



SNS COLLEGE OF ALLIED HEALTH SCIENCES

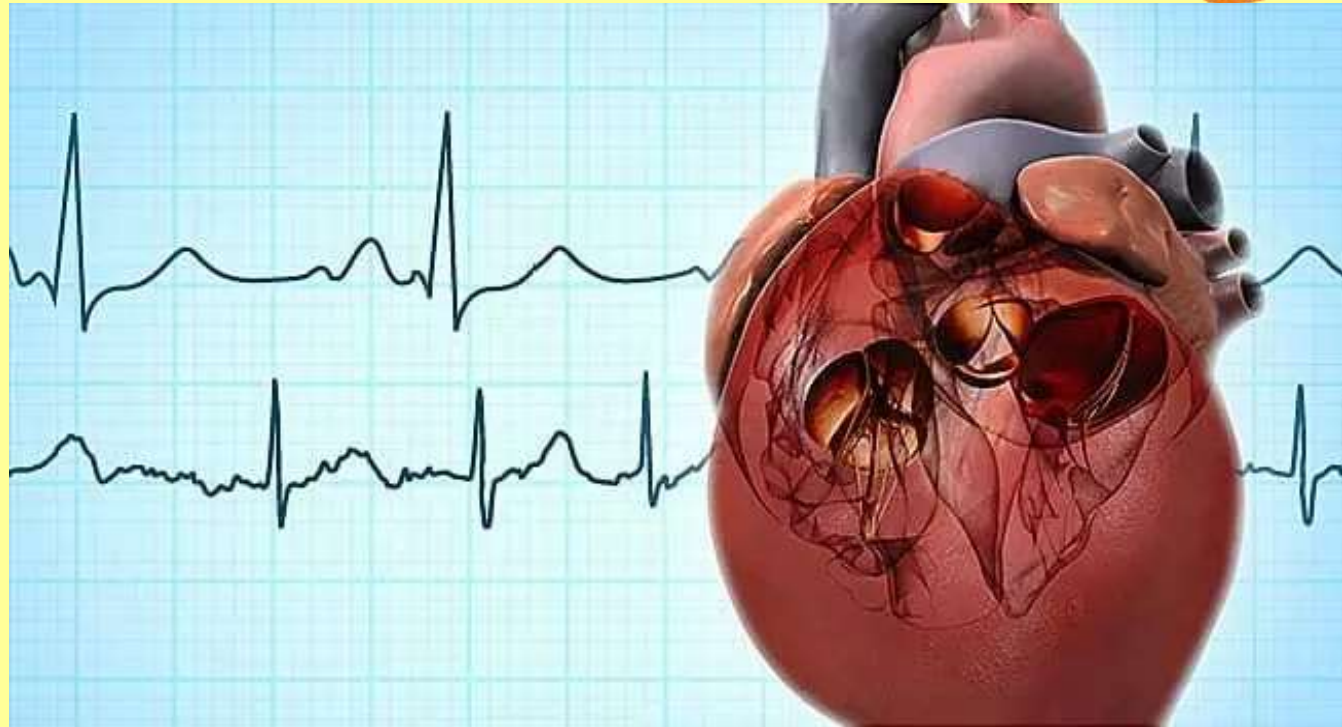
SNS Kalvi Nagar, Coimbatore - 35

Affiliated to Dr MGR Medical University, Chennai



DEPARTMENT OF CARDIAC TECHNOLOGY -II YEAR

UNIT I: ARTRIAL ARRHYTHMIAS



ATRIAL ARRHYTHMIAS

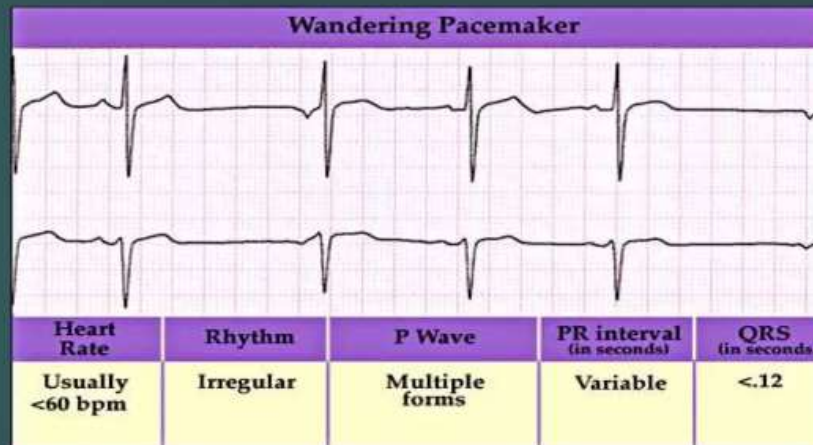


outlines

- ▶ Premature atrial contraction
- ▶ Wandering pacemaker
- ▶ Sinus tachycardia
- ▶ SVT
- ▶ Atrial flutter
- ▶ Atrial fibrillation

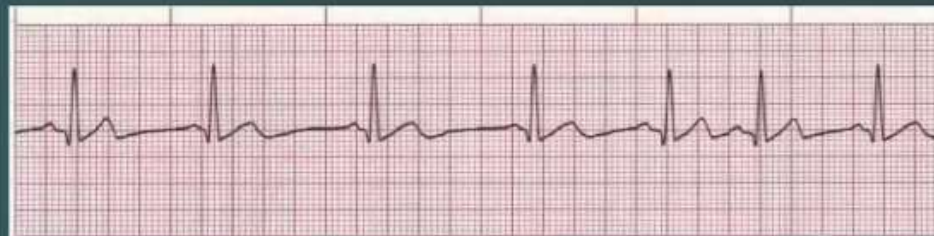
Wandering Pacemaker

- Pacemaker sites transfers from the SA Node to other sites in the atrium and the
- AV junction and back to the SA Node



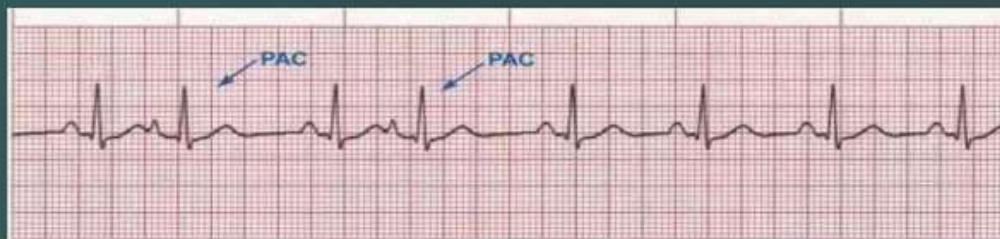


- **Rate:** Normal (60–100 bpm) **Rhythm:** Irregular.
- **Waves:** At least three different forms, determined by focus in atria by focus **PR Interval:** Variable; determined
- **QRS:** Normal



Preamature Atrial Contraction (PAC'S)

- The atrial impulse fires earlier than expected; afterwards normal sinus rhythm
- usually continues.





PAC'S

- **Rate:** Depends on rate of underlying rhythm **Rhythm:** Irregular whenever a PAC occurs.
- **P Waves:** Present; in the PAC, normal, may have a different shape.
- **PR Interval:** Varies in the PAC; otherwise normal
- **QRS:** Normal

Atrial Tachycardia

- The SA node impulse is overridden by the more rapid atrial rate.
- wave and the T wave may be seen.
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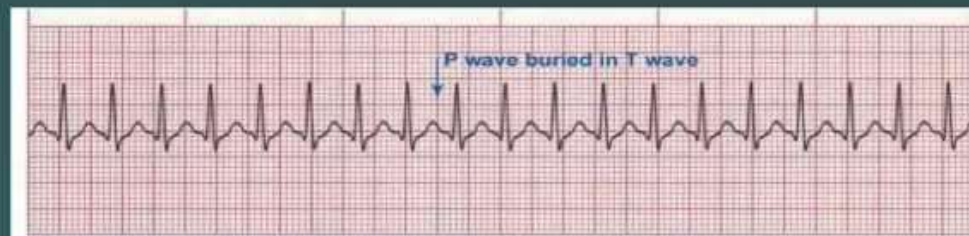




- **Rate:** 150–250 bpm **Rhythm:** Regular
- **P Waves:** Normal (upright and uniform) but differ in shape from sinus P waves
- **PR Interval:** May be short (<0.12 sec) in rapid rates .
- **QRS:** Normal
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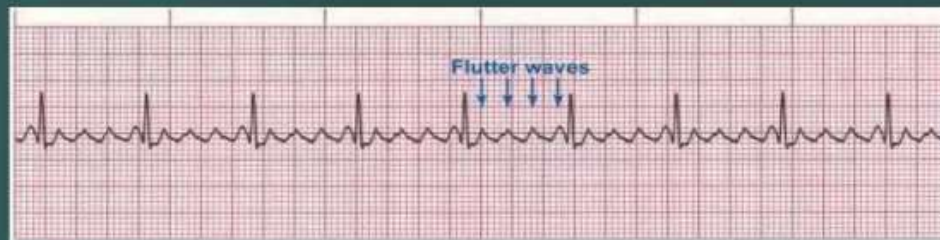
SUPRAVENTRICULAR TACHYCARDIA (SVT)

- P waves may not be seen due to the extremely rapid rate.



ATRIAL FLUTTER

- The AV node conducts impulses to the ventricles at a 2:1, 3:1, 4:1, or greater ratio (rarely 1:1).





- *If ventricular heart rate is less than 100 =*

*Controlled A-flutter
or*

A-flutter with controlled ventricular response.

- *If ventricular heart rate is greater than 100 =*

*Uncontrolled A-flutter
or*

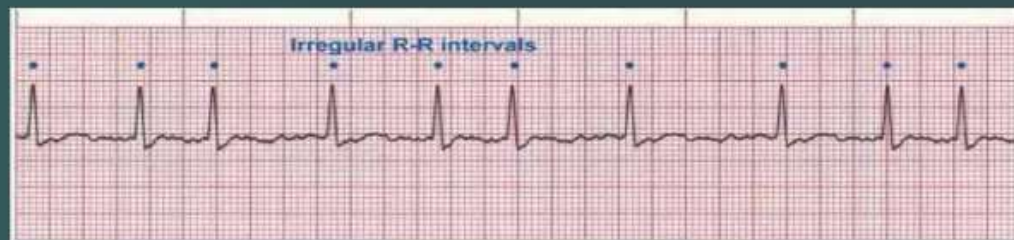
A-flutter with RVR (rapid ventricular response)



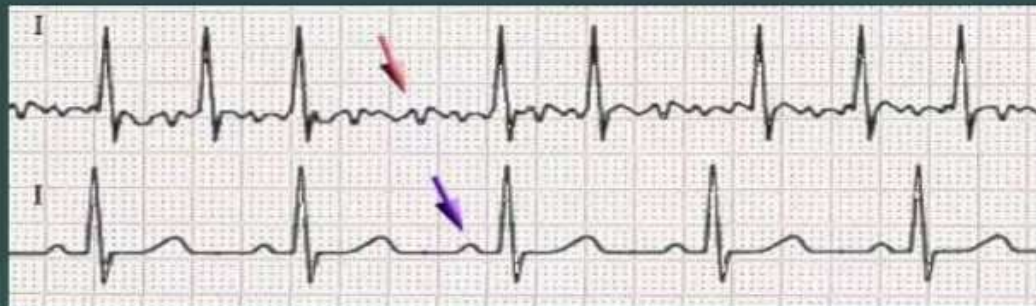
- **Rate:** Atrial: 250–350 bpm; ventricular: variable. **Rhythm:** Atrial: regular; ventricular: variable
- **P Waves:** Flutter waves have a saw-toothed appearance, some may not be visible buried in the QRS.
- **PR Interval:** Variable
- **QRS:** Usually normal

ATRIAL FIBRILLATION

- Rapid electrical discharge comes from multiple atrial ectopic foci.
- No organized atrial depolarization are detectable.



Atrial Fibrillation



Rhythm: Irregular

Rate: Unable to measure atrial; ventricular depends on AV conduction

P waves: Fibrillatory waves (coarse or fine)

PR: Unable to be measured

QRS: Narrow (< 0.12 sec); sometimes wide



- *If ventricular heart rate is greater than 100 =*

Uncontrolled A-fib

or

A-fib with RVR (rapid ventricular response)

Atrial Flutter

Can count the # of flutter waves (P waves)



Atrial Fibrillation (Afib)

Unable to count the # of waves





Fibrillation vs. Flutter?

- Multi-focal origins - chaotic
- Rate: >400 bpm
- IRREGULAR-R
- Atrial Cardiac Output is lost
- One focus - organized
- Rate: 200-400 bpm
- Atrial Cardiac Output is compromised

Atria contribute ~20% of the total Cardiac output: A-Fib is non-lethal



THANK YOU