

Herpes, Syphilis & More: Keeping Up to Date



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Infection with Herpes simplex virus type 1 (HSV)-1 and Herpes simplex virus type 2 (HSV)-2 is the most common cause of genital ulceration in North America. Serological studies have demonstrated the existence of antibodies to HSV-2 in 20% of adults; however, only 10% of infected individuals show symptoms of the disease which leads to diagnosis.¹⁻²

In the past five years, the re-emergence of syphilis and more recently, the emergence of lymphogranuloma venereum serovars of *Chlamydia trachomatis* (LGV), have complicated the diagnosis of genital ulcers in Canada (Table 1).

The incidence of infectious syphilis has increased from 0.4 per 100,000 in 1997 to a projected 3.9 per 100,000 in 2004.³⁻⁴ Outbreaks have been reported in both gay and heterosexual populations in different Canadian cities. Syphilis is often associated with the sex trade.

Outbreaks of LGV, which typically occur in tropical countries, have occurred among gay men in several cities in Europe and in North America. In Canada, 38 cases of LGV have been reported since active surveillance for this infection began in 2003.⁵

Chancroid and granuloma inguinale are endemic in tropical and subtropical regions, but are rare in Canada. Chancroid may occur in individuals involved in the sex trade or in illicit drug use.

Meet Tom

- Tom, 30, presents with a two-day history of a slightly sensitive ulcer on the shaft of his penis and enlarged, non-tender nodes in the left groin.
- Tom has been sexually active with his male partner and had one casual male partner two months ago.
- He had negative VDRL and HIV serology two years ago.



For more on Tom, go to page 74.

Table 1
STIs causing genital ulceration

| Ulcerative STIs | Incubation period |
|--|--|
| HSV-1 and HSV-2 <ul style="list-style-type: none">– Primary– Nonprimary first episode | <ul style="list-style-type: none">• Two to 21 days• Unknown |
| Primary syphilis | <ul style="list-style-type: none">• Three to 90 days |
| LGV | <ul style="list-style-type: none">• Three to 30 days |
| Chancroid | <ul style="list-style-type: none">• Three to 14 days |
| Granuloma inguinale | <ul style="list-style-type: none">• One to 16 weeks |

STIs: Sexually transmitted infections
LGV: Lymphogranuloma venereum serovars of *Chlamydia trachomatis*
HSV-1: Herpes simplex virus type 1
HSV-2: Herpes simplex virus type 2

Table 2

STI risk factors

- New partner in the last six months
- Multiple partners
- Men who have male partners
- Involvement with the sex trade
- Illicit drug use
- Sexual partner in or from a country where the infectious agent is endemic
- A history of a previous STI
- Contact with an infected partner



Figure 1. Syphilitic chancre.

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A detailed sexual history will identify those at risk (Table 2). Knowledge of the incubation period and time since last sexual encounter, may help to narrow the differential diagnosis.

Do clinical features aid diagnosis?

In an individual with partial immunity due to prior orolabial HSV-1, the first presentation of genital HSV-2 is often unilateral with single or multiple shallow, painful ulcerations with or without tender inguinal lymphadenopathy. The presentation of genital HSV may be atypical in 20% of first episodes.⁶ Cutaneous manifestations may include:

- erosions,
- fissures and
- abrasions.

The syphilitic chancre appears at the sight of contact and is painless, with a slightly indurated border, clean base and scant serous exudates (Figure 1). Inguinal node enlargement is often unilateral and non tender. The chancre typically heals within 10 days.

The earliest manifestation of an LGV infection is the appearance of a papule at the site of bacterial invasion. The papule breaks down to small, painless, single- or multiple-ulcers that heal within a few days. LGV is typically associated with large, tender fluctuant nodes that may suppurate. When transmission occurs during anal intercourse, infection presents with symptoms of proctitis.

Clinical signs are an insensitive diagnostic tool for any of these infections. The presentation of HSV is often atypical. Primary syphilis and LGV lesions heal spontaneously and secondary bacterial infection or co-infection with HIV can alter the appearance of genital ulcers.

Which laboratory tests will be helpful in diagnosis?

Given the prevalence of genital herpes infections and the frequency of atypical presentation, it is appropriate to culture all genital ulcerations for HSV. A positive culture not only confirms the diagnosis, but differentiates infection with HSV-1 or HSV-2.

The distinction between types is important in counselling and prognosis. For example, an HSV-1 genital infection will recur less frequently and asymptomatic viral shedding is less prevalent than with an HSV-2 infection.

Where available, a swab for dark field microscopy or direct fluorescent antibody is indispensable in identifying *Treponema pallidum* from an ulcer caused by primary syphilis. Serology is the mainstay of syphilis diagnosis.

When considering a diagnosis of primary syphilis, it is essential to request both the non-treponemal test (VDRL, RPR) and treponemal specific test (TP-PA, FTA-ABS, MHA-TP). The latter test may become positive earlier than the screening non-treponemal test. Early in the course of the infection, both tests may remain negative and it is prudent to repeat the serology two to four weeks after appearance of the ulcer.

When the epidemiologic profile suggests the possibility of LGV, testing should include a swab of the lesion for chlamydia culture or nucleic acid amplification tests and serology for chlamydia trachomatis antibody. Since the availability and type of tests varies by locality, check with the local laboratory for collection and transportation specifics.

Table 3
Recommended treatment⁷

| | |
|--------------------------|--|
| First episode HSV | <ul style="list-style-type: none"> • Acyclovir, 200 mg, five times per day, for five to 10 days, or • Famciclovir, 250 mg, three times per day for five • Valacyclovir, 1000 mg, two times per day for 10 days • Follow-up counseling should include discussion of episodic or suppressive treatment |
| Primary syphilis | <ul style="list-style-type: none"> • Benzathine penicillin G- 2.4 x 10⁶ IU IM in a single dose* • Follow response to treatment with serial VDRL/RPR |
| LGV | <ul style="list-style-type: none"> • Doxycycline, 100 mg, two times per day, for 21 days |

* Available to community physicians only through Provincial Sexually Transmitted Disease Services

Note: See Canadian Guidelines on Sexually Transmitted Infections (reference 7) for alternate treatment regimens for allergic or pregnant patients.

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Should treatment be initiated before a definitive diagnosis is reached?

Where a first episode of HSV is the most likely diagnosis, treatment should be offered (Table 3). Discomfort will be reduced and the duration of lesions and viral shedding will be shortened.

When the epidemiologic picture suggests a diagnosis of primary syphilis or LGV, the decision to treat is based on the likelihood of patient compliance with follow-up. Caution the patient to abstain from sexual activity until the diagnosis is confirmed and the appropriate treatment is completed.

When patient follow-up cannot be assured, it is appropriate to initiate treatment based on the clinical picture alone. If the diagnosis is not clear, treating for more than one suspected infection may be necessary to prevent transmission. As with all bacterial sexually transmitted infections, the identification, notification, testing and treatment of sexual partners is standard public health practice.

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More on Tom

- Tom's test results included a negative HSV culture and reactive TP-PA
- The RPR was initially negative, but became positive at a ratio of 1:8 when the test was repeated two weeks later.
- Chlamydia trachomatis culture and serology were negative.
- Tom was treated with benzathine penicillin G.
- He was also tested for gonorrhea and HIV. He had previously been immunized against hepatitis B and received a vaccine against hepatitis A at this visit.
- Tom's regular partner was also treated with long acting penicillin. His RPR was 1:64.

Take-home message

1. The sexual history is an invaluable aid in the diagnosis of STIs.
2. Test for HSV and syphilis in individuals presenting with genital ulcers.
3. Genital ulceration increases the risk of acquiring HIV.
4. Interruption of STI transmission requires adequate treatment of the index case and testing and treatment of sexual partners.

References

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