

Recurrent Vesicles on the Palm

Matthew W. McEwen, MD; Apphia L. Wang, MD

Eligible for 1 MOC SA Credit From the ABD

This Photo Challenge in our print edition is eligible for 1 self-assessment credit for Maintenance of Certification from the American Board of Dermatology (ABD). After completing this activity, diplomates can visit the ABD website (<http://www.abderm.org>) to self-report the credits under the activity title "Cutis Photo Challenge." You may report the credit after each activity is completed or after accumulating multiple credits.



A 54-year-old man presented to the emergency department with painful lesions at the base of the right palm that had progressed to include areas of erythema and warmth migrating proximally along the right forearm and distal right arm. He stated that similar lesions had occurred episodically in the same location approximately 100 times over the last 20 years. Each time, the lesions began as painful vesicles that he subsequently popped with a sewing needle. He denied any history of orolabial or genital herpes simplex virus infection. Physical examination revealed erythematous scattered papules with dry hemorrhagic crust over the base of the right palm with expressible serous fluid upon forceful pressure. Swelling, erythema, and warmth of the distal right forearm also were observed.

WHAT'S THE DIAGNOSIS?

- bullous tinea manuum
- contact dermatitis
- dyshidrotic eczema
- herpes simplex virus dermatitis
- scabies

PLEASE TURN TO **PAGE 122** FOR THE DIAGNOSIS

Dr. McEwen is from the Department of Dermatology, University of Tennessee Health Science Center, Memphis. Dr. Wang is from the Department of Dermatology, University of Alabama at Birmingham.

The authors report no conflict of interest.

Correspondence: Matthew W. McEwen, MD, Department of Dermatology, University of Tennessee Health Science Center, 930 Madison Ave, Ste 840, Memphis, TN 38163 (mmcewen2@uthsc.edu).

THE DIAGNOSIS:

Herpes Simplex Virus Dermatitis

A swab of the lesions yielded negative varicella-zoster virus and herpes simplex virus (HSV) cultures, but polymerase chain reaction (PCR) was positive for HSV DNA. The patient was started on acyclovir, which resulted in resolution of the lesions.

Recurrent HSV dermatitis most frequently is encountered in the orolabial or genital regions. After primary infection, HSV is retrogradely taken up into the dorsal root ganglion and may be reactivated in the same dermatome upon stress induction, forming clustered vesicles that rupture to form painful erosions.¹ Our patient's history of numerous recurrent episodes in the same area of the palm in the distribution of the median nerve suggests viral latency in the C5 through T1 dorsal root ganglia with reactivation rather than autoinoculation or external infection from another source. The incidence of HSV involving the hand has been estimated at 2.4 cases per 100,000 individuals per year, with finger, thumb, or palm/wrist involvement accounting for 67%, 22%, and 11% of cases, respectively.² Of the palmar cases that have been reported, most have a positive history for genital or orolabial HSV infection.²⁻⁵

In cases of suspected HSV dermatitis with atypical presentations, diagnostic studies are of importance. Although viral culture is the diagnostic gold standard in active lesions, it has lower sensitivity in improperly handled specimens; cases of recurrent disease; and specimens from dried, crusted, or aged lesions,¹ which helps to explain the negative culture result in our patient. Viral culture has been largely replaced in clinical practice by nucleic acid amplification tests using PCR, which is fast and type specific.^{6,7} The sensitivity of PCR approaches 100% when vesicles or wet ulcers are sampled, and PCR has better yields from dry ulcers or crusts compared to viral culture.⁶ However, because viral shedding is intermittent, a negative PCR result does not rule out HSV infection.⁸ Additional bedside diagnostic techniques include Tzanck smear, a rapid and inexpensive test in which lesions are scraped and stained with Giemsa, Wright, or Papanicolaou stains. Under light microscopy, multinucleated giant cells are seen in 60% to 75% of cases.⁹ This method, however, cannot distinguish HSV from varicella-zoster virus and must be followed by direct fluorescent antibody testing or immunohistochemistry for viral typing.^{1,9} Serologic testing also may be useful in patients who have a suspicious history for HSV infection but do not have lesions on physical examination to diagnose clinically or sample for PCR. Enzyme-linked immunosorbent assay testing can detect IgG starting 3 weeks after infection, and newer type-specific assays

can distinguish between HSV types 1 and 2.⁶ In low-incidence populations, false positives from enzyme-linked immunosorbent assay can be seen and should be confirmed by western blot.^{6,7}

Preferred treatment of HSV includes antiviral medications such as acyclovir, valacyclovir, and famciclovir. Regimens vary based on the site of infection, primary or recurrent nature of the infection, immune status of the patient, and whether or not viral suppression is desired to prevent recurrent outbreaks.^{7,10}

Tinea manuum also may present with unilateral vesicles and erosions involving the palms¹¹; however, it was less likely than HSV dermatitis in this patient presenting with a history of numerous recurrent episodes and without scaling on physical examination. Dyshidrotic eczema, contact dermatitis, and scabies are more characteristically pruritic rather than painful. Additionally, dyshidrotic eczema and scabies would be more likely to have symmetric involvement of the arms. Although vesicles are seen in both dyshidrotic eczema and HSV dermatitis, the vesicles of dyshidrotic eczema usually are noninflammatory compared to the painful vesicles on an erythematous base classically seen in HSV dermatitis.

Acknowledgment—The authors thank Elizabeth Ergen, MD (Knoxville, Tennessee), for her assistance with this case.

REFERENCES

1. Fatahzadeh M, Schwartz RA. Human herpes simplex virus infections: epidemiology, pathogenesis, symptomatology, diagnosis, and management. *J Am Acad Dermatol*. 2007;57:737-763; quiz 764-766.
2. Gill MJ, Arlette J, Buchan K. Herpes simplex virus infection of the hand: a profile of 79 cases. *Am J Med*. 1988;84:89-93.
3. Widenfalk B, Wallin J. Recurrent herpes simplex virus infections in the adult hand. *Scand J Plast Reconstr Surg Hand Surg*. 1988;22:177-180.
4. Gill MJ, Arlette J, Buchan KA. Herpes simplex virus infection of the hand. *J Am Acad Dermatol*. 1990;22:111-116.
5. Osio A, Fremont G, Petit A, et al. An unusual bipolar primary herpes simplex virus 1 infection. *J Clin Virol*. 2008;43:230-232.
6. Gnann JW Jr, Whitley RJ. Clinical practice. genital herpes. *N Engl J Med*. 2016;375:666-674.
7. Workowski KA, Bolan GA. Sexually transmitted diseases treatment guidelines, 2015. *MMWR Recomm Rep*. 2015;64:1-137.
8. LeGoff J, Péré H, Bélec L. Diagnosis of genital herpes simplex virus infection in the clinical laboratory. *Virol J*. 2014;11:83.
9. Downing C, Mendoza N, Sra K, et al. Human herpesviruses. In: Bologna JL, Schaffer JV, Cerroni L, eds. *Dermatology*. 4th ed. China: Elsevier; 2018:1400-1424.
10. WHO Guidelines Approved by the Guidelines Review Committee. *WHO Guidelines for the Treatment of Genital Herpes Simplex Virus*. Geneva, Switzerland: World Health Organization; 2016.
11. Veraldi S, Schianchi R, Benzecry V, et al. Tinea manuum: a report of 18 cases observed in the metropolitan area of Milan and review of the literature. *Mycoses*. 2019;62:604-608.