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The Medical Bulletin

ECG Excursion

What are the typical electrocardiographic changes observed in a patient with COPD?

The typical ECG changes seen in a patient with chronic obstructive pulmonary disease include the following-

Prominent tall P waves (more than 2.5 mm tall) in leads II, III and aVF, called as the P—pulmonale Rightward shift of the QRS axis in the frontal plane

Poor progression of the R wave in the precordial leads

Low voltage of the QRS complexes, especially in the left precordial leads The 'lead I sign'

In patients with COPD and cor pulmonale, poor 'r' wave progression and the loss of R waves in right sided and mid precordial leads may sometimes mimic anterior wall myocardial infarction.

Sometimes abnormal Q waves may appear in the inferior leads to suggest an inferior wall myocardial infarction. These ecg changes are usually secondary to the vertical displacement of the heart due to the low lying flattened diaphragms and the intervention of hyperinflated lungs.

If the ecg recordings are taken one intercostal space lower, then the morphology of the QRS forces can be partially normalized.

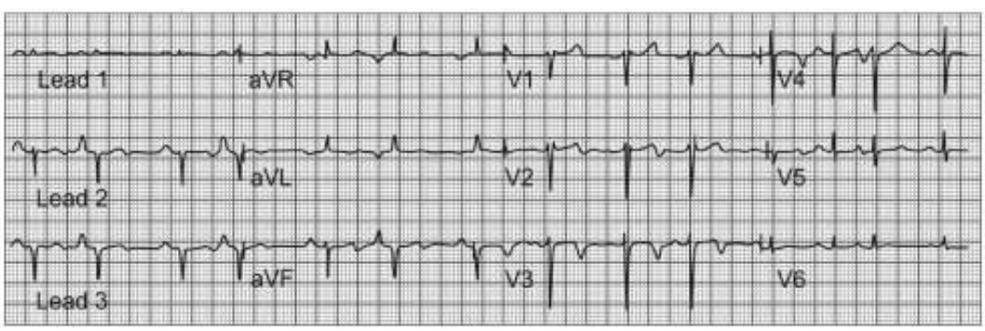

Fig. 9.4: Electrocardiographic changes in COPD

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