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Sean Branch DO

Lehigh Valley Health Network, Sean.Branch@lvhn.org

Arthur C. Sosis MD

Lehigh Valley Health Network, Arthur.Sosis@lvhn.org

Stephen M. Purcell DO

Lehigh Valley Health Network, Stephen.Purcell@lvhn.org

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Herpes Zoster Duplex Bilateralis

Sean Branch, DO, Arthur Sosis, MD and Stephen M. Purcell, DO
Lehigh Valley Health Network, Allentown, Pennsylvania

Case Presentation

Patient: 81 year-old Italian male.

History of Present Illness: This patient was admitted for progressive weakness and dizziness with two recent falls. He also complained of a worsening painful rash that started two weeks prior on the right face. It was associated with swelling and blurriness of the right eye along with numbness over the right forehead. The patient was initially given an unknown cream by his PCP which did not seem to help. He also complained of an asymptomatic rash on his left chest that first appeared about 1 week after the onset of the facial rash. He denied shortness of breath, photophobia or neck stiffness.

Medical History/Surgical History: Childhood varicella, left eye cataract S/P YAG laser posterior capsulotomy, coronary artery disease, coronary artery bypass graft, diabetes mellitus

Medications: ASA, famotidine, enoxaparin, insulin lispro

Previous Treatments: Unknown cream prescribed by PCP

Physical Examination: Significant right periocular erythema and edema. Several hemorrhagic vesicles and bullae on an erythematous, edematous base on the right scalp, forehead, cheek and upper eyelid in a V1 distribution with sharp demarcation at midline. Some shallow ulcers with exudative and hemorrhagic crusting are also present. No ear, nose or oral lesions noted. Erythematous papules and vesicles coalescing into linear plaques on the left chest extending to the left lateral back in the T7 dermatome. Less than 20 scattered discrete vesicles with an erythematous base on abdomen and anterior thighs, right > left. Cranial nerves intact. Grip strength 5/5. Hyperesthesia on right V1 distribution.

Laboratory Data: VZV direct fluorescent antibody (DFA) and viral culture: positive for VZV, blood culture, CBC, BMP, LFT: WNL or negative

Discussion

The varicella-zoster virus (VZV) is a neurotropic herpes virus (HHV-3) with worldwide distribution. In the United States 99.5% of adults are seropositive. The primary mode of transmission is via airborne droplets although direct contact can also transmit disease. VZV has the ability to cause two clinically distinct diseases. Primary VZV infection causes varicella (chickenpox) which is characterized by malaise, viremia and a diffuse rash. Following infection the virus establishes lifelong latency in multiple dorsal root, cranial nerve and autonomic ganglia. Postmortem studies have found latent VZV DNA in 94% of studied ganglia. Herpes zoster (HZ) is caused by reactivation of latent VZV with viral replication and spread via retrograde axonal flow to the corresponding dermatome. The mechanism for reactivation is complex and not fully understood but results from decreasing VZV-specific T-cell mediated immunity over time. Reactivation of VZV can occur at any time but typically occurs in adults over the age of 50.

Over 1 million new HZ cases are diagnosed each year with up to 4% requiring hospitalization. Approximately 1 in 3 persons will develop HZ during their lifetime. Declining VZV-specific host immunity as seen with advanced age, HIV infection, immunosuppressive therapy and malignancy (most commonly leukemia and lymphoma) are the greatest risk factors for HZ.

Herpes zoster typically presents with a characteristic unilateral dermatomal eruption consisting of erythematous macules and plaques which evolve to vesicles and pustules on an erythematous base before becoming dry and crusted after 7–10 days. A prodrome of intense pain, pruritus or tingling sensations usually precedes the onset by 2–3 days. Herpes zoster is characteristically limited to a single unilateral dermatome. Bilateral involvement and recurrences are rare. When multiple dermatomes are involved (multidermatomal HZ) they tend to be contiguous. The phenomenon of HZ occurring in two noncontiguous, widely separated dermatomes is referred to as herpes zoster duplex bilateralis (HZDB) or unilateralis, depending on whether one or both sides of the body are affected. This presentation of HZ is exceedingly rare with 23 reported cases worldwide. The vast majority of reported cases involve advanced age or immunocompromised patients. However, HZDB does not seem to represent a risk factor for poor prognosis. The dermatomes most frequently affected are the thoracic, trigeminal and lumbar.

Treatment of HZDB is not standardized but is typically similar to HZ. Antiviral therapy is the mainstay. The goal of therapy is to expedite resolution and decrease duration of zoster related pain. Intravenous therapy should be considered for severe cases, ophthalmic or otic involvement and immunosuppressed patients. A live attenuated VZV vaccine is currently recommended for prevention of HZ and its sequelae in adults aged ≥ 60 years who have no contraindications, including those with a history of HZ or chronic medical conditions.



Figures 1, 2 & 3: Right periocular erythema and edema. Several hemorrhagic vesicles and bullae on an erythematous edematous base on the right scalp, forehead, cheek and upper eyelid in the V1 distribution with sharp demarcation at midline. Shallow ulcers with exudative and hemorrhagic crusting are also present.



Figure 4: Erythematous papules and vesicles coalescing into linear plaques on the left lateral chest extending to the left lateral back in the T7 dermatome.

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