A 50-year-old man with angina pectoris was hospitalized for coronary angiography. He was diagnosed with angina pectoris from the typical symptom (angina on exercise), positive exercise ECG (depressed ST-T in leads I, aVL, and V_1 through V_3), and positive exercise ²⁰¹TI single photon emission CT (decreased ²⁰¹TI perfusion in anteroseptal wall on exercise and significant redistribution on the 4-hour delayed scan). The coronary angiogram (CAG) depicted left anterior descending coronary artery (LAD) stenoses (75% stenosis in segment 6 and 50% stenosis in segment 7, Figure). Plain CT depicts no calcification of the LAD, and contrast-enhancement CT depicts LAD stenoses concordant with the CAG (Figure). To demonstrate coronary arteries, we used 3-mm-thick, 2-mm-per-rotation table speed (0.8 second per rotation), and 0.1 pitch overlapping reconstruction. Because a half-scan helical reconstruction algorithm was applied, time resolution (full width—half maximal) to obtain one transaxial slice was 0.4 second. This protocol allowed clear images of the coronary artery with less motion artifact. Clear images were obtained mainly in the end-diastolic and end-systolic phases. This image (quality and resolution) supports the potential use of subsecond spiral CT in the evaluation of coronary artery disease.

Figure 1. CAG (left) and plain and contrast-enhancement CT (middle and right, respectively) of 50-year-old man with angina pectoris. Coronary angiogram depicts LAD stenoses (75% stenosis in segment 6 [arrow] and 50% stenosis in segment 7 [arrowhead]). Plain CT depicts left coronary arteries, and no calcification is observed. Contrast-enhancement CT depicts LAD stenoses concordant with CAG.
LAD Stenosis Detected by Subsecond Spiral CT
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