

Student's Corner

Become a Sherlock Holmes in ECG

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Series 7:

“Muscle in Distress”

This is the routine ecg of 27-year-old male with no risk factors

Questions :

(1) What are the ECG changes?

(2) What is the differential diagnosis for this ECG ?

(3) Why is the clue?

(1) What are the ECG changes ?

The ECG shows Tall R wave in V1. There is deep and Broad Q waves in anterolateral and high lateral leads. There is left ward Axis. There is fractured QRS in L II, L III, avF

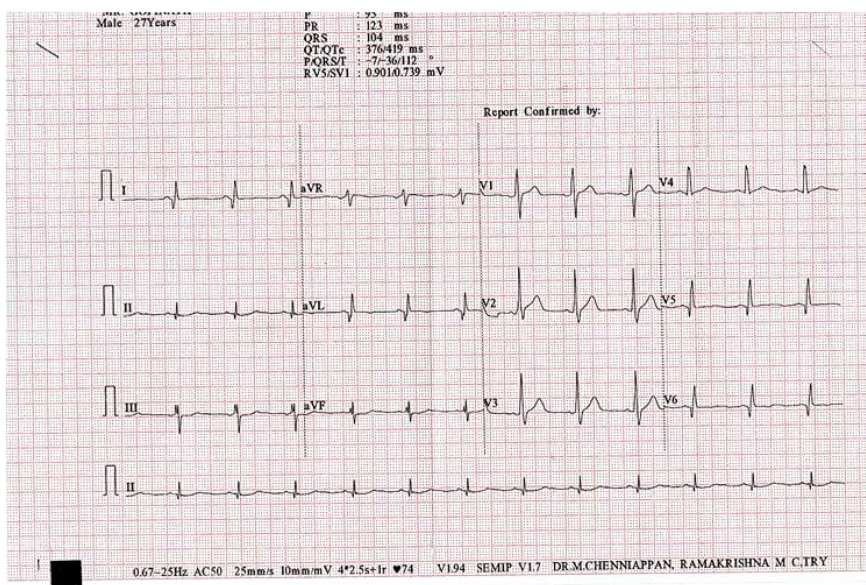
(2) What is the differential diagnosis ? (See table)

As the QRS is narrow, the causes of Tall R wave with wide QRS are excluded. Coming to Tall R waves with narrow QRS this is not RV Hypertrophy as the axis is not right and there is no right atrial enlargement. This is not dextrocardia as the P and QRS are upright in L I; Patient is not cyanosed and there is no ecg signs of single ventricle. The ECG is recorded properly.

It is unlikely to be Hypertrophic cardiomyopathy (HCM) as the QRS voltage is normal. Usually the septal Q in lateral leads is deep and narrow in HCM. Here the Q in lateral leads and broad and deep. So, the DD boils down to lateral and posterior wall MI (PWMI) Vs Deschene Muscular Dystrophy (DMD). Here the PWMI is not the possibility as the age of the patient and risk factors are against. So, this ECG is likely to be due to DMD. In DMD, the tall R in V1 and deep broad Q waves are due to fibrosis of postero lateral wall. The fractured QRS in inferior leads is suggestive of LV dysfunction.

(3) Why is the clue?

“Muscle in distress” is given to indicate it is a myopathy. The intentional wrong spelling of “dystress”



instead of distress is a clue towards muscular ‘dystrophy’. The ecg signs of DMD are sinus tachycardia, QT interval abnormalities, supraventricular and ventricular arrhythmias as well as conduction disturbances. In addition to arrhythmias, autonomic nervous system abnormalities may lead on to sudden cardiac death.

SUMMARY	
TALL “R” IN V1	
NARROW QRS	WIDE QRS
POST WALL MI	RBBB
RVH	WPW –TYPE A
HCM –ASH	AIVR / V-TACH
DEXTROCARDIA	BRUGADA
WRONG LEAD PLACEMENT	EPICARDIAL PACING FROM LV
SINGLE VENTRICLE	ASD
DUSCHENE MUSC.DYSTROPHY	

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