FACTSHEET

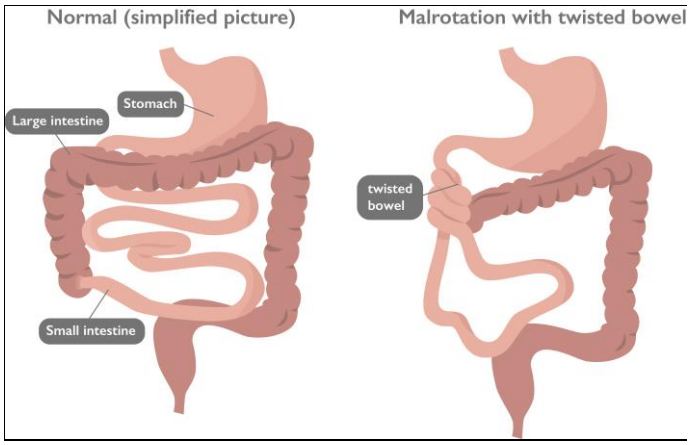
Malrotation and volvulus

What is malrotation?

Malrotation is an abnormality in the way the bowel is positioned.

Inside the womb, a baby's bowel begins as a tube from the stomach to the anus. In order for it to grow, it moves into the umbilical cord where there is space and then coils back into its final position in the abdomen. Normally it attaches itself to the back wall of a baby's abdomen. Malrotation happens when these coils end up in the *wrong position.* We do not know what causes this, but it is not the parent's fault.

Figure 1: Normal intestine and Intestine with malrotation and volvulus



What is volvulus?

Volvulus is a type of bowel blockage where the bowel twists. The twists in the bowel cut off the blood supply to the bowel (See Figure 1). Without a blood supply, the bowel can start to die and can make your baby very sick.

Children with malrotation can develop a volvulus because their bowels are in the wrong position. Volvulus from malrotation will often happen in the first month of your baby's life.

What are the symptoms of malrotation?

Malrotation doesn't always cause problems. Often, a baby with malrotation will not show any signs until they have a volvulus. When this happens, your baby may:

- Start to vomit green liquid. Green vomit can mean a bowel blockage and your baby must be seen urgently. Your doctor needs to exclude the possibility of malrotation and volvulus.
- Pass blood in their poo, or poo less.
- Have tummy pain, which will make them cry, and draw up their legs. This happens because the bowel tries to push food past the twisted part. The pain may come and go, but your baby will be difficult to settle during them.
- Start to breathe more quickly, have a faster heart rate, become irritable or lethargic and develop a fever.

A baby can look very well and still have a volvulus. If your baby has any of the above symptoms, it is important that ***you see a doctor urgently*** *as the bowel may already be in trouble.*

How common is malrotation?

Malrotation happens in about 1 in 200 babies. It only causes problems in 1 in 6000 babies.

This document was last reviewed on 7 April 2020

How is malrotation treated?

Usually a *contrast study* is done to diagnose the problem. Your baby will be given some dye through a tube into their stomach (nasogastric tube) and x-rays are taken. If malrotation is diagnosed, they will get a drip, fluids and sometimes antibiotics.

The only way to repair malrotation is with an operation under a general anesthetic. This usually needs to be done urgently, as the twisted bowel may already be dying.

Ladd's procedure

The operation to fix malrotation is called a Ladd's procedure. This is often done through a cut above the belly button. The surgeon will examine the bowel, and cut any abnormal bands that are holding the bowel in the wrong position. If the bowel is healthy, the surgeon will then return the bowel to the abdomen in a safe position. If parts of the bowel are dead, the surgeon will remove these, trying to keep as much bowel in your baby's abdomen as possible.

The healthy parts of bowel can sometimes be joined back together.

Sometimes, the bowel is not healthy enough to be joined, and the surgeon may need to create a stoma. A stoma is where the bowel is sewn to the abdominal wall, so that your baby can pass poo through this stoma into a bag. This allows the end part of the bowel to rest. This is usually temporary, and when the bowel has had enough time to heal, the stoma can often be taken down, and the bowel rejoined.

Your surgeon may decide to do another operation in a few days and decide at that time what is best, after the bowel has had some time to recover.

The appendix is sometimes removed if it is on the wrong side of the body. This is because it may cause problems diagnosing appendicitis if it were to occur later in your child's life. The appendix has no function and your baby does not need it.

At the end of the procedure, the cut will be closed with stitches or the abdomen will be left open with a dressing if the surgeon is planning to go back to theatre in the days ahead.

What are the risks?

Every operation has its risks, including anaesthetic complications, however these are rare.

In malrotation the risks of not operating are FAR GREATER than the operation itself.

During a Ladd's procedure, your baby may need a blood transfusion. The surgeon must be careful to not damage the liver and other organs. Occasionally, the wounds get infected or break down. Some children may develop blockages later in life due to scar tissue.

If large parts of bowels need to be removed, your baby may have problems absorbing nutrients. In this instance, they will need the help of nutrition through a special drip for some time. The doctors will talk to you if this is the case.

What happens next?

Your baby will initially return to the Intensive Care Unit to recover from their operation. They may need a breathing tube for some time. They will initially get both pain relief and sometimes food (TPN) through their drip.

Milk feeds will begin slowly, and will be upgraded to your baby's full needs before being sent home.

The stitches that are put in during your baby's operation will dissolve on their own. Usually a simple dressing will be applied and taken off after a week or so.

Before your baby leaves hospital, the surgeon will arrange to see them again in clinic.

Your baby should be brought back to hospital sooner if:

- They redevelop any of the symptoms listed above.
- Their operation wounds become red, swollen, hot, or begin to ooze.

Remember:

- Babies with green vomit must be seen URGENTLY.
- If your baby looks very well, they still need to be reviewed, even if there has been only one vomit.
- If your baby has malrotation, they will usually need surgery.
- The problem can be fixed as long as delays are minimised.