PROCEDURE

Patent urachus repair

Patent urachus repair is surgery to close and remove an abnormal connection between the bladder and the navel.

PURPOSE
Close bladder-to-navel connection and remove abnormal urachal tissue

PROCEDURE TYPE
Therapeutic surgery, usually open or minimally invasive

WHERE IT IS DONE
Operating theatre

ANAESTHESIA
General

HOW LONG IT TAKES
About 1-3 hours, based on approach and complexity

PREPARATION
Fasting, medication review, and treatment of active infection

RECOVERY
Same day or overnight; no driving after general anaesthesia

MAIN RISKS
Infection, bleeding, bladder leak, injury to nearby organs

RESULTS
Repair confirmed immediately; tissue testing usually takes several days

Overview

A patent urachus is an abnormal open channel between the bladder and the navel, also called the belly button. Before birth, the urachus connects the developing bladder to the umbilical cord. It normally closes before birth and becomes a band of tissue.

Patent urachus repair closes the opening in the bladder and removes the remaining channel. The surgeon may also remove a small cuff of bladder tissue around the connection so that the opening can be closed securely.

The operation may be performed through a small lower abdominal incision. Some surgeons use laparoscopic or robotic surgery, which uses a camera and instruments placed through several small cuts. The best approach is based on age, anatomy, infection, previous surgery, and the surgical team's experience.

Why the procedure is performed

Repair may be recommended when a urachus remains fully open and allows urine to pass from the bladder to the navel. Surgery may also be considered when a urachal remnant causes repeated infection, pain, drainage, or skin irritation.

The goals are to:

An ultrasound or other imaging test is usually used to confirm the anatomy. In some cases, the healthcare team may need to rule out another cause of drainage from the navel.

- Stop urine or fluid leaking through the navel
- Reduce repeated infections and skin problems
- Close the abnormal opening in the bladder
- Remove tissue that could cause future problems

Who should and should not have it

Repair is most often offered for a confirmed patent urachus that remains open, leaks urine, or causes repeated problems. Although it is often found in babies and children, adults can also need treatment.

Surgery may not be the right first step for every urachal finding. A small, symptom-free urachal remnant found by chance may sometimes be monitored, especially in a young infant. Some remnants close or become less noticeable without an operation.

An operation may be delayed when there is an active abscess or significant infection. Antibiotics like amoxicillin or doxycycline , drainage, or both may be used first. Once the infection has settled, surgery can be planned under safer conditions. In selected cases, the surgical team may recommend treatment in one operation instead.

Surgery may also be postponed if you are not well enough for general anaesthesia, have an uncontrolled medical condition, or are taking a medicine that creates an unacceptable bleeding risk. These issues are reviewed individually rather than being automatic reasons to avoid repair.

If imaging suggests a mass or possible urachal cancer, the operation may need to be more extensive than a standard patent urachus repair. This is mainly a concern in adults and requires specialist urological assessment.

How to prepare

Follow the treating facility's own instructions first, because its fasting, medication, and arrival rules take priority.

You will be told when to stop eating and drinking before general anaesthesia. Not following the fasting instructions may mean the operation must be delayed.

Give the surgical team an up-to-date list of medicines, vitamins, and supplements. Blood thinners and some diabetes medicines may need special planning. Do not stop a prescribed medicine unless the treating team tells you to.

Before surgery, you may have blood tests, a urine test, and imaging such as an ultrasound. Occasionally, a test that shows the bladder during urination is needed to look for another urinary problem.

Tell the team about allergies, previous reactions to anaesthesia, pregnancy or possible pregnancy, recent illness, fever, or signs of infection around the navel. Arrange transport home and help afterward if the operation is planned as day surgery.

What happens during the procedure

You receive general anaesthesia, so you are unconscious and do not feel the operation. Monitoring equipment tracks your breathing, heart rate, blood pressure, and oxygen level.

A urinary catheter-a soft tube that drains urine from the bladder-may be placed. The surgeon then reaches the urachus through an open incision or through small laparoscopic or robotic incisions.

The tract is separated from the surrounding tissue and removed. The surgeon closes the connection at the top of the bladder, sometimes after removing a small cuff of bladder wall. The bladder closure may be filled with sterile fluid to check for a leak.

The navel end of the tract is also treated. How much of the navel is removed or reshaped depends on how the tract is attached and whether infection has damaged the tissue.

Removed tissue is usually sent to a laboratory for examination under a microscope. The incisions are closed with stitches, skin adhesive, or both. Some stitches dissolve on their own.

Recovery and what to expect afterward

Pain is usually felt around the incision sites and lower abdomen. It should gradually improve. You may receive pain medicine and instructions for using it safely. Contact the team if pain is

worsening rather than improving.

You can usually start with clear fluids and then return to regular food as nausea settles. Temporary nausea, reduced appetite, or constipation can occur after anaesthesia and pain medicine.

Gentle walking is encouraged. Avoid strenuous exercise, heavy lifting, swimming, and activities that pull on the incisions until the surgical team says they are safe. Keep the wounds clean and follow the team's bathing instructions.

Do not drive home. General anaesthesia and prescription pain medicines can affect coordination and judgment. Follow the facility's instructions about when driving can restart.

Return to work or school is based on the surgical approach, comfort, and physical demands involved. Desk-based activities may restart sooner than heavy physical work. Ask for written activity restrictions before leaving.

Some people go home the same day; others stay overnight or longer. If a urinary catheter remains in place, the team will explain how to care for it and when it will be removed.

Risks and possible complications

The surgical team will explain risks that apply to your planned approach. Possible complications include:

A bladder leak may require the catheter to remain in longer. Further treatment or another operation is occasionally needed for a significant leak, infection, injury, or recurrent tract.

Minimally invasive surgery can sometimes need to be changed to an open operation if the anatomy is unclear, there is severe inflammation, or the procedure cannot be completed safely through small incisions.

- Bleeding or infection
- Urine leaking from the bladder closure
- Injury to the bladder, bowel, blood vessels, or nearby structures
- Problems emptying the bladder after catheter removal
- Scarring, numbness, or a hernia at an incision
- Persistent drainage or recurrence of the abnormal tract
- Reactions related to general anaesthesia

Results and follow up

The surgeon can usually tell immediately whether the tract was removed and the bladder opening was closed. You may receive an initial explanation after the operation, once you or your caregiver can discuss it clearly.

Laboratory examination of the removed tissue generally takes several days. The healthcare team will explain how and when you will receive that report.

Routine follow-up checks wound healing, urination, pain, and recovery. If you have a catheter, drain, or non-dissolving stitches, follow-up may also include removing them. Additional imaging is not always needed after an uncomplicated repair, but it may be arranged if symptoms continue or the anatomy was complex.

Alternatives

The real alternatives depend on whether the channel is fully open, whether urine is leaking, and whether infection is present.

For a persistent patent urachus that is leaking urine, observation or antibiotics usually trade definitive closure for continued monitoring and the possibility of further leakage or infection.

- Observation: Avoids surgery and anaesthesia. It may be reasonable for selected symptom-free remnants, particularly in young infants, but requires follow-up and does not immediately close a persistent urine-leaking connection.
- Antibiotics: Treat a bacterial infection but do not remove or close the urachus. Infection can return if the underlying channel remains.
- Drainage of an abscess: Relieves a collection of infected fluid. It may make later surgery safer, but it is not usually a permanent repair.
- Open surgery: Uses one larger incision and gives direct access to inflamed or complex tissue. Recovery and scarring may be greater than with minimally invasive surgery.
- Laparoscopic or robotic surgery: Uses smaller incisions and may support a faster recovery. It requires suitable equipment and expertise and may still need conversion to an open operation.

When to call your healthcare team

Contact the surgical team promptly for fever, increasing redness, warmth, swelling, pus, worsening pain, repeated vomiting, a swollen abdomen, or a wound that opens. Also call if urine

or clear fluid starts leaking from the navel or an incision.

Seek same-day medical advice if you cannot pass urine, the catheter stops draining, urine leaks around the catheter with increasing discomfort, or there is new blood in the urine that does not settle.

Call emergency services for trouble breathing, chest pain, fainting, severe weakness, uncontrolled bleeding, or difficulty waking after pain medicine. These are emergency symptoms, not routine postoperative concerns.

Mild bruising, manageable soreness, tiredness, and a small amount of clear or blood-tinged wound staining can occur early in recovery. Mention concerns at routine follow-up if they are improving and no urgent features are present.

Common questions

Will I be asleep?

Yes. Patent urachus repair is normally performed under general anaesthesia, so you are unconscious throughout the operation.

Can I drive home?

No. Arrange for a responsible adult to take you home. Do not drive again until the effects of anaesthesia and sedating pain medicines have passed and the surgical team's restrictions are met.

How painful is it?

Expect soreness around the lower abdomen and incisions. Pain is usually controlled with the medicines recommended by the team and should improve over time. Worsening or severe pain needs medical review.

Will I need a urinary catheter?

A catheter is commonly used during surgery. It may be removed before discharge or left in place while the bladder closure heals. The surgeon will explain the plan.

When will I know whether it worked?

The surgeon usually knows during the operation whether the connection was removed and closed. Healing is confirmed through recovery, urination, wound checks, and follow-up.

When will the laboratory result be ready?

Microscopic examination of the removed tissue usually takes several days. Ask how results will be communicated, because reporting systems differ between facilities.

Sources

- Naiditch JA, Radhakrishnan J, Chin AC. "Current diagnosis and management of urachal remnants." Journal of Pediatric Surgery . 2013;48(10):2148-2152.
- Ghattas YS, Gelikman DG, Ibanez KR, et al. "Current management strategies of urachal anomalies in pediatric patients: A scoping review." Frontiers in Urology . 2023;3.
- Gleason JM, Bowlin PR, Bagli DJ, et al. "A comprehensive review of pediatric urachal anomalies and predictive analysis for adult urachal adenocarcinoma." The Journal of Urology . 2015;193(2):632-636.
- StatPearls Publishing. "Patent Urachus." StatPearls , NCBI Bookshelf.
- Children's Hospital of Philadelphia. "Urachal Abnormalities."
- Cleveland Clinic. "Urachal Remnant: Symptoms, Diagnosis and Treatment."