

Critical left main coronary artery stenosis diagnosed by computed tomographic coronary angiography

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A 60-year-old man with previous cerebrovascular accident, hypercholesterolemia, and tobacco use presented with a several-month history of worsening exertional dyspnea. Immediate catheterization was considered unsafe, as the patient was taking warfarin (international normalized ratio, 2.9), and nonemergent, as the patient's symptoms were relatively stable. Warfarin was stopped, and multislice computed tomographic coronary angiography (CTCA) was performed (Lightspeed 16, GE Systems) after obtaining appropriate consent.

CTCA demonstrated a high-grade narrowing at the ostium of the left main coronary artery (Figure 1, arrowheads). The ostium of the left main coronary artery had a tapered appearance

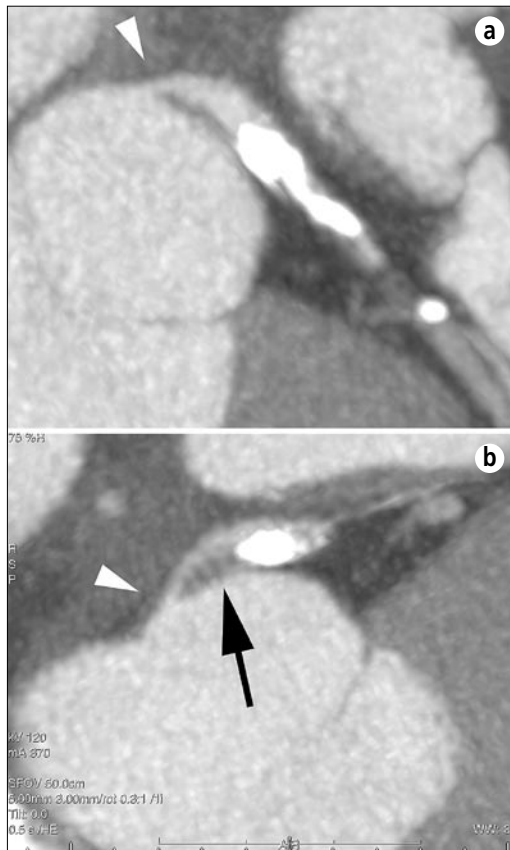


Figure 1. Computed tomographic coronary angiogram demonstrating critical left main coronary artery stenosis. (a, b) The multiplanar reformat views clearly demonstrate a high-grade stenosis (arrowheads). (b) The plaque contains both soft and calcified components (black arrow).



Figure 2. Conventional invasive angiography confirmed the critical stenosis (arrowhead).

and a large plaque in its ostial and proximal portions (Figure 1b, black arrow). A large amount of plaque was seen in all coronary distributions.

Cardiac catheterization was performed using a 4F system in an attempt to avoid excessive trauma to the artery. In addition, an intraaortic balloon pump and console were positioned inside the cardiac catheterization suite. Invasive coronary angiography demonstrated a critical stenosis of the left main coronary artery (Figure 2, arrowhead), with pressure damping upon engagement of the 4F Judkins left catheter. The intraaortic balloon was placed, and the patient went on to have successful 5-vessel coronary artery bypass grafting that afternoon.

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CTCA allowed us to “preview” the coronary anatomy in a patient whose invasive catheterization was delayed due to anticoagulation. Demonstration of the critical stenosis prior to the catheterization allowed us to change the timing of the catheterization (which was originally planned for the next week) as well as the strategy. Normally, 6F catheters would have been used, which might have been more traumatic given the severity of the ostial left main artery stenosis. In addition, foreknowledge of the severity of the stenosis allowed us to plan for likely intraaortic balloon insertion.

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