

Herpes zoster in a five month old infant subsequent to intrauterine exposure to varicella infection

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ABSTRACT

Herpes zoster is characterized by painful vesicular eruption in a dermatomal distribution of sensory nerves as a result of reactivation of latent herpes zoster virus in posterior root ganglia. The primary varicella infection is usually acquired in childhood and reactivation usually is seen in elderly. In rare instances herpes zoster can also occur in infancy as a result of reactivation of primary varicella infection acquired in utero or in early infancy. Here, we report a rare case of herpes zoster in a 5 month baby who acquired primary infection in utero from mother who had varicella infection at 6 months of gestation.

Keywords: Herpes zoster, immunocompetent infant, intrauterine varicella.

INTRODUCTION

Primary infection by varicella zoster virus (VZV) causes varicella (Chicken pox). An endogenous reactivation of VZV that has continued to exist in a latent form in the sensory neurons of the posterior root ganglia, results in herpes zoster (shingles).¹ Herpes zoster (HZ) is a cutaneous lesion that presents in a dermatomal distribution and is characterized by painful, vesicular dermatomal eruptions in groups.^{1,2} HZ occurs sporadically without demographic, seasonal, gender, racial or occupational differences.³ HZ commonly occurs in elderly;⁴ however, rarely HZ can occur in normal and immunocompromised children.⁵ HZ is extremely rare in infants. In infants it results from reactivation of primary varicella infection in utero due to maternal infection. In addition, in rare instances, HZ can also occur as a result of reactivation of unrecognized primary varicella infection in early infancy.¹

CASE REPORT

A 5 month old female baby presented to the Dermatology Out Patient Department of Tribhuvan University Teaching Hospital, with history of grouped, fluid filled lesions over right buttock, posterior aspects of right thigh, leg and right side of vulva for 5 days. There was no history of fever, ear discharge or cough and cold. She did not have loose motion. The baby was being exclusively breast fed. During 6 months of antenatal period, the mother had varicella infection which had resolved spontaneously. It was a full term, normal vaginal delivery at hospital. Birth weight was 3 kg. Postnatal period was uneventful. Her developmental milestones were normal.

On examination the baby was irritable but afebrile. There were grouped vesicles on an erythematous base over the right side of buttock and vulva, posterior aspects of right leg and thigh corresponding to the dermatomes S2, S3 and S4 (Figure 1). Right inguinal lymph nodes were enlarged and tender. Tzanck smear from the lesions showed many mononuclear and multinucleated acantholytic cells with ground glass nuclei consistent with tzanck cells, supporting the clinical diagnosis of herpes zoster (Figure 2). HIV serology was negative in both mother and the baby. Baby was managed symptomatically with syrup paracetamol and topical calamine lotion. The lesions healed completely in a week.

DISCUSSION

Herpes zoster, a reactivation of latent VZV infection is very rare in childhood and especially in infants. Childhood as well as infantile HZ has two recognized risk factors: (i) exposure to VZV infection in utero and (ii) exposure to VZV infection during the first months of life.¹ HZ can develop in infants as young as a few weeks of age irrespective of immune status and should be considered in differential diagnosis of vesicular eruptions.² Infantile HZ is more commonly associated with intrauterine VZV infection than postnatal infection with VZV,² however, it can occur to an unrecognized subclinical varicella in infants born to varicella zoster immune mothers.⁶ HZ has also been described in new bornes whose mother had been exposed to VZV infection during pregnancy.^{7,8} VZV infection occurring at 3rd, 4th, 5th, 6th, and 8th months of gestations leading to childhood or infantile HZ have been described.^{7,9-11} In present case the mother had varicella

infection during 6 months of pregnancy and the baby manifested HZ at 5 months of age. Infantile HZ is slightly more common in male babies and all the dermatomes are involved.² In the present case the baby was female and S2, S3 and S4 dermatomes were involved. Although HZ in children is considered common in immunocompromised babies, but can occur in immunocompetent children as well, however, recurrent lesions may be more common in the former.¹² Duration of HZ may be longer in immunocompromised children.¹³ In addition, HZ in immunocompetent children is not as mild as generally accepted.¹⁴ The baby in the present case was not immunodeficient and a test for HIV serology was negative in both mother and the baby. Even in immunocompetent children, a decrease in specific cellular immunity may play an important role in the mechanism of virus reactivation.¹⁵

The diagnosis can usually be made on clinical grounds; distinguishing it from zosteriform herpes simplex virus infection may be however difficult.¹² Tzanck smear may support the clinical diagnosis.¹² Prodromal symptoms are usually not seen in childhood shingles¹³ as in the present case. As occasional cases of childhood HZ can present with atypical features such as overlap with Stevens Johnson syndrome-toxic epidermal necrolysis (SJS-TEN),¹⁶ a careful clinical evaluation is necessary. There is no consensus about the use of antiviral drugs in the treatment of HZ in children, however, early acyclovir therapy in immunocompromised ones can prevent significant morbidity and death.¹³ In present case the baby was managed with paracetamol and topical calamine lotion and she recovered within a week.

Herpes zoster can occur at any age regardless of immune status of the individual. Childhood or infantile HZ, as in present case, usually occurs as a result of reactivation of primary infection by VZV acquired in utero or less commonly acquired during early infancy. Diagnosis is usually clinical, however, should be differentiated from zosteriform herpes simplex virus infection. Patient is usually managed symptomatically as in present case; however, in immunocompromised cases acyclovir can limit the severity of disease.

REFERENCES

1. Elmer KB, George RM. Herpes zoster in a 7-month-old infant: a case report and review. *Cutis*. 1999; 63: 217-8.
2. Kurlan JG, Connelly BL, Lucky AW. Herpes zoster in the first year of life following postnatal exposure to varicella-zoster virus: four case reports and a review of infantile herpes zoster. *Arch Dermatol* 2004; 140: 1268-72.
3. Rothe MJ, Feder HM Jr, Grant-Kels JM. Oral acyclovir therapy for varicella and zoster infections in pediatric and pregnant patients: a brief review. *Pediatr Dermatol* 1991; 8: 236-42, 246-7.
4. Lin F, Hadler JL. Epidemiology of primary varicella and herpes zoster hospitalizations: the pre-varicella vaccine era. *J Infect Dis* 2000; 181:1897-1905.
5. Latif R, Shope TC. Herpes zoster in normal and immunocompromised children. *Amer J Dis Child* 1983; 137: 801-2.
6. Dobrev H. Herpes zoster in infants. *Folia Med (Plovdiv)* 1994; 36: 45-9.
7. Mogami S, Muto M, Mogami K, Asagami C. Congenitally acquired herpes zoster infection in a newborn. *Dermatology* 1997; 194: 276-7.
8. Querol I, Bueno M, Cebrian A, Gonzalez-Echeverria FJ. Congenital herpes zoster. *Cutis* 1996; 58: 231-4.
9. Loras-Duclaux I, Roy P, Lachaux A, Fournier V, Zerbib C, Hermier M. Zona in a 6-month-old infant. Apropos of one case. *Pediatric* 1989; 44: 645-7.
10. Della Porta G, Pullini A, Pascucci T. Herpes zoster in a 12-month-old girl subsequent to intrauterine exposure to the varicella-zoster virus. *Pediatr Med Chir* 1984; 6: 573-4.
11. Rivas de La Lastra E, Lasso Bonilla MA. Herpes zoster in infants. *Rev Med Panama* 199; 20: 54-7.
12. Nikkels AF, Nikkels-Tassoudji N, Pierard GE. Revisiting childhood herpes zoster. *Pediatr Dermatol* 2004; 21: 18-23.
13. Kakourou T, Theodoridou M, Mostrou G, Syriopoulou V, Papadogeorgaki H, Constantopoulos A. Herpes zoster in children. *J Amer Acad Dermatol* 1998 (2 Pt 1): 207-10
14. Takayama N, Yamada H, Kaku H, Minamitani M. Herpes zoster in immunocompetent and immunocompromised Japanese children. *Pediatr Int'l* 2000; 42:275-9.
15. Terada K, Tanaka H, Kawano S, Kataoka N. Specific cellular immunity in immunocompetent children with herpes zoster. *Acta Paediatr* 1998; 87: 692-4.
16. Bhattarai S, Agrawal S, Rijal A, Dhali TK. Atypical varicella zoster as SJS-TEN overlap syndrome with involvement of palm and sole. *Nepal Med Coll J* 2006; 8: 69-71.



Fig. 1. Herpes zoster in infant: Grouped vesicles on an erythematous base over the right side of buttock, posterior aspects of right leg and thigh corresponding to the dermatomes S2, S3 and S4



Fig. 2. Tzanck smear from the vesicles: Acantholytic cells with ground glass nuclei consistent with tzanck cells