Herpes Zoster Anterior Uveitis with Hyphema

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ABSTRACT

Herpes zoster ophthalmicus usually manifests in elderly people as a unilateral painful skin rash in a dermatomal distribution of the ophthalmic division of the trigeminal nerve shared by the eye and ocular adnexa. It is the reactivation of varicella-zoster infection. Most common ocular manifestations of this disease include keratitis, conjunctivitis, and anterior uveitis. Severe hyphema as a complication following herpes zoster uveitis is uncommon. We report a rare case of a 90-year-old lady with herpes zoster ophthalmicus and diabetes mellitus with unusually severe hyphema. The disease responded well to systemic and topical steroids with improved vision outcome. Early referral to an ophthalmologist, detailed evaluation, and immediate treatment are mandatory to prevent permanent vision loss in these patients.

Keywords: Anterior uveitis, herpes zoster ophthalmicus, hyphema, raised intraocular pressure.

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I. INTRODUCTION

Herpes zoster ophthalmicus (HZO) develops after the reactivation of varicella-zoster virus, typically affecting the ophthalmic division of trigeminal nerve, causing unilateral pain and pustular rash. Ocular manifestations of HZO most commonly seen are keratitis, conjunctivitis, anterior uveitis and external ophthalmoplegia [1]. The disease begins in a prodromal phase with non-specific symptoms such as lethargy, malaise, and low-grade fever. After incubation for around 1-week, erythematous macules appear on the forehead and along the distribution of the ophthalmic nerve [2]. Involvement of the tip of the nose which represents the dermatome of nasociliary nerve is classically known as Hutchinson's sign; ocular involvement is more common in such cases, and hence, urgent ophthalmological consultation is required [3]. In cases of herpes zoster anterior uveitis, hyphema as a complication has been reported in a few cases [4]-[8] from different countries. The literature search (Pubmed, Science direct and Google scholar search) showed only three papers from Malaysia, of which one paper is on herpes zoster keratouveitis with hypopyon and hyphemia in 61 and 74 year old ladies [9], second paper is on herpes zoster keratouveitis and partial third nerve palsy in a 10 year old child [10], and third paper is on concurrent hyphemia and orbital apex syndrome following herpes zoster ophthalmicus in a 59 year old lady [11]. Therefore, we report a case of

herpes zoster ophthalmicus with iridocyclitis and hyphema in a very elderly (90 years old) lady with diabetes mellitus, in view of its rare occurrence.

II. CASE REPORT

A 90-year-old lady, diabetic for more than 20 years with previous good health, presented to the eye clinic of our hospital with painful right macular rash over the forehead on the right side, root of the nose, and redness of right eye for the past one week which was worsening day by day (Fig. 1). On presentation, vision in the affected right eye was counting finger at 2 meters. Anterior segment examination of right eye with slit lamp showed diffuse congestion of the conjunctiva, multiple punctate epithelial erosions, keratic precipitates (Fig. 2), and flare and cells in the anterior chamber. Pupil was circular and reacting sluggishly to light. Lens examination showed nuclear sclerosis cataract. Applanation tonometry showed intraocular pressure (IOP) of 15 mmHg. Dilated pupil funduscopy revealed moderate non-proliferative diabetic retinopathy. Hutchinson's sign was positive. The left eye had a vision of 6/36, with nuclear sclerosis cataract. Intraocular pressure was 18 mm Hg. Funduscopy showed mild non-proliferative diabetic retinopathy.

We diagnosed her as having herpes zoster ophthalmicus with anterior uveitis and the patient was admitted in the eye ward. Blood investigations (full blood count, erythrocyte

sedimentation rate and C-reactive protein) revealed no abnormalities. Fasting blood sugar was within normal range with already taking diabetic medication Tab. Metformin 1 gram two times daily.

Fig. 1. Showing skin rash along the ophthalmic division of the trigeminal nerve on the right side of forehead, root of the nose, and congestion of right eye.

Fig. 2. Slitlamp photograph (magnified view) of the cornea showing circular multiple keratic precipitates (cellular deposits on the corneal endothelium) and nuclear sclerosis of the lens.

Dexamethasone eye drops (0.1%) 4 hourly, homatropine eye drops (2%) 3 times, Acyclovir eye ointment (3%) 5 times daily in the right eye and oral Acyclovir 800 mg 5 times a day for one week were started. After 24 hours, patient went home against the medical advice on the same treatment. However, three days after that, patient came back to the eye clinic with history of sudden loss of vision in right eye. There was no history of fall, head trauma or any injury sustained to the eye.

Right eye examination: Vision worsened to perception of light. Keratic precipitates were present. Severe hyphemia (two-thirds of anterior chamber covering the upper margin of the pupil) was noted (Fig. 3). Intraocular pressure was 24 mmHg. Ultrasound B- scan did not show any vitritis, or vitreous haemorrhage, or retinal detachment.

Fig. 3. Showing blood in anterior chamber (hyphema) covering upper margin of the pupil.

In addition to topical treatment, Tab. Acetazolamide 250 mg QID, Tab. Prednisolone 10mg QID were started, and Gutt Timolol 0.5% BD was added in right eye to reduce the IOP. After one week of treatment, vision improved to 6/60, hyphema level became less (blood up to 1/3 of anterior chamber) and the intraocular pressure reduced to 17 mmHg. Tab. Acetazolamide and Tab. Prednisolone were reduced to 3 times daily. During the follow up visits after one-week, anterior segment examination showed very minimal hyphema, and presence of segmental iris atrophy (thin areas on the iris) from 3 to 7 o'clock. No rubeosis (new blood vessels on the iris) was noted on the iris. Intraocular pressure in the right eye was 16 mmHg.

The frequency of topical treatment in the right eye was reduced (homatropine eye drops once daily, dexamethasone eye drops two times daily acyclovir eye ointment three times daily); and timolol eye drops were continued two times daily. Tab. Acetazolamide was reduced to bid for 2 days and then stopped; Tab. Prednisolone was also tapered at three days interval in one week time. An anterior chamber paracentesis to demonstrate the presence of the varicella-zoster virus in the aqueous fluid (polymerase chain reaction test) was planned. However, we were unable to get the test done because the patient did not consent for the procedure, and she was not financially able to pay the cost of the test. The patient was asked to come for follow up after one week. Unfortunately, she defaulted the follow up.

III. DISCUSSION

Herpetic anterior uveitis is the most common cause of viral anterior uveitis accounting for 5-10% of all uveitis cases in the western world [12] and 0.9-8.3% of all infectious uveitis in India [13]. Varying prevalence of anterior uveitis has been reported in 17.8% [14], 29.4% [15], and 46.6% [1] of herpes zoster ophthalmicus patients.

Ocular involvement in HZO may be varied in the form of macular/pustular rash over the eyelids, conjunctivitis (congestion and edema of conjunctiva), punctate epithelial keratitis and the hallmark pseudodendrites with negative fluorescein staining i.e. fluorescein collects at the edges of the epithelium rather than staining an epithelial defect, anterior stromal keratitis (nummular keratitis – multiple small circular white opacities in the cornea), disciform stromal keratitis (involving endothelium) resulting in corneal opacification, raised intraocular pressure due to trabeculitis, anterior uveitis (iritis, iridocyclitis), episcleritis/scleritis, acute retinal necrosis (rapid necrotic inflammation of the retina resulting in retinal detachment in 50% of patients and often permanent vision loss) [1]. Rarely, ocular cranial nerve palsy and optic neuritis are also reported in HZO patients [14], [15].

Anterior uveitis typically results in an anterior chamber cellular reaction and can progress to synechiae formation with adhesion of the iris to either the lens or the angle structures inside the anterior chamber, and sectoral iris atrophy. Hyphema in cases of herpes zoster anterior uveitis is relatively uncommon [4], [5], [7], [9]. Tugal-Tutkun *et al.* [8] did not find any hyphemia in 111 cases of herpes zoster induced anterior uveitis; however, they reported distorted pupil, posterior synechiae, elevated IOP, sectorial iris atrophy

in these patients. In cases of herpes zoster uveitis with hyphema, it is widely believed that the presenting hyphema is caused by occlusive vasculitis to the iris leading to ischemia and bleeding into anterior chamber [2], [5], [6]. Severe iris atrophy seen after resolution of the hyphema suggests the possibility of severe inflammation that may have caused the obstruction of iris vessels. Hyphema showed a tremendous reduction upon starting prednisolone [7], and similar observation was noted in our patient also.

An iris fluorescein angiography might help to rule out rubeosis as a cause of the hyphema [4]. In view of severe hyphema, it was not performed in our patient. In an aqueous-based polymerase chain reaction (PCR) study of viral anterior uveitis cases, Babu et al from South India, reported 66.6% of cases were varicella zoster virus (VZV), 19.4% were herpes simplex virus (HSV-1), and 8.3% were cytomegalo virus (CMV) [13]. An anterior chamber paracentesis yielding a positive result of viral DNA can help in the definitive diagnosis of varicella zoster virus (VZV) causing the herpes zoster uveitis [16]. In cases whereby the viral DNA PCR yields a negative result, a progressive decrease in serial anti-VZV antibody measurement, can strongly indicate the virus as a causative agent [7]. However, the gold standard investigation is still the detection of the virus via DNA PCR. In our patient the above investigations were not done due to financial constraints.

IV. CONCLUSION

Occurrence of hyphema in herpes zoster anterior uveitis is uncommon. Early referral of herpes zoster ophthalmicus patients to the ophthalmologist is vital to detect and give appropriate treatment for eye lesions to save the vision. Presence of hyphemia in iridocyclitis is an indication of herpes zoster aetiology in a patient with cutaneous lesions.

ETHICAL APPROVAL

It is not applicable.

CONSENT

The patient was admitted in the eye ward. Informed consent was taken for investigations and further management.

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