Intravitreal Bevacizumab for Macular Edema From Idiopathic Retinal Vasculitis, Aneurysms, and Neuroretinitis

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ABSTRACT
To assess the potential visual benefit of intravitreal bevacizumab in a patient with macular edema from idiopathic retinal vasculitis, aneurysms, and neuroretinitis, an intravitreal injection of bevacizumab (1.25 mg) was given. Within 1 week, visual acuity improved from 20/60 to 20/30 and optical coherence tomography demonstrated resolution of macular edema. There was no adverse effect. The macular edema returned after 3 months, and a repeat treatment of bevacizumab led to resolution of macular edema once again. An intravitreal injection of bevacizumab may provide potential short-term visual benefit in patients with macular edema from idiopathic retinal vasculitis, aneurysms, and neuroretinitis.

CASE REPORT
A 64-year-old woman presented with decreased vision in the left eye for 2 months. Her ocular history was notable for vasculopathy of unknown etiology in both eyes and vitreous hemorrhage in the right eye that required extensive panretinal photocoagulation treatment more than 20 years previously. The patient reported that visual acuity in the right eye had remained suboptimal for the past two decades.

The best-corrected visual acuity was 20/200 in the right eye and 20/60 in the left eye. There was a relative afferent pupillary defect on the right. Anterior segment examination revealed no evidence of uveitis or rubeosis iridis. On dilated fundus examination, there was mild optic nerve pallor in the right eye. There were sclerotic arterial vessels and multiple saccular aneurysms on the optic nerve, in the peripapillary area, and at the arterial bifurcations in both eyes (Fig. 1). There was mild macular edema with exudates in the right eye and moderate macular edema in the left eye. There was no evidence of active uveitis or retinal neovascularization. Fluorescein angiography demonstrated hyperfluorescence corresponding to the saccular aneurysms and cystoid macular edema in both eyes, as well as areas of peripheral capillary nonperfusion in the left eye (Fig. 2). Optical coherence tomography (OCT) showed bilateral macular edema that was worse in the left eye (Fig. 3A). Based on the constellation of clinical features...
and ancillary tests, the diagnosis of idiopathic retinal vasculitis, aneurysms, and neuroretinitis was made.

Treatment options were reviewed for macular edema in the left eye, including observation, focal or grid laser photocoagulation, intravitreal triamcinolone acetonide, and intravitreal bevacizumab. The patient elected intravitreal injection of bevacizumab and was given 1.25 mg in 0.05 mL. She tolerated the procedure well. One week later, her visual acuity improved to 20/30 in the left eye and OCT demonstrated resolution of macular edema (Fig. 3B).

Three months after the intravitreal bevacizumab treatment, the patient noted increased metamorphopsia in the right eye. The best-corrected visual acuity decreased to 20/60 in the left eye and the macular edema returned. The patient elected a repeat intravitreal injection of bevacizumab, which was performed without complication. One month after the treatment, macular edema resolved in the left eye and visual acuity improved to 20/40.

**DISCUSSION**

The pathophysiology of idiopathic retinal vasculitis, aneurysms, and neuroretinitis is unknown. This syndrome typically affects young, healthy individuals...
without any systemic abnormalities and is predominately in females. Chang et al. reported a series of 10 patients with idiopathic retinal vasculitis, aneurysms, and neuroretinitis and carefully characterized the disease, greatly enhancing our current understanding of this syndrome. Samuel et al. described the clinical course and outcome in a series of 22 patients and proposed a staging system for idiopathic retinal vasculitis, aneurysms, and neuroretinitis. In their report, 7 eyes underwent focal or grid laser photocoagulation for exudative maculopathy and two-thirds maintained visual acuity within 1 line of the initial baseline vision.

Currently, no standardized treatment exists for macular edema in idiopathic retinal vasculitis, aneurysms, and neuroretinitis. In addition to focal or grid laser photocoagulation, off-label use of intravitreal triamcinolone acetonide may be considered, but it has several potential adverse side effects such as steroid-induced glaucoma and cataract progression, which may require surgical intervention.

In this report, we present a case of macular edema treated with intravitreal injection of bevacizumab in a patient with idiopathic retinal vasculitis, aneurysms, and neuroretinitis. We are unaware of previous reports of this treatment modality for macular edema from idiopathic retinal vasculitis, aneurysms, and neuroretinitis. Bevacizumab is a recombinant humanized monoclonal antibody currently approved by the U.S. Food and Drug Administration for treatment of advanced colorectal cancer. It is a potent angiogenesis inhibitor that works by binding to and inhibiting the biologic activity of human vascular endothelial growth factor. Vascular endothelial growth factor has been shown to play an important role in angiogenesis and vascular permeability in diseases such as age-related macular degeneration and macular edema from various etiologies. Several studies have shown the safety and potential benefits of intravitreal bevacizumab (1 to 1.25 mg) in patients with exudative age-related macular degeneration, proliferative diabetic retinopathy with vitreous hemorrhage, diabetic ruberosis iridis, macular edema from central retinal vein occlusion, and refractory pseudophakic cystoid macular edema.

In our patient, there was improvement in visual acuity and macular edema related to idiopathic retinal vasculitis, aneurysms, and neuroretinitis after a single intravitreal injection of bevacizumab. However, the effect appeared to be temporary and only lasted 2 to 3 months. The repeat injection of bevacizumab led to visual improvement once again and resolution of macular edema. There was no adverse effect.

Intravitreal bevacizumab appears to be well tolerated and may provide potential short-term benefit in patients with macular edema from idiopathic retinal vasculitis, aneurysms, and neuroretinitis. However, further studies are needed to better understand the efficacy and safety of this treatment modality.

REFERENCES