ABC of Sexually Transmitted Diseases

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URETHRAL DISCHARGE: DIAGNOSIS

The commonest presenting symptom of a sexually transmitted disease in men

A urethral discharge is the commonest presenting symptom of a sexually transmitted disease in men. A few discharges may be physiological but most are pathological; most of those seen by both general practitioners and specialists are pathological.

Causes

Broadly, pathological discharges are either gonococcal, due to infection with *Neisseria gonorrhoeae*, or non-gonococcal. The commonest cause of non-gonococcal urethritis is *Chlamydia trachomatis*, but it may also be due to infection with *Ureaplasma urealyticum*, *Trichomonas vaginalis*, or *Candida albicans* and sometimes to intraurethral lesions such as herpes genitalis, warts, or a syphilitic chancre. All these infections are acquired sexually. Rarely, pyelonephritis or a urinary tract infection may produce a urethral discharge. Attempts at self medication with chemicals may cause a discharge, as may trauma from the use of sexual aids or the self inflicted lesions of dermatitis artefacta.

In about a quarter of cases of non-gonococcal urethritis no cause or infective agent may be identified, and these may be designated as true non-specific urethritis. Usually, these discharges are assumed to be caused by a sexually transmitted infection which requires treatment.

Small amounts of clear or mucoid urethral discharge after sexual intercourse are probably the result of sexual stimulation. In the absence of sexual arousal the discharge may be due to spermatorrhoea or prostatorrhoea, both of which may be noticed at urination or defecation.

Taking a history

An accurate history must be taken, particularly of the clinical features and sexual factors, and a physical examination and full microbiological tests performed.

Clinical features—When a patient complains of a discharge it is important to identify its site. Uncircumcised men may develop a subpreputial infection (for example, herpetic or candidal) or disease (for example, inflammation from smegma or trauma, skin disorders, or malignancy) but find it difficult to pinpoint the exact source of the discharge. The patient may describe the colour and quantity of the discharge as yellow, white, clear, profuse, scanty, or a combination of these. Such descriptions give little indication of the type of infective agent present. Likewise, the fact that the incubation period of gonorrhoea (two to five days) is often shorter than for chlamydial or other types of non-gonococcal infection (seven to 14 days)

Sexual history

Homosexual or heterosexual
 Number of partners
 Symptoms in partner(s)
 Overseas contact
 Sites of contact

should not be used to make a non-microbiological clinical diagnosis. Five to 10% of patients with gonococcal and non-gonococcal urethritis have no symptoms.

Sexual factors—Details of the number and type of sexual contact in the previous four weeks and whether or not the partner has symptoms or has been treated recently must be determined. If the patient is homosexual it is necessary to know which anatomical sites have been exposed to risk—for example, the rectum or the throat as well as the urethra or a combination of all three. More than one site may be affected, and appropriate tests on samples from the rectum, throat, or both—as well as from the urethra—may be needed. Because of the development of strains of *N gonorrhoeae* that are resistant to penicillin details of sexual contact in other countries must be obtained. In all cases contact tracing of sexual contacts needs to be carried out to determine the source of the infection and the people who may in turn have been infected by the patient.

Physical examination

The penis should be thoroughly examined, particularly with the prepuce retracted, as should the scrotum and its contents, the pubic hair and surrounding skin, and the perianal area. The physical examination should not be limited to the genitals since with a “fly button” approach important information may be missed. A thorough general physical examination is needed to exclude possible complications of gonorrhoea or non-gonococcal infection. Often patients have more than one sexually transmitted disease at a time, and these may be missed unless the patient is comprehensively examined. Particular attention should be paid to the skin, soles of the feet, mouth, and joints.

A specimen of urethral discharge must be collected for Gram staining and microscopical examination. The slides may be stained immediately and a presumptive diagnosis of gonococcal or non-gonococcal urethritis made. Gonorrhoea will be confirmed by the presence of Gram negative intracellular diplococci, whereas non-gonococcal urethritis will be confirmed by their absence but the presence of ≥ 5 polymorphonuclear leucocytes per high power field ($\times 1000$ magnification). *C trachomatis* cannot, however, be identified by direct microscopy.

T vaginalis is not a common cause of urethral discharge and is probably worth looking for only in patients with chronic urethritis and those whose female sexual contacts already have trichomoniasis. A specimen of discharge is placed on a wet slide (with one drop of saline) and examined without staining under the microscope with dark ground illumination.

Culture

As up to 10% of cases of gonorrhoea may be missed if microscopy alone forms the basis of diagnosis specimens of discharge should ideally be cultured for *N gonorrhoeae*. The discharge may be plated directly on to a selective medium—for example, Thayer-Martin or modified New York City medium—which has added antibiotics to suppress overgrowth by other micro-organisms. The plates are incubated at 37°C in an enriched carbon dioxide environment (5-10%) for 48 hours in candle extinction jars or a carbon dioxide incubator. If a transport medium is needed either Stuart's or Amies's may be used, but specimens must reach the laboratory for plating out (as above) within 24 hours. Confirmatory tests, such as oxidase reaction, sugar fermentation, or immunofluorescence on suspected cultures, help to distinguish between *N gonorrhoeae* and other species of *Neisseria*.

Unfortunately, most laboratories supporting sexually transmitted disease clinics cannot provide a routine culture service for *C trachomatis*, although 30-50% of men with non-gonococcal urethritis may have a chlamydial infection.

Blood and urine tests

A urine sample should be collected. In the two glass urine test the patient is asked to pass about 60-120 ml into the first glass (first voided urine) and the remainder of his specimen into the second. The presence of threads or specks of pus and a hazy appearance which is not due to phosphates—that is, it does not clear after 5-10% acetic acid has been added—in the first glass confirms anterior urethritis. This test may easily be carried out by the general practitioner before referral and will help to differentiate an anterior from a posterior urethritis, a cystitis, or a nephritis (hazy urine with threads in both glasses). The referring practitioner should advise the patient to hold his urine for at least four hours before attending the clinic; this allows for the discharge to collect within the urethra. Some patients who give a history of discharge have no evidence of this when examined. In these cases it may be worth while repeating the investigations after the patient has held his urine overnight.

Although the gonococcal complement fixation test is of no use in the diagnosis of gonorrhoea blood samples should be collected from all patients to exclude concurrent infection with syphilis.

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