

Epididymitis

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EPIDIDYMITIS

Definition

- Epididymitis can be defined as inflammation of the epididymis manifested by a relative acute onset of unilateral testicular pain and swelling often with tenderness of the epididymis and vas deferens and occasionally with erythema and edema of the overlying skin.
- The term epididymo-orchitis is primarily used when inflammation occurs in both the epididymis and the testes together.¹

Etiology²

- Before tests for detecting *Chlamydia trachomatis* were available, the cause of most cases of acute epididymitis was unknown. Subsequent studies have shown that epididymitis is primarily an infective condition.
- In men under 35 years of age, sexually transmitted infection (STI) accounts for 2/3 of epididymitis (47% *Chlamydia trachomatis* and 20% *Neisseria gonorrhoeae*). In men over 35 years of age, 75% of cases can be attributed to coliforms or pseudomonas. Isolation of *Chlamydia trachomatis* or *Neisseria gonorrhoeae* is unusual.
- The determination of the possible etiologic agent should always be based on the evaluation of the risk of the individual having acquired a sexually transmitted agent.
- **In children and young adults, it is important to consider non-infectious causes of scrotal swelling, such as trauma, torsion of the testicle and tumour. Torsion of the testicle, which has a high risk of testicular infarction if treatment is delayed, is a surgical emergency and should be suspected when the onset of scrotal pain is sudden.**

Table 1. Microbial etiology and predisposing factors in acute epididymitis³

Age group	Etiology and predisposing factors
Prepubertal children	<ul style="list-style-type: none"> • Usual etiology: coliforms, <i>P. aeruginosa</i> • Unusual etiology: hematogenous spread from primary infected site • Predisposing factors: underlying genitourinary pathology
Men under 35	<ul style="list-style-type: none"> • Usual etiology: <i>C. trachomatis</i>, <i>N. gonorrhoeae</i> • Unusual etiology: coliforms or <i>P. aeruginosa</i>, <i>Mycobacterium tuberculosis</i> • Predisposing factors: sexually transmitted urethritis
Men over 35	<ul style="list-style-type: none"> • Usual etiology: coliforms or <i>P. aeruginosa</i> • Unusual etiology: <i>N. gonorrhoeae</i>, <i>C. trachomatis</i>, <i>Mycobacterium tuberculosis</i> • Predisposing factors: underlying structural pathology or chronic bacterial prostatitis

Epidemiology

- Accurate data on acute epididymitis are lacking. Therefore, the incidence of this condition in the general population is unknown. In a large retrospective study, 49% of cases were in those 20–29 years old, with 70% of cases in those aged 20–39 years.⁴
- In adolescents with epididymitis, sexual behaviour should be ascertained, as the cause may be a sexually transmitted infection.
- Coliforms may be a frequent cause of acute epididymitis in sexually active men in all age groups who practice unprotected insertive anal intercourse.

Prevention and Control

- At the time of diagnosis of suspected sexually acquired epididymitis, safer-sex practices should be reviewed.
- Appropriate information should be provided concerning the level of protection provided by barrier methods such as male condoms.
- The patient and contact(s) should abstain from unprotected intercourse until treatment of both patient and contact(s) is complete, or for 7 days in the case of single-dose treatment of partners.

Manifestations^{5,6}

- Patients with acute epididymitis usually present with unilateral testicular pain and tenderness.
- The onset of pain is generally gradual.
- In sexually transmitted epididymitis, symptoms of urethritis or a urethral discharge may be present. However, urethritis is often asymptomatic.
- **Testicular torsion should be considered in all cases, as it is a surgical emergency. Torsion is more likely if the onset of pain is sudden and the pain is severe. Torsion is more frequent in men less than 20 years of age, but it can occur at any age.**

Signs of acute epididymitis may include any of the following:

- Tenderness to palpation on the affected side.
- Palpable swelling of the epididymis.
- Urethral discharge.
- Hydrocele.
- Erythema and/or edema of the scrotum on the affected side.
- Fever.

Diagnosis⁵

- **If diagnosis is questionable, a specialist should be consulted immediately, because in the case of testicular torsion, testicular viability may be compromised.**
- Evaluation for epididymitis should include the following:
 - Urethral swab for Gram stain.
 - Collection of specimens for identification of *N. gonorrhoeae* and *C. trachomatis* (intraurethral exudate or urine according to available laboratory techniques).
 - Microscopy and culture of mid-stream urine.
- If it can be arranged without delay, a Doppler ultrasound may be useful to help differentiate epididymitis from testicular torsion.
- There is no role for epididymal aspiration in routine clinical practice. It may be useful in recurrent infection that fails to respond to therapy or in patients with suspected abscess formation.

Management and Treatment

- See Table 2, below, for published treatment recommendations for acute epididymitis.

Table 2. Recommended regimens for the treatment of acute epididymitis^{5 10}

Epididymitis most likely caused by chlamydial or gonococcal infections	Doxycycline 100 mg PO bid for 10–14 days [A-I] PLUS Ceftriaxone 250 mg IM in a single dose* [§] [A-I] OR Ciprofloxacin 500 mg PO in a single dose [†] [A-I]
Epididymitis most likely caused by enteric organisms	Ofloxacin 200 mg PO bid for 14 days [A-I]

[†] **Due to the rapid increase in quinolone resistant *Neisseria gonorrhoeae*, quinolones such as ciprofloxacin and ofloxacin are no longer preferred drugs for the treatment of gonococcal infections in Canada.**

- **Quinolones may be considered as an alternative treatment option ONLY IF:**
 - antimicrobial susceptibility testing is available and quinolone susceptibility is demonstrated;
 - OR**
 - where antimicrobial testing is not available, a test of cure is essential.

* Ceftriaxone should not be given to persons with a cephalosporin allergy or a history of immediate and/or anaphylactic reactions to penicillins.

[§] The preferred diluent for ceftriaxone is 1% lidocaine without epinephrine (0.9 mL/250 mg, 0.45 mL/125 mg) to reduce discomfort.

Note:

- Consultation with an experienced colleague is recommended for patients with a documented gonococcal epididymitis who have contraindications to treatment with cephalosporins and quinolones.

Consideration for Other STIs

- Depending on sexual history, gonococcal and/or chlamydial infections should be considered as the etiology of acute epididymitis in all sexually active men with acute epididymitis, especially those under age 35.
- Consideration for testing for other STIs, including HIV, should be made according to the patient's sexual history and the presence of risk factors for specific infections.

Reporting and Partner Notification

- Patients with conditions that are reportable according to provincial and territorial laws and regulations should be reported to the local public health authority.
- Local public health authorities are available to assist with partner notification and help with appropriate referral for clinical evaluation, testing, treatment and health education.
- When treatment is indicated for the index case, and they are presumed to have sexually acquired epididymitis, all sexual partners from 60 days prior to symptom onset or the date of diagnosis (if asymptomatic) should be located, clinically evaluated and treated with an appropriate regimen regardless of clinical findings and without waiting for test results.

Follow-up

- Follow-up should be arranged to evaluate the response to treatment. If a recommended regimen has been given and correctly taken, symptoms and signs have disappeared and there is no re-exposure to an untreated sexual partner, then repeat diagnostic testing for *N. gonorrhoeae* and *C. trachomatis* is not routinely recommended.

Special Considerations

- Rare causes of clinical sterile acute epididymitis include amiodarone therapy, vasculitis, polyarteritis nodosa, Behçet disease and Henoch-Schönlein purpura and a proportion of cases remains idiopathic.
- A condition described as “chronic epididymitis” has been recently characterized in the literature.¹¹ Although defined by the author as the presence of “symptoms of discomfort and/or pain at least 3 months in duration in the scrotum, testicle or epididymis localized to one or each epididymis on clinical examination,” there is no clear natural history of the condition. The authors conclude that further studies on the epidemiology, etiology and pathogenesis of this condition are needed.