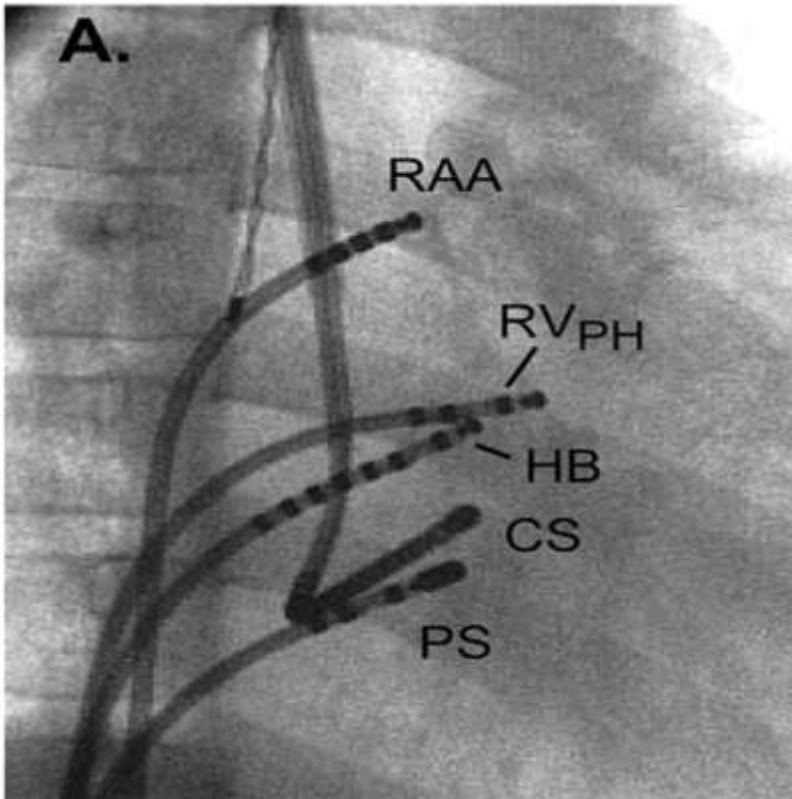
1



2

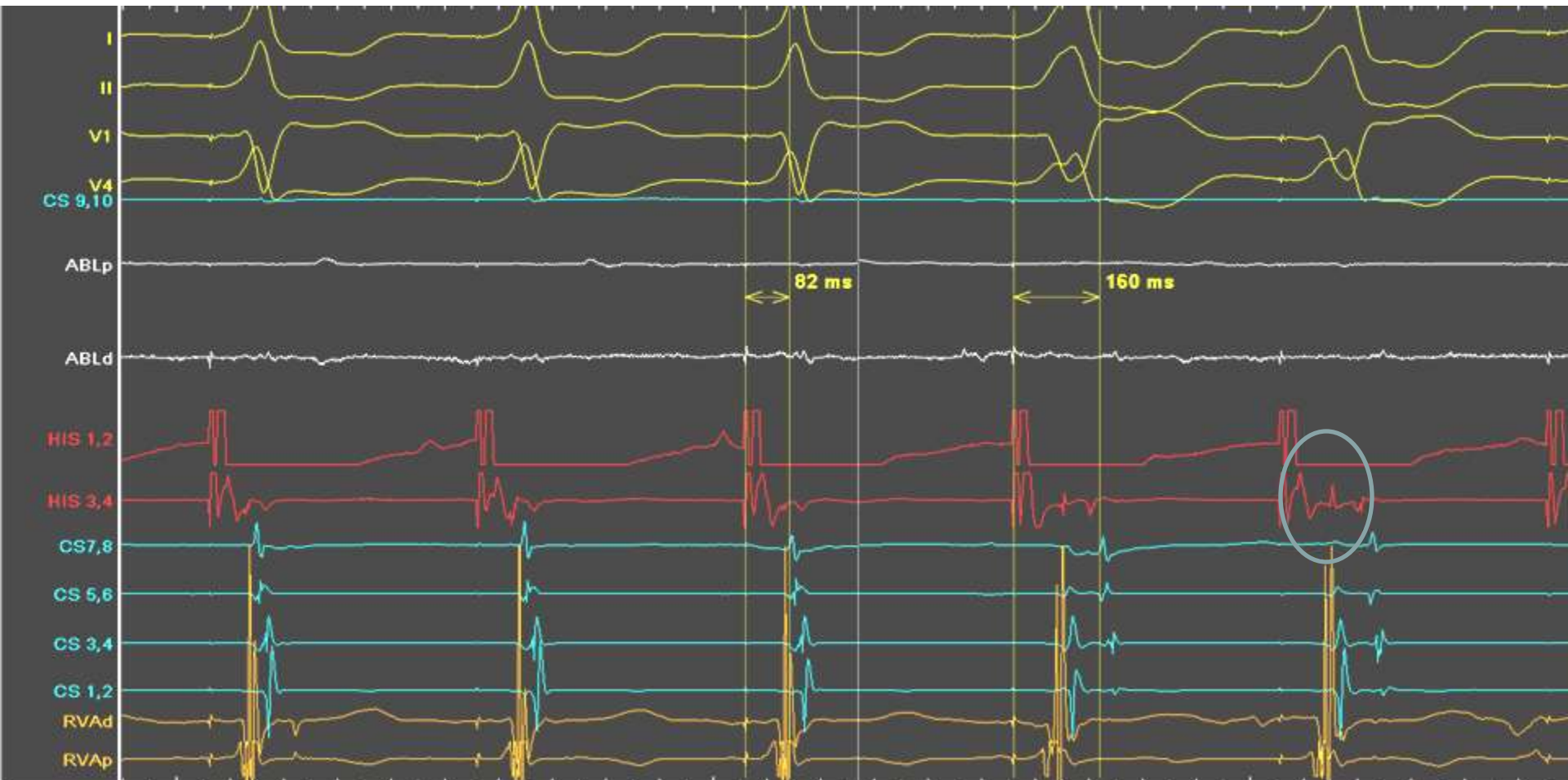


# Catheter set-up (Jackman)

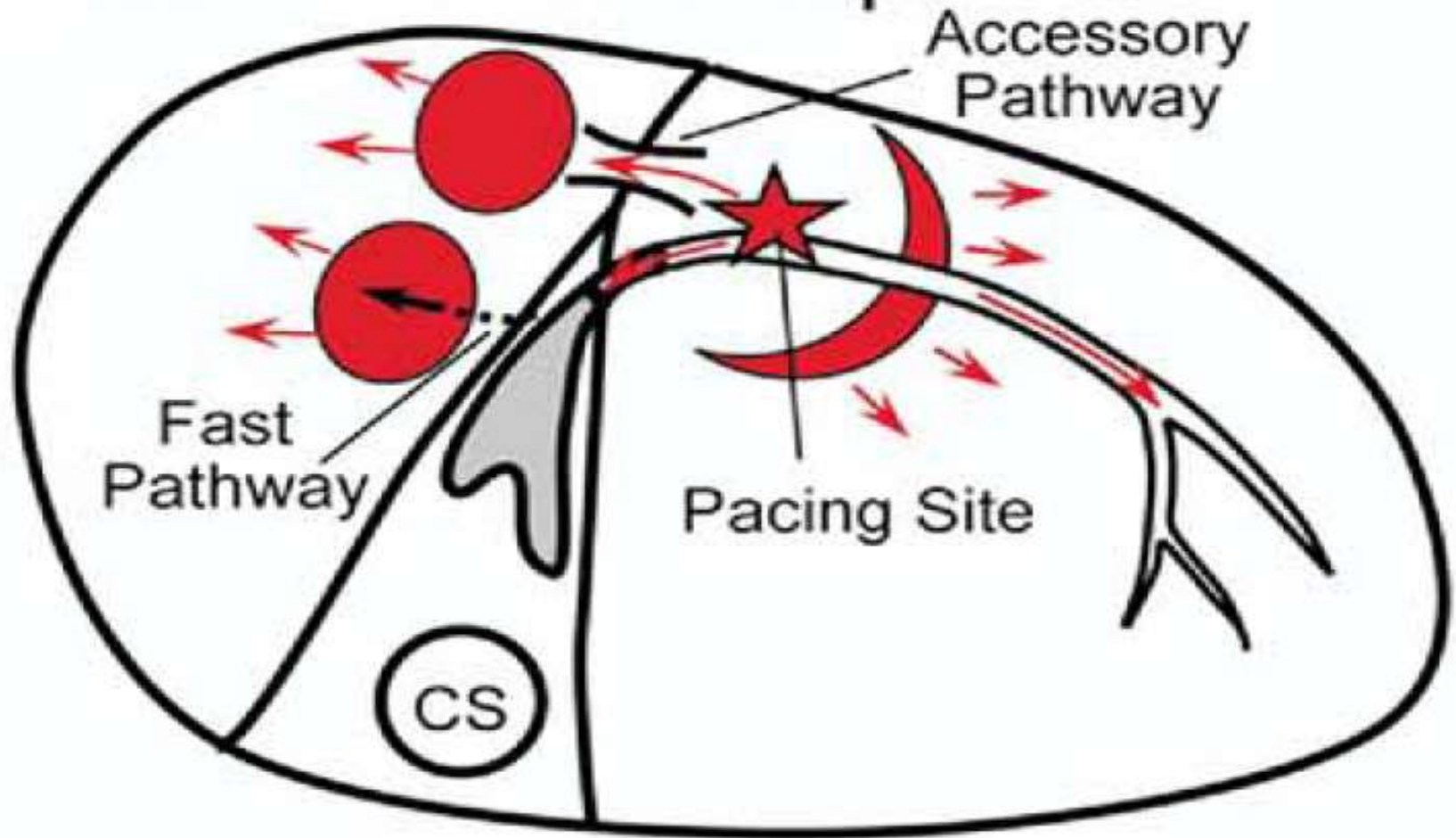




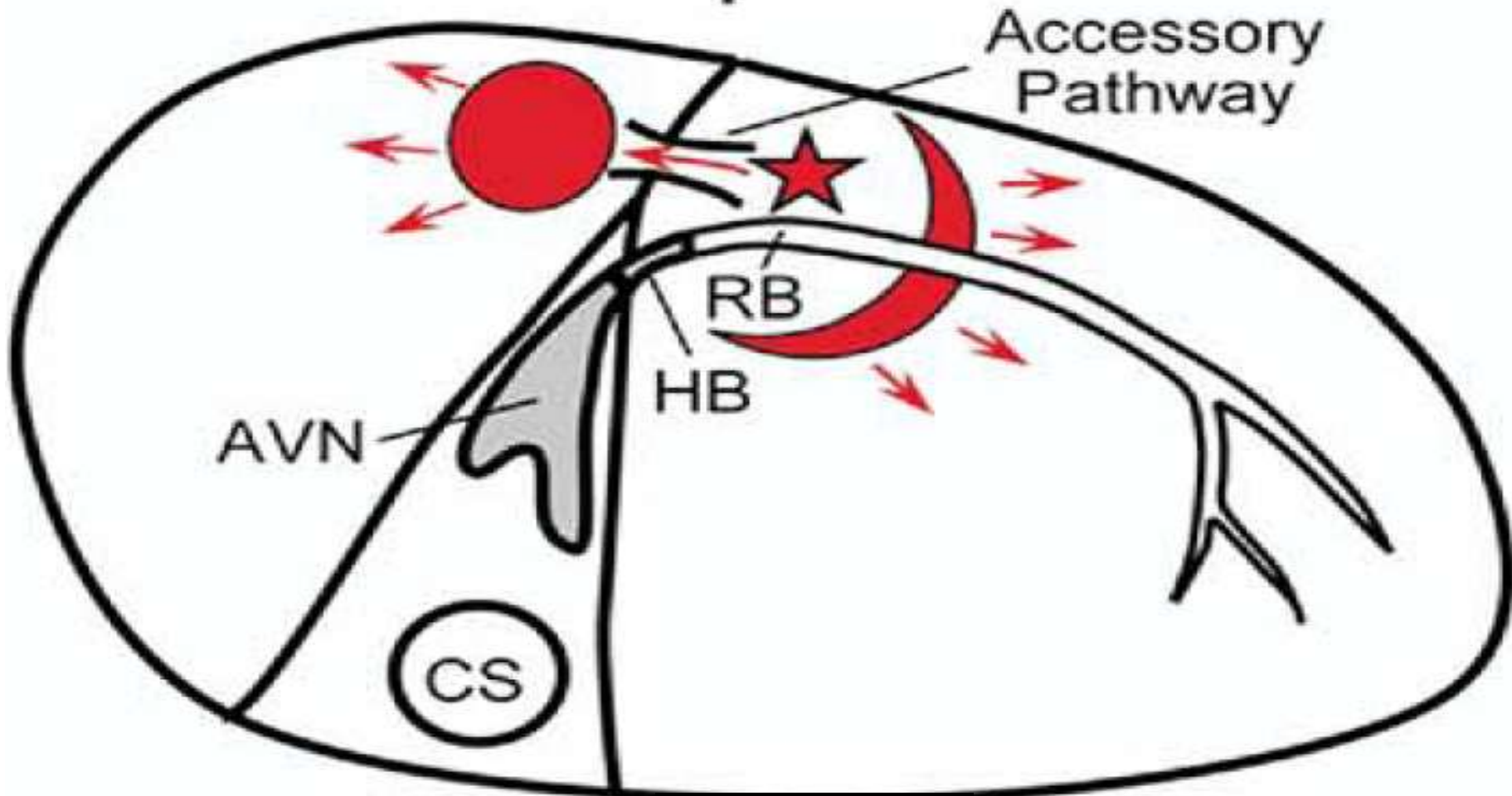
# Parahisian pacing – conduction only over AV node



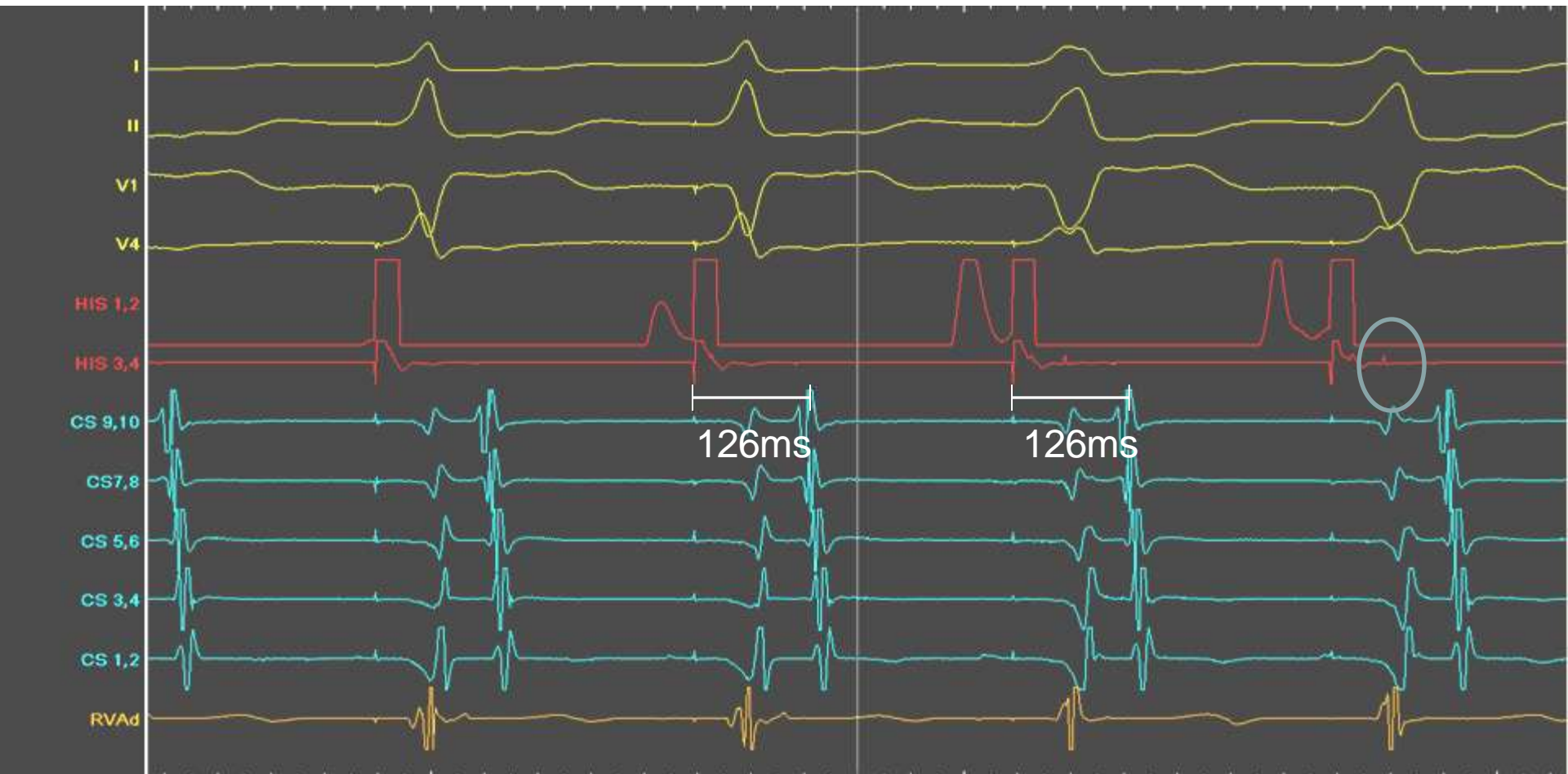
# RV + HB-RB Capture



# RV Capture



# Parahisian pacing – conduction over accessory pathway



# Differential Ventricular Pacing

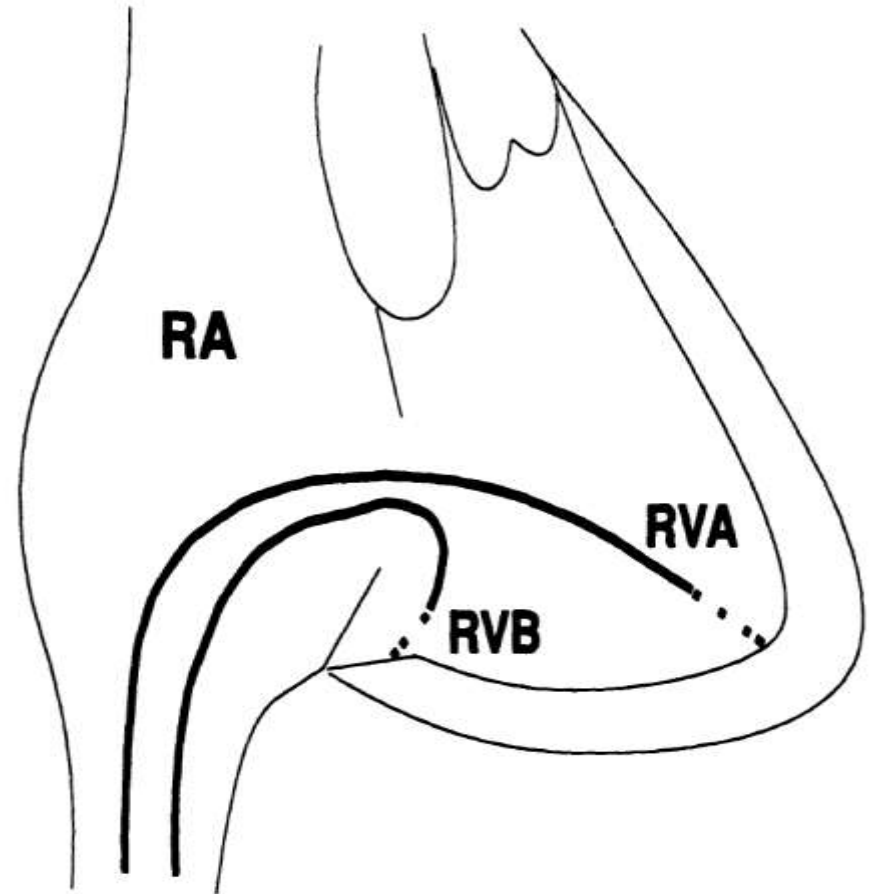
Compare timings to HRA catheter:

- (A) Pacing at RV apex – close to His-Purkinje system but further from P/S AP
- (B) Pacing at RV base – close to P/S AP but further from His-Purkinje system

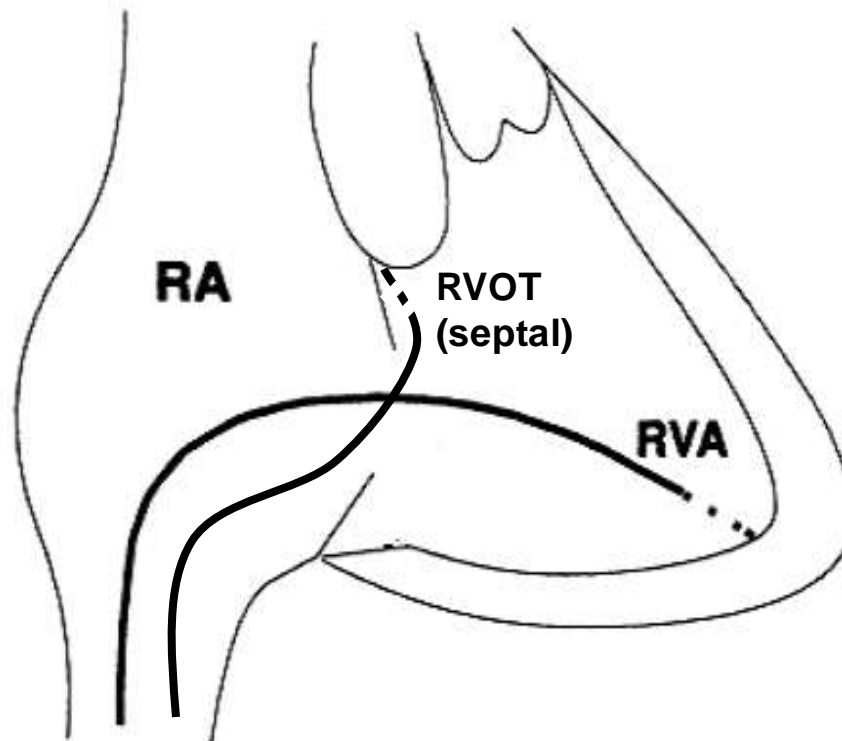
If only over AV node: conduction time longer from RV base

If over P/S AP then conduction time shorter from RVB

General difference – 20ms



# Differential Ventricular Pacing for concealed Parahisian AP



# Parahisian Pacing – final tips

1. Try it – even if you don't need it
2. Remember good His – no A
3. Often a little clock torque will help His capture
4. Start at 20mA output – look for narrow(ish) QRS
5. Bring pacing output down – look for wider QRS

## Watch out for:

1. V/A too short – normally  $<50\text{ms}$  – you are probably capturing A too
2. If V/A in tachy longer ( $>150\text{ms}$ ) then pathway may have slower conduction and parahisian pacing can look like AV nodal pattern