

Interesting Electrocardiogram

Q Waves in the Inferior Leads

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The problem of determining on one tracing alone the significance of Q waves in the inferior leads (II, III, AVF) can be difficult. The present ECG on a 36-year-old male illustrates the situation seen quite frequently in insurance medicine, i.e., the need to rule out an old inferior myocardial infarction.

The criteria for abnormal Q waves in the inferior leads can be described as follows: the Q wave must be 0.04 sec. or wider in duration in AVF and III. Lead AVF is the source lead for inferior damage as it faces the diaphragmatic or inferior cardiac surface. The size of the Q in lead III should, in general, be at least 3 mm. deep and this should represent 25% or more of the total QRS amplitude (height of R plus depth of Q) in lead III. If there is a Q in lead II as well as in leads III and AVF, this Q will show a wide duration (0.04 sec. or more) and a depth of 20% of the total QRS amplitude

in lead II if there has been an infarction. However, abnormal Q waves are not always seen in lead II in inferior infarction.

Let us summarize the problem shown in this record where there are Q waves in inferior leads in a young man with no history of infarction. Where an inferior infarct has healed the T wave abnormalities in II, III and AVF may have disappeared. The only remnants of the event are abnormal Q waves in leads III and AVF. In this tracing the Q waves do not meet the criteria for abnormality, — they are not wider than 0.03 sec. and not large in size. Note also that in lead III Q varies, the first two beats are narrower than the third. This reminds us of the useful maneuver of recording lead III and AVF during a deep breath. When there is no inferior infarct this deep breath will cause the Q (which is of positional origin) to become smaller or disappear altogether.

