Herpes manuum: a new name for non-digit herpetic whitlow

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Abstract

Herpes simplex virus (HSV) is one of the most prevalent infections worldwide. It consists of two types: HSV1 and HSV2 that primarily cause orofacial and genital disease. However, both types can infect any site. Rarely, HSV infection of the hand occurs and is often documented as herpetic whitlow. Herpetic whitlow is primarily recognized as an HSV infection of the digits and thus HSV infection of the hand is largely associated with infection of the fingers. This is problematic, as HSV is often left off the differential diagnosis of non-digit hand pathology. We present two cases of non-digit HSV infection of the hand that were misdiagnosed as bacterial infections. As our cases and others demonstrate, the lack of knowledge that HSV infections can occur on the hand leads to confusion and delayed diagnosis among a myriad of providers. Therefore, we seek to introduce the term "herpes manuum" to increase awareness that HSV can appear on the hand in locations aside from the digits and thus differentiate it from herpetic whitlow. By doing so, we hope to encourage more timely diagnosis of HSV hand infections to decrease associated morbidity.

Keywords: herpes manuum, herpetic whitlow, HSV, lymphangitis, palmar, simplex virus

Case Presentation

Case 1

A 26-year-old woman presented for evaluation of a painful rash on her right hand and forearm that started two days prior. One-day prior she was seen at an emergency room where she was diagnosed with a bacterial infection and prescribed antibiotics. She reported a history of hypertension, asthma, atopic dermatitis, and eczema herpeticum, but denied any rash isolated to her hand previously. She did not recall any new exposures or trauma to the area but worked with children as a preschool teacher.

Physical examination revealed grouped cloudy vesicles on the palmar aspect of her right hand with a prominent erythematous, tender streak extending proximally to the mid-anterior forearm, consistent with lymphangitis (**Figure 1**). No other rashes were present. A viral culture was obtained from the lesion, confirming infection with herpes simplex virus (HSV) type 1. The patient was prescribed valacyclovir 1

Figure 1. *Grouped cloudy vesicles on the palmar aspect of the right hand with lymphangitis extending proximally to the mid-anterior forearm.*

gram three times daily for seven days with complete resolution of the rash and clearance of the lymphangitis one week later.

Case 2

A 45-year-old man presented for evaluation of a recurrent, itchy and painful rash that occurred intermittently on his left dorsal hand over the past three years. The patient noted that he had seen multiple physicians, including an infectious disease specialist, throughout the years whenever episodes occurred. Each time, he was diagnosed with a bacterial infection and given antibiotics which did not help. The patient noted a history of recurrent radicular pain shooting from his dorsal hand to his shoulder. The patient denied trauma to the area or other medical history.

Physical examination revealed grouped cloudy vesicles on the dorsal aspect of his left hand near the base of his thumb (**Figure 2**). No other rashes were present. Given the characteristic clinical findings, the patient was diagnosed with HSV. He was prescribed valacyclovir 1 gram daily as suppressive therapy.

Figure 2. *Grouped cloudy vesicles on the dorsal aspect of the left hand.*

Discussion

Although it is common knowledge that cutaneous HSV infections can present anywhere on the body, the condition is not always diagnosed correctly. General medical education classically associates cutaneous HSV infections with orofacial and genital lesions. Given its lower prevalence, herpetic whitlow (HW) is less often mentioned in literature. Herpetic whitlow is primarily documented as an HSV infection of the digits and thus HSV infection of the hand is largely associated with infection of the fingers. This is problematic, as HSV is often left off the differential diagnosis of palmar or dorsal hand pathology. As our cases and others [1,2] demonstrate, the lack of knowledge that HSV infections can occur on the hand leads to confusion and misdiagnosis among many providers. Therefore, we believe it would be prudent to label any non-digit HSV infection of the hand as "herpes manuum." By making herpes manuum a distinct entity we aim to expand its documentation in literature and inclusion in medical education to increase its awareness.

Herpes manuum has rarely been reported in literature under the name palmar herpetic whitlow or herpetic dermatitis [1,3-5]. The incidence of HW is 2.4 per 100,000 [4]. Approximately 93% of HW cases occur on the fingers, whereas 7% occur on the palm or near the wrist [4]. Therefore, herpes manuum occurs in approximately 0.07 per 100,000. Like HW, herpes manuum is caused by infection with HSV types 1 or 2. Most cases result from autoinoculation in patients who have herpes elsewhere [6].

The pathophysiology of herpes manuum is the same as cutaneous HSV infections elsewhere. Viral entry occurs through skin that is damaged [7]. Following inoculation, viral invasion and replication occur in neurons, as well as epidermal and dermal cells [8]. Incubation occurs between 2-20 days, after which symptoms appear [7]. A prodrome of pain, burning, or tingling at the affected site is often the first sign of infection [9]. Shortly after, painful grouped vesicles develop on an erythematous base [9]. Vesicular fluid is clear early on but may become cloudy, seropurulent, or hemorrhagic as it progresses [7,9]. There will not be frank pus unless a bacterial superinfection is present, whereas bacterial infections are purulent from the start [7]. Vesicles may eventually merge into bullae, followed by progression to erosions and ulcerations with a

scalloped border before crusting and healing over a 2-6 week period [7,9,10]. Following recovery, the virus remains latent in neural ganglia. Intermittently, replicative episodes occur resulting in asymptomatic viral shedding or symptomatic recurrence [6,10].

Associated symptoms of acute infection can include fever, regional lymphadenopathy, lymphangitis, and in recurrent cases, lymphedema [6]. Lymphangitis is characterized by linear erythematous streaks extending proximally towards regional nodes and reflects underlying inflammation of the superficial lymphatic vessels [11]. It is most commonly associated with acute bacterial infections, such as *Staphylococcus aureus*, *Streptococcus pyogenes*, and *Pasteurella multocida* infections [11]. Consequently, when streaking is present, clinicians often prescribe systemic antibiotics. However, lymphangitis may occur secondary to a variety of other nonbacterial etiologies, including viral or fungal infections, arthropods bites, or iatrogenic interventions [11]. A number of reports document HSV extremity infections with lymphangitis initially mistaken for a bacterial infection [11]. Additionally, varicella zoster virus may produce localized herpes zoster that may be clinically indistinguishable from HSV. Although no data exists for adults, one study found that 65% of pediatric HSV hand infections are initially misdiagnosed [2]. Lack of knowledge that HSV can mimic bacterial infections and other conditions can lead to delayed diagnosis, improper management, and subsequent complications [1]. Furthermore, HSV is very contagious and its infectious potential is amplified by its palmar location in herpetic manuum, necessitating the need for prompt diagnosis. This was essential in our first case given the patient's occupation of preschool teacher.

Diagnosis of herpes manuum can be made clinically. However, in unclear cases multiple confirmatory methods exist. Viral culture of vesicular fluid is a common option, but takes 2-5 days and lacks sensitivity in late stage disease after vesicles erode and ulcerate [10]. Samples are typically collected from unroofed vesicles via swabbing. Vesicles contain the highest concentration of HSV within 24-48 hours of forming, therefore samples should be obtained as early as possible [8]. Polymerase chain reaction (PCR) assays of samples for HSV DNA is the gold standard given its speed (1-3 hours), sensitivity (>95%), and specificity (up to 100%), [12]. PCR has the additional advantage of superior detection in later-stage disease once lesions have dried [6]. Direct fluorescent antibody testing is another diagnostic method. Although direct fluorescent antibody testing is less sensitive than PCR (85%), it just as specific (up to 100%), can be performed rapidly (1-2 hours), and is cheaper [13]. Serology can be tested for the presence of HSV IgG antibodies, but may take several weeks to develop after primary infection and remains positive indefinitely, which limits its utility in diagnosing acute infections [8]. Another less commonly used method includes Tzank smears, which can be done immediately but require experience for correct interpretation [6,8,10].

Like other cutaneous HSV infections, herpes manuum is self-limited. Symptomatic relief is the mainstay of therapy. Antiviral treatment within 48 hours of onset has been shown to shorten symptoms, shorten viral shedding, and reduce the risk of recurrence [10]. Although no medications are FDA approved for herpes whitlow, several studies have shown efficacy of oral acyclovir, valacyclovir, and famiclovir [14]. Likewise, these agents can be taken daily to suppress outbreaks.

Conclusion

The lack of knowledge that HSV infections can occur on the hand leads to confusion and delayed diagnosis among a wide variety of providers and thus increased morbidity among affected patients. Therefore, we seek to introduce the term "herpes manuum" to increase awareness that HSV can appear on the hand in locations aside from the digits and differentiate it from herpetic whitlow.

Potential conflicts of interest

The authors declare no conflicts of interest

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