PROCEDURES PERFORMED:,1. Left heart catheterization.,2. Bilateral selective coronary angiography.,3. Saphenous vein graft angiography.,4. Left internal mammary artery angiography.,5. Left ventriculography.,INDICATIONS: , Persistent chest pain on maximum medical therapy with known history of coronary artery disease, status post coronary artery bypass grafting in year 2000.,PROCEDURE: , After the risks, benefits, and alternatives of the above-mentioned procedure were explained to the patient in detail, an informed consent was obtained both verbally and in writing. The patient was taken to the Cardiac Catheterization Suite where the right femoral region was prepped and draped in the usual sterile fashion. 1% lidocaine solution was then used to infiltrate the skin overlying the right femoral artery. Once adequate anesthesia had been obtained, a thin-walled #18 gauge Argon needle was used to cannulate the right femoral artery. A steel guidewire was then inserted through the needle into the vascular lumen without resistance. A small nick was then made in the skin and its pressure was held. The needle was removed over the guidewire. A #6 French sheath was then advanced over the guidewire into the vascular lumen without resistance. The guidewire and dilator were then removed. The sheath was then flushed. Next, angulated pigtail catheter was advanced to the level of the ascending aorta under direct fluoroscopic visualization with the use of the guidewire. The catheter was then advanced into the left ventricle. The guidewire was then removed. The catheter was connected to the manifold and flushed. LVEDP was then 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 non-ionic contrast material. LVEDP was then remeasured. Pullback was then 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. Using hand injections of non-ionic contrast material, the left coronary system was evaluated in several different views. Once adequate study has been performed, the catheter was removed. 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. The ostium of the saphenous vein graft was engaged using hand injections of non-ionic contrast material. The saphenous vein graft was visualized in several different views. The Judkins right catheter was then advanced and the native coronary artery was engaged using hand injections of non-ionic contrast material. Right coronary system was evaluated in several different views. Once adequate study has been performed, the catheter was retracted. We were unable to engage the left subclavian artery thus the catheter was removed over an exchange wire. Next, a multipurpose catheter was advanced over the exchange wire. The wire was then easily passed into the left

subclavian artery. The multipurpose catheter was then removed. LIMA catheter was then exchanged over the wire into the left subclavian artery. The guidewire was removed and the catheter was connected to the manifold and flushed. LIMA graft was then engaged using hand injections of non-ionic contrast material. The LIMA graft was evaluated in several different views. Once adequate study has been performed, the LIMA catheter was retracted under fluoroscopic guidance. The sheath was flushed for the final time. The patient was returned to the cardiac catheterization holding area in stable and satisfactory condition.,FINDINGS:,LEFT VENTRICULOGRAM: , There is no evidence of any wall motion abnormalities with an estimated ejection fraction of 60%. Left ventricular end-diastolic pressure was 24 mmHg preinjection and 26 mmHg postinjection. There is no mitral regurgitation. There is no LVAO or pullback.,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 ARTERY: , The LAD is a small caliber vessel, which traverses through the intraventricular groove and wraps around the apex of the heart. There are luminal irregularities from the mid to distal portion. There is noted to be antegrade flow in the LIMA to LAD graft. There are very small diagonal branches, which are diffusely diseased.,CIRCUMFLEX ARTERY: , The circumflex is a small caliber vessel, which traverses through the

atrioventricular groove. There are minor luminal irregularities throughout. There are very small obtuse marginal branches, which are diffusely diseased.,RIGHT CORONARY ARTERY:, The RCA is a small vessel with luminal irregularities throughout. The RCA is the dominant coronary artery.,Left internal mammary artery graft to the left anterior descending artery failed to demonstrate any hemodynamically significant stenosis. Saphenous vein graft to the obtuse marginal branches is a Y-graft, which bifurcates to the first obtuse marginal and the obtuse marginal branch. The saphenous vein graft to the obtuse marginal branches is widely patent without any evidence of hemodynamically significant disease.,IMPRESSION:,1. Diffusely diseased native vessels.,2. Saphenous vein graft to the obtuse marginal branch is widely patent.,3. Left internal mammary artery graft to the left anterior descending artery is patent.,4. Normal left ventricular function with ejection fraction of 60%.,5. Mildly elevated left-sided filling pressures.,PLAN:,1. The patient is to continue on her current medical regimen, which includes beta-blocker, aspirin, statin, and Plavix. The patient is unable to tolerate a long-acting nitrate, thus this will be discontinued.,2. We will add Norvasc 5 mg daily as well as hydrochlorothiazide 25 mg daily.,3. Risk factor modification was discussed with the patient including diet control as well as tobacco cessation.,4. The patient will need to be monitored closely for close lipid control as well as blood pressure control.