Treadmill Stress Test in a 56-Year-Old Man

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Several findings on an exercise electrocardiogram predicted left main and/or 3-vessel coronary arterial disease, which was confirmed by coronary arteriography, and the 56-year-old man underwent a multivessel coronary arterial bypass operation the following day.

Case Report

Six weeks earlier, this hypertensive and morbidly obese 56-year-old man developed chest pain while walking up a hill. His primary care physician scheduled a stress test. His supine standard ECG was normal (Figure 1), and his standing modified ECG showed mild ST-segment depression in lead V_6 and the inferior leads. After 2 minutes and 30 seconds of exercise, the patient had mild chest pain; his blood pressure was 210/68 mm Hg, and the test was stopped. At peak exercise and early recovery marked, ST-segment depression was present in the inferior and lateral leads with reciprocal ST-segment elevation in lead aVR (Figure 2). A transthoracic echocardiogram showed normal ventricular function.

Cardiac catheterization revealed a critical stenosis in the distal portion of the left main coronary artery that also narrowed the ostium of the left anterior descending coronary artery. The right coronary artery had an 80% narrowing in its mid portion. The patient had a multivessel coronary arterial bypass operation the following day.

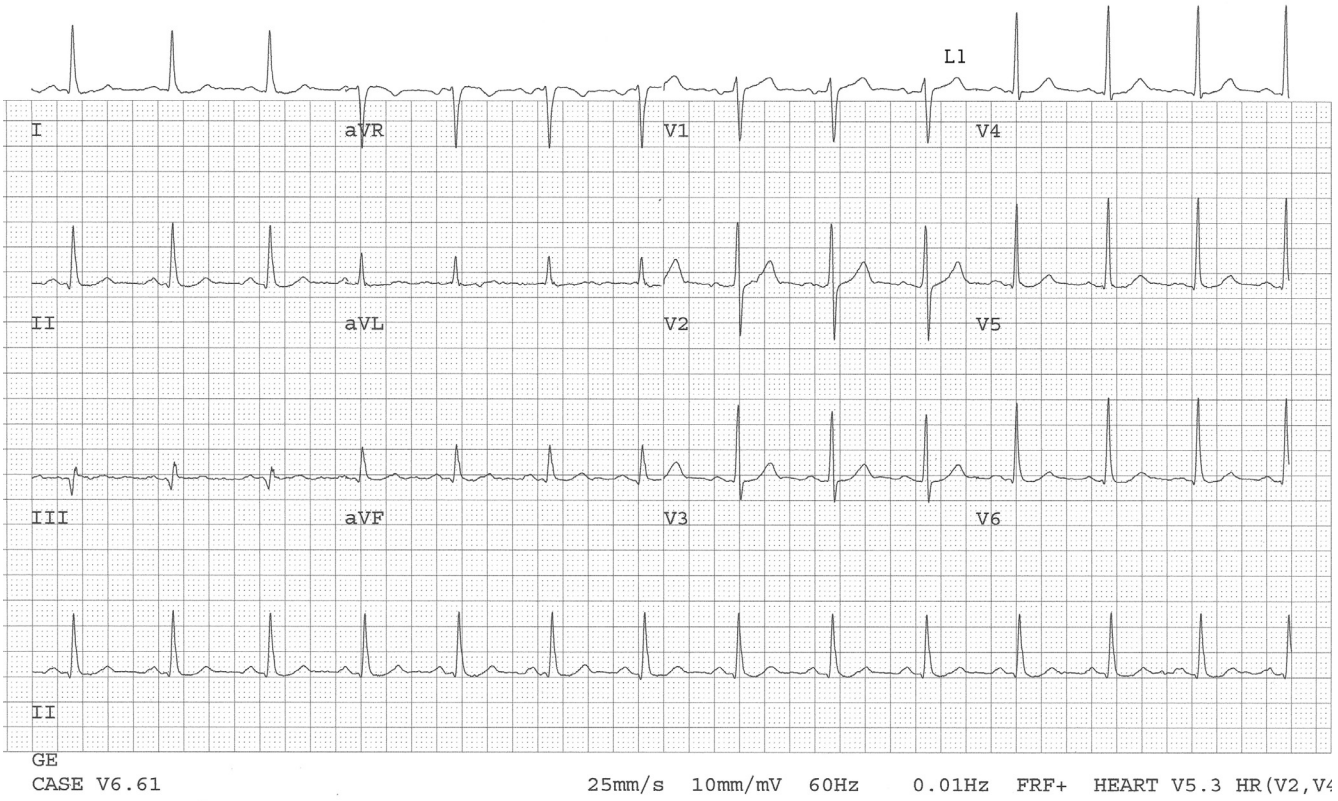

Figure 1. Normal supine pre-exercise ECG.

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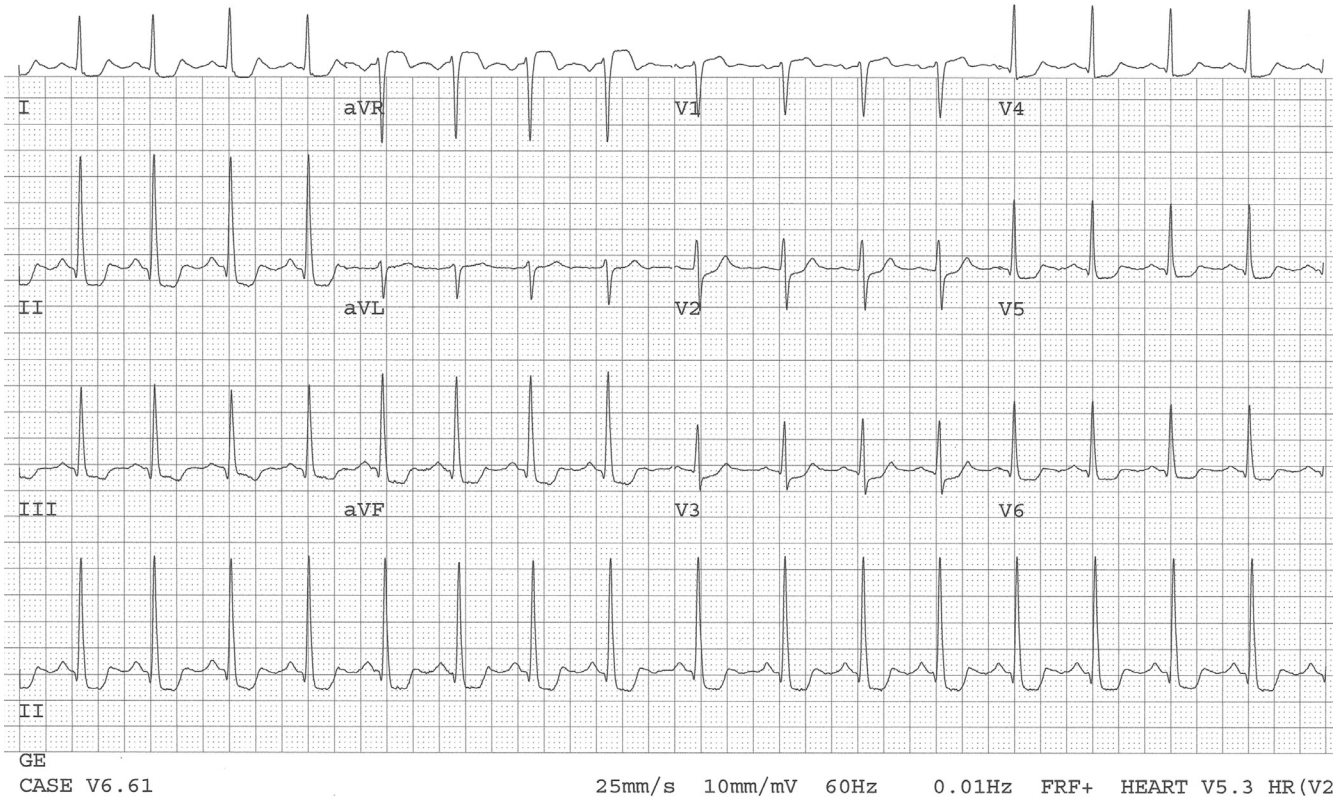

Figure 2. ECG recorded with the patient supine 1 minute after exercise was stopped. See text for explication.

Several stress test findings predicted severe left main and/or 3-vessel coronary disease: ST-segment depression ≥2 mm, downsloping ST depression, ST depression in 8 ECG leads with reciprocal ST elevation in lead aVR, early ($2^1/_2$ minutes of exercise) appearance of angina and marked systolic blood pressure elevation.[1,2]

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