Thoracic Percutaneous Biopsy

A Diagnostic Lung Procedure
Biopsy Helps Diagnose a Chest or Lung Problem

You may have already had tests, such as a chest x-ray or a sputum test. Percutaneous biopsy lets the doctor gather more information about your lungs and chest. It can help your doctor diagnose a problem in your lungs or chest. It also helps choose the best treatment for any problem that is found.

Signs of a Possible Chest or Lung Problem

Problems in the chest or lungs include infection, cancer, non-cancerous masses, smoking-related and non-smoking-related diseases. These problems may share the following:

- Coughing
- Shortness of breath
- Chest pain
- Dark or bloody sputum
- Hoarseness
- Trouble swallowing

Quit Smoking for Good

If you smoke, there is no better time to quit than right now. Smoking leads to cancer and other lung problems. So talk to your doctor about getting help. He or she can provide you with resources to help you quit smoking for good.

When You Need Percutaneous Biopsy

Your doctor recommends that you have a procedure called **percutaneous biopsy**. This procedure allows the doctor to learn more about your chest and lungs. It can help your doctor diagnose a problem in your lungs or chest. It also helps choose the best treatment for any problem that is found.
What You Will Learn

This booklet will help you understand your procedure. If you still have questions after reading this booklet, talk to your doctor. He or she can address any concerns you have.

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Anatomy of the Chest and Lungs

The space inside the chest where the lungs are found is called the chest cavity. The lungs take up most of the chest cavity. They are protected by the chest wall, which is made up of the ribs, breastbone, and muscles. The lungs are divided into sections called lobes (three in the right lung, two in the left). The lungs are separated from the abdomen by the diaphragm (breathing muscle). Air flows into and out of the lungs through bronchial tubes (breathing passages).

The Medastinum

The mediastinum is the area between the two lungs. The heart, trachea, esophagus, bronchial tubes, and lymph nodes are in the mediastinum. The spine is at the back of the mediastinum and the breastbone is at the front.
Problems that Affect the Chest and Lungs

A number of problems can affect the lungs and chest. These include masses, infections, and other diseases. The procedures mentioned in this booklet help the doctor determine what the problem is and how serious it may be. Common types of chest and lung problems are listed below.

Masses

A mass is a lump of abnormal tissue. It can be **benign** (not cancerous) or **malignant** (cancerous). If a mass is found in the lung or chest, the doctor will want to take a **biopsy** (tissue sample) of it. This tissue sample helps the doctor determine if the mass is cancerous. Depending on the mass, it may need to be removed.

Infections

Infections are illnesses caused by bacteria, viruses, or fungi. Examples of lung infections include tuberculosis and pneumonia. Lung infections can irritate the airways. They can also cause fluid to build up in the lungs or chest. Some lung infections are contagious. This means they can travel from an infected person through the air to infect another person. Most lung infections can be treated with antibiotics or other medications.

Diseases

Smoking is often the cause of lung diseases. For example, smoking can lead to chronic obstructive pulmonary disease (COPD). COPD refers to a group of diseases that destroy the lungs and make it hard to breathe. COPD can include emphysema, chronic bronchitis, and chronic asthma. Certain non-smoke-related factors, such as exposure to asbestos, can also cause lung disease. Other conditions called interstitial lung diseases can lead to scarring of the lungs.
Having Percutaneous Biopsy

Percutaneous means “through the skin.” This procedure allows the doctor to take a sample (biopsy) of fluid or lung tissue with a needle. No cut is needed in the skin or chest wall. Two ways of doing percutaneous biopsy are described below.

Fine Needle Aspiration

Fine needle aspiration (FNA) is a procedure used for taking a tissue sample from a mass. First, a CT scan is done. This helps the doctor locate the mass and determine where to place the needle. The chest is numbed so you don’t feel pain. Then, a thin needle is inserted through the skin of the chest into the mass. Another CT scan is taken to ensure the needle is placed properly. Once the needle is in place, a small amount of tissue is drawn (aspirated) into the needle. The tissue sample is then sent for testing.

Thoracentesis

Thoracentesis is used to drain buildup of fluid in the pleural space (between the lungs and chest wall). Because the pleural space does not normally hold much fluid, extra fluid can make breathing difficult. For the procedure, the chest is numbed. Then, a needle is put through the skin of the chest into the pleural space. Once inside the space, fluid is drained. Fluid is drawn into the needle and later tested for cancer and other problems.
Preparing for the Procedure

Before your procedure, do the following:

• Follow your doctor’s instructions about eating and drinking.
• Tell your doctor about the medications you take. You may need to stop taking certain medications before the procedure, especially aspirin, Coumadin, or other blood thinners.
• Discuss any allergies and health problems with your doctor.
• Tell your doctor if you are pregnant.

During the Procedure

You receive local anesthesia (numbing medication) to keep you from feeling pain. The area where the needle goes in is numbed. But you will feel some stinging as the anesthesia needle enters the skin. Medication to help you relax (sedation) may also be given through an intravenous (IV) line.

After the Procedure

You may have some pain after the procedure. You will be given medication to help ease any pain. The area where the needle was inserted is covered with an adhesive bandage. You can go home after you recover from anesthesia, usually the same day as the procedure. If you received sedation, an adult family member or friend will need to drive you home from the facility. If a tube was placed in your chest to drain fluid, you will likely stay at least 1 day in the hospital. Your doctor will tell you more.

Risks and Complications

• Bleeding
• Infection
• Injury to other structures in the chest
• Pneumothorax (collapsed lung)

When to Call the Doctor

• Coughing up blood
• Shortness of breath
• Chest pain
• Fever of 101.1°F (38.5°C) or higher
Getting Your Test Results

It will likely take a few days to get back your test results. Your doctor will discuss the results with you in detail. He or she will explain any follow-up care or treatment you need. Be sure to share any concerns you have with your doctor.