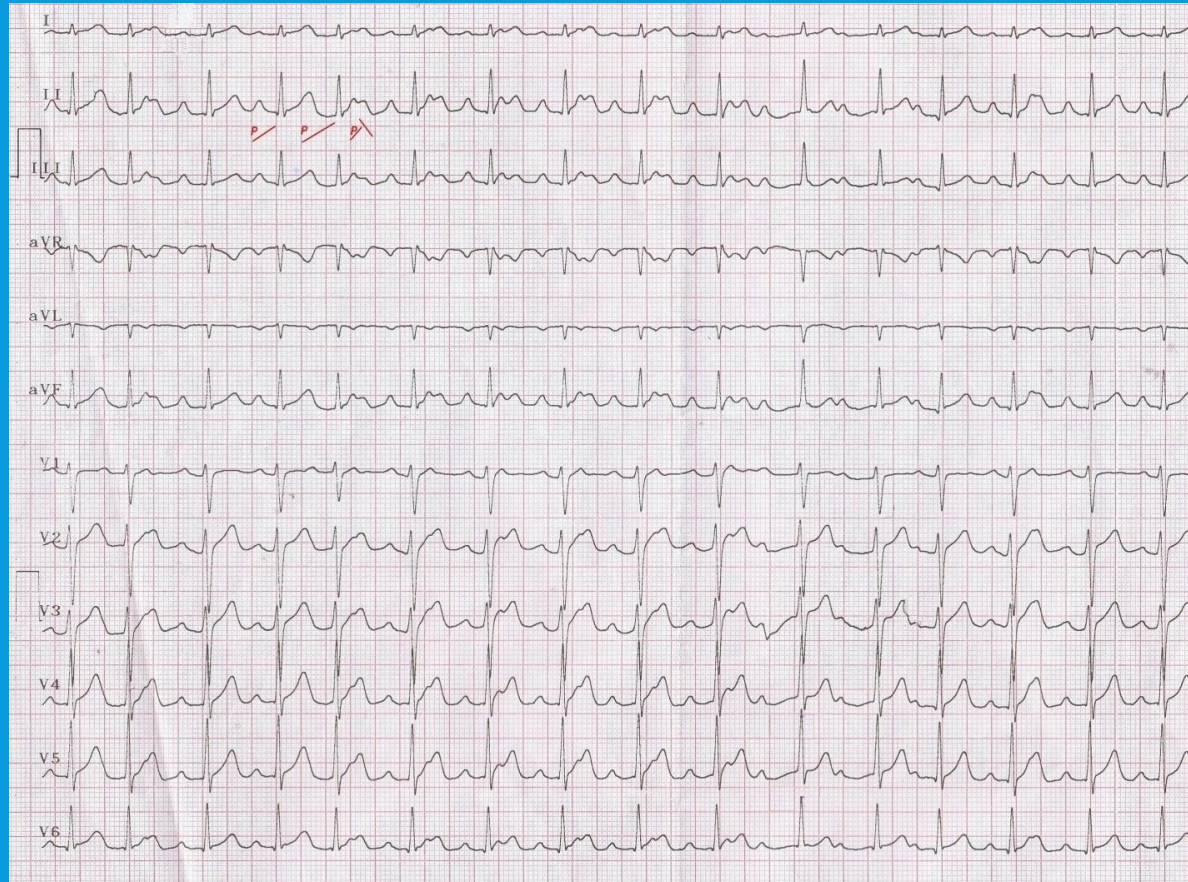


SUPRAVENTRICULAR TACHYCARDIA

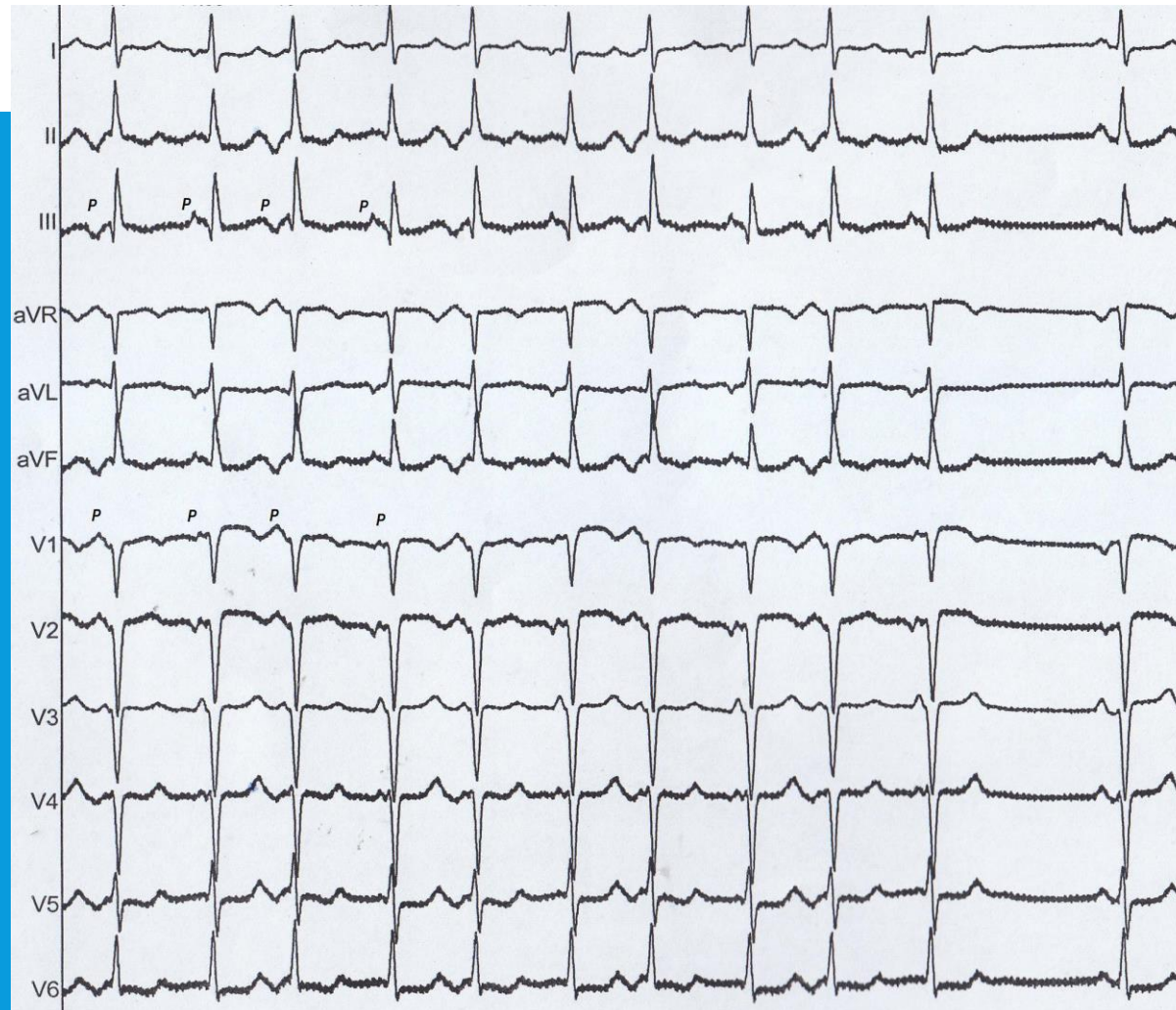
- A narrow QRS tachycardia is the result of normal and rapid ventricular activation via the normal conduction system. The site of origin is the above or within the His bundle i.e., the atrium, AV node, the His bundle, or their combination.
- The narrow QRS tachycardia subtypes:
 - **1-Atrial tachyarrhythmia:**
 - A)Focal AT
 - B)Macroreentrant tachycardia(AFL)
 - **2-Reentrant tachycardia involving the AV node: AVNRT, AVRT**

- **Focal AT:** originates from a small area in a left or right atrium with a heart rate of > 100 beats per minute. Atrial tachycardia is usually divided into two subtypes:
- Ectopic (unifocal) Atrial tachycardia(AT)
- Multifocal atrial tachycardia(MAT)
- **Unifocal atrial tachycardia:** The unifocal AT is a single P wave morphology, and isoelectric line between P waves. Focal AT can be conducted to ventricles with 1:1, 2:1 AV conduction(regular ventricular response) or Wenckebach (irregular ventricular response).
- **Multiple atrial tachycardias (MAT):**different P wave morphology:

UNIFOCAAL AT



MAT

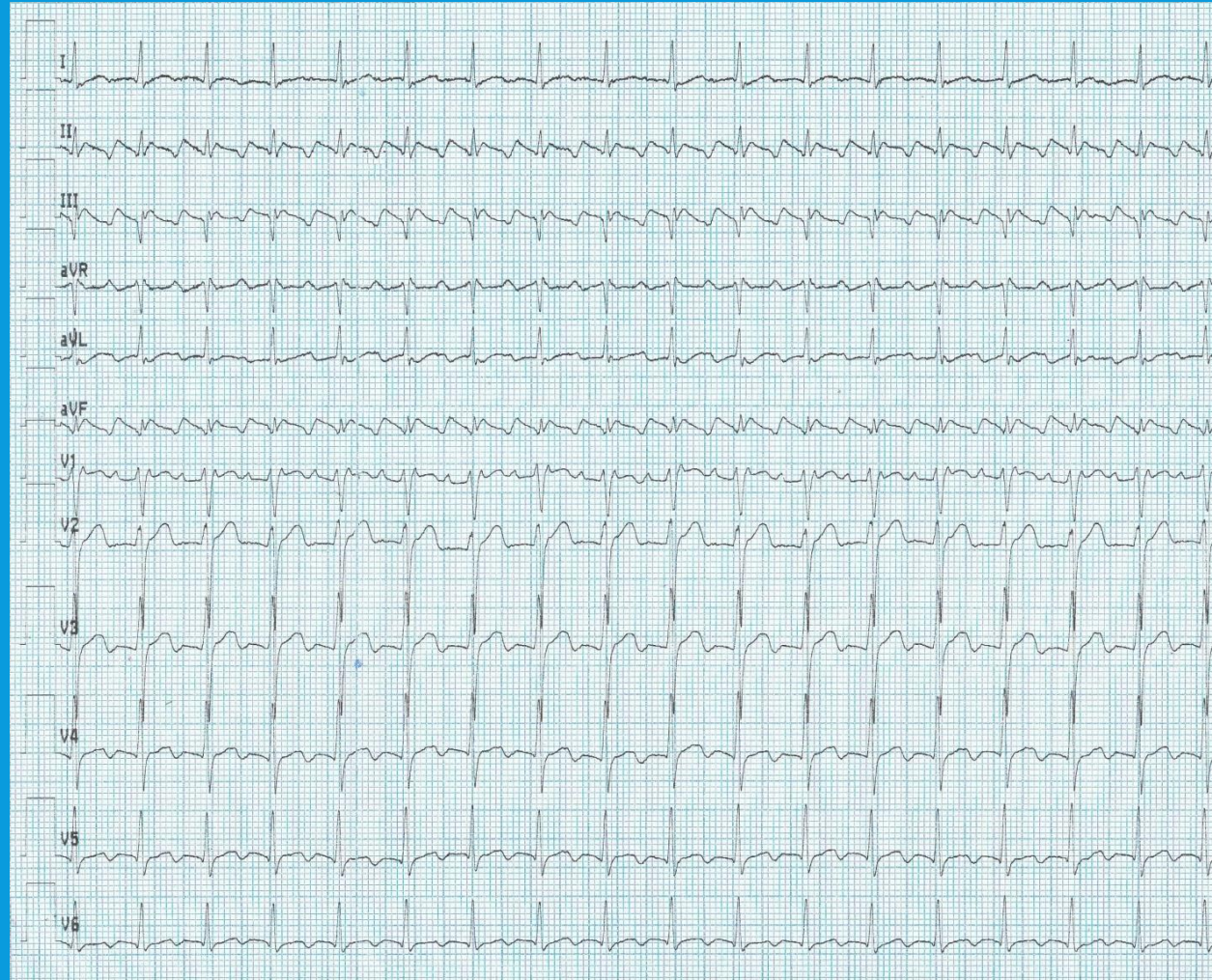


- **Macro reentrant tachyarrhythmia (AFL):** AFL is a macro reentrant arrhythmia with rate between 250 to 350 bpm, and saw tooth appearance in EKG.
- AFL divides into two subtypes (Typical AFL, and atypical AFL).
- Typical AFL is dependent to cavo-tricuspid isthmus in right atrium.
- Atypical AFL is independent to cavo-tricuspid isthmus. AFL can be conducted to ventricles with regular ventricular response (1:1, 2:1...) or irregular ventricular conduction (Wenckebach pattern).

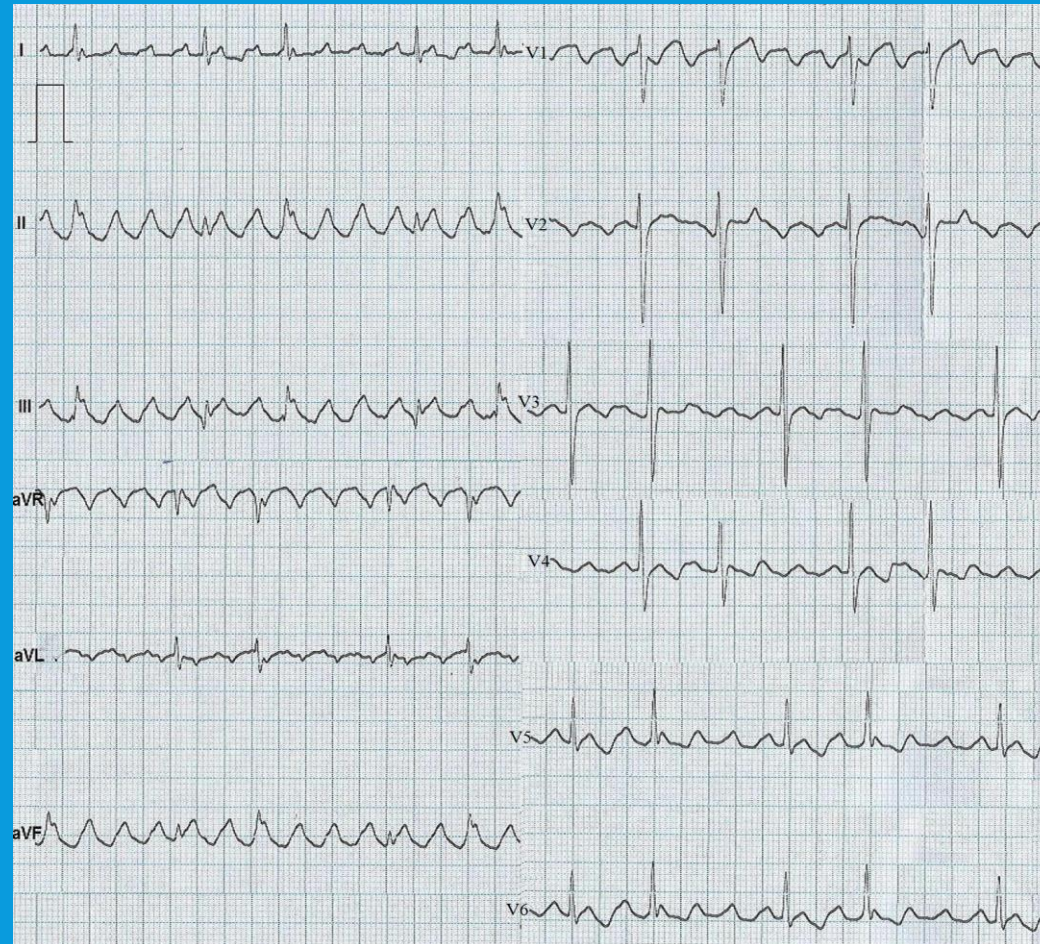
- **Typical atrial flutter classification:**

- 1-counterclockwise AFL: negative flutter waves in inferior leads, and positive flutter waves in V₁.
- 2- Clockwise AFL: positive flutter waves in inferior leads, and negative flutter waves in V₁.

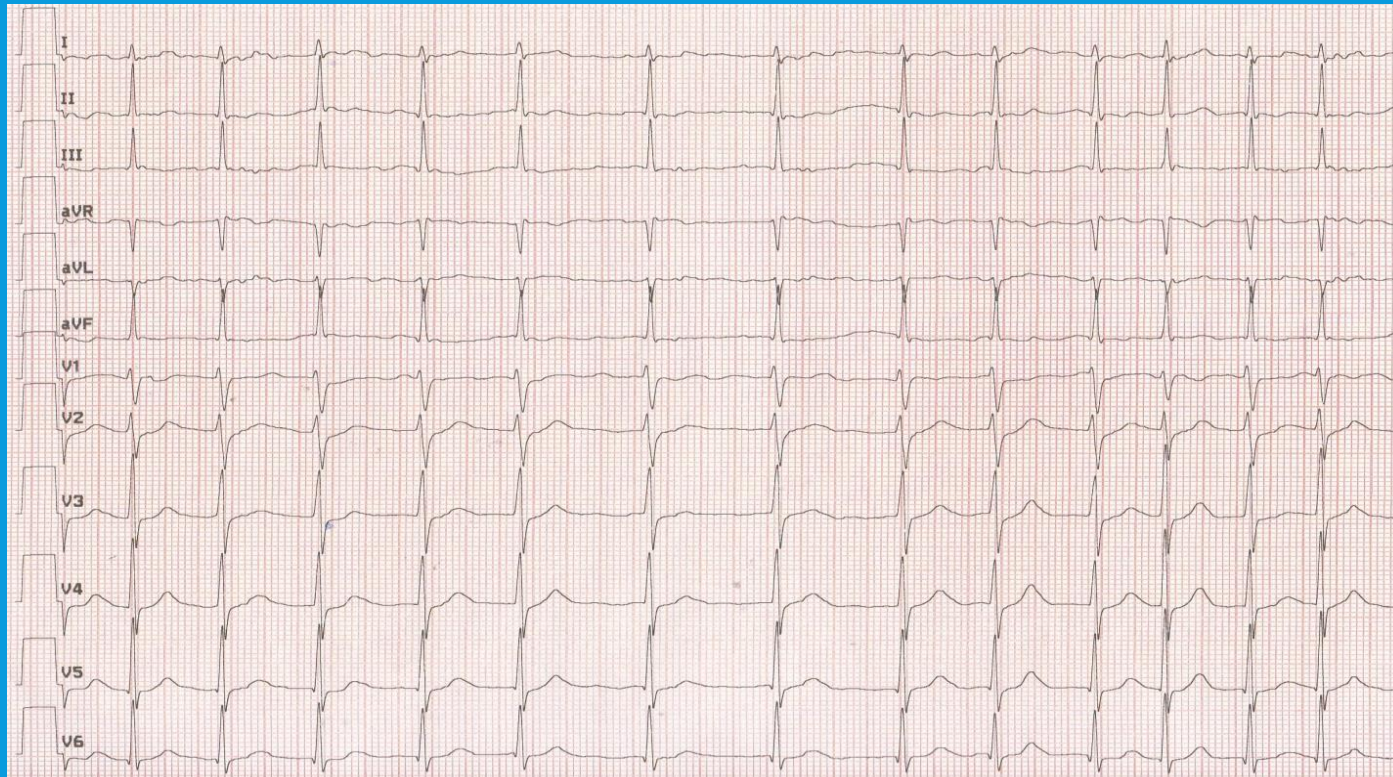
COUNTERCLOCKWISE ATRIAL FLUTTER



CLOCKWISE AFL



- **Atrial fibrillation (AF):**
- AF is a supraventricular tachyarrhythmia originating from atrium or pulmonary veins. AF is characterized by irregular-irregular rhythm, and fibrillation waves.



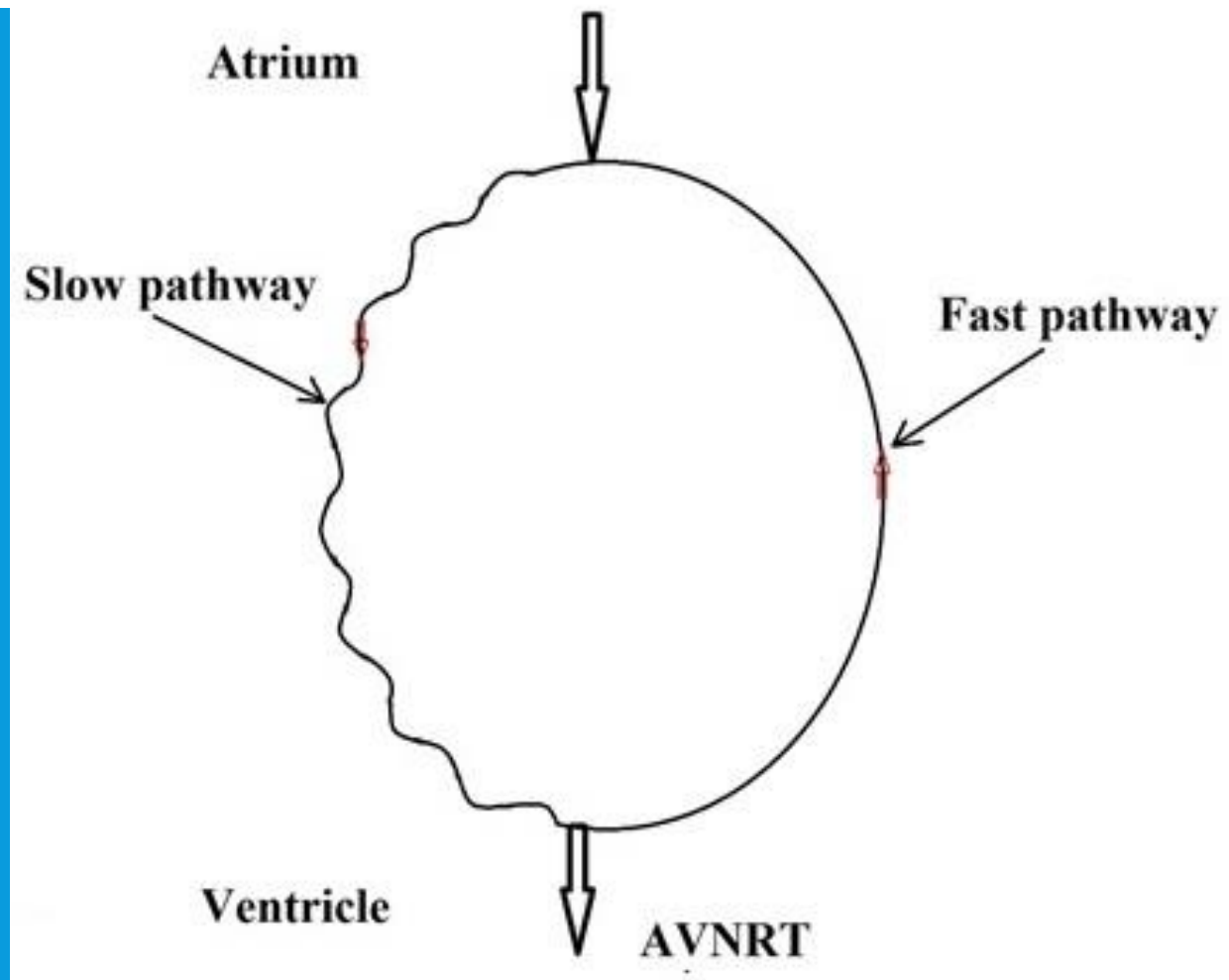
REENTRANT TACHYCARDIA INVOLVING AV NODE:

- **1-AVNRT:** Is the most common form of supraventricular tachyarrhythmia.
- There are two pathways involving in AVNRT:
 - **-Fast pathway:** Rapid conduction velocity, and long refractory period
 - **-Slow pathway:** Slow conduction velocity, and short refractory period
- **Subtypes of AVNRT:**
 - **Slow-Fast AVNRT (Typical)**
 - **Fast-Slow AVNRT (Atypical)**
 - **Slow-Slow AVNRT**
 -

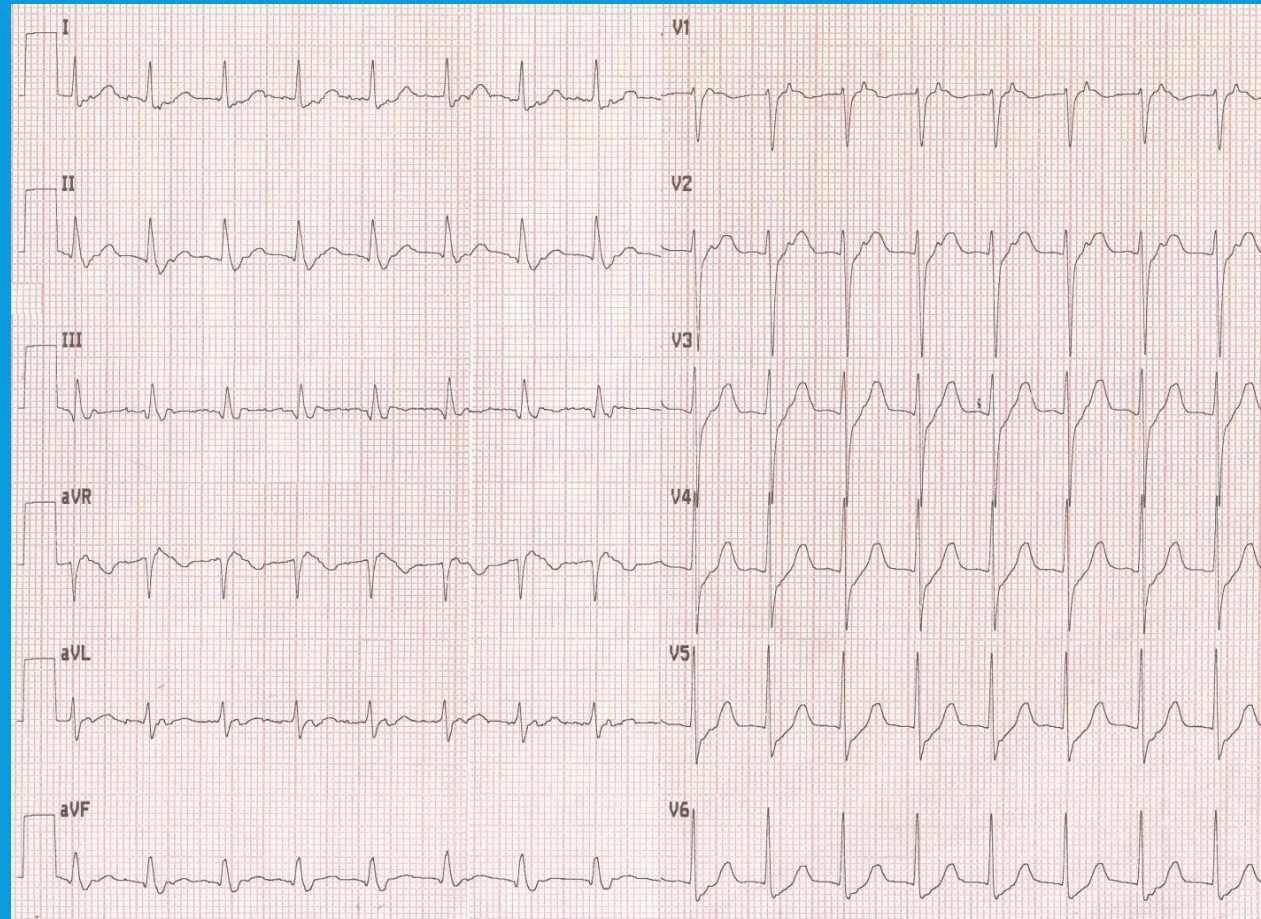
TYPICAL AVNRT (SLOW-FAST):

- A) Typical AVNRT is the most common form of SVT. It is the result of antegrade conduction over slow pathway and retrograde conduction over fast pathway (short RP-long PR).
- EKG characteristics:
 - 1- P waves are hidden in QRS complexes and not seen in ECG (no visible P wave).
 - 2- Pseudo s in inferior leads, and r' in V1 due to superimposition of P waves in the terminal portion of the QRS complex.
- B) **Fast-Slow AVNRT (Atypical):** anterograde conduction over fast pathway and retrograde conduction over slow pathway (long RP-short PR). Visible P wave after QRS complex

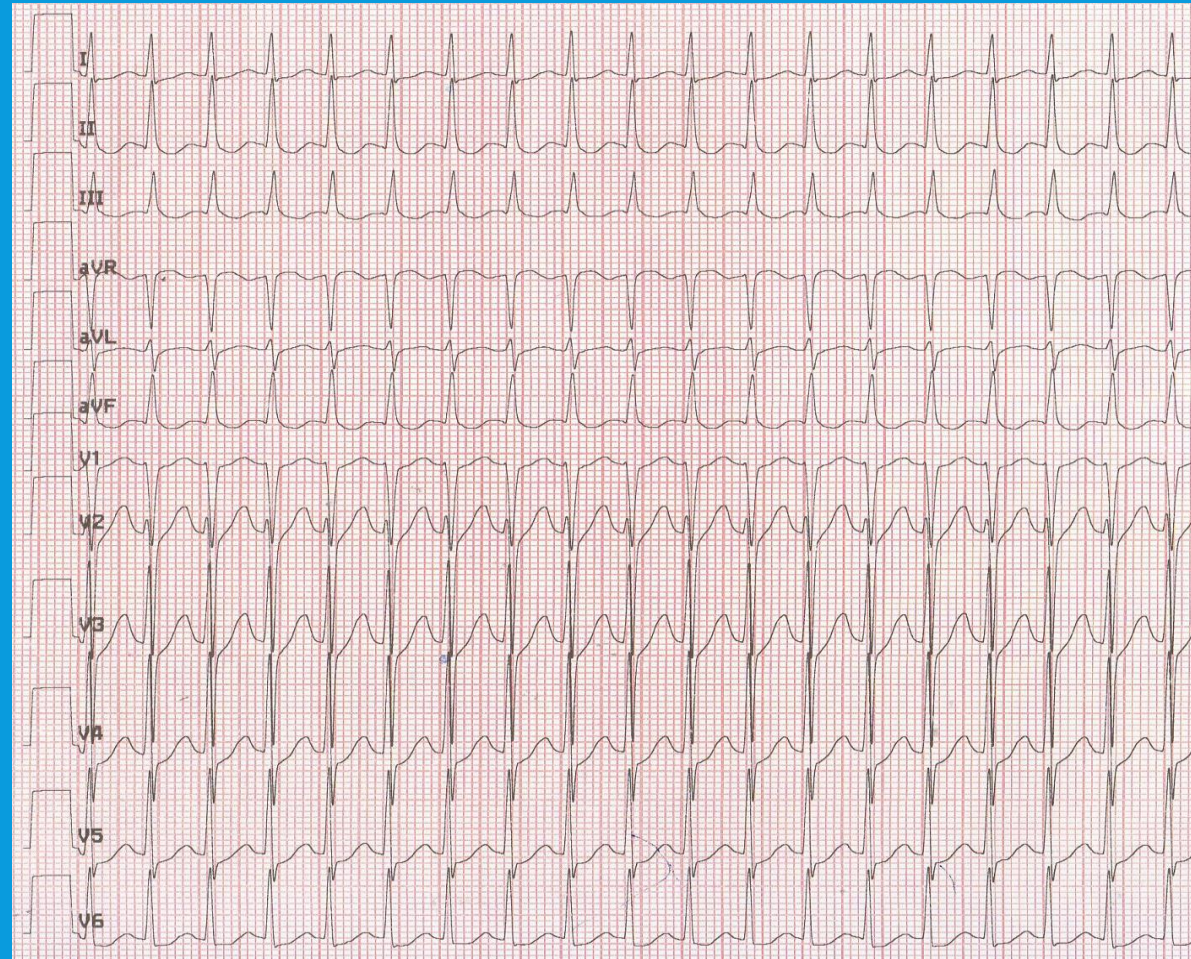
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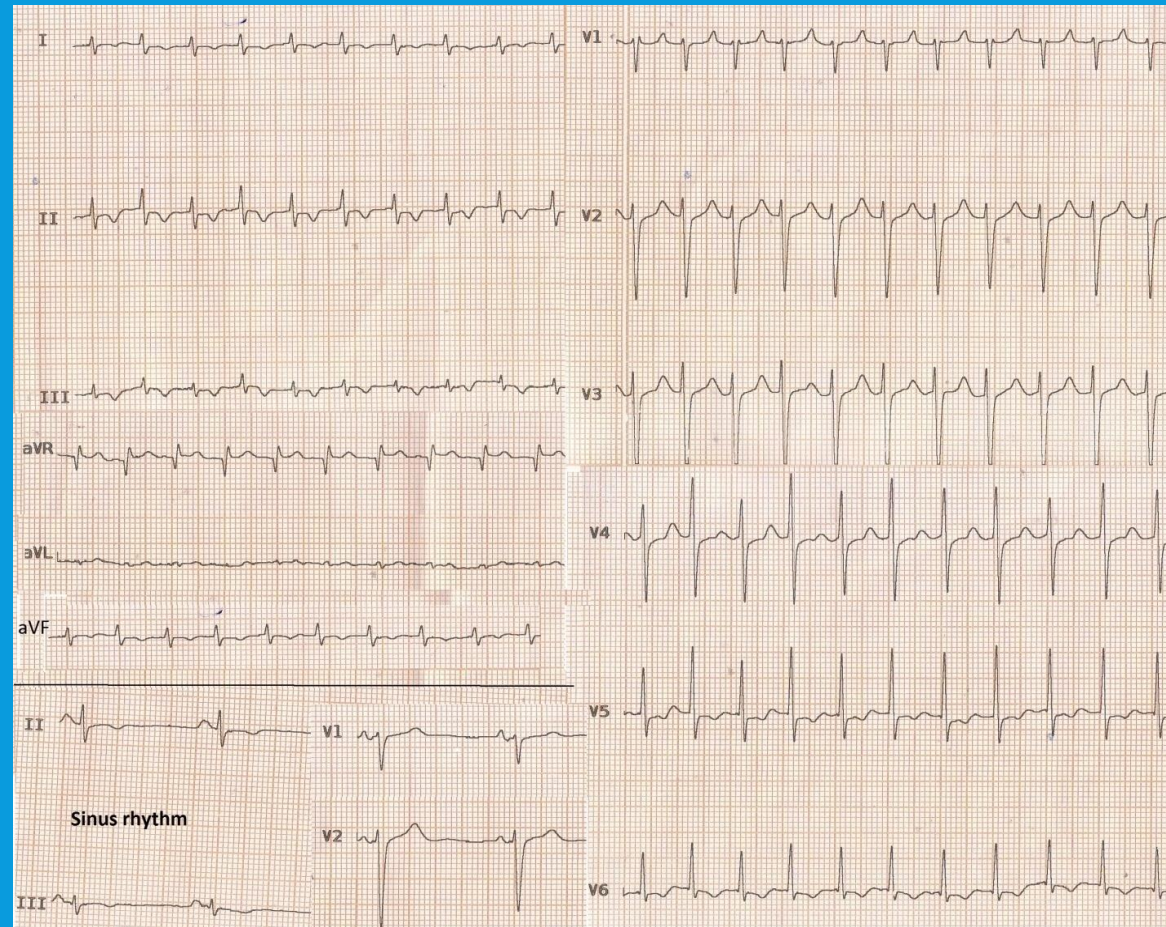
TYPICAL AVNRT(PSEUDO S IN INFERIOR LEADS)



TYPICAL AVNRT(NON VISIBLE P WAVE)



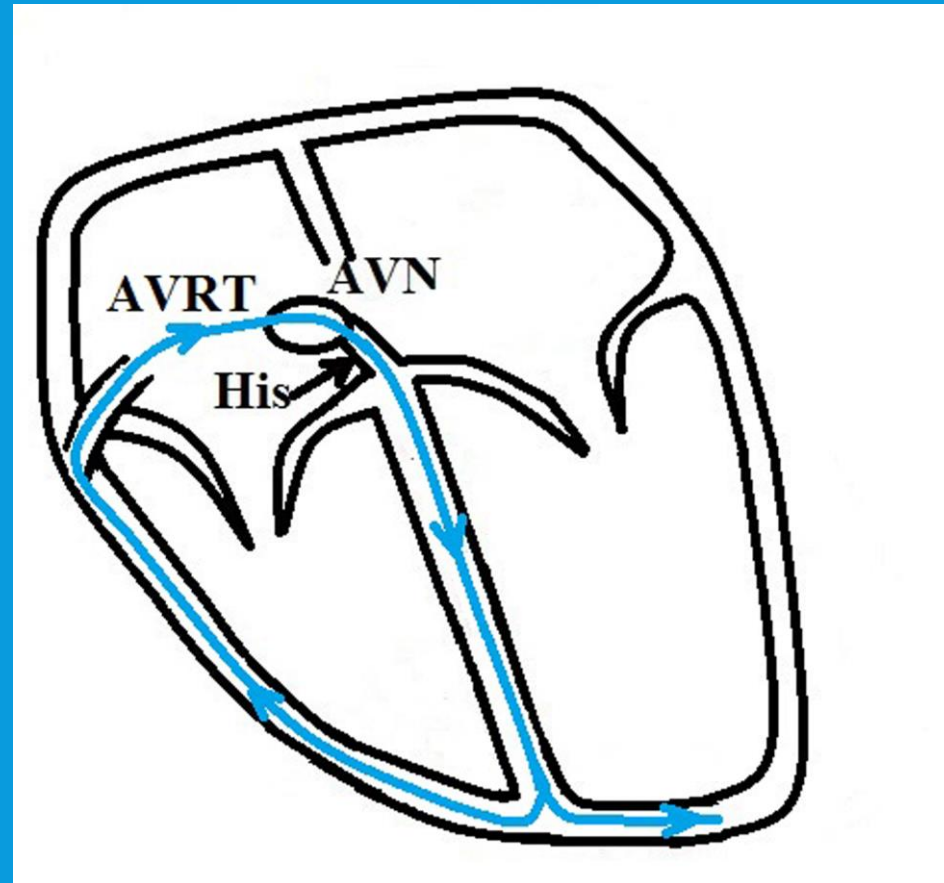
ATYPICAL AVNRT



- **2-AVRT:** This form of arrhythmia occurs as a result of conduction via normal conduction system and extra nodal accessory pathway. Accessory pathway can conduct impulse between atrium and ventricle antegradely and retrogradely.
- AVRT can be divided into two subtype: 1-Antidromic AVRT, 2-Orthodromic AVRT
- **1-Antidromic AVRT: Antegrade conduction via** accessory pathway and retrograde conduction over the AV node. This form of tachyarrhythmia is characterized by a wide QRS complex in surface ECG .
- **2-Orthodromic AVRT:** Antegrade conduction via normal AV node-His system and retrograde conduction over accessory pathway. regular narrow QRS tachycardia with a rate between 150-250 bpm .

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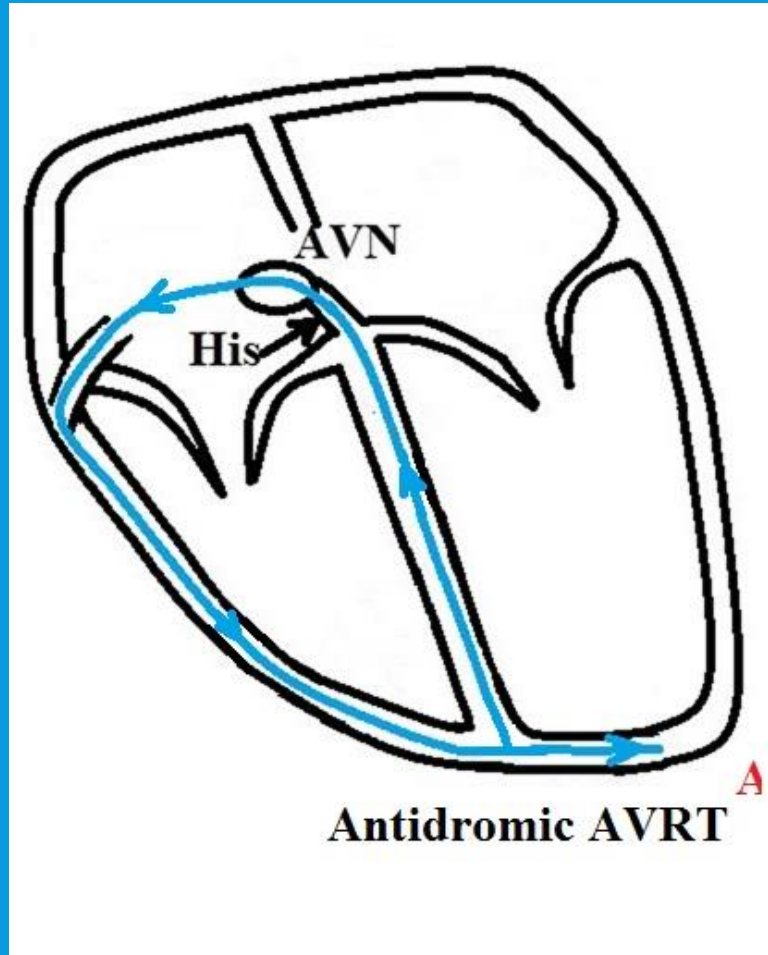
ORTHODROMIC AVRT



ANTIDROMIC AVRT



ANTIDROMIC AVRT



ORTHODROMIC AVRT OR AT : DEFINITE DIAGNOSIS BY EPS WAS ORTHODROMIC AVRT

