CONDITION

Volvulus - childhood

Childhood volvulus is a twisting of the intestine that can block it and cut off its blood supply.

WHAT IT IS
Twisting of the intestine causing blockage

BODY SYSTEM
Digestive system

MAIN SYMPTOMS
Green vomiting, abdominal pain, swollen abdomen, bloody stool

WHAT CAUSES IT
Usually congenital intestinal malrotation

HOW IT IS DIAGNOSED
Contrast imaging, ultrasound, or surgical findings

MAIN TREATMENT
Emergency surgery with bowel-preserving care

CAN IT BE CURED?
Yes - surgery usually corrects the twist

IS IT AN EMERGENCY?
Yes - suspected intestinal twisting needs immediate treatment

LONG-TERM OUTLOOK
Usually good when treated before major bowel damage

Overview

Volvulus means that part of the digestive tract has twisted around itself or the tissue supporting it. The twist can block food, liquid, and gas from moving through the intestine. More seriously, it can squeeze the blood vessels supplying the bowel.

Without enough blood, the affected bowel can become injured. This is why suspected volvulus in a child is treated as an emergency.

In babies and children, the most important type is midgut volvulus . It usually occurs in children with intestinal malrotation , meaning the intestines did not settle into their usual position before birth. Malrotation and volvulus are not the same thing: malrotation is the underlying arrangement, while volvulus is the actual twist.

Volvulus most often appears in infancy, but it can occur later in childhood or, occasionally, in adulthood. Older children may have sudden severe symptoms or repeated episodes of pain and vomiting.

Other parts of the digestive tract, including the stomach or large bowel, can also twist. These forms are less common in children and may have different causes.

Symptoms

Symptoms can begin suddenly and worsen quickly. In newborns and young babies, a key warning sign is bilious vomiting . This is vomit containing bile, a digestive fluid, and it is usually dark or bright green rather than simply yellow.

Possible symptoms include:

Some babies are initially alert and may not have a noticeably swollen abdomen. A child can therefore have a serious intestinal problem even when there are few early signs.

Older children may describe cramping or central abdominal pain. If the intestine twists and partly untwists, symptoms can come and go. There may be repeated vomiting, poor appetite, slow weight gain, or episodes of unexplained abdominal pain. These longer-term patterns still need medical assessment, but sudden green vomiting or severe pain requires emergency care.

- Green vomiting
- Sudden or severe abdominal pain
- A swollen, firm, or tender abdomen
- Irritability, unusual sleepiness, or difficulty waking
- Refusing feeds or being unable to keep feeds down
- Blood or dark red material in the stool
- Passing less stool or gas
- Signs of dehydration, such as a dry mouth or fewer wet nappies
- Pale, cool, or mottled skin

Causes and risk factors

Most childhood midgut volvulus is linked to intestinal malrotation. During development before birth, the intestine normally turns and becomes fixed in a broad position inside the abdomen.

With malrotation, it may remain attached by a narrow stalk of tissue. The bowel can then twist around this stalk more easily.

Malrotation is congenital, meaning it is present from birth. It is not caused by feeding practices, physical activity, or anything a parent did during pregnancy.

Some children with malrotation also have abnormal bands of tissue called Ladd bands . These may press on the first part of the small intestine and contribute to blockage.

Volvulus can occasionally develop for other reasons, including scar tissue after abdominal surgery, an abnormal opening or pouch in the bowel, or another difference in abdominal anatomy. Gastric volvulus involves twisting of the stomach and may be associated with problems affecting the diaphragm or the tissues holding the stomach in place.

Most cases are not directly inherited. However, malrotation can occur alongside other congenital conditions, including differences affecting the abdominal wall, diaphragm, intestines, or heart.

Diagnosis

A child with possible volvulus needs urgent assessment. The medical team will ask about the colour and timing of vomiting, pain, bowel movements, feeding, previous surgery, and any known congenital conditions. They will examine the abdomen and check circulation, hydration, temperature, and alertness.

Imaging is used when the child is stable enough. An upper gastrointestinal contrast study is often used to assess possible malrotation and midgut volvulus. The child swallows, or receives through a tube, a liquid that appears on X-rays. The images show how the liquid moves through the stomach and first part of the small intestine.

Ultrasound may show abnormal blood vessel positions or a "whirlpool" pattern where the bowel and its blood vessels have twisted. Its usefulness can depend on local expertise and how clearly the structures can be seen.

A plain abdominal X-ray may show blockage or a perforation, meaning a hole in the bowel. However, an X-ray can look normal early in volvulus, so a normal result does not rule it out.

Blood tests can identify dehydration, infection, acid build-up, or signs that tissues are not receiving enough oxygen. They support treatment decisions but do not confirm or exclude volvulus by themselves.

If the child is very unwell or has signs of bowel injury, surgery may be needed without waiting for every test.

Treatment and management

Midgut volvulus usually requires emergency surgery. Before and during preparation for surgery, the team may give fluids through a vein, correct salt or blood sugar problems, and monitor breathing and circulation.

A tube may be passed through the nose into the stomach. This removes trapped fluid and air, which can reduce vomiting and pressure. Antibiotics like amoxicillin or doxycycline may be given when bowel injury, perforation, or infection is suspected.

During surgery, the surgeon untwists the bowel and checks whether it has a healthy blood supply. With malrotation, a procedure called a Ladd procedure is commonly performed. This usually includes dividing abnormal bands, widening the narrow tissue attachment that allowed twisting, and placing the intestines in a position less likely to twist again.

The appendix is often removed during a Ladd procedure because its new position could make future appendicitis harder to recognise. This does not affect digestion or immune function in a meaningful way.

If a section of bowel has been permanently damaged by loss of blood flow, it may need to be removed. Sometimes the surgeon waits and checks the bowel again in a planned second operation before deciding whether it can recover.

After surgery, feeding usually pauses until the bowel begins working. Fluids and nutrition may be given through a vein. Milk or food is then restarted gradually. The timing depends on the child's condition, the operation, and whether any bowel was removed.

Complications

The main complication is loss of blood flow to the intestine. This can cause tissue death, bleeding, a hole in the bowel, inflammation of the abdominal lining, or sepsis. Sepsis is a dangerous whole-body response to infection.

Removing a large amount of small intestine can lead to short bowel syndrome . The remaining bowel may not absorb enough fluid and nutrients. Some children then need specialist nutrition, medicines, or intravenous nutrition while the intestine adapts.

Possible complications after surgery include wound infection, temporary slowing of the bowel, and blockage caused by internal scar tissue called adhesions. Volvulus can recur after a Ladd procedure, although the operation is intended to reduce this risk. New green vomiting or severe abdominal pain should therefore never be dismissed because a child has already had surgery.

Prevention

Congenital malrotation cannot be prevented. It develops before birth and is not caused by diet, medicines, movement, or parenting choices.

If malrotation is found before it causes symptoms, a paediatric surgical team can discuss the child's individual risk and whether planned surgery is appropriate. Management is not identical for every child, particularly when malrotation is discovered incidentally in an older child.

After abdominal surgery, there is no reliable way to prevent all internal scar tissue or future bowel blockage. Following recovery advice and recognising warning symptoms can help a child receive prompt care if a problem develops.

Living with it and what to expect

Many children recover well when volvulus is treated before substantial bowel damage occurs. Once healing is complete, they may eat normally, take part in usual activities, and need only planned surgical follow-up.

Early recovery may include tiredness, changes in appetite, irregular bowel movements, and discomfort around the incision. The care team will explain wound care, bathing, physical activity, pain relief, and when the child can return to nursery or school.

Routine follow-up checks growth, feeding, bowel function, and recovery from surgery. Contact the child's usual care team if there is ongoing abdominal discomfort, repeated non-green vomiting, poor appetite, constipation, diarrhoea, or concern about growth. These symptoms are not always caused by another twist, but they deserve assessment.

Children who have lost a significant amount of bowel may need longer-term care from paediatric surgery, gastroenterology, and nutrition specialists. Their needs can change as the remaining intestine adapts over months or years. Some need temporary or long-term nutrition through a vein, while others gradually move toward full feeding by mouth.

Surgery lowers the chance of another volvulus but cannot guarantee that future bowel obstruction will never occur. Families should continue to treat green vomiting and sudden severe abdominal pain as urgent symptoms.

When to get medical help

Seek emergency medical care immediately if a baby or child has:

Do not wait for a routine appointment when volvulus is possible. Do not give food or drink unless the emergency team advises it, because anaesthesia and surgery may be needed.

For less urgent concerns, arrange routine medical review for repeated abdominal pain, feeding difficulty, poor growth, persistent changes in bowel habits, or vomiting that keeps returning. If vomit becomes green or the child becomes acutely unwell, seek emergency care instead.

- Dark or bright green vomit
- Sudden, severe, or worsening abdominal pain
- A swollen, hard, or very tender abdomen
- Blood in vomit or stool
- Unusual sleepiness, limpness, confusion, or difficulty waking
- Pale, cold, mottled, or bluish skin
- Breathing difficulty, collapse, or signs of shock
- Repeated vomiting with an inability to keep fluids down

Common questions

Is green vomit always volvulus?

No. Green vomit can have more than one cause, but it may indicate a blockage below the stomach. Because volvulus can damage the bowel quickly, green vomiting in a baby or child needs emergency assessment rather than observation at home.

What is the difference between malrotation and volvulus?

Malrotation is an unusual position and attachment of the intestines that develops before birth. Volvulus is the twisting that can occur because of that arrangement. A child may have malrotation without a current twist, but malrotation can create a lifelong risk of volvulus.

Can volvulus untwist by itself?

A partial twist may occasionally loosen, causing symptoms to improve temporarily. This does not make it safe. The bowel can twist again or remain partly blocked, so suspected volvulus still needs urgent assessment.

Will my child need surgery?

Acute midgut volvulus is usually treated with emergency surgery because the bowel's blood supply may be threatened. When malrotation is found without volvulus or symptoms, the decision about planned surgery is more individual and is discussed with a paediatric surgeon.

Can volvulus come back after surgery?

It can recur, although surgery is performed to make another twist less likely. Internal scar tissue can also cause a different type of bowel blockage. Green vomiting, severe abdominal pain, or abdominal swelling requires urgent assessment even years after surgery.

Can a child live normally after volvulus?

Many children have normal feeding, growth, schooling, and activity after recovery. The outlook is more complicated when a large amount of bowel has been damaged or removed. Those children may need prolonged nutrition support and specialist follow-up.

Sources

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