Cardiothoracic Surgery Associates
Premier Health Partners
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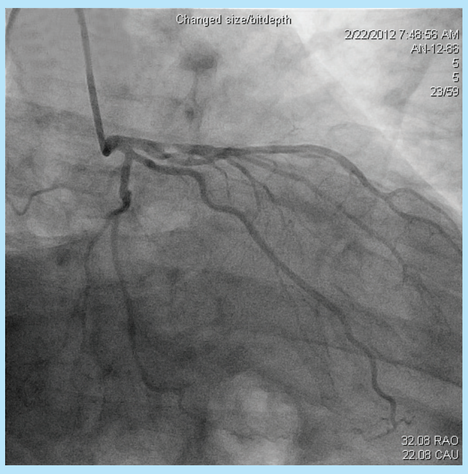
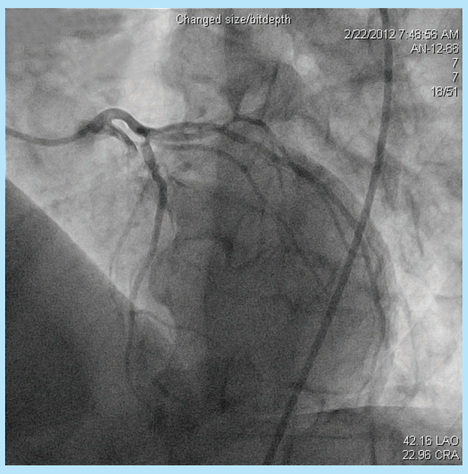
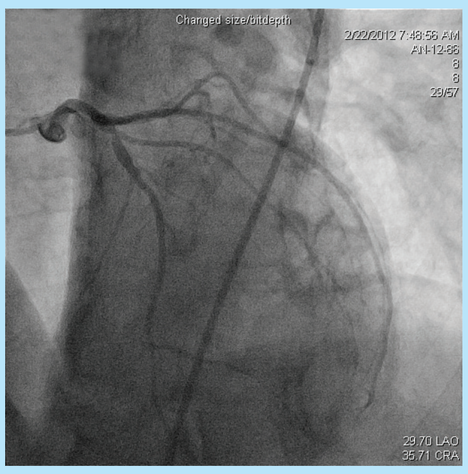
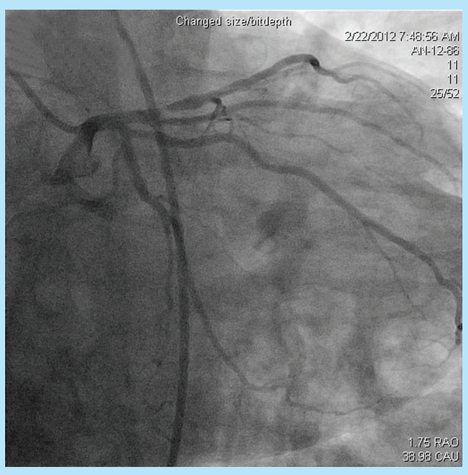
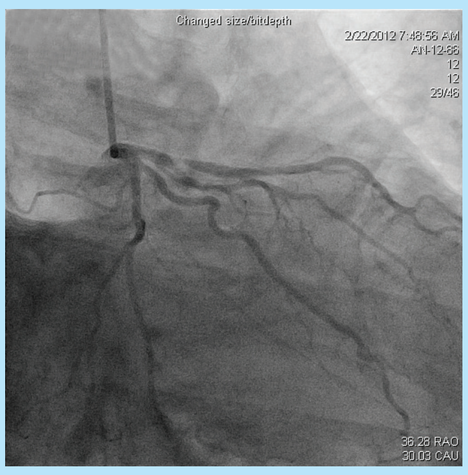
Robotic-Assisted Minimally Invasive Coronary Artery Bypass











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History Present Illness:

A 67 year old male presents for elective cardiac cauterization due to an abnormal stress test. The patient complains of mild shortness of breath with exercise. He denies orthopnea or paroxysmal nocturnal dyspnea. The cardiac catheterization showed severe proximal LAD coronary disease.

Past Medical History:

Hyperlipidemia, hypertension, hypercholesteremia and lymphoma treated with chemotherapy and radiation in 2011

Past Surgical History:

Appendectomy, back surgery, left chest wall mass biopsy (lymphoma)

Social History:

Smoking: Never smoked

Home Medications:

Lisinopril and simvastatin

Operative Course:

A robotic-assisted left internal mammary artery harvesting was performed. Minimally invasive coronary artery bypass with a 5 cm left lateral thoracotomy was performed. The off pump technique was used for LIMA-LAD anastomosis.

Treatment/Outcome:

The operation was uneventful with 200 ml of blood loss. The patient was extubated in the operating room. Postoperatively, he was admitted to the HVICU. His chest tube was removed during post-operative day 2, and the patient was discharged on POD 3. He stayed in the hospital one additional day due to paresthesia in the right arm which resolved spontaneously.

Discussion:

The traditional method of performing coronary artery bypass grafting (CABG) can be seen by the patient as a very traumatic and complicated procedure. It involves a bone saw for a full median sternotomy. Although cardiac surgeons have become comfortable with the established routines and excellent track record of this well-established procedure, patients universally have experienced fears about undergoing such a significant and traumatic operation. The availability of less invasive, percutaneous treatments for coronary artery disease has dramatically influenced patient referrals.

Recently, however, the da Vinci robot has opened the door for a procedure that is sternum sparing. Robotic instruments provide thorascopic access to the mediastinum for internal mammary artery (IMA) harvest, pericardiotomy, and identification of the coronary targets, all without the usual risk of poor sternal healing associated with IMA harvest following a sternotomy. The distal anastomoses are created via an incision limited to a small, intercostal thoracotomy performed using port-access stabilization or endoscopic instruments. The addition of IMA grafting provides complete revascularization and the potential to reduce the risk of reintervention compared to surgery performed with stenting alone. Our focus is on less invasive revascularization making robotic CABG complementary to percutaneous coronary intervention as a means of addressing a broader population of patients with complex multivessel disease.

Advantages of minimal invasive CABG are decreased length of stay and decreased rate of infections. It has been established that minimizing the length of hospital stay or frequency of postoperative complications are among the highest-impact methods for reducing hospital costs. Sternal infection/mediastinitis is a dreaded complication associated with additional hospital costs estimated to range from $20K to $50K per patient. Recent changes in health care financing designate mediastinitis as a “never event” that is not reimbursable by Medicare. Without the sternotomy, an obvious benefit of minimally invasive CABG is that it eliminates sternal infection regardless of the preoperative risk profile.

All of these factors continue to be studied in efforts to fully understand the financial impact of minimally invasive surgery on providers, hospitals, and payers.