PROCEDURE

Omphalocele repair

Omphalocele repair places a baby's abdominal organs inside the abdomen and closes or covers the opening.

PURPOSE
Return exposed organs and close or cover the abdominal wall

PROCEDURE TYPE
Therapeutic surgery, using open repair or staged surgical closure

WHERE IT IS DONE
Operating theatre

ANAESTHESIA
General anaesthesia

HOW LONG IT TAKES
About 1 to 4 hours for each operation

PREPARATION
Fasting, stomach drainage, intravenous fluids, and assessment for other conditions

RECOVERY
Usually weeks in hospital; caregivers provide transport home

MAIN RISKS
Infection, breathing problems, bowel injury, and wound breakdown

RESULTS
Closure known immediately; feeding and breathing recovery takes longer

Overview

Omphalocele repair is surgery for a baby born with an opening in the abdominal wall at the belly button. Part of the intestine, liver, or other abdominal organs may be outside the body within a thin protective sac.

The aim is to protect these organs, move them safely into the abdomen, and close the opening. Doctors may call an omphalocele an exomphalos.

A small omphalocele can sometimes be closed in one operation. A large or "giant" omphalocele often needs a staged approach. The organs are moved inward gradually, or the sac is treated so skin grows over it before a later repair.

The best approach is based on the opening's size, which organs are involved, the amount of

room inside the abdomen, and the baby's heart, lungs, and overall stability.

Why the procedure is performed

Repair creates a protective abdominal wall around the organs. It also places the bowel and other organs into a position that supports feeding, movement, and growth.

Without suitable protection, the sac could break or become infected. The exposed organs could also be injured or lose heat and fluid.

Babies with an omphalocele may have heart, lung, chromosome, or genetic conditions. These do not result from the operation, but they can affect its timing and the baby's recovery. Assessing them helps the team plan the safest form of repair.

Who should and should not have it

Most babies with an omphalocele need surgical closure or another planned method of covering the organs. However, immediate one-stage surgery is not right for every baby.

Primary closure may be suitable when the organs fit inside the abdomen without causing excessive pressure. It may be avoided or delayed when:

A torn sac usually requires urgent protection and surgical assessment, although the exact operation still depends on the baby's condition.

Rarely, severe associated conditions may mean surgery is unlikely to provide meaningful benefit. In that situation, the family and specialist team may discuss supportive or comfort-focused care alongside the available surgical choices.

- The omphalocele is very large or contains much of the liver
- The baby's abdomen does not yet have enough space
- The baby has serious breathing or circulation problems
- Major heart or lung conditions need treatment first
- Closing the abdomen would place unsafe pressure on the lungs or blood vessels
- The protective sac is intact and gradual treatment is safer

How to prepare

Many omphaloceles are found during pregnancy. Parents may meet specialists in maternal-fetal medicine, newborn care, pediatric surgery, cardiology, genetics, and anaesthesia before delivery. Birth is often planned at a hospital with a neonatal intensive care unit and pediatric surgery service.

After birth, the team protects the sac with a sterile covering and keeps the baby warm. The baby will not be fed by mouth at first. A tube through the nose or mouth may drain the stomach, while intravenous fluids provide water and sugar.

Tests may include heart ultrasound, abdominal imaging, chromosome or genetic testing, and blood tests. These check for associated conditions and help guide the timing of surgery.

The surgeon and anaesthetist will explain the proposed repair, possible staged treatment, major risks, and whether blood products might be needed. The treating facility's own fasting, testing, medicine, and arrival instructions take priority over general information.

What happens during the procedure

Your baby receives general anaesthesia and is asleep throughout the operation. The anaesthesia team monitors breathing, heart rate, blood pressure, temperature, and oxygen levels.

For a primary repair, the surgeon examines the sac and organs. The organs are carefully placed into the abdomen. The muscle layer, called fascia, is then closed when this can be done without excessive pressure. The skin is closed over it.

For staged closure, the organs may be held in a sterile pouch called a silo. Over several days, gentle pressure helps move them into the abdomen. A later operation closes the abdominal wall.

With a large omphalocele, the team may recommend delayed treatment sometimes called "paint and wait." Medicine and dressings are applied to the intact sac so it dries and becomes covered by skin. This leaves a temporary bulge, or ventral hernia, which can be repaired when the child is older and the abdomen has grown.

Some babies need a breathing tube, central intravenous line, or additional monitoring after surgery.

Recovery and what to expect afterward

Pain is treated with medicines chosen for your baby's age, condition, and type of repair. The

team watches for signs of discomfort such as restlessness, changes in heart rate, or difficulty settling.

Feeding usually starts only after the bowel begins working. Milk may initially be given in small amounts through a feeding tube and increased gradually. Intravenous nutrition may be needed while the bowel recovers. Feeding can take longer after a large or staged repair.

Activity is naturally limited for a newborn. Nurses will explain when you can hold, comfort, and provide skin-to-skin care. Once home, follow the surgical team's advice about lifting, tummy time, bathing, and protecting the wound.

Driving restrictions do not apply to the baby. A caregiver must take the baby home in an approved car seat. Adults should not drive if they have taken sedating medicines or are too tired to drive safely.

The hospital stay may last several weeks and is often longer for a giant omphalocele or associated heart and lung problems. A caregiver's return to work therefore depends on the baby's hospital course, feeding needs, and follow-up plan.

Risks and possible complications

The surgical and anaesthesia teams take steps to reduce risk, but complications remain possible.

Important risks include bleeding, infection, injury to the bowel or other organs, and problems with the wound. If the abdomen is closed under too much pressure, breathing and blood flow to the organs can be affected. The team measures and watches for these effects closely.

Other possible problems include:

A baby's overall outlook is often influenced as much by associated heart, lung, chromosome, or genetic conditions as by the abdominal repair itself.

- A leak or blockage in the bowel
- Delayed bowel function and difficulty establishing feeds
- Breakdown or infection of the protective sac
- A hernia or weakness at the repair site
- Scar tissue that later causes bowel obstruction
- A need for another operation

Results and follow up

The surgeon can usually tell immediately whether primary closure was completed or whether further staged procedures are needed. Recovery is judged over time by breathing, circulation, wound healing, bowel function, feeding, and growth.

Before discharge, you should receive instructions about wound care, feeding, bathing, pain relief, and activity. Routine follow-up usually includes appointments with pediatric surgery and the baby's primary care team. Other specialists may follow heart, lung, developmental, or genetic concerns.

Some children later need surgery for a ventral hernia, a weak scar, or another planned stage of reconstruction. Growth, nutrition, and development may also need ongoing review.

Alternatives

The alternatives are different repair strategies rather than equally effective ways to leave the omphalocele untreated.

Primary closure finishes the abdominal repair sooner. Its trade-off is that it may create unsafe pressure when the abdomen is too small.

Staged silo closure gives the abdomen time to accept the organs gradually. It usually means more time in intensive care and at least one later closure procedure.

"Paint and wait" avoids forcing a large omphalocele into the abdomen during the newborn period. It requires prolonged sac care and leaves a hernia that may need surgery months or years later.

Leaving the organs unprotected is not a safe substitute because of the risk of sac rupture, infection, fluid loss, and injury. When major associated conditions greatly limit the expected benefit of surgery, comfort-focused care may be discussed as a separate, family-centred option.

When to call your healthcare team

While your baby is in hospital, tell the bedside team about any new change. After discharge, contact the surgical team promptly for poor feeding, repeated vomiting, increasing pain, fewer wet diapers, new abdominal swelling, wound redness, drainage, bleeding, or a temperature at or above the threshold in your discharge instructions. Green vomit needs urgent assessment.

Call emergency services for trouble breathing, blue or grey skin, unusual unresponsiveness,

severe swelling with distress, major bleeding, or a wound that opens and exposes tissue or organs.

Questions about dressings, feeding progression, scar appearance, and appointment timing can usually wait for routine office hours unless there is a sudden change.

Common questions

Will my baby be asleep?

Yes. Omphalocele repair is performed under general anaesthesia. Your baby will be asleep and continuously monitored.

How painful is it?

The incision and abdominal pressure can cause pain. The team uses regular pain assessments and provides medicine during and after surgery. You can also help by speaking softly, touching, holding, or providing skin-to-skin care when permitted.

Can we drive home after surgery?

A caregiver can drive the baby home once discharge is approved. The baby must travel in a suitable car seat. The driver should be rested and should not have taken sedating medicine.

When will we know if the repair worked?

The surgeon will explain the immediate result after the operation. It takes longer to know how well the bowel, lungs, feeding, and wound are recovering.

Will my baby need another operation?

Possibly. A staged repair requires later closure, while paint-and-wait treatment usually leaves a hernia for future repair. Some children also need surgery for a wound problem or later hernia.

How long will my baby be in hospital?

Many babies remain in hospital for weeks. The timing is guided by breathing, feeding, wound healing, associated conditions, and whether the repair was completed in one stage.

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