Case Report

A Rare Case of Herpes Simplex Virus Type 2 Induced Acute Retinal Necrosis

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Abstract

29 year old healthy female came with complaints of defective vision in left eye for one week duration along with pain, redness and floaters. On examination, patient was found to have pan uveitis, retinal vasculitis, vitritis and necrosis of the peripheral retina in the left eye. A diagnosis of acute retinal necrosis was made. PCR analysis of aqueous and vitreous revealed Herpes Simplex Virus type 2 which is a rare cause for acute retinal necrosis.

Key Words: Acute Retinal Necrosis, Immunocompetent, Herpes Simplex Type 2

Introduction

Acute retinal necrosis (ARN) is a rare but potentially devastating syndrome characterized by progressive peripheral necrotizing retinitis. It was first described in 1971[1]. It is usually caused by Varicella zoster and occurs in immunocompetent individual[2].

Progressive outer retinal necrosis (PORN) is also type of necrotizing retinitis and characterized by multifocal lesions without granular borders in deep retinal layers[3]. The main difference between both ARN and PORN is ARN occurs in immunocompetent and PORN in immunocompromised and absence of inflammation in PORN[4].

Herpes simplex virus is a DNA virus belonging to herpes family is two types – type 1 and type 2. Herpes Simplex Virus 1 is transmitted by oral contact and direct contact. In eye it causes herpes keratitis which is the leading cause of corneal blindness in U.S.A[5]. Herpes Simplex Virus 2 causes genital herpes and sexually transmitted. 3.7 billion people have Herpes Simplex Virus 1 and 417 million people have Herpes Simplex Virus 2 infection[6].

Case History

A 29 year old female came with complaints of defective vision in left eye for one week duration. There is a history of fever, vomiting and headache for 2 weeks for which she was admitted and treated. There is also history of joint pain. On examination, right eye appears to be normal with normal unaided visual acuity. Left eye anterior segment showed cirumciliary congestion of conjunctiva with fine keratic precipitates in cornea and anterior chamber showing cells 3+. Patient's best corrected visual acuity in left eye was 6/12. The patient was given topical steroids and was reviewed after 1 week. Patient vision worsened to 3/60 inspite of treatment with pupil sluggishly reacting to light. Fundus examination of right eye was within normal limits. Fundus examination of left eye showed hazy media due to vitreous inflammation. Vitreous cells were 2+. Optic disc showed edema with blurring of disc margins(Fig1). The superior retinal quadrant showed pale and thin retina with granular borders which are well demarcated(Fig 2). There was evidence of retinal vasculitis with sheathing of arteries and occluded peripheral retinal vessels in superior quadrant of retina(Fig 3). With the above clinical findings, a presumptive clinical diagnosis of acute retinal necrosis in the left eye was made. Routine blood investigations, ANA, RA factor VDRL, HIV serology, Mantoux, Chest X-ray were within normal limits.

Fig 1: Optic disc edema with vitritis

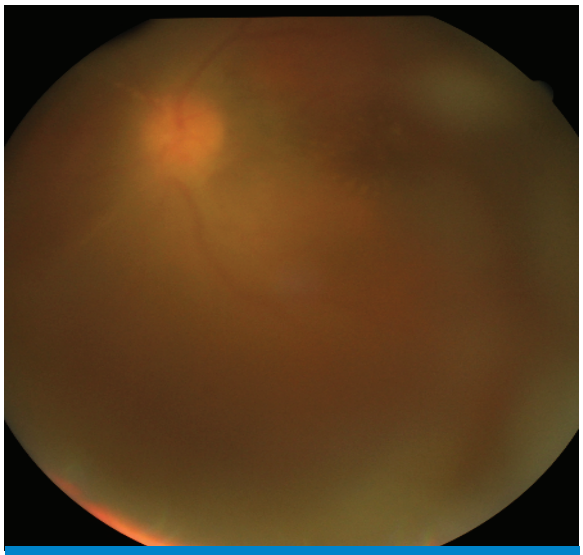

Fig 2: Thinning and sheathing of retinal arterioles

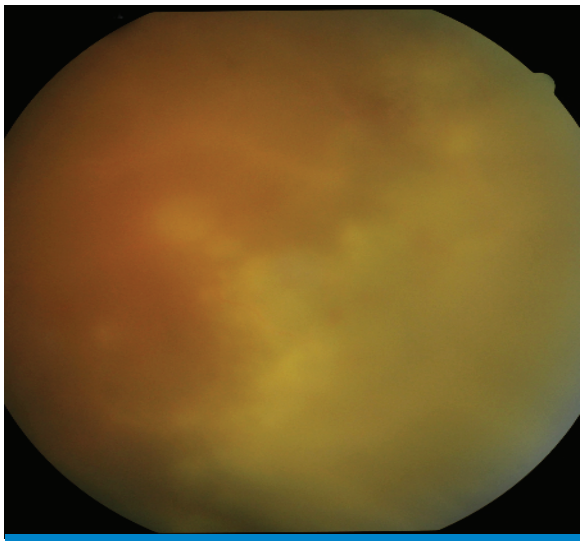

Fig 3: Necrosed peripheral retina with granular borders

Discussion

Acute Retinal Necrosis is caused by viral infection mostly by Varicella zoster virus or Type 1 Herpes Simplex. Type 2 Herpes Simplex Virus causing Acute Retinal Necrosis is very rare[7]. American Uveitis Society defined ARN based on following clinical criteria[8]:

1) One or more foci of retinal necrosis with discrete borders located in the peripheral retina
2) Rapid progression in the absence of antiviral therapy
3) Circumferential spread
4) Evidence of occlusive vasculopathy with arterial involvement
5) A prominent inflammatory reaction in the vitreous and anterior chambers

Our patient had all the above clinical findings and hence was diagnosed clinically as Acute Retinal Necrosis. The confirmation of organism is usually by Polymerase Chain Reaction with aqueous or vitreous samples. We went on to do a PCR analysis of aqueous and vitreous and it showed type 2 herpes simplex virus which is very rare. Rarely in non-responding cases is diagnostic vitrectomy or retinal biopsyis needed[9].

Antiviral therapy can be given systemically as well as intravitreally. Commonly used systemic antiviral used are acyclovir, famciclovir, valcyclovir[10] antiviral agents given intravitreally are ganciclovir (200 microgram/0.1 ml) foscarnet (1.2 mg/01ml). They are given in retinitis threatening macula or optic disc[11].

The patient completed the course of oral Valcyclovir 1gm TID for 6 weeks and her renal function was stable throughout the treatment. Intravenous anti-viral medications were not given as the patient is immunocompetent and had responded to oral valcyclovir. The patient is currently on regular follow up for recurrence of disease in both eyes.

Conclusion

Acute retinal necrosis is a severe ocular inflammatory syndrome in immunocompetent associated with poor visual outcome. It is commonly caused by Varicella zoster virus, Herpes Simplex virus type 1 and less commonly by Herpes simplex virus type 2 as in our case which was confirmed by PCR analysis of vitreous and aqueous samples. The patient responded well to oral Valcyclovir which was given for 6 weeks along with steroids. Retinal inflammation subsided, but retinal thinning still persisted as the retina was necrosed.

Patient is currently on follow up for recurrent involvement in same eye and for involvement of other eye. Photocoagulation of retina is planned in left eye for prevention of Retinal Detachment.

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