# Multisegmental Herpes Zoster in an Immunocompetent Girl

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*Children infrequently are afflicted with herpes zoster (HZ). Activation of latent varicella-zoster virus (VZV) in a partially immune host results in HZ. Herpes zoster in children can be benign or with varied severity, especially in cases associated with malignancy. Because of its rarity, we report widespread multisegmental HZ primarily presenting on the right side of the body and abdomen in a 6-year-old immunocompetent girl.*

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Children infrequently are afflicted with herpes zoster (HZ). Activation of latent varicella-zoster virus (VZV) in a partially immune host results in HZ. Herpes zoster in children can be benign or with varied severity, especially in cases associated with malignancy. Defects in normal immunity and cellular immunity have been postulated as important factors in the pathogenesis of HZ. Disseminated HZ is typical HZ associated with widespread cutaneous lesions simulating varicella (chickenpox) and it may be associated with immunosuppression.[1]

## Case Report

A 6-year-old girl presented with a dermatomal blistering rash of 1 week's duration affecting the right side of her abdomen and back (Figures 1 and 2). The blisters were preceded by a 2-day history of low-grade fever, anorexia, malaise, and pain at the site where the blisters erupted. The patient did not have a history of exposure to varicella (chickenpox) and had not received the varicella vaccine. The patient's mother had chickenpox as an adult but could not recall the exact age. However, she was certain that she had chickenpox before the patient was born. There was no evidence of the patient's predilection for other infections.

Physical examination showed confluent vesicles and bullae along the course of the right T10, T11, and T12 nerves. There also were a few scattered vesicles with central dimples on the face and arms.

Tzanck test showed multinucleated giant cells, while her complete blood cell count showed mild leukocytosis with a relatively normal differential count. A complete metabolic panel

**Figure 1.** Disseminated vesicles on the right side of the body.

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**Figure 2.** A vesicular eruption on the trunk.

did not reveal any abnormalities. An enzyme-linked immunosorbent assay for human immunodeficiency virus screening was nonreactive and was repeated twice. Cerebrospinal fluid examination was refused by the patient's guardian. A chest radiograph was normal. A Mantoux test was negative. Immunoelectrophoresis was done and showed no evidence of any gammopathies.

The diagnosis of disseminated HZ (shingles) in an immunocompetent girl was made. The patient was prescribed acyclovir 200 mg 5 times daily for 7 days as an outpatient. The patient tolerated the medication well and her HZ resolved.

## Comment

Varicella-zoster virus infection causes 2 clinically distinct forms of disease: varicella (chickenpox) and HZ (shingles). Primary VZV infection results in the diffuse vesicular rash of varicella (or chickenpox). Clinical resolution is followed by the establishment of latent infection within the sensory dorsal root ganglia. Reactivation of this neurotropic virus leads to the secondary form known as HZ, or shingles, which is a painful unilateral vesicular eruption in a restricted dermatomal distribution.

The incidence of HZ has been well-studied. In the United States, HZ occurs in nearly 1 million individuals annually.[2] The cumulative lifetime incidence is approximately 10% to 20% of the population.[3] Overall, the Centers for Disease Control and Prevention estimates that 32% of individuals in the United States will experience zoster during their lifetime.[4]

Age is the most important risk factor for the development of zoster. One study demonstrated that HZ incidence increased 10-fold with age when comparing children younger than 10 years to individuals aged 80 to 89 years; a dramatic increase in disease rates begins to occur after 50 years of age.[5]

During an episode of primary varicella infection (chickenpox), VZV is highly contagious and spread both by respiratory droplets (sneezing and coughing) and direct contact. Infection with VZV occurs when the virus comes into contact with the mucosa of the upper respiratory tract or the conjunctiva of the eye. The virus travels in the bloodstream via mononuclear cells to the skin, resulting in the generalized rash of chickenpox. The virus also infects human cells in the dorsal root ganglia of the spinal column and cranial nerve ganglia where it becomes latent. Essentially protected from the human immune system, VZV typically remains dormant in the ganglia for decades. Herpes zoster occurs when the virus subsequently reactivates. Initially causing pain and soon afterwards a vesicular rash in the distribution of 1 or 2 contiguous dermatomes, it is less contagious than VZV (varicella). Zoster generally spreads only by direct contact with open draining lesions and not via airborne droplets.[6]

The natural history of HZ varies depending on the host. Reactivation appears to be influenced by immunosenescence, disease-related immunocompromise, or iatrogenic immunosuppression. Increasing age is the leading risk factor for the development of HZ.

Our patient is unique because she presented with the secondary infection of HZ without prior exposure to VZV and thus no primary infection. Primary infection of the individual with VZV results in varicella whereas reactivation of the latent virus lying dormant in the sensory ganglia results in HZ. In our case, the patient had no history of chickenpox, so disseminated HZ is difficult to explain. However, the primary infection may have been so mild it went unnoticed.

## Conclusion

We report a unique case of widespread unilateral multisegmental HZ in a healthy 6-year-old girl who recovered uneventfully.

## REFERENCES

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