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Complete Visual Rehabilitation in a Patient with Complicated CMV Retinitis and Macular Involvement

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Abstract

Introduction: *There have been many reports in the literature demonstrating successful restoration of ocular anatomy post pars Plana Vitrectomy (PPV) in patients with cytomegalovirus (CMV) retinitis induced retinal detachment. We aim to report a rare case of complete visual rehabilitation with best corrected visual acuity (BCVA) reaching 20/20 post PPV in a patient with complicated CMV retinitis and macular involvement.*

Case presentation: *We present a case of a 45-year-old Lebanese male patient with newly diagnosed human immunodeficiency virus (HIV) infection. Findings suggestive of CMV retinitis bilaterally were found on fundus examination. Appropriate systemic and intravitreal treatment was started. At 4 months follow up, patient developed a secondary retinal detachment in left eye (OS) and surgery was performed (PPV with silicone oil and scleral buckle) after a latency of 3 weeks. Patient had a smooth recovery with BCVA reaching 20/20 after silicone oil removal.*

Conclusion: *HIV patients with macula-off retinal detachment post CMV retinitis may retain BCVA of 20/20 even with delayed surgical procedure. Close follow up and appropriate timely interventions play important role for improved final outcomes.*

Keywords: HIV; CMV Retinitis; Retinal Detachment.

Introduction

Cytomegalovirus (CMV) retinitis is the most prevalent opportunistic eye infection to manifest in immunologically compromised patients due to Human Immunodeficiency Virus (HIV) worldwide [1,2]. CMV retinitis results in visual damage mainly due to retinal inflammation that may also be complicated more by retinal detachment. A probable predisposition to this complication was raised in myopic patients [3]. The cause of retinal detachment in these patients is breaks due to necrosis of the retina located between previously infected and healthy retina [4]. Since there are usually many irregular thin breaks that are difficult to see, pars plana Vitrectomy with silicone oil as a tamponed is the preferred technique in these cases. Due to the many complications and squeal caused by presence of silicone oil such as hyperopic shifts, cataract formation, and elevated intraocular pressure, timing for removal of silicone oil is very important [4]. Prognosis following such cases is poor in terms of recovering full best corrected visual acuity (BCVA) with no prior reported case reaching 20/20 vision. The purpose of this paper is to shed lights on a particular rare case that achieved a BCVA of 20/20 post complicated CMV retinitis.

Case Presentation

A 45-year-old male patient diagnosed with HIV 2 months ago with unknown CD4 count presented to our clinic for bilateral floaters and blurry vision. Patient was already started on antiretroviral regimen for HIV. BCVA was 20/30 in right eye (OD) and 20/80 in left eye (OS) with near vision in both eyes reaching 20/30 (Jaeger score 2). Anterior segment exam was normal bilaterally. On fundus exam, patient was found to have vitritis bilaterally with grade 3 cells and superior perivascular retinitis with scattered intraretinal hemorrhages more extensive OS (Figure 1).

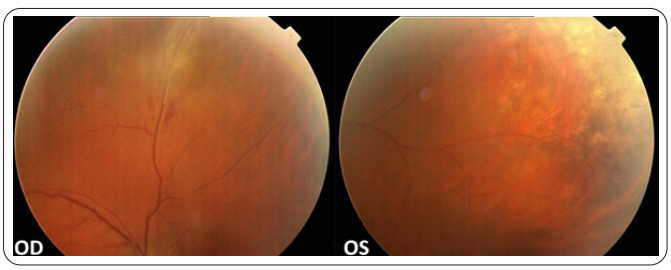

Figure 1: Fundus photo showing bilateral CMV retinitis with vitritis upon presentation

Extensive workup including CD4 counts was ordered. CD4 count was found to be 40 cells/mm3 and blood tests showed positive IgM anti-CMV antibodies therefore the diagnosis of CMV retinitis was made without the need to do a vitreous tap. All other tests for syphilis, tuberculosis, toxoplasmosis, pneumocystis, Cryptococcus, and herpetic retinitis turned out to be negative. Intravitreal injections of ganciclovir were started OU and repeated at 1 week, 2 weeks, 3 weeks, 4 weeks, 5 weeks, and 6 weeks later. Oral valganciclovir was also initiated directly after presentation (900mg twice daily for 2 weeks followed by 900 mg once daily as maintenance) since the patient couldn't afford to be admitted for intravenous antivirals. Inflammation subsided and visual acuity improved gradually and reached 20/20 OU four weeks after last injection (Figure 2).

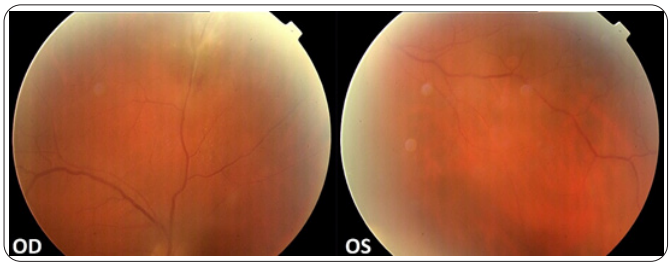

Figure 2: Fundus photo at 1 month after last intravitreal injection showing resolving inflammation bilaterally

At that time, argon laser was done around the lesions to prevent future complications (Figure 3).

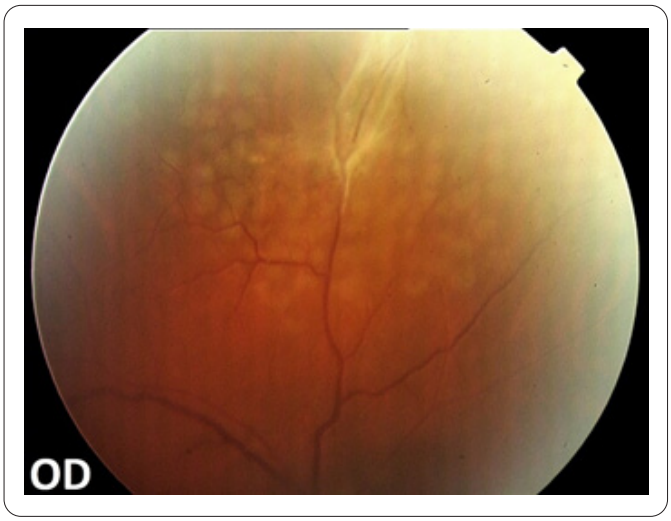

Figure 3: Fundus photo post argon laser photocoagulation in the right eye

Two months after last injection, patient presented again with decrease in visual acuity in left eye and was found to have a rhegmatogenous retinal detachment OS with macula off. Visual acuity was hand motion. Decision to operate was taken but patient was lost to follow up for 3 weeks returning with total detachment and Proliferative Vitreoretinopathy (PVR). 23 Gauge pars plana Vitrectomy with silicone oil and scleral buckle was performed. Post-operative period was uneventful with a normal IOP and no significant inflammation, however progressive cataract formation was noted. At 6 months after first surgery, phacoemulsification of cataract and PPV was performed for silicone oil removal and replacement with SF6 gas, PVR membrane stripping (with internal limiting membrane peeling) and argon laser photocoagulation. Patient was given routine post op medications (antibiotic and steroid drops) and instructions (face down for 2 days). BCVA post operatively was 20/60 at 1 month. Vision showed progressive recovery to 20/25 two months later, and reached 20/20 after 3 months. To note, CD4 count was confirmed to be more than 200 cells per mm3 before doing each procedure. Patient is now followed up every 6 months with stable vision and no active ocular pathologies.

Discussion

Our case study showed that visual acuity is not necessarily compromised by CMV retinitis induced rhegmatogenous retinal detachment despite involving complex surgical management, extensive intravitreal injections and follow up visits. The final goal in such cases should not be anatomical restoration only but also should address regaining normal visual acuity knowing that postoperative complication rates in CMV patients is not inevitably more than that in non CMV retinal detachment patients [5]. Moreover, the decision for silicone oil removal can also affect outcomes in terms of retinal re detachment especially if accompanied by cataract removal or a low CD4 number at time of surgery [6]. Although the technique used is not unique or new, close follow up and appropriate timely interventions might be responsible for getting the best visual outcome. More observational studies, thorough and extensive assessment should be done so that factors that improve post-operative outcomes be determined and documented. One of the factors that could have had a pivotal role in gaining vision was the patients' age, knowing that younger retinas tend to regenerate more and photoreceptor loss in young adults tends to be less [7]. Another factor that might play a role is surgical time and particularly intraocular manipulation time by decreasing retinal photo toxicity. Surgical technique and expertise also plays a role since minimal contact with healthy retinal tissue during surgery prevents retinal trauma and death of retinal cells [8].

Conclusion

Not all cases of retinal detachment post CMV retinitis will necessarily have a decreased visual outcome. As we presented in our case, a BCVA of 20/20 can be achieved. Patients' age, surgical technique, and surgical time may have some effects on the final outcome. However, further collaborative studies with large patient population need to be conducted to accurately determine factors and interventions (pre, intra, and post op) leading to best visual outcomes in complicated CMV retinitis cases.

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