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Case Study

Herpes Zoster Ophthalmicus – A Case Study

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ABSTRACT:
Herpes Zoster ophthalmicus (HZO) is a viral disease caused by the reactivation of latent varicella zoster virus at the ophthalmic division of the trigeminal nerve. It is characterized by unilateral painful rashes in one or more dermatome distribution of the trigeminal nerve. In this case study, we review the clinical manifestations and management of HZO. This is a case of 63 year old female patient with complaints of severe pain and skin rash on the left side of the face involving the nose, forehead and over maxilla. She was diagnosed with Herpes Zoster Ophthalmicus and treated with antiviral drugs, antibiotics, and other supportive drugs.

Keywords: Herpes Zoster Ophthalmicus, Varicella Zoster virus, clinical manifestations, antiviral drugs.

1. INTRODUCTION

Herpes Zoster Ophthalmicus (HZO) also known as Shingles is an infection that occurs due to the reactivation of the varicella-zoster virus in the ophthalmic division of the trigeminal nerve [1]. The disease usually occurs in healthy adults but can also affect immunocompromised patients. The virus lies dormant in the sensory ganglion until it is reactivated as a zoster [2]. Herpes zoster affects 20-30% of the population. In that 10-20% will have HZO [3].

The disease is characterized by unilateral pain in the V1 dermatomal distribution and erythematous pustules or vesicles. The pain is usually neuropathic and is often accompanied by parasthesias. Other symptoms include fever, malaise, and fatigue. Lesions are commonly seen on the forehead, scalp, upper eyelid, lower eyelid, and cheek. A skin lesion on the lip of the nose is an indication of involvement of the nervus ophthalmicus ramus nasociliaris and it is known as Hutchinson's sign [4]. The ophthalmic manifestations include epithelial keratitis, disciform keratitis, stromal keratitis, anterior and posterior uveitis, necrotizing retinitis, paralytic ptosis, optic neuritis, retrobulbar neuritis, exophthalmosis, cicatricial lid retraction, Argyll Robertson pupil, glaucoma, conjunctivitis, and extra-ocular muscle palsies [5, 6].

The treatment for Herpes Zoster Ophthalmicus includes antiviral agents like Acyclovir, Valacyclovir, and Famciclovir. Antibiotics such as erythromycin ophthalmic ointment, topical and systemic corticosteroids, topical aqueous suppressants and debridement are also considered for the treatment of HZO [7].

2. CASE REPORT

A 63 year old female patient visited the ophthalmology department of a tertiary care hospital, Trivandrum with chief complaints of severe pain, blurred vision, photophobia and skin rash on the left side of the face involving the nose, forehead and over maxilla. The patient also had complaints of foreign body sensation, watery discharge, redness and swelling around the left eye over the previous two days. The patient had a past medical history of diabetes mellitus (10 years). The patient was under the treatment with insulin and metformin. There was no family history of skin rash and the patient is non-vegetarian. Her blood pressure (BP), respiratory rate (RR), and pulse rate (PR) were as follows: BP: 125/80 mmHg, RR: 20breaths/min, and PR: 82 beats/min. On examination, she had a unilateral vesicular skin rash on the left side of the face involving the forehead, nose, and maxilla.

The ocular evaluation revealed a visual acuity of 6/60 on the right eye and 6/12 on the left eye as per the Snellen chart examination. It was also found that she has an immature senile cataract on the right eye and early lenticular changes on the left eye. Her intraocular pressure (IOP) was 14mm of Hg as measured with the Applanation tonometer. Conjunctivitis was present on the left eye without any exudate. On slit-lamp examination, corneal abrasion was present with superficial punctate keratitis on the left eye. The ocular movement was normal in all directions with no diplopia. Fundus can't be assessed in the affected eye because of superficial epithelial and stromal keratitis.

Based on clinical history and examination, the patient was diagnosed with Herpes zoster ophthalmicus on the left eye.

The patient was treated with T. Acyclovir 800mg five times a day for 7 days, Eye drop Ofloxacin 1% w/v 1-drop q.i.d for 7 days, and Eye drop Carboxymethylcellulose 1% 1-drop q.i.d for 7 days. The patient was referred to the dermatology department. She was also advised to review after 7 days.

When the patient presented after one week, the pain was present, the vision was improved, redness and vesicular skin rash subsided and scars were present. On her third visit, the pain was relieved and other ocular manifestations were resolved.

3. DISCUSSION

The primary varicella infection is chicken pox which is more commonly observed in children and is characterized by fever and pustular rashes. It is often self-limited. Following the primary infection, the virus gains access to the nerve ganglia through a retrograde axonal transport mechanism from the skin site. The reactivation of this latent virus causes viral replication and reaches the skin by an anterograde axonal transport mechanism. This results in herpes zoster infection. The reactivation of the varicella virus at the ophthalmic division of the trigeminal nerve is known as herpes zoster opthalmicus [8].

HZO presents with vesicular or pustular rashes on periocular skin such as eyelids, medial canthal area, and the tip of the nose (Hutchinson's sign). Additionally, the patient may complain about fatigue, malaise, fever, photophobia, and headache. Eyelid involvement results in cutaneous macular rashes. Conjunctival involvement is characterized by conjunctivitis and chemosis with papillary reaction. Corneal manifestations include punctate epithelial keratitis, stromal keratitis, disciform keratitis, psuedodentriris, and corneal neovascularization which results in corneal opacification. Uveal involvement typically manifests as anterior chamber synechiae formation, adhesion of the iris to either the lens or the angle structure inside the chamber, and iris atrophy. Furthermore, HZO is characterized by acute retinal necrosis which subsequently results in permanent vision loss.[9] Keratitis is the most common ophthalmic complication, followed by uveitis or iritis, conjunctivitis, and scleritis or episcleritis.The other most common and frequent complication of herpes zoster is postherpetic neuralgia, a neuropathic syndrome that occurs regardless of the dermatomal distribution [3].

Diagnosis of Herpes Zoster Ophthalmicus is usually based on the patient history and finding from slit lamp examination.

HZO can be effectively managed with antiviral agents such as Acyclovir 800mg orally 5 times a day for 7 days, Valacyclovir 1g orally every 8 hours for 7 days, or 500mg of Famciclovir orally 3 times a day for 7 days. Renal dose adjustment is required for both valacyclovir and famciclovir. For immunocompromised patients, acyclovir 10 mg/kg of body weight intravenously every 8 hours or foscarnet 90 mg/kg intravenously every 12 hours is given. Artificial tears, cold compresses, and analgesics can be given as supportive measures for the management of symptoms. Antibiotics such as erythromycin eye ointment can be used for the prevention of secondary bacterial infection. Both topical and systemic corticosteroids can be used to treat HZO, but their potential for adverse effects limits their use. Moreover, the herpes zoster vaccine is available to prevent herpes zoster, HZO, and postherpetic neuralgia [7, 3].

4. CONCLUSION

HZO is a serious, sometimes sight-threatening disease caused by the reactivation of latent varicella zoster virus at the trigeminal nerve. Diagnosis is usually based on clinical presentation. However, a thorough ophthalmic examination is required for all patients diagnosed with HZO for evaluating the ocular complications. HZO can be treated effectively with antivirals and other adjunctive therapies such as antibiotics, topical aqueous suppressants, and debridement.

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