

2001 National guideline for the management of epididymo-orchitis

Clinical Effectiveness Group (Association for Genitourinary Medicine and the Medical Society for the Study of Venereal Diseases)

Aetiology

In men younger than 35 years of age epididymo-orchitis is most often caused by sexually transmitted pathogens such as *Chlamydia trachomatis* and *Neisseria gonorrhoeae* [1-13]. In men older than 35 years of age epididymo-orchitis is most often caused by non-sexually transmitted Gram negative enteric organisms causing urinary tract infections [1-13]. There is crossover between these groups and complete sexual history taking is imperative [4,8-10,12,13].

Epididymo-orchitis caused by sexually transmitted enteric organisms also occurs in homosexual men who engage in insertive anal intercourse [14,15].

Gram-negative enteric organisms are more commonly the cause of epididymo-orchitis if recent instrumentation or catheterisation has occurred [16-19]. Anatomical abnormalities of the urinary tract are common in the group infected with Gram negative enteric organisms and further investigation of the urinary tract should be considered in all such patients but especially in those older than 50 years [20].

Epididymo-orchitis has been described in 12-19% of men with Behcet's disease [21,22]. This is non-infective and thought to be part of the disease process. Epididymo-orchitis has also been reported as an adverse effect of amiodarone treatment [23].

Clinical Features

Symptoms

- Patients with epididymo-orchitis usually present with unilateral testicular pain
- In sexually transmitted epididymo-orchitis there may be symptoms of a urethritis or a urethral discharge; however the urethritis is often asymptomatic [9,10,13].
- Torsion of the spermatic cord (testicular torsion) is the main differential diagnosis. It is a surgical emergency. It should be considered in all patients and should be excluded first as testicular salvage becomes decreasingly likely with time [24,25].
- Torsion is more likely if:
 - the onset of pain is sudden
 - the pain is severe
 - tests performed during the initial visit show neither the presence of a urethritis nor probable urinary tract infection
- Torsion is more common in men who are younger than 20 years of age (the peak incidence is in adolescents), but can occur at any age [24,25].

Signs

- Tenderness to palpation on the affected side
- Palpable swelling of the epididymis

They may also be:

- urethral discharge
- hydrocoele
- erythema and/or oedema of the scrotum on the affected side
- pyrexia

Diagnosis

The following should be performed:

- Urethral swab stained by Gram's method and examined microscopically for the diagnosis of urethritis, (≥ 5 polymorphonuclear leucocytes per high power field $\times 1000$) and presumptive diagnosis of gonorrhoea.
- Urethral culture for *N gonorrhoeae* or a nucleic acid amplification test for *N gonorrhoeae* of urethral swab or first-void urine.

- A nucleic acid amplification test or antigen detection test for *C trachomatis* of first void urine or urethral swab. A nucleic acid test amplification test is preferable as it is much more sensitive.
- Examination of the first void urine for urinary threads if the Gram stained urethral swab is negative. Threads should be stained by Gram's method and examined microscopically for the diagnosis of urethritis (≥ 10 polymorphonuclear leucocytes per high power field $\times 1000$).
- Microscopy and culture of mid-stream urine for bacteria.

If it can be arranged without delay, colour Doppler ultrasound is useful to help differentiate between epididymo-orchitis and torsion of the spermatic cord [26-29].

There is no role for epididymal aspiration in routine clinical practice. It may be useful in recurrent infection which fails to respond to therapy and if epididymo-orchitis is found at operation [30,31].

Ureaplasma urealyticum is found in men with epididymo-orchitis, often in association with *N gonorrhoeae* or *C trachomatis* infection. Evidence supporting it as a common cause of epididymo-orchitis is lacking and routine investigation for *Ureaplasma urealyticum* is not recommended [4-6,13,32].

Management

General Advice

- Bed rest, scrotal elevation and support, and analgesics are recommended. Non-steroidal anti-inflammatory drugs may be helpful [33,34] (level of evidence III, grade of recommendation B).
- Patients should be advised to avoid unprotected sexual intercourse until they and their partner(s) have completed treatment and follow-up.
- Patients should be given a detailed explanation of their condition with particular emphasis on the long-term implications for the health of themselves and their partner(s). This should be reinforced by giving them clear and accurate written information.

Further Investigation

All patients with sexually transmitted epididymo-orchitis should be screened for other sexually transmitted infections.

Treatment

- Empirical therapy should be given to all patients with epididymo-orchitis before culture results are available. The antibiotic regimen chosen should be determined in light of the immediate tests as well as age, sexual history, any recent instrumentation or catheterisation and any known urinary tract abnormalities in the patient.
- Antibiotics used for sexually transmitted pathogens may need to be varied according to local knowledge of antibiotic sensitivities.

Recommended Regimes

For epididymo-orchitis most probably due to gonococcal infection:

- Ceftriaxone 250mg intramuscularly single dose [13] (III, B)
- or
- Ciprofloxacin 500mg by mouth single dose [13] (III, B)
- plus
- Doxycycline 100mg by mouth twice daily for 10-14 days [4,13] (III, B)

For epididymo-orchitis most probably due to chlamydia infection or other non-gonococcal, non-enteric organisms:

- Doxycycline 100mg by mouth twice daily for 10-14 days [4,13] (III, B)

For epididymo-orchitis most probably due to enteric organisms:

- Ofloxacin 200mg by mouth twice daily for 14 days [8,35,36] (IIb, B)
- Ciprofloxacin 500mg by mouth twice daily for 10 days [37] (Ib, A)

Corticosteroids have been used in the treatment of acute epididymo-orchitis but have not been shown to be of benefit [38,39] (IIa, B)

Allergy

For epididymo-orchitis of all causes where the patient is allergic to cephalosporins and/or tetracyclines:

- Ofloxacin 200mg by mouth twice daily for 14 days [8,35,36] (IIb, B)

Sexual partners

If the epididymo-orchitis is caused by, or likely to be caused by, a sexually transmitted pathogen such as *N gonorrhoeae* or *C trachomatis* then sexual contacts must be evaluated [10,11]. Please refer to appropriate sections of these guidelines for approach to partner notification. All partners should be treated epidemiologically. This will prevent illness and complications in the contact and will also prevent reinfection of the index patient.

Follow-up

If there is no improvement in the patient's condition after 3 days then the diagnosis should be reassessed and therapy re-evaluated. Reassessment is required if signs of swelling and tenderness persist after antimicrobial therapy is completed although in some cases symptoms take longer than this to settle. Surgical assessment may be appropriate in these cases [40,41].

Differential diagnoses to consider in these circumstances include:

- testicular ischaemia/infarction [40,41]
- abscess formation and/or scrotal fixation [40,41]
- testicular or epididymal tumour [2,40]
- mumps epididymo-orchitis [42]
- tuberculous epididymitis [43]
- fungal epididymitis [44,45]

Auditable Outcomes Measures

- Were the five basic microbiological investigations performed? Target 90%
- Were appropriate antibiotics prescribed? Target 90%
- Were sexual partners of men with sexually transmitted epididymo-orchitis seen and treated epidemiologically? Target 70% of sexual partners to be seen
- Was a written action plan recorded for men who had not responded clinically to the initial course of antibiotics? Target 80%

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Conflict of interest

None

Evidence Base

A Medline Search was performed for 1966-2000 using the keywords "epididymitis", "orchitis" and "epididymo-orchitis". The Cochrane Database of Systematic Reviews and the Cochrane Controlled Trials Register up to 2000 were reviewed using the same keywords. Further references from articles identified were included.

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