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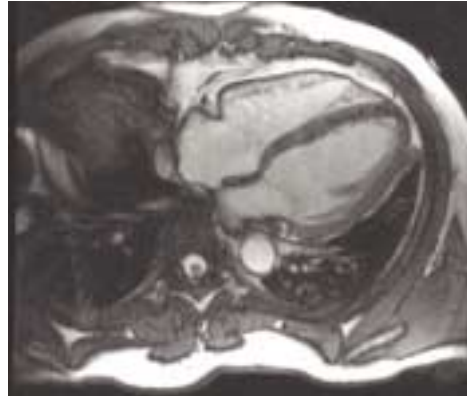
# CT Clinical Case Study CT Cardiac LAD Stent Follow-Up and Sub-Endocardial Septal Wall Infarct

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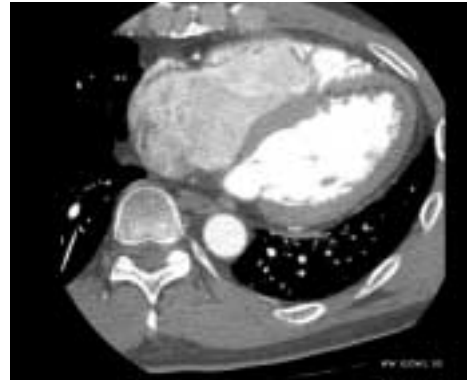
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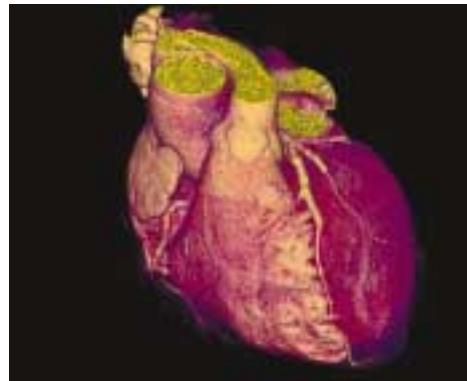




**Figure 1**  
Long axis FIESTA MR image demonstrating anterior septal wall infarct (Exam date: January, 2002).



**Figure 2**  
Axial reformatted image demonstrating anterior septal wall infarct (Exam date: March, 2005).



**Figure 3**  
3-D volume rendered view demonstrating LAD, first diagonal stents and RCA with marginal branch.

## CT Clinical Case Study CT Cardiac LAD Stent Follow-Up and Sub-Endocardial Septal Wall Infarct

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### Patient History

A 48-year-old male presented with a sudden onset of chest pain while water skiing and was brought to a hospital where he had a coronary CT Angiography (CTA) procedure on a 16-slice CT scanner three hours after the initial onset of his chest pain. At that time, a blockage was found in the Left Anterior Descending (LAD) coronary artery. Also demonstrated was an infarct in the anterior septal sub-endocardial wall from apex extending up towards the mid-ventricular level. In addition, the patient had a cardiac MRI procedure to evaluate the cardiac wall for viability.

The patient subsequently underwent a coronary catheterization for two stent placements, one in the proximal LAD and another in the first diagonal coronary artery. Per the standard of care, a follow-up conventional coronary angiography procedure was recommended to the patient; however, because the patient did not want to have the recommended procedure, a follow-up post-stent-placement coronary CT Angiography procedure was performed on the LightSpeed VCT scanner instead for evaluation purposes.

### Exam Protocol:

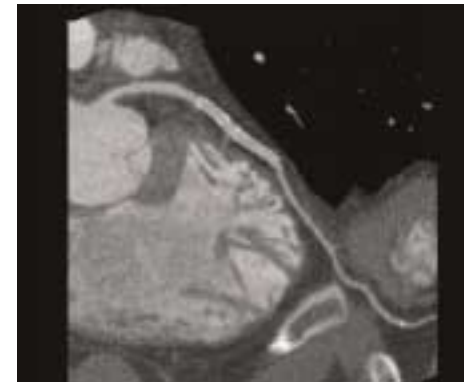
Scanner:	Lightspeed VCT
Scan Type:	Gated Cardiac Helical
Rotation Speed:	0.35 Seconds
Detector Configuration:	64 x 0.625
Slice Thickness:	0.625mm
Pitch:	0.26:1
SFOV:	Cardiac Large
kVp:	120
mAs:	207
Recon Mode:	SnapShot Segment
Total Scan Time:	4 Seconds
Coverage:	11.9cm
Average HR:	61 BPM

### Contrast Injection Parameters:

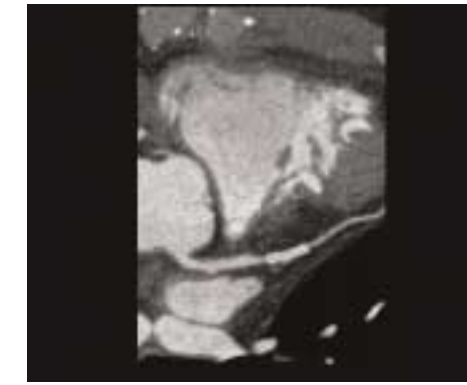
Three-phase injection using a two-barrel injector:

- Prep Delay = 24 Seconds
- 60 ml of contrast at 5cc/sec.
- 20 ml of contrast at 3.5 cc/sec.  
+ 50 ml of saline at 5cc/sec.

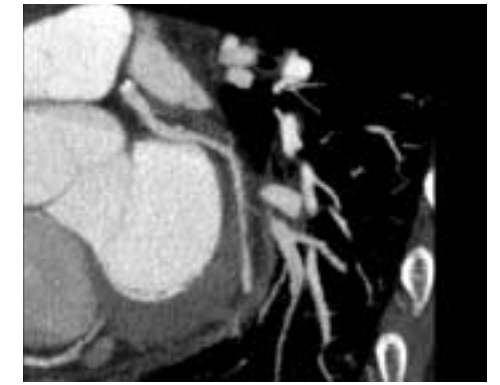
Contrast Type: 370mg I/ml



**Figure 4**  
Curved view of the Left Anterior Descending coronary artery demonstrating patent stent.



**Figure 5**  
Curved view demonstrating first diagonal stent with ~30 percent stenosis proximal to stent.



**Figure 6**  
Curved Maximum Intensity Projection (MIP) view of LCx coronary artery demonstrating non-calcified plaque.



**Figure 7**  
Curved view of Right Coronary Artery (RCA) demonstrating mixed plaque in the proximal segment and non-calcified and calcified plaque in the mid and distal segment.



**Figure 8**  
3-D coronary vessel tree view demonstrating proximal LAD and first diagonal stents.

### Clinical Findings

Cardiac coronary CT Angiography procedure demonstrated a patent proximal LAD stent. There were both calcified and non-calcified plaques in the proximal LAD noted without significant stenosis. The first diagonal stent was patent. Proximal to the first diagonal stent there was non-calcified plaque with ~30 percent stenosis. Distal to the first diagonal stent there was non-calcified plaque with no significant stenosis. There was also non-calcified plaque in the circumflex with ~50 percent to 70 percent stenosis. The proximal RCA demonstrated with calcified plaque and 30 percent stenosis. In addition, there was non-calcified plaque in the mid and distal segments of the RCA and <50 percent stenosis. Finally, an infarct was demonstrated in the anterior septal sub-endocardial wall from apex extending up towards the mid-ventricular level.

The treatment prescribed for the patient was to continue on his statin therapy and adopt a healthier diet. In addition, the patient will consider having a coronary angiography procedure in the future to evaluate his LCx coronary artery due to the CTA procedure findings.