

Case Report

Herpes Zoster: A Case ReportAhmed AU¹, Haque N², Begum S³, Islam MS⁴**Abstract**

Herpes zoster (HZ) is a sporadic disease which results due to reactivation of the latent Varicella-zoster virus that is present because of a previous exposure to varicella infection (chicken pox). The C3, T5, L1, L2, and 1st division of the trigeminal nerve are the most commonly affected; the involvement of 2nd and 3rd division of trigeminal nerve is a rarity. The condition is marked by the manifestation of multiple, painful, unilateral vesicles, and ulcerations which show a typical single dermatome involvement. The elderly and those with an immunocompromised status such as HIV/AIDS stand at a greater risk to develop HZ. The case report, presents a 24 years old female patient with HZ involving the L3 dermatome of left knee and L5 dermatome of top and bottom of left foot. The involvement of two dermatomes in young immunocompetent patients relatively uncommon and accounts for only few percentages of the total cases of HZ. The purpose of this article is to review a case along with the discussion.

Keywords: *Herpes zoster, Immunocompromised, Chicken pox.*

Introduction

Herpes zoster (HZ) is a well-known viral disease that usually presents as a painful unilateral vesicular rash restricted to the distribution of a sensory nerve. HZ which is also known as shingles, is an acute infection of viral origin resulting from the reactivation of the DNA virus varicella zoster, which causes chickenpox.¹ It commonly manifests as vesicular rash, which are painful and runs its progression in a matter of 4-5 weeks. The pain may persist for months or even years after healing of the skin lesions. This phenomenon is called as post herpetic neuralgia (PHN).² The risk of PHN in patients with zoster is approximately 10-18%. Nearly, 3% of patients with zoster are hospitalized. Herpes zoster (HZ) typically erupts within one or two

adjacent dermatomes, with thoracic (50- 60%), cervical (10-20%) and trigeminal (10-20%) being more commonly involved, while lumbar (5-10%) and sacral (5%) are other less commonly involved dermatomes. In immunocompetent patients, involvement of non-contiguous dermatomes is never seen, although overlapping of adjacent dermatomes can be seen in 20% of cases.³ Morbidity due to zoster is common among immunocompromised patients.⁴ This case is being reported to highlight the rarity of involvement of more than one dermatome in young immunocompetent individuals.

Case Report

A female patient of 24 years reported to our department (Department of Dermatology, Brahmanbaria Medical College and Hospital in August 2018) complaining of painful skin rash in the left knee and bottom of the left foot for 3 days. The patient presented with the history of pain which was severe, developed fluid-filled blisters, distributed over the left half of the knee and lower part of the leg. The patient gave a history of chickenpox infection in childhood. No relevant drug, and family history was recorded. On general physical examination, the patient was of normally built and no abnormality was detected in the nails, gait, upper, and lower limbs. Clinical signs of icterus, pallor, clubbing, edema, cyanosis, and lymphadenopathy were absent. On evaluation of vital signs, temperature was noted to be 100°F and blood pressure 130/70 mm of Hg. On examination of left leg, no abnormality was detected in the knee joint.

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Clusters of vesicles and pustules (Figure 1) were present on the left half of knee involving lower part of the foot (Figure 2). Routine hematological tests were done for the patient. Complete blood count was found to be within normal limits except erythrocyte sedimentation rate and red blood cell which were slightly raised. Correlating the case history and clinical finding, a final diagnosis of HZ was established. Aceclofenac 100 mg two times daily was prescribed for symptomatic relief of pain. Antiviral drug therapy was started with valacyclovir 1 gm 2 times per day for 10 days.



Figure 1 Vesicles involving the left side of the knee



Figure 2 Vesicles in the bottom of left lower leg

On examination of the patient after 2 weeks, regression of a number of lesions were noted with the formation of scar tissue and hypopigmented areas. No fresh vesicles were reported. The patient was then reviewed after 1 week and tremendous improvement was noticed regarding the HZ lesions. After 1 month follow-up, the patient was totally devoid of symptoms. The lesions healed with scarring, but post therapeutic complications were not reported.

Discussion

HZ is also known as shingles, which is derived from the Latin cingulum, meaning 'girdle'. This is because a common presentation of HZ involves a unilateral rash

that can wrap around the waist or torso like a girdle. The name zoster is derived from classical Greek, referring to a belt-like binding (known as a zoster) used by warriors to secure armour.⁵ Von Bokayin, in 1988, hypothesized for the first time that chicken pox and HZ were caused by the same infectious agent.⁶ Varicella-zoster virus (VZV) is one of the eight known herpes viruses that infect humans. Its structure is characterized by an icosahedral nucleocapsid surrounded by a lipid envelope. Double-stranded DNA is located at its center. The virus is approximately 150-200 nm in diameter and has a molecular weight of approximately 80 million.⁷ VZV like other herpes viruses causes both primary and recurrent infections and remains latent neurons present in the sensory ganglia. VZV is associated with two major clinical infections of humans: Chickenpox (varicella) and shingles (HZ).⁸ Chicken pox is a primary infection that occurs the first time in an individual is affected by the virus with generalized manifestations. After the primary disease heals, VZV remains latent in the dorsal root ganglia of spinal nerves or extramedullary ganglia of cranial nerves. A person without any prior contact with VZV can develop chickenpox after coming in contact with an individual with HZ.⁹ The patient complained of severe pain. Hence, HZ disease patients can have mild to severe pain during active stage of the disease. HZ follows a prodromal, active and chronic stage.¹⁰

Classically it presents with a prodrome of mild-to-moderate burning or tingling (or in some cases numbness) in the skin of a given dermatome. often associated with fever, headache, general malaise and stomach upset.¹¹ Similar findings were reported in our case, however, stomach upset was not reported. In a duration of about 48-72 hours from the prodrome, there is development of a unilateral erythematous, maculopapular rash along the dermatome, which eventually develops into a vesicular lesion, this represents the active stage.¹² The active stage is described by the appearance of the rash with along with the systemic upset. The skin rash is very characteristic and progresses from erythematous papules, edema to vesicles, and finally to pustules within 1-7 days. Later, these pustules dry, crust, and are exfoliated over the next 2-3 weeks leaving erythematous macular lesions that may scar.¹³ In this case, an apparently immunocompetent patient with HZ who responded dramatically to treatment with oral valacyclovir, 1 gm two times daily for 7 days, is

reported. Treatment should be initiated within 48 hours of the onset of the rash. The decision to treat the patient with a valacyclovir was not influenced by her age but the presence of severe pain, multi dermatomal involvement. Herpes zoster, in the immunocompetent patient is not a listed indication for treatment with systemic valacyclovir. However, successful treatment of this infection has been reported previously and was borne out by the present case.

Conclusion

In conclusion, a case of HZ affecting multi dermatome in young age is reported. This case signifies the importance of a thorough medical history and examination of the patients with sporadic diseases such as HZ. Early diagnosis and prompt treatment by antiviral drugs in the prodromal stage of the HZ may aid in reducing the duration and the severity of pain of HZ infection and also prevent the complications.

References

1. Fristad I, Bardsen A, Knudsen GC, Molven O. Prodromal herpes zoster - A diagnostic challenge in endodontics. *Int Endod J* 2002; 35: 1012-6.
2. Roxas M. Herpes zoster and postherpetic neuralgia: diagnosis and therapeutic considerations. *Altern Med Rev* 2006; 11 (2): 102-13.
3. Cohen JI, Brunell PA, Straus SE, et al. Recent advances in varicella zoster virus infection. *Ann Intern Med* 1999; 130: 922-32.
4. Schmader KE, Dworkin RH. Natural history and treatment of herpes zoster. *J Pain* 2008; 9 1 Suppl 1: S3-9.
5. Roxas M. Herpes zoster, postherpetic neuralgia. Diagnosis and therapeutic considerations. *Altern Med Rev* 2006; 11: 102-13.
6. Hambleton S, Gershon AA. Preventing varicella-zoster disease. *Clin Microbiol Rev* 2005; 18:70-80.
7. Whitley RJ. Varicella-zoster virus infections. In: Fauci AS, Braunwald E, Isselbacher KJ, et al. eds. *Harrison's principles of internal medicine*. 14th edn. New York, NY: McGraw Hill, 1998: 1086-9.
8. Volvoikar P, Patil S, Dinkar A. Tooth exfoliation, Journal of Dental & Oro-facial Research Vol 11 Issue 1 JanJun 2015 J D O R osteonecrosis and neuralgia following herpes zoster of trigeminal nerve. *Indian J Dent Res* 2002; 13 (1): 11-4.
9. Carmichael JK. Treatment of herpes zoster and postherpetic neuralgia. *Am Fam Physician* 1991; 44: 203-10.
10. Neville BW, Damm DD, Allen CM, et al. Viral infections. In: *Oral and maxillofacial pathology*. Chapter 7. 3rd edn, 2005. New Delhi, India: Reed Elsevier India Pvt Ltd: 222-3.
11. Roxas M. Herpes zoster, postherpetic neuralgia. Diagnosis and therapeutic considerations. *Altern Med Rev* 2006; 11: 102-13.
12. Tidwell E, Hutson B, Burkhart N, Gutmann JL, Ellis CD. Herpes zoster of the trigeminal nerve third branch: a case report and review of the literature. *Int Endod J* 1999; 32(1): 61-6.