CONDITION

Hydrocele

A hydrocele is a fluid-filled swelling around a testicle, usually causing painless enlargement of the scrotum.

WHAT IT IS
Fluid-filled swelling around one or both testicles

BODY SYSTEM
Male reproductive system

MAIN SYMPTOMS
Scrotal swelling, heaviness, discomfort, changing size

WHAT CAUSES IT
Trapped fluid, open abdominal passage, inflammation, or injury

HOW IT IS DIAGNOSED
Physical examination, sometimes scrotal ultrasound

MAIN TREATMENT
Observation or surgery

CAN IT BE CURED?
Yes - surgery usually corrects it

IS IT AN EMERGENCY?
Sometimes - sudden severe pain needs emergency assessment

LONG-TERM OUTLOOK
Usually harmless; treatment effective when swelling causes problems

Overview

A hydrocele is a collection of clear fluid around a testicle. The fluid sits inside a thin lining within the scrotum, the skin-covered sac that holds the testicles. It may affect one or both sides.

Hydroceles are common in newborn boys because of how the testicles develop before birth. They can also appear later in childhood or adulthood. An adult hydrocele may develop without an obvious cause or after inflammation, injury, infection, or surgery in the groin or scrotum.

Most hydroceles are not dangerous. They often cause painless swelling rather than illness. However, any new scrotal swelling should be examined because a hydrocele can look similar to a hernia, infection, testicular torsion, or a growth in the testicle.

A hydrocele is not cancer and does not turn into cancer. It can sometimes make the testicle

difficult to feel, so an examination or ultrasound may be needed to check the structures underneath.

Symptoms

The main sign is swelling on one or both sides of the scrotum. It may be small and barely noticeable, or large enough to feel heavy or get in the way of walking, exercise, clothing, or sexual activity.

Possible symptoms include:

In babies, the swelling may change in size. It can become smaller while the baby is resting and larger when the baby cries or strains. This may suggest a communicating hydrocele, where fluid can move between the abdomen and scrotum.

Pain is not a typical feature of a simple hydrocele. Sudden or severe pain, marked tenderness, redness, fever, nausea, or vomiting may point to another condition and needs prompt assessment.

- Painless or mildly uncomfortable scrotal swelling
- A feeling of weight, pressure, or fullness
- Swelling that becomes larger during the day
- Difficulty feeling the testicle through the fluid
- Irritation of the surrounding skin when the hydrocele is large

Causes and risk factors

Before birth, each testicle usually moves from the abdomen into the scrotum through a temporary passage. This passage normally closes around the time of birth.

If it remains open, fluid from the abdomen can move into the scrotum. This is called a communicating hydrocele. The same opening may also allow part of the intestine to enter the groin or scrotum, causing an inguinal hernia.

If the passage closes but some fluid remains around the testicle, the result is a noncommunicating hydrocele. The body often absorbs this fluid during infancy.

Babies born prematurely have a higher chance of having a hydrocele because the passage may not have had time to close before birth. In many babies, there is no other health problem.

In older children and adults, a hydrocele may form when the lining around a testicle produces

more fluid than it can absorb. Possible triggers include:

In many adults, no specific cause is found. This is sometimes called an idiopathic hydrocele, meaning that the cause is unknown.

- Injury to the scrotum
- Inflammation or infection of the testicle or epididymis, the coiled tube behind it
- Previous groin or scrotal surgery
- A testicular or nearby growth
- Problems with lymph drainage, which normally carries excess tissue fluid away

Diagnosis

A clinician usually begins by asking when the swelling appeared, whether it changes size, and whether there is pain, fever, injury, or previous surgery. The groin and scrotum are then examined, often while you are standing and lying down.

The swelling may be gently felt to check its size, tenderness, and relationship to the testicle. The groin may also be checked for a hernia.

A light may be shone through the scrotum. Clear fluid often allows light to pass through, a finding called transillumination. This can support the diagnosis, but it cannot reliably rule out every other cause of swelling.

A scrotal ultrasound may be arranged when the diagnosis is uncertain, the testicle cannot be felt clearly, or there is pain or another concerning feature. Ultrasound uses sound waves rather than radiation. It can show fluid and examine the testicle, blood flow, and surrounding tissues.

Urine or blood tests are not usually needed for an uncomplicated hydrocele. They may be used when symptoms suggest infection or another underlying condition.

Treatment and management

Treatment is based on age, the type and size of the hydrocele, symptoms, and whether a hernia or another condition is present.

Many hydroceles in babies disappear as the fluid is absorbed and the passage closes. A period of observation is often appropriate when the swelling is uncomplicated and the testicle is otherwise normal. Follow-up helps confirm that the swelling is improving and that a hernia has not appeared.

Surgery may be considered when a childhood hydrocele persists, becomes very large, or is associated with a hernia or another testicular problem. A communicating hydrocele is treated by closing the open passage between the abdomen and scrotum.

Adults with a small, painless hydrocele may not need active treatment. Regular review may be reasonable if the diagnosis is clear and the swelling is not causing problems. There is no medicine that reliably makes a simple hydrocele disappear.

Surgery, called hydrocelectomy, is the main treatment when a hydrocele causes discomfort, continues to enlarge, affects daily life, or makes examination of the testicle difficult. The surgeon drains the fluid and removes, turns back, or repairs the lining that produced it. The exact method differs between adult and childhood hydroceles.

Bruising, swelling, and soreness are expected for a time after surgery. Supportive underwear and temporary limits on strenuous activity may be advised. Recovery instructions differ according to the operation and your general health.

Fluid can also be removed through a needle. This is called aspiration. The fluid often returns because the lining remains in place. Aspiration, sometimes combined with an irritating substance intended to seal the space, may be considered when surgery is unsuitable. It can cause pain, infection, inflammation, or recurrence and is not the usual first treatment for otherwise healthy children.

Any underlying infection, injury, hernia, or testicular condition requires its own treatment.

Complications

A simple hydrocele often causes no lasting harm. Larger hydroceles can cause heaviness, discomfort, skin irritation, difficulty exercising, or problems with sexual activity.

A hydrocele may make it harder to examine the testicle. This can delay recognition of a separate problem unless the swelling is assessed properly. The hydrocele itself does not become cancer.

A communicating hydrocele can occur with an inguinal hernia. Rarely, bowel can become trapped in the hernia. A painful, firm swelling that cannot be pushed back, especially with vomiting or abdominal pain, needs emergency assessment.

Possible complications of hydrocele surgery include bleeding, a collection of blood called a hematoma, infection, persistent swelling, recurrence, and injury to nearby structures. Serious damage to the testicle or structures involved in fertility is uncommon but possible.

Prevention

A congenital hydrocele cannot usually be prevented. It results from a passage that has not yet closed during development before birth. Nothing a parent did during pregnancy causes it.

Many adult hydroceles also cannot be prevented because they develop without a clear cause. Protecting the groin during contact sports may reduce the chance of injury. Prompt assessment of scrotal pain, infection symptoms, or a new lump can help identify an underlying problem early, but it cannot prevent every hydrocele.

Living with it and what to expect

In babies, many uncomplicated hydroceles become smaller and disappear during the first year or two of life. The chance of spontaneous improvement becomes lower as a hydrocele persists with age. A communicating hydrocele or associated hernia may need surgery rather than continued observation.

An adult hydrocele may stay about the same size or gradually enlarge. It does not usually disappear on its own. Some people live with a small hydrocele for years without treatment, while others choose surgery because of pressure, appearance, activity limits, or difficulty examining the testicle.

If observation is recommended, follow-up is routine rather than urgent. Report changes such as increasing size, new firmness, pain, redness, or difficulty feeling the testicle. A change does not necessarily mean something serious, but it may justify another examination or ultrasound.

Surgery usually corrects the fluid collection, although recurrence is possible. Temporary swelling after the operation can make the scrotum look enlarged at first. Healing and return to usual activities take time and differ from person to person.

A hydrocele does not usually affect sexual function or fertility. Very large hydroceles, an underlying testicular condition, or complications from treatment may have a greater effect. If fertility is a concern, it can be discussed during routine care.

When to get medical help

Arrange a routine medical appointment for any new scrotal swelling, even when it is painless. Babies and children with scrotal swelling should also be examined so that a communicating hydrocele and hernia can be considered.

Seek prompt same-day care if the swelling becomes painful, red, hot, rapidly larger, or is accompanied by fever. These features may suggest infection, bleeding, inflammation, or another condition.

Get emergency help for:

Sudden testicular pain can be caused by testicular torsion, in which the spermatic cord twists and cuts off blood flow. It requires urgent treatment and should not be assumed to be pain from a hydrocele.

- Sudden, severe testicular or scrotal pain
- Pain with nausea or vomiting
- A testicle that appears higher or at a different angle
- A painful, firm groin or scrotal lump that does not settle
- Severe swelling or pain after an injury

Common questions

Can a hydrocele go away on its own?

Many hydroceles in babies disappear as the remaining fluid is absorbed and the passage from the abdomen closes. Hydroceles that develop in adults are less likely to go away without treatment, although a small one may remain stable and cause no problems.

Is a hydrocele cancer?

No. A hydrocele is a collection of fluid, not cancer, and it does not become cancer. However, fluid can make the testicle difficult to examine. Ultrasound may be used to make sure there is no separate condition underneath.

Does a hydrocele affect fertility?

An uncomplicated hydrocele usually does not affect sperm production or fertility. Fertility may be affected by an underlying testicular problem or, uncommonly, by complications involving nearby structures.

What is the difference between a hydrocele and a hernia?

A hydrocele contains fluid. An inguinal hernia occurs when tissue, often part of the intestine, passes through a weak or open area in the groin. They can occur together, particularly in babies and children. A painful hernia containing trapped bowel can be an emergency.

Is hydrocele surgery painful?

The operation is performed with anaesthesia. Soreness, bruising, and swelling are common

during recovery and usually improve with time. Your surgical team will explain pain relief, wound care, activity limits, and signs of complications.

Can draining a hydrocele cure it?

Removing fluid with a needle can reduce swelling temporarily, but the fluid often returns because the surrounding lining is still present. Surgery provides a more lasting repair for people who need treatment.

Sources

- European Association of Urology, EAU Guidelines on Paediatric Urology: Hydrocele
- NHS, Hydrocele
- Mayo Clinic, Hydrocele: Symptoms and causes
- Mayo Clinic, Hydrocele: Diagnosis and treatment
- American College of Radiology, ACR Appropriateness Criteria: Newly Diagnosed Palpable Scrotal Abnormality
- Crawford P, Crop JA. Evaluation of Scrotal Masses. American Family Physician. 2014;89(9):723-727
- Shakiba B, Heidari K, Jamali A, Afshar K. Aspiration and sclerotherapy versus hydrocoelectomy for treating hydrocoeles. Cochrane Database of Systematic Reviews. 2014