CONDITION

Undescended testicle

An undescended testicle has not moved into its usual position in the scrotum.

WHAT IT IS
Testicle remaining outside its usual scrotal position

BODY SYSTEM
Reproductive system

MAIN SYMPTOMS
Empty scrotum, testicle not felt, asymmetry, usually no pain

WHAT CAUSES IT
Usually unknown; development, hormones, and anatomy contribute

HOW IT IS DIAGNOSED
Physical examination; laparoscopy for a nonpalpable testicle

MAIN TREATMENT
Surgery to move and secure the testicle

CAN IT BE CURED?
Yes - surgery usually secures it in the scrotum

IS IT AN EMERGENCY?
Sometimes - sudden pain may mean testicular torsion

LONG-TERM OUTLOOK
Usually good after early treatment, with ongoing cancer awareness

Overview

An undescended testicle, also called cryptorchidism, is a testicle that has not moved into the scrotum before birth. The scrotum is the pouch of skin below the penis. One or both testicles can be affected.

The testicles develop inside the abdomen during pregnancy. They usually travel through the groin and enter the scrotum before birth. An undescended testicle may stop anywhere along this route. Less often, it moves into a different location, such as the upper thigh or area beside the penis.

Many testicles descend naturally during the first few months after birth, particularly in babies born early. Descent after about 6 months of corrected age is unlikely. Corrected age accounts for how many weeks early a baby was born.

The condition matters because the scrotum keeps the testicles slightly cooler than the rest of the body. This supports future sperm production. An untreated undescended testicle has higher risks of reduced fertility, testicular cancer, twisting and injury.

Moving the testicle into the scrotum does not remove every long-term risk. However, it protects its position, makes examination easier and may improve future fertility potential.

Symptoms

An undescended testicle usually causes no pain or illness. It is often noticed during a newborn examination or routine childhood check.

Possible signs include:

A testicle may sometimes be in the scrotum and sometimes higher up. This may be a retractile testicle . A normal muscle reflex temporarily pulls it toward the groin, especially when the child is cold, anxious or being examined. A retractile testicle can usually be moved gently into the scrotum and remain there briefly.

A testicle that was previously in the scrotum can later stay in the groin. This is called an ascending or acquired undescended testicle . It needs medical assessment.

Sudden severe pain is not a routine symptom. It may signal twisting of the testicle, called testicular torsion, and requires emergency care.

- One side of the scrotum looking smaller or less developed
- A testicle that cannot be felt in the scrotum
- Both sides of the scrotum appearing empty
- A small lump that can be felt in the groin

Causes and risk factors

In most cases, there is no single clear cause. Testicular descent is a complex part of development involving hormones, nerves, muscles and the tissues of the groin.

Factors linked with a higher chance of an undescended testicle include:

These factors do not mean a child will have the condition. Many affected babies have no known risk factor.

An undescended testicle is not caused by something a parent did during ordinary pregnancy or infant care. It also cannot be pushed into place at home.

- Premature birth
- Low birth weight
- A close family history of undescended testicles
- Conditions affecting fetal growth or hormone development
- Differences in the development of the genitals or urinary tract

Diagnosis

Diagnosis usually begins with a physical examination. A healthcare professional feels the scrotum and groin while the child is warm and relaxed. This helps distinguish an undescended testicle from a retractile one.

A testicle may be:

Ultrasound, MRI and CT scans usually do not reliably show where a nonpalpable testicle is and generally do not change the initial plan. A specialist can often make decisions based on examination.

For a nonpalpable testicle, keyhole surgery called laparoscopy may be used. A small camera is passed through an opening in the abdomen to find the testicle or confirm that it is absent. Treatment can often begin during the same procedure.

If both testicles cannot be felt, especially when the genitals look different from expected, prompt specialist assessment is important. Blood tests may be needed to examine hormone production and development.

- Palpable: it can be felt in the groin or near the scrotum
- Nonpalpable: it cannot be felt during examination
- Ectopic: it has moved outside the normal route of descent
- Absent or severely underdeveloped: it did not form normally or lost its blood supply before birth

Treatment and management

A baby's testicles may be observed during the first few months because natural descent can still happen. If a testicle has not descended by around 6 months of corrected age, referral to a children's surgical or urology specialist is generally appropriate. Treatment is usually completed during early childhood rather than waiting for school age.

The main treatment is orchiopexy , an operation that moves the testicle into the scrotum and secures it there. It is performed under general anaesthesia.

For a testicle that can be felt in the groin, the surgeon usually makes a small cut in the groin and another in the scrotum. The surrounding tissues are freed so the testicle can reach the scrotum without tension.

A testicle inside the abdomen is often treated using laparoscopy. If its blood vessels are too short, treatment may require more than one operation.

Most children go home on the day of surgery or after a short stay. Temporary bruising, swelling and discomfort are expected. The surgical team will give instructions about pain relief, bathing, wound care and when to resume active play.

If a testicle is severely damaged or underdeveloped, removing it may sometimes be safer than moving it. This is more likely to be considered in an older teenager or adult with a normal testicle on the other side. The decision should include discussion of fertility, hormone function, cancer risk and personal preferences.

Hormone injections or nasal hormone treatments have been used to encourage descent. Success is limited, and the testicle may rise again. Because recommendations differ between healthcare systems and individual situations, surgery remains the main treatment in many settings.

A testicular prosthesis is an optional implant that can improve the appearance or balance of the scrotum. It does not produce sperm or hormones. Timing can be discussed with a specialist.

Complications

An undescended testicle can affect the cells that later produce sperm. The chance of fertility problems is higher when both testicles are affected, when the testicle is high inside the abdomen or when treatment is delayed. Many people with one affected testicle and a healthy testicle on the other side have normal fertility.

The risk of testicular cancer is higher than average. Orchiopexy places the testicle where changes are easier to notice and may lower risk when performed early, but it does not remove the risk completely.

Other possible complications include:

Surgery also has risks, including bleeding, infection, injury to nearby structures, the testicle moving upward again or loss of blood supply. Serious complications are uncommon, but the

surgeon should explain the risks for the planned procedure.

- Testicular torsion, in which the spermatic cord twists and blocks blood flow
- An inguinal hernia, where bowel or tissue pushes through the groin
- Injury to a testicle located in the groin
- Reduced growth or shrinkage of the affected testicle
- Concerns about body image or scrotal appearance

Prevention

An undescended testicle usually cannot be prevented. It develops before birth, and there is no proven action that guarantees normal testicular descent.

Good pregnancy care supports health overall, but a diagnosis should not be viewed as the result of a parent's behaviour. The useful focus is early recognition, follow-up and treatment at the appropriate time.

Living with it and what to expect

After successful orchiopexy, most children grow, attend school, play sports and go through puberty normally. The testicle may remain slightly smaller than the other one. Its position and growth are usually checked at follow-up appointments.

Some testicles move upward again or do not grow as expected. This is why postoperative follow-up matters even when recovery seems straightforward. A retractile testicle also needs periodic examination during childhood because it can later become an ascending testicle.

Having one healthy testicle is usually enough for normal testosterone production, puberty, sexual function and fertility. Testosterone is the main hormone responsible for male puberty and many adult sexual characteristics.

When both testicles were undescended, future sperm production is less predictable. Fertility testing is not usually useful in a young child but may be discussed after puberty or when planning a pregnancy.

As the child grows older, they should learn what their testicles normally feel like and report a new lump, swelling, firmness or lasting ache. This is awareness rather than a guarantee of preventing cancer. A healthcare professional can explain age-appropriate self-examination if appropriate.

An adult who still has an undescended testicle can also be assessed. Management may involve orchiopexy, removal or observation, based on the testicle's location and condition, the health of the other testicle, fertility goals and personal preferences.

When to get medical help

Arrange a routine medical appointment if:

Seek emergency care for sudden severe pain in the scrotum, groin or lower abdomen, especially with swelling, vomiting or a testicle sitting higher than usual. These can be signs of testicular torsion. Blood flow may be at risk, so do not wait for a routine appointment.

A painful groin bulge with vomiting, marked swelling or distress may be a trapped hernia and also needs urgent assessment.

After surgery, contact the surgical team promptly about increasing redness, pus, fever, worsening swelling, uncontrolled pain, repeated vomiting or difficulty passing urine. Follow the specific discharge instructions provided.

- A baby's testicle has not descended by about 6 months of corrected age
- One or both testicles cannot be felt in the scrotum
- A testicle that used to be in the scrotum now stays higher up
- A known retractile testicle no longer moves into the scrotum
- An older child, teenager or adult appears to have an undescended testicle
- There is a new painless lump, change in size or persistent heaviness

Common questions

Will an undescended testicle come down by itself?

It may descend during the first few months after birth, especially in a premature baby. Natural descent is unlikely after about 6 months of corrected age. A testicle still undescended then should be assessed rather than watched indefinitely.

Is an undescended testicle the same as a retractile testicle?

No. A retractile testicle can be moved into the scrotum and stays there temporarily without tension. A true undescended testicle cannot be brought into a stable scrotal position. Retractile testicles are usually observed because some later become ascending testicles.

Can my child still have children in the future?

Many people with one undescended testicle have normal fertility, particularly when the other testicle is healthy. Fertility problems are more likely when both testicles are affected. Early treatment may protect fertility potential, but it cannot guarantee future sperm production.

Does it increase the risk of testicular cancer?

Yes. The lifetime risk is higher than for someone without this history, although most people with an undescended testicle do not develop cancer. Surgery makes the testicle easier to examine and may reduce risk when completed early, but ongoing awareness remains important.

What happens during the operation?

During orchiopexy, the child is asleep under general anaesthesia. The surgeon releases the testicle and its supporting tissues, moves it into the scrotum and secures it. A testicle inside the abdomen may require keyhole surgery or a staged procedure.

Can an undescended testicle be treated in adulthood?

Yes. An adult can be referred to a urologist for assessment. Treatment may involve moving the testicle, removing a poorly developed testicle or monitoring it. The choice considers cancer risk, fertility, hormone function, the other testicle and the person's preferences.

Sources

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