PROCEDURES PERFORMED:,1. Left heart catheterization.,2. Bilateral selective coronary angiography.,3. Left ventriculography.,4. Right heart catheterization.,INDICATION: , Positive nuclear stress test involving reversible ischemia of the lateral wall and the anterior wall consistent with left anterior descending artery lesion.,PROCEDURE: , After risks, benefits, and alternatives of the above-mentioned procedure were explained in detail to the patient, informed consent was obtained both verbally and in writing. The patient was taken to cardiac catheterization suite where the right femoral region was prepped and draped in the usual sterile fashion. 1% lidocaine solution was used to infiltrate the skin overlying the right femoral artery and vein. Once adequate anesthesia has been obtained, a thin-walled #18 gauge Argon needle was used to cannulate the right femoral artery. A steel guidewire was inserted through the needle into the vascular lumen without resistance. A small nick was then made in the skin. The pressure was held. The needle was removed over the guidewire. Next, a #6 French arterial sheath was then advanced over the guidewire into the vascular lumen without resistance. The guidewire and dilator were then removed. The sheath was flushed. Next, an angulated pigtail catheter was advanced to the level of the ascending aorta under the direct fluoroscopy visualization with the use of a guidewire. The catheter was then guided into the left ventricle. The guidewire and dilator were then removed. The catheter was then flushed. LVEDP was measured and found to be favorable for a left ventriculogram. The left

ventriculogram was performed in the RAO position with a single power injection of nonionic contrast material. LVEDP was then remeasured. Pullback was performed, which failed to reveal an LVAO gradient. The catheter was then removed. Next, a Judkins left #4 catheter was advanced to the level of the ascending aorta under direct fluoroscopic visualization with the use of a guidewire. The guidewire was removed. The catheter was connected to the manifold and flushed. The ostium of the left main coronary was unable to be engaged with this catheter. Thus it was removed over a guidewire. Next, a Judkins left #5 catheter was advanced to the level of the ascending aorta under direct fluoroscopic visualization with the use of a guidewire. The guidewire was removed. The catheter was connected to the manifold and flushed. Left main coronary artery was then engaged. Using hand injections of nonionic contrast material, the left coronary system was evaluated in several different views. The catheter was then removed from the ostium of the left main coronary artery and was removed over a guidewire. Next, a Judkins right #4 catheter was then advanced to the level of the ascending aorta under direct fluoroscopic visualization with the use of a guidewire. The guidewire was removed. The catheter was connected to the manifold and flushed. Using hand injections of nonionic contrast material, the right coronary system was evaluated in several different views. The catheter was then removed from the ostium of the right coronary artery and then removed. The sheath was then flushed. Because the patient did have high left ventricular end-diastolic pressures, it was

determined that the patient wound need a right heart catheterization. Thus an #18 gauge Argon needle was used to cannulate the right femoral vein. A steel guidewire was inserted through the needle into the vascular lumen. The needle was removed over the guidewire. Next, an #8 French venous sheath was advanced over the guidewire into lumen without resistance. The guidewire and dilator were then removed. The sheath was then flushed. Next, a Swan-Ganz catheter was advanced to the level of 20 cm. The balloon was inflated. Under fluoroscopic visualization, the catheter was guided into the right atrium, right ventricle, and into the pulmonary artery wedge position. Hemodynamics were measured along the way. PA saturation, right atrial saturation, femoral artery saturation were all obtained. Once adequate study has been performed, the catheter was then removed. Both sheaths were flushed and found fine. The patient was returned to the cardiac catheterization holding area in stable satisfactory condition.,FINDINGS:,LEFT VENTRICULOGRAM: ,There is no evidence of any wall motion abnormalities with estimated ejection fraction of 60%. Left ventricular end-diastolic pressure was 38 mmHg preinjection and 40 mmHg postinjection. There is no LVAO. There is no mitral regurgitation. There is a trileaflet aortic valve noted.,LEFT MAIN CORONARY ARTERY: ,The left main is a moderate caliber vessel, which bifurcates into the left anterior descending and circumflex arteries. There is no evidence of any hemodynamically significant stenosis.,LEFT ANTERIOR DESCENDING: , The LAD is a moderate caliber

vessel, which traverses through the intraventricular groove and reaches the apex of the heart. There is a proximal 60% to 70% stenotic lesion. There was also a mid 70% to 80% stenotic lesion at the takeoff of the first and second diagonal branches.,CIRCUMFLEX ARTERY: ,The circumflex is a moderate caliber vessel, which traverses through the atrioventricular groove. There is a mid 60% to 70% stenotic lesion followed by a second mid 90% stenotic lesion. The first obtuse marginal branch is small and the second obtuse marginal branch is large without any evidence of critical disease. The third obtuse marginal branch is also small.,RIGHT CORONARY ARTERY: ,The RCA is a moderate caliber vessel with minor luminal irregularities throughout. There is no evidence of any critical disease. The right coronary artery is the dominant right coronary vessel.,RIGHT HEART FINDINGS: ,Pulmonary artery pressure equals 61/23 with a mean of 44. Pulmonary artery wedge pressure equals 32. Right ventricle pressure equals 65/24. The right atrial pressure equals to 22. Cardiac output by Fick is 4.9. Cardiac index by Fick is 2.3. Hand calculated cardiac output equals 7.8. Hand calculated cardiac index equals 3.7. On 2 liters nasal cannula, pulmonary artery saturation equals 77.8%. Femoral artery saturation equals 99.1%. Pulse oximetry is 99%. Right atrial saturation is 76.3%. Systemic blood pressure is 166/58. Body surface area equals 2.12. Hemoglobin equals 12.6.,IMPRESSION:,1. Two-vessel coronary artery disease with a complex left anterior descending arterial lesion as well as circumflex

disease.,2. Normal left ventricular function with an estimated ejection fraction of 60%.,3. Biventricular overload.,4. Moderate pulmonary hypertension.,5. There is no evidence of shunt.,PLAN:,1. The patient will be admitted for IV diuresis in light of the biventricular overload.,2. The findings of the heart catheterization were discussed in detail with the patient and the patient's family. There is some concern with the patient's two-vessel coronary artery disease in light of the patient's diabetic history. We will obtain a surgical evaluation for the possibility of a coronary artery bypass grafting.,3. The patient will remain on aggressive medical regimen including ACE inhibitor, aspirin, Plavix, and nitrate.,4. The patient will need to undergo aggressive risk factor modification including weight loss and diet control.,5. The patient will have an Internal Medicine evaluation regarding the patient's diabetic history.