A suspicious rash in a man with human immunodeficiency virus (HIV)

Case
A man, 51 years of age, presented to his general practitioner (GP) with a three-to-four-week history of a rash on the palms of his hands, as well as a ‘lump’ on his penis that was pink and raised. The rash was not painful. He also felt weak, unwell and had lost weight. Past medical history included human immunodeficiency virus (HIV) infection, hypertension and hypothyroidism. The patient had lived with HIV for several years but had refused treatment.

On examination, a 2 cm posterior triangle cervical chain lymph node was palpable. A non-pruritic, macular, scaly keratotic rash was present on the palms of his right and left hands (Figure 1). Genital examination revealed a well-circumscribed singular, non-painful pink papule on the dorsal aspect of the glans penis corona, 0.8 cm in diameter (Figure 2). No inguinal lymph nodes were palpable. There was no discharge from the penis.

Question 1
What are your differential diagnoses for this genital lump?

Question 2
What further history would you ask?

Question 3
What further examination would you perform?

Question 4
What investigations would you order?

Question 5
What is the final diagnosis?

Question 6
What is the management of this patient?

Answer 1
The differential diagnoses are shown in Table 1.

Answer 2
This patient’s risk for sexually transmissible infections (STIs) should be assessed. A sexual history should be obtained and information required should include:

- partners’ gender (men who have sex with men [MSM], men who have sex with women [MSW], or both)
- type of sex – oral, vaginal or anal sex (if anal – receptive, insertive or versatile)
- use of condoms
- regular or casual partners
- previous STIs.

Bloodborne disease risk profile (intravenous drug use, tattoos, blood transfusions) should also be assessed.¹⁻⁴ Consider inquiring about neurological deficits – balance problems, hearing or visual changes, and cognitive impairment.³ This patient identified as a man who has sex with men and admitted to unprotected oral sex. He mentioned he had recently developed problems with his balance.

Figure 1. Keratotic rash on the palms of the (a) right and (b) left hand

Figure 2. Singular pink papule on the dorsal aspect of the glans penis corona
Previous STIs other than HIV included genital herpes, syphilis and genital warts.

**Answer 3**

Further examination should include a full neurological assessment to rule out neurosyphilis – cranial, motor and sensory peripheral nerve examination. Examination of the ears, mouth and throat, as well as cardiovascular and gastrointestinal examinations, should be performed. Look for patchy alopecia as this may be the only presenting symptom of secondary syphilis.

**Answer 4**

Consider the following tests for patients with HIV who present with a rash:

- Chlamydia or gonorrhoea nucleic acid amplification test (NAAT) from first pass urine, and/or urethral, rectal, cervical or self-collected vaginal swabs as appropriate. Add lymphogranuloma venereum (LGV) if chlamydia NAAT is positive in rectal swabs of HIV-positive MSM.
- Throat swabs in MSM and sex workers.
- Syphilis serology including:
  - Syphilis enzyme immunoassay (EIA) – a specific screening test. False positives occur in 1–2% of samples because of underlying inflammatory conditions (e.g. hepatitis), pregnancy, autoimmune diseases, ageing and malignancy. The sensitivity of EIA is 84% for detecting primary syphilis and 100% for syphilis in other stages; specificity is 96–100%.
  - Rapid plasma reagin (RPR) – a non-specific test. The sensitivity of RPR is 78–86% for primary syphilis, 100% for secondary syphilis and 95–98% for latent syphilis; specificity is 85–99%.
  - *Treponema pallidum* particle agglutination (TPPA) assay – a specific test. The sensitivity of TPPA is 99% and specificity is 96%. False positives may occur in rheumatic heart disease.
- HIV plasma viral load, cluster of differentiation 4 (CD4) count and T-cell subsets, complete blood picture (CBP), serum biochemistry including liver function tests (LFTs).

**Further information**

The patient’s blood results returned showing the following:

- HIV viral load: 66,400 copies/mL
- CD4 (cluster of differentiation 4) count: 203 cells/mm
- Syphilis screen: enzyme immunoassay (EIA) reactive; RPR titre: 1:256; TPPA reactive.

**Answer 5**

The diagnosis is secondary infectious syphilis in a patient with untreated HIV. The RPR was raised at 1:256, suggesting re-infection within the last four to 10 weeks; however, secondary syphilis may manifest up to two years after initial infection.

**Answer 6**

Syphilis is a notifiable communicable disease. Partner notification is required for this patient (Figure 3). Treatment with...
intramuscular benzathine penicillin 1.8 g (2.4 million IU) is required for secondary syphilis as per World Health Organization (WHO) guidelines. Urgent referral to an HIV medical practitioner (specialist GP, or infectious disease or sexual health physicians) for commencement of highly active antiretroviral therapy (HAART) is necessary.

The patient was extensively counselled on the benefits of commencing HAART to halt the progress of his HIV and reduce the risk of transmission to others. However, he refused treatment as it was against his personal beliefs. Lumbar puncture was performed given the patient’s neurological symptoms and returned negative for neurosyphilis. Further follow-up was arranged to repeat his syphilis serology, further discuss commencing HAART, and for opportunistic ophthalmology and audiology review in light of his chronic, untreated HIV. He failed to attend these appointments.

Syphilis has made a resurgence in Australian populations, occurring in 14 per 100,000 males.

**Key points**

- Consider syphilis in a patient who is HIV positive and who presents with a rash.
- Syphilis enhances HIV transmission and may present atypically.
- Syphilis serology should be checked every three months in patients who are MSM and HIV-positive.
- Syphilis can be transmitted by unprotected oral sex as well as insertive and receptive anal and vaginal sex.

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**References**


**Figure 3. Management of secondary syphilis**

**CT**, computed tomography; **EIA**, enzyme immunoassay; **HIV**, human immunodeficiency virus; **IM**, intramuscular; **MSM**, men who have sex with men; **RPR**, rapid plasma reagin

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**Alert**

All patients who are HIV positive with neurological deficits should undergo lumbar puncture and head CT scan.

**High-risk populations**

- MSM
- HIV positive
- Aboriginal and Torres Strait Islander peoples

**Symptoms**: fever, weight loss, malaise, fatigue

**Signs**: cranial nerve palsies, generalised lymphadenopathy, splenomegaly, skin rashes (occur in 90% of cases) – papular, macular or maculopapular rash, alopecia, oral ulcers, meningitis, uveitis, condylomata lata

**Test of cure**

- Infection status confirmed with RPR level
- TPPA and EIA remain positive even after Rx
- Four-fold increase in RPR indicates re-infection
- Four-fold decrease in RPR demonstrates cure
- Repeat serology 1, 3, 6, 12 and 24 months after Rx

**Transmission**

- Skin-to-skin contact
- Infected blood
- Vertically from mother to fetus

**Partner notification**

- All sexual partners from minimum six months up to two years
- Treat contacts presumptively

**Beware**

Jarisch-Herxheimer reaction within 24 hours of IM penicillin: fever, headaches, joint pain, rigors and myalgia

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