Sexually transmitted infections (STIs) include a wide range of infectious diseases that can be passed sexually between humans. Although many STIs present with genital symptoms, some manifest at extragenital sites such as skin, eyes, brain and joints. Some STIs, if left untreated, can have long-term morbidities such as pelvic infections, epididymo-orchitis and fertility problems.

The prevalence of STIs has been increasing. This may partly be a result of changes in sexual behaviour and partnerships, which means more opportunities for sexual encounters and therefore increased risks of exposure.1–3 Diagnostic technologies such as nuclear acid amplification tests (NAAT), which are very sensitive and specific, have made it easier to test for STIs. Sampling can be less invasive and more acceptable for patients, such as urine tests from men or self-taken vulvovaginal swabs from women for chlamydia and gonorrhoea.

Sexually transmitted infections in primary care is published jointly by the Royal College of General Practitioners and the British Association for Sexual Health and HIV (BASHH).4 It is intended to be a practical guide for doctors and nurses working in general practice or other settings for diagnosing and managing STIs.

Richard Ma uses urology case histories to illustrate situations in which sexually transmitted infections may need to be considered, and explains how best-practice guidance may be helpful for further management.

Figure 1. Epididymo-orchitis is a possible diagnosis when a patient presents with pain, swelling and inflammation of the testes and scrotum ("Dr P. Marazzi/Science Photo Library")

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CASE 1: DAWID

36-year-old Dawid is a student from Poland. He presents with pain and swelling in his left testicle, which has developed over the past few days.

What are the possible differentials?
1. Testicular torsion [T]
2. Indirect inguinal hernia [T]
3. Urinary tract infection (UTI) [T]
4. Epididymo-orchitis [T]
5. Hydrocele [F]

Urinary tract infection may present with loin pain that radiates to the groin and even the testicle, but not necessarily scrotal swelling. Hydrocele presents with scrotal swelling over a longer period of time, but is not always painful.

Testicular torsion is possible but unusual in this age group; according to Hospital Episodes Statistics data, 2504 cases were admitted to hospitals in England in the year 2011–12, and the mean age of patients was 16 years.

Indirect inguinal hernia and epididymo-orchitis may present with scrotal swelling and discomfort (Figure 1).

What questions will you ask about the history?
When you delve further into the history, Dawid tells you that the swelling developed over the past three days. He is also experiencing slight discomfort on passing urine. He does not describe colicky abdominal pains.

What will you include in the examination?
On examination, there is no evidence of urethral inflammation or discharge. There is no renal angle tenderness or fever. There are no lumps in the groin and no evidence of direct or indirect inguinal hernia. The left testicle is slightly more swollen than the right and feels warm and tender. No abnormalities are detected on urinalysis.

What are the causes of epididymo-orchitis?
1. Mumps [T]
2. UTI [T]
3. Chlamydia [T]
4. Tuberculosis [T]
5. Gonorrhoea [T]

Although these infections may cause epididymo-orchitis, they may not all explain current symptoms, so history taking is important to identify the likely cause.

What further questions in the history might be helpful?
You ask about risks of STIs. Dawid states that he had STI tests when he first came to the UK, which were negative. However, he had unprotected vaginal sex with a female partner just over two weeks ago at a student party.

There may be other symptoms such as dysuria, urethral discharge and urinary frequency, which may indicate a UTI or STI. First-catch urine (FCU) can be used to test for chlamydia and gonorrhoea, where this is available, whereas midstream urine (MSU) can be used for diagnosing UTI.

You may also include vaccination history in your enquiry. Adults born between 1982 and 1986 in the UK may not have been vaccinated against mumps; there may be a larger cohort in other countries with no robust vaccination programmes. Twenty to thirty per cent of post-pubertal men with mumps may develop epididymo-orchitis. It may be associated with fever, headaches and parotid swelling.

Disseminated tuberculosis is uncommon but you may wish to check if there are any symptoms or exposure to tuberculosis, especially from countries where it is prevalent. He has no history of chronic cough or contact with tuberculosis. You note a BCG scar. He has no evidence of sore throat or parotid swellings.

Based on the history and examination, you decide that epididymo-orchitis is the most likely diagnosis.

How would you manage this patient?
According to the BASHH guidelines, first-line treatment for epididymo-orchitis is oral doxycycline 100mg twice daily for two weeks, especially if you suspect a non-gonococcal STI as a cause. A positive test for gonorrhoea may need referral to genitourinary medicine because of the prevalence of resistant strains; intramuscular injection of ceftriaxone 500mg is usually added to the epididymo-orchitis treatment.

As with all STI management, advise no sexual contact during treatment until partners are treated. Also consider testing for other STIs such as HIV and syphilis. You decide to send off an FCU sample for chlamydia and gonorrhoea NAAT, and an MSU sample for microscopy, culture and sensitivities (MC&S).

After a brief discussion, you agree that Dawid is at low risk for blood-borne viruses and you offer serology for HIV, syphilis and hepatitis B to complete the STI check-up. Note that detailed ‘counselling’ is not required for HIV testing; the guideline offers a simple ‘crib sheet’ as to what needs to be covered in this discussion.

Should you offer follow up?
You should review Dawid two weeks later, after the course of treatment. You may wish to offer face-to-face or a remote consultation such as a telephone call or email.

You find that he is much better. The MSU was negative; FCU was positive for chlamydia and negative for gonorrhoea; serology was negative for HIV, hepatitis B and syphilis.
You discuss the diagnosis with him and proceed with partner notification. He states that he has not had any other sexual partners since the last STI check-up. You advise him to contact his last sexual partner to test for STIs and also to make sure she got treated for chlamydia; you reassure him that this is so that he does not get re-infected and also to make sure the infection does not spread to other people.

A week later, he is able to tell you he managed to text the last sexual partner and she obtained treatment for chlamydia, although her tests were normal. This process is necessary for resolution of partner notification.

**CASE 2: PHILIP**

Philip is a 56-year-old man who presents with urinary frequency and discomfort on passing urine. He does not complain of urethral discharge, nocturia or frank haematuria. While he is with you, he would also like something for his erectile problems.

**What do you include in your differential diagnosis?**

1. Diabetes [T]
2. Renal calculus [F]
3. UTI [T]
4. STI [T]
5. Benign prostate enlargement [T]

**What else in the history would help narrow down the possibilities?**

Colicky abdominal pains, especially in the loins, with radiation to the groins may indicate renal calculi. Diabetes may present with urinary frequency. Philip may be at higher risk from his family history or lifestyle; he is a non-smoker but his father has type 2 diabetes.

UTIs are more common in men over 35 years presenting with urinary symptoms, but STIs are possible if they are also sexually active.

Philip has recently separated from his wife; he has returned from South Africa recently, where he had unprotected oral and vaginal sex with a woman he met there; he has also had a few sexual encounters with women he met online in the UK. He might be at risk of an STI and other blood-borne viruses. People over 40 are now at increasing risk of STIs as a result of changes in partnership and sexual behaviour.5

**What would you look for in the examination?**

Philip is afebrile and does not have any abdominal or renal angle tenderness. His body mass index (BMI) is 32kg/m² and genital examination is normal. His prostate is smooth and not enlarged. His International Prostate Symptom Score (IPSS) is 3/35. His urinalysis results are: glucose +, blood —, protein —, nitrite — and leucocytes ++. Based on his history and BMI, his QDiabetes score is 27 per cent; Philip is at high risk of developing diabetes.

**What investigations may be helpful to make your diagnosis?**

1. MSU [T]
2. HbA1c [T]
3. Prostate-specific antigen (PSA) [F]
4. FCU [T]

In accordance with the Health Protection Agency guideline on UTI, you should send an MSU for MCrIs; it will not be processed for STIs so you should ask for an FCU sample (patient must not pass urine for at least one hour) and ask for chlamydia and gonorrhoea NAAF. If urine tests are not available, take a urethral swab.

Philip is at risk of diabetes so he may need any of the screening tests for diabetes such as oral glucose tolerance test, fasting glucose or HbA1c. PSA test is not useful at this stage, especially if the IPSS is low and the prostate not enlarged.

Note that there are now many older men and women who are at increased risk of STIs including HIV and hepatitis as a result of changing partnerships, divorce, separation and increased opportunities for sexual encounters from travel and social media. Men who request drugs for erectile dysfunction or present with sexual difficulties may offer a good opportunity to discuss sexual health issues and STI/HIV testing.

Philip agrees to have a test for STIs as he is doing a urine sample anyway. He has also agreed to a test for HbA1c and a cardiovascular check; as he is already having blood tests, he has agreed to include syphilis, HIV and hepatitis B.

**How would you manage this patient?**

1. Give trimethoprim 200mg twice daily for one week [T]
2. Give azithromycin 2g immediately [T]
3. Give an alpha-blocker such as tamsulosin [F]
4. Give sildenafil 25mg on the selected list scheme (SLS) [F]

You offer Philip a course of antibiotics (oral trimethoprim 200mg twice daily for a week) as you suspect UTI. You discuss causes and management of erectile dysfunction, which includes a cardiovascular check; as he is already having blood tests, he has agreed to include syphilis, HIV and hepatitis B.

Philip requests for the diagnosis to be confirmed with a second sample, which is done. You agree to continue with partner notification.

A week later you call him up to let him know that his MSU, HIV, gonorrhoea and hepatitis B results are negative but he has tested positive for chlamydia. You offer...
him azithromycin 2g as a single dose, according to BASHH guidelines, and you discuss partner notification, a process similar to the last clinical case.

His HbA1c is 68mmol/l and you diagnose him with type 2 diabetes. Because he is not on oral hypoglycaemic agents, he is not eligible for NHS prescriptions for erectile dysfunction drugs.

CONCLUSIONS

There may be unexpected opportunities to discuss sexual health issues and offer tests for STIs and HIV, particularly during consultations related to urological problems. STIs are common and can present with typical symptoms and signs or those of complications. Although young adults under 25 may account for the majority of STI diagnoses, older adults who are sexually active and with new or unstable partnerships may also be at risk.

Thankfully most STIs are treatable and preventable, which is why every opportunity should be used for testing and prevention to reduce onward transmission.

Declaration of interests: none declared.
REFERENCES


