The blood is not able to carry any oxygen in that tissue, which may put a strain on the heart. In these children, surgery to remove the abnormal area is performed in the first few months of their lives.

Long-term outlook

The long term outlook for these children is very good if they have the CCAM or sequestration removed. Typically, they lead healthy lives with normal life expectancy. When not removed, both sequestrations and CCAMs may cause lung infections. You will have a chance to talk to a paediatric surgeon after the baby is born.

Will this happen again?

If there are no associated abnormalities, and the diagnosis after birth is confirmed to be CCAM or BPS, there is a very low chance of this occurring again. The chance is not higher than the general population.

For more information please contact your local NZMFMN Unit

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Lung Masses

New Zealand Maternal Fetal Medicine Network

Reviewed: September 2015

Fetal lung masses

These are usually diagnosed at the time of the fetal anatomy scan at 18-20 weeks. The most commonly diagnosed chest masses include congenital cystic adenomatoid malformation (CCAM), bronchopulmonary sequestration and congenital diaphragmatic hernia.

Congenital cystic adenomatoid malformation

Congenital cystic adenomatoid malformation (CCAM) is caused by abnormal proliferation of bronchioles or air way passages and there is lack of normal air spaces in the lung. It is usually present on one side, rarely on both lungs or lung segments. These aberrant spaces do communicate with the main airway passages in most cases. On ultrasound lungs may show bright solid appearing areas, fluid filled spaces of varying sizes or a combination of the two. These masses have the same blood supply as the lungs.

Bronchopulmonary sequestration (BPS)

Sequestrations may appear similar to CCAM on ultrasound. They may be found within the fetal lung or outside the normal lung area such as below the diaphragm. These lung masses often have a separate blood supply from the rest of the lung. Usually this blood vessel arises from the aorta.

How is the diagnosis made?

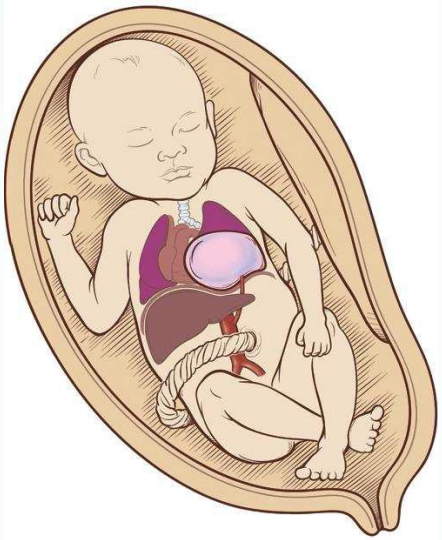
Fetal CCAM and sequestrations can be diagnosed by ultrasound examination usually at 18-20 week scans. Typically, if your obstetrician or midwife suspects that the baby has CCAM you will be referred to the MFM clinic to see a Fetal Medicine specialist. You will have a detailed ultrasound and the findings will be discussed with you. When a fetal abnormality is noted, we take every step to establish a diagnosis. Often this is difficult and the final diagnosis may only become clear after the baby is born.

In most cases we recommend that delivery should occur in a hospital that has a Neonatal Intensive Care Unit (NICU). In some situations we may suggest that your baby be delivered at Auckland Hospital. That may mean that your LMC can no longer deliver you.

What are the implications for the baby?

Chest masses can compress the normal lung tissue and prevent it from developing normally. If the mass is large, it can also push the contents of the chest to the opposite side.

This may mean that the fetal heart also shifts from its normal space in the chest. This usually occurs when the chest mass is very large and/or involves the whole lung. In the worst case scenario, the heart and major blood vessels in the chest may work less efficiently due to the compression and fluid builds up in the lungs (pleural effusion), covering of the heart (pericardial effusion) and abdomen (ascites). This collection of fluid in various body spaces is called ‘Hydrops’.



Development of hydrops is not a good sign for fetal well being. In some cases, the compression of the chest contents from the mass can lead to accumulation of fluid in the sac around the baby. This is known as polyhydramnios. This is also a complication due to the chest mass and can cause preterm labour and delivery. The pregnancy is usually monitored for these signs by serial ultrasound scans. In most cases, the mass may remain stable or may even become smaller in size. This is a good prognostic indicator.

The baby does still need to be born with a neonatologist (paediatrician) present at birth and will need the usual monitoring post natally.

Treatment

There is no treatment antenatally. In some cases, a fluid filled cyst may be aspirated by a needle. Very occasionally, a chest drain may be recommended.

This will be explained to you at the time.

The majority of babies diagnosed with CCAM are born without any symptoms. If this is the case, then a CT scan is done and follow up care continues for about a year. The Paediatric surgical team will monitor your baby. If removal of this mass is recommended, the surgical team will discuss this with you. If infants are born with breathing difficulties because of a lung mass, they may need assistance from a breathing machine called a ventilator. Under these circumstances, emergency surgery is performed to remove the mass.

Bronchopulmonary sequestration treatment

The majority of babies diagnosed with a bronchopulmonary sequestration also are born with no symptoms. However, even if no symptoms are present, the sequestration is removed by one year of age because it is prone to infection. A smaller number of infants may have symptoms in the first few days of life that are caused by blood flowing through the abnormal piece of lung tissue.