

## Student's Corner

### Become a Sherlock Holmes in ECG

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#### Series 10 :

#### “Extraordinary systole”

This is the routine ECG of 67 years Diabetic male.

#### Questions :

- (1) What are the ECG findings ?
- (2) Why is this clue ?
- (3) What is practical implication ? What is practical implication?

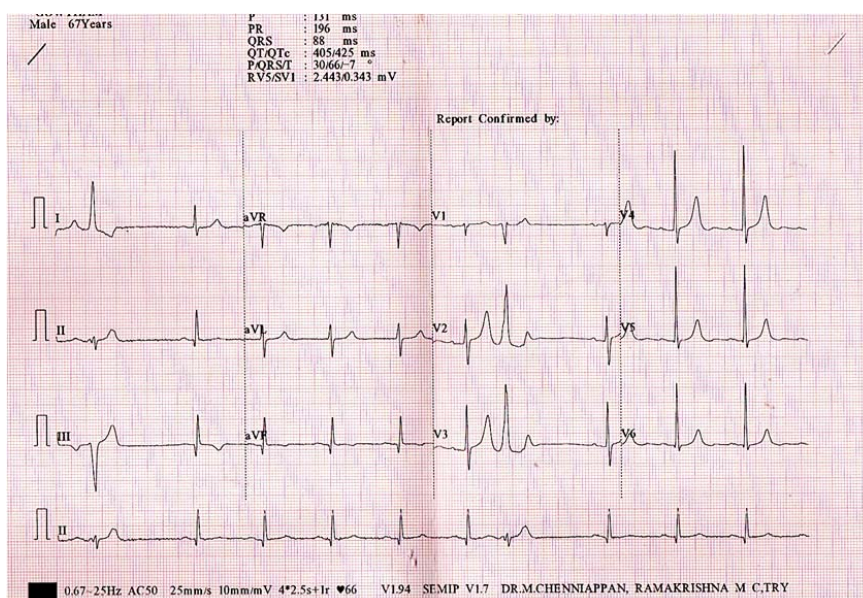
#### Answers :

##### (1) ECG Findings :

ECG shows sinus rhythm, right ward axis, high voltage QRS in left lateral leads with 2 VPDs. The inferior leads show narrow Q waves. The VPD has negative QRS in V1 and superior axis. So, it is probably arising from RV inflow region. The interesting point is that VPD in the chest leads has homophasic ST T changes (ST, T in the same direction of QRS). The VPD in limb leads, show classical secondary ST T changes.

##### (2) Why is this clue?

The homophasic ST T changes in VPD are considered to be subtle sign of ischemic heart disease (IHD). In this ECG, the VPD in chest leads shows homophasic ST T changes even though the sinus complexes in these leads are not showing significant IHD. The VPD in limb leads, arising from the same



focus is not showing homophasic ST T changes indicating no significant ischemia in that region. So, the VPD in chest leads has unmasked CAD. In addition to that in the rhythm strip the T wave which forms VPD shows fluttering of T which is once again a subtle sign of IHD. This is named “Poor man’s Exercise Test” by Levine. So, this extrasystole, has given us extraordinary information about occult CAD, and hence this clue.

##### (3) Practical implication:

The VPD has unmasked IHD even though the sinus beats are not showing signs of IHD by 2 ecg signs which are homophasic ST T changes in VPDs in V3, V4 and post extra systolic T changes in LII. So, although the patient is asymptomatic, he needs further evaluation for IHD like MSCT CAG and management with statins, antiplatelet and beta blockers.

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