Student's Corner

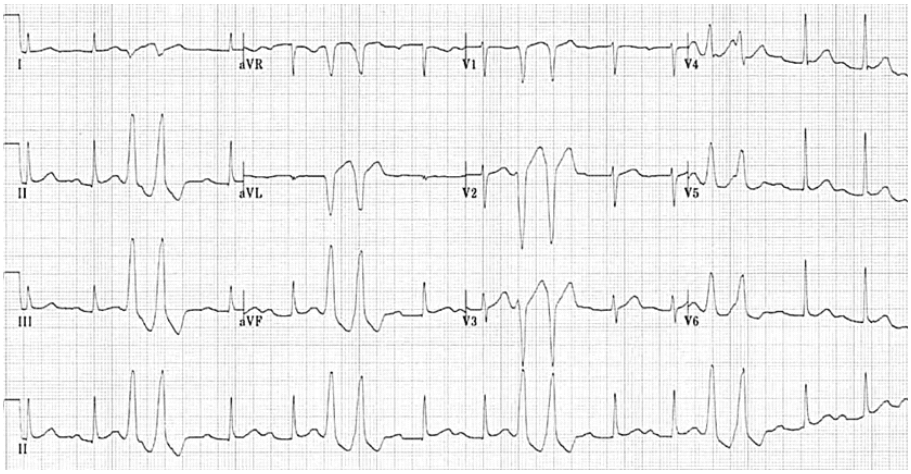
Become a Sherlock Holmes in ECG

M Chenniappan[1]

Series 5 :

"What catches the eye, distracts you"

This is the ECG of 68 years old patient with DM who presents with palpitations and giddiness.



Questions :

1 mv STD; 25 mm/sec

(1) Describe all ECG changes.

(2) Why is this clue?

(3) What are practical implications?

ECG Findings:

ECG shows frequent ventricular depolarisations (VPDs). The VPDs occurring in couplets. The first VPD is R on T to the previous sinus beat and the second VPD is R on T for the previous VPD. These couplets have LBBB pattern with inferior axis indicating the site of origin is from Right Ventricular Outflow Tract (RVOT). The basic sinus beats show 1mm ST elevation in inferior leads. The ST elevation in L II is more than L III suggesting Left Circumflex Artery occlusion (LCX) causing acute inferior wall infarction. The LCX as the culprit artery is confirmed by the absence of reciprocal ST depression in LI and avL. There is also prolonged PR interval indicating first degree Atrio Ventricular Block. The PR intervals are constant. There is no ST depression in V1 to V3 which excludes associated posterior MI.

The Clue :

Although the most prominent finding of frequent couplets draws our attention, the subtle ECG finding of Inferior wall infarction may often be missed. In addition, the careful study of sinus beats reveals that the culprit artery for this inferior wall MI is LCX and AV node is probably supplied by Left Circumflex (10%-LCX inferior wall MI with prolonged and constant PR interval). If one is diagnosing only malignant VPDs because of the prominent finding and misses subtle but most important finding of acute IWMI in sinus beat, the management will be in a wrong direction for treating the VPDs alone and not for Inferior wall MI. That is why the clue of "What catches the eye, distracts you" is given.

Practical Implications :

In addition to the treatment for this malignant couplet by IV lignocaine one should immediately plan for revascularisation of LCX either by primary PCI or thrombolysis depending upon 5As – **A**vailability, **A**ccessibility, **A**ffordability, **A**rrival time, and **A**bout the institution.

[1]Adjunct Professor, Dr MGR Medical University, Tamilnadu; Senior consultant cardiologist, Tamilnadu; Ramakrishna Medical Centre, Apollo Speciality Hospital, Trichy