

Acute scrotal pain / swelling

What is it?

Sudden onset of pain or swelling in the scrotum.

Background

Acute pain or swelling occurs when part of the contents of the scrotum are 'injured' or inflamed.

The scrotum is a muscular sac. Its contents are:

- testes
- epididymis
- spermatic cord (part)
- testicular appendages
- tunica (covering)

The appendages are remnants of a developmental structure and have no purpose in the male. They may respond to hormones by increasing in size in the years before puberty.

Causes of scrotal pain and swelling:

Testicular torsion

Twisting of the testis on the spermatic cord, like a yo-yo on a string, blocks the blood flow to and from the testis.

It occurs in 1 in 4000 males, and makes up a quarter to a third of acute scrotal pain in children; most commonly around or soon after puberty. It may also occur in newborns.

It presents with sudden onset of pain on one or both sides of the scrotum. There may be associated nausea and vomiting, erythema (redness), and oedema (swelling).

Torsion of a testicular appendage

A testicular appendage can also twist on its blood supply, causing the appendage to infarct (die) and reactive inflammation occurs.

This is a common cause of acute scrotal pain in children. It may begin with sudden or gradual onset of pain on one side of the scrotum, and may be associated with nausea or vomiting.

Epididymitis

Inflammation of the epididymis may be bacterial, viral or chemical.

This is uncommon in prepubertal boys, being more common in sexually active males. In children, it may be associated with a urine infection, a structural anomaly of the urinary tract or bladder dysfunction.

It causes scrotal pain that typically increases in severity over days. There may be associated symptoms of urinary infection – fever, dysuria (painful voiding), frequency and urgency.

Trauma

Blunt trauma may result in pain and swelling in the scrotum. There may be haematoma (bruise), hydrocele (fluid around testis) or testis fracture.

This is most commonly seen in males between 10 and 30 years. The majority are due to blunt trauma from sports related injuries.

Idiopathic scrotal oedema

Swelling and erythema (redness) of the scrotal skin of unknown cause, possibly allergic reaction

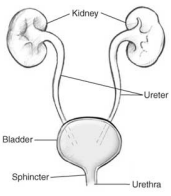
It usually affects boys between 5-9 years of age.

There is insidious onset of redness and swelling of perineum or inguinal region (groin), extending to scrotum. It may be itchy but is not often painful.

Acute scrotal hydrocele

Fluid around the testis can result in swelling. The fluid can track from the abdominal cavity via a persisting connection (patent processus vaginalis), or can be generated by the covering of the testis (tunica vaginalis) in response to injury or inflammation.

They usually present with sudden onset of painless swelling in the scrotum. If there is associated inflammation, there may be pain and redness. A boy may be born with a hydrocele.



Acute scrotal pain / swelling

How is it diagnosed?

Any boy with scrotal *pain* needs URGENT assessment by a doctor to exclude serious causes. Please keep your child fasted until assessment is undertaken. The doctor will take a history from the boy, and perform an examination.

If the doctor is unable to confidently exclude torsion of the testis, you will need to see a surgeon. The surgeon will repeat the assessment, and recommend treatment.

If the surgeon is unable to confidently exclude testicular torsion by the examination, the surgeon will recommend URGENT surgical exploration to make the diagnosis and attempt to save the testis.

What tests are performed?

No tests are routinely performed for boys with acute scrotal pain.

Urine sample for microscopy and culture may be taken for infection.

If testicular torsion CAN BE excluded, scrotal ultrasound may be recommended.

What are the treatment options?

Testicular torsion:

Urgent surgery is needed to untwist the testis and restore the blood supply. This needs to happen as quickly as possible after the onset of pain, and is performed under general anaesthesia.

The operation is done through a small cut in the scrotum. The testis is untwisted and assessed for viability. If the testis can be saved, it will be fixed into place so it can't twist again. The other testis is also assessed, and often fixed to prevent future torsion.

If the testis has infarcted (died) and is unable to be revived, it may need to be removed. The surgery needs to be done quickly to reduce the chance the testis has to be removed.

Torsion of a testicular appendage

If the diagnosis of *testicular* torsion cannot be excluded on examination, surgical exploration will be carried out. If a diagnosis of appendage torsion is made at surgery, the appendage can be removed. The testes do not require fixation.

If the diagnosis of testicular appendage torsion can be made before surgery, the boy can be managed with simple analgesia and rest. Recovery usually takes about 1 week. If the symptoms are prolonged, elective surgical removal of the appendage may speed recovery.

Epididymitis

If a diagnosis of epididymitis can be made on examination, treatment with antibiotics is started. Often a urinary tract ultrasound will be done, looking for associated urinary tract problems.

Sometimes this diagnosis may be made at surgical exploration. Once diagnosed, treatment is started with antibiotics.

Trauma

This is often clear on history. Ultrasound is often done to assess for testicular fracture or rupture.

If significant testis injury is suspected, surgical exploration may be needed. This is carried out through a small scrotal incision. The testis may need repair or even removal.

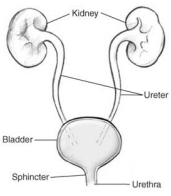
Idiopathic scrotal oedema

This can be treated with reassurance. Antihistamines are sometimes used for relief.

Tests for urinary tract infections may be done with treatment as appropriate.

Acute scrotal hydrocele

These will often resorb spontaneously. The patent processus may close spontaneously in the first 2 years of life. A hydrocele present at birth which is still present after 2 years should be referred for elective surgery.



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What are the outcomes?

The outcomes of acute scrotal pain depend on the underlying cause and the promptness of appropriate treatment. Testis survival is threatened within 4-6 hours of the onset of the problem. The twist may precede the pain by several hours.

Testicular survival will depend on the state of the testis at the time of surgery, but will not be known until at least 6 months after the incident.

The infertility risk after testicular torsion has not been well established. If the patient has one normal, uninvolved testis at the time of surgery, then normal fertility is more likely.

What are the complications?

After a scrotal exploration, bleeding and infection are the most common complications to occur, but these are not very common.

Scrotal haematoma or extensive scrotal bruising may occur, because of the lax skin of the area. These can be painful and can take weeks to months to go away. The best prevention of this is good scrotal support after surgery with firm-fitting underpants.

What is the follow-up?

All patients who have been seen in hospital with an episode of acute scrotal pain should have an outpatient review 4-6 weeks following discharge.

Patients who have had testicular torsion or testicular trauma will require follow-up for testicular atrophy 6 months later and at puberty.

Medical practitioners can also see RCH Clinical practice guidelines for more information:

http://www.rch.org.au/clinicalguide/guideline_in dex/Acute_Scrotal_Pain_or_Swelling/