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Intravitreal Bevacizumab for Diabetic Papillopathy

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Abstract

A 43-year-old woman presented with a visual acuity of 1/10 in the right eye and 3/10 in the left eye. Ophthalmologic examination disclosed optic disc swelling on both sides with mild nonproliferative diabetic retinopathy. The pupils were equal and reactive without an afferent pupillary defect. Visual field testing showed no significant defect in both eyes. Systemic investigations revealed no abnormality. The patient was injected with bevacizumab intravitreally with the diagnosis of diabetic papillopathy (DP). Three weeks later, the vision increased to 7/10 in the right eye and optic disc edema disappeared. Intravitreal injection of bevacizumab effectively treated DP.

Introduction

Diabetic papillopathy (DP) is a term that is used to characterize a finding of unilateral or bilateral optic disc edema with variable visual loss in a patient with diabetes. Specific criteria for the diagnosis of DP and a clear differentiation of this entity from nonarteritic anterior ischemic optic neuropathy have not been established. The pathogenesis of DP is uncertain. A diabetic microangiopathy has been proposed as an etiology, but no pathologic studies of DP have been reported to confirm or refute this theory. There is no clear association between DP and the state of metabolic control of the diabetes or with the stage of diabetic retinopathy. Most reported cases of DP occur in patients with long-standing diabetes, but duration of diabetes is not proven to be a risk factor for DP. Untreated DP gradually resolves over a period of 2–10 months, leaving minimal optic atrophy. Although systemic and local corticosteroids have been used in isolated cases, there is no proven therapy for this disorder.[1]

Bevacizumab is an intravenously delivered recombinant humanized monoclonal antibody currently used for the treatment of colorectal cancer. Intravitreal bevacizumab in human eyes has been used recently for the treatment of vascular diseases like central retinal vein occlusion, iris and angle neovascularization, and diabetic retinopathy.

Case Report

A 43-year-old woman was referred to us with decreased vision in both eyes. Her medical history included type 2 diabetes (HbA1c was 5.9%) and hypertension. Best-corrected visual acuity was 1/10 (Snellen) in the right eye and 3/10 (Snellen) in the left eye. The pupils were equal and reactive without an afferent pupillary defect. Intraocular pressure was measured as normal. Ocular examination revealed a nonspecific anterior segment. Dilated fundus examination showed swollen optic discs on both sides with mild nonproliferative diabetic retinopathy. Blood pressure was 150/90 mmHg right arm sitting. Visual field testing with Humphrey automated perimetry showed no significant defect in both eyes. Neurology consultation with cranial magnetic resonance imaging revealed no abnormality. Laboratory tests, including complete blood count, erythrocyte sedimentation rate, and work up for connective tissue disease, showed no abnormality. HbA1c levels, renal functions, and lipid profile were in normal limits. On fluorescein angiography, we noted hyperfluorescence on the disc in the early phase and late leakage from telangiectatic vessels (Fig. 1). Due to the presence of optic disc edema without localizing visual field defect, lack of afferent pupillary defect, normal neurological examination, and laboratory investigations, DP was diagnosed and the patient was informed that the eyes with DP may undergo spontaneous resolution and a return to near-normal visual acuity within months. She was also informed about the management of the condition. Intravitreal bevacizumab with a dosage of 1.25 mg/0.05 cc was injected into the vitreous with full asepsis at 4 mm posterior the limbus through the inferior pars plana in the right eye. Treatment of diabetes included diet control, exercise, blood glucose testing, and oral medication. In 3 weeks, visual acuity improved to 7/10 (Snellen) with marked improvement of her optic nerve appearance on the right side (Fig. 2). Her vision in the left eye was stable at 3/10 (Snellen).

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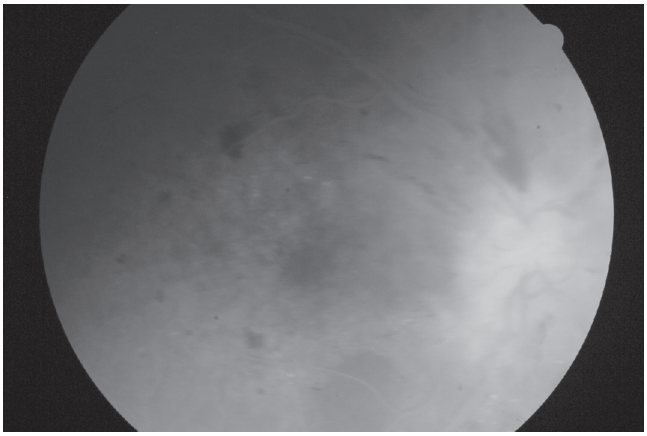

FIG. 1. Late phase fluorescein angiogram shows leakage from the optic nerve head.

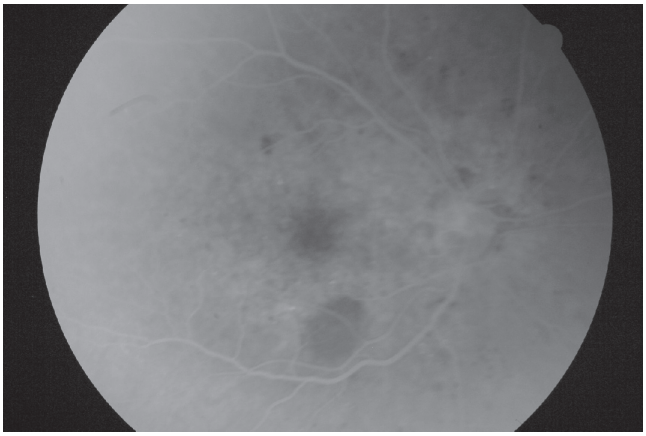

FIG. 2. Three weeks later, late phase fluorescein angiogram shows complete resolution of leakage from the optic nerve head.

Discussion

Intravitreal bevacizumab injections have been reported for the treatment of optic nerve diseases like optic disc vasculitis, radiation optic neuropathy, neuroretinitis, and anterior ischemic optic neuropathy.[2–5] To the best of our knowledge, this is the first case of DP treated with intravitreal bevacizumab injection.

Treatments for DP have included observation, periocular steroids, and intravitreal triamcinolone acetonide injections.[6,7] This case reveals dramatic resolution of DP accompanied with improvement in vision within 3 weeks of bevacizumab injection. Rapid improvement in vision was also noted in a patient with DP soon after intravitreal injections of triamcinolone acetonide.[6] The advantages of intravitreal bevacizumab in comparison to intravitreal triamcinolone acetonide are the lack of increase in intraocular pressure and absence of cataract formation. Therefore, intravitreal bevacizumab seems to be an alternative in the treatment of DP in younger patients and in eyes with poorly controlled glaucoma or cataractous changes.

In conclusion, a single intravitreal injection of bevacizumab seems to offer promising clinical and anatomical outcomes in DP with decreased vision. Further studies with longer follow-up and larger groups are needed to confirm the efficacy of this new drug in the treatment of DP.

Author Disclosure Statement

The authors do not have any proprietary interest or financial support.

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