PROCEDURE

Gastroschisis repair

Gastroschisis repair places a newborn's exposed intestines inside the abdomen and closes the opening.

PURPOSE
Return exposed intestines and close the abdominal opening

PROCEDURE TYPE
Therapeutic surgery, using immediate or staged closure

WHERE IT IS DONE
Operating theatre or neonatal intensive care bedside

ANAESTHESIA
General anaesthesia for surgical closure

HOW LONG IT TAKES
One to three hours; staged reduction continues several days

PREPARATION
No milk feeds; stomach tube, IV fluids, protected bowel

RECOVERY
Several weeks in hospital; no driving restriction for the baby

MAIN RISKS
Infection, bowel injury, breathing problems, intestinal blockage

RESULTS
Closure known immediately; bowel recovery becomes clear over weeks

Overview

Gastroschisis repair is surgery for a baby born with intestines outside the abdomen. The intestines pass through an opening beside the belly button and have no protective sac around them.

The goal is to move the intestines safely into the abdomen and close the opening. This may be done in one operation, called primary closure . If the abdomen is too small or the intestines are too swollen, the repair is completed gradually using a temporary pouch called a silo .

A silo holds and protects the intestines above the abdomen. Over several days, gravity and gentle pressure help move them inside. The opening is then closed with stitches or, in selected cases, with the baby's umbilical cord and a dressing.

Your baby will usually receive care in a neonatal intensive care unit, or NICU, before and after repair.

Why the procedure is performed

Exposed intestines lose heat and fluid and are vulnerable to injury and infection. They also cannot work normally while outside the abdomen.

Repair is performed to:

Before closure, the surgical team examines the bowel. Some babies have an area that is narrowed, blocked, damaged or disconnected. This is called complex gastroschisis and may require additional surgery.

- Protect the intestines
- Return them to the abdominal cavity
- Close the abdominal opening
- Allow feeding and digestion to develop
- Reduce ongoing fluid and heat loss

Who should and should not have it

Gastroschisis repair is needed for nearly every baby born with gastroschisis. The decision is usually about how and when to close the opening rather than whether closure is needed.

Immediate closure may be suitable when the intestines fit into the abdomen without creating unsafe pressure. It may be avoided or delayed if the bowel is very swollen, the abdominal cavity is small, or the baby is not stable enough for an operation.

A staged silo repair may be safer when immediate closure could make it difficult for the baby to breathe or could reduce blood flow to the intestines or other organs.

Closure may also be delayed while the team treats problems such as low body temperature, dehydration, poor blood pressure or breathing difficulty. Severely damaged or blocked bowel may need separate treatment, sometimes including removal of a segment or creation of a temporary stoma , where bowel is brought to the skin.

In exceptionally serious circumstances, such as extensive bowel loss or other life-limiting conditions, the family and care team may discuss whether surgery remains consistent with the baby's goals of care.

How to prepare

Gastroschisis is often found during pregnancy. When possible, delivery is planned at a hospital with a NICU and paediatric surgical team. The method and timing of delivery are decided by the pregnancy and neonatal teams; gastroschisis does not automatically require a caesarean birth.

After birth, the exposed bowel is covered with a sterile plastic wrap or protective bag. This limits heat and fluid loss. The baby is kept warm and receives fluid through an intravenous, or IV, line.

A tube is passed through the nose or mouth into the stomach. This removes swallowed air and fluid, reducing pressure in the digestive system. The baby will not receive milk before repair. Antibiotics and breathing support may also be given.

The surgeon will explain whether immediate closure, a silo or another approach is expected. You will be asked to give consent if you are the baby's parent or legal guardian.

The treating facility's own preparation instructions take priority. Follow its directions about feeding, medicines, testing and arrival arrangements.

What happens during the procedure

For primary closure, the baby receives general anaesthesia and is asleep. The surgical team inspects the intestines for injury, blockage or poor blood supply. The bowel is then placed carefully inside the abdomen.

The opening is closed with stitches. The surgeon may close the skin completely or use a dressing-based, sutureless technique in selected babies.

If a staged repair is safer, the intestines are placed inside a sterile silo. The silo is attached around the abdominal opening and suspended above the baby. The bowel is moved gradually into the abdomen, usually over several days.

Once the bowel is inside and the pressure is acceptable, the opening is closed. Silo placement and adjustment may take place at the NICU bedside. Pain relief and comfort measures are used. Final surgical closure may take place at the bedside or in an operating theatre.

Some babies need a breathing tube because returning the bowel increases pressure inside the abdomen. The team monitors breathing, blood flow, urine output and the appearance of the intestines throughout the process.

Recovery and what to expect afterward

Your baby will receive pain medicine and be watched for signs of discomfort. The team may use facial expression, movement, heart rate and other measures because a newborn cannot describe pain.

Milk feeds cannot usually begin immediately. The intestines often remain temporarily inactive after exposure and surgery. During this period, the stomach tube continues to drain fluid. Nutrition is given through an IV, often using parenteral nutrition , which delivers nutrients directly into the bloodstream.

Small milk feeds begin when stomach drainage decreases and the bowel starts working. Feeds are increased slowly. Some babies need several weeks before they can take enough milk to grow without IV nutrition.

Activity is not restricted in the usual adult sense. Nurses will explain when your baby can be held, have skin-to-skin contact or begin tummy time. These steps may be delayed by IV lines, breathing support or the silo.

Driving restrictions do not apply to the baby. You can drive if you are medically and legally safe to do so. At discharge, your baby should travel in an approved rear-facing car seat as directed by the hospital.

Returning to work is a decision for parents or caregivers. The hospital stay often lasts several weeks, and some babies need feeding support and frequent appointments after discharge. Ask the hospital social worker about leave, travel and accommodation support.

Risks and possible complications

The team balances the need for closure against the pressure created inside the abdomen. Possible complications include:

If bowel is badly damaged, part may need to be removed. Losing a large amount can cause short bowel syndrome , meaning there is not enough intestine to absorb nutrients normally. This is not expected for every baby and is more associated with complex gastroschisis.

- Wound, bloodstream or abdominal infection
- Injury or reduced blood flow to the intestines
- Breathing problems caused by increased abdominal pressure
- Intestinal blockage from scar tissue or narrowed bowel
- Breakdown or reopening of the wound

- An abdominal wall hernia
- Feeding intolerance or slow intestinal movement
- IV-line infection or liver problems during prolonged IV nutrition

Results and follow up

The team knows immediately whether the intestines have been returned and the opening closed. It takes longer to learn how quickly the bowel will recover.

During the hospital stay, progress is judged by stomach drainage, bowel movements, abdominal swelling, feeding tolerance and weight gain. Blood tests monitor hydration, nutrition, infection and liver function.

Your baby can usually go home when they can maintain body temperature, breathe safely, gain weight and receive enough nutrition through the planned feeding method.

Follow-up may involve paediatric surgery, neonatal care, nutrition services and your baby's primary healthcare professional. Some babies need monitoring for reflux, constipation, feeding difficulty, growth problems, hernia or later bowel obstruction.

Alternatives

There is no medicine or nonsurgical treatment that can place exposed intestines permanently inside the abdomen. Without protection and closure, the bowel remains at risk of fluid loss, injury and infection.

The main choices are different methods of repair:

If surgery is unlikely to achieve the agreed goals because of exceptional, severe medical problems, comfort-focused care may be discussed. This is a highly individual decision supported by neonatal, surgical and palliative care teams.

- Primary closure: Completes the repair sooner but may create unsafe abdominal pressure if the bowel does not fit easily
- Staged silo closure: Gives swelling time to decrease and may reduce pressure, but leaves the bowel in a temporary pouch for several days
- Sutureless closure: May avoid a formal stitched skin closure in selected babies, but is not suitable for every opening or bowel problem

- Resection or stoma surgery: Treats damaged or blocked bowel but may require further surgery and can affect nutrition

When to call your healthcare team

While your baby is in the NICU, tell the nurse promptly about any change that concerns you. Continuous monitoring does not replace information from parents and caregivers.

After discharge, contact the healthcare team urgently for:

Call emergency services if your baby has severe trouble breathing, turns blue or grey, becomes unresponsive or has another immediately life-threatening change.

Questions about mild spit-up, stool patterns, scar appearance, feeding plans or routine growth can usually wait for the surgical or primary care follow-up appointment unless symptoms are worsening.

- Green vomit or repeated vomiting
- A firm, increasingly swollen or painful-looking abdomen
- Poor feeding or a sudden drop in feeding
- Fever or an unusually low temperature, using the hospital's thresholds
- Redness, swelling, discharge or opening at the wound
- Fewer wet nappies, unusual sleepiness or difficulty waking
- No stool together with vomiting or abdominal swelling

Common questions

Will my baby be asleep?

Your baby will have general anaesthesia for an operative closure. Silo placement or adjustment may occur in the NICU with pain relief and sedation chosen for the situation.

Can I drive my baby home?

Yes, once the hospital has discharged your baby and you are safe to drive. Use the car seat and positioning recommended by the neonatal team.

How painful is gastroschisis repair?

Your baby may have discomfort from the abdominal opening, silo, operation and medical lines. The team uses regular pain assessments and gives pain medicine as needed.

When will I know if the repair worked?

The surgeon can confirm closure immediately. Bowel function becomes clearer over the following days or weeks as feeds begin and increase.

How long will my baby stay in hospital?

The stay is usually measured in weeks rather than days. It is longer when the bowel is damaged, feeds progress slowly or further surgery is needed.

Will my baby have a normal belly button?

The appearance depends on the opening and closure method. Some children have a small or differently shaped belly button or a visible scar. Later cosmetic surgery is occasionally considered.

Sources

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