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Case Report

Acute Retinal Necrosis Misdiagnosed as Toxoplasma - Case Report

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Abstract

Acute retinal necrosis syndrome (ARN) is a rare necrotizing, fulminant retinopathy caused by one of the members of the herpes group of viruses with poor visual outcome if not diagnosed and treated timely. The condition occurs typically in healthy person but may occur in immunocompromised also. We report a rare case of ARN misdiagnosed as toxoplasma but timely diagnosis and treatment results in good visual outcome.

Keywords: Acute Retinal Necrosis; Acyclovir; Polymerase Chain Reaction

Introduction

Acute retinal necrosis (ARN) is an uncommon infectious viral uveitis syndrome which manifest as acute panuveitis with retinal periarteritis progressing to diffuse necrotizing retinitis. Retinal detachment (RD) is the most common cause for loss of vision which occurs in 20 - 73% of treated eyes [1,2]. Contralateral involvement can vary from months to years. Some atypical cases may need diagnostic vitrectomy or retinal biopsy. Long-term maintenance therapy is essential to prevent disease recurrence or contralateral eye involvement but functional status of the affected eye, renal status of patient should be kept in mind. The conduct of large randomized clinical trials is difficult due to its rare occurrence.

Case Report

A 30 year male presented with diminution of vision in right eye since two week. He was previously diagnosed and treated by his local ophthalmologist as toxoplasma, had received tablet azithromycin and Bactrim DS along with oral steroid but did not feel any improvement. On examination, he had best corrected visual acuity of 6/18 in right eye and 6/6 in his left eye. Slit lamp examination revealed ac cells 3+, mutton fat kps along with vitreous cells 2+ in right eye. Intraocular pressure measured was normal in both eyes. Fundus examination showed whitish lesion in peripheral retina with vitritis (Figure 1). Left eye was within normal limit. His investigation revealed normal chest x-rays, mantaux test negative, ELISA for Toxoplasma and HIV negative. Right eye anterior chamber tap was done for polymerase chain reaction (PCR) of herpes simplex virus (HSV), Varicella zoster virus (VZV), mycobacterium tuberculosis (MTB), cytomegalovirus (CMV) and toxoplasma. PCR came positive for HSV 2. Right eye clinical diagnosis of acute retinal necrosis was made. He was started with intravenous acyclovir 500 mg thrice daily with topical steroid. Tablet prednisolone 50mg/day was started after 48 hour of antiviral treatment. At 1 week visual acuity was same. Fundus examination showed regressing posterior

marginal lesion with reduced vitreous haze (Figure 2). Prophylactic laser barrage was done (Figure 3). After 10 days, he was symptomatically better and discharged with Tablet Valacyclovir 1 gram thrice daily with tapering dose of tablet prednisolone. At 3 week of follow up, right eye fundus revealed increased vitritis with regressing lesion (Figure 4). Again tablet prednisolone was hiked upto 50 mg/day. Both eye OCT was done which was normal. At 5 week of follow up, right eye visual acuity was 6/9. Slit lamp examination showed quiet anterior chamber. Fundus examination revealed no active lesion with reduced vitritis (Figure 5). Left eye was within normal limit. He was advised to continue tablet prednisolone in tapering doses and tablet valacyclovir for at least 3 month with monitoring of renal function test. At 1 year follow up, there was no recurrence.

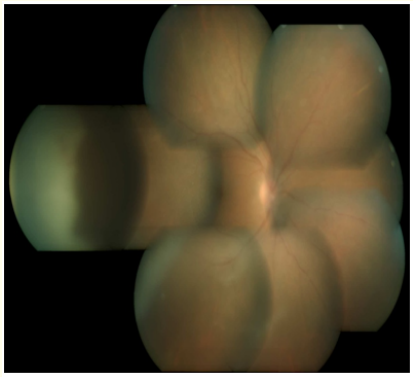

Figure 2: Montage photo showing regressing margin with decreased vitreous haze in right eye (at 1 week).

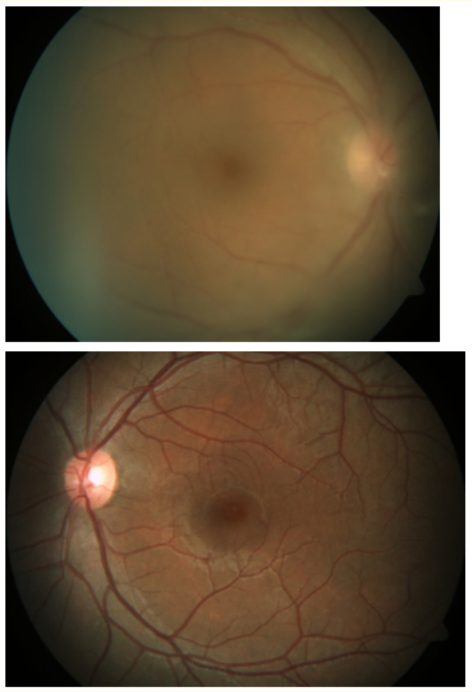

Figure 1: Showing virtutis with whitish lesion in peripheral temporal retina in right eye and normal fundus in left eye.

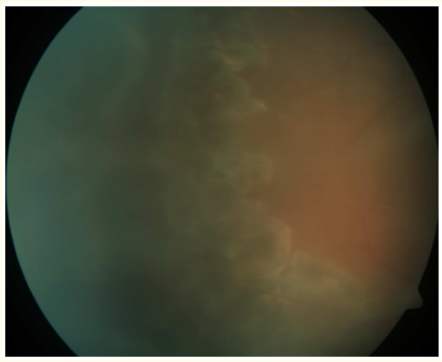

Figure 3: Showing laser barrage in right eye.

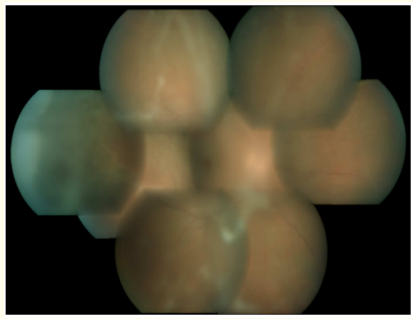

Figure 4: Montage photo showing increased vitritis in right eye (at 3 week).

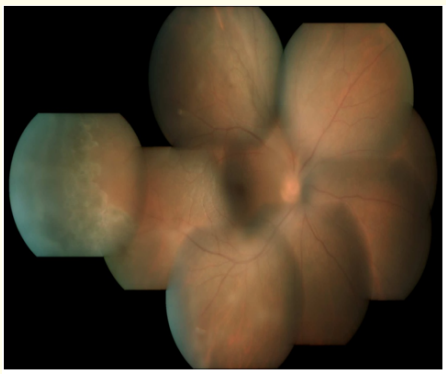

Figure 5: Montage photo showing reduced vitreous haze in right eye (at 5 week).

Discussion

ARN is usually characterized by anterior uveitis, vitritis, peripheral retinal necrosis and occlusive vasculitis [3,4]. It has bimodal age distribution peaking at 20 and 50 years of age. One-third of patients may involve contralateral eye within 1 month, if left untreated. Other complications may include optic neuropathy, chronic vitritis, cystoid macular edema, macular ischemia. The diagnosis of ARN is mainly based on clinical findings and antiviral treatment should be started promptly. Intravenous acyclovir is the treatment of choice currently. One study found complete resolution of active retinitis without involving contralateral eye with oral antivirals valacyclovir and famciclovir with mean follow-up of 36 weeks [5]. Systemic corticosteroids help to control inflammation associated with ARN syndrome, hence typically added at 48 hours after initiation of antiviral therapy. If initiated too early without co-administration of antiviral treatment, it may potentiate viral replication causing rapid progression of retinitis [6]. Prophylactic laser is recommended preferably within first two weeks to reduce incidence of RD [7]. In this case, we confirmed the diagnosis of ARN by herpetic viruses based on PCR and timely prophylactic laser help to decrease incidence of RD. Several infectious diseases like cmv retinitis, toxoplasma, progressive outer retinal necrosis may resemble ARN. Toxoplasmosis may present with atypical findings like large multiple unilateral or bilateral lesions with or without chorioretinal scars making it difficult to distinguish from ARN. PCR of intraocular fluids is the most sensitive, specific and rapid diagnostic test because it may detect minute quantities of herpetic DNA [8]. Quantitative PCR may give additional information regarding viral load, disease activity and response to therapy. In our case, acyclovir was given promptly and timely to the patient, hence responded well with the lesions becoming inactive and stable on follow up emphasizing the importance of early anti-viral therapy and also supporting good visual outcome in ARN. Timely referral to a uveitis specialist with collaboration of an infectious disease specialist is essential.

Conclusion

Although ARN is an uncommon disease, it can be associated with visually devastating consequences and substantial ocular morbidity if not diagnosed and treated timely. In cases of suspected ARN or unusual presentation to confirm diagnosis or rule out other masquerade diseases, aqueous PCR testing should be done. Most important, one should not wait for PCR results while initiating treatment. PCR from intraocular fluid have improved to identify the precise herpetic aetiology in case of ARN. Careful administration of corticosteroid timing should be kept in mind. Severe exacerbation of disease following systemic corticosteroid is reminder for importance of judicious use of corticosteroid while dealing with an infectious viral uveitis. Further studies are needed in future to refine disease protocols for better outcomes in this challenging infectious syndrome.

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