

Meconium Peritonitis

Patient Information Series – What you should know, what you should ask.

What is meconium peritonitis?

Meconium peritonitis (MP) is a sterile peritonitis resulting from spillage of bowel contents into the abdominal cavity due to a bowel rupture. Simple meconium peritonitis is suggested when calcifications are identified throughout the fetal abdominal cavity or on the diaphragm. Complex meconium peritonitis is identified when there are additional abnormalities seen in the abdomen of the baby. This finding is very rare. It is seen in 1/30,000 live births.

How is meconium peritonitis detected?

Meconium peritonitis can be detected by prenatal ultrasound, in some cases as early as 15 weeks of gestation. Simple meconium peritonitis is suspected when there are calcifications identified throughout the baby's abdomen. Complex meconium peritonitis is identified when there are additional abnormalities, including cysts in the abdomen, dilated loops of bowel, echogenic bowel, extra fluid around the baby or extra fluid inside the baby in the skin, heart, chest or abdominal areas.

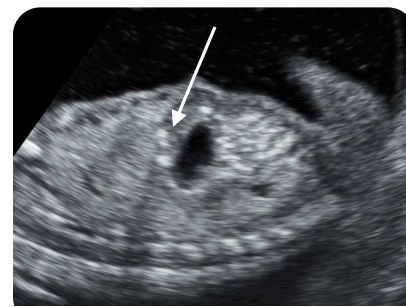


Figure 1. Calcifications on the surface of the diaphragm in a case of simple MP

What causes meconium peritonitis?

There are several problems that can cause meconium peritonitis.

Obstruction of the bowel:

Meconium peritonitis can be caused by a variety of bowel problems which can obstruct the continuous passage of stool contents from the stomach to the anus. There can be a variety of ways in which these blockages can occur, including abnormal twisting, duplicate pathways, discontinuous areas of bowel, and internal hernias. Many of these abnormalities can not be diagnosed prior to birth.

Cystic fibrosis

Cystic fibrosis is a genetic disease that can affect the lungs and bowels, causing thickened mucus to build up in those organ systems and in some cases cause bowel rupture. It can be difficult for the baby to have the first bowel movement after he or she is born, also known as meconium ileus. In order for a baby to have cystic fibrosis, it must have two copies of the abnormal cystic fibrosis gene. One abnormal gene copy is inherited from each parent, who are carriers for the disease (meaning they are healthy but have one normal gene and one abnormal gene).

Hirschsprung's disease:

Hirschsprung's disease is a condition where the nerves which help the colon to contract are missing. Typically, this is diagnosed after birth when the baby fails to pass its first stool.

Fetal infection

Infections that can affect the baby's bowels include cytomegalovirus and parvovirus B19 and possibly rubella. Often these infections do not make adults very ill, but they can cause the baby's bowels to be inflamed and swollen. This can show up as bright areas on ultrasound. Bright spots can also be seen in other places in the baby's abdomen.

In-utero cocaine exposure

Meconium Peritonitis

Patient Information Series – What you should know, what you should ask.

It is thought that some cases of MP occur due to maternal use of cocaine, which can cause problems with the blood supply to the bowel and to other organs.

No clear explanation

A clear explanation for MP is not found in approximately half of all cases. In these cases, it is possible that there has been decreased blood flow to a portion of the bowel, but this has not been proved.

Should I have more tests done?

You will be offered additional testing to help determine the reason for the meconium peritonitis. The exact testing offered will be based on the presence or absence of other ultrasound findings, your medical and pregnancy history, and results from any earlier testing you may have had. You may also be offered consultation with a Genetic Counselor, a medical professional with special training in genetic conditions.

Tests that may be offered include:

- **A detailed ultrasound examination:** This is to carefully look at your baby for any other ultrasound findings or abnormalities. Ultrasound can identify many but not all abnormalities.
- **Fetal echocardiogram:** a special evaluation of the baby's heart structures may be performed with ultrasound to ensure that there are no heart abnormalities which could point to a specific diagnosis.
- **Amniocentesis:** This is a test that removes a small amount of fluid from around the baby by a thin needle. The fluid can be tested for chromosomal abnormalities as well as fetal infections. Other genetic tests may be offered, such as Chromosomal Microarray (CMA, or "chip") which looks more closely at the genetic make-up of the fetus.
- **Cell-free fetal DNA:** This is a maternal blood test that uses your baby's cells that are in your bloodstream. It is a very good genetic screening test for certain conditions, such as Down syndrome, but it is not as accurate as an amniocentesis.
- **Maternal blood tests for infection** such as cytomegalovirus or toxoplasmosis: These tests may determine if you have had a recent or past infection, but they will not tell you if your baby has been infected. If your results show possible infection, additional testing may be recommended to confirm an infection in your baby.
- **Maternal blood test for cystic fibrosis:** Because cystic fibrosis is a genetic condition, you only need to be tested for it once. Your results will never change. It may have already been done as part of your normal pregnancy laboratory testing.
- **Additional ultrasound examinations:** Additional ultrasound scans will be performed to look at the abdominal contents and to ensure that no extra fluid develops either around or with the baby. Blood flow studies to determine if the fetus is anemic may also be performed.

What if all my test results are normal?

If the baby has simple meconium peritonitis, and has normal follow-up tests, your baby will likely be healthy at birth. However, it is important to remember that not all problems can be detected during pregnancy. Therefore, while normal testing is reassuring, it cannot guarantee that your baby will be healthy.

If there is complex MP, delivery at a tertiary center with a multidisciplinary team is suggested to further evaluate the baby after birth.

Meconium Peritonitis

Patient Information Series – What you should know, what you should ask.

What other questions should I ask?

- Are there any other abnormalities on the ultrasound?
- What kind of genetic testing will I need to have?
- How often will I have ultrasound examinations done?
- Will my baby need surgery after delivery?
- Where should I deliver?
- Where will the baby receive the best care after it is born?
- Can I meet the team of doctors that will be assisting my baby when it is born, prior to delivery?