

## Student's Corner

### Become a Sherlock Holmes in ECG

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#### Series 4 :

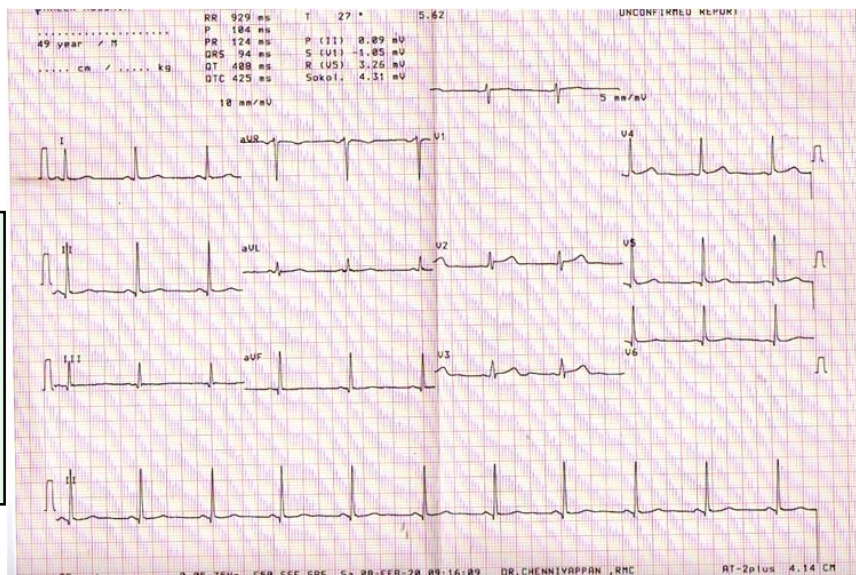
#### “Set Yourself High Standards”

This is the routine ECG of 49-year-old known hypertensive.

#### Questions :

What will you not do except :

- (1) Describe ECG changes
- (2) Why is this clue?
- (3) What are practical implications?



#### Answers :

#### ECG Changes :

The ECG shows sinus rhythm with no significant findings superficially except for minor T changes. But when you look at standardization, the chest leads are recorded at Half standardization. This means R in V5 is double voltage of R shown in V5. The amplitude measured by doubling the R wave in V5 shows R wave height in V5 as 32mm and Sokolow-Lyon measurement of S in V1 and R in V5 is 43mm. This means patient has left ventricular enlargement.

#### Why this clue ?

When you read an ECG don't forget to look at standardization and speed for all leads. Assuming the ECG is taken in 1mV standardization (usual) and 25mm/sec speed throughout the ECG will most often result in wrong interpretation. Sometimes limb and chest leads may have been recorded in different

standardization as in this ECG. Here if the standardization for Chest leads (which is half standardization shown at the end) is not seen LV enlargement would have been missed. So “set yourself high standard” of the ECG reading by checking the standardization and speed first in all leads!

#### Practical implication :

ECG is the most cost-effective way of detecting LVH which is one of the most important target organs involved in Hypertension. The presence of LVH with same Blood Pressure increases events like CAD, Stroke and Kidney Disease. For the diagnosis of ventricular enlargement all the criteria are based on normal standardization (ie, 1mV =10mm).

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