VATS Procedures Provide Definitive Patient Benefits

The cardiothoracic surgeons at Catholic Medical Center have been performing video-assisted thoracoscopic surgery (VATS) procedures for a decade. David C. Charlesworth, MD, FACS, advanced the use of this procedure further when he performed the first VATS lobectomy in Manchester in mid-February. (See related case study.) Minimally invasive VATS procedures provide patients with particular advantages over open procedures, including smaller incisions, reduced postoperative pain and faster recovery.

DAVID C. CHARLESWORTH MD, FACS

"All three of our cardiothoracic surgeons are committed to performing VATS procedures, including the VATS lobectomy, because of the benefits these procedures provide to patients," says Dr. Charlesworth. "Our default position is to perform VATS for virtually any lung or chest procedure, if possible, as it is ideal medical care."

Cardiothoracic VATS Procedures

Cardiothoracic surgeons at CMC are performing a range of VATS procedures:

Cardiac
- Epicardial left ventricular lead placement for biventricular pacing and dilated cardiomyopathy
- Pericardial window for pericardial effusion
- Pericardial cyst and mass excision

Pulmonary
- Wedge resection
- Lobectomy
- Spontaneous pneumothorax

Pleural
- Decortication for emphysema
- Talc pleurodesis for effusion

Mediastinal
- Lymph node excision

The board-certified cardiothoracic surgeons at CMC have been performing VATS procedures in recently updated cardiac operating rooms, complete with high resolution imaging capabilities, flat-panel screens, advanced videography, and the latest thoracic and mediastinal scopes. The state-of-the-art facilities include real-time echocardiography and easy access to archived patient imaging during a procedure.

For more information on VATS procedures, contact Dr. Charlesworth at 603.663.6340.

Case Study: VATS Lobectomy

Patient
Female, age 76

History
Long-term use of tobacco before quitting 14 years prior to admission

Diagnosis
Nodule discovered in left chest following admission for chest pain. Needle biopsy demonstrated non small cell lung cancer. Limited pulmonary function studies indicated potential intolerance to a major lobe procedure.

Treatment
The patient underwent video-assisted thoracoscopic surgery (VATS) with a left upper lobectomy and lymph node dissection. With the patient under general anesthesia and positioned on her right side, the scope was inserted through a 1.5-cm port in the eighth anterior interspace, with two additional ports created anterior and posterior at the fifth interspace and a fourth port created posteriorly at the eighth space.

With the scope images displayed and magnified on high-definition flat screens, the cardiothoracic surgeon stapled and divided the pulmonary veins, as well as the artery branches that connect to the upper lobe. The fissure between the upper and lower lobe was completed by fully dividing the lung tissue and veins. After clamping the bronchus under videoscopic guidance, the lower lobe was inflated to ensure that only the upper lobe was clamped off. The bronchus was then stapled and divided.

The upper posterior port was lengthened to 5 cm and a specimen bag was inserted. Again, with scope guidance and without retracting the ribs, the diseased upper lobe was encased by the bag and gently removed through the port. The lung was re-inflated, chest tubes and nerve blocks inserted, and the patient was sent to recovery. The patient had eight lymph nodes that tested negative for metastatic cancer.

Follow up
The patient reported little postoperative pain and was discharged seven days post-operatively. At two weeks, the patient had no intercostal pain and the four small incisions had healed.

Physician comments
This case demonstrates that complex procedures, such as the dissection of the pulmonary arteries and veins, can be performed safely, and outcomes with the VATS approach are as good as the traditional "open" approach and with decreased morbidity. The surgical team performing these procedures should be capable of converting to an open procedure in an emergency, if indicated. These VATS procedures are facilitated by specialized equipment designed to fit through the 1 cm ports.

The outcome of this VATS lobectomy was similar to the results reported at other centers, with the minimally invasive VATS lobectomy demonstrating advantages over a lobectomy by thoracotomy. A number of recent studies have shown that in a comparison of the two procedures, after undergoing a VATS lobectomy, patients had a lower incidence of air leaks, fewer complications, less blood loss, improved pulmonary function, less postoperative pain and reduced hospital stays. The cardiothoracic surgeons at CMC have been extensively trained in VATS procedures and will continue to determine, on a patient-by-patient basis, the efficacy of performing a minimally invasive VATS lobectomy or a lobectomy by thoracotomy.

New England Heart Institute
OF CATHOLIC MEDICAL CENTER