CONDITION

Testicular torsion

Testicular torsion is twisting of the cord supplying a testicle, which can quickly cut off its blood flow.

WHAT IT IS
Twisting of a testicle's blood-supplying cord

BODY SYSTEM
Male reproductive system

MAIN SYMPTOMS
Sudden testicle pain, swelling, nausea, abdominal pain

WHAT CAUSES IT
Usually an inborn anatomical difference

HOW IT IS DIAGNOSED
Examination, Doppler ultrasound, and surgical exploration

MAIN TREATMENT
Emergency surgery to untwist and secure both testicles

CAN IT BE CURED?
Yes - prompt surgery corrects the twisting

IS IT AN EMERGENCY?
Yes - sudden testicle pain needs immediate assessment

LONG-TERM OUTLOOK
Usually good with prompt treatment

Overview

Testicular torsion happens when a testicle rotates and twists the spermatic cord. This cord contains the blood vessels that keep the testicle alive. Twisting can reduce or completely stop its blood supply.

This is a medical emergency. A testicle can be permanently damaged if normal blood flow is not restored quickly. Treatment is most successful during the first few hours, but you should still seek emergency care even if the pain started longer ago or has improved.

Torsion can happen at any age, including before birth. It is most common around puberty. It usually affects one testicle.

The condition may begin during sleep, exercise, or ordinary daily activity. It does not require an

injury, and it is not usually caused by anything you did.

Symptoms

The usual symptom is sudden, severe pain on one side of the scrotum. The scrotum is the skin sac that holds the testicles. Pain may wake someone from sleep or start without warning.

Other possible symptoms include:

Some people, particularly younger children, first report abdominal pain, nausea, or vomiting rather than testicle pain. A child may be unable to explain where the pain is coming from.

Occasionally, the testicle twists and then untwists by itself. This is called intermittent torsion. It can cause sudden pain that disappears within minutes or hours. Even if the pain has stopped, urgent assessment is important because the testicle may twist again and remain twisted.

Newborn babies may have a firm, swollen, or discoloured scrotum without obvious signs of pain. Torsion that happens before or around birth is managed differently from torsion in older children and adults.

- Swelling, redness, or darkening of the scrotum
- One testicle sitting higher than usual or at an unusual angle
- Nausea or vomiting
- Lower abdominal or groin pain
- Tenderness when the testicle is touched

Causes and risk factors

Many cases are linked to an anatomical difference sometimes called a bell-clapper deformity. Normally, tissues inside the scrotum help hold each testicle in place. With this difference, a testicle is less firmly attached and can rotate more freely.

This anatomy is present from birth, but torsion may not happen until later. It can affect both sides, even when only one testicle has twisted. It is not usually possible to know that you have this difference before symptoms occur.

Factors associated with torsion include:

Torsion sometimes follows physical activity or a minor injury, but it can also occur during sleep. Sexual activity, masturbation, tight clothing, and ordinary movement are not established causes.

- Being in adolescence, when the testicles grow rapidly
- A previous episode of sudden testicle pain that resolved
- A close relative who has had testicular torsion
- An undescended testicle, which has not moved into the scrotum
- A previous torsion affecting the other side

Diagnosis

Sudden testicle pain is assessed as an emergency. A healthcare professional will ask when the symptoms began and examine the abdomen, groin, and scrotum. They may look at the testicle's position and check the reflex that normally pulls it upward when the inner thigh is stroked.

No single examination sign can safely rule torsion in or out. Other conditions, including infection of the epididymis-the coiled tube behind the testicle-can cause similar pain and swelling.

A Doppler ultrasound can show blood flow in the testicle. It may help when the diagnosis is uncertain, provided that arranging it does not delay treatment. Ultrasound does not detect every case, especially when twisting is incomplete or intermittent.

If the symptoms and examination strongly suggest torsion, surgeons may recommend immediate exploration without waiting for imaging. Surgical exploration allows them to see whether the spermatic cord is twisted and treat it at the same time. It is the definitive way to confirm the diagnosis.

Urine or blood tests may help identify infection or another cause, but normal results do not rule out torsion.

Treatment and management

The main treatment is urgent surgery under general anaesthesia. During the operation, the surgeon makes a small cut in the scrotum, untwists the spermatic cord, and checks whether blood flow and the testicle's appearance recover.

If the testicle appears likely to survive, it is stitched to the inside of the scrotum. This procedure is called orchiopexy. The other testicle is usually secured during the same operation because it may have the same anatomical freedom to twist.

If a testicle has been without blood flow for too long and cannot recover, it may need to be removed. This is called orchiectomy. The decision is made during surgery after the surgeon assesses the tissue.

A trained healthcare professional may sometimes try to untwist the testicle by hand while surgery is being arranged. This is called manual detorsion. It may reduce pain and restore some blood flow, but it does not reliably correct every twist and does not prevent another episode. Surgery is still needed and should not be delayed.

After surgery, pain relief and scrotal support can make recovery more comfortable. You will receive instructions about wound care, bathing, lifting, sexual activity, and returning to exercise or sports. These instructions reflect the operation and your recovery rather than a single timetable for everyone.

Complications

The main complication is permanent damage from loss of blood supply. The chance of saving the testicle is highest when treatment happens within the first several hours. It falls as time passes, but the exact outcome cannot be predicted from time alone.

A treated testicle may later shrink, known as testicular atrophy, even if it appeared to recover during surgery. Follow-up can check its size and development.

Other possible effects include:

Most people with one healthy testicle continue to make enough testosterone and can go through puberty, have erections, and produce sperm. Fertility is often preserved, although no individual outcome can be guaranteed.

A testicular prosthesis, which is an implant made to resemble a testicle, may be considered after removal. This is optional and can be discussed once the urgent situation has passed.

- Removal or loss of the affected testicle
- Reduced sperm production, particularly if both testicles are affected
- Lower testosterone if both testicles are severely damaged or removed
- Infection, bleeding, or ongoing discomfort after surgery
- Emotional distress about appearance, fertility, or sexual health

Prevention

Testicular torsion usually cannot be prevented before the first episode. The anatomical difference that allows twisting is often present from birth and may cause no warning symptoms.

Protective sports equipment can reduce injury but cannot reliably prevent the spermatic cord from twisting. Clothing choices and changes in activity are not proven ways to prevent torsion.

Surgically securing both testicles greatly reduces the chance of future torsion. This is why both sides are usually fixed when one testicle has twisted.

If you have had episodes of sudden testicle pain that went away by themselves, seek prompt medical assessment. These may represent intermittent torsion, and planned surgery may be considered to prevent a prolonged episode.

Living with it and what to expect

Recovery after surgery usually involves temporary swelling, bruising, and discomfort. These should gradually improve. Follow the surgical team's advice about supporting the scrotum and returning to school, work, exercise, or sex.

A follow-up appointment may be used to check wound healing and whether the affected testicle maintains its size. Children and teenagers may have additional follow-up to monitor development through puberty. New pain or increasing swelling should be assessed rather than saved for a routine appointment.

When a damaged testicle must be removed, the remaining healthy testicle usually produces enough testosterone. Most people retain normal sexual function, and many can have biological children. If fertility is a concern later, semen testing can measure sperm number and movement.

Losing a testicle can affect body image or cause worry about relationships and fertility. These reactions are understandable. A healthcare professional can discuss counselling, fertility assessment, or a testicular prosthesis if these would be helpful.

Torsion usually does not become a long-term illness once both testicles have been secured. Rarely, torsion can recur after orchiopexy. Any new sudden testicle pain still needs emergency assessment, even after previous surgery.

When to get medical help

Go to an emergency department immediately for:

Do not wait for a routine appointment or for the pain to settle. Do not try to untwist the testicle yourself. Emergency assessment remains necessary even if symptoms followed an injury, started several hours ago, or seem less severe than expected.

After surgery, seek urgent advice for rapidly worsening pain or swelling, heavy bleeding, pus from the wound, fever, difficulty passing urine, or feeling very unwell.

Routine follow-up is appropriate for questions about healing, return to activity, fertility, body image, or a prosthesis when there are no new urgent symptoms.

- Sudden or severe pain in a testicle or scrotum
- Testicle pain with nausea, vomiting, or abdominal pain
- Rapid scrotal swelling or a testicle sitting unusually high
- Sudden pain that has improved or disappeared
- New scrotal swelling or discolouration in a newborn

Common questions

Can testicular torsion go away on its own?

A testicle may occasionally untwist and the pain may stop. This does not mean the problem is safely resolved. It can twist again, and the next episode may not correct itself. Sudden pain that has disappeared still needs urgent assessment.

How quickly does testicular torsion need treatment?

Treatment is most likely to save the testicle when blood flow is restored within the first few hours. Damage becomes more likely with longer delays. There is no point at which you should assume treatment is too late, so seek emergency care regardless of when the pain began.

How can I tell torsion from an infection?

Both can cause pain, tenderness, and swelling. Infection may develop more gradually and may come with urinary symptoms or fever, but these differences are not reliable enough for self-diagnosis. Sudden testicle pain should be treated as possible torsion until urgently assessed.

Can I have children after losing one testicle?

Many people remain fertile with one healthy testicle because it can make sperm and testosterone. Fertility may also be influenced by the health of the remaining testicle and other factors. A semen analysis can provide more information if there are later concerns.

Can testicular torsion happen again after surgery?

Surgery greatly lowers the risk by stitching the testicles in place. Recurrence is rare but possible. New sudden testicle pain is still an emergency, even if you have already had orchiopexy.

Does testicular torsion affect sex or erections?

With one healthy testicle, testosterone levels and erections are usually unaffected. Temporary discomfort may limit sexual activity during recovery. Follow the surgical team's advice about when it is safe to resume.

Sources

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