

Treatment of Subretinal Neovascular Membranes in a Patient with Membranoproliferative Glomerulonephritis Type II: A Longitudinal Case Report

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Abstract

A 38-year-old woman with membranoproliferative glomerulonephritis type II (MPGN II), previously treated successfully for choroidal neovascular membrane (CNV) in the left eye with injections of anti-vascular endothelial growth factor (VEGF) therapy, subsequently developed blurry vision due to new CNV in her right eye. She was treated with a total of 6 intravitreal injections of ranibizumab, with improvement in acuity and imaging findings. At her most recent follow up visit prior to the writing of this paper, nearly 10 years after her initial presentation with left eye CNV and 7.5 years after developing right eye CNV, she remains recurrence-free.

Introduction

MPGN II is a chronic renal disease that primarily affects children and young adults, with electron microscopy findings of complement deposition in various renal tissues, as well as within Bruch's membrane, clinically appearing as drusen [1,2]. Varying degrees of visual impairment may result secondary to retinal atrophy, central serous retinopathy, optic atrophy, macular edema, and the development of subretinal/choroidal neovascular membranes.

Case

As previously published in 2009, a 29 year old woman with MPGN II presented with CNV in her left eye (Figure 1A) [3]. She was treated with monthly intravitreal injections of bevacizumab, and her vision continued to improve through the 9th injection. Treatment was eventually stopped after the 12th monthly injection, with a visual acuity of 20/20. She was closely followed every 3 months without evidence of recurrence. After two years, she again reported blurry vision, this time in her right eye. Visual acuity was noted to be 20/200 in the right eye and 20/25 in her left eye. Slit lamp exam was unremarkable. Fundoscopic exam revealed drusen in both eyes, with macular edema in the right eye. Stratus ocular coherence tomography (OCT) (Carl Zeiss Meditec, Inc., Dublin, CA) showed a foveal thickness of 362 microns in the right eye, and fluorescein angiography (FA) confirmed the presence of classic subretinal membranes (Figure 1B). The patient was treated with intravitreal ranibizumab therapy monthly in the right eye, with recording of visual acuity, OCT measurements, and FA results at regular intervals. After completing a series of 6 injections, visual acuity improved to 20/20, and foveal thickness was reduced to 154 microns. The patient was followed regularly at 3 month intervals

subsequently, without visual complaint or evidence of recurrence. At her most recent follow-up examination prior to this publication, close to 10 years after her initial presentation with left eye CNV, and 7.5 years after developing right eye CNV, the patient's visual acuity was 20/20 in the right eye, and 20/25 in the left eye; there was no evidence of CNV or ME on fundoscopic exam or FA; and OCT revealed a foveal thickness of 236 microns in the right eye, and 247 microns in the left eye (Figure 1C).

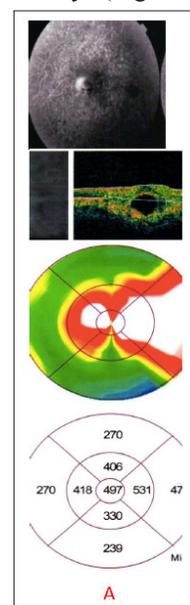


Figure 1A: Fluorescein angiogram and optical coherence tomography of the left eye at initial presentation

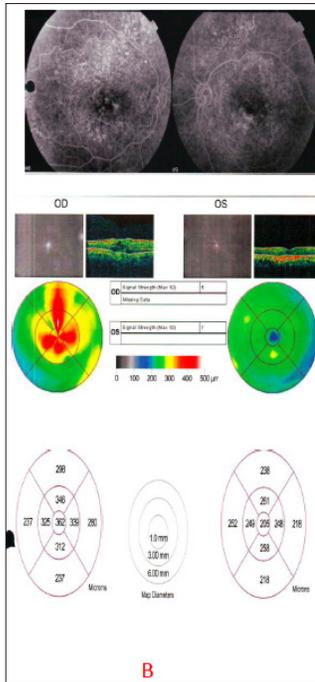


Figure 1B: Fluorescein angiogram and optical coherence tomography demonstrating new CNV in the right eye and resolved CNV in the left eye

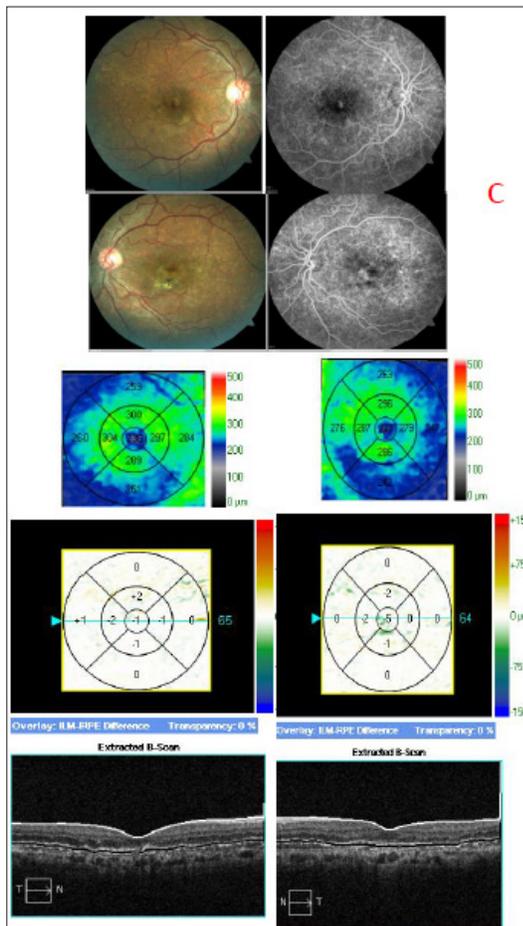


Figure 1C: Fluorescein angiogram and optical coherence tomography demonstrating resolved CNV in both eyes

Discussion

An extensive Medline search revealed 3 other published case reports that document the treatment outcomes of CNV secondary to MPGN II with anti-VEGF therapy. In the first report, the patient was treated with a single intravitreal injection of bevacizumab, with no recurrence of CNV at the 6 month follow up visit [4]. In the second case report, Mc Cullagh et al., detailed a treatment regimen of two injections of ranibizumab 2 months apart with improvement in visual acuity, and OCT scan 6 weeks post-treatment confirming a normal, fluid-free macula [5]. In the final case report, a patient was treated initially with intravitreal bevacizumab and focal laser, with 8 subsequent intravitreal bevacizumab injections repeated every 6 weeks, resulting in improved visual acuity and minimal persistent extrafoveal subretinal hemorrhage and fluid at the time of last follow up, one year later [6]. We are presenting the longest published follow up on a case of bilateral, consecutive CNV secondary to MPGN II, with close to a 10 year follow up for one eye and 7.5 years for the second eye. These cases all demonstrate a favorable prognosis for patients with MPGN II who develop CNV, and in our case, there is no evidence of recurrence in either eye at the time of the most recent examination prior to the writing of this paper.

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