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Herpes Zoster in Childhood: Three Cases and Review of the Literature

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ABSTRACT: Varicella-zoster virus (VZV) is a member of the alpha-herpesvirus family, causing varicella upon primary infection and remaining latent in the nerve ganglia. Reactivation of the virus leads to herpes zoster. The disease is rare in healthy children and typically presents with mild symptoms. Three cases of herpes zoster in boys aged 9 to 12 years are reported. Two of the children had no history of clinically evident varicella or vaccination, while the third child had a history of varicella at the age of four. In all three cases, the rash was unilateral and involved the T-5 dermatome. Treatment with oral acyclovir and topical agents resulted in complete recovery. Herpes zoster in childhood is more frequently observed after a history of varicella than following vaccination. The incidence of the disease in children under the age of fourteen years old is relatively low. Reactivation of the virus is associated with a temporary decline in cell-mediated immunity. The diagnosis is usually clinical, but it can be confirmed by serological and molecular methods. Treatment involves oral acyclovir, and in immunocompromised children, intravenous administration may be required. Complications are rare, but they may be of neurological, ophthalmological, or otological origin.

KEYWORDS: herpes zoster, children, varicella-zoster virus, varicella, acyclovir.

INTRODUCTION

Varicella-zoster virus (VZV), a member of the alpha-herpesvirus family (human herpesvirus 3), causes varicella upon primary infection, after which the virus remains latent in the ganglionic neurons. In childhood, varicella typically resolves and is self-limiting; however, complications, although rare, may appear unpredictably. Patients develop long-lasting immunity upon recovery (1). Reactivation of the varicella-zoster virus, which remains latent in the nerve ganglia, leads to herpes zoster. This condition is generally rare in healthy children and may result from early exposure to the virus in infancy or intrauterine infection (2). The rash is unilateral, most commonly affecting one, and less frequently two or three adjacent dermatomes, and is characterized by vesicular eruptions on an erythematous base (3). In childhood herpes zoster, the skin rash typically resolves quickly within a few days to a few weeks. Healthy children are not predisposed to postherpetic neuralgia, but immunocompromised individuals are at increased risk of viremia and visceral dissemination of the virus (4)

CLINICAL OBSERVATIONS

Clinical Case 1

Eleven-year-old boy presented to his healthcare provider with a rash consisting of small blisters located on the chest and back, which were present for several days and accompanied by mild pain, burning, and itching. According to his mother, her son had never had chickenpox and had not been vaccinated against it. The mother also did not have an infection during her pregnancy. No VZV (varicella-zoster virus) vaccine has been administered. Dermatological examination revealed a unilateral rash affecting the right T-5 dermatome. The lesions consisted of grouped vesicles, located on an erythematous base (Fig.1). The diagnosis was confirmed by laboratory testing – IgG VZV levels were significantly elevated at 1170.0 mIU/ml (normal value: 150 mIU/ml). Systemic therapy with Acyclovir 400 mg tablets, taken four times a day for seven days, and local treatment with Fucidin cream twice a day were administered, resulting in full recovery.

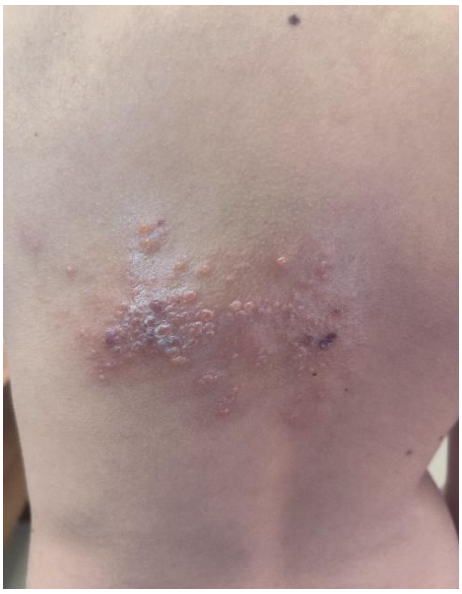

Fig.1 Grouped vesicles on an erythematous base, with a few erosions covered by crusts

Clinical Case 2

Nine-year-old boy presented with a rash consisting of blisters on the chest and back. Subjective symptoms included burning and itching. Again, there was no history of chickenpox or vaccination, and his mother did not have an infection during her pregnancy. The rash was unilateral, affecting the right T-5 dermatome, and consisted of grouped vesicles on an erythematous base (Fig.2). The diagnosis was confirmed by elevated IgG VZV levels. The same systemic and local therapy as in the first clinical case was applied, resulting in complete recovery.

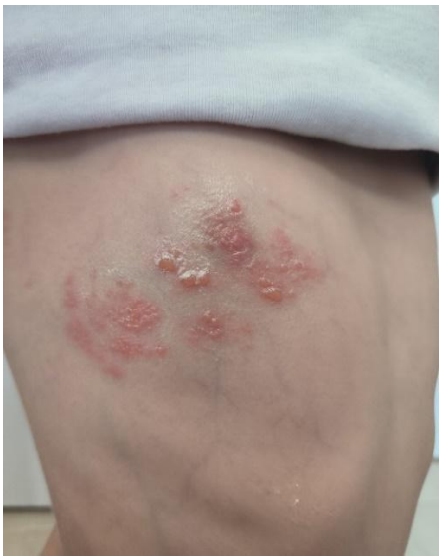

Fig.2 Grouped vesicles on an erythematous base, filled with serous fluid

Clinical Case 3

Twelve-year-old boy presented with initial complaints of pain on the right side of the chest and back, followed three days later by the appearance of a rash in the same area. The medical history was, taken from the patient and his parents. The rash consisted of grouped vesicles on an erythematous base and involved two adjacent dermatomes (T5 and T6) (Fig.3). A week earlier, the child had suffered from a viral infection accompanied by a fever. The mother also mentioned that the child had chickenpox at the age of four. Systemic treatment with Acyclovir 800 mg tablets, four times a day for one week, and an antibiotic cream were prescribed. The child made full recovery.

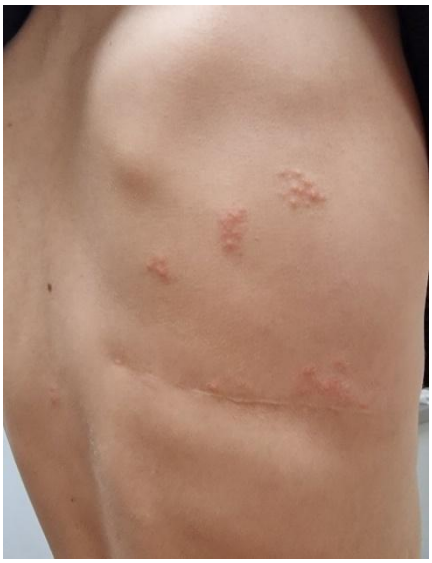

Fig.3 Grouped vesicles involving two adjacent dermatomes

DISCUSSION

Herpes zoster is a relatively rare occurrence in childhood. It is more commonly observed following natural infection with varicella than after vaccination against the virus. The incidence rate among children under 14 years of age is 110 per 100,000 individuals per year (3). A research team from Poland analyzed 152 pediatric cases of herpes zoster, of which 56 required hospitalization and 96 were managed on an outpatient basis. The mean age of the patients was 10 years, with an average interval of five years between the onset of varicella and the subsequent development of herpes zoster. None of the children had been vaccinated against VZV (5). According to literature data, the likelihood of a child developing herpes zoster at an earlier age is higher if the child had varicella before the age of one or if the mother contracted varicella during pregnancy. This is most likely due to the immaturity and incompleteness of the immune system during these periods (6).

Interestingly, two of the children in the clinical cases presented above had neither contracted varicella at a younger age nor had been vaccinated against the virus, and their mothers denied having had the infection during pregnancy. The third child had varicella at the age of four. It is believed that viral reactivation occurs in the adult population when resistance to the virus decreases due to selective cell-mediated immunosuppression. In children under 12 years of age, the incidence rate is 0.45 per 1,000 individuals, while in adults over 75 years of age, it increases to 4.5 per 1,000 individuals (7). Other factors contributing to VZV reactivation due to impaired immunity include malignant diseases and their treatment with chemotherapy or radiotherapy, HIV infection, immunosuppressive therapy, and corticosteroid use (8). Moreover, several viral infections have been associated as potential triggers. One reported case involves a four-year-old child who developed a vesicular dermatosis consistent with herpes zoster, following an asymptomatic COVID-19 infection. Notably, family members had been diagnosed with SARS-CoV-2 approximately three weeks before. This suggests that even subclinical Covid-19 may act as a potential trigger for VZV reactivation (9). The diagnosis of herpes zoster is primarily clinical. However, in cases with atypical presentation, additional diagnostic methods may be employed, including polymerase chain reaction (PCR), using vesicular fluid, cerebrospinal fluid, or blood. Other diagnostic options include the direct fluorescent antibody (DFA) test, Tzanck smear, and serological assays for anti-VZV IgG and IgM (10). The differential diagnosis may include, among others, herpes simplex virus (HSV) infection, impetigo, contact dermatitis, insect bites, drug reactions, dermatitis herpetiformis. In cases of pain without a rash, differential considerations should include renal or biliary colic (11). In children, the recommended antiviral therapy is oral acyclovir at a dose of 20 mg/kg, four times a day (12). In the three cases described earlier, the children responded well to treatment, showing full recovery without adverse reactions. Potential side effects of acyclovir therapy may include nausea and vomiting in short-term use, while prolonged treatment may lead to abdominal pain, diarrhea, headache, and dizziness (13). In immunocompromised children, intravenous acyclovir is indicated at a dose of 10 mg/kg every 8 hours for 7 to 10 days. Ideally, antiviral therapy should be initiated within 72 hours of the rash onset. The objectives of treatment are to prevent the formation of new lesions, accelerate healing of existing ones, reduce pain, and lower the risk of complications (3). According to a study conducted in South Korea, the most common complications of herpes zoster include secondary bacterial skin infections, ophthalmic zoster (manifesting as conjunctivitis, keratitis, uveitis, and retinitis), herpes zoster oticus or Ramsay Hunt syndrome with facial paralysis, meningitis, and postherpetic neuralgia (14). In 2006, the live attenuated vaccine *Zostavax* was introduced to prevent herpes zoster. It contains the same Oka/Merck strain of the virus as the *Varivax* vaccine for varicella, though the two are not interchangeable. The vaccine has shown highest efficacy in individuals aged 60–69 years (15).

CONCLUSION

Herpes zoster in children is a relatively rare, but still observed infectious skin disease. Although uncommon, it can occur without a history of clinically evident varicella or prior vaccination. The clinical presentation is characteristic and usually easily recognizable, and treatment with antiviral agents such as acyclovir leads to rapid and complete recovery in immunocompetent children. Despite its typically mild course, herpes zoster should not be underestimated due to the risk of complications, particularly in immunocompromised patients. This underscores the importance of a thorough medical history, timely diagnosis, and appropriate therapeutic management.

REFERENCES

1) Gershon AA, Breuer J, Cohen JI, Cohrs RJ, Gershon MD, Gilden D, et al. Varicella zoster virus infection. Nat Rev Dis Primers. 2015; 1:15016.
2) Katakam B, Kiran G, Kumar U. A prospective study of herpes zoster in children. Indian J Dermatol. 2016;61(5):534.
3) Leung AKC, Barankin B. Herpes zoster in childhood. Open J Pediatr. 2015;5(1):39–44.
4) Arvin AM. Management of varicella-zoster virus infections in children. Adv Exp Med Biol. 1999;458:167–74.
5) Bieńkowski C, Talarek E, Pokorska-Śpiewak M. The clinical course of herpes zoster is similar in immunocompetent and immunocompromised pediatric patients. Res Sq. 2022.
6) Terada K, Kawano S, Yoshihiro K, Yokobayashi A, Miyashima H, Morita T. Characteristics of herpes zoster in otherwise normal children. Pediatr Infect Dis J. 1993;12(11):960–1.
7) Mitra B, Chopra A, Talukdar K, Saraswat N, Mitra D, Das J. A clinico-epidemiological study of childhood herpes zoster. Indian Dermatol Online J. 2018;9(6):383.
8) Johnson RW, Dworkin RH. Treatment of herpes zoster and postherpetic neuralgia. BMJ. 2003;326(7392):748–50.
9) Reza NR, Prakoeswa CRS, Alkaff FF. Herpes zoster following COVID-19 asymptomatic infection in children. Eur J Pediatr Dermatol. 2022;32(2):101–4.
10) Kelley A. Herpes zoster: A primary care approach to diagnosis and treatment. J Am Acad Physician Assist. 2022;35(12):13–8.
11) Nair PA, Patel BC. Herpes zoster. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023.
12) Balfour HH, Kelly JM, Suarez CS, Heussner RC, Englund JA, Crane DD, et al. Acyclovir treatment of varicella in otherwise healthy children. J Pediatr. 1990;116(4):633–9.
13) Arndt KA. Adverse reactions to acyclovir: topical, oral, and intravenous. J Am Acad Dermatol. 1988;18(1 Pt 2):188–90.
14) Kang DH, Kwak BO, Park AY, Kim HW. Clinical manifestations of herpes zoster associated with complications in children. Children. 2021;8(10):845.
15) Sampathkumar P, Drage LA, Martin DP. Herpes zoster (shingles) and postherpetic neuralgia. Mayo Clin Proc. 2009;84(3):274–80.