

# Painful genital ulcers

**Richard P. Usatine, MD**

Vice Chair for Education, Department of Family and Community Medicine,  
University of Texas Health Science Center at San Antonio

A colleague came into the charting area and said he thought he had just seen his first case of chancroid. He asked me if I had a moment to see the patient, a 32-year-old African American man who noted the onset of painful sores on his penis 1 week ago. The patient consented to a second opinion. On further questioning, he remembered a tingling pain that started a few days prior to the sores. When asked about any previous outbreaks, he thought he may have had something like this 1 year ago. He did not remember seeing blisters before the sores appeared.

The last time the patient had sexual relations was 2 months ago, with someone he met at a party. He claimed he used a condom. He did not have any lesions at that time and had never had a sexually transmitted disease before.

He had recently fallen in love, and was concerned about these ulcers—he did not want to give her any diseases. They had only kissed so far and he wanted to know what he should tell her. He said he had never had sex with men or injected any drugs. He has had a number of serially monogamous relationships and reported no other human immunodeficiency virus (HIV) risk factors.

The patient was a healthy-looking young man. Examination of his penis (**Figure 1**) showed the ulcers clearly visible (**Figure 2**). He had only shotty inguinal adenopathy that was nontender.

## ■ WHAT IS THE DIAGNOSIS?

## ■ WHAT IS THE TREATMENT AND PREVENTION STRATEGY?

**FIGURE 1** Painful sores on the genitals



*The patient noted the onset of these sores on his penis 1 week previous.*

**FIGURE 2** Close-up of ulcers on the penis



*The sores had shotty inguinal adenopathy that was nontender.*

## ■ DIFFERENTIAL DIAGNOSIS

The most likely causes of painful genital ulcers in this case are herpes simplex, chancroid, and syphilis. Granuloma inguinale and lymphogranuloma venereum (LGV) are rare causes of genital ulceration in the United States. A zipper accident or other trauma can cause genital ulceration, but the patient should be able to give a clear history of such an event.

By epidemiology alone, the order of likelihood for the cause of any genital ulceration is herpes, syphilis, then chancroid.

### This case points to herpes

Herpes simplex is by far the most common cause of painful genital ulcers in the United States; at least 50 million people have genital herpes simplex virus (HSV) infection.<sup>1</sup> The features of this case pointing to herpes are the appearance of multiple ulcers, the tingling pain that preceded the ulcers, and the history of a possible episode in the preceding year. While it would be helpful to have a history of blisters that preceded the ulcers, the evidence still points to herpes as the most likely diagnosis.

### Could it be syphilis?

While the primary chancre of syphilis is classically described as painless, the patient with syphilis may experience pain. Syphilis tends to present as a single ulcer but may cause multiple ulcers.

### Why not chancroid?

Chancroid may also cause multiple small painful ulcers. However, the ulcers of chancroid tend to be deeper than those of herpes and bleed more easily.

### Other characteristics to look for

All of these sexually transmitted diseases can cause tender painful adenopathy, which is particularly characteristic of chancroid and LGV. Suppurative inguinal adenopathy with painful genital ulcers is almost pathognomonic of chancroid. With LGV, there may be a self-limited genital ulcer at the site of inoculation, which is often gone by the time a patient seeks care. Granuloma inguinale causes painless, progressive ulcerative lesions without regional lymphadenopathy. These lesions are highly vascular (with a characteristic beefy red appearance) and bleed easily on contact.<sup>1</sup> While HIV can be spread more easily with open genital ulcerations, HIV alone does not cause genital ulcerations.

## ■ LABORATORY EXAMINATION

### Herpes

All patients with genital ulcers thought to be from an STD should be tested for syphilis and HIV regardless of other risk factors.<sup>1</sup> This patient should additionally be tested for herpes simplex. A bacteriologic test for chancroid is not necessary, but the clinician who first saw the patient asked that we conduct the test for chancroid—a culture for the *Haemophilus ducreyi* bacterium.

Isolation of HSV in cell culture is the preferred virologic test for patients with genital ulcers.<sup>1</sup> Unfortunately, the sensitivity of culture declines rapidly as lesions begin to heal, usually within a few days of onset. Direct fluorescent antibody tests are also available. Both herpes culture and the direct fluorescent antibody test distinguish HSV-1 from HSV-2. Polymerase chain reaction assays for HSV DNA are highly sensitive, but

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**Richard P. Usatine, MD, Editor, Photo Rounds, University of Texas Health Science Center at San Antonio, Department of Family and Community Medicine, MC 7794, 7703 Floyd Curl Drive, San Antonio, TX 78229-3900.**

their role in the diagnosis of genital ulcer disease has not been well-defined.

Most cases of recurrent genital herpes are caused by HSV-2. Specific serologic testing can be expensive, and is not needed at the time of the initial virologic screening. However, consider ordering the test at a subsequent visit, because the distinction between HSV serotypes influences prognosis and counseling. Also, because false-negative HSV cultures are common—especially with recurrent infection or healing lesions—type-specific serologic tests are useful for confirming a diagnosis of genital herpes.<sup>1</sup> Herpes serologies can also be used to help manage sexual partners of persons with genital herpes.

### Syphilis

The Venereal Disease Research Laboratory (VDRL) test or rapid plasma reagin (RPR) test should be used to detect syphilis. Both tests are used for nonspecific screening only, because they measure anticardiolipin antibodies. A positive result should be confirmed with a specific treponemal test such as a fluorescent treponemal antibody absorption test (FTA-ABS).

The results of these laboratory tests are not available immediately during the patient's visit. If there was a high suspicion for syphilis, a dark field examination from the ulcer exudate could be used to look for spirochetes while the patient was still in the office. In this case, the suspicion for syphilis was low.

### ■ TREATMENT: ANTIVIRALS

The major question is whether the patient should be treated empirically with medication. The most likely diagnosis is herpes simplex. Randomized trials indicate that 3 antiviral medications—acyclovir, famciclovir, and valacyclovir—provide clinical benefit for genital herpes (level of evidence [LOE]=1a).<sup>1</sup>

The Centers for Disease Control and Prevention (CDC) 2002 treatment guidelines for STDs recommend the following medications for

the first clinical episode of genital herpes:

- Acyclovir 400 mg orally, 3 times daily for 7–10 days or until clinically resolved, *OR*
- Acyclovir 200 mg orally, 5 times daily for 7–10 days or until clinically resolved, *OR*
- Famciclovir 250 mg orally, 3 times daily for 7–10 days or until clinically resolved, *OR*
- Valacyclovir 1 g orally, twice daily for 7–10 days or until clinically resolved.

Topical acyclovir is less effective than the oral formulation and its use is discouraged.

The suspicion for syphilis is too low to warrant an intramuscular shot of penicillin, which is painful and can cause anaphylaxis in some patients. The likelihood of chancroid is too low to prescribe an oral antibiotic such as erythromycin.

The patient wanted empirical treatment for herpes. He was given valacyclovir, 1 gm for 7 days, taken twice daily, with the option to call in for more if the ulcers did not resolve by day 7. He was told he might apply petrolatum and clean gauze to the ulcers to diminish the pain when open ulcers rub against underwear. Acetaminophen or other analgesics were recommended for pain, and he was advised to avoid sexual activity until the ulcers had fully healed.

### ■ PREVENTING TRANSMISSION

The patient is appropriately concerned about the transmission of this condition to a new partner. Not having a firm diagnosis makes definitive counseling more difficult. However, general principles of safe sex and condom use were discussed. On the follow-up visit the patient was told that the result of his herpes test was positive for HSV-2. Results of his RPR, HIV antibody test, and *H ducreyi* culture were all negative.

Information about condom use was reinforced, and the patient was told there is definitive evidence that condom use does diminish the risk of transmission of herpes from a man to a woman (LOE=1b).<sup>2</sup> That same study did not show that condom use prevents transmission from women to men. Also, changes in sexual behavior,

correlated with counseling about avoiding sex when a partner has lesions, were associated with reduction in HSV-2 acquisition over time (LOE=1b).<sup>2</sup>

One study showed that the overall risk of genital HSV transmission in couples is low (10%/year). The risk may be significantly increased in women and in seronegative individuals.<sup>3</sup> This speaks for serologic testing for the potential partner of this patient.

When recurrences are frequent, antiviral agents can decrease the frequency (LOE=1a).<sup>1</sup> If this patient has frequent recurrences, antiviral agents would be appropriate and would decrease the times when the patient is shedding virus asymptomatically.

Herpes is transmitted between sexual partners during asymptomatic shedding.<sup>1</sup> Acyclovir 400 mg twice daily can reduce asymptomatic viral shedding significantly among women with recurrent herpes simplex (LOE=1b).<sup>4</sup> While it is likely this will decrease transmission from women to men, this has not been proven. Data on decreasing viral transmission from men to women by antiviral therapy is not available. At some point, the Glycoprotein-D-adjuvant vaccine may be an option to prevent genital herpes transmission to his partner.<sup>5</sup>

#### REFERENCES

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- Note.* The CDC 2002 sexually transmitted diseases treatment guidelines are available for download and use on a Palm handheld computer at [www.cdcnpin.org/scripts/std/pda.asp](http://www.cdcnpin.org/scripts/std/pda.asp).

# THE JOURNAL OF FAMILY PRACTICE

## Evidence-based medicine terms

THE JOURNAL OF FAMILY PRACTICE uses a simplified rating system derived from the Oxford Centre for Evidence-based Medicine. More detailed definitions may be found at its website: [http://www.cebm.net/levels\\_of\\_evidence.asp](http://www.cebm.net/levels_of_evidence.asp).

**Level of Evidence** characterizes the validity of a study while making no specific practice recommendation

- 1a Systematic review of randomized controlled trials
- 1b Individual randomized controlled trial with narrow confidence interval
- 1c All or none—all patients died before therapy was available, but now some survive; or, some patients died before therapy was available, but now all survive
- 2a Systematic review of cohort studies
- 2b Individual cohort study, or low-quality randomized controlled trial
- 2c "Outcomes" research
- 3a Systematic review of case-control studies
- 3b Individual case-control study
- 4 Case series, or poor quality cohort or case-control studies
- 5 Expert opinion

**Strength of Recommendation** translates a given level of evidence into a practice recommendation

- A Includes 1a-c levels of evidence
- B Includes levels 2a-c and 3a, b
- C Includes levels 4 and 5

Strength-of-recommendation ratings do not always reflect a direct one-to-one correspondence with levels of evidence, as depicted above, but may take into account such variables as intervention cost, ease of use, and impact of the disease in the population.