European Journal of Ophthalmology / Vol. 18 no. 3, 2008 / pp. 466-468

SHORT COMMUNICATION

Intravitreal bevacizumab in the management of choroidal neovascular membrane secondary to choroidal osteoma

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PURPOSE. *To describe a patient with choroidal neovascular membrane (CNVM) secondary to choroidal osteoma treated successfully with intravitreal bevacizumab.*
METHODS. Case report. *A 25-year-old healthy woman presented with complaints of sudden painless decrease in vision in the left eye (OS) of 1 month duration. On examination, visual acuity was 20/20 in the right eye (OD) and counting fingers at 1.5 meters OS. Slit lamp examination was unremarkable. Fundus examination OD was normal; OS demonstrated a flat, opaque, yellowish parapapillary choroidal lesion with adjacent subfoveal grayish membrane associated with minimal subretinal fluid suggestive of a CNVM. B-scan ultrasonography revealed findings consistent with a choroidal osteoma. Fundus fluorescein angiography (FFA) of the left eye revealed a relatively well-defined area of hyperfluorescence that increased in size and intensity in the later phases suggestive of active subfoveal CNVM. Optical coherence tomography (OCT) confirmed the subfoveal CNVM with altered foveal contour and distortion of foveal architecture. A diagnosis of subfoveal CNVM associated with choroidal osteoma was made. The patient was treated with intravitreal bevacizumab 1.25 mg in 0.05 mL OS and repeated 6 weeks later.*
RESULTS. *At the 4-month visit, vision OS improved to 20/125. The FFA and OCT revealed a resolved CNVM.*
CONCLUSIONS. *Intravitreal bevacizumab may be an effective alternative in the management of CNVM secondary to choroidal osteoma. Larger series of such cases need to be studied to further validate our findings. (Eur J Ophthalmol 2008; 18: 466-8)*

KEY WORDS. *Osteoma, Choroidal neovascular membrane, Avastin, Bevacizumab, Choroidal osteoma*

Accepted: January 4, 2008

INTRODUCTION

Choroidal osteoma is a benign ossified tumor first described by Gass et al in 1978 (1). These tumors are predominantly observed in young healthy women, and are unilateral in the majority of cases. The most serious vision-threatening complication is the formation of choroidal neovascular membrane (CNVM) and its sequelae such as subretinal hemorrhage, serous detachment, macular edema, and disciform scarring (2, 3). Although the tumor is located at the posterior pole, most uncomplicated cases have good visual acuity. Over 60% of cases develop an associated CNVM at some point during the course of the disease (3). The available options for the treatment of CNVM secondary to choroidal osteoma that have been reported include argon or krypton laser photocoagulation, transpupillary thermotherapy, and photodynamic therapy (4-6). We describe a patient with CNVM secondary to choroidal osteoma treated successfully with intravitreal bevacizumab.

1120-6721/466-03$25.00/0

This paper was presented at the Annual meeting of American Society of Retina Specialist Palm Springs, CA, USA

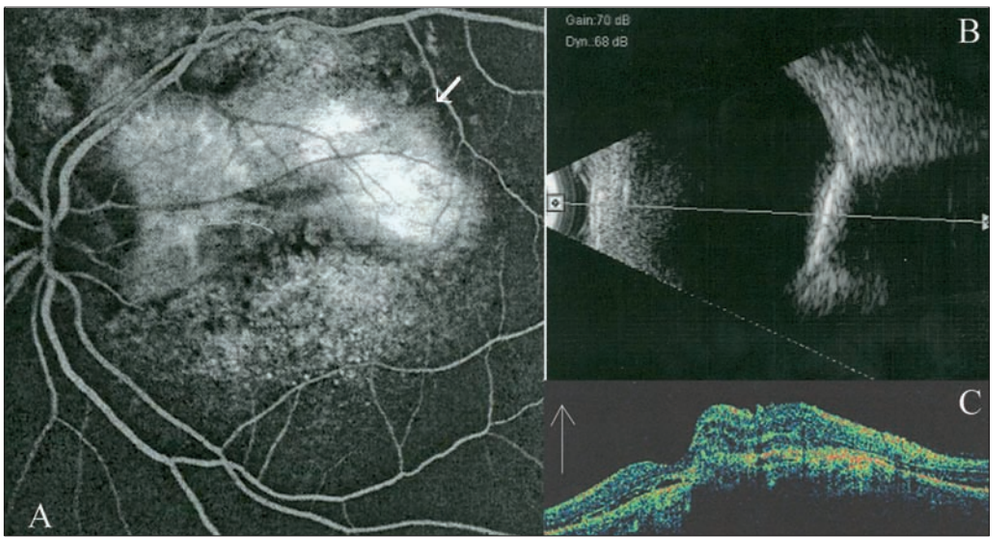

Fig. 1 (A) - *Fluorescein angiography of the left eye revealed early mottled hyperfluorescence over the region of choroidal osteoma. There is a relatively well-defined area of hyperfluorescence that increased in size and intensity in the later phases (arrow) suggestive of active subfoveal choroidal neovascular membrane (CNVM).* **(B)** *B-scan ultrasonography showing a high (100%) reflective lesion at the posterior pole with acoustic shadowing of the retrobulbar tissues.* **(C)** *Optical coherence tomography revealing a subfoveal CNVM extending superiorly with thickening of the retina at the fovea with distortion of the foveal architecture.*

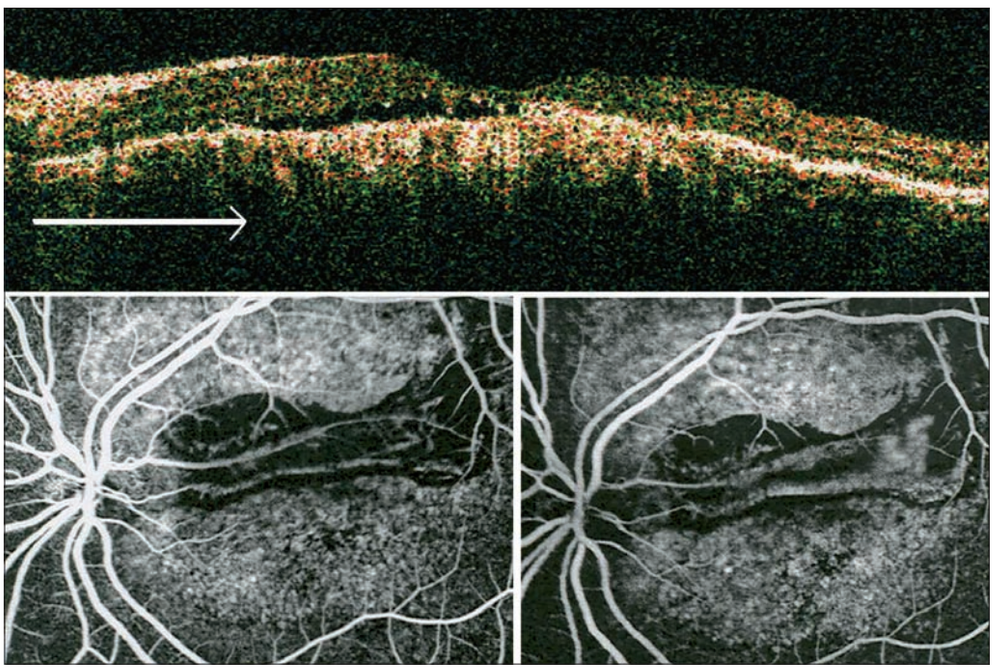

Fig. 2 - (Top) *Horizontal optical coherence tomography line scan through the macula at 4 months follow-up demonstrating resolution of the choroidal neovascular membrane (CNVM) with possible minimal residual subretinal fluid but no intraretinal fluid.* (Bottom) *Fundus fluorescein angiography of the left eye revealed absence of the previously present fluorescein leakage suggestive of resolution of the active CNVM.*

Case report

A 25-year-old woman presented to the retina service on January 11, 2007, with complaints of sudden painless decrease in vision of the left eye (OS) of 1 month duration. Past ocular and medical history was noncontributory. On examination, her best-corrected visual acuity (BCVA) was 20/20 in the right eye (OD) and counting fingers at 1.5 meters OS. Slit lamp examination was unremarkable. Applanation tonometry revealed that intraocular pressures were 14 mm Hg in both eyes. Fundus examination OD was normal; OS demonstrated a flat, opaque, yellowish parapapillary choroidal lesion with adjacent subfoveal grayish membrane associated with minimal subretinal fluid suggestive of a CNVM. B-scan ultrasonography revealed a high 100% reflective lesion at the posterior pole with acoustic shadowing of the retrobulbar tissues (Fig. 1) consistent with a diagnosis of choroidal osteoma. Fundus fluorescein angiography (FFA) of the left eye revealed early mottled hyperfluorescence over the region of choroidal osteoma suggestive of retinal pigment epithelial

changes. There was a relatively well defined area of hyperfluorescence that increased in size and intensity in the later phases suggestive of active subfoveal CNVM (Fig. 1). Optical coherence tomography (OCT) confirmed the subfoveal CNVM with altered foveal contour and distortion of foveal architecture (Fig. 1). A diagnosis of subfoveal CNVM associated with choroidal osteoma was made.

The patient was treated with intravitreal bevacizumab 1.25 mg in 0.05 mL OS on January 19, 2007, and repeated on March 9, 2007. In May 2007 (4 months after first treatment), vision OS improved to 20/125. The FFA and OCT revealed a resolved CNVM (Fig. 2).

DISCUSSION

Vascular endothelial growth factor (VEGF) plays an important role in the formation of abnormal vessels in various pathologic conditions; and inhibition of VEGF and, thereby, the inhibition of angiogenesis is an effective treatment for CNVM (7). Ranibizumab – a recombinant, humanized, monoclonal antibody Fab that neutralizes all active forms of VEGF-A – has been the first treatment for neovascular age-related macular degeneration (AMD) to improve vision for most patients. The benefits apply to all angiographic subtypes of neovascular AMD and across all lesion sizes (8, 9). Bevacizumab is the full-length, humanized monoclonal antibody directed against all the biologically active isoforms of VEGF-A. The antibody was initially designed and studied as an anti-angiogenic strategy to treat a variety of solid tumors. Bevacizumab (Avastin) has been successfully used in off-label treatment of CNVMs secondary to AMD and pathologic myopia (10, 11). Our patient had a minimally classic subfoveal CNVM and she had a lower socioeconomic status without health insurance. Her treatment was being performed without any cost to her. Ranibizumab was deemed expensive and it was decided with the patient's consent to use off-label bevacizumab. The off-label nature of the drug and the known risks of the drug were explained to the patient.

To our knowledge (Medline search, English literature), this is the first report of the use of intravitreal bevacizumab to treat CNVM associated with a choroidal osteoma. Our case had a subfoveal CNVM that was treated successfully with two intravitreal bevacizumab injections repeated at an interval of 6 weeks, which resulted in improvement in visual acuity along with resolution of the CNVM.

In summary, intravitreal bevacizumab may be a new and effective alternative in the management of CNVM secondary to choroidal osteoma. Larger series of such cases need to be studied to further validate our findings.

The authors report no financial interest.

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