Fetal Small Bowel Obstruction

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

What is a Fetal Small Bowel Obstruction?

Fetal bowel obstructions can either be in the small bowel or the large bowel, which is also called the colon. The small bowel, also called the small intestine, has three parts to it: the duodenum, the jejunum and the ileum, and any part can have a blockage in it. (This information sheet does not discuss blockages in the duodenum or in the colon). Normal bowel has a muscular wall which contracts to propel fluid through it. When there is a blockage or narrowing in the bowel, the normal movements the bowel makes become exaggerated as the bowel tries to propel fluid through the blockage. These movements, also called peristalsis, can be seen over several seconds with ultrasound. The bowel also appears to be larger than expected in some areas and the size (diameter) of the bowel changes over time. There can be one or more blockages in the bowel, but, unfortunately, ultrasound isn't really helpful in figuring out the location or number of blockages. Sometimes, there are additional signs on ultrasound which can lead doctors to think that the obstruction is in one or another of the areas of the bowel. These can include extra amniotic fluid (polyhydramnios), an enlarged stomach, fluid inside the fetal abdomen but outside the bowel (ascites) and calcifications (accumulation of calcium) in the abdomen of the fetus.

How does a Fetal Small Bowel Obstruction happen?

Fetal Bowel obstructions are relatively rare and occur in 1 of 300-5000 live births. The exact reason why they occur is not known yet, but it is thought that they happen due to damage to the blood vessels that feed the bowel during the first 6-12 weeks of fetal life. Bowel obstructions can occur as a result of twisting of the bowel on itself (volvulus), improper rotation of the bowel in early pregnancy (malrotation), or sometimes a portion of the bowel moves inside another portion of it (intussusception). Maternal medications, including some decongestants as well as maternal use of nicotine, amphetamines, or cocaine, have been associated with bowel obstructions.

Should I have more tests done?

Many women will choose to have more tests done to know more about the condition of their baby. The tests available depend on where you live. Tests to ask about include a blood test or amniocentesis (where a thin needle is used to take some of the fluid from the womb) or blood sample to look for cystic fibrosis. Unless there are additional ultrasound findings, amniocentesis for chromosomes is typically not recommended but this can be performed in any pregnancy. Occasionally, severely increased amniotic fluid volume (polyhydramnios) occurs and patients request an amniocentesis to temporarily reduce the amount of amniotic fluid to make them more comfortable for a few days. There is currently no prenatal treatment for bowel obstruction in the fetus. Your doctor may wish you to be evaluated by a specialist in ultrasound for more information.

What are the things to watch for during the pregnancy?

Babies with bowel obstructions should have additional ultrasound examinations. These ultrasound examinations will focus mostly on the baby's growth and amniotic fluid volume, since

the most common complications in babies with bowel obstructions are a small baby and extra amniotic fluid (polyhydramnios). Fortunately, this does not happen in every case.

Re-evaluation of the abdominal cavity for pseudocysts (collections of fluid from the bowel that have leaked out due to a rupture of the bowel), calcifications on the lining of the abdomen, and extra fluid outside the bowel (ascites) which could indicate rupture of the bowel, may be performed. The baby's anus and rectum may be evaluated to see if there is anal atresia (where babies have imperforate anus). Sometimes a baby with a bowel obstruction has an enlarged stomach.

What does it mean for my baby after it is born?

After the baby is born, he or she will be transferred to a neonatal intensive care unit, where additional studies will be performed. A nasogastric tube will be placed to drain the secretions from the mouth and stomach and an IV will be placed. The baby will have X-rays taken to further evaluate the abdomen and a surgeon will be consulted. The baby will not be fed until the studies are completed. If surgery is indicated, the neonatal intensive care team will decide how best to provide nutrition for the baby and when feeding by mouth can begin. Additional testing may be done if cystic fibrosis is suspected.

When the baby is stable, a surgeon will remove the portions of the bowel which are not functioning well and will attempt to reconnect the portions of bowel which are not connected. The surgeon will determine how many blockages there are and how best to fix them. Most babies can have their bowel connected in one surgery, but, occasionally, the baby will need a colostomy (bag to collect intestinal fluids) until the intestine can be fully connected. The baby will be discharged once there are no issues with the bowel function and feeding. Some children may stay in the hospital for several months, but others are discharged after a several week stay.

In the long term, the outcome for most children is excellent. There are some children who have long-term issues which are related to the amount of bowel that needs to be removed and additional bowel malformations. These problems can include short gut syndrome (poor absorption of nutrients due to lack of functional small intestine), bowel movement problems and recurrent blockages. Unfortunately, prenatal ultrasound is not able to predict which children will have these problems.

Will it happen again?

Most cases of small bowel blockage are sporadic, meaning that they are very unlikely to happen again.

There are some rare families where there are recurrences of bowel obstruction. This is more of a concern if the baby is found to have the "apple-peel" or "Christmas tree" form of atresia, or if there are multiple blockages discovered at the time of surgery, or if the baby is diagnosed with cystic fibrosis. If any of these conditions are diagnosed, additional information will be available from your doctor, a genetic counsellor or a geneticist.

What other questions should I ask?

- Does this look like a typical small bowel obstruction?
- Do I have extra amniotic fluid?
- Do you see additional abnormalities in my baby?
- How often will I have ultrasound examinations done?
- What will you be looking for during these examinations?
- Where should I deliver?
- Where will the baby receive the best care after he or she is born?
- Can I meet in advance the team of doctors who will be looking after my baby when he or she is born, and tour the nursery?

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