

Chamberlain Procedure

What is it?

The Chamberlain Procedure is also known as an anterior mediastinotomy. A related procedure, known as the Jolly Procedure, is also an anterior mediastinotomy. An extended Chamberlain procedure is called an anterior thoracotomy. The Chamberlain procedure is a minimally invasive operation performed by a thoracic surgeon.

What is it for?

The Chamberlain procedure is used to biopsy lymph nodes in the center of the chest, or to biopsy a mass in the center of the chest. The Chamberlain procedure differs from a cervical mediastinoscopy by the location of the incision, and the location of the lymph nodes or mass to be biopsied.

The Chamberlain procedure is used to biopsy lymph nodes or masses in the aorto-pulmonary window on the left side of the chest, or nodes in the hilar areas of the lung. (In contrast, the cervical mediastinoscopy procedure is used to biopsy nodes or masses to the front or side of the trachea, or windpipe.) The aorto-pulmonary window is the area in the center of the chest bound by the aorta superiorly, and the pulmonary artery inferiorly. This area contains lymph nodes that filter lymph coming from the left lung, especially the left upper lobe. If a lung cancer is present in the left lung, the Chamberlain procedure is useful for staging the cancer (determining the extent of spread.) The hilar areas of the lung (the hilum) are the areas of the lung where the pulmonary artery and vein (the blood supply) join the lung.

How is it done?

The Chamberlain procedure is usually done on the left side, because the aorto-pulmonary window is on the left side. However, the procedure is used for the right side under certain conditions.

The patient is placed under general anesthesia. The skin of the chest is prepped with a sterile solution. A small, two inch incision is made over the second rib where it joins the breast bone (at the Angle of Louis.) The incision is carried down through the pectoralis major muscle (the "pecs") by spreading the muscle fibers apart. The cartilage of the second rib is located (the costal cartilage) and is removed. The internal mammary artery and vein are sometimes tied and cut. The parietal pleura (the inside lining of the chest wall) is then dissected to the side, and the surgery is directed into the center of the chest, between the aorta and the pulmonary artery. Great care is taken not to injure the large blood vessels. Biopsies are taken of the respective abnormal lymph nodes or mass. The incision is then closed, without replacing the cartilage.

Occasionally, the nodes or mass cannot be safely located by this technique. If that occurs, a decision is made by the surgeon to enlarge the incision slightly, open the parietal pleura, move the lung out of the way, and approach the nodes or mass from inside the chest. By opening the pleura and extending the incision, an anterior thoracotomy is created. Because air has been introduced into the area around the lung (the pleural space), a chest tube may be required to drain the air overnight.

When the nodes or mass have been biopsied, the incision is closed with absorbable suture, and air is evacuated from the chest.

What are the risks?

The risk of a Chamberlain procedure is very low. The chief risk is that of opening the pleura, and the requirement for placement of a chest tube (drain.)

Although very rare, there is a risk bleeding from a large blood vessel such as the aorta or pulmonary artery. Such bleeding would require a sternotomy or thoracotomy to stop the bleeding.

Most patients go home the same day as surgery. Most return to work within a few days or a week, and will require pain pills for only a few days. The patient may shower 48 hours after surgery, and should not soak the incision under water in a bath tub or spa for three weeks.