



## SYMPOMS OF EPIDIDYMITIS, TREATMENT AND EPIDIMIOLOGY

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**Annotation:** Epididymitis is a medical condition characterized by inflammation of the epididymis, a curved structure at the back of the testicle.<sup>[1]</sup> Onset of pain is typically over a day or two.<sup>[1]</sup> The pain may improve with raising the testicle.<sup>[1]</sup> Other symptoms may include swelling of the testicle, burning with urination, or frequent urination.<sup>[1]</sup> Inflammation of the testicle is commonly also present.

**Key words:** symptoms, diagnosis, treatment, blood vassels.

In those who are young and sexually active, gonorrhea and chlamydia are frequently the underlying cause.<sup>[1]</sup> In older males and men who practice insertive anal sex, enteric bacteria are a common cause.<sup>[1]</sup> Diagnosis is typically based on symptoms.<sup>[1]</sup> Conditions that may result in similar symptoms include testicular torsion, inguinal hernia, and testicular cancer.<sup>[1]</sup> Ultrasound can be useful if the diagnosis is unclear.<sup>[1]</sup>

Treatment may include pain medications, NSAIDs, and elevation.<sup>[1]</sup> Recommended antibiotics in those who are young and sexually active are ceftriaxone and doxycycline.<sup>[1]</sup> Among those who are older, ofloxacin may be used.<sup>[1]</sup> Complications include infertility and chronic pain.<sup>[1]</sup> People aged 15 to 35 are most commonly affected, with about 600,000 people within this age group affected per year in the United States.

Those aged 15 to 35 are most commonly affected.<sup>[2]</sup> The acute form usually develops over the course of several days, with pain and swelling frequently in only one testis, which will hang low in the scrotum.<sup>[3]</sup> There will often be a recent history of dysuria or urethral discharge.<sup>[3]</sup> Fever is also a common symptom. In the chronic version, the patient may have painful point tenderness but may or may not have an irregular epididymis upon palpation, though palpation may reveal an indurated epididymis. A scrotal ultrasound may reveal problems with the epididymis, but such an ultrasound may also show nothing unusual. The majority of patients who present with chronic epididymitis have had symptoms for over five years.<sup>[4]:p.311</sup>

### Complications

Untreated, acute epididymitis's major complications are abscess formation and testicular infarction. Chronic epididymitis can lead to permanent damage or even destruction of the epididymis and testicle (resulting in infertility and/or hypogonadism), and infection may spread to any other organ or system of the body. Chronic pain is also an associated complication for untreated chronic epididymitis.

Though urinary tract infections in men are rare, bacterial infection is the most common cause of acute epididymitis.<sup>[6]</sup> The bacteria in the urethra back-track through the urinary and reproductive structures to the

epididymis. In rare circumstances, the infection reaches the epididymis via the bloodstream.<sup>[7]</sup>

In sexually active men, *Chlamydia trachomatis* is responsible for two-thirds of acute cases, followed by *Neisseria gonorrhoeae* and *E. coli* (or other bacteria that cause urinary tract infection). Particularly among men over age 35 in whom the cause is *E. coli*, epididymitis is commonly due to urinary tract obstruction. Less common microbes include *Ureaplasma*, *Mycobacterium*, and cytomegalovirus, or *Cryptococcus* in patients with HIV infection. *E. coli* is more common in boys before puberty, the elderly, and men who have sex with men. In the majority of cases in which bacteria are the cause, only one side of the scrotum or the other is the locus of pain.<sup>[9]</sup>

Non-infectious causes are also possible. Reflux of sterile urine (urine without bacteria) through the ejaculatory ducts may cause inflammation with obstruction. In children, it may be a response following an infection with enterovirus, adenovirus or *Mycoplasma pneumoniae*. Rare non-infectious causes of chronic epididymitis include sarcoidosis (more prevalent in black men) and Behçet's disease.<sup>[4]:p.311</sup>

Any form of epididymitis can be caused by genito-urinary surgery, including prostatectomy and urinary catheterization. Congestive epididymitis is a long-term complication of vasectomy.<sup>[10][11]</sup> Chemical epididymitis may also result from drugs such as amiodarone.

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Epididymitis usually has a gradual onset. Typical findings are redness, warmth and swelling of the scrotum, with tenderness behind the testicle, away from the middle (this is the normal position of the epididymis relative to the testicle). The cremasteric reflex (elevation of the testicle in response to stroking the upper inner thigh) remains normal.<sup>[1]</sup> This is a useful sign to distinguish it from testicular torsion. If there is pain relieved by elevation of the testicle, this is called Prehn's sign, which is, however, non-specific and is not useful for diagnosis.<sup>[13]</sup> Before the advent of sophisticated medical imaging techniques, surgical exploration was the standard of care. Today, Doppler ultrasound is a common test: it can demonstrate areas of blood flow and can distinguish clearly between epididymitis and torsion. However, as torsion and other sources of testicular pain can often be determined by palpation alone, some studies have suggested that the only real benefit of an ultrasound is to assure the person that they do not have testicular cancer.<sup>[14]:p.237</sup> Nuclear testicular blood flow testing is rarely used.<sup>[citation needed]</sup>

Additional tests may be necessary to identify underlying causes. In younger children, a urinary tract anomaly is frequently found. In sexually active men, tests for sexually transmitted infections may be done. These may include microscopy and culture of a first void urine sample, Gram stain and culture of fluid or a swab from the urethra, nucleic acid amplification tests (to amplify and detect microbial DNA or other nucleic acids) or tests for syphilis and HIV.

## Summary

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- The epididymis is a series of small tubes that collects and stores sperm. It is attached to the back of each testicle.
- Epididymitis is inflammation of the epididymis, usually caused by an infection.
- Most cases of epididymitis are caused by bacterial infection from a urinary tract infection (UTI) or a sexually transmissible infection (STI) such as gonorrhoea or chlamydia.
- Epididymitis can also be caused by bacteria that leads to gastroenteritis (such as *E.Coli*), particularly if the person is in an older age group, or has insertive anal sex.
- Treatment includes antibiotics and bed rest.
- Some people develop chronic epididymitis, which is inflammation of the testes even when there is

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## About epididymis

The epididymis is a series of small tubes that collects and stores sperm. It is attached to the back of each testicle.

One of the most common causes of pain in the scrotum is epididymitis. An inflammation of these coiled tubes – which may be due to an infection.

Epididymo-orchitis is the spread of the infection to the testicle.

Epididymitis is usually a secondary bacterial infection that can be triggered by a range of conditions – such as an urinary tract infection (UTI) or a sexually transmissible infection (STI).

The bacteria in the urethra (the tube carrying urine and sperm from the penis) move through the urinary and reproductive structures to the epididymis.

Treatment options include antibiotics and bed rest.

Some people develop chronic epididymitis – which is inflammation even when there is no infection.

## Epididymitis symptoms

The symptoms of epididymitis include:

- swollen (enlarged), red or warm testicle
- feeling of heaviness in the affected testicle
- tenderness or pain in the affected testicle
- pain in the abdomen or pelvis
- frequent urge to urinate
- burning feeling when urinating
- discharge from the penis
- blood in the urine
- pain when ejaculating
- slight fever
- chills.

## Epididymitis causes

Most cases of epididymitis are caused by bacterial infection. Causes include:

- urinary tract infections (UTIs)
- sexually transmissible infections (STIs) (such as chlamydia or gonorrhoea)
- recent genito-urinary surgery – including prostatectomy (surgical removal of all or part of the prostate gland)
- the use of a urinary catheter
- some congenital kidney and bladder problems.

#### Complications of epididymitis

If left untreated, acute epididymitis can lead to a range of complications, including:

- Chronic epididymitis – the inflammation can become persistent, even when there is no bacterial infection present.
- Abscess – a ball of pus can accumulate inside the epididymis or nearby structures, requiring surgery to drain the pus.
- Destruction of the epididymis – inflammation can cause permanent damage or destroy the epididymis and testicle. This can lead to infertility.
- Spread of infection – the infection can spread from the scrotum to any other structure or system of the body.

#### Diagnosing epididymitis

It can be hard to tell the difference between epididymitis and testicular torsion – especially in younger people.

#### Testicular torsion

Testicular torsion is when the testicle has twisted and cut off its supply of blood. Testicular torsion is a surgical emergency and assessment should be made at a hospital emergency department.

Sometimes, epididymitis and testicular torsion occur at the same time.

Epididymitis can be diagnosed through:

- physical examination
- medical history
- urine tests
- STI tests
- blood tests
- ultrasound of the testes.

#### Epididymitis treatment

Treatment options for epididymitis include:

- antibiotics
- antibiotics for any sexual partners (if an STI was the cause)
- bed rest
- pain-relieving medication
- cold compresses applied regularly to the scrotum

- elevation of the scrotum
- a stay in hospital (in cases of severe infection)
- a check-up afterwards to make sure the infection has cleared up. If symptoms have not improved after 48-72 hours, diagnosis should be re-evaluated.

### Chronic epididymitis

Some people develop chronic epididymitis. This is inflammation where there has been no infection for at least 3 months.

The cause is not known. It is thought that hypersensitivity of certain structures (including nerves and muscles) may play a part.

Some of the known risk factors for chronic epididymitis include:

- genito-urinary surgery
- exposure to STIs
- past acute epididymitis.

Even if you don't have any of these risk factors, you can still develop chronic epididymitis.

### Diagnosing chronic epididymitis

Tests are needed to distinguish chronic epididymitis from other disorders that cause constant scrotal pain. Such as testicular cancer, enlarged scrotal veins (varicocele) or a cyst in the epididymis.

Tests may include physical examination and ultrasound.

### Treatment for chronic epididymitis

Chronic epididymitis is difficult to treat. Antibiotics should not be used, as there is no infection. Treatment options include:

- frequent warm baths
- non-steroidal anti-inflammatory medication (NSAIDs)
- medication to alter nerve messages to the scrotum
- rarely, surgery to remove the affected epididymis
- stress management techniques.

Additional tests may be necessary to identify underlying causes. In younger children, a urinary tract anomaly is frequently found. In sexually active men, tests for sexually transmitted infections may be done. These may include microscopy and culture of a first void urine sample, Gram stain and culture of fluid or a swab from the urethra, nucleic acid amplification tests (to amplify and detect microbial DNA or other nucleic acids) or tests for syphilis and HIV.

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