

Chest Pain and Electrocardiographic Changes



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A 58-year-old man with his first episode of chest pain had an acute anterior myocardial infarct. After balloon angioplasty and stenting of a completely occluded left anterior descending coronary artery, the anterolateral ST-T changes had largely resolved.
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Case Report

A 58-year-old man with no prior heart troubles came to the emergency department within one hour of the onset of chest pain. His electrocardiogram (Figure 1) showed hyperacute ST-T changes in the anterolateral leads with marked elevation of the J point and tall and broad T waves. The inferior leads show reciprocal ST-segment depression. The patient went immediately to the

cardiac catheterization laboratory where a totally occluded left anterior descending coronary artery was opened with a balloon and stented. Less than 3 hours later, the changes of anterolateral infarction were far less ominous (Figure 2).

Although other conditions such as early repolarization, pericarditis, left ventricular hypertrophy, left bundle branch block, and hyperkalemia may produce ST-segment elevation,

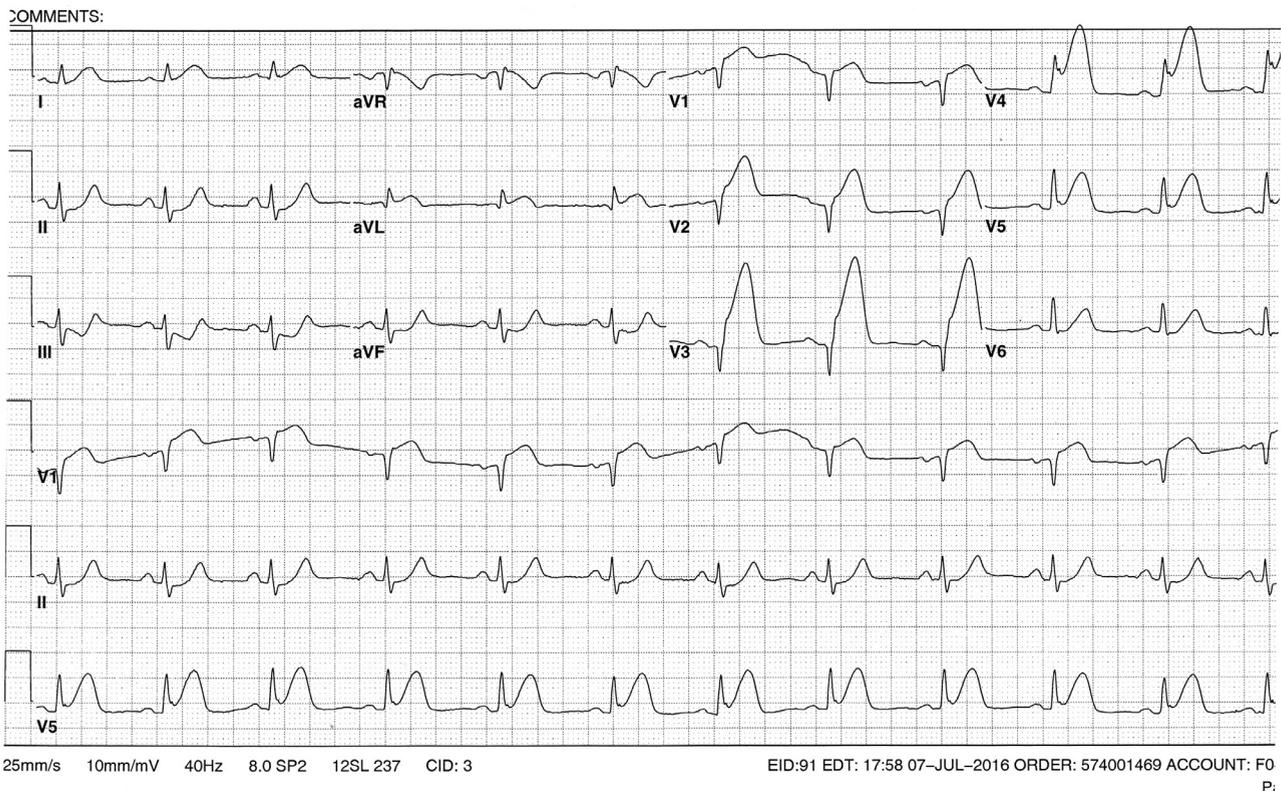


Figure 1. Presenting ECG in a man with less than one hour of chest pain. See text for explanation.

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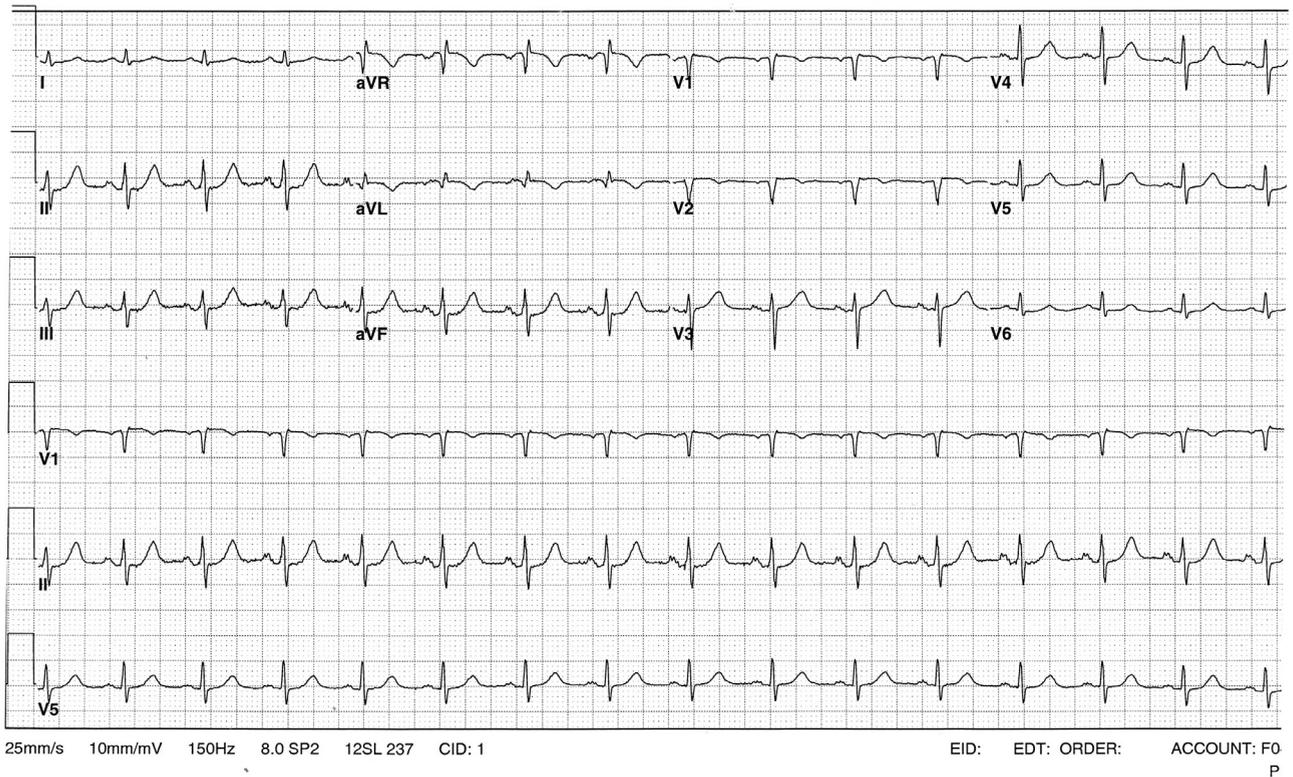


Figure 2. ECG recorded less than 3 hours after the ECG shown in Figure 1.

five findings in this patient's electrocardiogram indicate that the ST-segment elevation is due to acute anterior myocardial infarction: the elevation involves leads V₁-V₅; the ST segment fuses with the T wave to produce a tall and wide dome; there are Q waves in leads V₁-V₃; the height of the domed

ST-Ts exceed that of the R waves, and there is reciprocal ST-segment depression in leads II, III, and aVF.¹

1. Hanna EB, Glancy DL. ST-segment elevation: differential diagnosis, caveats. *Clev Clin J Med* 2015;82:373-384.