Optical Coherence Tomography (OCT) Findings Of Unilateral Ischemic Maculopathy Associated With CMV Retinitis In Patient With AIDS

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Abstract :

Cytomegalovirus(CMV) retinitis in Acquired Immuno-Deficiency Syndrome (AIDS) patients is the quite common entity. But unilateral ischemic maculopathy associated with CMV retinitis in Acquired immunodeficiency syndrome (AIDS) is very rare. We report a 43 years old female who presented to our hospital with decreased visual acuity and floaters. Optical coherence tomography (OCT) demonstrated increased reflectivity at the inner retinal layer with a preponderance in the nasal area of the macula and macular oedema. The patient was treated with oral valganciclovir, started on HAART, and administered a high dose of intravitreal ganciclovir (5.0 mg/0.1 ml once a week) for 5 doses followed by panretinal photocoagulation in the RE, which controlled the retinitis and rubeosis iridis. After 6months, best corrected visual acuity (BCVA) was 6/60 in the RE with an increase in retinal thickness in the temporal area of the fovea, healed CMV retinitis and the small amount of SRF remained, as demonstrated by OCT. Ischemic maculopathy may cause a severe and permanent decrease in vision in AIDS patients. CMV retinitis plays a role in the pathogenesis of ischemic maculopathy. Fluorescein angiography and OCT should be considered in any patient with AIDS and unexplained visual loss.

Key Words: CMV retinitis, Optical coherence tomography(OCT), AIDS.

Introduction : Cytomegalovirus(CMV) retinitis is the most common ocular opportunistic infection, representing 90% of the infectious retinitis, 20-30% of the patients with AIDS develop CMV retinitis.[1]

An electron microscopic study in patients with acquired immune deficiency syndrome (AIDS) revealed ischemic maculopathy in 6% of eye autopsies.[2] Macular ischemia and oedema are rare findings. Few authors reported clinical macular ischemia among AIDS patients.[3-5]

Case Report :

A 43-year-old female was diagnosed with HIV at the age of 41. She complained of decreased visual acuity (VA) and floaters of 45 days duration in her right eye. The patient was not on highly active antiretroviral therapy (HAART). She had a CD4 + T-lymphocyte count of 20 cells/μl.

Visual loss was gradual, progressive, painless, and involved both central and peripheral vision. Examination revealed best corrected visual acuity (BCVA) of counting fingers at 3 meters in the right eye (RE) and 6/9 in the left eye (LE). Evaluation of the LE was unremarkable.

Slit-lamp biomicroscopic examination showed rubeosis iridis, 1 + cells and flare in the anterior chamber, and 1 + cells in the anterior vitreous in the RE. Intraocular pressure (IOP) was 24 mmHg in the RE and 12 mmHg in the LE.

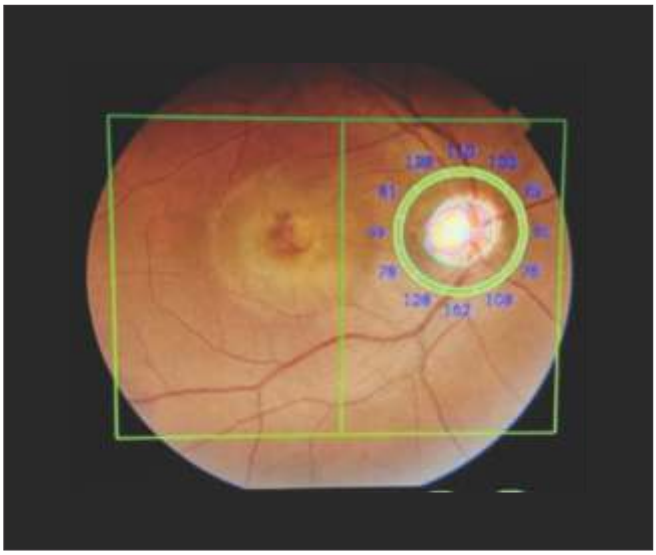

Figure1: Posterior segment examination of the RE showed juxtafoveal retinal opacification and macular oedema

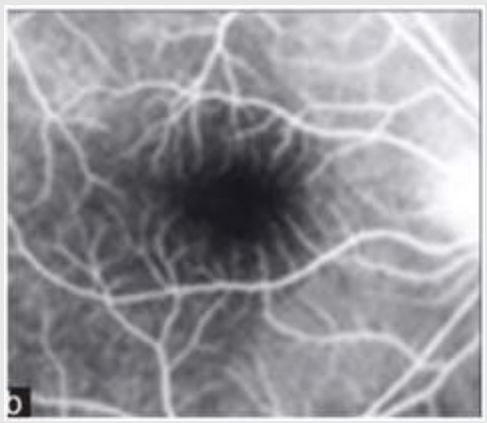

Figure 2: Fluorescein angiography revealed an enlarged and irregular foveal avascular zone extending to the temporal retina with faint, late staining of juxtafoveal vessels

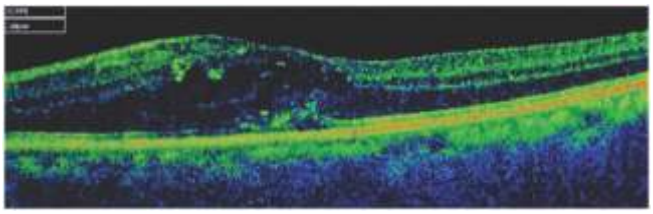

Figure 3: Optical coherence tomography demonstrated increased reflectivity at the inner retinal layer with a preponderance in the nasal area of the macula

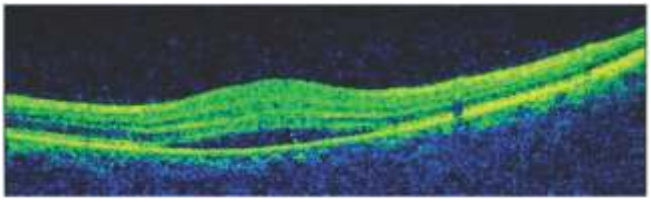

Figure 4: After 6months there was healed CMV retinitis and the small amount of SRF remained

The patient was treated with oral valganciclovir, started on HAART, and administered a high dose of intravitreal ganciclovir (5.0 mg/0.1 ml once a week) for 5 doses followed by panretinal photocoagulation in the RE, which controlled the retinitis and rubeosis iridis.

Six months later, BCVA was 6/60 in the RE with an increase in retinal thickness in the temporal area of the fovea, an epiretinal membrane and healed CMV retinitis, as demonstrated by OCT.

Discussion : Ocular findings of HIV microvasculopathy include sluggish blood flow in the conjunctival capillaries in addition to cotton-wool spots, intraretinal hemorrhage and microaneurysms in the retina[2] affecting up to 50% of patients with AIDS at some point in their disease.

In our patient, visual symptoms were unilateral. However, most reported cases are bilateral cases.[6] Opacification of the superficial retina in the macular area and intraretinal oedema suggested the diagnosis.

OCT changes consisted of increased reflectivity from the inner retina and decreased backscattering from the retinal photoreceptors due to fluid and retinal oedema.

The prevalence of cotton-wool spots in patients with AIDS (70%) is significantly higher than other human immunodeficiency virus-infected individuals. Increased fibrinogen levels in HIV-infected patients contribute to sludging of blood flow by increasing red blood cell aggregation.

Ischemic maculopathy causing severe visual loss can be seen in patients with AIDS. The presence of superficial retinal opacification on fundus examination, impaired foveal circulation on fluorescein angiography, and increased foveal and parafoveal inner retina reflectivity on OCT scans suggest the diagnosis.

Conclusion : Ischemic maculopathy may cause a severe and permanent decrease in vision in AIDS patients. CMV retinitis plays a role in the pathogenesis of ischemic maculopathy.Fluorescein angiography and OCT should be considered in any patient with AIDS and unexplained visual loss. The mechanisms of ischemic maculopathy may be multifactorial and remain unknown.

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