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The Terrible Ten

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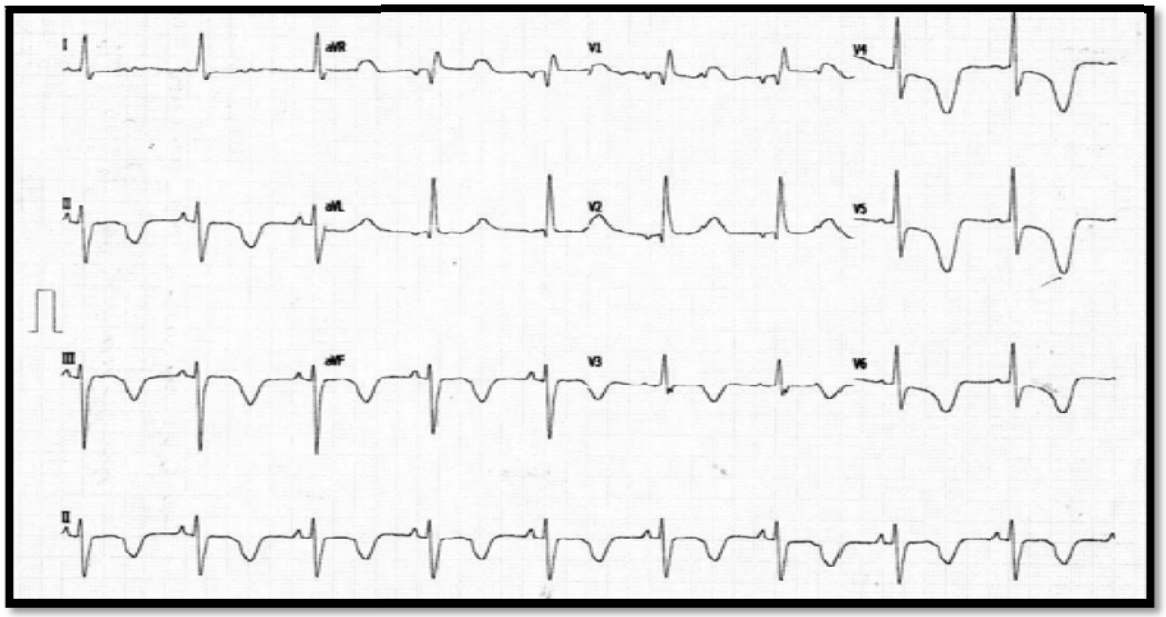
This is the ECG of a 60-year-old female with chest pain and intermittent dizziness.

1. Describe ECG changes
2. Why is this clue?
3. What are the practical implications?



ECG Changes:

The ECG shows complete RBBB, Left Anterior Fascicular Block (LAFB) with a P wave in the ST segment of all beats. Most of the leads show deep,broad, symmetrical T inversions with prolonged QTc. The PR interval is normal and constant. The P wave in the ST segment can be either an Atrial Premature beat or a sinus P which is not conducted to the ventricles. As the P-P intervals, including non-conducted P waves are constant, it is likely that this P in ST segments is non conducted sinus P. If it is APD, conducted Sinus P to non conducted P in the ST segment is likely to be short when compared with other P-P intervals. It is ideally called "non conducted" rather than "blocked "P because it is falling in a period where it is not expected to be conducted.

The deep broad symmetrical T inversion is unlikely due to Acute Coronary Syndrome (ACS) like "Wellen's syndrome" because the QTc is prolonged and diffuse. There is no initial r in V1 and initial q in V5 V6, indicating Antero Septal MI(ASMI). There arehomophasic ST T changes with RBBB. The deep broad symmetrical T inversion with prolonged QTc is probably due to the recent "Strokes Adam Attack."

Clue:

The overall 10 ECG findings are:

1. Complete RBBB
2. Left Anterior Fascicular Block
3. 2:1 AV conduction
4. Anteroseptal MI
5. Deep Broad symmetrical T inversion

6. Prolongation of QTc
7. Homophasic ST T changes in the presence of RBBB
8. Probable recent Stokes Adams attack
9. Dominant RBBB (presence of terminal r in L1 in the presence of LAFB)
10. "Pseudo" Wellens

As this ECG has "Ten" terrible changes that may be dangerous to patients' lives, the clue of "The Terrible Ten" is given.

Practical implications:

In advanced conduction disturbances such as RBBB, LAFB, and 2:1 A.V. Conduction, the broad, symmetrical deep inversion represents recent stokes Adams Attacks. (Stoff Weichsel syndrome). This T inversion in advanced A.V. Blocks or sinus node disorders represents recent transient brain ischemia like the ECG changes in CVA. Although this patient does not have typical syncope, the dizziness may represent episodes of pre-syncope, and it is the definite indication for Permanent Pacemaker Implantation. The presence of ASMI and homophasic ST T changes in RBBB represent occult CAD, and she also needs Coronary Angiogram to decide about further management of CAD.