

Epididymitis

Acute epididymitis is a clinical syndrome consisting of pain, swelling, and inflammation of the epididymis that lasts <6 weeks (755). Sometimes the testis is also involved—a condition referred to as epididymo-orchitis. A high index of suspicion for spermatic cord (testicular) torsion must be maintained in men who present with a sudden onset of symptoms associated with epididymitis, as this condition is a surgical emergency.

Among sexually active men aged <35 years, acute epididymitis is most frequently caused by *C. trachomatis* or *N. gonorrhoeae*. Acute epididymitis caused by sexually transmitted enteric organisms (e.g., *Escherichia coli*) also occurs among men who are the insertive partner during anal intercourse. Sexually transmitted acute epididymitis usually is accompanied by urethritis, which frequently is asymptomatic. Other nonsexually transmitted infectious causes of acute epididymitis (e.g., Fournier's gangrene) are uncommon and should be managed in consultation with a urologist.

In men aged ≥35 years who do not report insertive anal intercourse, sexually transmitted acute epididymitis is less common. In this group, the epididymis usually becomes infected in the setting of bacteremia secondary to bladder outlet obstruction (e.g., benign prostatic hyperplasia) (756). In older men, nonsexually transmitted acute epididymitis is also associated with prostate biopsy, urinary tract instrumentation or surgery, systemic disease, and/or immunosuppression.

Chronic epididymitis is characterized by a ≥6 week history of symptoms of discomfort and/or pain in the scrotum, testicle, or epididymis. Chronic infectious epididymitis is most frequently seen in conditions associated with a granulomatous reaction; *Mycobacterium tuberculosis* (TB) is the most common granulomatous disease affecting the epididymis and should be suspected, especially in men with a known history of or recent exposure to TB. The differential diagnosis of chronic non-infectious epididymitis, sometimes termed "orchalgia/epididymalgia" is broad (i.e., trauma, cancer, autoimmune, and idiopathic conditions); men with this diagnosis should be referred to a urologist for clinical management (755,757).

Diagnostic Considerations

Men who have acute epididymitis typically have unilateral testicular pain and tenderness, hydrocele, and palpable swelling of the epididymis. Although inflammation and swelling usually begins in the tail of the epididymis, it can spread to involve the rest of the epididymis and testicle. The spermatic cord is usually tender and swollen. Spermatic cord (testicular) torsion, a surgical emergency, should be considered in all cases, but it occurs more frequently among adolescents and in men without evidence of inflammation or infection. In men with severe, unilateral pain with sudden onset, those whose test results do not support a diagnosis of urethritis or urinary-tract infection, or men in whom diagnosis of acute epididymitis is questionable, immediate referral to a urologist for evaluation of testicular torsion is important because testicular viability might be compromised.

Bilateral symptoms should raise suspicion of other causes of testicular pain. Radionuclide scanning of the scrotum is the most accurate method to diagnose epididymitis, but it is not routinely available. Ultrasound should be primarily used for ruling out torsion of the spermatic cord in cases of acute, unilateral, painful scrotum swelling. However, because partial spermatic cord torsion can mimic epididymitis on scrotal ultrasound, when torsion is not ruled out by ultrasound, differentiation between spermatic cord torsion and epididymitis must be made on the basis of clinical evaluation. Although ultrasound can demonstrate epididymal hyperemia and swelling associated with epididymitis, it provides minimal utility for men with a clinical presentation consistent with epididymitis, because a negative ultrasound does not alter clinical management. Ultrasound should be reserved for men with scrotal pain who cannot receive an accurate diagnosis by history, physical examination, and objective laboratory findings or if torsion of the spermatic cord is suspected.

All suspected cases of acute epididymitis should be evaluated for objective evidence of inflammation by one of the following point-of-care tests.

- Gram or methylene blue or gentian violet (MB/GV) stain of urethral secretions demonstrating ≥2 WBC per oil immersion field (478). These stains are preferred point-of-care diagnostic tests for evaluating urethritis because they are highly sensitive and specific for documenting both urethral inflammation and the presence or absence of gonococcal infection. Gonococcal infection is established by documenting the presence of WBC-containing intracellular Gram-negative or purple diplococci on urethral Gram stain or MB/GV smear, respectively.
- Positive leukocyte esterase test on first-void urine.
- Microscopic examination of sediment from a spun first-void urine demonstrating ≥10 WBC per high power field.

All suspected cases of acute epididymitis should be tested for *C. trachomatis* and for *N. gonorrhoeae* by NAAT. Urine is the preferred specimen for NAAT testing in men (394). Urine cultures for chlamydia and gonococcal epididymitis are insensitive and are not recommended. Urine bacterial culture might have a higher yield in men with sexually transmitted enteric infections and in older men with acute epididymitis caused by genitourinary bacteremia.

Treatment

To prevent complications and transmission of sexually transmitted infections, presumptive therapy is indicated at the time of the visit before all laboratory test results are available. Selection of presumptive therapy is based on risk for chlamydia and gonorrhea and/or enteric organisms. The goals of treatment of acute epididymitis are 1) microbiologic cure of infection, 2) improvement of signs and symptoms, 3) prevention of transmission of chlamydia and gonorrhea to others, and 4) a decrease in potential chlamydia/gonorrhea epididymitis complications (e.g., infertility and chronic pain). Although most men with acute epididymitis can be treated on an outpatient basis, referral to a specialist and hospitalization should be considered when severe pain or fever suggests other diagnoses (e.g., torsion, testicular infarction, abscess, and necrotizing fasciitis) or when men are unable to comply with an antimicrobial regimen. Because high fever is uncommon and indicates a complicated infection, hospitalization for further evaluation is recommended.

Recommended Regimens

For acute epididymitis most likely caused by sexually transmitted chlamydia and gonorrhea

Ceftriaxone 250 mg IM in a single dose

PLUS

Doxycycline 100 mg orally twice a day for 10 days

For acute epididymitis most likely caused by sexually-transmitted chlamydia and gonorrhea and enteric organisms (men who practice insertive anal sex)

Ceftriaxone 250 mg IM in a single dose

PLUS

Levofloxacin 500 mg orally once a day for 10 days

OR

Ofloxacin 300 mg orally twice a day for 10 days

For acute epididymitis most likely caused by enteric organisms

Levofloxacin 500 mg orally once daily for 10 days

OR

Ofloxacin 300 mg orally twice a day for 10 days

Therapy including levofloxacin or ofloxacin should be considered if the infection is most likely caused by enteric organisms and gonorrhea has been ruled out by gram, MB, or GV stain. This includes men who have undergone prostate biopsy, vasectomy, and other urinary-tract instrumentation procedures. As an adjunct to therapy, bed rest, scrotal elevation, and nonsteroidal anti-inflammatory drugs are recommended until fever and local inflammation have subsided. Complete resolution of discomfort might not occur until a few weeks after completion of the antibiotic regimen.

Other Management Considerations

Men who have acute epididymitis confirmed or suspected to be caused by *N. gonorrhoeae* or *C. trachomatis* should be advised to abstain from sexual intercourse until they and their partners have been adequately treated and symptoms have resolved. All men with acute epididymitis should be tested for other STDs, including HIV.

Follow-Up

Men should be instructed to return to their health-care providers if their symptoms fail to improve within 72 hours of the initiation of treatment. Signs and symptoms of epididymitis that do not subside within 3 days require re-evaluation of the diagnosis and therapy. Men who experience swelling and tenderness that persist after completion of antimicrobial therapy should be evaluated for alternative diagnoses, including tumor, abscess, infarction, testicular cancer, tuberculosis, and fungal epididymitis.

Management of Sex Partners

Men who have acute sexually transmitted epididymitis confirmed or suspected to be caused by *N. gonorrhoeae* or *C. trachomatis* should be instructed to refer for evaluation, testing, and presumptive treatment all sex partners with whom they have had sexual contact within the 60 days preceding onset of symptoms (see [Chlamydial Infections](#) and [Gonorrheal Infections](#)). If the last sexual intercourse was >60 days before onset of symptoms or diagnosis, the most recent sex partner should be treated. Arrangements should be made to link female partners to care. EPT and enhanced referral (see [Partner Services](#)) are effective strategies for treating female sex partners of men who have chlamydia or gonorrhea for whom linkage to care is anticipated to be delayed ([93,94](#)). Partners should be instructed to abstain from sexual intercourse until they and their sex partners are adequately treated and symptoms have resolved.

Special Considerations

Allergy, Intolerance, and Adverse Reactions

The cross reactivity between penicillins and cephalosporins is <2.5% in persons with a history of penicillin allergy ([428-431,464](#)). The risk for penicillin cross-reactivity is highest with first-generation cephalosporins, but is negligible between most second-generation (cefotaxime) and all third-generation (ceftriaxone) cephalosporins ([428-431](#)) (see [Management of Persons with a History of Penicillin Allergy](#)). Alternative regimens have not been studied; therefore, clinicians should consult infectious-disease specialists if such regimens are required.

HIV Infection

Men with HIV infection who have uncomplicated acute epididymitis should receive the same treatment regimen as those who are HIV negative. Other etiologic agents have been implicated in acute epididymitis in men with HIV infection, including CMV, salmonella, toxoplasmosis, *Ureaplasma urealyticum*, *Corynebacterium* sp., *Mycoplasma* sp., and *Mima polymorpha*. Fungi and mycobacteria also are more likely to cause acute epididymitis in men with HIV infection than in those who are immunocompetent.

[Next](#)

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