

Herpes Zoster Ophthalmicus in a Healthy Nigerian Child

K.K. Oladigbolu, G.A. Farouk, A.J. Orugun, H. Abdulrahman

Department of Ophthalmology, Ahmadu Bello University Teaching Hospital, Shika-Zaria, Kaduna State, Nigeria

Abstract

Herpes zoster ophthalmicus (HZO) is rare in children especially those who are immunocompetent. We reported a case of HZO in a healthy 3-year-old girl with no history of exposure or underlying immune-compromising systemic disease. She developed severe ocular complications after treatment. Both parents were non-reactive to human immunodeficiency virus (HIV) I and II.

Keywords: Healthy child, herpes zoster ophthalmicus, ocular complications

INTRODUCTION

Herpes zoster ophthalmicus (HZO) is a rare form of herpes infection in children. It has been known to be more common in adults. It is also said to run a mild course in children and it clears up with little residual damage.^[1] Such a rare occurrence in infants and children is because of the generally accepted fact that the same virus in children cause varicella and may be giving some immunity against HZO.^[2] We report a unique case of HZO in an otherwise healthy 3-year-old girl with severe ocular complications after treatment.

CASE REPORT

We received a consult to review Z.U., a 3-year-old girl, who was first sent by the Pediatric unit of our hospital with complaints of rashes on the right side of her forehead, scalp and upper and lower lids, which were discharging and painful. Otherwise, there were no rashes on other parts of the body and no history of previous allergies. There was an associated redness, together with lacrimation and mild discharge of the same eye. No similar symptoms were observed in the left eye.

On examination, she was well nourished, not dehydrated or pale. However, she had a fever of 40° and irritable with right-sided hemifacial extensively grouped herpetiform vesicles, involving the temporal side, extending inferiorly to the periorbital region of the right eye including the nasal bridge sparing the tip of the nose. Vesicles were discharging mucopurulent substance suggestive of bacterial super infection [Figure 1].

Visual acuity was difficult to assess despite several attempts at persuasion. Right upper lid was swollen and no visualization of other structures of the right eye. Left eye was essentially normal. No history and no sign or symptoms of immunological cause were present. The patient was said to be fully immunized for age and parents denied use of traditional eye medications.

She was admitted and commenced on Acyclovir cream twice daily application on the periorbital skin, suspension Acyclovir 150 mg five times a day, ointment Acyclovir five times a day on the eye, drops Tropicamide twice a day, syrup Ibuprofen 200 mg eight hourly and suspension Cephalexin 250 mg eight hourly. Investigations were ordered for retroviral screening (RVS) and full blood count and differentials. RVS came out non-reactive. It was repeated two times at 2 weeks interval and all reported non-reactive to type I and II human immunodeficiency virus (HIV). The parents were also screened and both of them tested negative to type I and II HIV.

Symptoms subsided remarkably after 1 week of treatment [Figure 2]. Right eye was more visible and hence examined to find that conjunctiva was hyperemic as well as cornea was hazy with a central area of dense opacity. Further examination

Address for correspondence: Dr. Kehinde Kabir Oladigbolu, Department of Ophthalmology, Ahmadu Bello University Teaching Hospital, Shika-Zaria, Kaduna State, Nigeria.
E-mail: oladigbolukehinde@yahoo.com

Access this article online

Quick Response Code:



Website:

www.nigerianjournalofophthalmology.com

DOI:

10.4103/0189-9171.207369

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work noncommercially, as long as the author is credited and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

How to cite this article: Oladigbolu KK, Farouk GA, Orugun AJ, Abdulrahman H. Herpes zoster ophthalmicus in a healthy Nigerian child. *Niger J Ophthalmol* 2017;25:56-8.

with fluorescein dye revealed a central corneal ulcer and treatment was continued for another 2 weeks before discharging patient home.

Scarring of the right hemifacial region with ectropion of the temporal part of the right upper lid was noticed 2 weeks after discharging patient home. There was incomplete lid closure

while sleeping [Figure 2]. Features of exposure keratopathy were evident [Figure 3]. Mother was counseled on generous application of chloramphenicol ointment. The patient was referred to oculoplastic and plastic and burns units to address the temporal upper lid ectropion and hemifacial scarring, respectively.

DISCUSSION

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 in a painful, unilateral, dermatomal vesicular rash.^[3] About 20% of HZ involve the first division (ophthalmic) of cranial nerve V (trigeminal) resulting in HZO.^[4]

HZO, first described fully by Jonathan Hutchinson in 1866, is very rare in children, being predominantly an adult affection.^[1] However, cases have been reported during childhood at various ages and even in a 20-hour-old infant.^[2] The incidence in children is 42:100,000 person-years.^[5] Birks found an incidence of 0.2% in children 6–13 years.^[2] It usually follows a mild course in children, with all traces of the infection resolved leaving minimal residual damage. Ocular complications are usually mild and post-herpetic neuralgia (PHN), which is so common in affected adults, rarely troubles the child.^[1]

Primary infection with VZV during the first year of life is the most common risk factor for developing childhood HZ.^[6] The occurrence of varicella during pregnancy may also lead to an increased risk of developing HZ.^[7] As a result of these risk



Figure 1: HZO child at presentation



Figure 2: HZO child at 1 week of treatment



Figure 3: HZO child 2 weeks after discharge

factors, cases of HZ reported in the children are mostly related to immunosuppressive states or varicella infection acquired intrauterine or during the first year of life.^[8,9] The probable cause in this patient may be due to acquiring primary varicella infection *in utero*, or in infancy, wherein the immunity is not fully developed.

Like in the reported case, cases of HZO in immunocompetent children without a history of varicella vaccination have also been reported in the literature.^[8-12] Studies of zoster in the pediatric age group have shown that its occurrence is not always associated with underlying immunodeficiency, HIV infection or malignancy.^[5,11,13]

The diagnosis is clinical in most cases with classical unilateral dermatomal vesicular rash. In cases, where there is clinical suspicion of HZO, polymerase chain reaction (PCR) can be performed to confirm the diagnosis promptly by identifying VZV DNA in various clinical specimens such as vesicular fluid, cerebrospinal fluid (CSF), and blood.^[14] Alternatively, the Tzanck test can be used in similar circumstances; scrapings from the sore of the rashes are stained and examined under the microscope; its limitation is the inability to differentiate the herpes simplex from the VZV.^[15]

If the nasociliary branch of the ophthalmic division of the trigeminal nerve is involved, clinically manifested by skin involvement of the tip of the nose (Hutchinson's sign), the eye will very often be involved as well. This is considered a prognostic sign of sight-threatening ocular complications.^[16] Although the tip of the nose was spared in the case being reported, she developed severe keratoconjunctivitis with corneal opacity and upper lid ectropion. This is most likely as a result of bacterial super infection owing to poor hygiene or the use of traditional herbal preparations which is a common practice in the rural locality where the patient resides.

CONCLUSION

Although HZO 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.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Ethical approval

The ethical approval for this case report was obtained from the Health Research Ethics Committee of Ahmadu Bello University Teaching Hospital, Shika-Zaria, Kaduna State, Nigeria.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Tucker SM. Herpes zoster ophthalmicus in children. *Arch Dis Child* 1958;33:437-9.
2. Panda A, Sood NN, Dayal Y, Bhatia IM. Herpes zoster ophthalmicus in children. *Indian J Ophthalmol* 1981;29:37-8.
3. Cohen EJ, Kessler J. Persistent dilemmas in zoster eye disease. *Br J Ophthalmol* 2016;100:56-61.
4. Liesegang TJ. Herpes zoster ophthalmicus natural history, risk factors, clinical presentation, and morbidity. *Ophthalmology* 2008;115(2 Suppl):S3-12.
5. Baba K, Yabuuchi H, Takahashi M, Ogra PL. Increased incidence of herpes zoster in normal children infected with varicella zoster virus during infancy: Community-based follow-up study. *J Pediatr* 1986;108:372-7.
6. Soeteman M, Williams RP, Busari JO. Herpes zoster ophthalmicus in an otherwise healthy 2-year-old child. *BMJ Case Rep* 2012;1-4. doi: 10.1136/bcr-2012-007015.
7. Nikkels AF, Nikkels-Tassoudji N, Piérard GE. Revisiting childhood herpes zoster. *Pediatr Dermatol* 2004;21:18-23.
8. Binder NR, Holland GN, Hosea S, Silverberg ML. Herpes zoster ophthalmicus in an otherwise-healthy child. *J AAPOS* 2005;9:597-8.
9. De Freitas D, Martins EN, Adan C, Alvarenga LS, Pavan-Langston D. Herpes zoster ophthalmicus in otherwise healthy children. *Am J Ophthalmol* 2006;142:393-9.
10. Bhatnagar A, Tomlins P, Parulekar MV. Role of polymerase chain reaction in early diagnosis of herpes zoster ophthalmicus in children. *J AAPOS* 2009;13:213-4.
11. Liao W, Chu G, Hutnik CM. Herpes zoster ophthalmicus and sixth nerve palsy in a pediatric patient. *Can J Ophthalmol* 2007;42:152-3.
12. Ofek-Shlomai N, Averbuch D, Wolf DG, Engelhard D. Varicella zoster virus encephalitis in a previously healthy five-year-old child with herpes zoster ophthalmicus. *Pediatr Infect Dis J* 2005;24:476-7.
13. Feder HM Jr, Hoss DM. Herpes zoster in otherwise healthy children. *Pediatr Infect Dis J* 2004;23:451-7; quiz 8-60.
14. Finnström N, Bergsten K, Ström H, Sundell T, Martin S, Wutzler P, *et al.* Analysis of varicella-zoster virus and herpes simplex virus in various clinical samples by the use of different PCR assays. *J Virol Methods* 2009;160:193-6.
15. Teran CG, Medows M. Herpes zoster ophthalmicus in a healthy child. *BMJ Case Rep* 2013. doi: 10.1136/bcr-2013-009702. <http://casereports.bmj.com/content/2013/bcr-2013-009702.extract>. [Last accessed on 2016 Mar 15].
16. Zaal MJ, Völker-Dieben HJ, D'Amato J. Prognostic value of Hutchinson's sign in acute herpes zoster ophthalmicus. *Graefes Arch Clin Exp Ophthalmol* 2003;241:187-91.