Student's Corner

Become a Sherlock Homes in ECG

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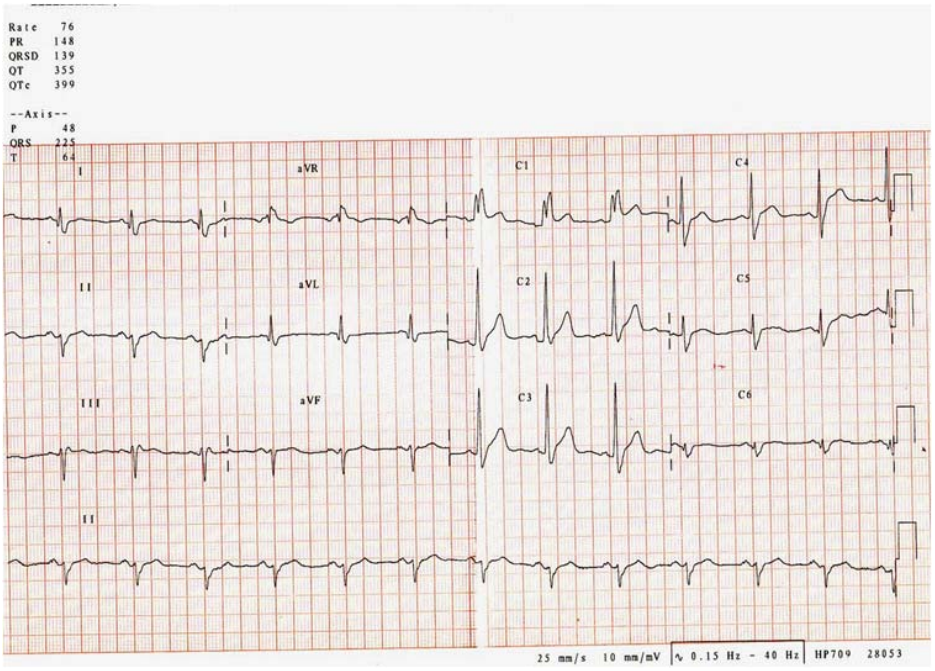
Series 3 :

ECG



"Obvious is obvious, look for unobvious"

This is the ECG of 50-year diabetic with intermittent chest pain

Questions:

1. What is obvious?
2. What is unobvious?
3. What is the practical implication?

Answers

1. Obvious : The presence of Right Bundle Branch Block (RBBB), left anterior fascicular block and anterolateral and high lateral pathological Q waves are obvious indicating Antero and high lateral MI.

2. Unobvious : Unobvious is associated Posterior Wall Myocardial Infarction (PWMI). Most often it is difficult to diagnose PWMI in the presence of RBBB. One should concentrate on initial R wave in RBBB. In uncomplicated RBBB, in V1 this initial r is due to septal activation occurring from Left to Right and it is narrow and small – but in the presence of RBBB, the initial R wave becomes tall and broad in V1. In addition, there may be homophasic ST T changes in V1 where ST T are in the same direction as QRS. So, in this ECG, in addition to Anterior Injury and ischemia, patient has old PWMI indicated by Tall and Broad initial R in V1 (Fig 3A).

Fig 3A — Showing ECG complex in V1 with PWMI, RBBB and the combination

3. Practical implications : It is always a good practice to look for PWMI in inferior MI whether it is in acute phase or chronic phase in the form of reciprocal ST depression or Tall R in VI respectively. Association of PWMI in addition to IWMI indicates more myocardial involvement and more extensive disease. This ecg illustrates how to diagnose PWMI in the presence of RBBB which masks chronic PWMI.

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