

# Case Study: Postsexual Penile Ulcer as a Symptom of Diabetes

Nehman Lauder, MD, and Juliann Binienda, MA, LMFT

## Presentation

D.H., a 50-year-old married man, presented for his first office visit complaining of a “male problem,” which he described as a sore on his penis that had been present for 14 days. The patient’s most recent sexual encounter was with his wife 2 weeks before the office visit. He denied any penile discharge but complained of constant pain in his “private part.” He also denied dysuria, frequency, past sexually transmitted diseases, and extramarital sexual encounters. His wife had no vaginal or perineal symptoms.

The patient reported first noticing a “blister” on the glans penis, which ruptured several days after forming. The pain intensified when the blister broke. He described the pain intensity as mild to moderate with no radiation, “sharp and stinging,” especially when washing himself and during sexual intercourse. He had not experienced nausea, fatigue, fever, or malaise.

The penile examination revealed an uncircumcised glans penis that was inflamed, erythematous, and tender. On the glans penis was a 0.5-cm, oval, erythematous-based ulceration with some crusting. There were no vesicles associated with the lesion. No penile discharge, scrotal tenderness, or scrotal abnormalities were noted.

Herpes simplex virus (HSV) and aerobic bacterial cultures of the lesion were conducted. A DNA probe for *Chlamydia trachomatis* and *Neisseria gonorrhea* were obtained. A complete blood diagnostic profile with rapid plasma reagin (RPR) for syphilis was also conducted. The patient was diag-

nosed with a penile lesion, possible genital HSV, and/or syphilis. He was started on the treatment for HSV with acyclovir, 200 mg five times daily, and ibuprofen, 800 mg three times daily for pain. The patient was also counseled regarding safe sex practices and asked to return in 1 week. The predicted outcome was that the culture would be positive for HSV and the treatment would be effective.

The patient returned in 1 week and reported little or no change in symptomatology. The results of all genital cultures were negative except for moderate *Candida albicans*. Blood profile results indicated that his random blood glucose was 207 mg/dl and his cholesterol profile was consistent with hyperlipidemia.

Fasting blood glucose and hemoglobin A<sub>1c</sub> (A1C) measurements were obtained. The fasting glucose was 167 mg/dl, and the A1C was 8.4%. A diagnosis of type 2 diabetes was made based on the results.<sup>1</sup> Additionally, because of the penile culture finding of *C. albicans*, the patient was diagnosed with balanitis secondary to type 2 diabetes.

His penile ulcer was treated with antifungal cream and local hygiene. He was also started on a combination of glyburide, 1.25 mg, and metformin, 250 mg, to be taken once daily. The penile ulcer healed within 1 month, and his glucose level improved significantly.

## Questions

1. What is balanitis, and how is it associated with diabetes?
2. How frequently does balanitis present in the diabetic and nondiabetic population?

## Commentary

In this case, the patient presented with a “blister,” a recent sexual encounter, and burning, stinging penile pain. Also, based on the physical findings of an erythematous-based ulceration on his glans penis, the presumptive diagnosis of genital herpes was made. The history and physical examination, coupled with the fact that HSV is the most prevalent of all sexually transmitted diseases in the United States, made HSV a likely diagnosis.<sup>2</sup> Definitive HSV diagnosis is based on a positive culture of the lesion, which was negative in this case.

The term balanitis refers to an inflammation of the glans penis. Balanitis is a general term that describes a group of conditions that present with similar clinical findings yet have different etiologies.<sup>3–5</sup> When the inflammation involves the prepuce in uncircumcised males, it is termed balanoposthitis. Approximately 11% of male urological patients have been reported to have balanitis.<sup>4,5</sup>

Balanitis has a wide variety of causes. It tends to be common among uncircumcised males with poor hygiene and those with diabetes. Different organisms have been associated with balanitis, including *C. albicans*, *Trichomonas vaginalis*, streptococci, anaerobic bacteria, *Gardnerella vaginalis*, *Staphylococcus aureus*, *Herpes simplex*, *Treponema pallidum*, and human papilloma virus.

Other factors causing balanitis include a number of skin disorders. Among them are psoriasis, Bowen’s disease, and lichen planus.<sup>5</sup> Balanitis xerotica obliterans (lichen sclerosus) is a

chronic skin condition involving the genital skin of men. The symptoms of this form of balanitis are similar to the balanitis caused by the *C. albicans* infection. However, this dermatitis tends to progress much more slowly and insidiously for an extended period of time.<sup>6</sup> Other etiologies of balanitis include trauma, irritants, contact allergies, and fixed drug eruptions.

As in the case presented here, patients with balanitis often present with symptoms such as swelling of the glans penis, tenderness, and "stinging" pain. Common signs include erythema, ulceration, crusting, and possibly odor.

Diagnosis of balanitis can be difficult because of its propensity to mimic other disease entities. The recommended investigations for diagnosing balanitis include culturing the prepuce for *C. albicans*, *T. vaginalis*, *N. gonorrhea*, and *C. trachomatis*, especially if a female partner has a vaginal discharge.<sup>5</sup> If ulceration is present, a culture for *H. simplex* is advised along with a serological test for syphilis, such as RPR. Finally, a finger stick should be obtained for glucose measurement.

Treatment for balanitis consists mainly of educating for appropriate hygiene, safer sex practices, and medications consistent with the etiology. In this case of candidal balanitis, the recommended management is to use antifungal creams. Because the most common underlying cause of candidal balanitis is diabetes, diabetes diagnosis and optimal

glycemic control are needed in order to eliminate or at least control associated candidal balanitis.<sup>6</sup>

In summary, penile ulcers are commonly associated with sexually transmitted diseases, such as syphilis or HSV, and with poor hygiene. Penile ulcers can also be secondary to balanitis. Therefore, physicians are encouraged to consider performing serological tests and cultures (viral, bacterial, and fungal) when patients present with symptoms consistent with balanitis. Acute balanitis can be an early warning sign of diabetes. It has been reported that balanitis occurs in ~ 16% of the diabetic population compared to 5.8% of the nondiabetic population.<sup>7</sup> Given that ~ 8.7 million men > 20 years of age have diabetes, and the incidence is rising, it is important to consider diabetes as an underlying cause of a penile ulcer, even if the ulcer has an appearance typical of a sexually transmitted disease.<sup>8</sup>

### Clinical Pearls

- Balanitis can occur in both diabetic and nondiabetic patients.
- Balanitis has several etiologies, including sexually transmitted diseases.

### Acknowledgments

The authors would like to thank Kendra Schwartz, MD, MSPH, associate professor in the Department of Family Medicine at Wayne State University

School of Medicine for her reviews and suggestions in the preparation of this article.

### REFERENCES

<sup>1</sup>American Diabetes Association: Report of the Expert Committee on the Diagnosis and Classification of Diabetes Mellitus. *Diabetes Care* 26 (Suppl. 1):S5–S20, 2003

<sup>2</sup>Centers for Disease Control and Prevention: Tracking the hidden epidemics, trends in STDs in the United States 2000 (Revised 2001) [article online]. Available from [http://www.cdc.gov/nchstp/std/Stats\\_Trends/Trends2000.pdf](http://www.cdc.gov/nchstp/std/Stats_Trends/Trends2000.pdf). Accessed 14 February 2005

<sup>3</sup>Edwards S: Balanitis and balanoposthitis: a review. *Genitourinary Med* 72:155–159, 1996

<sup>4</sup>Leber M: Balanitis [article online]. eMedicine 2001. Available from <http://www.emedicine.com/emerg/topic51.htm>. Accessed 11 January 2005

<sup>5</sup>Edwards S: 2002 National guideline on the management of balanitis (Revised 2002). Rockville, Md., National Guideline Clearinghouse, Agency for Healthcare Research and Quality, U.S. Department of Health and Human Services, 1999

<sup>6</sup>Neuhaus I, Skidmore R: Balanitis xerotica obliterans and its differential diagnosis. *J Am Board Fam Pract* 12:473–476, 1999

<sup>7</sup>Fakjian N, Hunter S, Cole G, Miller J: An argument for circumcision: prevention of balanitis in the adult. *Arch Dermatol* 126:1046–1047, 1990

<sup>8</sup>American Diabetes Association: Diabetes statistics for men [article online]. Available from <http://www.diabetes.org/diabetes-statistics/men.jsp>. Accessed 18 February 2005

*Nehman Lauder, MD, is an assistant professor, and Juliann Binienda, MA, LMFT, is a member of the behavioral science faculty in the Department of Family Medicine at Wayne State University School of Medicine in Detroit, Mich.*