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### **Video-Assisted Thoracoscopic Surgery (VATS)**

Video-Assisted Thoracoscopic Surgery (VATS) is a minimally invasive surgical alternative for a variety of thoracic (lung) conditions. Video Assisted Thoracic Surgery can be used for either diagnostic or therapeutic purposes and has been applied to a variety of diseases within the chest. It provides a comprehensive view of the heart, lung, and surrounding lymph nodes. In addition, it reduces pain after surgery and allows more rapid recovery. In some cases, VATS has enhanced or replaced complex open surgical techniques that traditionally required a large incision and rib spreading techniques. At Rocky Mountain Surgical we are committed to offering minimally invasive procedures whenever possible and VATS is done frequently for our patients.

#### **VATS Applications**

**Pleural diseases** The pleura is a two-layered transparent membrane that lines the chest cavity and surrounds both lungs. **Pneumothorax** (air in the pleural space or “collapsed lung”) is a common condition frequently caused by a ruptured cyst on the surface of the lung. The resultant lung leak behaves like a balloon with a hole. VATS is used to remove the cyst and reinflate the lung, preventing recurrence of the problem.

**Pleural effusions** (abnormal collections of fluid in the pleura) can be caused by many different conditions. Surgeons at RMSA use VATS to evacuate the pleura of fluid, performing biopsies to determine the cause, and then perform pleurodesis (roughing up and/or applying talc to the pleura to form scarring) to control the problem by fusing the space between the lung and chest wall.

VATS is also used to **diagnose cancer** of the pleura (see below).

**Mesothelioma** A rare cancer of the membranes lining the chest, abdominal cavity or heart, mesothelioma can be diagnosed with a VATS biopsy. VATS pleurodesis can also be performed on these patients.

**Lung Cancer** VATS is used to remove pieces of lung (wedge resection) and lobes (lobectomy) as well as any suspicious spots on the lungs, along with a margin of healthy tissue. These samples can then be tested for cancer.

**Interstitial Lung Disease** This term covers a wide range of diffuse lung diseases. VATS is used to obtain pieces of lung to ascertain a diagnosis and guide treatment decisions.

**Empyema** An empyema is a collection of pus and fluid that develops from a lung infection such as pneumonia. VATS is used to drain the excess fluid and allow the lung to reexpand.

**Granulomas** Masses of inflamed tissue can develop in the lungs from other underlying conditions. VATS can be used to diagnose and remove granulomas.

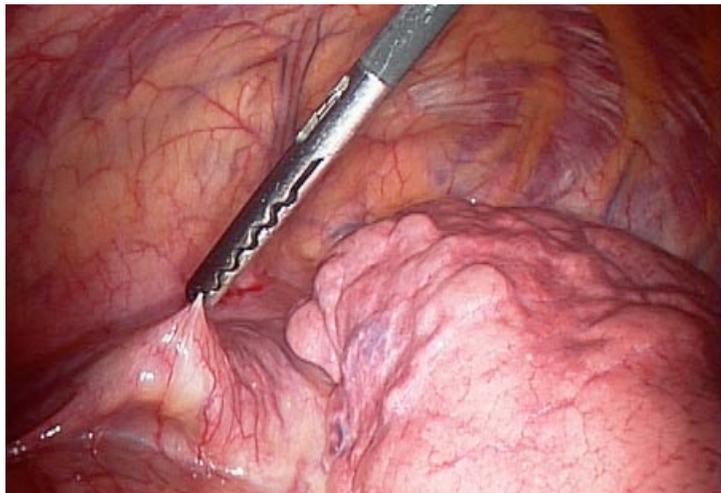
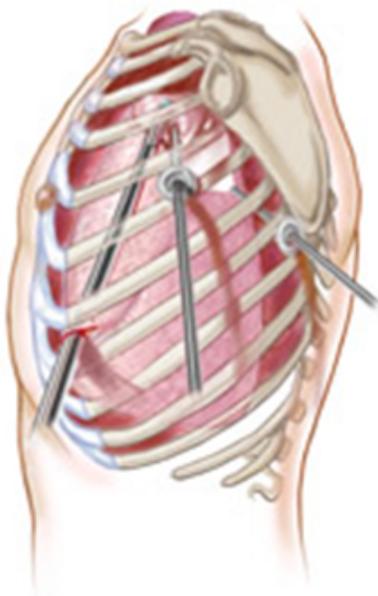
**Lymphomas** VATS also can be used to diagnose cancers originating in the lymph nodes (lymphomas). Surgeons can remove samples of abnormal lymph nodes to determine the type and location of lymphoma.

**Hyperhidrosis** Hyperhidrosis (excessive sweating) is related to certain nerves in the chest cavity. RMSA surgeons can use VATS to perform a sympathectomy (cutting of the specific nerves that cause the sweating).

**Pericardial effusion** A collection of fluid in the sac (pericardium) surrounding the heart can be caused by a range of diseases and conditions. VATS can be used to evacuate (drain) the fluid.

### **Procedure:**

After being given a general anesthetic, the patient is rolled on one side, exposing the side of the chest requiring surgery. Typically 3 small incisions are needed for a camera and instruments. The camera projects the operative field onto a television screen so the surgeon can perform required skills.



At the conclusion of the procedure, a chest tube is left inside the chest to collect fluid and help expand the lung. It is removed prior to discharge. This is the most unpredictable part of recovery. Frequently, the chest tube can be removed in a day or two. Infrequently, it takes several days.

## **Post operative care and recovery**

Recovery from thoracoscopy depends upon which operation was done using this technique. If a lung resection is performed, or if a chest tube is placed, then the patient must remain in the hospital for about two to five days until drainage from the chest tube diminishes, and any air leak from the lung has healed.

When the patient goes home, he or she is restricted from driving for a week or so, or until pain medications are no longer necessary. The effects of anesthesia will make the patient tire a little more quickly than usual.

We usually see the patient back in the office in one to three weeks, or at any time that the patient perceives that there is a problem.

Dr. Robert Macdonald, MD