

# Herpes Zoster Ophthalmicus in an Immunocompetent Child as Primary Presentation

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## Abstract

**Aim & Purpose:** To report a new case of herpes zoster in an immunocompetent pediatric patient.

**Case report:** A previously healthy 6-year-old boy which the medical history revealed no anterior vaccination against VZV but a maternal varicella during the pregnancy. He Consults on our Emergency Department for a diffuse vesicular skin eruption, particularly covering the left forehead, a blurry vision, photophobia and a left-sided Headache. The clinical examination revealed a sub-febrile temperature (38.5°C), a thick layer of necrotizing crusts covering the left forehead, an upper eyelid, vesicles and pustules with an erythematous base on the left zygoma extending to the left lateral canthus, a bilateral eyelid edema particularly on the left and the Hutchinson's sign, a predictor of ocular inflammation and corneal sensory denervation, was present. The best visual Acuity was 10/10 in the right eye and 7/10 on the left. The slit lamp examination noted in left eye a conjunctival hyperemia with a pseudo dendritic epithelial keratitis, a diffuse fluorescein staining of the corneal epithelium, and secretions. The right eye was normal. The laboratory investigations revealed white blood cells at  $5.1 \times 10^3$  cells/ $\mu$ L, the basic immunological tests (Immunoglobulines; C3 and C4 levels) were normal and the HIV serology was negative. A clinical diagnosis of herpes zoster was made, and the patient was started on intravenous Acyclovir (10 mg/kg/dose every 8 hours) associated to topical Gancyclovir, eye wash solution, topical antibiotic, lubricating eye drops and Dermatologic ointments daily for 1 week. The evolution was marked by a complete remission without sequelae.

**Discussion and Conclusion:** The peculiarity of our observation is the occurrence of shingles in an immunocompetent child, without notion of previous chickenpox and the ophthalmic localization which remains a rare form in children. Clinicians must be vigilant in their evaluation of vesicular lesions in children even without known varicella exposure.

**Keywords:** Herpes zoster ophthalmicus • Child • Varicella • Primary presentation

## Introduction

Herpes zoster ophthalmicus in children is uncommon and is only barely described in the literature especially in immunosuppressed patients [1]. It is quite uncommon in immunocompetent children [2]. This is a rare affection which can be responsible for serious ocular complications requiring adequate and early management [3]. We are reporting a new case of herpes zoster in an immunocompetent pediatric patient.

## Case Report

A previously healthy 6-year-old boy, with the medical history revealed no anterior vaccination against VZV but a maternal varicella during the pregnancy. He Consults on our Emergency Department for a diffuse vesicular skin eruption, particularly covering the left forehead, a blurry vision, photophobia and a left-sided Headache. The clinical examination revealed a subfebrile temperature (38.5°C), a thick layer of necrotizing crusts covering the left forehead, an upper eyelid, vesicles and pustules with an erythematous base on the left zygoma extending to the left lateral canthus, a bilateral eyelid edema particularly on the

left and the Hutchinson's sign, a predictor of ocular inflammation and corneal sensory denervation, was present. The best visual Acuity was 10/10 in the right eye and 7/10 on the left. The slit lamp examination noted in left eye a conjunctival hyperemia with a pseudo dendritic epithelial keratitis, a diffuse fluorescein staining of the corneal epithelium, and secretions. The right eye was normal. The laboratory investigations revealed white blood cells at  $5.1 \times 10^3$  cells/ $\mu$ L, the basic immunological tests (Immunoglobulines; C3 and C4 levels) were normal and the HIV serology was negative. A clinical diagnosis of herpes zoster was made, and the patient was started on intravenous Acyclovir (10 mg/kg/dose every 8 hours) associated to topical Gancyclovir, eye wash solution, topical antibiotic, lubricating eye drops and Dermatologic ointments daily for 1 week. The evolution was marked by a complete remission without sequelae (Figures 1 and 2).

## Discussion

Herpes zoster is very unusual in children younger than 10 years old, especially in healthy children [4]. In an Indian study about 195 cases of HZV, 22 ophthalmic shingles were found, 10% were children [5]. Varicella-zoster virus is 1 of 8 viruses in the Herpesviridae family known to infect humans. It is known to cause 2 distinct disease states: varicella due to a primary infection from the virus, and herpes zoster caused by a reactivation of the latent virus in the dorsal root ganglion, which travels the neural pathway and manifests cutaneous along 1 to 2 dermatomes [6]. The overall incidence of Herpes-zoster is lower in children compared to adults, and the risk dramatically increases in individuals older than 50 years [2]. Children aged 1 to 18 years who were evaluated for herpes zoster demonstrated a decreased incidence among those who were vaccinated versus those who were not [7,8]. The vaccination strain of the virus probably has led to the presentation of herpes zoster, but theoretically it is also possible that wild type VZV from a

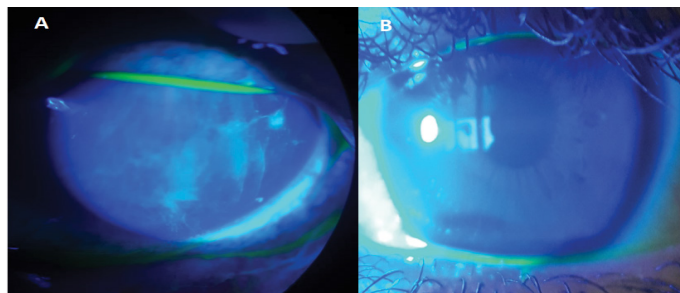
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**Figure 1.** Herpes zoster in an immuno-competent paediatric patient (A). Day 3 of treatment (B). Day 7 of treatment (C). Day 14 of treatment (D).



**Figure 2.** Pseudo dendritic epithelial keratitis with a diffuse superficial punctate keratitis (A). Complete resolution without sequelae (B).

mild, undiagnosed case of varicella led to the herpes zoster outbreak. Late-onset side effects of VZV vaccination are relatively uncommon; however, the development of herpes zoster after vaccination has been reported [9-12].

The typical presentation of HZ includes grouped vesicles or small bullae on an erythematous base that occur unilaterally within the distribution of a cranial or spinal sensory nerve, occasionally with overflow into the dermatomes above and below, typically without crossing the midline [13]. The lesions may become hemorrhagic, necrotic, or bullous, with or without adenopathy. Rarely, there can be pain without the associated skin eruption (zoster sine herpete). Lesions tend to crust by days 7 to 10 [13]. Ocular complications occur in 50% to 70% of cases, with an often-poor prognosis [14]. There are documented cases of severe sequelae secondary to zoster infection in pediatric patients, including but not limited to disseminated Herpes zoster, herpes zoster ophthalmicus [15,16] Ramsey Hunt syndrome [13] and chronic encephalitis [13]. Herpes zoster usually is diagnosed based on its clinical presentation [2]. Direct fluorescent antibody testing and viral culture are less rapid but are standard

tests that may help with the diagnosis. Direct fluorescent antibody testing can have a high false-negative rate, and viral cultures typically take 2 weeks for completion. These tests have largely been replaced by PCR analysis [2].

## Conclusion

The peculiarity of our observation is the occurrence of shingles in an immunocompetent child, without notion of previous chickenpox and the ophthalmic localization which remains a rare form in children. Clinicians must be vigilant in their evaluation of vesicular lesions in children even without known varicella exposure.

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