

Student's Corner

Become a Sherlock Holmes in ECG

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Series 11 :

“Massage to Unmask”

This is the ECG of 80 years old female with intermittent palpitation (ECG-1)

Questions :

- (1) Describe the ECG Finding?
- (2) Why is this Clue?
- (3) What is Practical Implication?

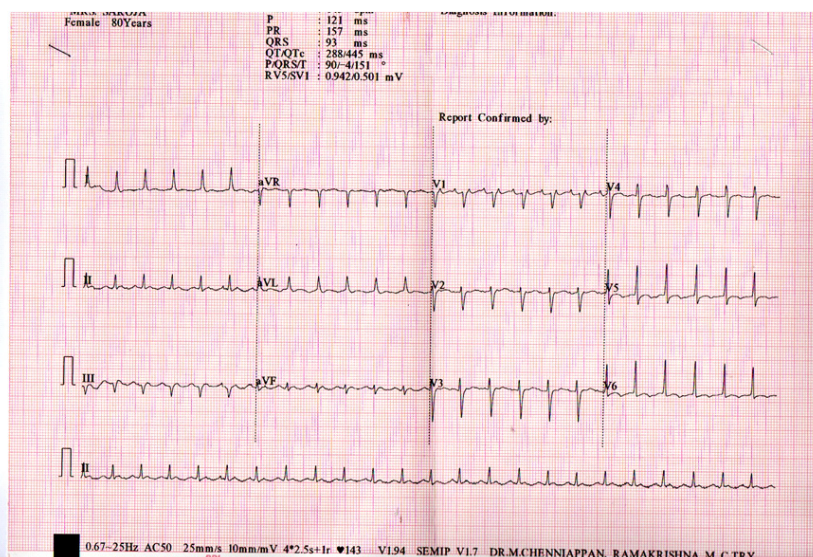
Answers :

(1) The ECG Findings :

This ECG shows narrow QRS regular tachycardia. Each QRS is preceded by p wave which mimics sinus tachycardia. There seems to be another P wave at the end of QRS which means that atrial rate is almost 286/mt. So this is atrial tachycardia with 2:1 AV block. But it is difficult to differentiate between sinus tachycardia and atrial tachycardia with 2:1 AV conduction. That's why some other maneuver is necessary to confirm the diagnosis of atrial tachycardia with 2:1 AV block.

(2) The Clue :

Whenever there is confusion about sinus tachycardia vs atrial tachycardia it is preferable to employ a vagal maneuver to delay the AV conduction. The simple bedside vagal maneuver is carotid sinus massage (CSM). If it is sinus tachycardia there will be gradual slowing of sinus tachycardia as long as the massage is applied; once the massage is stopped, the original rate is restored. If it is atrial tachycardia, due to increase in A.V. nodal refractory period, more p waves are blocked resulting in long R-R interval within which we can see rapid, blocked p waves, confirming the diagnosis of atrial tachycardia. Hence the clue “massage to unmask” is given. The ECG of this



ECG 1



ECG 2 — The last portion of this strip shows rapid blocked P waves confirming atrial tachycardia

patient after CSM is given (ECG-2) which shows rapid blocked P waves due to long R-R interval produced by CSM.

(3) Practical Implication :

If this ECG is diagnosed as sinus tachycardia, active intervention may not be necessary other than treating underlying cause. If atrial tachycardia is diagnosed by CSM active intervention like cardio version or pharmacological intervention is needed to covert the rhythm to normal sinus rhythm or controlling ventricular response.

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