International Journal Dental and Medical Sciences Research
Volume 2, Issue 6, pp 320-323 www.ijdmsrjournal.com ISSN: 2582-6018

Post Herpetic Neuralgia following Herpes Zoster Ophthalmicus: a Case Report

Dr Dipanjali Majumder[1], Dr Pranabes Chakraborti[2], Dr Partha Nandi[3], Dr Shivam Gupta[4], Dr Paichainda Mog[5]

[1](Department of Ophthalmology, Agartala Govt. Medical College)
[2](Department of General Medicine, Agartala Govt. Medical College)
[3](Department of General Surgery, Fortis Hospital, Faridabad)
[4](Department of Ophthalmology, Agartala Govt. Medical College)
[5](Department of Ophthalmology, Agartala Govt. Medical College)
Corresponding author: Dr Dipanjali Majumder

Date of Submission: 05-12-2020 Date of Acceptance: 17-12-2020

ABSTRACT: Herpes Zoster Ophthalmicus (HZO) is an acute, self-limiting, neuro ophthalmic cutaneous viral infection caused by the reactivation of the Varicella Zoster Virus (VZV) that remains dormant in the dorsal root ganglion. In HZO, ocular involvement is seen in more than 50% of the patients. HZO is characterized by the unilateral pain, burning and tingling sensation followed by the vesicular eruptions limited to the single dermatome that are innervated by the single cranial ganglion, sometimes it leads to Post Herpetic Neuralgia (PHN). We present a case of 65 years old woman who presented ophthalmic herpes zoster in September 2018, and although she was correctly and promptly treated with Acyclovir and different analgesic medications, post herpetic neuralgia was still ongoing 2 months later.

Keywords: Herpes Zoster Ophthalmicus (HZO), Post herpetic neuralgia (PHN), fifth cranial nerve, Varicella zoster virus, chronic obstructive pulmonary disease (COPD), SSRI.

I. INTRODUCTION

Herpes zoster Ophthalmicus (HZO) is caused by reactivation of the Varicella Zoster virus (VZV), which remains dormant in sensory ganglia[1]. Its reactivation causes direct inflammation and tissue damage, which is the underlying mechanism of neuralgic pain associated with HZO. Reactivation usually occurs in the elderly or due to immune-suppression (HIV, cancer, immunosuppressive therapy) triggers both, cellular and humoral immune response[2]. In most cases the diagnosis is clinical, although sometimes immunofluorescence or PCR is needed. Complications of HZO can include infections, central nervous system affection, nerve palsies, almost every single ophthalmic disorder, and post herpetic neuralgia (PHN), which, although is non-life threatening, may be associated with an important loss of autonomy, poorer quality of life[3]. Neuralgic pain might develop before the rash, or during the acute phase of the disease. PHN is a direct consequence of the damage caused by VZV on the peripheral nerve and one of the most frequent complications in the elderly[4]. PHN is conventionally defined as the persistence of pain beyond 30, 60 or 90 days of eruption[5]. Patients with PHN have reduced quality of life, physical functioning and psychological well being. The pharmacological management of this entity is of variable efficacy and little response in most cases[6]. This report examines a case of a patient who is experiencing PHN following HZO, first reported from Tripura.

II. CASE REPORT

A 65 years old female patient came to the Agartala Government Medical College, Tripura, India, with the complaint of intense pain and swelling in the right side of the face along with right side of forehead and scalp for past 4 days in September 2018. History revealed that the patient had chicken pox when she was 14 years old transmitted from her brother. Patient was diabetic and hypertensive for past 10 years for which she was under treatment. She also had burning sensation in the right side of the face, forehead and scalp along with the continuous watering from the right eye. On general examination, cluster of vesicles were present in the right middle third of the face, forehead and scalp. Ruptured vesicles were evident on the upper lip leaving an ulcerated area. Ophthalmic examination revealed right bipalpebral edema and blisters mostly on the upper eyelid. Slit-lamp examination of right eye showed

International Journal Dental and Medical Sciences Research
Volume 2, Issue 6, pp 320-323 www.ijdmsrjournal.com ISSN: 2582-6018

mild conjunctival congestion, no papillae, no secretion with inferior punctate keratitis. Intraocular pressure (IOP) of right eye was 17 mmHg. Left eye was normal. Patient was treated with tablet acyclovir 800 mg 5 times a day for 7 days, 0.3% acyclovir cream topically five times a day, tablet gabapentin 300 mg once daily and non-steroidal painkillers. Patient was reviewed after 2 weeks showed healing of all the vesicles along with scaring, but persistence of pain in the dermatome supplied by the affected nerve suggested PHN. Patient was then advised to continue tablet gabapentin 300 mg once daily. On the follow up visit at 2 month after starting gabapentin, pain subsided to significant degree.

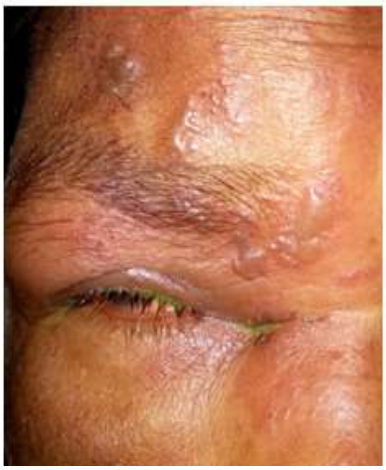

Figure I: HZO: vesicular eruption.

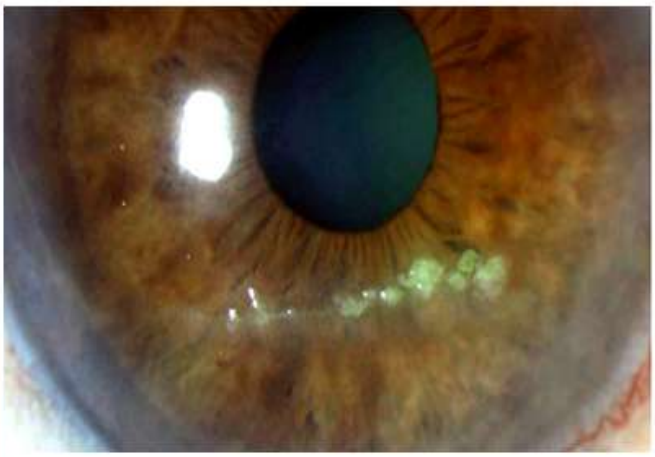

Figure II: Punctate keratitis.

III. DISCUSSION

HZO is caused by the reactivation of varicella zoster virus (VZV). It occurs in three successive stages such as prodromal, acute and chronic. The chronic neuropathic stage which also known as post herpetic neuralgia (PHN) is defined as sharp, intense, radiating pain lasting for months to decades due to demyelination of the affected nerve[7]. Prevalence of PHN ranges from 9%-73% in which pain persists even after healing of the vesicle for more than a week, month or years[8]. Pain associated with PHN may occur continuously or as electric shock like sensation. Diagnosis is frequently done clinically, though immunofluorescence and PCR are used for confirmation[9].

HZO is treated by administering the antiviral drugs within 72 hours after onset of rash[10]. Topical antiviral agents such as 0.3% acyclovir cream five times a day is effective. Oral administration includes acyclovir 800 mg orally 5 times daily for 7-10 days or in severe cases 10 mg/kg IV every 8 hours for 7-10 days. If acyclovir is not effective famciclovir 500 mg orally 3 times daily for 7 days or valacyclovir 500 mg orally 3 times daily for 7 days have been proved to be effective[11, 12]. Recent advanced targeted drug therapies are directed towards the viral DNA such as amenamevir, which inhibits helicase primase complex, Bicyclic Nucleoside Analogues (BCNA), Valamaciclovir Nucleoside analogue[13].

Pain management is tough in PHN. It may require several drugs, for a great amount of time. The objective of the treatment of PHN is primarily pain alleviation and improvement of the quality of life. Antiviral therapy in the early acute phase significantly reduces the severity of infection; however, this therapy does not completely alleviate acute herpetic neuralgia. Randomized trials support the effectiveness of both topical and oral agents; however, PHN is very difficult and sometimes even impossible to treat despite the use of strong analgesics[14]. Pathologic evidence suggests that VZV can cause permanent peripheral and central nervous system damage, destroying sites of intrinsic pain inhibitory mechanisms where analgesics act[15]. Treatment of acute pain associated with PHN is done by phenytoin; 100-300 mg orally at bedtime; increase dosage until response is adequate, or blood drug level is 10-20 mg/ml, carbamazepine 100 mg orally at bedtime; increase dosage by 100 mg every 3 days until dosage is 200 mg three times daily, response is adequate or blood drug level is 6-12 mg/ ml; gabapentin 100-300 mg orally at bedtime; increase dosage by 100-300 mg every 3 days until dosage is 300-900 mg three times daily or response is adequate[16]. Second line of treatment is done using opioids, tricyclic antidepressants and Selective Seratonin

Norepinephrine Reuptake Inhibitors (SSRI's) [17]. In some studies, Prednisolone 60 mg is considered initially to reduce the acute pain but care should be taken while tapering the drug dose[18]. Topical treatment are lidocaine gel, capsaicin cream, non steroidal anti inflammatory drugs and acetaminophen, steroids, gabapentin or pregabalin, tricyclic antidepressants, opiods, local anesthetic, acupuncture[19]. Other advanced treatment modalities are electrical stimulation of thalamus, anterolateral cordotomy, intercostal nerve cryotherapy, pulsed radiofrequency ablation, spinal cord stimulation, botulinum toxin injection to reduce the intensity of PHN[20].

IV. CONCLUSION

HZO involving the ophthalmic division of trigeminal nerve has broad spectrum of clinical presentation but complication involving HZO leads to the most painful PHN. Early clinical suspicion followed by diagnosis and prompt treatment helps in preventing the severity of PHN and prognosis of the disease. PHN may be a long, and very much affecting of quality of life. Our patient is an older adult; she is still working and has family obligations, which are very much affected by this incapacitating pain. PHN prevention is mainly achieved through the vaccine, which is recommended to individuals aged 60 to 70, independently of history of VZV infection, since more than 95% adults over 40 are immune to VZV, thus at risk for HZ

Conflict of Interests

The authors declare that they have no conflict of interests.

REFERENCES

[1]. Costache C, Costache D. A study of the dermatomers in herpes zoster. Bulletin of the Transilvania University of Brasov. 2009; 2(51):19–24. [Google Scholar]

[2]. Chen SY, Suaya JA, Li Q, Galindo CM, Misurski D, Burstin S, et al. Incidence of herpes zoster in patients with altered immune function. Infection. 2014; 42:325–34. [PMC free article] [PubMed] [Google Scholar]

[3]. M.W. Ragozzino, L. J. Melton III, L. T. Kurland, C. P. Chu, and H. O. Perry, "Population-based study of herpes zoster and its sequelae," Medicine, vol. 61, no. 5, pp. 310–316, 1982.

[4]. R. W. Johnson, G. Wasner, P. Saddier, and R. Baron, "Herpes zoster and postherpetic neuralgia: optimizing management in the elderly patient," Drugs and Aging, vol. 25, no. 12, pp. 991–1006, 2008.

[5]. A. Philip and R. Thakur, "Post herpetic neuralgia," Journal of Palliative Medicine, vol. 14, no. 6, pp. 765–773, 2011.

[6]. Bruxelle J, Pinchinat S. Effectiveness of antiviral treatment on acute phase of herpes zoster and development of post herpetic neuralgia: Review of international publications. Med Mal Infect. 2012; 42: 53-58.

[7]. G. C. Manzoni and P. Torelli, "Epidemiology of typical and atypical craniofacial neuralgias," Neurological Sciences, vol. 26, no. 2, pp. S65–S67, 2005.

[8]. A. Sadosky, A. M. McDermott, N. A. Brandenburg, and M. Strauss, "A Review of the epidemiology of painful diabetic peripheral neuropathy, postherpetic neuralgia, and less commonly studied neuropathic pain conditions," Pain Practice, vol. 8, no. 1, pp. 45–56, 2008.

[9]. Wareham DW, Breuer J. Herpes zoster; clinical review. BMJ. 2007; 334(77605):1211–15. [PMC free article] [PubMed] [Google Scholar]

[10]. Dworkin RH, Breuer J, Gnann JW, Levin MJ, Backonja M, et al. Recommendations for the management of herpes zoster. Management of herpes zoster. Clin Infect Dis. 2007; 44(1):S1–26. [PubMed] [Google Scholar]

[11]. Vajpayee M, Malhotra N. Antiviral drugs against herpes infections. Indian Journal of Pharmacology. 2000; 32:330–38. [Google Scholar]

[12]. Lapolla W, DiGiorgio C, Haitz K, Magel G, Mendoza N, Grady J, et al. Incidence of postherpetic neuralgia after combination treatment with gabapentin and valacyclovir in patients with acute herpes zoster. Arch Dermatol. 2011; 147(8):901–07. [PubMed] [Google Scholar]

[13]. Nagalaxmi V, Singh A, Srikanth K, Prameela K, Reddy S. An insight to herpes zoster review article. Global Journal of Medical Research: J Dentistry and Otolaryngology. 2014; 14(3):22–28. [Google Scholar]

[14]. Alper BS, Lewis PR. Does treatment of acute herpes zoster prevent or shorten postherpetic neuralgia? J Fam Pract. 2000; 49: 255-264.

[15]. Dworkin RH, O'Connor AB, Audette J, Baron R, Gourlay GK, Haanpää ML, et al. Recommendations for the pharmacological

management of neuropathic pain: an overview and literature update. Mayo Clin Proc. 2010; 85: S3-14.

[16]. Watson CP, Evans R, Watt VR, Birkett N. Post-herpetic neuralgia: 208 cases. Pain 1988; 35: 289-297.

[17]. Coplan PM, Schmader K, Nikas A, Chan IS, Choo P, Levin MJ, et al. Development of a measure of the burden of pain due to herpes zoster and postherpetic neuralgia for prevention trials: adaptation of the brief pain inventory. J Pain. 2004; 5: 344-56.

[18]. Esmann V, Geil JP, Kroon S, Fogh H, Peterslund NA, Petersen CS, et al. Prednisolone does not prevent post-herpetic neuralgia. Lancet. 1987; 2: 126-129.

[19]. Sampathkumar P, Drage LA, Martin DP. Herpes zoster (shingles) and postherpetic neuralgia. Mayo Clin Proc. 2009; 84: 274-280.

[20]. Alper BS, Lewis PR. Does treatment of acute herpes zoster prevent or shorten postherpetic neuralgia? J Fam Pract. 2000; 49: 255-264.