Exemplars of complex assessment and care for hospitalized older adults: Genital herpes infection

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Hospitalized older adults often present with more than one acute illness and/or multiple chronic conditions. Their assessment and care requires nurses and inter-professional team members to be “tuned in” to complex conditions and trajectories. The herpes simplex virus (HSV) is an emerging/re-emerging infection and chronic condition that contributes to the complexity of care for older people during acute hospitalization and across care settings. The estimated current incidence (more than a half billion people worldwide) and future global impact of genital herpes infection is staggering. Nursing care during hospitalization includes prevention of transmission, wound care, anti-viral treatment, patient-family education and counseling, and follow-up care planning. In this article, guest contributors, Dr. Jodi McDaniel and Michele Giovannelli, present the special considerations regarding HSV infection in wound assessment among hospitalized older adults as exemplars of complex acute care in geriatric nursing. Two case exemplars illustrate the problem, presentation, and treatment of HSV wounds.

Wounds that develop unintentionally in older adults during hospitalization often have serious and costly health consequences. Both patient and environmental factors can promote their occurrence. For example, aging skin is associated with a decline in skin barrier function, sensory perception, thermoregulation and immunologic responsiveness. These changes can collectively contribute to an increased risk for skin tears, skin infections and pressure ulcers during hospitalization when patients are less mobile and/or require assistance with activities of daily living. Chronic conditions associated with aging, such as diabetes and vascular disease, are linked to wound development. In addition to these common causative factors, it is also important to consider a differential diagnosis of genital herpes when assessing new wounds in hospitalized older adults.

Genital herpes, characterized by recurrent ulcerative lesions on the genitalia, buttocks, thighs and/or around the anus, is one of the most prevalent sexually transmitted infections worldwide with estimations of 546 million infected persons. It is a lifelong infection primarily caused by the herpes simplex virus type 2 (HSV-2), but can also be caused by the herpes simplex virus type 1 (HSV-1) via oral-genital contact. Prevalence of HSV infection in older adults has increased dramatically. Over all HSV-2 seroprevalence has consistently increased with age in all areas of the country with prevalence rates for black Americans showing the sharpest increase, reaching >70% in those >60 years of age. However, evaluating the actual magnitude of HSV infection is challenging because it is not a reportable disease in many states. Moreover, the majority of people infected with HSV often do not know when the primary infection occurred because initial symptoms are often mild to nonexistent.

The HSV is a double stranded DNA virus that can penetrate the host through broken skin or intact mucous membranes. HSV infection is acquired through close contact with an infected person who is shedding virus from their skin or genital secretions. After HSV penetrates the dermis it enters peripheral sensory nerves innervating infected cells and is transported in a retrograde manner to sensory nerve root ganglia. It may also spread to local and regional lymph nodes via the lymphatic system. When the primary infection occurs, papules and vesicles may form on the genitalia,
buttocks, upper thighs and perianal region to varying degrees when infected cells die and release clear fluid. These lesions can then coalesce into ulcers. Accompanying symptoms may include pain, itching, burning, fever, malaise and myalgias. Importantly, once acquired, the HSV is able to evade clearance by the immune systems by establishing latency in sensory ganglia.\(^5\)\(^6\) Reactivation can be triggered by local trauma (e.g. surgery or UV light) and systemic stimuli (e.g. immunosuppression, fever). Growing evidence supports the relationship between aging, psychological stress and the recurrence of HSV outbreaks and infections.\(^7\)\(^8\) Stress has been associated with an increased frequency of outbreaks and longer durations of genital herpes, especially in women infected with HSV.\(^9\) Thus, the stress associated with hospitalization could be an initiating trigger to a more severe recurrent outbreak in older adults infected with HSV. Early signs of a recurrent episode sometimes precede the development of lesions by hours to days. These prodrome symptoms include tingling, itching, paresthesias and pain around lower back dermatomes. However, older adults are often hospitalized for complications related to complex conditions and thus may be unable to communicate these symptoms effectively. Furthermore, because herpes lesions often present atypically, a genital herpes diagnosis may be discounted by clinicians when evaluating a new wound in this population.\(^10\) Atypical lesions can appear as furuncles, fissures, linear ulcerations or excoriations around and in areas adjacent to the genitalia. Therefore, it is important to consider a diagnosis of genital herpes when evaluating any new ulcer/wound on the buttocks, lower abdomen and upper thighs and to confirm with laboratory tests. We present two hospital wound care service cases to illustrate these points and for use as teaching exemplars for staff or students. Cases have been de-identified.

**Case 1**

David is a 69-year-old diabetic who sustained spinal cord damage at the age of 59 after a cervical vertebral fusion. During hospitalization in the intensive care unit (ICU), David developed multiple complications including acute respiratory failure requiring mechanical ventilation, renal failure, and two open wounds, initially diagnosed as pressure ulcers located bilaterally on the gluteal folds. As David’s ICU stay progressed he also developed symptoms of sepsis including hypotension, leukocytosis and fever. A systemic bacterial infection was suspected, and fever. A systemic bacterial infection was suspected, and a blood culture revealed disseminated viremia with HSV-2. According to his family, David did not have a history of previous HSV outbreaks and infections.\(^9\)\(^10\) Stress has been associated with an increased frequency of outbreaks and longer durations of genital herpes, especially in women infected with HSV.\(^9\) Thus, the stress associated with hospitalization could be an initiating trigger to a more severe recurrent outbreak in older adults infected with HSV. Early signs of a recurrent episode sometimes precede the development of lesions by hours to days. These prodrome symptoms include tingling, itching, paresthesias and pain around lower back dermatomes. However, older adults are often hospitalized for complications related to complex conditions and thus may be unable to communicate these symptoms effectively. Furthermore, because herpes lesions often present atypically, a genital herpes diagnosis may be discounted by clinicians when evaluating a new wound in this population.\(^10\) Atypical lesions can appear as furuncles, fissures, linear ulcerations or excoriations around and in areas adjacent to the genitalia. Therefore, it is important to consider a diagnosis of genital herpes when evaluating any new ulcer/wound on the buttocks, lower abdomen and upper thighs and to confirm with laboratory tests. We present two hospital wound care service cases to illustrate these points and for use as teaching exemplars for staff or students. Cases have been de-identified.

David was treated with intravenous acyclovir and over the course of the next few weeks, the sepsis resolved. He was eventually weaned from the ventilator and the gluteal wounds closed. He transitioned back to his home and experienced only a few exacerbations by establishing latency in sensory ganglia.\(^5\)\(^6\) Reactivation can be triggered by local trauma (e.g. surgery or UV light) and systemic stimuli (e.g. immunosuppression, fever). Growing evidence supports the relationship between aging, psychological stress and the recurrence of HSV outbreaks and infections.\(^7\)\(^8\) Stress has been associated with an increased frequency of outbreaks and longer durations of genital herpes, especially in women infected with HSV.\(^9\) Thus, the stress associated with hospitalization could be an initiating trigger to a more severe recurrent outbreak in older adults infected with HSV. Early signs of a recurrent episode sometimes precede the development of lesions by hours to days. These prodrome symptoms include tingling, itching, paresthesias and pain around lower back dermatomes. However, older adults are often hospitalized for complications related to complex conditions and thus may be unable to communicate these symptoms effectively. Furthermore, because herpes lesions often present atypically, a genital herpes diagnosis may be discounted by clinicians when evaluating a new wound in this population.\(^10\) Atypical lesions can appear as furuncles, fissures, linear ulcerations or excoriations around and in areas adjacent to the genitalia. Therefore, it is important to consider a diagnosis of genital herpes when evaluating any new ulcer/wound on the buttocks, lower abdomen and upper thighs and to confirm with laboratory tests. We present two hospital wound care service cases to illustrate these points and for use as teaching exemplars for staff or students. Cases have been de-identified.

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**Case 2**

Stella is a 76-year-old woman with multiple sclerosis and associated neurogenic bladder requiring an indwelling Foley catheter. She was admitted to the infectious disease unit with influenza. During the course of her hospitalization, Stella began to complain of a burning sensation in her perineum. A urinalysis was positive for bacteria and a few white blood cells but negative for nitrites and leukocyte esterase. A course of Cipromycin was ordered and two days later, Stella developed three painful superficial ulcers on her buttocks. These were initially thought to be a chemical dermatitis as a result of antibiotic-induced diarrhea. A topical barrier cream was ordered to be applied three times a day to the ulcers after cleansing. In addition, the hospital Certified Wound, Ostomy and Continence Nurses (CWOCN) were consulted to assist with an advanced integumentary evaluation and management plan. The CWOCN noted, from her past medical history, that Stella experienced painful ulcers around her mouth during times of stress, but no outbreaks of genital lesions. The CWOCN suspected that the new ulcers on Stella’s buttocks were due to a recurrent HSV outbreak because Stella experienced a prodrome of HSV – perineal burning for three days prior to the ulcer outbreaks. Moreover, the appearance of the ulcers were consistent with those associated with HSV infections (circumscribed, well defined and clearly ulcerated) rather than ulcerations associated with chemical dermatitis (denuded epithelium over a macerated base). A viral culture of Stella’s wound tested positive for HSV-1. Cipromycin was discontinued and Stella received a one-week course of valacyclovir. She eventually recuperated from the flu, and the gluteal ulcers closed. She was instructed to share this history with her primary care provider who, along with Stella, can now recognize the symptoms of a prodrome so that recurring HSV outbreaks can be treated promptly.

**Discussion**

These two examples of older adult patients experiencing recurring HSV outbreaks during hospitalization illustrate the importance of considering an HSV diagnosis during wound assessments.

**What you can do**

1. **Follow the Centers for Disease Control and Prevention (CDC) recommendation** that all patients who have genital, perianal or unusual wounds/ulcers on buttocks, thighs or abdomen have diagnostic evaluation for genital herpes and a serologic test for syphilis.\(^13\) A biopsy of wounds/ulcers may be needed as part of that diagnostic evaluation to help identify the cause. Specific diagnostic tests and serologic assays are listed in the

   **Text box 1.** Centers for Disease Control and Prevention Guidelines – HSV\(^13\)

   Specific diagnostic tests include:
   1) Syphilis serology and darkfield examination
   2) Culture for HSV or PCR testing for HSV
   3) Serologic testing for type-specific HSV antibody

   Type-specific HSV serologic assays might be valuable in the following situations:
   1) Recurrent genital symptoms or atypical symptoms with negative HSV cultures
   2) A clinical diagnosis of genital herpes without laboratory confirmation
   3) A partner with genital herpes

   HSV – herpes simplex virus; PCR – polymerase chain reaction.
famciclovir), but these drugs do not destroy the virus nor do they lower the risk, frequency or severity of repeated episodes when the drug is discontinued. An initial genital herpes outbreak, whether caused by HSV-1 or HSV-2, should include a short course of systemic antivirals. Because initial outbreaks in an immunologically compromised host may lead to systemic involvement, the CDC recommends treating newly diagnosed patients with a systemic anti-viral for 7–10 days. Systemic antivirals can be administered during each acute recurrence episode or flare-up or suppressive therapy can be prescribed, especially for those with frequent bouts of active disease. Suppressive therapy can reduce the frequency of recurring lesions by up to 80%. If treating recurrent HSV infections episodically, systemic antivirals are most effective when initiated prior to ulcer outbreak during the prodromal period of the flare. Treatment recommendations vary with regards to the drug used, dosage and number of days prescribed. Variables to consider when prescribing are cost and frequency of dosing. Acyclovir is relatively cheap but requires dosing multiple times a day. Valacyclovir is expensive but only has to be dosed once or twice each day. Lifelong suppressive therapy in this high risk population should also be strongly considered to help prevent future sequelae with disseminated disease.

(3) Assess newly diagnosed patients for other sexually transmitted diseases, including syphilis.

(4) Counsel patients regarding the communicability of this disease and ongoing management. Be aware of the potential for transmission through sexual interactions as well as by means of genitalia contact for hygiene purposes with care givers. Counseling goals should also include explaining the natural history of the disease and helping patients cope with the infection.

Unfortunately, there is no cure for genital HSV infections and once infected there is a lifelong risk for acute exacerbations or recurrences, especially in the compromised host (i.e. hospitalized older adult). Because of the high prevalence of carriers of both viruses, health care providers need to consider this differential diagnosis in hospitalized older adults with gluteal, perineal, abdominal or thigh wounds, test for it when suspicious and treat it appropriately. With more aggressive diagnostic and management strategies it may be possible to reduce the severity of genital herpes, the incidence of associated complications and its spread.

References


