Bronchogenic Cysts

Patient and family information, brought to you by the Education Committee of APSA

Overview - "What is it?"

A bronchogenic cyst is a mass sometimes found by chance on imaging and is usually located close to the trachea (windpipe). A cyst is a fluid-filled pouch or sac. A bronchus is one of the branching airways to the lung. Bronchogenic cysts occur when small portions of the developing trachea and lung pinch off and become separate from the airways. The reason this occurs is unknown.

Bronchogenic cysts are usually, but not always, outside of the lung and do not communicate with the normal airways. In addition, bronchogenic cysts do not contain air sacs (alveoli). Alveoli are the main areas of the lung where oxygen and carbon dioxide are exchanged.

Signs and Symptoms - "What symptoms will my child have?"

Bronchogenic cysts are rare and are usually found during a prenatal ultrasound or as an unexpected finding on a chest x-ray. Most of the time the child will have no symptoms at all.

Bronchogenic cysts are located in the area where the main windpipe (trachea) branches to the main airways to the right or left lung and can sometimes cause compression on the trachea, resulting in breathing problems in newborns.

Early symptoms can include wheezing, noisy breathing, cyanotic episodes (baby turns blue), chronic cough or chest pain.

Late symptoms can include coughing blood from the cyst eroding through tissues, infection, or the development of cancer (very rare). These cysts can be found at any age, depending on size, location, and presence of symptoms.

Diagnosis - "What tests are done to find out what my child has?"

Chest X-ray, MRI or CT scan of the chest. Imaging may not definitively localize the cyst to a specific area but 15% are actually found within the lung (intrapulmonary cysts). Eighty-five percent are found along the trachea (windpipe) or the bronchus. Cysts are usually single in number and appear round or oval (Figure 1). They may contain fluid, air, or a combination of both. Cysts that are within the lung are usually in the lower lobes and the ones that contain air and fluid may raise suspicion for an infection.

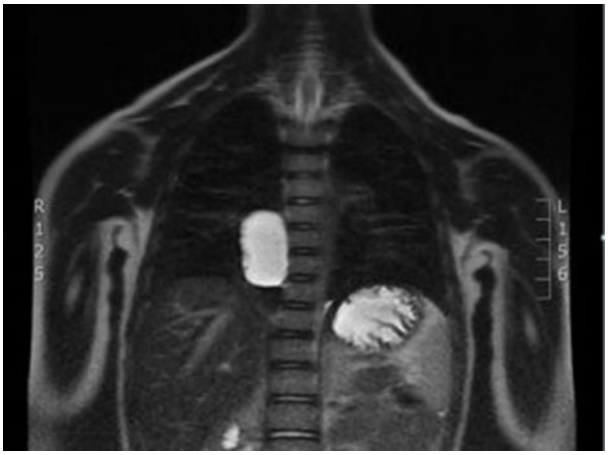

Figure 1: MRI showing a bronchogenic cyst (white circle).
(Image provided by Dr. Marion Henry, Naval Medical Center San Diego, California)

A bronchoscope is a small camera inserted into the airways through the mouth while the patient is intubated and under anesthesia in the operating room. **Bronchoscopy** may be useful for identifying those cysts that communicate with the airways or those cysts that compress the airway.

Treatment - "What will be done to make my child better?"

Medicine: No medical treatment is able to remove or shrink the cyst. If the cyst is infected, medicines to treat the infection (antibiotics) may be needed.

Surgery: Symptomatic cysts should be removed with an operation. Most bronchogenic cysts can be removed using either open (thoracotomy) or minimally invasive (thoracoscopy) techniques. Open surgery means a larger incision between the ribs to remove the cyst. Thoracoscopy means using a camera, telescope, and instruments through small incisions to perform the surgery. Thoracoscopy may be contraindicated in children with cysts in certain locations. In some cases, it is extremely difficult to separate the wall of the cyst from the

normal airway without causing damage to the airway. Near-complete removal and leaving the attached portion of the cyst wall on the airway is reasonable treatment and has not been associated with the cyst coming back. (Figure 2)

Asymptomatic cysts should also be removed because of the risk of infection and the rare risk of developing cancer in the cyst.

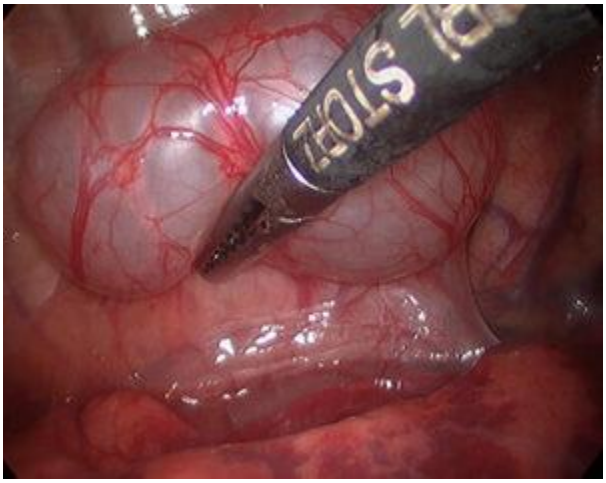

Figure 2: Minimally invasive surgery to remove a bronchogenic cyst.
(Image provided by Dr. Marion Henry, Naval Medical Center San Diego, California)

Risks for surgery are low but include bleeding, infection, collapsed lung, air leakage from the airways and risks of anesthesia.

Usually, after the surgery a tube to drain air and fluid from the chest cavity (chest tube) is needed for a few days. This tube will be removed prior to discharge.

Informed consent: A consent form is a legal document that states the tests, treatments, or procedures that your child may need and the doctor or practitioner that will perform them. Before surgery, your doctor should tell you what the operation is, the goal of the surgery and other possible treatment options that are available. Your doctor should explain the risks and benefits of the surgery. You give your permission when you sign the consent form. You can have someone sign this form for you if you are not able to sign it. You have the right to understand your child's medical care in words you know. Before you sign the consent form, make sure all of your questions are answered. It is important to know that during surgery, there are things that can happen that your doctor may have not predicted before going in. He or she will explain these to you after the surgery.

Home Care - "What do I need to do once my child goes home?"

Diet: Your child may eat a normal diet after surgery.

Activity: Your child should avoid strenuous activity and heavy lifting for the first 1-2 weeks after thoracoscopic surgery, 4-6 weeks after open surgery.

Wound care: Surgical incisions should be kept clean and dry for a few days after surgery. Most of the time, the stitches used in children are absorbable (go away on their own) and do not require removal. Your surgeon will give you specific guidance regarding wound care, including when your child can shower or bathe.

Medicines: Medication for pain such as acetaminophen (Tylenol) or ibuprofen (Motrin or Advil) or something stronger like a narcotic may be needed to help with pain for a few days after surgery. Stool softeners and laxatives may be required to encourage regular stooling after surgery, especially if narcotics are still needed for pain.

What to call the doctor for: Call your doctor for worsening pain, fever, breathing problems or if the wounds are red or draining fluid.

Follow-up care: Your child should follow up with their surgeon 2-4 weeks after surgery to ensure proper post-operative healing.

Complications: Wound infections are rare but usually only need oral antibiotics or may require opening of the wound depending on how bad the infection is.

Long Term Outcomes - "Are there future conditions to worry about?"

After surgical treatment, the long-term prognosis is excellent, and recurrence of the cyst is exceedingly rare.

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