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SHORT COMMUNICATION

Immune recovery uveitis in a iatrogenically immunosuppressed patient

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PURPOSE. To report a case of immune recovery uveitis (IRU) in an iatrogenically immunosuppressed human immunodeficiency virus (HIV)-negative patient.
METHODS. Interventional case report. One patient was diagnosed with cytomegalovirus retinitis in the left eye while receiving immunosuppressive treatment following renal transplantation. The retinitis resolved completely with systemic ganciclovir. Further reduction of immunosuppressive treatment, causing a rapid increase in CD4-T lymphocyte count, was associated in the same eye with the occurrence of IRU consisting of anterior uveitis, vitritis, and macular edema.
RESULTS. Visual acuity at IRU presentation onset was 20/200 in the left eye. After 6 weeks of follow-up, the uveitis resolved with topical and periocular steroid treatment. Visual acuity restored to 20/40.
CONCLUSIONS. IRU can occur in iatrogenically immunosuppressed HIV-negative patients.
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KEY WORDS. Immune recovery uveitis, Cytomegalovirus retinitis, Immunosuppression, Human immunodeficiency virus

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INTRODUCTION

Immune recovery uveitis (IRU) is a chronic intraocular inflammatory syndrome occurring in selected patients with inactive cytomegalovirus (CMV) retinitis taking highly active antiretroviral therapy (HAART) who experience an increase in CD4-T lymphocyte count (1-3).

A 45-year-old human immunodeficiency virus (HIV)-negative man was referred to the Ocular Immunology Service, University Hospital San Raffaele, with suspected CMV retinitis.

Case report

The patient had received a renal transplant 2 years earlier for progressive renal failure secondary to Berger glomerulonephritis and was placed on immunosuppressive treatment with cyclosporin and prednisone. When the patient came to our observation, he complained about floaters and blurred vision in the left eye (visual acuity 20/50) lasting a few days. Fundus examination of the left eye revealed a peripheral whitish area of retinitis with intraretinal hemorrhages and perivascular sheathing (Fig. 1). A positive result on the polymerase chain reaction (PCR) analysis of the anterior chamber tap confirmed the clinical diagnosis of CMV retinitis. The CD4-T lymphocyte count was 30 cells/mm^3. Intravenous gancyclovir was started and continued for 4 weeks. Visual acuity returned to 20/20 after 2 weeks of treatment and the retinitis showed signs of complete regression.

Immunosuppressive treatment was therefore rapidly reduced and CD-4 T lymphocyte count increased to 350 cells/mm^3 in 2 months.

One month later, the patient noted a new episode of blurred vision in the left eye. The visual acuity decreased to 20/200. Anterior segment examination disclosed 2+

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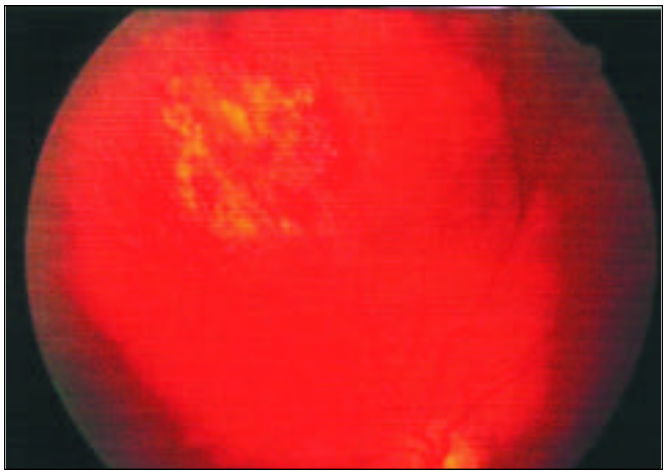

Fig. 1 - Fundus photograph of cytomegalovirus retinitis in the left eye.

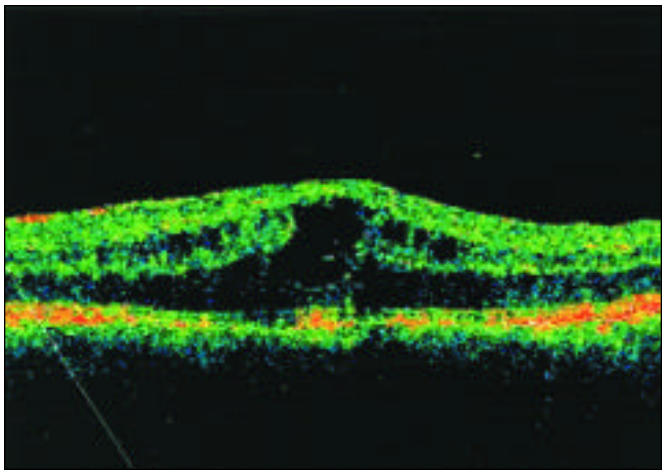

Fig. 2 - Optical coherence tomography of the left eye showing cystoid macular edema.

cells in the anterior chamber. Ophthalmoscopy revealed 1+ vitritis and clinically significant cystoid macular edema, confirmed by optical coherence tomography (OCT) (Fig. 2). There were no signs of CMV retinitis reactivation.

After excluding other possible causes of intraocular inflammation with appropriate complete serologic workup, according to published criteria (1-5) a diagnosis of IRU was made. Topical prednisolone acetate 1% drops were given 6 times a day and a cycle of periocular injections of triamcinolone acetonide 40 mg/mL was performed.

Anterior uveitis and macular edema resolved within 6 weeks and visual acuity returned to 20/40.

DISCUSSION

Cytomegalovirus retinitis is the most common cause of infectious retinitis in immunocompromised hosts, both those with acquired immunodeficiency syndrome and those iatrogenically immunosuppressed (4).

The pathogenesis of IRU is unknown and unexplained. However, the uveitis may represent an immunologic reaction to CMV antigens in the eye (1-5).

Histologic studies of the retina of patients with IRU showed the presence of an inflammatory process with a predominance of T-lymphocytes (4). These data would suggest that IRU can be the result of a T-cell-mediated immune reaction to latent CMV antigens present in the retina, in the area of inactive CMV retinitis. A larger area of inactive CMV retinitis may cause a greater antigenic stimulus, resulting in an inflammatory response.

A recent study on HIV-positive patients with IRU showed the absence of CMV genome on the PCR analysis, supporting the hypothesis that IRU is not directly related to viral replication in the eye (6).

Kuo et al (7) have recently reported the largest series (18 patients) of CMV retinitis in immunodepressed HIV-negative patients. The authors concluded that the characteristics and the course of CMV retinitis, IRU, and the visual loss in this group of patients were similar to those found in HIV-positive patients.

Our patient received iatrogenic immunosuppression after renal transplantation (CD4 less than 50 cells/mm^3) that eventuated in CMV retinitis. The rapid increase in CD4 level secondary to the reduction of immunosuppressive treatment led to the occurrence of IRU.

According to recent reports on CMV retinitis in HIV-negative patients and with the increasing use of immunosuppressive agents for various clinical conditions, including ocular diseases, the incidence of IRU in patients without HIV infection may increase.

Therefore, the ophthalmologist should be alert in considering IRU in the differential diagnosis of uveitis in HIV-negative immunosuppressed patients.

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REFERENCES

1. Karavellas MP, Lowder CY, MacDonald JC, Avila CP Jr, Freeman WR. Immune recovery vitritis associated with inactive cytomegalovirus retinitis: a new syndrome. Arch Ophthalmol 1998; 116: 169-75.
2. Nguyen QD, Kempen JH, Bolton SG, Dunn JP, Jabs DA. Immune recovery uveitis in patients with AIDS and cytomegalovirus retinitis after highly active antiretroviral therapy. Am J Ophthalmol 2000; 129: 634-9.
3. Robinson MR, Reed G, Csaky KG, Polis MA, Whitcup SM. Immune-recovery uveitis in patients with cytomegalovirus retinitis taking highly active antiretroviral therapy. Am J Ophthalmol 2000; 130: 49-56.
4. Karavellas MP, Azen SP, MacDonald JC, et al. Immune recovery vitritis and uveitis in AIDS. Clinical predictors, sequelae, and treatment outcomes. Retina 2001; 21: 1-9.
5. Gery I, Nussenblatt RB. Immunologic basis of uveitis. In: Pepose JS, Holland GN, Wilhelmus KR, eds. Ocular Infection and Immunity. St. Louis: CV Mosby-Year Book; 1998: 141-56.
6. Siqueira RC, Cunha A, Orefice F, et al. PCR with the aqueous humor, blood leukocytes and vitreous of patients affected by cytomegalovirus retinitis and immune recovery uveitis. Ophthalmologica 2004; 218: 43-8.
7. Kuo IC, Kempen JH, Dunn JP, et al. Clinical characteristics and outcome of cytomegalovirus retinitis in persons without human immunodeficiency virus infection. Am J Ophthalmol 2004; 138: 338-46.