

SHORT COMMUNICATION

An unusual cause of central retinal artery occlusion: Acquired immunodeficiency syndrome

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PURPOSE. *In patients with acquired immunodeficiency syndrome (AIDS), disturbances in the circulation of retinal vessels are mostly encountered at the microvascular level. Rarely observed large retinal vessel occlusions frequently affect retinal veins.*

METHODS. *A 32-year-old woman was admitted to the authors' clinic with sudden loss of vision. Her clinical and ophthalmologic examinations and laboratory tests were carried out and the results were evaluated.*

RESULTS. *The patient's history revealed a diagnosis of AIDS established 5 years ago. Her corrected visual acuity was limited to light perception in the right eye and 20/60 in the left eye. There was afferent pupillary defect in the right eye. Posterior segment examination demonstrated central retinal artery occlusion in the right eye and cotton-wool spots in the left eye. The clinical examination and laboratory test results did not reveal any comorbid disease state that can contribute to this presentation.*

CONCLUSIONS. *As thrombi may develop in patients with human immunodeficiency virus infection, they should be closely followed up for the development of vasoocclusive disease. (Eur J Ophthalmol 2007; 17: 671-3)*

KEY WORDS. *Acquired immunodeficiency syndrome, Blindness, Retinal artery occlusion*

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INTRODUCTION

Ocular abnormalities are important complications affecting visual prognosis in patients infected with human immunodeficiency virus (HIV). Retinal microvascular changes might occur in such patients and the most common clinical manifestations of HIV retinopathy include cotton-wool spots, intraretinal hemorrhages, and retinal microaneurysms. The degree to which HIV retinopathy develops might change from individual to individual depending on the level of impairment in the immune system of the patient concerned. Despite being rare, obstructions of the larger retinal blood vessels (macrovasculopathy) have also been reported in HIV-in-

ected patients. However, the development of macrovasculopathy in this group of patients affects retinal veins more often than arteries (1).

Central retinal artery occlusion in association with HIV infection occurs rarely. In this study, we report a patient with acquired immunodeficiency syndrome (AIDS) having central retinal artery occlusion and retinal ischemia in one eye and cotton-wool spots in the contralateral eye.

Case report

A 32-year-old woman was admitted to our clinic with sudden loss of vision. Her history revealed a diagnosis of

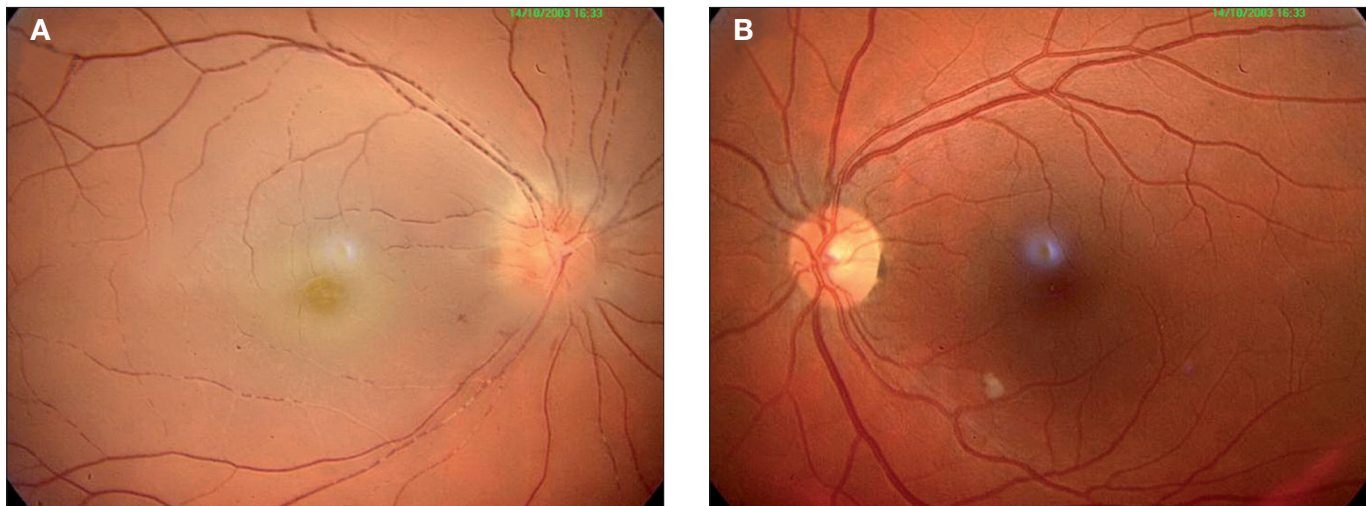


Fig. 1 - Fundus photographs of the patient with acquired immunodeficiency syndrome. In the right eye central retinal artery occlusion and accompanying severe retinal ischemia together with widespread occlusive segmentation of retinal veins is observed (A) while in the left eye we can observe a cotton-wool spot in inferior part of macula (B).

AIDS established 5 years ago. Her husband had died 18 months previously as a result of complications of AIDS and she had been under medical treatment since then. The treatment consisted of antiretroviral drugs such as zidovudine, didanosine, and nevirapine, as well as other drugs such as trimethoprim-sulfamethoxazole, acyclovir, and clarithromycin that were used at some point during this period.

In her ophthalmologic examination, corrected visual acuity was limited to light perception in the right eye and 20/60 in the left eye. There was afferent pupillary defect in the right eye. In the examination of the posterior segment, there was occlusion of central retinal artery resulting in widespread retinal ischemia in the right eye. The substantial level of retinal perfusion disturbance hampered the blood flow in retinal veins resulting in the development of occlusive segmentation in retinal vessels (Fig. 1A). In posterior segment examination there were microhemorrhages and cotton-wool spots in the inferior temporal region of the left eye (Fig. 1B). There were no findings of active retinitis in either of the eyes. Intraocular pressure was 18 mmHg in the right and 20 mmHg in the left eye. Fluorescein angiography could not be performed due to patient noncompliance as well as her general weakness and malaise.

Laboratory test results were as follows: hemoglobin 9.2 g/dL, erythrocytes $2.87 \times 10^6/\mu\text{L}$, leukocytes $2 \times 10^3/\mu\text{L}$, platelets $229 \times 10^3/\mu\text{L}$, and erythrocyte sedimentation rate

100 mm/h. In addition to these findings, CD4+ T-lymphocyte count was 120 cells/ μL , anti-HIV serology was positive with enzyme-linked immunosorbent assay test (confirmed by Western blot). Other laboratory tests were normal.

Sources of systemic emboli such as cardiac and systemic diseases were ruled out both clinically and by laboratory means.

Cytomegalovirus (CMV) infection serology was negative. Moreover, there were no findings of CMV retinitis in her eyes.

DISCUSSION

HIV-infected patients frequently develop ocular complications, the most common of which are vascular abnormalities. The most important complications are disturbances of retinal circulation together with vascular abnormalities while the pathogeneses of these complications are not very clear (1).

In one study, focal retinal ischemia was correlated with elevated levels of fibrinogen, which is the major determinant of erythrocyte aggregation and, indirectly, that of microvascular blood flow (2). Yung et al (3) showed a decrease in perifoveal blood flow in patients with HIV. De-jaco-Rushwurm et al (4) also found resistive index in central retinal artery to be higher than normal.

Central retinal artery occlusion (CRAO) in association with HIV infection is a rare occurrence. Dunn et al (1) conducted a study on 2484 patients infected with HIV; they could identify large retinal blood vessel occlusion in only 38 eyes of 33 (1.3%) patients, and the development of CRAO was only reported in 1 of these 33 patients.

The mechanism of development for CRAO has not been fully delineated. It may be postulated that HIV-infected patients are at high risk for the development of thrombi due to decreased blood flow, increased levels of coagulation factors, and degeneration in blood vessels, which may be the cause of the arterial occlusion in this case.

In patients with AIDS possible other complications such as viral retinitis, endogenous endophthalmitis, and acute chorioretinitis should also be considered in differential diagnosis (5). In our case, we ruled out these possible co-

morbid complications via laboratory tests and clinical examination.

Finally, as thrombi may develop in patients with HIV infection, they should be closely followed up for the development of vasoocclusive disease. For patients at risk, possible measures for the aforementioned complications like administration of antiaggregants and/or anticoagulants might be considered.

The authors do not have any proprietary interest.

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