

Epididymitis and Orchitis

If you are a male and experiencing pain the scrotum or testicle, then it might be attributed to epididymitis, orchitis or a combination of the two. The information below will give you a head start in learning more about these conditions and aid in your discussions with a urologist.

What are epididymitis, orchitis and epididymo-orchitis?

Epididymitis is inflammation of the epididymis—the coiled tube that collects sperm from the testicle and passes it on to the vas deferens. There are two forms of this disease, acute and chronic. Acute epididymitis comes on suddenly with severe symptoms and subsides with treatment. Chronic epididymitis is a long-standing condition, usually of gradual onset, for which the symptoms can be improved with treatment but may not completely be eradicated. Most cases of epididymitis occur in adults.

Orchitis is inflammation of the testicle. It almost always comes on suddenly and subsides with treatment. Chronic orchitis is not well-defined, and instead is considered to be one of the many conditions related to chronic testicular pain (orchalgia).

Epididymo-orchitis is the sudden inflammation of both the epididymis and the testicle.

What are the causes of such conditions?

Acute epididymitis is usually caused by a bacterial infection. In children who haven't reached puberty, the infection usually starts in the bladder or kidney and then spreads to the testicle. This is often associated with a birth-related abnormality that predisposes to urinary tract infection. In sexually active men, the most common infection causing epididymitis is a sexually transmitted disease such as gonorrhea or chlamydia infection. These infections start in the urethra, causing urethritis, which can then move into the testicle. In men over 40 years of age, the most common cause is bacteria from the urinary tract. Other causes can include: bladder outlet obstruction due to enlargement of the prostate; partial blockage of the urethra; or recent catheterization of the urethra. In any of these cases, the original infection may not cause symptoms, and the first sign of a problem may be epididymitis. Bacterial epididymitis rarely occurs when a bacterial infection spreads from the bloodstream into the epididymis, although this is the typical way that tuberculosis infection can involve the epididymis. Epididymitis is occasionally due to causes other than infection. Chemical epididymitis occurs when sterile urine flows backward from the urethra to the epididymis, which most commonly occurs with heavy lifting or straining. The urine causes inflammation without infection. The drug amiodarone also can cause a non-infectious epididymitis, and there are other cases of non-infectious epididymitis without known cause.

Chronic epididymitis may develop after several episodes of acute epididymitis that do not subside, but also can occur without any symptomatic episodes of acute epididymitis or prior infection—in which case the cause is unknown.

In most cases of acute orchitis, the testicle is inflamed due to the spread of a bacterial infection from the epididymis, and therefore "epididymo-orchitis" is the correct term. Although orchitis without epididymitis can occur from a bacterial infection, orchitis without epididymitis usually results from an infection related to the mumps virus. "Mumps orchitis" occurs in approximately one-third of males who contract mumps after puberty.

Acute epididymo-orchitis is usually a primary bacterial or tuberculous infection of the epididymis that has spread to the testicle to involve both structures. Rarely, it can start in the testicle and spread to the epididymis. Mumps orchitis does not spread to the epididymis.

What are the symptoms and how are they diagnosed?

Acute epididymitis and acute epididymo-orchitis: Symptoms occur not only from the local infection, but also from the original source of the infection. Common symptoms from the original source of the infection include: urethral discharge and urethral pain or itching (from urethritis); pelvic pain and urinary frequency, urgency or painful/burning urination (from infection of the bladder, called cystitis); fever, perineal pain, urinary frequency, urinary urgency or painful/burning urination (from infection of the prostate, called prostatitis); fever and flank pain (from infection of the kidney, called pyelonephritis). In some cases, pain in the scrotum from the local infection is the only noticeable symptom. The pain starts at the back of one testicle but can soon spread to the entire testicle, the scrotum and occasionally the groin. Swelling,

tenderness, redness, firmness and warmth of the skin may also accompany the pain. The entire scrotum can swell up with fluid (hydrocele). To make the diagnosis, the doctor will ask you about your medical history and examine you. The doctor may test a urine sample and look at it under the microscope to assess for bacterial infection, culture a urine sample as a more definitive way to see if there is bacterial infection, or examine a swab obtained from the urethra (if urethritis is suggested by your symptoms). If your pain came on very suddenly and severely, then an ultrasound, which is a non-invasive test that uses sound waves to look at the epididymis and measure blood flow, might be used to distinguish epididymitis from another condition called testicular torsion. This is managed very differently than epididymitis, so making the distinction is very important. Tuberculous epididymitis presents in the same way, although chemical and amiodarone epididymitis are less severe.

Chronic epididymitis: The pain occurs only in the scrotal contents, and is less severe and more localized than acute epididymitis. Swelling, tenderness, redness and warmth of the skin do not occur. Additional tests may be used as for acute epididymitis, but are less frequently required. In acute epididymitis the urine is usually infected, whereas in chronic epididymitis it is usually not.

Acute orchitis: During the acute phase of mumps orchitis, symptoms include pain of varying severity, tenderness and swelling. The parotiditis (swelling of facial glands) of mumps usually precedes orchitis by three to seven days. Isolated orchitis from bacterial infection has the same symptoms of acute epididymitis or epididymo-orchitis.

What are the treatment options?

Acute epididymitis and acute epididymo-orchitis: Treatment in cases suspected to be from bacteria (most) includes at least two weeks of antibiotics. Most cases can be treated with oral antibiotics as an outpatient. Your doctor can choose one of several, including: doxycycline, azithromycin, ofloxacin, ciprofloxacin, levofloxacin or trimethoprim-sulfamethoxazole. Tuberculous epididymitis is treated with anti-tuberculous medications, although many cases surgical removal of the testicle (orchietomy, which includes removal of the epididymis) is required because the damage is so severe. Cases of severe infection, with intractable pain, vomiting, very high fever or overall severe illness, may require admission to the hospital. Aside from treatment of amiodarone epididymitis by reducing the dose or stopping the drug, there is no specific therapy for non-infectious epididymitis. General therapy for epididymitis includes bed rest for one to two days combined with elevation of the scrotum. The aim is to get the inflamed epididymis above the level of the heart. This improves blood flow out of the testicle, which promotes more rapid healing and reduces swelling and discomfort. Intermittent application of ice might also be of assistance and, in cases due to infection, intake of plenty of fluids. Nonsteroidal anti-inflammatory drugs such as ibuprofen or naproxen are useful since they not only relieve pain but also reduce the inflammation that is the cause of the pain.

Chronic epididymitis: Primary therapy is with medications and other treatments directed towards reducing the discomfort. Non-steroidal anti-inflammatory medications and local application of heat are the mainstays of treatment. If symptoms persist, your physician may recommend other medications to alter the perception of pain in the area, or might refer you to a specialist in pain management. If all else fails the epididymis can be surgically removed (epididymectomy) while leaving the testicle in place.

Acute orchitis: There is no specific treatment for acute mumps orchitis. In cases of bacterial infection, treatment is as for acute epididymitis and acute epididymo-orchitis.

What can be expected after treatment?

Acute epididymitis and acute epididymo-orchitis: In the typical infectious case, it will take two to three days for you to notice improvement. If the redness does not subside and you do not start to feel better by that time, contact your physician. Complete resolution of symptoms will take longer. Discomfort can persist until the entire course of antibiotics is completed, and the firmness and swelling can take months to resolve. Following the instructions to stay at bed rest with scrotal elevation for the first one to two days will help speed recovery. You should follow-up with your physician after treatment. In cases of tuberculous epididymitis that do not require orchietomy, it takes months to resolve on medications, and there will likely be some shrinking of the testicle. Amiodarone epididymitis improves after reducing the dose or stopping the drug, without any residual problems. Chemical epididymitis also resolves completely.

Chronic epididymitis: Treatment is ongoing, and not curative. You may need to take medications for years, or until the symptoms resolve spontaneously. If epididymectomy is performed, relief of symptoms occurs in

three out of four patients after a few weeks for surgical recovery. If surgery has not resolved your symptoms, then your doctor will try medical therapy again.

Acute orchitis: Following the acute phase of mumps orchitis, the pain resolves but there is often atrophy of the testicle.

Frequently Asked Questions:

What if the swelling and pain do not get better after the first three days of antibiotics?

Most cases of acute epididymitis or epididymo-orchitis are treated well by antibiotics, but in some cases a different antibiotic needs to be used. Tuberculous epididymitis should also be considered when symptoms do not resolve appropriately. On occasion, surgery needs to be performed. If an abscess (pocket of pus) has formed, antibiotics alone are rarely sufficient and surgery to drain the abscess or remove part or all of the epididymis and testicle might be required. Other complications that might require surgery include testicular infarction (death of the testicle due to destruction of the blood vessels) and cutaneous fistula (infection that continues to drain out through the skin).

Can I pass the infection to my sexual partner?

If the acute epididymitis or epididymo-orchitis is from a sexually transmitted disease (usually in sexually active men under 40 years of age), then your sexual partner needs to be treated as well since the infection can be passed back and forth through sexual contact. The urinary tract bacteria that cause other cases of epididymitis or epididymo-orchitis are not sexually transmitted. Treatment of your partner is not required, and there is no risk of infecting your partner.

Will the ability to father children be reduced?

The atrophy associated with mumps orchitis and tuberculous epididymitis is associated with reduced production of sperm in the affected testicle in some cases. After an episode of acute epididymitis or epididymo-orchitis there can rarely be blockage of the epididymis, which would reduce delivery of sperm from that testicle. In any of these cases, if the other testicle is unaffected then most men are able to father a child normally.

Will hormone production by the testicle be affected?

The ability of the affected testicle to produce testosterone is lost in some men with atrophy associated with mumps orchitis and tuberculous epididymitis. The rare epididymal blockage that occurs after acute epididymitis or epididymo-orchitis does not affect hormone production.

Do epididymal or testicular infections lead to cancer?

There is no association of these infections with cancer.