

Case Report

Pharmacy Practice

A Case Report on Herpes Zoster Ophthalmicus with Postherpetic Neuralgia

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DOI: [10.36348/sjmps.2022.v08i05.005](https://doi.org/10.36348/sjmps.2022.v08i05.005)

| Received: 27.03.2022 | Accepted: 04.05.2022 | Published: 18.05.2022

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Abstract

Herpes Zoster Ophthalmicus (HZO), also known as Ophthalmic Zoster, caused by the reactivation of the Varicella Zoster Virus (VZV), VZV reactivation commonly affects the ophthalmic division of the trigeminal nerve and subsequently the eye. HZO is considered an ophthalmologic emergency. The most common complication of HZO is postherpetic neuralgia (PHN). HZO is diagnosed based on history and cutaneous findings. Antiviral medications such as acyclovir, valacyclovir and famciclovir remain the mainstay of therapy for HZO. HZO represents approximately 10 to 25% of all cases of herpes zoster. Here, we report an interesting case of HZO and its complication PHN in a 61 years old male patient.

Keywords: Herpes zoster ophthalmicus (HZO); Varicella zoster virus (VZV); Postherpetic neuralgia (PHN); Antiviral.

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INTRODUCTION

Herpes Zoster Ophthalmicus (HZO) caused by the reactivation of the Varicella Zoster Virus (VZV), VZV reactivation commonly affects the ophthalmic division of the trigeminal nerve and subsequently the eye which leads to PHN (postherpetic neuralgia), a common complication [1, 2].

The incidence for Herpes Zoster Ophthalmicus is approximately 4 cases per 1000 US population annually. According to CDC (centres for disease control & prevention), there are 1 million cases of zoster annually and that 32% of persons in the United States will experience zoster during the life time [3, 4].

The viruses in the herpes family usually live around the nerve fibres in humans without ever causing a problem. The viruses will start to multiply or they will move from one area of the body to another and that is when herpetic disease breaks out [5]. Reactivation of the varicella zoster virus often happens when the immune system of the body is weakened or by some other health problems [6].

When this virus affects the eye, it is known as herpes zoster ophthalmicus. Herpes zoster ophthalmicus, itself is not contagious, but can spread through contact with fluid from the rash blisters. It

affects not only the eye but also the surrounding area of the face [7]. These vesicular rash involves the first (ophthalmic) division of the fifth cranial nerve i.e., trigeminal nerve [8].

The symptoms may be painful in and around the eye with redness, swelling or cloudiness of the cornea, edema and inflammation of the upper eyelid. Generally, the effect of the virus results with rashes that don't usually cross the mid line. The rash is usually painful, itchy or tingly. These rashes may further form into blisters [9]. HZO can be diagnosed based on eye & cutaneous examination, symptoms and past history and also PCR test, blood test & tissue culture to identify presence of VZV antibodies [10].

The standard treatment of HZO includes antivirals (acyclovir, valacyclovir and famciclovir) [11]. With advancing age, the people with HZO are at risk for postherpetic neuralgia, which is the most common complication of HZO [12].

CASE REPORT

A 61 year old male patient was admitted in the general male medical ward, GGH, Government General Hospital, Ongole, Prakasam district, Andhra Pradesh, with chief complaints of facial edema, inability to open eyes, fluid filled lesions over scalp, face, and maxillary

and perioral region associated with pain since 5 days. He has experienced similar complaints one month ago and treated with antibiotics. No surgical and smoking history was reported.

On examination, Patient was conscious and coherent, blood pressure was 130/90mmHg, pulse rate was 89beats/minute, respiratory rate was 18breaths/minute, SpO₂ was 97% at room air and the patient had a regular body temperature of 37.3°C. On eye examination, eyelids were crusting+, NPTG Grade 2 +, cornea were clear, CC +, Anterior chamber depth was normal and pupil was dilated. On cutaneous examination multiple well-defined vesicles, crusting over right maxillary, right periorbital region, right side of scalp region were present. Cardiac, abdominal and locomotor system examinations were normal. The patient underwent a blood test.

The blood results showed haemoglobin of 13.5g/dl (normal range adult males,14-18g/dl), white blood cell count of 10,000/cmm (normal range,4500-11000/cmm), platelets of 170000/ul (normal range,165000-415000/ul), neutrophils of 70% (normal range,55-70%), Lymphocytes of 25% (normal range,20-40%), Monocytes of 3%(normal range,2-8%), Eosinophils of 2% (normal range,1-4%), Basophils of

0% (normal range,0.5-1%), Random blood sugar of 113mg/dl (normal range,90-140mg/dl), Serum bilirubin of 1mg/dl(normal range,0.1-1.2mg/dl), Blood Urea of 26mg/dl(normal range,15-45mg/dl), Serum creatinine of 0.8mg/dl (normal range,0.6-1.2mg/dl) and venereal disease research laboratory test (VDRL) was nonreactive.

Based on subjective and objective evidence this case was assessed as Herpes Zoster Ophthalmicus with Post Herpetic Neuralgia.

The patient was advised to consume plenty of water, saline compression over face and was prescribed with Tablet Acyclovir (800mg) - 5 times daily {6am,10am,2pm,6pm,10pm}, Tablet Amoxicillin & clavulanate (625mg) - OD, Tablet Gabapentin (300mg) - OD, Tablet Cefixime (200mg) - BD, Tablet Amitriptyline (10mg) - OD and mupirocin ointment BD, Homatropine eye drops BD, carboxymethylcellulose eye drops QID, Ganciclovir eye drops TID and Moxifloxacin eye drops 8 times per day. The patient's lesions were fading slowly and his condition was improved day to day. Finally he was discharged after 2 weeks with early follow up by ophthalmology.



Fig-1: Patient with Herpes zoster ophthalmicus

DISCUSSION

Herpes zoster ophthalmicus in other terms shingles, derived from the Latin word *cingulum*, meaning 'girdle'. This is because a common presentation of herpes zoster involves unilateral rash that can wrap around the waist or chest, like a girdle [13]. It occurs due to reactivation of varicella zoster virus, a member of the herpes family of viruses. This is the virus that also causes chickenpox. Prior to reactivation, the virus remains dormant in the dorsal root or other sensory ganglia. Aging, Immunosuppression or both causes declination in the specific cell-mediated immunity to varicella zoster virus which leads to reactivation of VZV [14].

The reactivated virus replicates and migrates down the sensory nerve leading to dermatomal distribution of pain [15]. Subsequently erythematous macules appear along the involved dermatome, rapidly progressing over several days to papules and vesicles containing clear serous fluid and later pustules. These lesions rupture and typically crust over, requiring several weeks to heal completely.

Virus particles can be transmitted to direct contact with secretions from vesicles and secretion contaminated articles. In about 50% of patients with HZO, ocular involvement is seen [8].

Primary treatment for HZO includes antivirals like acyclovir reduces the severity and incidence of postherpetic pain and especially to protect against long term ocular complications [16]. Corticosteroids like prednisone reduce the pain associate with herpes zoster.

Postherpetic neuralgia can occur with injury secondary to altered gene expression in the sensory nerves that can induce neurochemical, physiological, anatomical modifications (such as afferent terminal sprouting) [17]. Postherpetic neuralgia, is painful condition that affects nerve fibres and skin, causing burning pain that lasts long after the rash and blisters of shingles disappear. Treatment of PHN includes anticonvulsants, antidepressants and topical therapies. The risk of PHN increases with age, primarily effecting people older than 60 [18].

In this case report, our patient had initially developed fluid filled lesions over scalp, face, maxillary and perioral region and has taken antibiotics. He again came to the hospital with similar complaints associated with pain. On treatment, pain was reduced slightly and lesions subsided improving the patient's ability to open eye.

The zoster vaccine is safe and effective for patients with a history of varicella zoster infection or varicella zoster virus seropositive with no previous doses aged 50- 59 years, if it can be administered 4 weeks or more before beginning immunosuppressive therapy [19].

CONCLUSION

If shingles is treated early with antiviral medicine the risk of complication such as postherpetic neuralgia is reduced. Within one year full recovery occurs in patients with postherpetic neuralgia. Vaccines boost cell mediated immunity which then reduces the risk of reactivation. Doctors should have a thorough knowledge of HZO treatment which reduces the occurrence of complications.

REFERENCES

1. Thomas, C., Gene Hern, H. (2008). Herpes Zoster Ophthalmicus. *Western Journal of Emergency Medicine*, 9(3), 174-176.
2. Weinberg, J.M. (2007). Herpes Zoster: epidemiology, natural history and common complications. *Journal of American Academy of Dermatology*, 57(6), S130-5.
3. Liesegang, T. J., (2008). Herpes Zoster Ophthalmicus natural history, risk factors, clinical presentation, and morbidity. *Ophthalmology*, 115 (2), S3-12.
4. Kathleen, L., Dooling, K.L., Guo, A., Patel, M. (2018). Recommendations of the Advisory Committee on Immunization Practices for Use of Herpes Zoster Vaccines. *MMWR Morbidity and Mortality Weekly Report*, 67(3), 103-108.
5. Carol DerSarkissian. (2020). Herpes and the Eye.
6. Ivan, V., Eileen, C., Vikram, D. (2017). Herpes Zoster Ophthalmicus: A Review for the Internist. *The American Journal of Medicine*, 130, 21-26.
7. Kenneth, R., Cohen, Rebecca, L., Salbu, Jerry, F., Israel, I. (2013). Presentation and Management of Herpes Zoster (shingles) in the Geriatric Population. *Pharmacy and Therapeutics*, 38(4), 217-224, 227.
8. Saad, S., Christopher, N. Ta. (2002). Evaluation and management of Herpes Zoster Ophthalmicus. *American Family Physician*, 66(9), 1723-1730.
9. John, B., Cason. (2020). Herpes Zoster Ophthalmicus. American Academy of Ophthalmology.
10. Cohen, P.R. (1994). Tests for detecting herpes simplex virus and varicella- zoster virus infections. *Dermatologic Clinics*, 12(1), 51-68.
11. Gnann, Jr. JW. (2007). Antiviral therapy of varicella-zoster virus infections. Human Herpesviruses: Biology, Therapy, and Immunoprophylaxis, Chapter 65.
12. Sampathkumar, P., Drage, L.A., Martin, D.P. (2009). Herpes zoster (shingles) and postherpetic neuralgia. *Mayo Clinic Proceedings*, 84(3), 274-80.
13. Srikrishna, K., Prabhat, M.P.V., Balmuri, P.K., Sudhakar, S., Ramaraju, D. (2012). Herpes Zoster: Report of a Treated Case with Review of Literature. *Journal Indian Academy of Oral Medicine and Radiology*, 24(2), 51-55.
14. Mishra, A., Baranwal, V.K., Patra, V.K., Srivastava, V.K. (2013). An interesting case of herpes zoster ophthalmicus. *Medical Journal of DY Patil University*, 6, 289-91.
15. Singh, S., Gupta, R., Kaur, S., Kaur, J. (2013). Post-herpetic neuralgia: A review of current management strategies. *Indian Journal of Pain*, 27, 12-21.
16. Harding, S.P., Porter, S.M. (1991). Oral acyclovir in herpes zoster ophthalmicus. *Current Eye Research*, 10, 177-82.
17. Philip, A., Thakur, R. (2011). Post herpetic neuralgia. *Journal of Palliative Medicine*, 14(6), 765- 773.
18. Miriam, R., Sandra, A., Adriana, R., del Carmen, R., Luis, C. (2017). Post Herpetic Neuralgia in an Older Adult. Case Report and Review of the Literature. *Journal of Immunology and Clinical Research*, 4(1), 1038.
19. Centers for Disease Control and Prevention (CDC). Update on herpes zoster vaccine: licensure for persons aged 50 through 59 years. *MMWR Morbidity and Mortality Weekly Report*. (2011).60(44), 1528.