

Lung Lesions

Congenital pulmonary airway malformations (CPAM)

Congenital Cystic Adenomatoid Malformation (CCAM), Pulmonary Sequestration, and Congenital Lobar Emphysema are all terms describing a mass in the fetal lung and chest. They are a part of a group of lung problems called Congenital Pulmonary Airway Malformations (CPAM).

The mass is in the unborn baby's lung. The mass may be solid or filled with fluid. In extreme cases, it can cause poor lung growth, and heart and breathing problems at birth.



How a lung mass is found

You may have a prenatal ultrasound done while you are pregnant to learn about the health of your baby. A lung mass is usually found during a routine prenatal ultrasound. Sometimes a fetal MRI is done to obtain more information about the diagnosis. About 10 to 20 percent of the time, the lung lesion shrinks in size during pregnancy. Sometimes a small lung mass is not found until later in childhood.

Cause

The exact cause of a CPAM is unknown. It is congenital, meaning that it happens before your baby is born. Other health issues do not commonly occur with this problem.

Care during your pregnancy

The high-risk obstetrician will have a detailed plan to watch your pregnancy very closely. You will have regular ultrasounds to check the size of the lung mass and see if your baby develops any complications during your pregnancy. The most severe complication of large lung masses to the unborn baby is generalized swelling, known as hydrops.

Ideally, you will be able to have a normal vaginal delivery. If a cesarean section (C-section) is needed, your doctor will discuss it with you. It is important to call your doctor if you have any questions during your pregnancy.

continued



NATIONWIDE CHILDREN'S

When your child needs a hospital, everything matters.SM

Ohio Fetal Medicine Collaborative

If this problem is found while you are pregnant, you will continue to receive care from your doctor and may be referred to the Ohio Fetal Medicine Collaborative (OFMC).

Through the OFMC, you will see a doctor who specializes in taking care of high-risk patients. You will also meet with a pediatric specialist at Nationwide Children's Hospital to learn more about your baby's care after he or she is born. Nurse coordinators will be available to help answer your questions and concerns; guide you through your pregnancy; and prepare you for what to expect.

You will deliver your baby at a hospital that is prepared to care for high-risk babies.

Care after your baby is born

At the delivery hospital, a neonatologist (a doctor who specializes in treating newborns) will evaluate your baby. An x-ray will be done to check your baby's lungs.

If there are no breathing problems at birth, usually your baby can go home with you from the hospital. It is recommended that you follow up with the pediatric surgeon at 2 to 4 weeks of age. The surgeon will schedule additional tests, such as x-rays and a CT scan. The pediatric surgeon will decide when surgery is appropriate. Typically, surgery takes place at about 3 to 6 months of age.

If your baby has breathing problems at birth, then:

- Your baby will receive care in the hospital's neonatal intensive care unit (NICU).
- Your baby may have a ventilator to help with breathing.
- A tube will be put into your baby's nose or mouth. This tube goes into your baby's stomach and helps to keep the stomach empty.
- An intravenous line (IV) will be started in your baby's arm, hand, foot or scalp. The IV provides fluids, nutrients and antibiotics to prevent dehydration and infection.

- Your baby will be taken to Nationwide Children's Hospital, Main Campus, for further care in the Neonatal Intensive Care Unit.
- If the mass is a medium or large size, causing the baby to be very sick, a special treatment called ECMO may be needed. The ECMO process uses a heart-lung bypass machine. ECMO is a way for a baby's lungs to rest and heal for a short period. The doctors and nurses will talk to you about this if they decide that ECMO might help your baby.

Surgery

The mass will need to be removed by a pediatric surgeon. The timing of the surgery depends on how well your baby is breathing at birth.

If your baby is not having breathing problems at birth, the surgery may happen later in infancy and your baby can go home from the hospital with you. It is important that the mass be surgically removed. Risk of infection during later childhood and the potential for cancer later in life develops if it is not removed.

If your baby is having breathing problems at birth, the surgery will occur within the first several days after birth. The pediatric surgeon will remove the mass and the part of the lung that is affected by the mass.

Care after surgery

After surgery, your baby will receive care in the hospital's neonatal intensive care unit. Your baby will need to be on a breathing machine right after the surgery. Other treatments your baby will probably need after surgery are:

- Antibiotics to prevent infection
- Fluids and nutrients given through an IV
- Oxygen
- Pain medicines as needed
- A tube placed through the nose into the stomach to drain the stomach to keep it empty (nasogastric or NG tube).

continued

- Your baby may have a chest tube. This tube helps drain fluid from the incision. The chest tube will stay in place a few days.

Feedings of breast milk or formula are started very slowly with either the bottle or nasogastric (NG) tube. The tube is removed when your baby's intestine works properly.

The total length of time your baby will stay in the hospital will vary. It will depend on whether your baby is born with other health issues or if there are complications after surgery. It may be several weeks or more depending on your child's recovery after surgery. You may be able to take your baby home once he or she is feeding well; gaining weight; and when the lungs are working well.

Nearly all babies have normal lung function after the surgery. This means that they will be able to play sports and do all the same activities as other children. If your baby had ECMO treatment, there is a chance that extra oxygen may be needed for several weeks or months after surgery.

Follow Up

Your baby will need regular follow-up appointments to measure growth, development and nutrition. You will want to find a local pediatrician to take care of routine checkups, immunizations and doctor's visits. The program coordinator can help if needed. The pediatric surgeon will follow up with your baby's surgical needs.