

Herpes zoster ophtalmicus in children: A prospective study

Mohammed Chaouche, Zakia Douhi, Selma El Kadiri, Abdellah Dah Cherif, Younes Barbach, Sara Elloudi, Hanane Baybay, Fatima Zahra Mernissi

Dermatology Department, University Hospital Hassan II, Fez, Morocco

Corresponding author: Dr. Mohammed Chaouche, E-mail: medch11@hotmail.com

Sir,

Varicella zoster virus (VZV) has a high level of infectivity and has a worldwide prevalence. Herpes zoster is a re-activation of latent VZV infection. Herpes zoster (HZ) can occur at any time after varicella infection or varicella vaccination. But the incidence of zoster is less after varicella vaccination than after natural infection. The incidence of zoster increases with age, although children who had varicella during the first year of life (or in utero) are at increased risk of developing zoster. It is diagnosed clinically by unilateral vesicular eruption involving a dermatome or dermatomes [1].

Herpes zoster ophtalmicus (HZO) is the involvement of the ophtalmic branch of the trigeminal nerve by recurrent VZV. It may lead to severe pain and a wide spectrum of sight-threatening complications affecting all ocular and orbital tissues. The sequelae are caused by nerve damage, chronic inflammation, or by direct viral infection. Live VZV is rarely found in the eye, with the exception of corneal dendritic ulcers [2]. In this prospective study, we describe the clinical findings and outcomes in children with HZO.

A prospective observational study was conducted from April 2015 to December 2018 in our dermatology departement. Consecutive cases clinically diagnosed as HZO, in pediatric age group were taken up. Inclusion criteria: All clinically diagnosed cases of HZO in children were taken up for the study. Exclusion criteria: All above 16 years of age were excluded from the study. Objectives: Our study is to review clinico-epidemiological data for HZO and treatment to minimize complications.

Patients have given their informed consent and that the study protocol has been approved by the institute's committee on human research.

A total number of 4 cases of HZ presented to our Dermatology Department over a period of 4 years.

There were 3 boys and one girl, the age was between 4 and 9 years old. No one of our children were vaccinated. One patient was immunosuppressed under chemotherapy for medulloblastoma. The notion of chickenpox has been reported in 3 children. Prodromal symptoms were seen in 3 cases. The diagnosis was based on the characteristic aspect of the disease: a crop of umbilicated, sometimes hemorrhagic, vesicles and pustules on an erythematous base. We considered lesions that were conspicuously limited to the distribution of the ophtalmic dermatome with mild pain and burning sensation (Fig. 1a-1c). Atypical cases were excluded. The distribution of skin lesions was recorded by anatomic drawings and photography. Ophthalmic examination revealed herpetic keratitis in two children and all other ocular structures were normal. The treatment was local antiseptic and systemic based aciclovir and analgesic in all patients. The illness was of short duration and resolved in less than two to three weeks. HIV and complete blood count screening in 3 cases without anomalies. The evolution was favorable in all our patients and no patient has kept a post-zosterian pain.

Herpes Zoster (HZ), also referred to as shingles, is caused by reactivation of the varicella-zoster virus (VZV) in people who have had chicken pox (varicella), the primary infection caused by VZV, typically resulting

How to cite this article: Chaouche M, Douhi Z, El Kadiri S, Cherif AD, Barbach Y, Elloudi S, Baybay H, Mernissi FZ. Herpes zoster ophtalmicus in children: A prospective study. *Our Dermatol Online*. 2019;10(e):e18.1-e18.2.

Submission: 11.03.2019; **Acceptance:** 01.05.2019

DOI: 10.7241/ourd.2019e.18



Figure 1: (a-c) Herpes zoster ophthalmicus of our patients.

in a painful, unilateral, dermatomal vesicular rash. About 20% of HZ involve the first division (ophthalmic) of cranial nerve V (trigeminal) resulting in HZO [2].

Historically, childhood herpes zoster was thought to be an indicator for an underlying malignancy, especially acute lymphatic leukemia, whereas recent studies have shown no increase in the incidence of malignancy in children with herpes zoster. Approximately 3% of the pediatric zoster cases occur in children with malignancies. Rising incidence of herpes zoster in otherwise healthy children may be due to acquiring primary varicella infection in utero, or in infancy, where in the immunity is not fully developed. Vaccination with live attenuated virus may also contribute [3,4]. HZO usually begins with pain and an erythematous maculopapular, then vesicular rash in the dermatomal distribution of the trigeminal nerve. The ophthalmic division of the trigeminal nerve can be divided into the frontal, lacrimal and nasociliary nerves.

Involvement of the eye is most common when accompanied by vesicles on the tip or side of the nose, indicating that the nasociliary branch of V-1 is affected. This is known as a positive Hutchinson's sign. Ophthalmic involvement presents clinically with a painful red eye, most commonly caused by corneal keratitis and/or uveitis, subconjunctival haemorrhage can also be an initial presentation of HZO in children [5]. Occasionally, other rashes mimic zoster, including herpes simplex skin infection, contact dermatitis and staphylococcal impetigo. Conjunctivitis or bacterial uveitis may have similar presentation to that of HZO, particularly when the skin rash is less distinct. It is important to distinguish HZO from these other conditions, to ensure an appropriate treatment and prevent complications. Acyclovir is the first choice treatment for children and the suggested dose is 10 mg/kg every 8 hours for 7 days. Starting within 72 hours of initial symptoms significantly reduces

adverse outcome. Topical steroids are recommended for treatment of conjunctival, corneal and uveal inflammation. Post herpetic neuralgia can be reduced by treating the patient with antiviral within the first 24 hours of symptom onset [6].

The particularity of our patients is the occurrence of herpes zoster majoritary in immunocompetent child and a particular case of child with medulloblastoma, and the zoster keratitis which remains a rare form in children.

Although herpes zoster ophthalmicus is uncommon in children, its occurrence in immunocompetent patients could lead to sight-threatening complications. Early presentation and prompt treatment will no doubt minimize morbidity.

Statement of Human and Animal Rights

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008.

Statement of Informed Consent

Informed consent was obtained from all patients for being included in the study.

REFERENCES

1. Wen SY, Liu WL. Epidemiology of pediatric herpes zoster after varicella infection: a population-based study. *Pediatrics*. 2015;135:e565-71.
2. Sanchez MA, Bello-Munoz JC, Cebrecos I, Sanz TH, Martinez JS, Moratonas EC, et al. The prevalence of congenital varicella syndrome after a maternal infection, but before 20 weeks of pregnancy: A prospective cohort study. *J Matern Fetal Neonatal Med*. 2011;24:341-7.
3. Kashyap S, Shanker V. Zoster ophthalmicus with dissemination in a six year old immunocompetent child. *Indian J Dermatol Venereol Leprol*. 2014;80:382.
4. Aikenhead KJ, Johnson TL Jr. Herpes zoster in a 6-month-old infant with 13-year follow-up: A retrospective case report. *J Chiropr Med*. 2011;10:306-9.
5. Gupta N, Sachdev R, Sinha R, Titiyal JS, Tandon R. Herpes zoster ophthalmicus: Disease spectrum in young adults. *Middle East Afr J Ophthalmol*. 2011;18:178-82.
6. Sanjay S, Huang P, Lavanya R. Herpes zoster ophthalmicus. *Curr Treat Options Neurol*. 2011;13:79-91.

Copyright by Mohammed Chaouche, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Source of Support: Nil, Conflict of Interest: None declared.