Narrow QRS Tachycardia

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COI Disclosure

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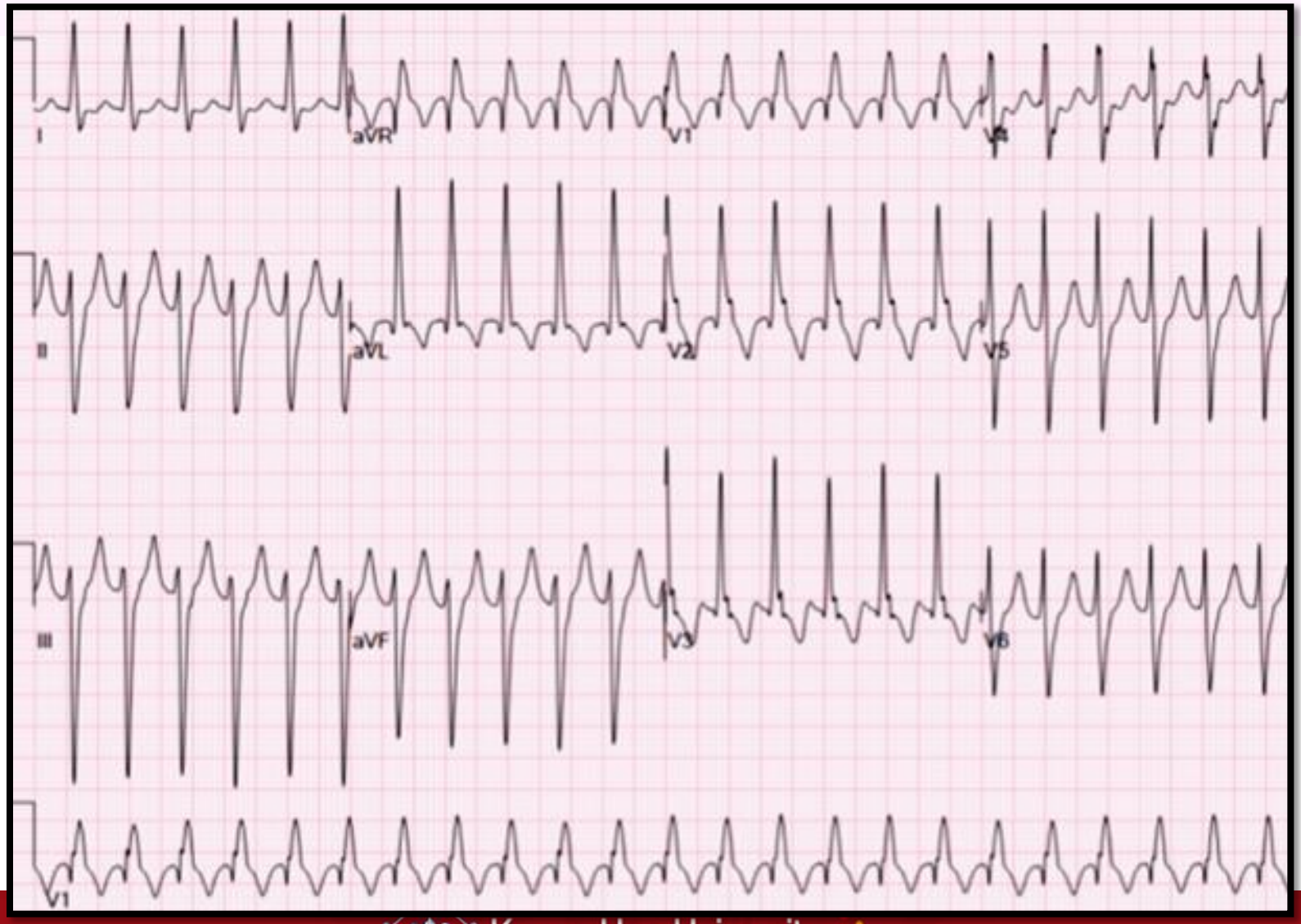
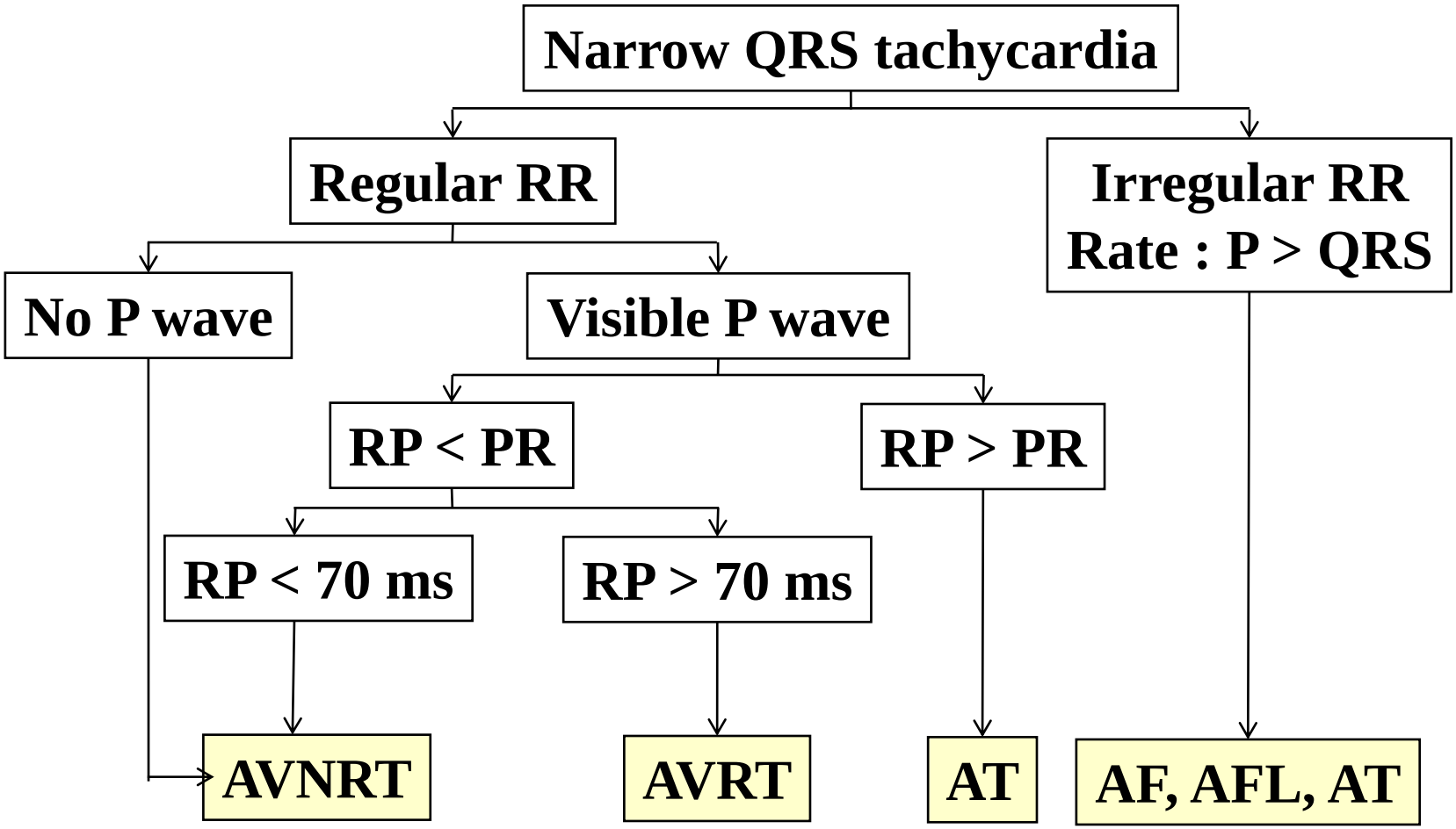
Narrow QRS tachycardia

- **QRS <120 ms, HR>100 bpm**
- **Supraventricular origin**
- **Potential exception**
  - **High septal VT**
  - **Fascicular VT**

Fascicular VT



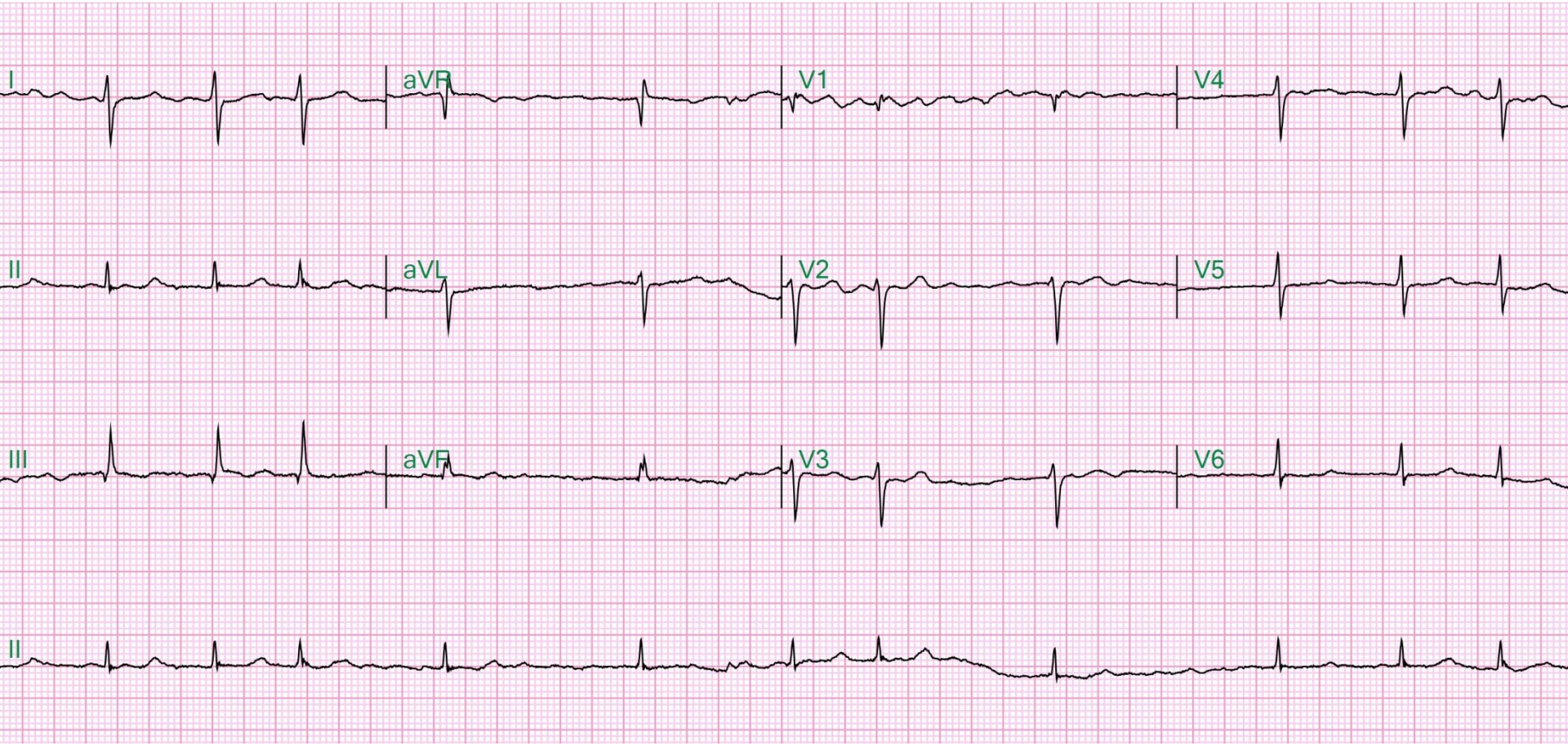
DDx of narrow QRS tachycardia



1. Regular or irregular?

1. **Irregular SVTs**
    1. **Atrial fibrillation**
    2. **Atrial tachycardia/flutter with variable AV conduction**
    3. **Multifocal atrial tachycardia**

Atrial fibrillation



- **Irregularly irregular rhythm**
- **Absence of P wave**

Atrial flutter with variable conduction

AT with variable conduction

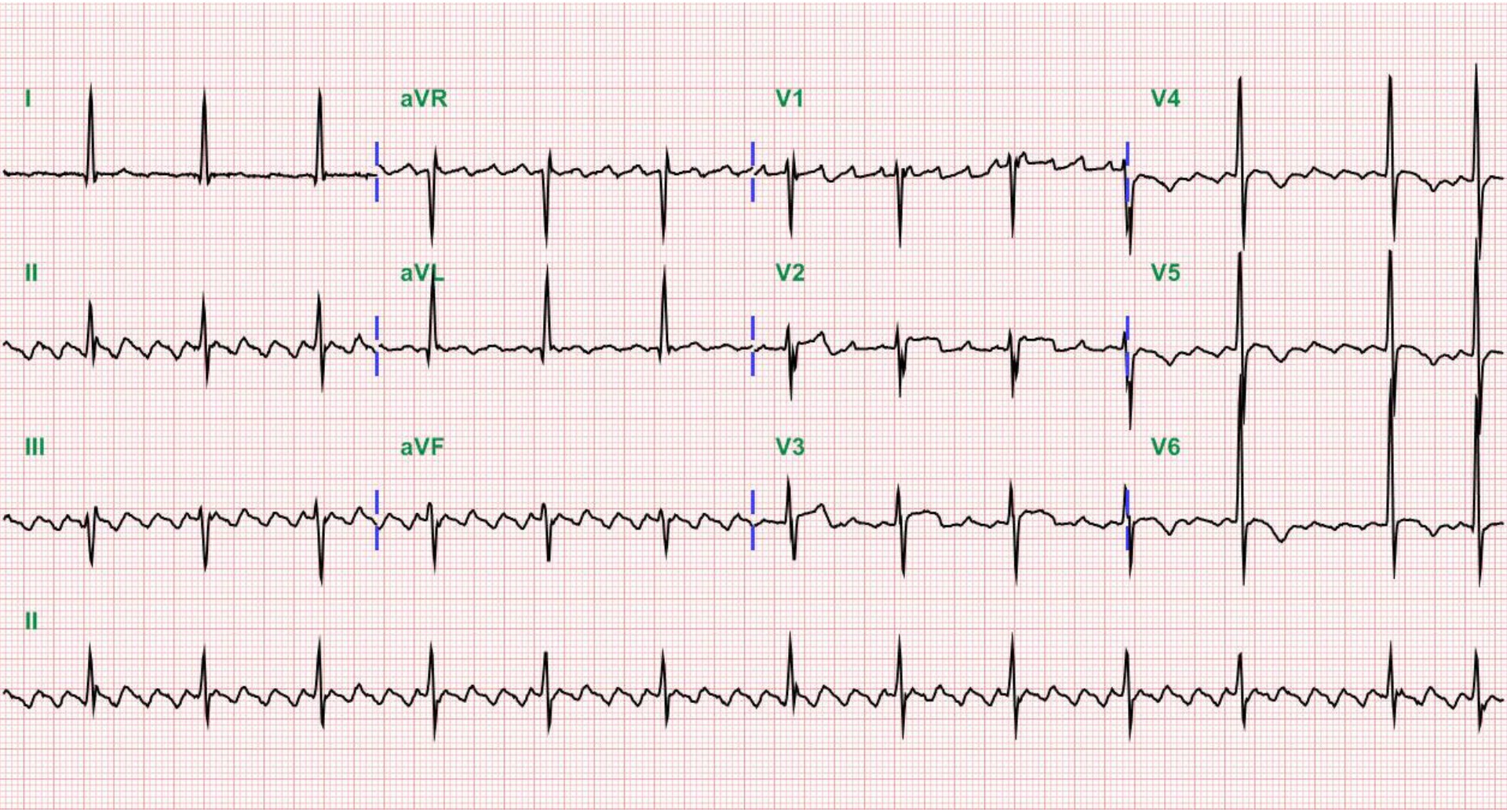
Multifocal Atrial Tachycardia

2. Regular SVT → look for P wave

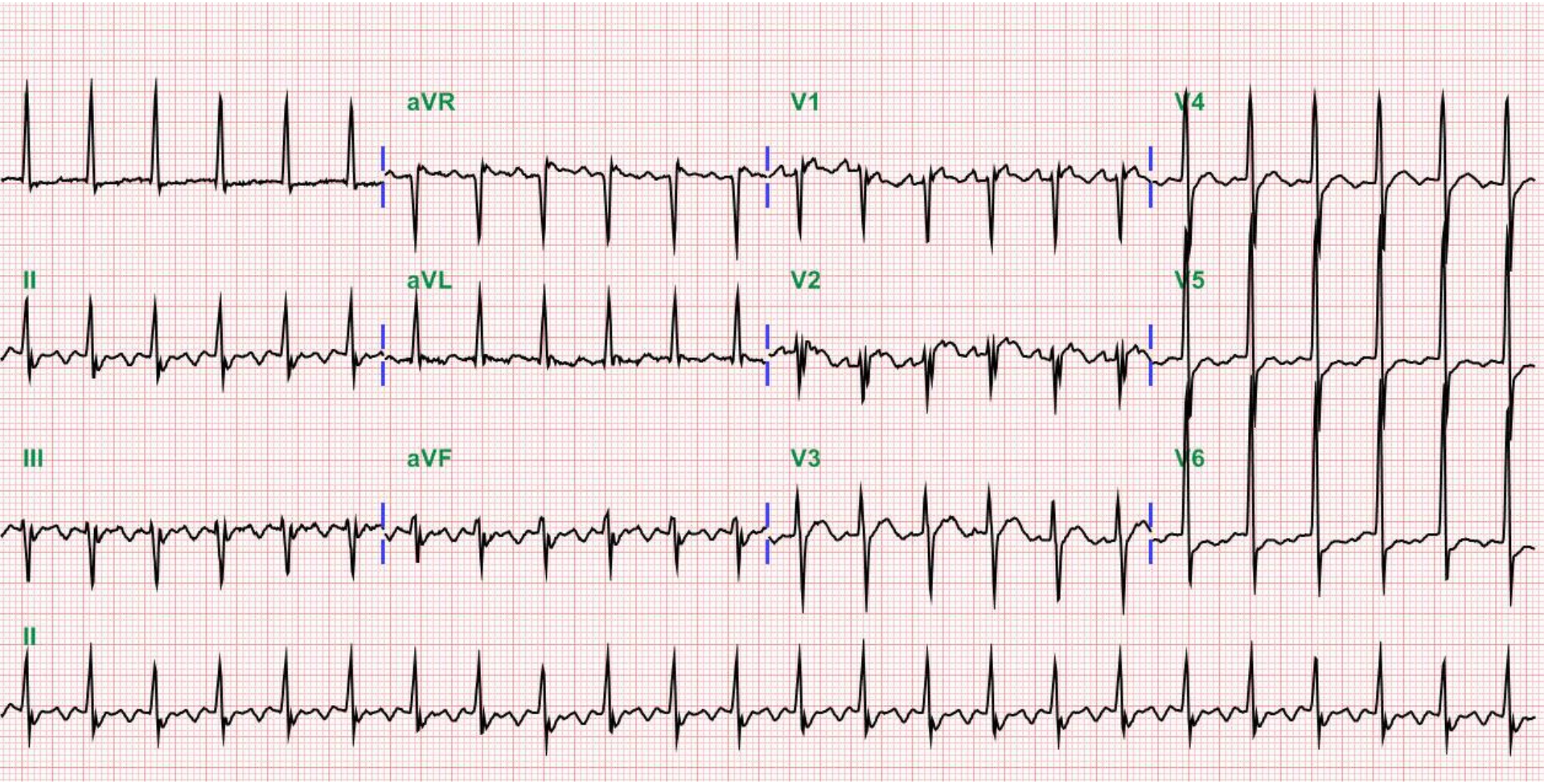
- **If A rate > V rate → AT/AFL**

- **A:V = 1:1, then examine RP interval**
  - **RP<PR**
    - **RP <90 ms: AVNRT**
    - **RP >90 ms: AVRT, atypical AVNRT, AT**
  - **RP>PR**
    - **AT, PJRT, atypical AVNRT**

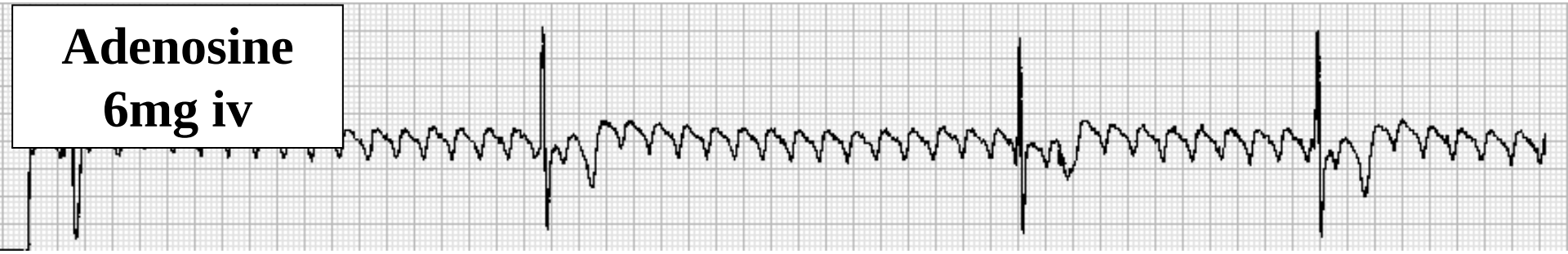
Atrial flutter (A:V = 4:1)



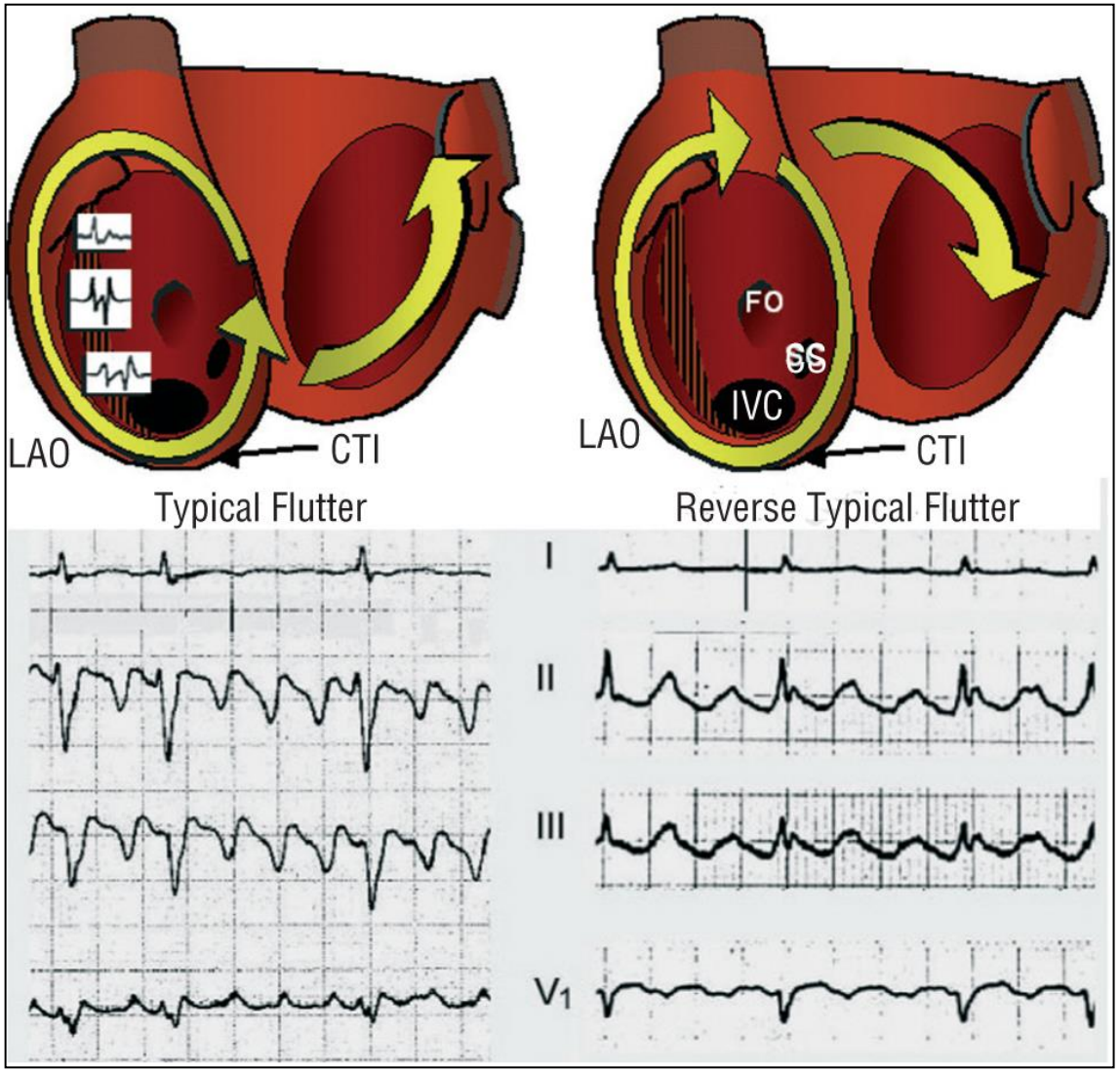
Atrial flutter (2:1 conduction)

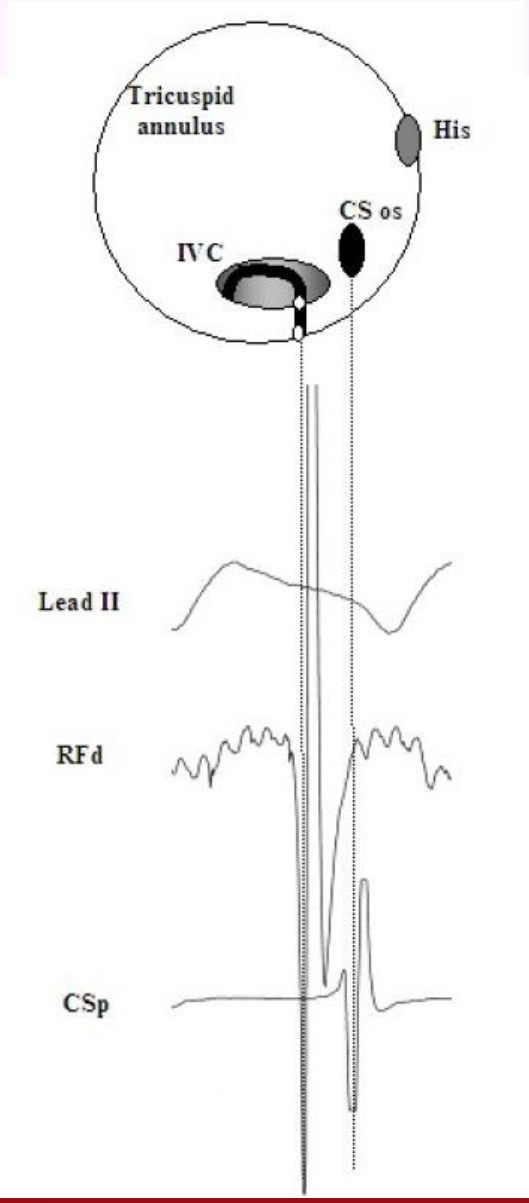


Adenosine injection



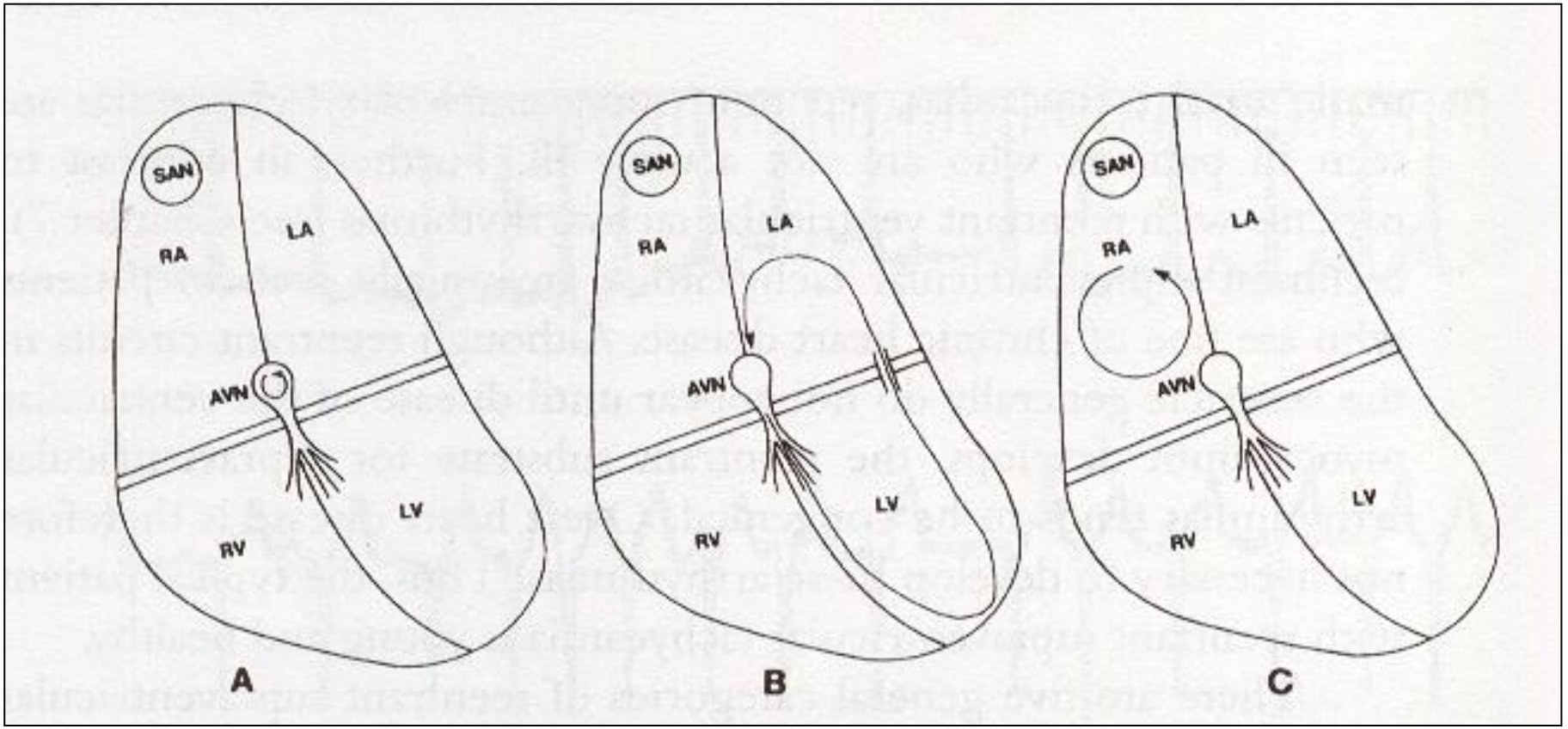
Atrial flutter – anatomical to electrophysiological relationship





O'Neill, Haissaguerre et al. IPEJ 2006

Mechanism of PSVTs

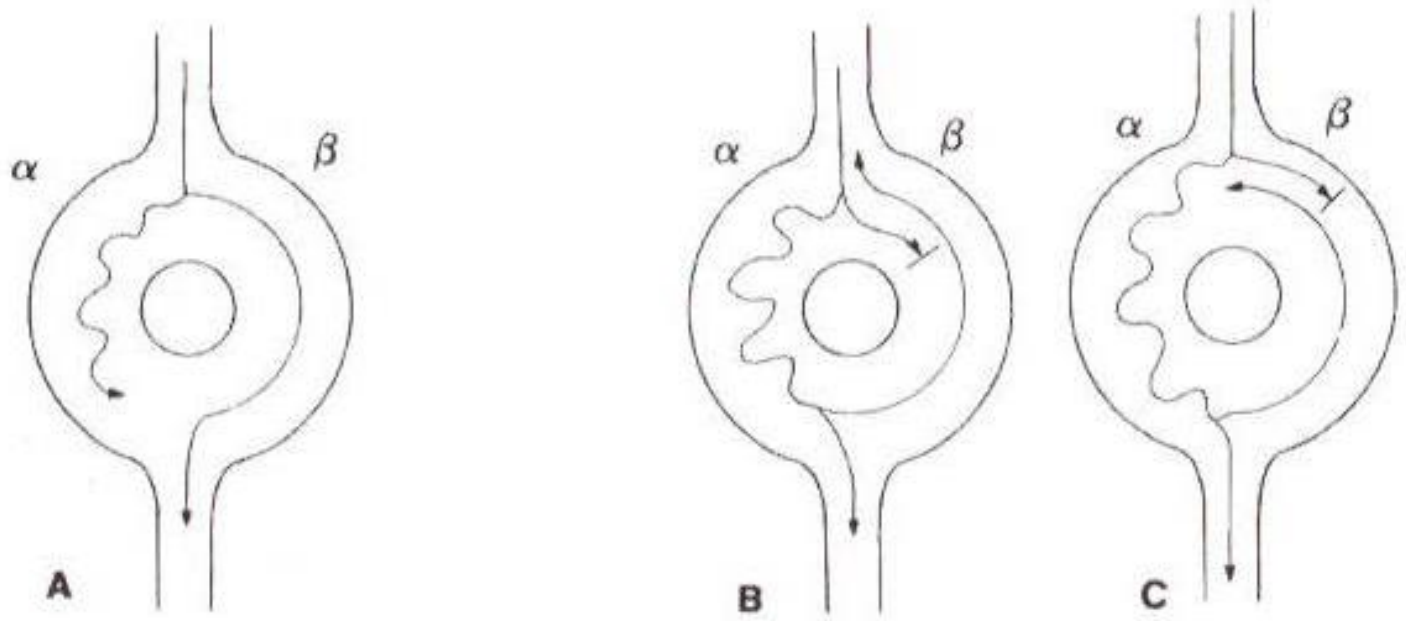


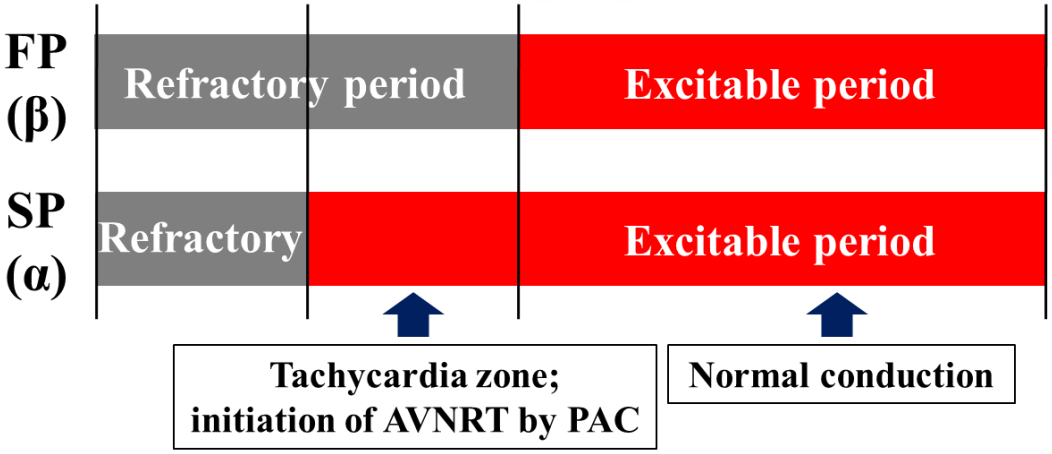
AVNRT (60%)

AVRT (30%)

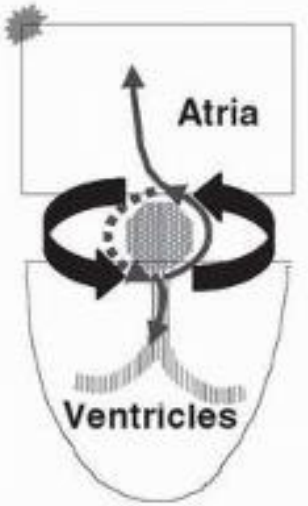
AT (<10%)

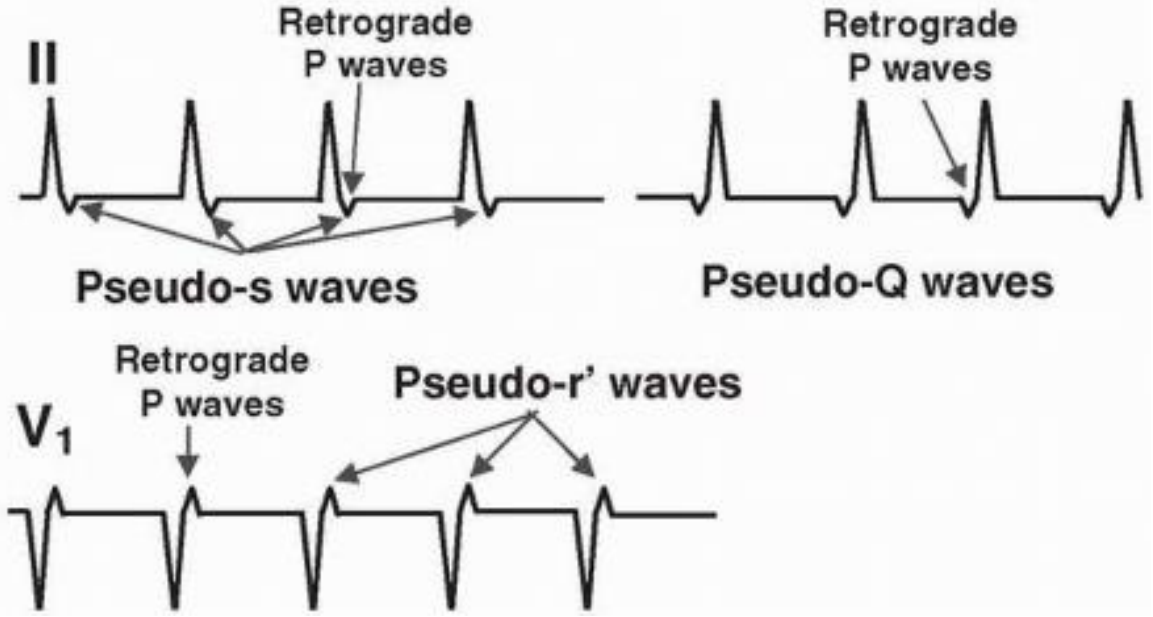
AV nodal reentry tachycardia (AVNRT)

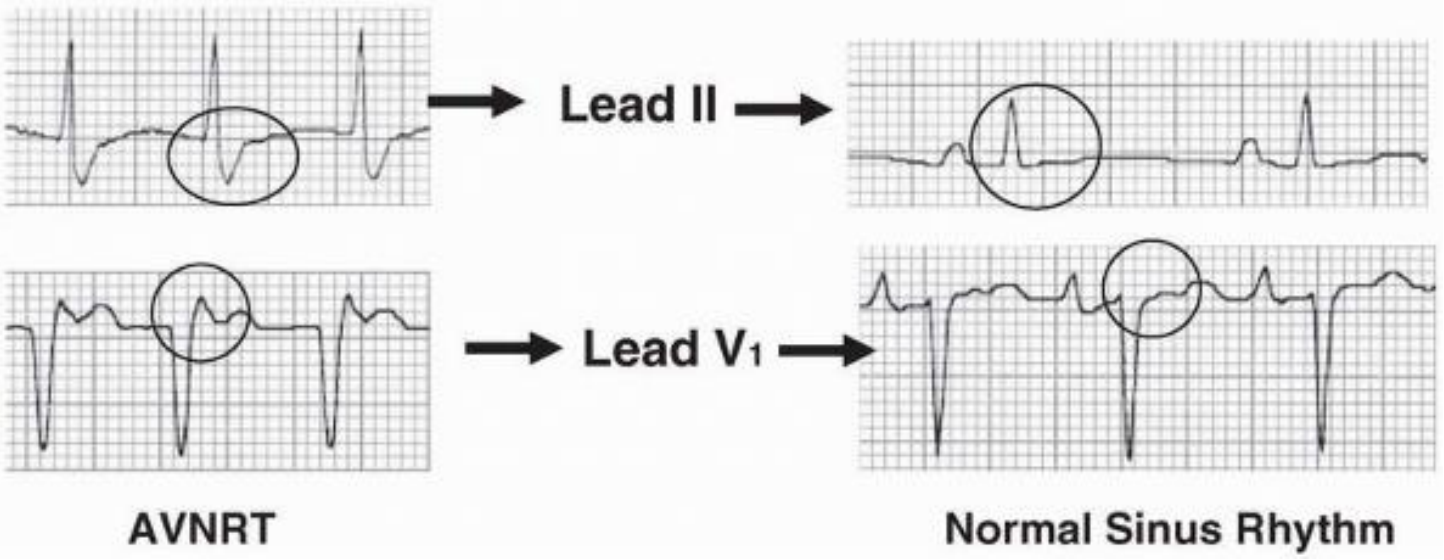




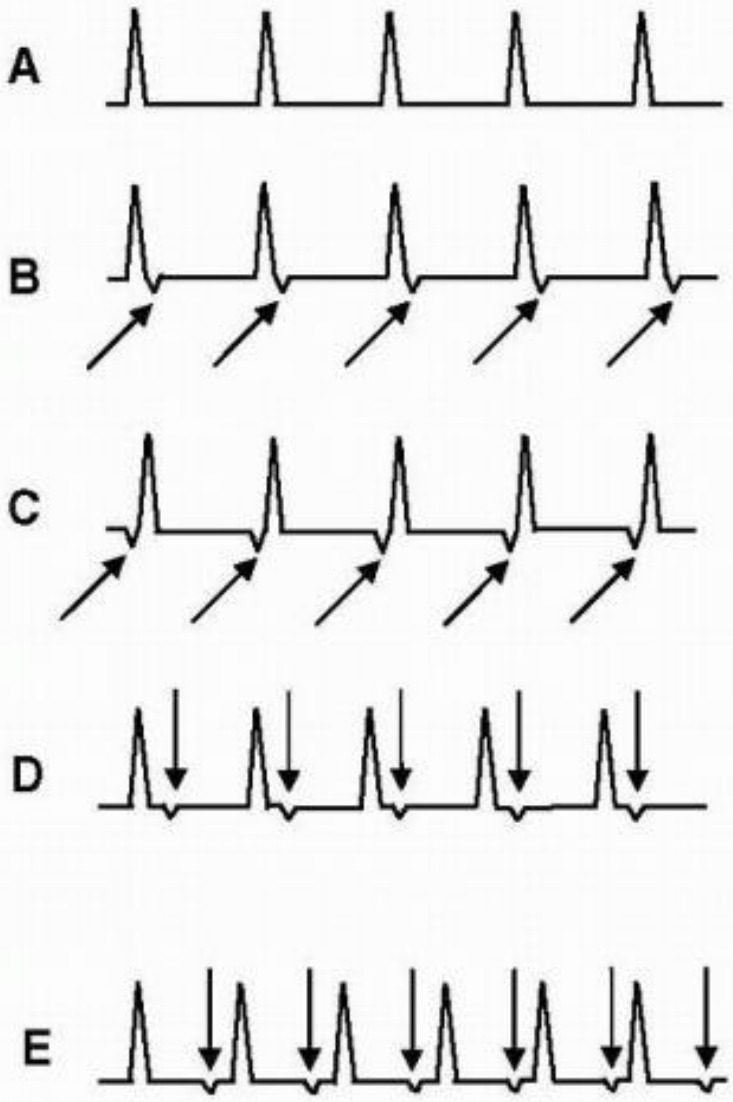
ECG of AVNRT


Atria
Ventricles


II
Retrograde
P waves
Pseudo-s waves
Retrograde
P waves
Pseudo-Q waves
V1
Retrograde
P waves
Pseudo-r' waves


Lead II
Lead V1
AVNRT
Normal Sinus Rhythm

ECG of AVNRT in lead Ⅱ



No P waves. This is the most common presentation of AVNRT occurring in 66% of all cases. The P waves are centered within the QRS complexes.

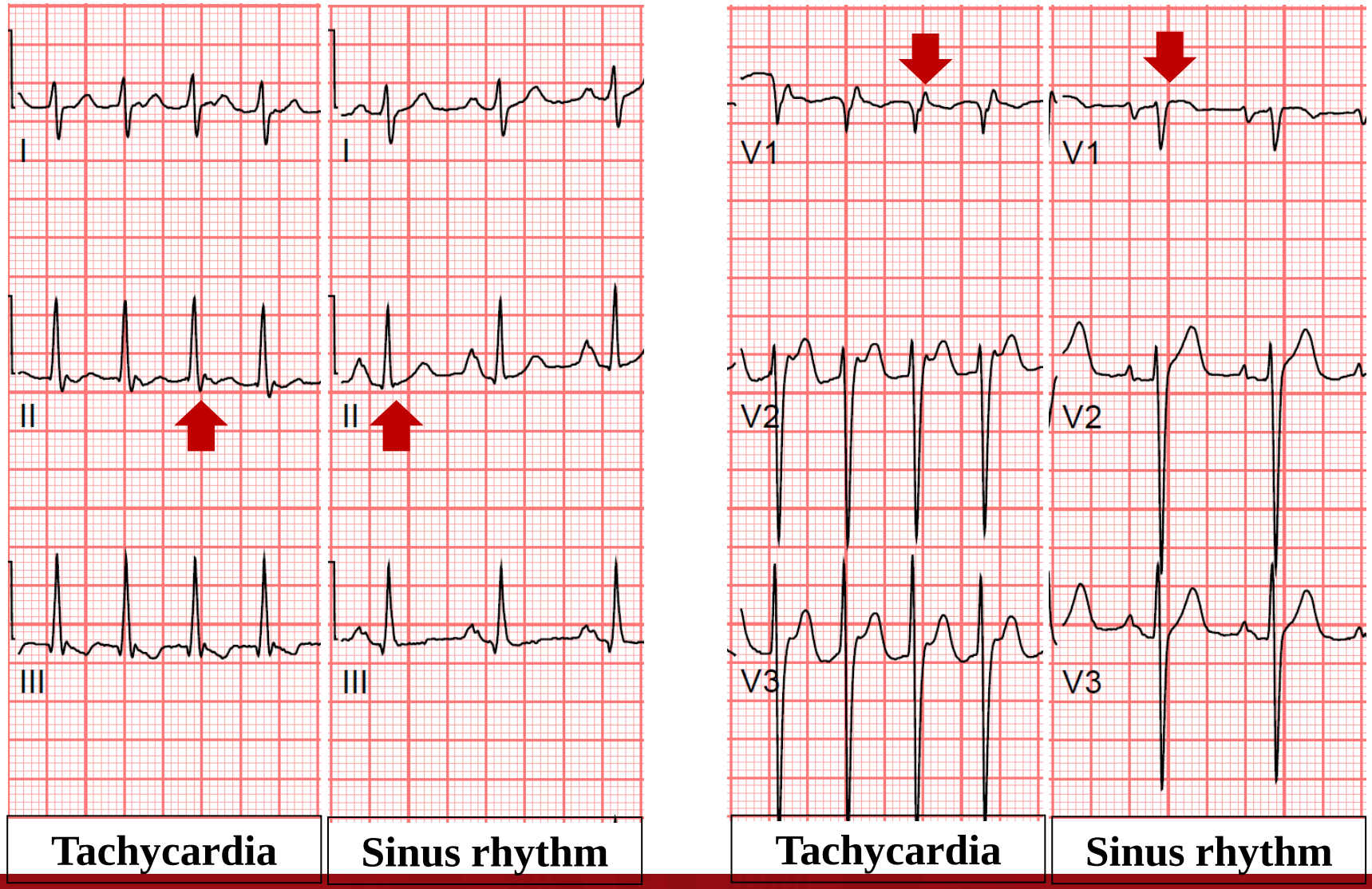
Pseudo S waves: 30%

Pseudo q waves: 4%.

Retrograde P waves after the QRS complex. This is rare and is almost always due to AVRT.

Atypical AVNRT: This is rare and is more commonly due to focal atrial tachycardia.

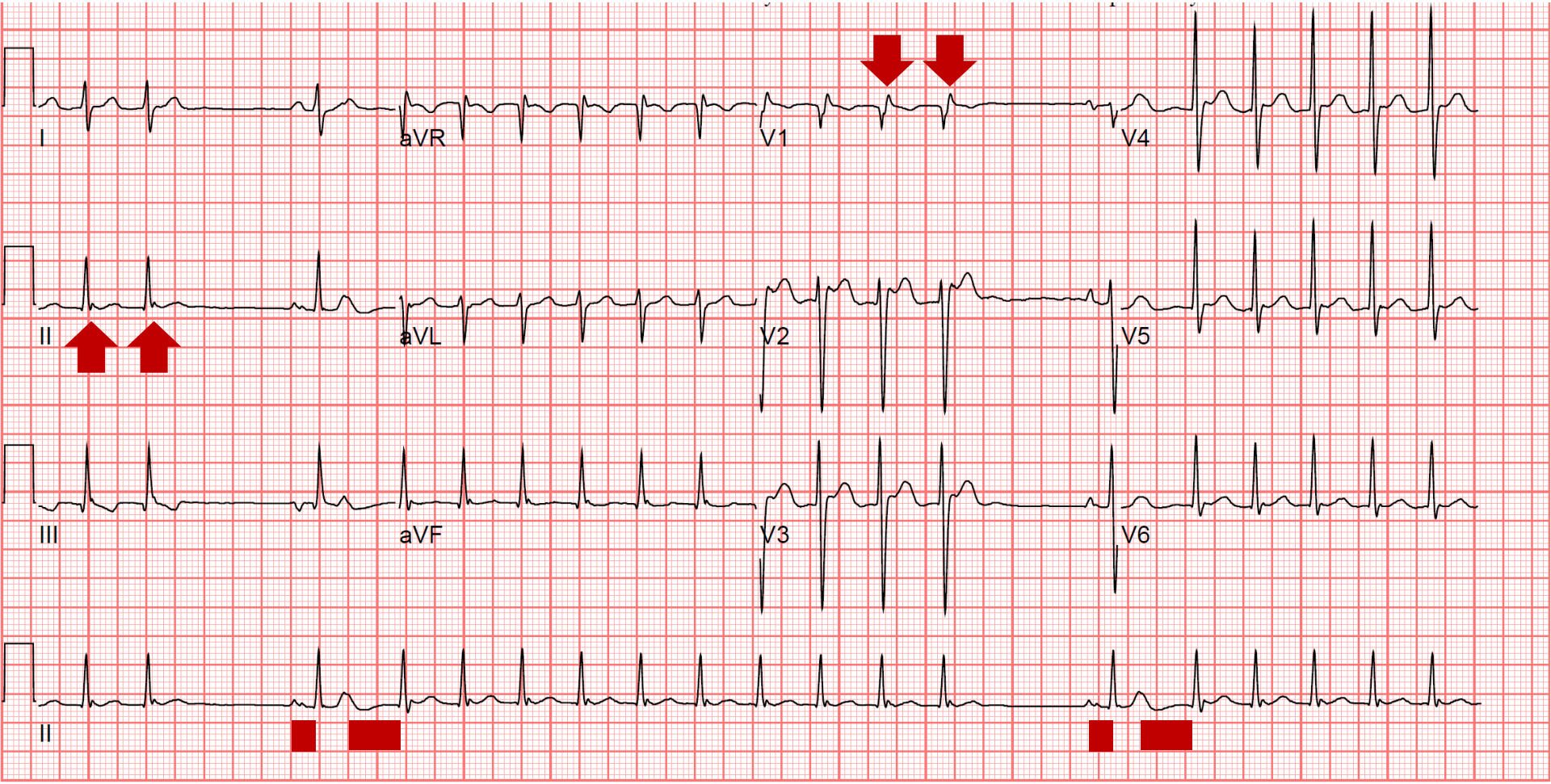
Points 1) Side-by side comparision



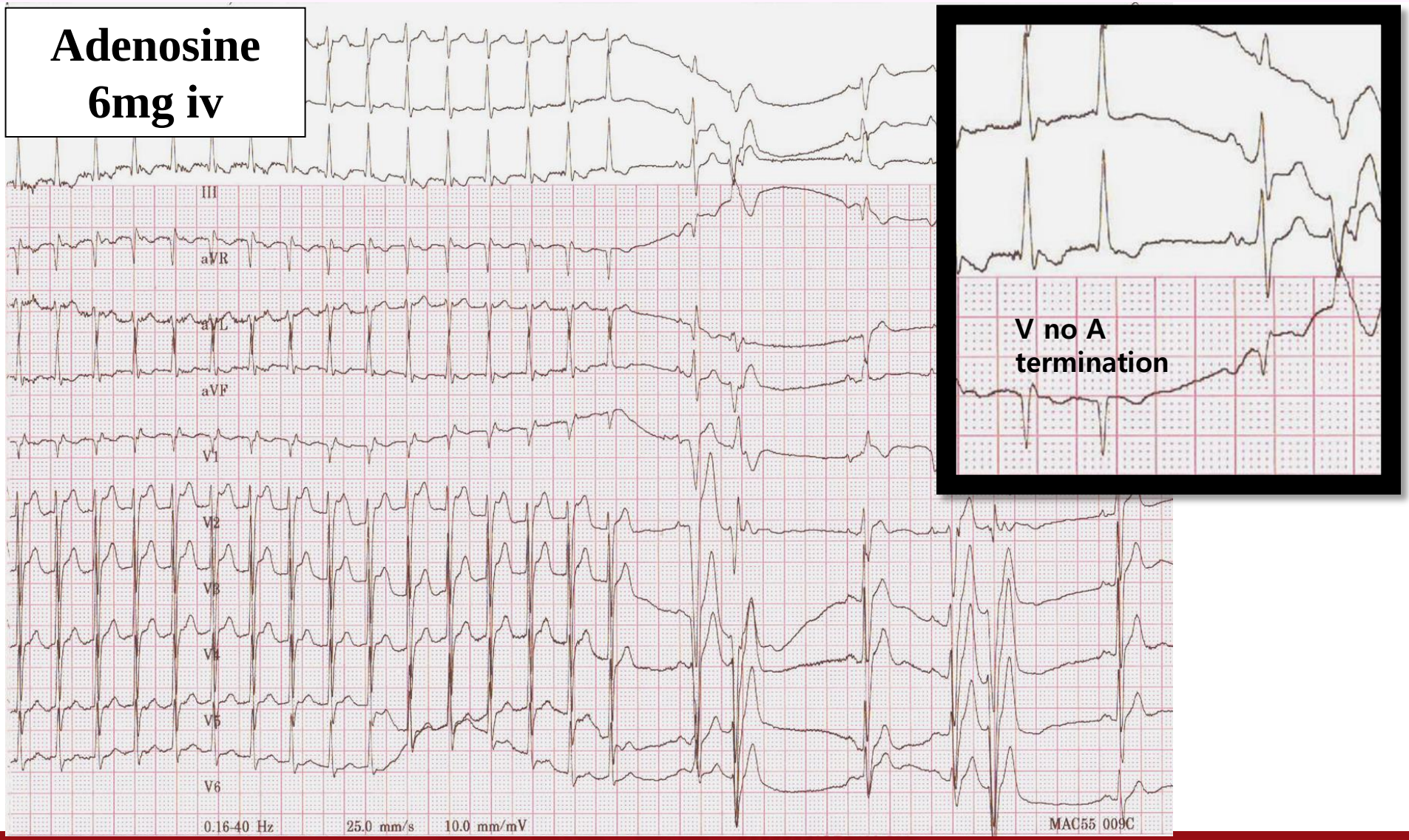
Points 2) Initiation & termination

Pseudo r'

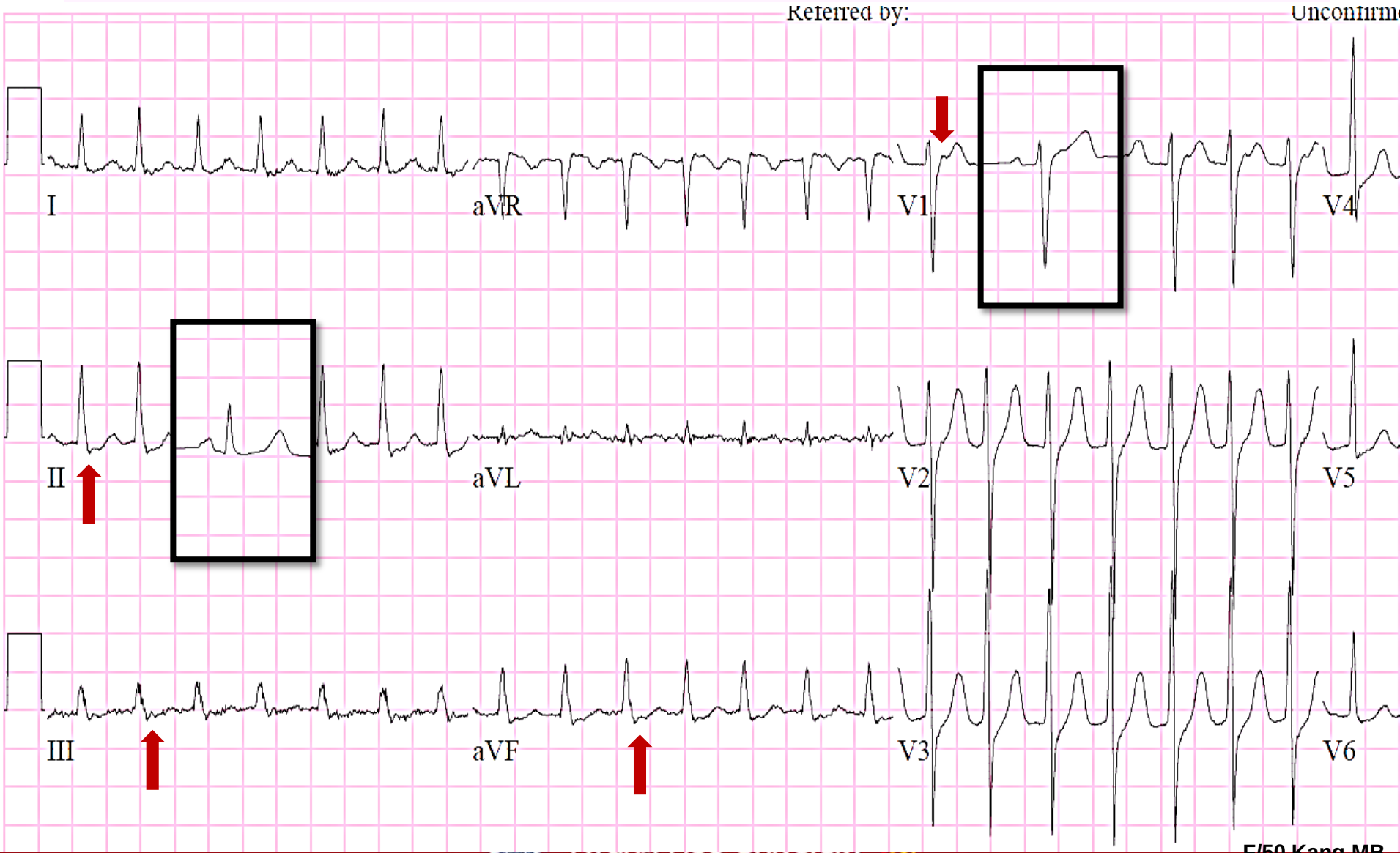
A-No-V termination



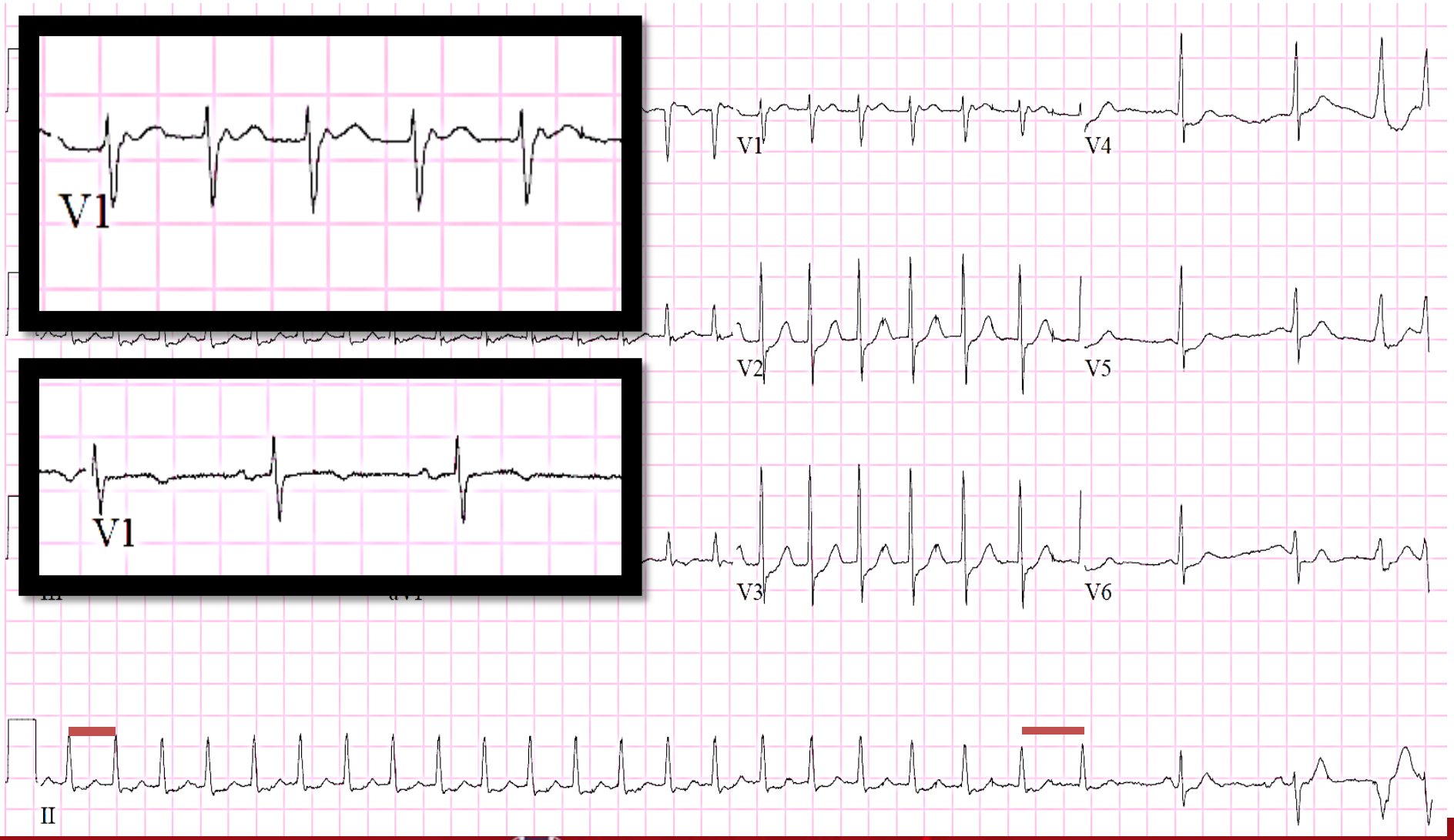
Points 3) adenosine response & termination



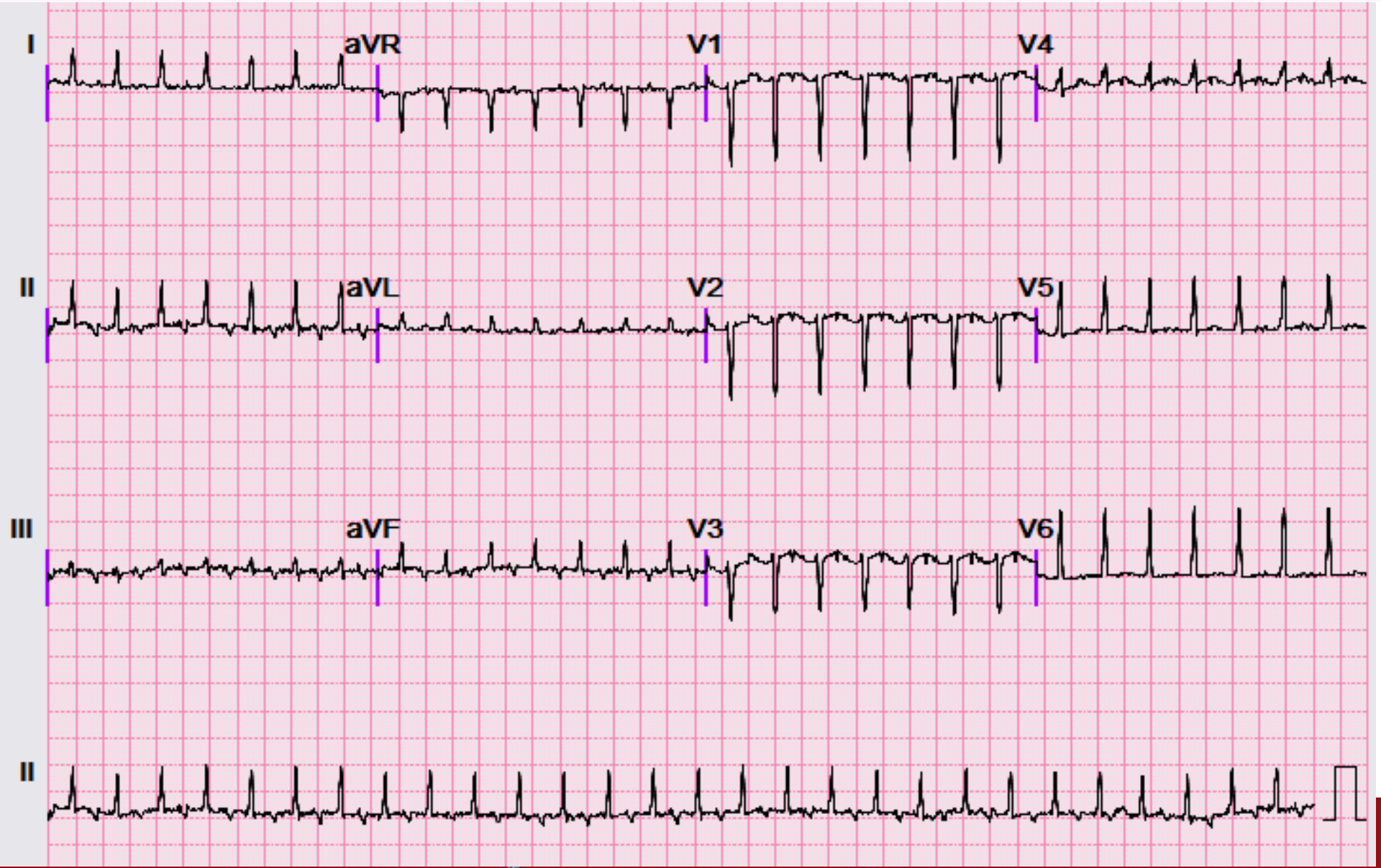
AVNRT #1



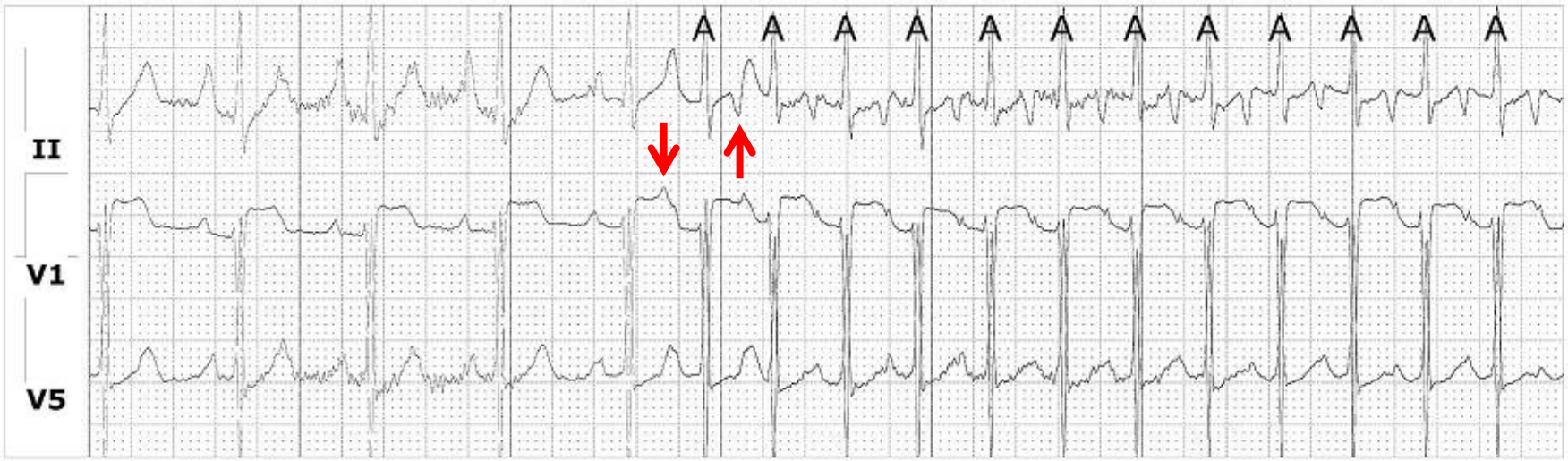
AVNRT, case #2
Adenosine 6 mg

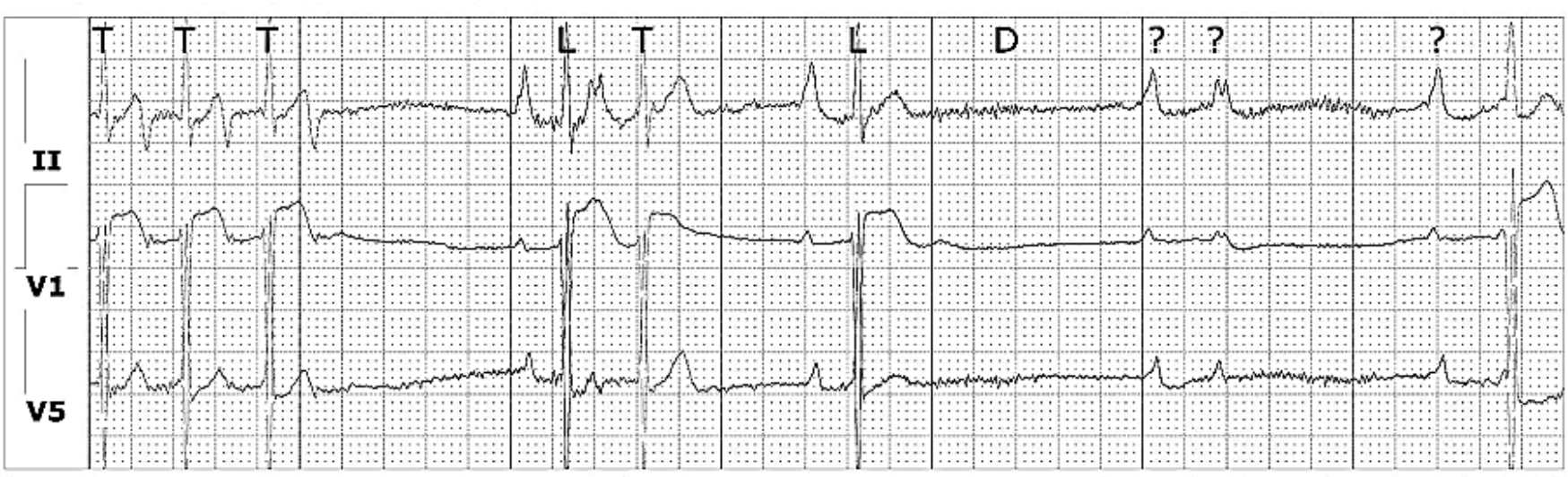


AVNRT #3 atypical AVNRT, long RP



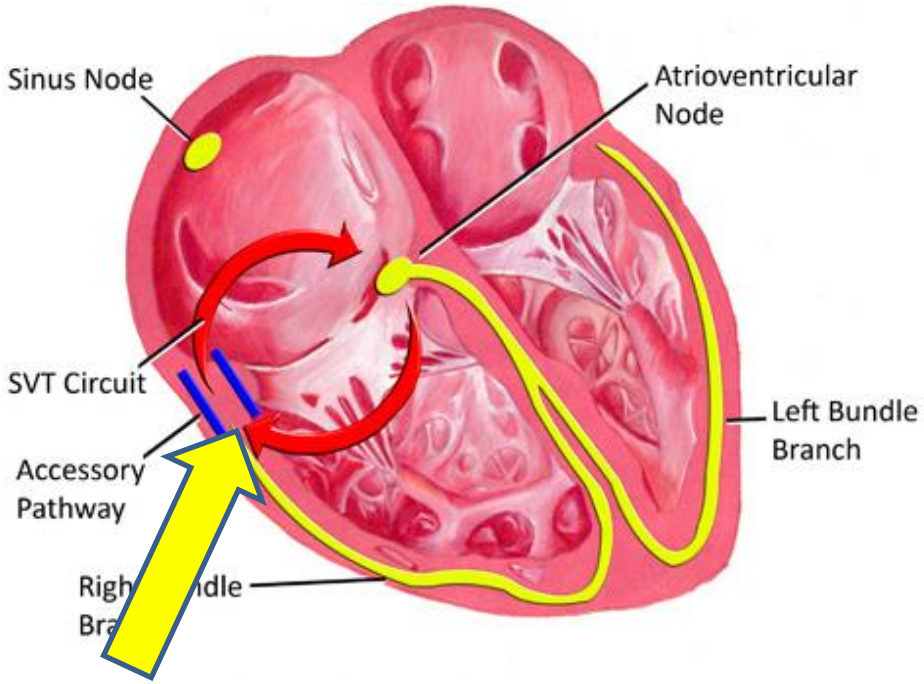
Initiation and termination





Bypass tract: manifested or concealed

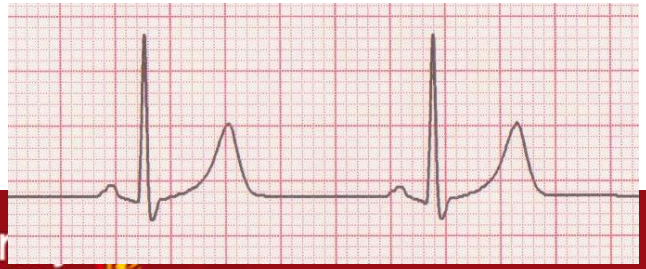
AVRT:
AtrioVentricular Reentrant Tachycardia, 방실회귀성 빈맥



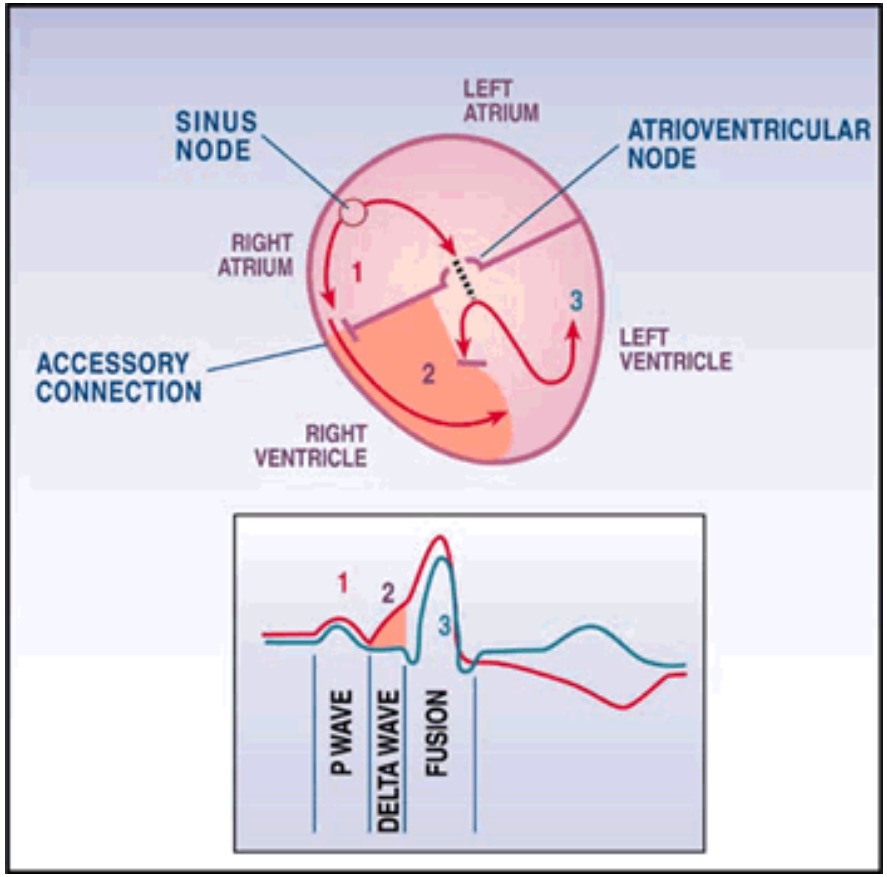
accessory pathway (= bypass tract)
(샛길, 우회로)

Manifested Bypass Tract:
WPW syndrome
현성 우회로

Concealed Bypass Tract:
CBT
불현성 우회로



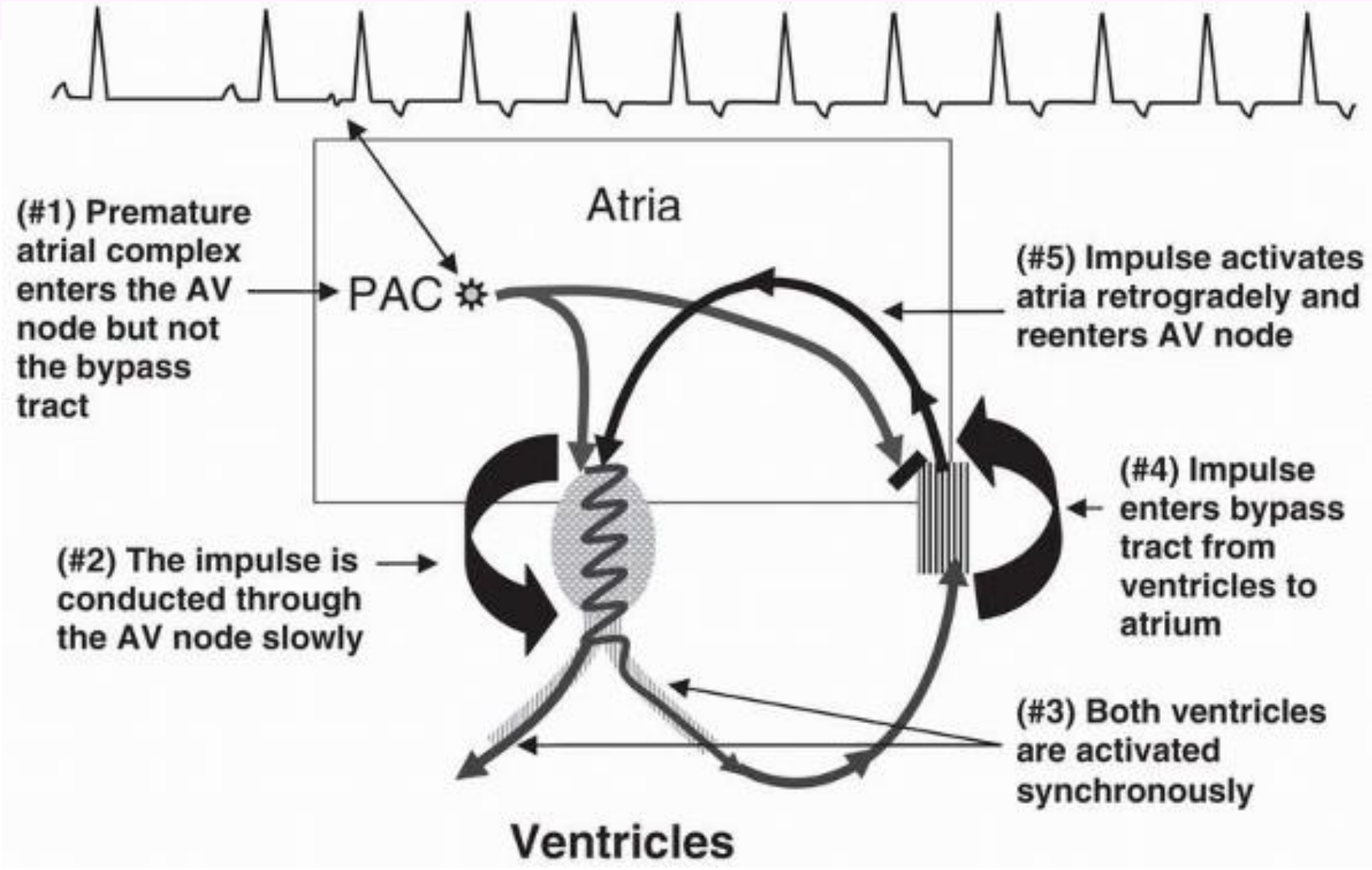
Wolff-Parkinson-White (WPW) syndrome



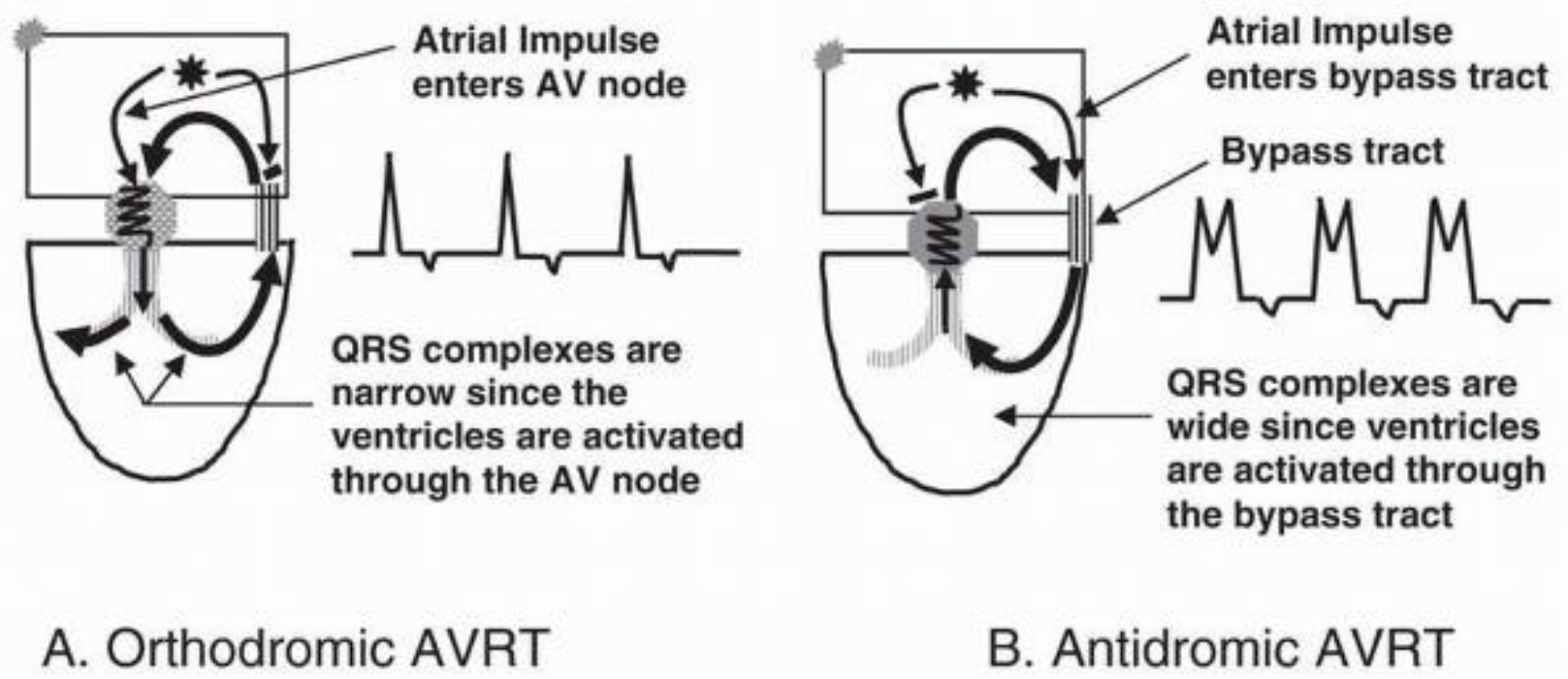
- **Definition : Ventricular preexcitation by antegradely conducting accessory pathway**

- **ECG :**
  - **Short PR interval**
  - **Delta wave**
  - **Wide QRS**
  - **Secondary ST and T wave changes**

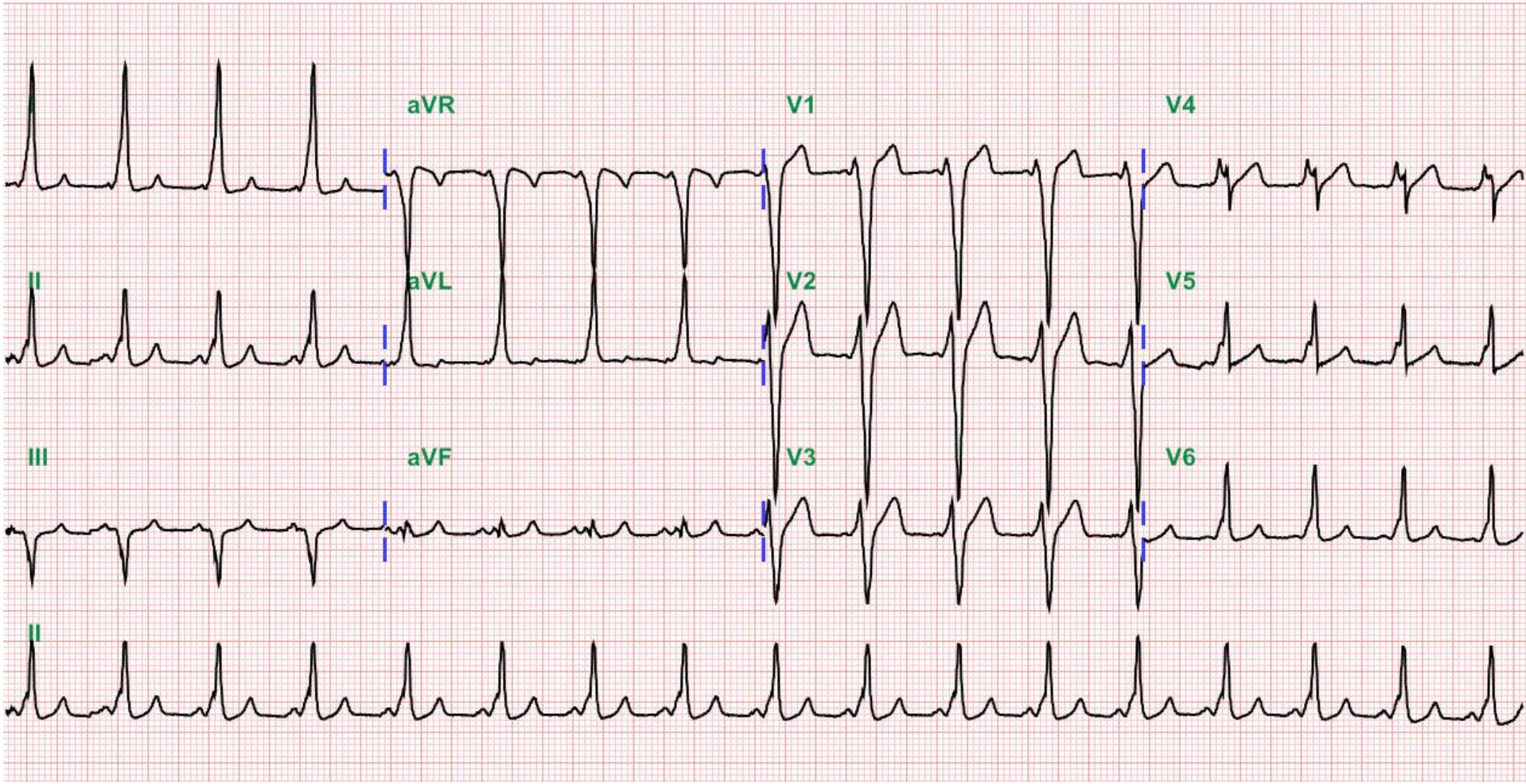
Mechanism of AVRT



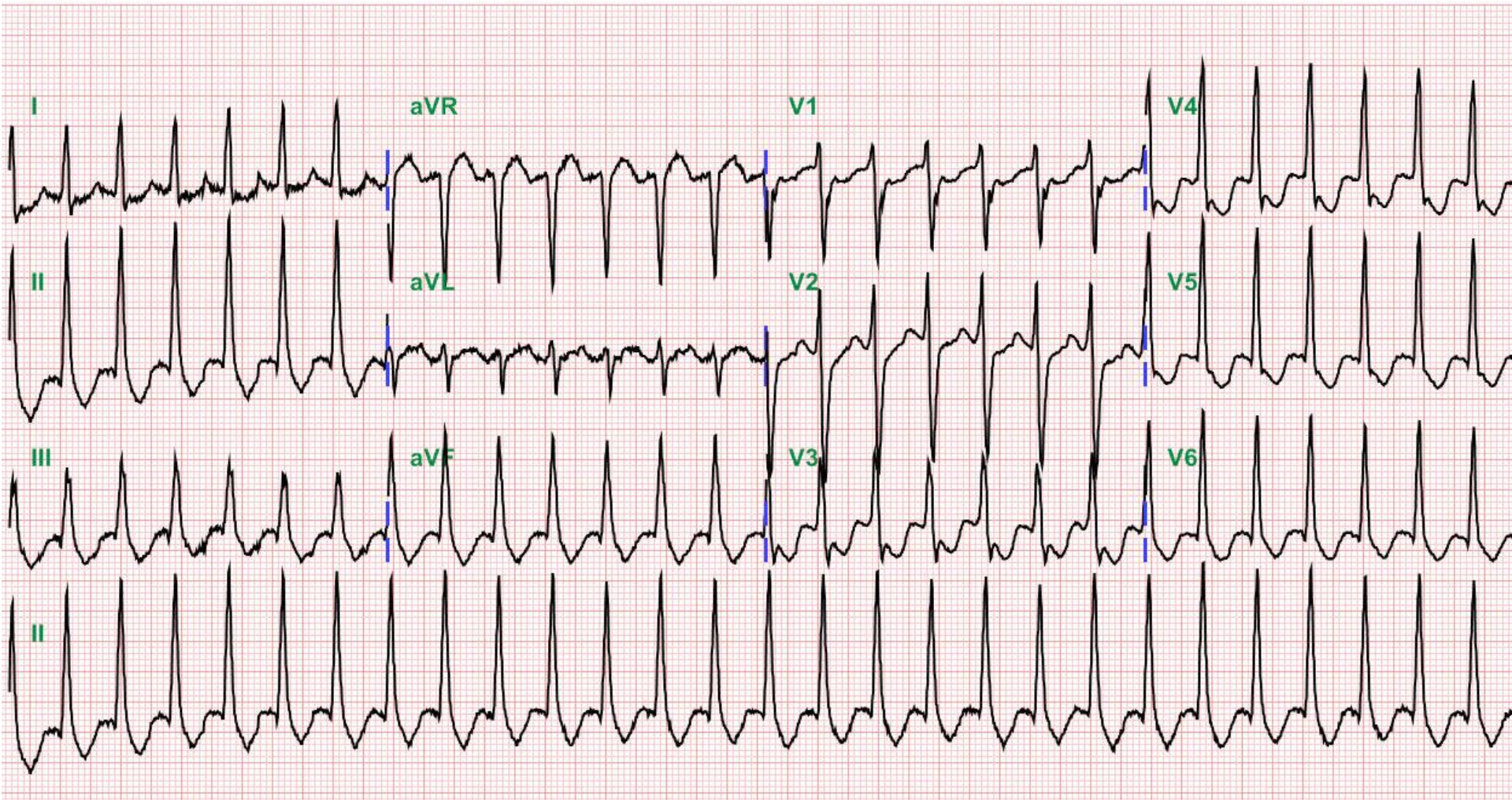
Mechanism of AVRT



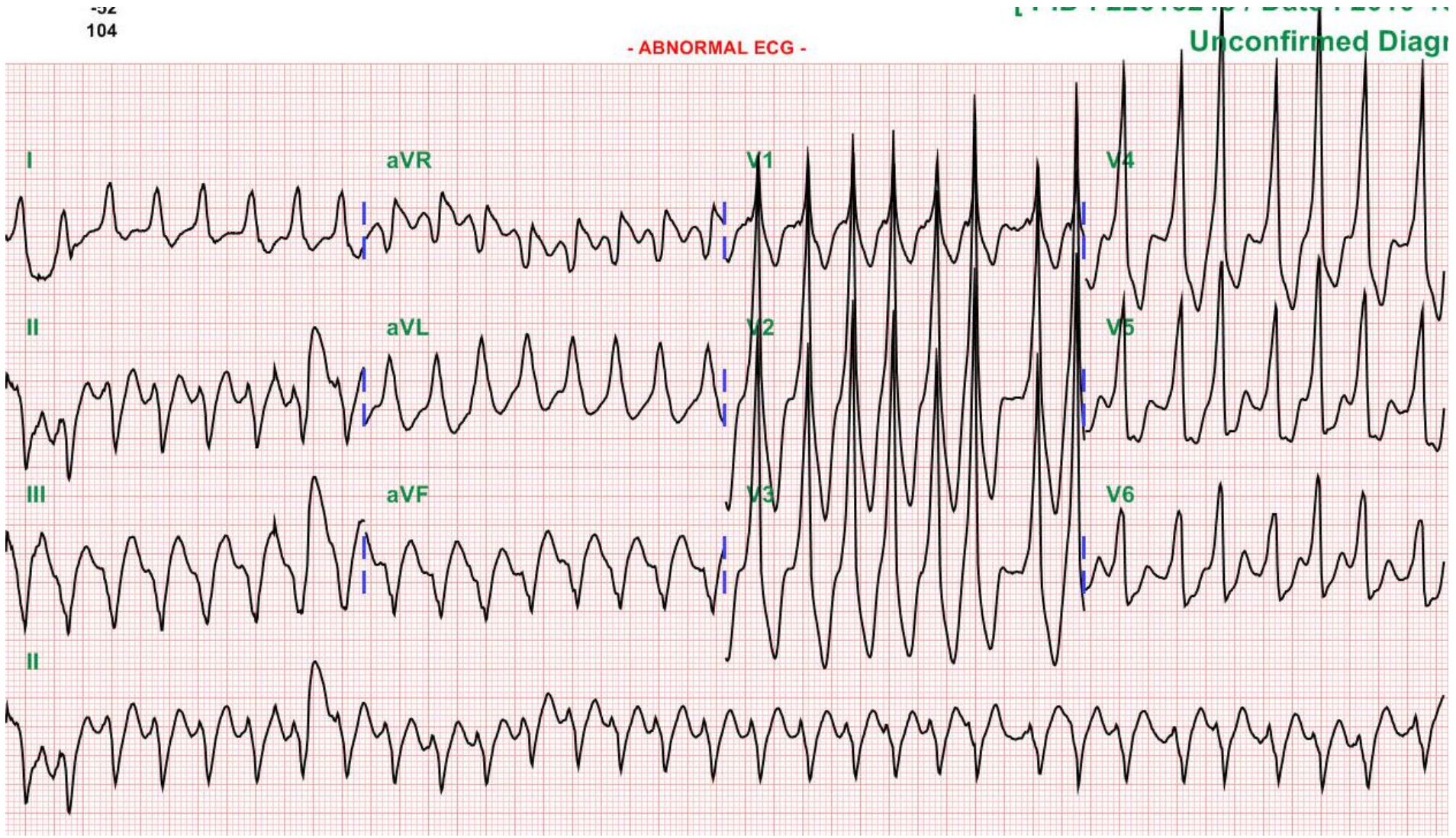
Wolff-Parkinson-White (WPW) syndrome



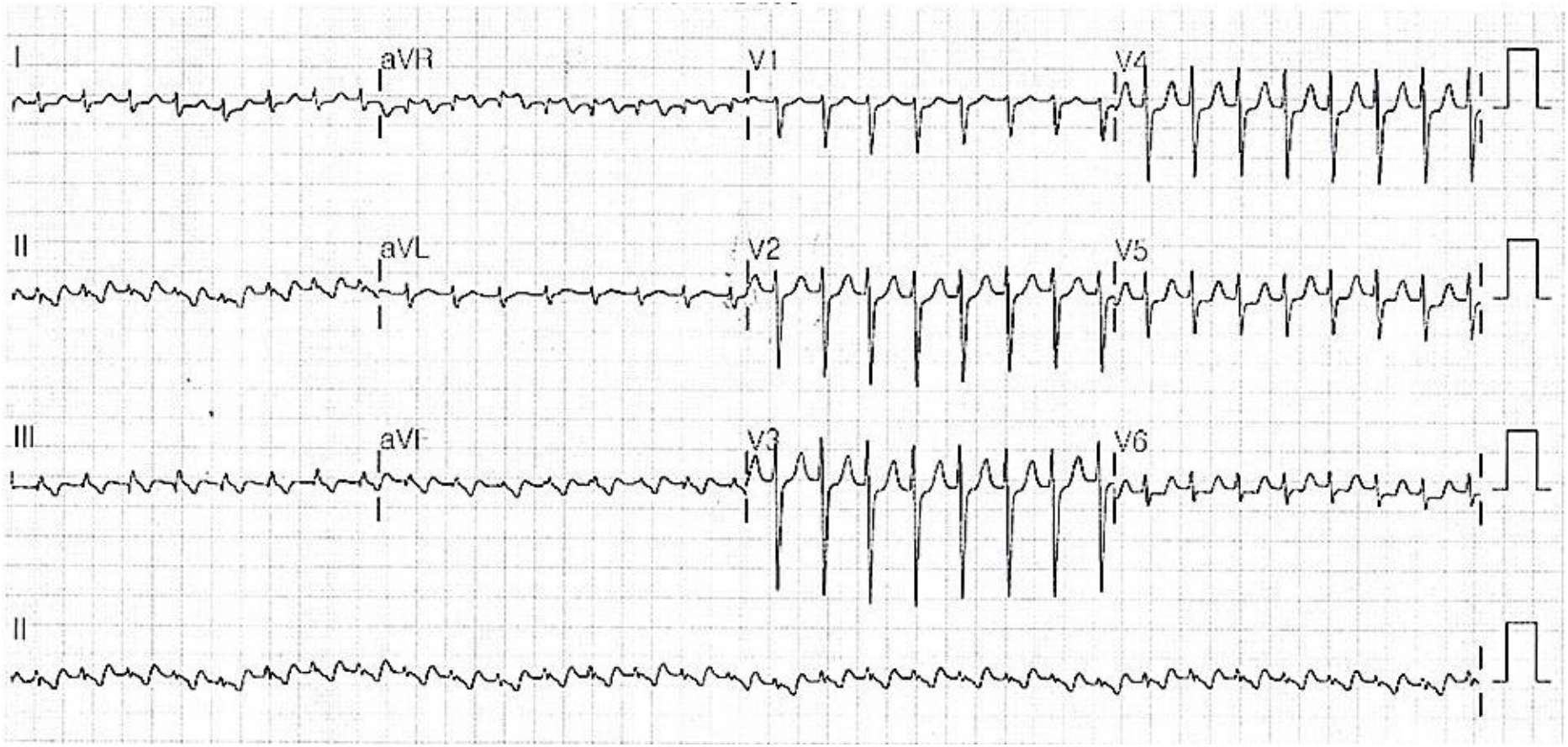
Wolff-Parkinson-White (WPW) syndrome
orthodromic AVRT



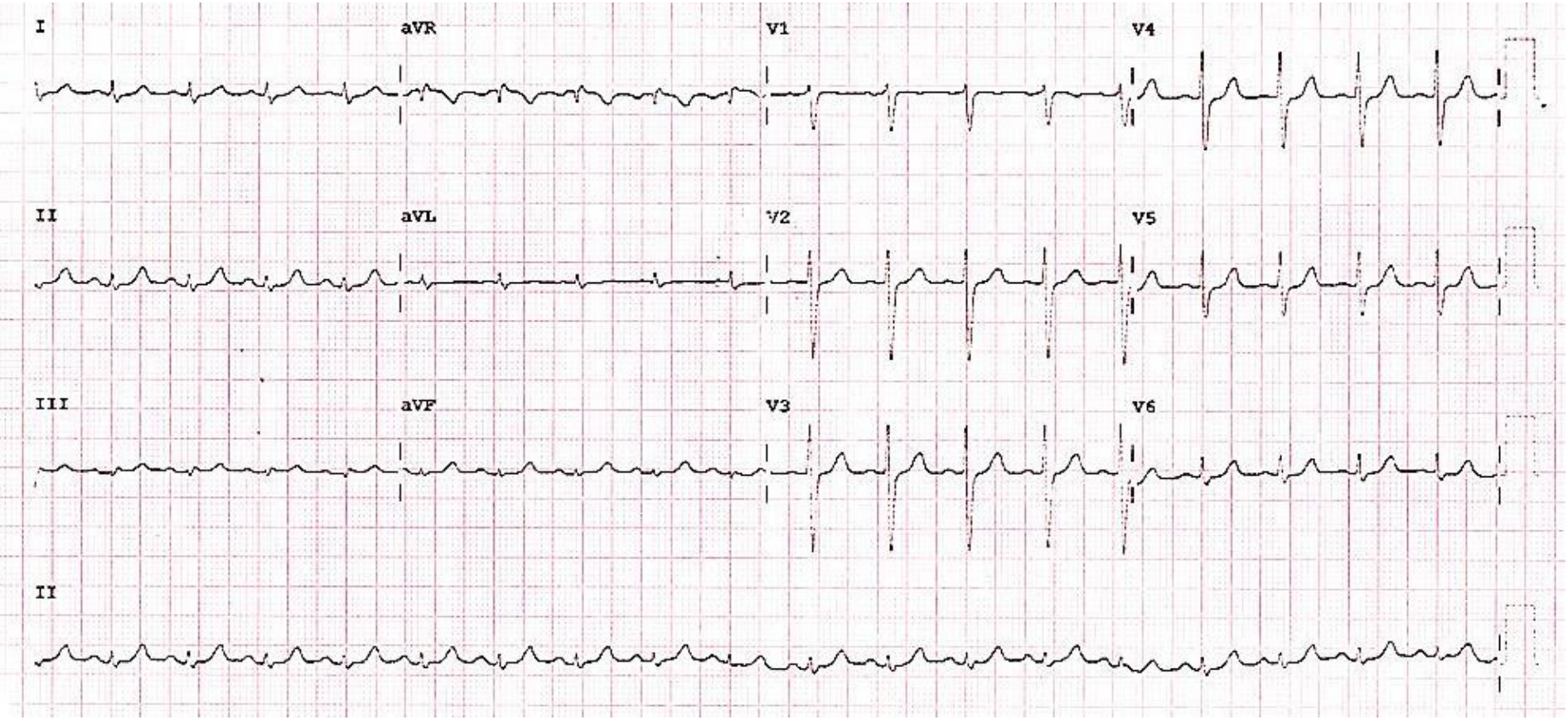
Wolff-Parkinson-White (WPW) syndrome with AF



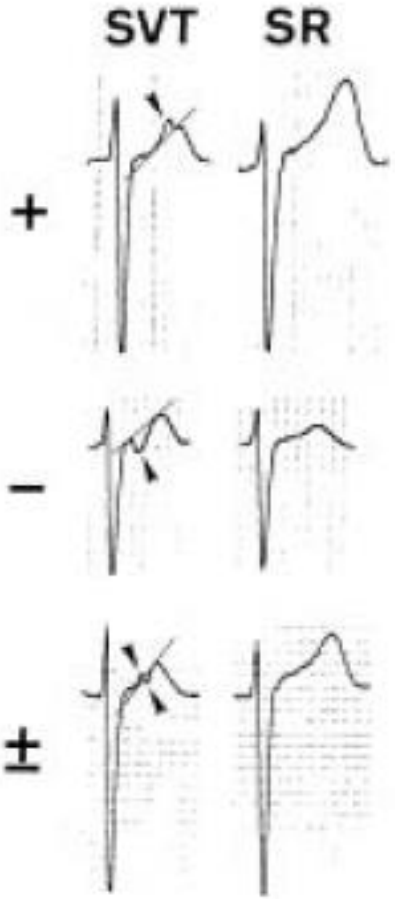
AVRT, posteroseptal CBT

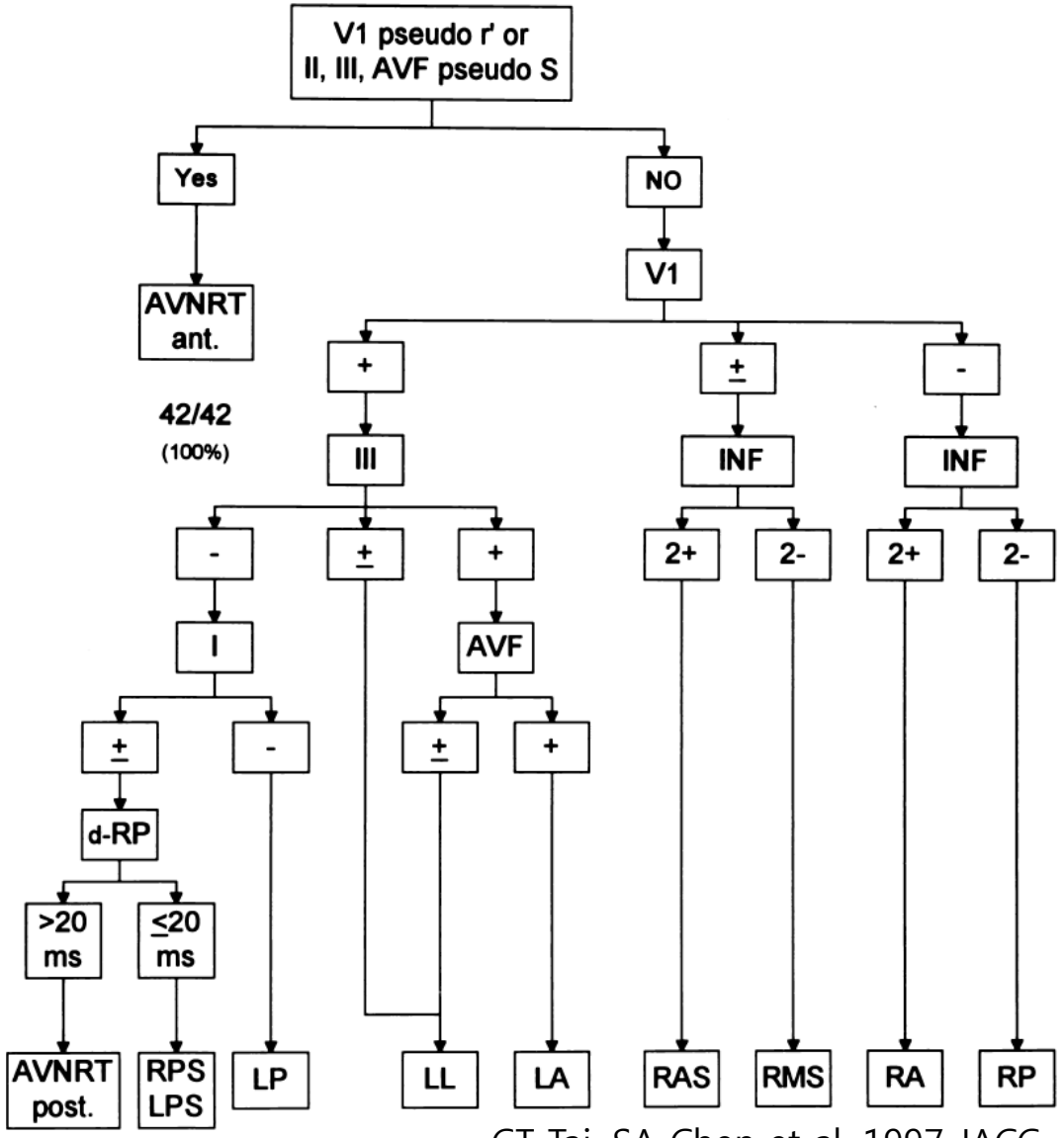


Sinus rhythm



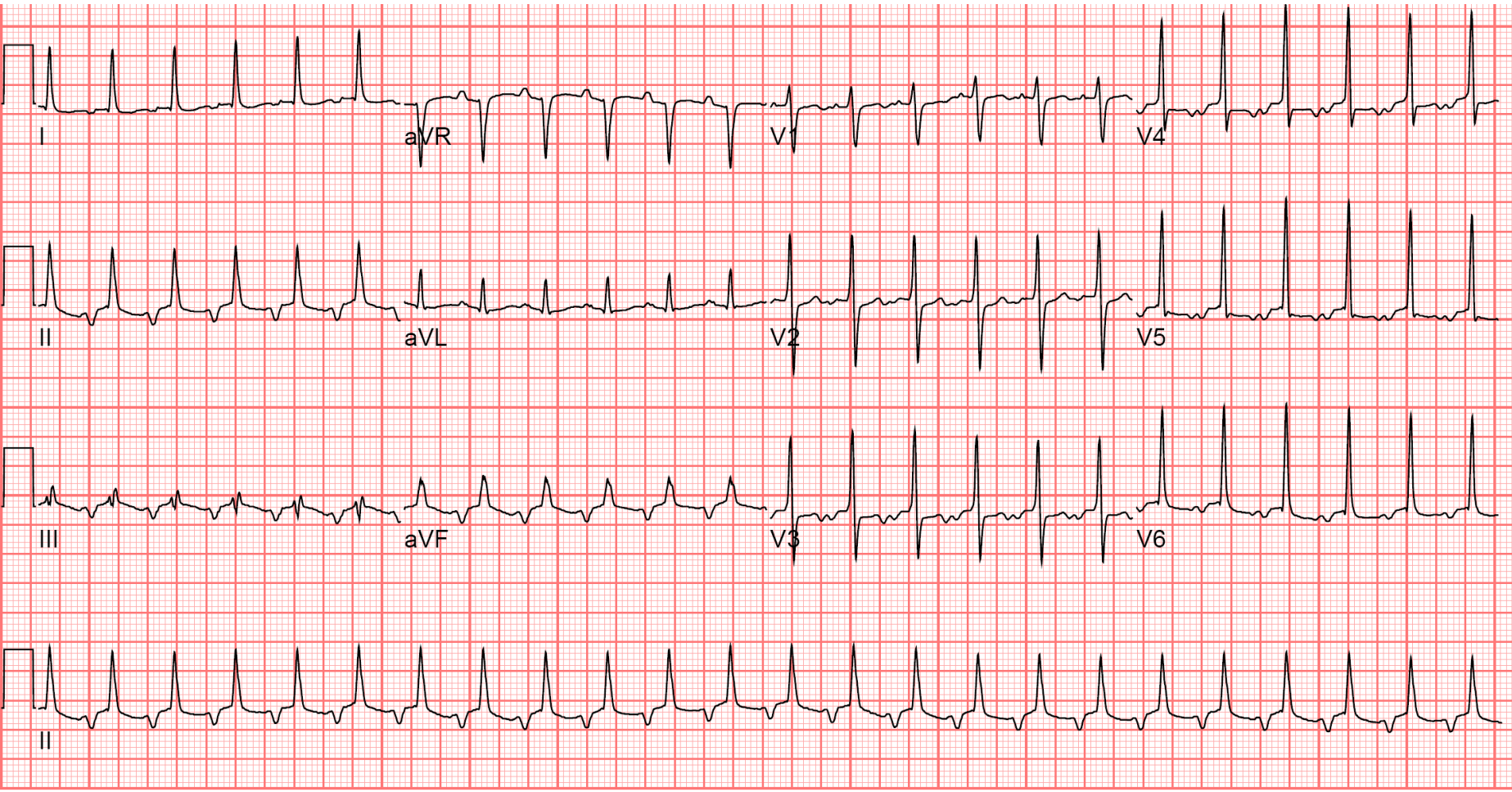
Analysis of retrograde P wave





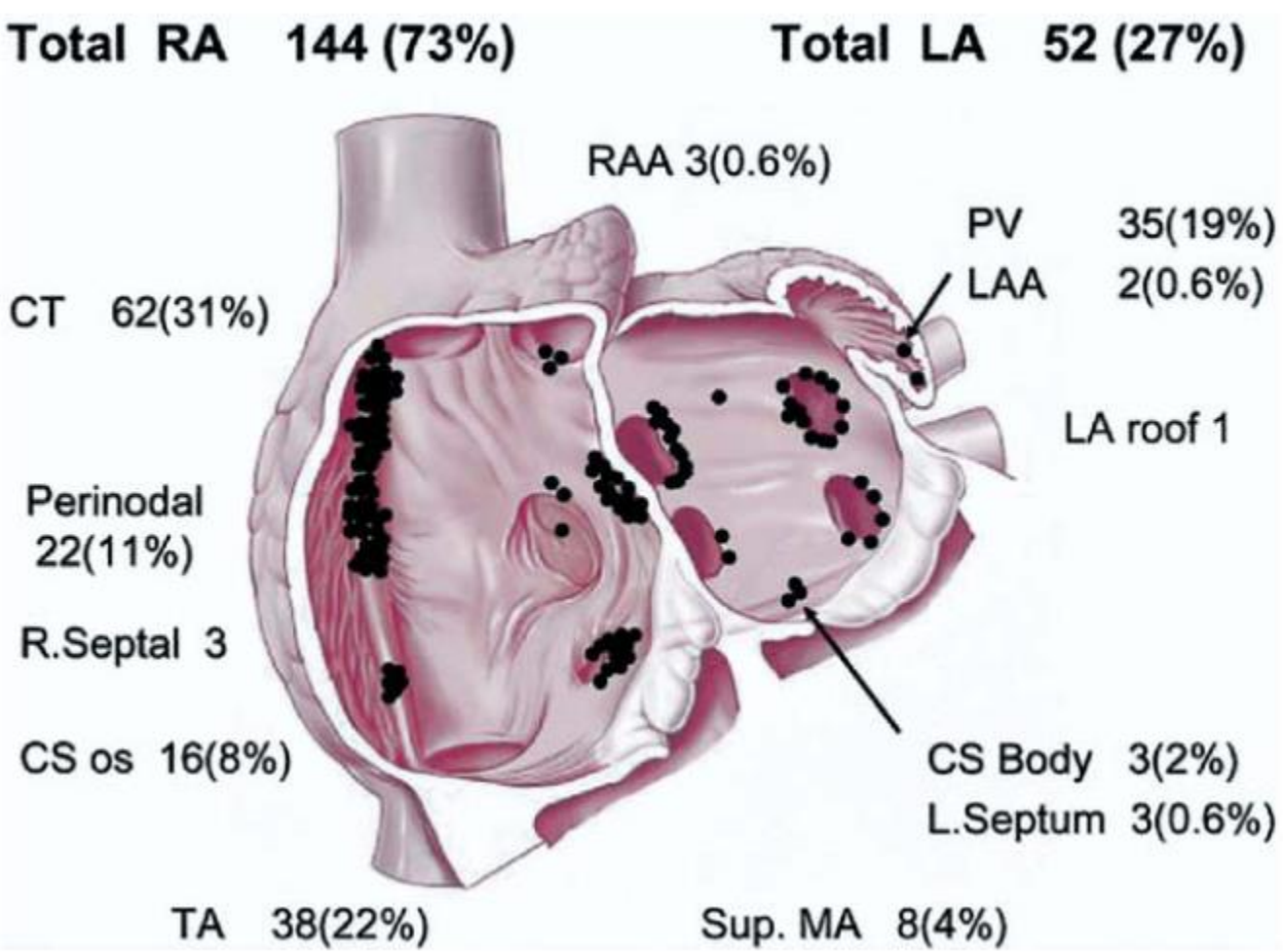
CT Tai, SA Chen et al. 1997 JACC

Atrial tachycardia



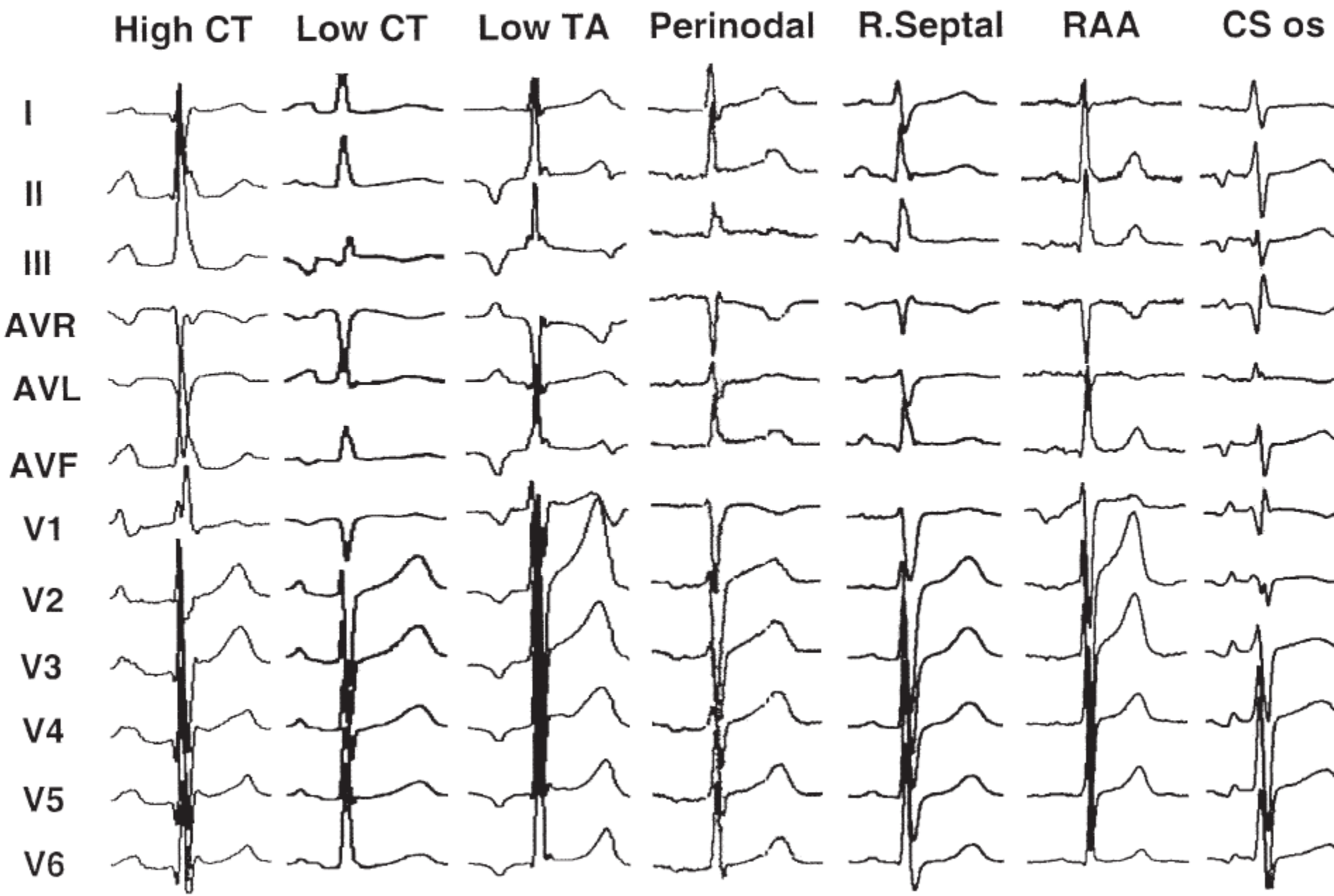
- **Abnormal P wave with rate of 120-240 bpm**
- **Varying-degree AV conduction (e.g. 1:1, 2:1, or 3:1…)**

Focuses of AT

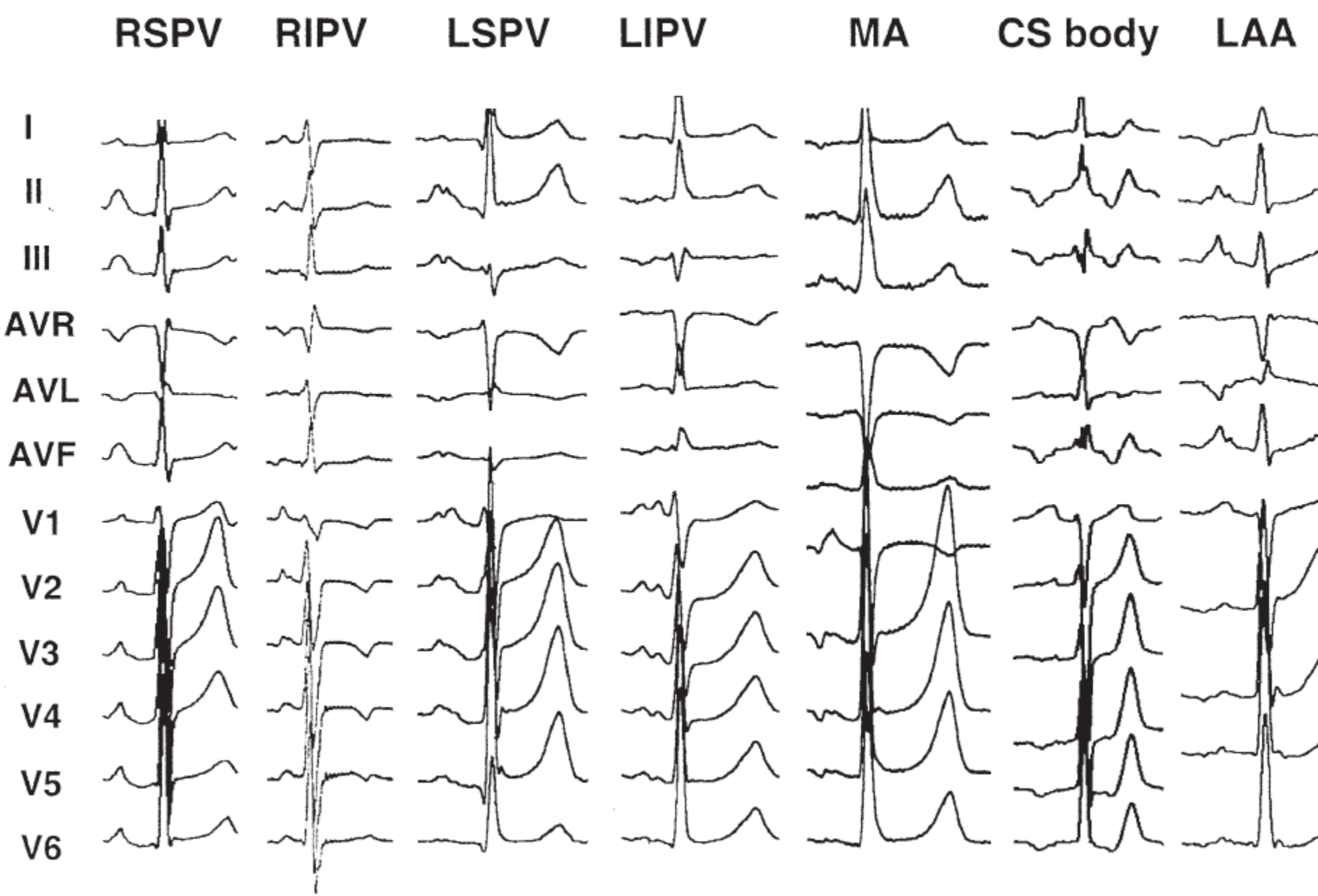


Kistler, J Am Coll Cardiol 2006;48:1010 –7

RA ATc P waves

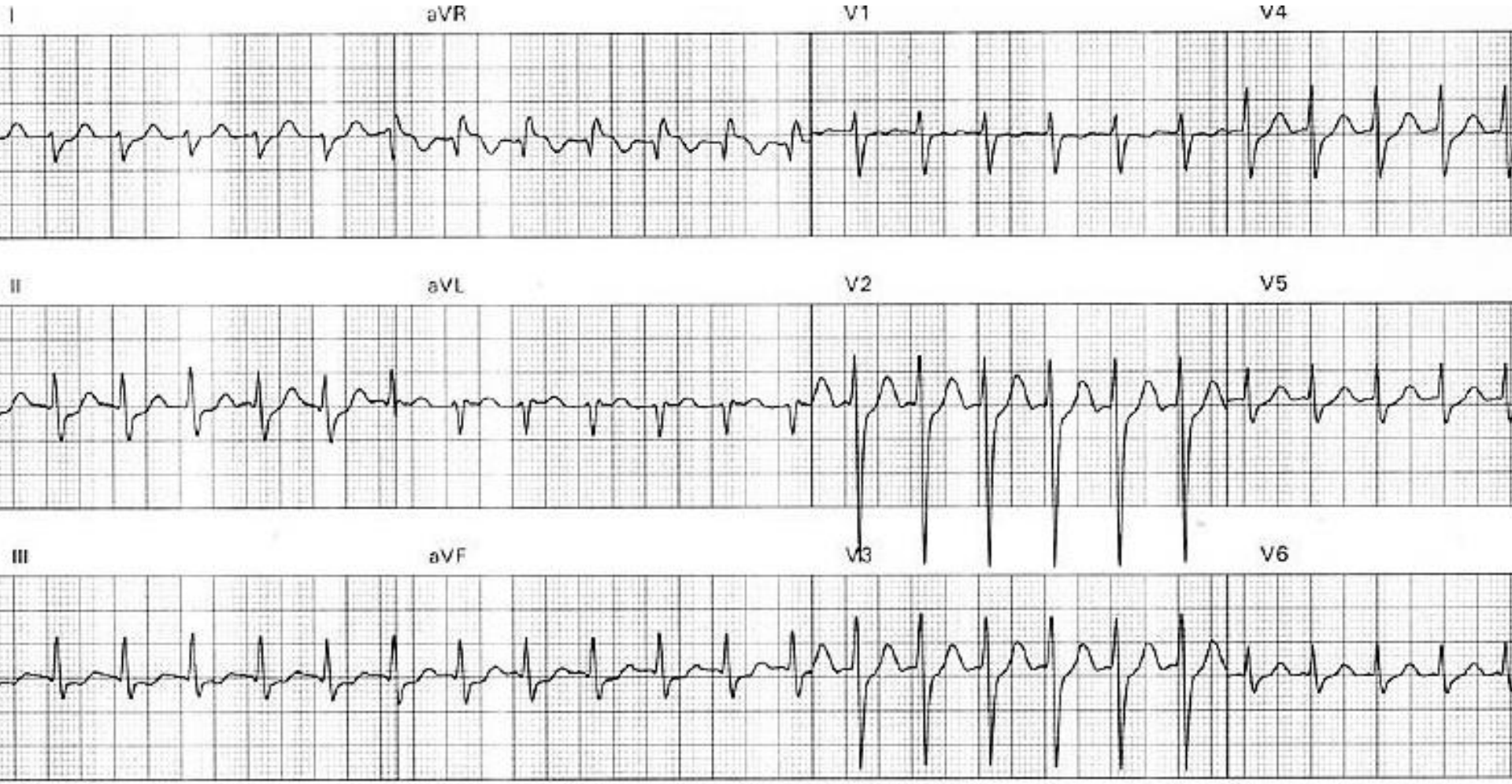


LA ATc P waves



Regular SVT without visible P wave

- **No visible P wave: mostly AVNRT**



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