Case Report

HERPES ZOSTER IN CHILDREN AND ADOLESCENTS: CASE SERIES OF 8 PATIENTS

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ABSTRACT

Herpes zoster can occur at any age but is rare in childhood and adolescents. Zoster can occur at any time after primary varicella infection or varicella vaccination. Recent studies have shown its increasing incidence in children. Maternal varicella infection during pregnancy and varicella occurring in the newborn represent risk factors for childhood herpes zoster. As varicella vaccine is a live attenuated virus, herpes zoster can develop in a vaccine recipient, but its incidence is less than natural infection. It is usually diagnosed clinically as unilateral vesicular eruption following a dermatome or dermatomes. Zoster in children is frequently mild, post herpatic neuralgia occurs rarely if ever. We present eight cases of zoster in children and adolescents.

Keywords: Herpes zoster, Varicella Zoster Virus, HIV, Children, Adolescents

INTRODUCTION

Herpes zoster (HZ) or shingles is an acute vesiculobullous cutaneous infection in dermatomal distribution, predominantly in adults and older persons. It is caused by reactivation of latent varicella-zoster virus (VZV) that resides in a dorsal root ganglion.[1] Children are infrequently affected with HZ. In cases where past history of varicella was not obtained, it is suggested that the initial contact with the virus may result in zoster.[2] HZ occurs at an overall rate of 3.40 cases per 1000 persons. Hope-Simpson's field study showed an incidence of 0.74 cases per 1,000 population per annum among the 0 to 9 and 1.38/1000 in 10 to 19 year-old age group. The attack rate during the first two decades is approximately seven times less than the seventh decade.[3] The earliest age reported is in a 3-month old infant.[4] However, the true incidence of HZ in children may be even higher since some patients do not seek medical attention because of the benign course. We present eight cases of zoster in children and adolescents.

CASE REPORT

Case 1: A 4-year-old girl had a three day h/o asymptomatic papulovesicular eruption on the left side of the thorax and upper limb involving C7-8 dermatome.

Case 2: A 10-year-old boy, serologically positive for Human Immunodeficiency Virus (HIV), had six day h/o multiple pus filled lesion over right abdomen, back and lower limb with mild burning pain. Multiple pustules were present involving right T9-10, L1-5 dermatomes with few discrete lesions on the left side of the body(Fig. 1a &1b).

Case 3: A 5-year-old boy had a two day h/o asymptomatic vesicular eruption over genitals on the left side involving S2 dermatome (Fig.2a & 2b).

Case 4: A 10-year-old girl presented with two days history of fluid filled lesions with burning pain on back & abdomen below umbilicus on right side involving right T11-T12 dermatome. She had varicella at the age of 4 years.

Case 5: A 4-year-old girl had a three day history of fluid filled eruption on the right side of chest and back involving T8 dermatome with fever and burning pain. She had varicella at the age of 2½ years.

Case 6: A 16-year-old male had pain on the right buttock and thigh for two days followed by the onset of vesicular eruption involving S1 dermatome. He had varicella at the age of 5 years.

Case 7: A 16-year-old female had grouped vesicular eruption on the right side of thorax for 2 days associated with burning sensation. Vesiculobullous lesions on erythematous base were present in the distribution of T4 dermatome. She had varicella at the age of 6 years.

Case 8: A 7 year old girl had 3 day history of fluid filled lesions over lower abdomen involving right T9-10 dermatome. P/h/o varicella at the age of 3 years was present.

Table 1: Summary of 8 Herpes zoster cases

Case	Age (Yrs)	Sex	Side	Dermatome	Associated symptoms	Known Exposure to Varicella	Age(yrs) at Previous Varicella	Sequalae	Immune suppression
1	4	F	L	C7-8	No	No	--	None	No
2	10	M	R	T9-10 & L1-5	Mild burning pain	No	--	Secondary infection & scarring	Yes Seropositive
3	5	M	L	S2	No	No	--	None	No
4	10	F	R	T11-12	Burning pain	Yes	4	None-	No
5	4	F	R	T8	Fever& burning pain	Yes	2½	None	No
6	16	M	R	T12-L1	Pain	Yes	5	None	No
7	16	F	R	T4	Burning sensation	Yes	6	None	No
8	7	F	R	T9-10	No	Yes	3	None	No

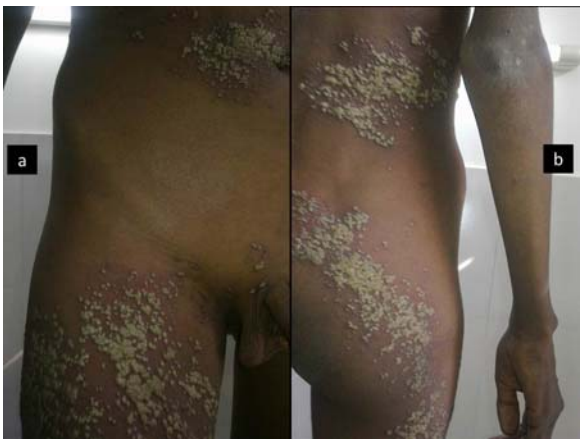

Fig 1: 10 year old HIV positive boy with multiple pus filled lesion; (a) abdomen, lower limb involving Right T9,T10,L1,L2,L3,L4 dermatomes; and (b) back involving Right T9,T10,L5 dermatomes

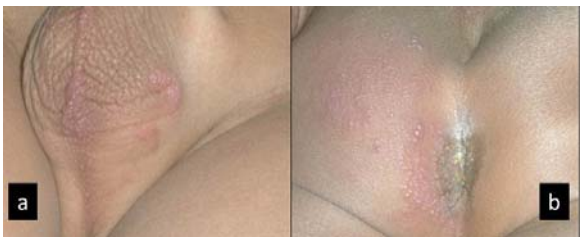

Fig 2: Five year old boy with vesicular eruption; (a) genitals involving left S2 dermatome; and (b) buttock involving left S2 dermatome

None of the children were immunized against varicella. No P/h/o varicella in first 3 cases, other five gave definite past history. Cases were diagnosed clinically as HZ and supplemented by Tzanck smear preparation. Scrapings from the floor of the vesicles, performed in 6 cases revealed multinucleated giant cells in 2 cases. HIV ELISA (Enzyme Linked Immunosorbent Serologic Assay) was negative in 7 cases except one patient. Hemogram and peripheral smear was normal in all cases. Herpes simplex virus (HSV) antigen detection and viral culture was not done due to lack of facility. All the children were treated with oral acyclovir 20mg/kg, 4 times a day for five days along with symptomatic treatment for pain and burning with topical silver sulfadiazine.

DISCUSSION

Our cases ranged from 4 to 16 years of age (Table. 1). Majority of the cases were females (5 cases), female preponderance was also seen in Prabhu et al[5] study also. The thoracic dermatomes were affected in five children comparable with study by Prabhu et al[5], Bharija et al[2] and Hope-Simpson's[3] studies, while Leung et al[6] noted predilection of cervical and sacral dermatomes. Right sided dermatomes were affected in 6 cases. This point is not highlighted in any of the study till date. Only five cases had definite history of previous varicella infection. None were immunized against varicella. No history of chicken pox to mother during

pregnancy and no recent history of family member having chicken pox noted in any case.

There are only few case reports of childhood HIV patients acquiring zoster is reported[5]. Disseminated VZV is more commonly seen in HIV infected individuals.[7] Our study reports one HIV positive boy, who had multi-dermatomal herpes zoster with secondary infection and dissemination, no complications were noted in other 7 cases

Following initial exposure to VZV, the virus may become latent and lie dormant in the dorsal nerve root or in the extramedullary cranial nerve root ganglion cells. HZ is caused by the reactivation of latent VZV. HZ arises, years or decades following primary infection with VZV.[1] HZ cases present with a characteristic unilateral, dermatomal, vesicular eruption preceded or accompanied by pain. Lesions heal within 2 to 3 weeks, but postherpetic neuralgia (PHN) can persist for months or years thereafter [8] and may be intractable. In infants and children it is more common in girls, usually not accompanied by pain or PHN but fever, headache and regional lymphadenopathy can occur. Zoster in children is frequently mild. The probability of PHN in children and adolescents is extremely low, rarely if it ever occurs.[9] Differential diagnosis for herpes zoster particularly in infants and children includes irritant contact dermatitis, insect bite and bullous impetigo which needs to be kept in mind.

The occurrence of zoster in childhood is related to exposure to VZV postnatal, perinatal or intrauterine. Herpes zoster in children probably represents the result of an immature immune response to the transplacentally acquired VZV[3]. Low levels of lymphocytes, natural killer cells, cytokines characterize this poor response, and virus-specific immunoglobulins may result in inability to maintain the latency of VZV leading to early appearance of zoster in children.[10]

Chickenpox in the first year of life was found to be a risk factor for childhood zoster, with a relative risk between 2.8 and 20.9. Neither chickenpox in the second year of life nor recent vaccinations were found to be risk factors for childhood zoster.[11] Such observation was not seen in our study as none of our cases had history of chickenpox in first year of life.

Childhood HZ was thought to be an indicator for an underlying malignancy, whereas recent studies have shown no increase in the incidence of malignancy in children with HZ. Approximately 3% of the pediatric zoster cases occur in children with malignancies.

CONCLUSION

HZ is an infrequent, but not a rare, disease of children. Its infrequent recognition could be explained by its benign clinical course. For this reason, patients so affected may never reach the physician. Because of a low index of suspicion, the eruption is often treated casually as a local cutaneous problem, and its actual nature remains unrecognized. The probability of postherpetic neuralgia in children and adolescents is extremely low. Zoster is seldom associated with undiagnosed malignancy in the primary care setting.

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