ABC of sexually transmitted infections

Main presentations of sexually transmitted infections in men

John Richens

Some sexually transmitted infections, such as gonorrhoea and chlamydial infection, have different presentations in the two sexes because of differences in genital anatomy. This chapter focuses on infections of the male urethra, epididymis, testis, and prostate. Anal and oral symptoms are also covered because these are encountered more often among men, especially men who have sex with men.

This article is adapted from the fifth edition of the *ABC of Sexually Transmitted Diseases*, which is published by BMJ Books (www.bmjbooks.com)
An overview of chlamydial infection and gonorrhoea is available on bmj.com

Urethral discharge and dysuria

Spontaneous discharge of fluid from the urethral meatus, usually most noticeable after holding urine overnight and often accompanied by burning discomfort during urination (dysuria), strongly indicates a sexually acquired urethral infection.

Symptomatic gonorrhoea usually develops within a few days of exposure. Chlamydial infections take slightly longer. Mild infections may cause urethral discomfort and dysuria without discharge and may be confused with cystitis.

Management of urethritis

1 Take history, including sexual history
2 Examine, looking especially for evidence of discharge
3 Take samples from urethra
4 Treat for gonorrhoea and chlamydia if urethral Gram stain is positive for Gram negative intracellular diplococci
5 Give treatment for chlamydia if the urethral smear shows five or more polymorphs per high power field and the Gram stain does not suggest gonorrhoea
6 Explain diagnosis, treatment, and methods of prevention
7 Advise to avoid sex until treatment and follow up are completed
8 Advise treatment of partners
9 Review patient after treatment for symptoms, adherence, treatment of partners, and test of cure if gonorrhoea has been diagnosed

When laboratory investigation is not feasible, steps 3, 5, and the test of cure can be omitted

In clinics with laboratory facilities, the usual approach is to test for gonorrhoea and chlamydial infection. The first step is microscopy of a urethral smear. Optimal results for this are obtained from patients who have held their urine for four hours or more.

Urethritis is confirmed if the urethral smear shows five or more polymorphs per high power field. If the smear shows Gram negative intracellular diplococci, the patient is treated for gonorrhoea and chlamydia to cover the possibility of a mixed infection. Meanwhile, confirmatory tests for gonorrhoea and chlamydia are carried out (see bmj.com).

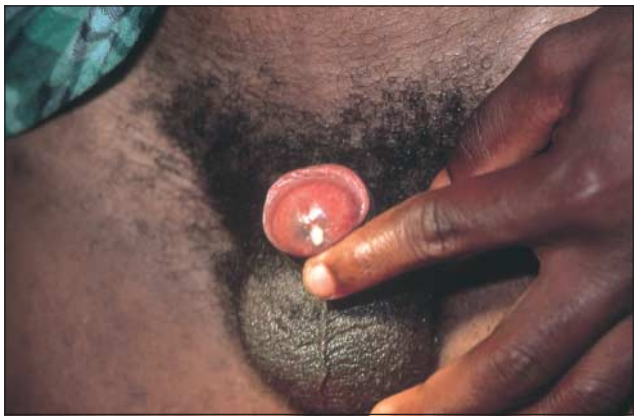
Patients without evidence of gonorrhoea receive doxycycline (100 mg twice daily for one week), erythromycin (500 mg twice daily for two weeks), or azithromycin (1 g single dose), which are active against chlamydial infection and most other pathogens associated with non-gonococcal urethritis. Doxycycline can cause photosensitivity. Absorption is impaired by antacids, iron, calcium, and magnesium salts. Gastrointestinal upset is common with erythromycin and azithromycin.

This approach will relieve symptoms in most patients, but some will report persistent symptoms or show a persistently

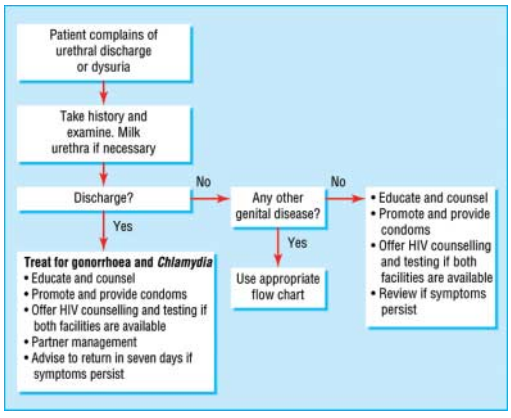
Causes of urethritis in men

Common diagnoses
- Gonorrhoea
- Chlamydial infection
- Non-specific urethritis

Less common diagnoses
- *Ureaplasma urealyticum* infection
- *Mycoplasma genitalium* infection
- Trichomoniasis
- Herpes simplex virus infection
- *Escherichia coli* infection
- Bacteroides infection
- Cystitis
- Pyelonephritis
- Trauma
- Foreign body
- Reactive arthritis, Reiter's syndrome, and allied conditions



Gonococcal urethral discharge



World Health Organization flow chart for managing urethral discharge

abnormal smear without symptoms. The options are then to investigate for treatment failure or reinfection or for infection by less common pathogens (for example, *Trichomonas vaginalis*) and to repeat, continue, or change the antibiotic therapy or await spontaneous resolution of symptoms.

When access to laboratory testing is not available, the simplest approach to managing urethritis is to administer blind treatment for gonorrhoea and chlamydia.

Scrotal swelling and pain

Mild testicular discomfort in the absence of abnormal physical signs is encountered commonly in young men attending STI clinics. Many patients can be reassured if testicular examination and a screen for STIs give normal results. In some cases, anxiety about infection, sexual function, or cancer is present. More marked scrotal pain has various causes.

Acute inflammation of the scrotal contents (usually unilateral) in young men is usually caused by gonorrhoea or chlamydia. In older men, *Escherichia coli*, *Klebsiella*, *Pseudomonas*, and *Proteus* infections are found more often. The first consideration in diagnosis is to exclude acute torsion, which requires emergency surgery. Torsion predominates in the teenage years, usually has an acute onset, and is often accompanied by vomiting. An immediate surgical opinion should be sought for any possible case. Doppler scanning is useful to show impaired blood flow.

The distinguishing features of mumps orchitis (severe testicular pain and marked systemic symptoms) usually appear a few days after parotid swelling, although the parotitis may be absent. Useful tests for cases of suspected epididymo-orchitis are a urethral smear, mid stream urine culture, and investigations for gonorrhoea and chlamydia. Presumptive treatment for gonorrhoea and chlamydia is appropriate in younger men when investigation is not feasible. Severe cases require treatment in hospital with parenteral antibiotics. Analgesia, scrotal support, and elevation may reduce discomfort and promote recovery.

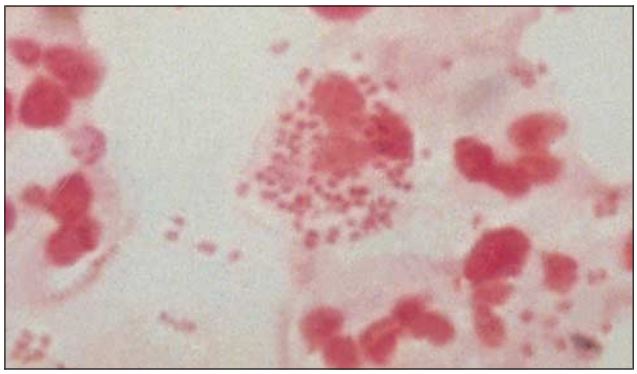
Painless swellings in the scrotum are common. Most of these are small, round, epididymal cysts or spermatoceles that require no investigation or treatment. Lesions in the testis can be due to tuberculosis, syphilis, or malignancy and require urgent ultrasound examination. Varicoceles feel like a bag of worms in the scrotum and can be associated with infertility. Therefore, referral to a urologist is advised if pain, testicular atrophy, infertility, or the threat of infertility are concerns.

Pelvic pain

The prostate can be affected by a variety of infectious and poorly defined non-infectious conditions that present as acute or chronic pelvic pain with a range of accompanying urinary and systemic symptoms. Gonorrhoea, chlamydial infections, and trichomoniasis can affect the prostate, but most acute infections are caused by other bacteria such as *E coli*, *Proteus*, *Streptococcus faecalis*, *Klebsiella*, and *Pseudomonas*.

STIs and non-sexually transmitted bacterial infections of the prostate account for only a few painful prostatic syndromes. Most patients with prostatic pain fall into a category recently designated "chronic pelvic pain syndrome" by the newly adopted National Institutes of Health classification of prostatitis syndromes.

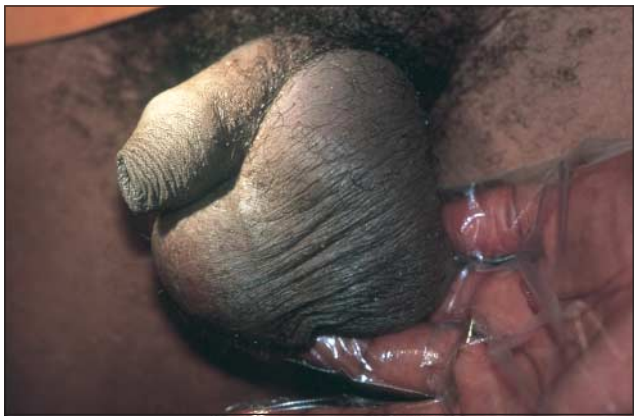
In patients who present with pelvic pain, the prostate should be examined for enlargement and tenderness. Patients with prostatitis should be screened for STIs. The value of subjecting



Gram negative intracellular diplococci

Causes of scrotal swelling and pain

- Infections of testis and epididymis: gonorrhoea, chlamydia, tuberculosis, mumps, and Gram negative bacteria
- Torsion of testis (mainly adolescents) or appendix testis (mainly 3-7 year olds)
- Pain after vasectomy
- Fournier's gangrene
- Vasculitis: Henoch-Schönlein purpura, Kawasaki disease, and Buerger's disease
- Amiodarone therapy
- Tumour
- Hernia
- Trauma



Acute epididymo-orchitis due to STI

Differential diagnosis of prostatic pain

NIH classification of prostatitis syndromes

I Acute bacterial prostatitis
II Chronic bacterial prostatitis
III Chronic pelvic pain syndrome (CPPS):
  IIIA Inflammatory (leucocytes in prostatic secretion, semen, or urine after prostatic massage)
  IIIB Non-inflammatory (as above without leucocytes)
IV Asymptomatic inflammatory prostatitis

Other causes of pain in region of prostate

- Pudendal neuralgia (sometimes due to tumour)
- Bladder outlet obstruction
- Bladder tumours
- Urinary stone disease
- Inguinal ligament enthesopathy
- Obstruction of ejaculatory duct
- Seminal vesicle calculi
- Bowel disorders

patients to prostatic massage to examine prostatic secretions for bacteria and inflammatory cells is now questioned by many experts. Transrectal ultrasonography and urodynamic studies are helpful in some patients. Confirmed infections respond well to antibiotics, the first choice often being a 28 day course of a quinolone or tetracycline, which have better prostatic penetration than other antibiotics.

Treating the more common causes of chronic pelvic pain is difficult. None of the treatments is well validated, and response rates are often poor. A recently published NIH symptoms index for chronic prostatitis is a useful way to record and monitor symptoms.

Measures occasionally found helpful in men with chronic pelvic pain syndrome

- Simple analgesia
- Non-steroidal anti-inflammatory drugs
- 2-4 weeks of ciprofloxacin or doxycycline
- Alpha blocking drugs (alfuzosin, terazosin, tamsulosin)
- Finasteride
- Quercetin
- Low dose amitriptyline
- Repetitive prostatic massage (contraindicated in bacterial prostatitis)
- Regular ejaculation

Anal symptoms

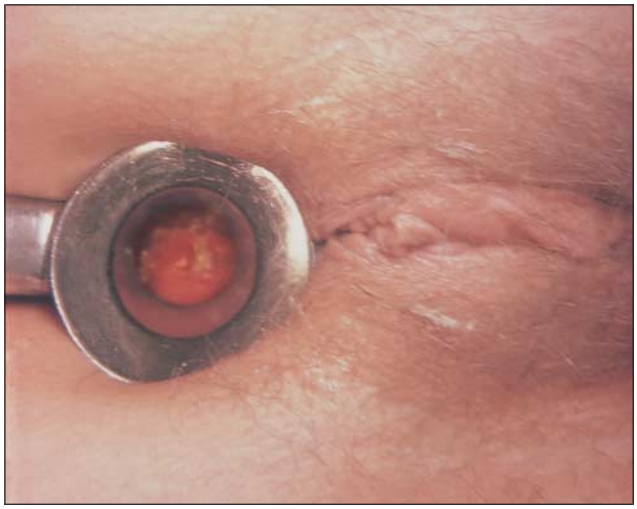
Anorectal STIs

Sexually transmitted infections can be transmitted by penile-anal contact, oroanal contact, or fingering, resulting in asymptomatic infection, ulceration (for example, herpes and syphilis) warts, or proctitis, the main manifestations of which are pain, tenesmus, bleeding, and discharge. Ulceration is investigated in the same way as genital ulceration. Discharges require investigation by proctoscopy, during which samples can be taken from the rectum to test for gonorrhoea and chlamydia. The management of a sexually acquired rectal discharge parallels that of urethritis. Anorectal infections are a potent cofactor for HIV transmission.

Anal intercourse can lead to the transmission of a wide variety of other organisms normally transmitted by the faeco-oral route. These include hepatitis A virus, *Shigella*, *Salmonella*, and *Giardia*. Anal intraepithelial neoplasia and invasive carcinoma may follow infection with certain subtypes of human papillomavirus.

Non-infectious anal conditions

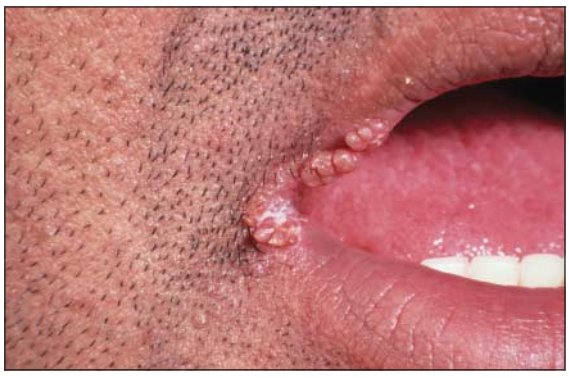
Patients who practise receptive anal sex often present to STI services with anal fissure, haemorrhoids, perianal haematomas, and pruritus ani. It is important to provide training and guidelines for the management and referral of these common conditions in clinics that see clients who practise anal sex.



Rectal gonorrhoea

Oral and perioral symptoms

Oral STIs usually are asymptomatic. *Neisseria gonorrhoeae* and *Chlamydia* infect the pharyngeal mucosa readily but rarely cause acute inflammation. Primary syphilis may present on the tongue or lips, and secondary syphilis can produce an oral mucositis. HIV has an important array of oral manifestations that include oral candidiasis (both erythematous and pseudomembranous), angular cheilitis, gingivitis, oral hairy leucoplakia, and Kaposi's sarcoma. Warts may develop in and around the mouth as a result of orogenital sexual activity.



Perioral warts. Reproduced with permission of the Wellcome Trust

Further reading

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