Intravitreal Bevacizumab Treatment for Chronic Central Serous Chorioretinopathy Presumably Associated with Trigger Point Steroid Injection*

Muhtemel Olarak Tetik Nokta Steroid Enjeksiyonuna Bağli Gelişen Kronik Santral Seröz Korioretinopatide İntravitreal Bevacizumab Tedavisi

Hasan Ali TUFAN[1], Baran GENCER[1], Arzu TAŞKIRAN ÇÖMEZ[1], Şengül ÖZDEK[2]

ABSTRACT

A 48-year-old man presented with a 6-month history of decreased visual acuity (VA) in his both eyes. There wasn't any significant medical history except an application of a steroid injection for trigger point 17 months ago. Fundus examination demonstrated atrophic changes of the retinal pigment epithelium (RPE) in the central macula OU. Optical coherence tomography showed subfoveal neurosensorial detachment adjacent to RPE detachment in the right eye and macular atrophy in the left eye. Fundus fluorescein angiography was consistent with central serous chorioretinopathy (CSC). This report describes the possible benefit of intravitreal bevacizumab in the treatment of chronic CSC complicated with trigger point steroid injection.

Key Words: Chronic central serous chorioretinopathy, trigger point injection, steroid, intravitreal bevacizumab.

ÖZ

Kırk sekiz yaşında erkek hasta her iki gözde 6 aydır az görme şikayeti ile başvurdu. Özgeçmişinde 17 ay önce tetik nokta steroid enjeksiyonu yapılması dışında belirgin bir özellik olmadığı öğrenildi.Fundus muayenesinde her iki gözde retina pigment epitel (RPE) atrofisi izlendi. Optik koherans tomografide sağ gözde RPE dekolmanı komşuluğunda subfoveal nörosensoryal dekolman ve sol gözde RPE'de atrofik değişiklikler izlendi. Fundus floresein anjiografi santral seröz korioretinopati (SSKR) ile uyumluydu. Bu çalışmada tetik nokta steroid enjeksiyonu sonrası gelişen kronik SSKR olgusunun tedavisinde intravitreal bevacizumab kullanımı sunulmuştur.

Anahtar Kelimeler: Kronik santral seröz korioretinopati, tetik nokta enjeksiyonu, steroid, intravitreal bevacizumab.

INTRODUCTION

Central serous chorioretinopathy (CSC) is a sporadic disease occurring in young and middle-aged adults and is characterized with detachment of neurosensory retina from retinal pigment epithelium (RPE). Although the disorder is self-limited in the majority of patients, the chronic form of CSC may be associated with pigment epithelial and photoreceptor damage resulting in permanent visual impairment.[1,2] Systemic, inhaled, intranasal, epidural and intra-articular routes of administration of corticosteroids have been implicated with the cause of chronic and recurrent forms of CSC.[3-6]

The pathophysiology of CSC is still not obvious; however, the cascade of events leading to neurosensory detachment may in fact begin with choroidal ischemia and leakage. The anti-permeability effect of anti-angiogenic agents such as bevacizumab, an antibody to vascular endothelial growth factor (VEGF), may provide beneficial effect in CSC. The present report describes the possible benefit of intravitreal bevacizumab application in the treatment of chronic CSC complicated with trigger point steroid injection.

This article presented at the XVI. Afro-Asian Congress of Ophthalmology and the V. Mediterranean Retina Meeting.

1- M.D. Asistant Professor, Onsekiz Mart University Faculty of Medicine, Department of Ophthalmology, Canakkale/TURKEY
TUFAN H.A., ha_tufan@hotmail.com
GENCER B., barangence@gmail.com
COMEZ A.T., arzucomez@yahoo.com
2- M.D. Professor, Gazi University Faculty of Medicine, Department of Ophthalmology, Ankara/TURKEY
OZDEK S., sozdek@gazi.edu.tr

Geliş Tarihi - Received: 26.08.2012
Kabul Tarihi - Accepted: 28.01.2013
Ret-Vit 2013;21:219-222

Yazışma Adresi / Correspondence Adress: M.D. Asistant Professor, Hasan Ali TUFAN
Onsekiz Mart University Faculty of Medicine, Department of Ophthalmology, Canakkale/TURKEY

Phone: +90 505 319 23 69
E-Mail: ha_tufan@hotmail.com

CASE REPORT

A 48-year-old male presented with bilateral progressive blurring of vision for the last 6 months. He had no previous eye and systemic problems except a history of trigger point steroid injection for his back pain about 17 months ago. Ophthalmologic examination revealed that; visual acuity was 0.4 OU with unremarkable anterior segment examination and mottled atrophic changes of the RPE in the central macula of both eyes (Figure 1a,e). Fundus fluorescein angiography (FFA) revealed multiple focal stippled hyperfluorescence associated with a background of widespread RPE atrophy in his both eyes (Figure 1b,f) and a focal leakage in foveal region in the right eye (Figure 1c) .

Optical coherence tomography (OCT) showed subfoveal neurosensorial detachment adjacent to RPE detachment in the right eye (Figure 1d) and macular atrophy in the left eye (Figure 1h).

After a careful explanation of the clinical aspects of the treatment including other treatment options and possible complications, a written informed consent for intravitreal bevacizumab injection was obtained from the patient. A dose of 2.5 mg (0.1 ml) bevacizumab was injected intravitreally into the right eye of patient at a distance of 3.5 mm from the corneal limbus by using a 30-gauge needle in the superotemporal quadrant under aseptic conditions.

Visual acuity improved to a level of 0.7 one month after the bevacizumab injection, with the resolution of both the neurosensory detachment and the RPE detachment in his right eye (Figure 2b).

However two months after injection, visual acuity decreased to 0.6 and OCT revealed a recurrence of detachment involving in both neurosensorial retina and retina pigment epithelium (Figure 2c); therefore, a second injection was performed.

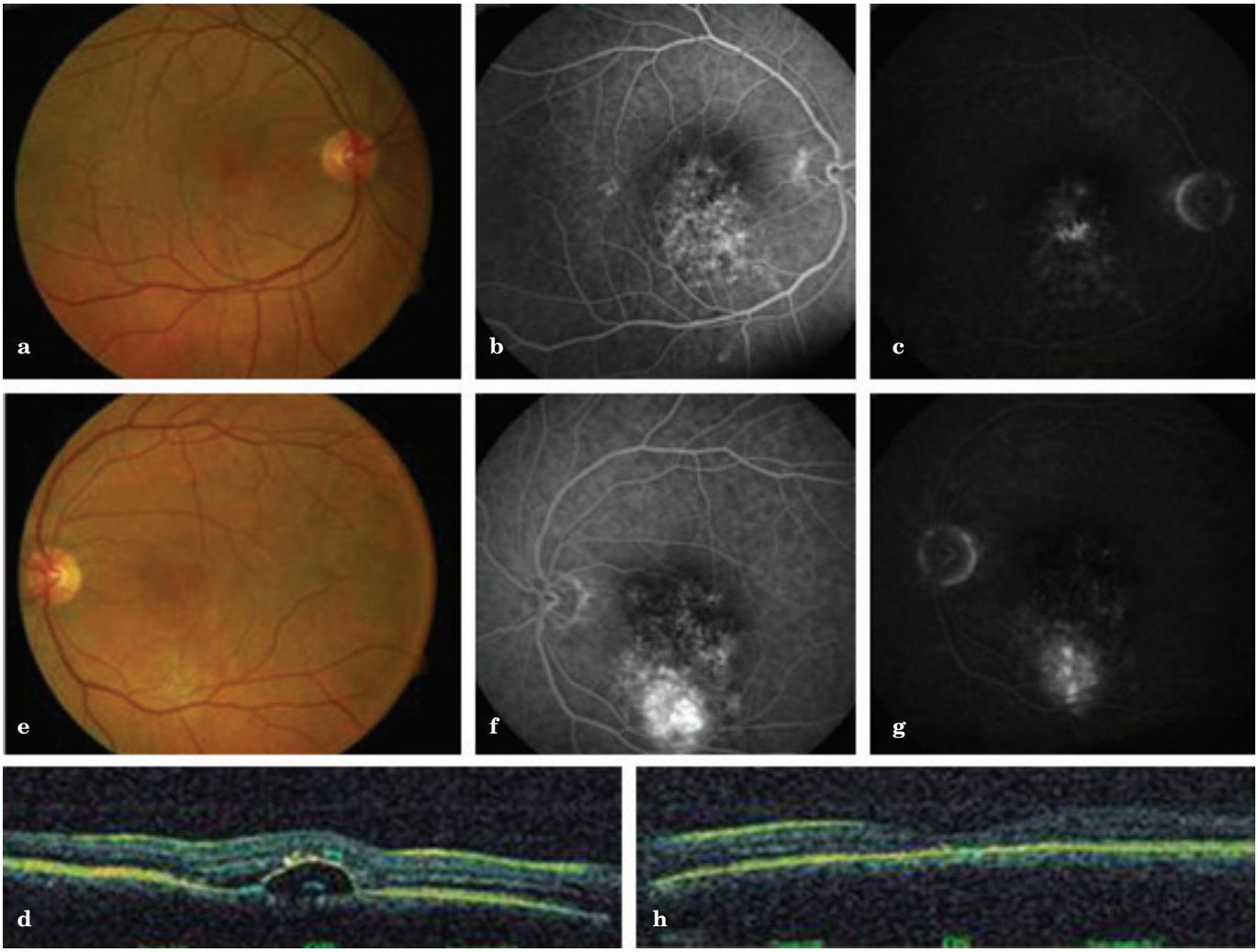

Figure 1a-h: *Findings of right eye at presentation. a: Fundus photograph showing mottled RPE atrophy. b: earlier FFA phase showing multiple focal stippled hyperfluorescence associated with widespread RPE atrophy at the macula. c: later FFA phase showing background widespread RPE atrophy and a focal leakage at the foveal region. d: OCT scan showing RPE detachment and very shallow subretinal fluid. e-h Findings of left eye at presentation. e: fundus photograph showing mottled RPE atrophy. f: earlier FFA phase showing multiple focal stippled hyperfluorescence associated with widespread RPE atrophy at the macula. g: later FFA phase showing background widespread RPE atrophy without any leakage. h: OCT scan showing macular atrophy.*

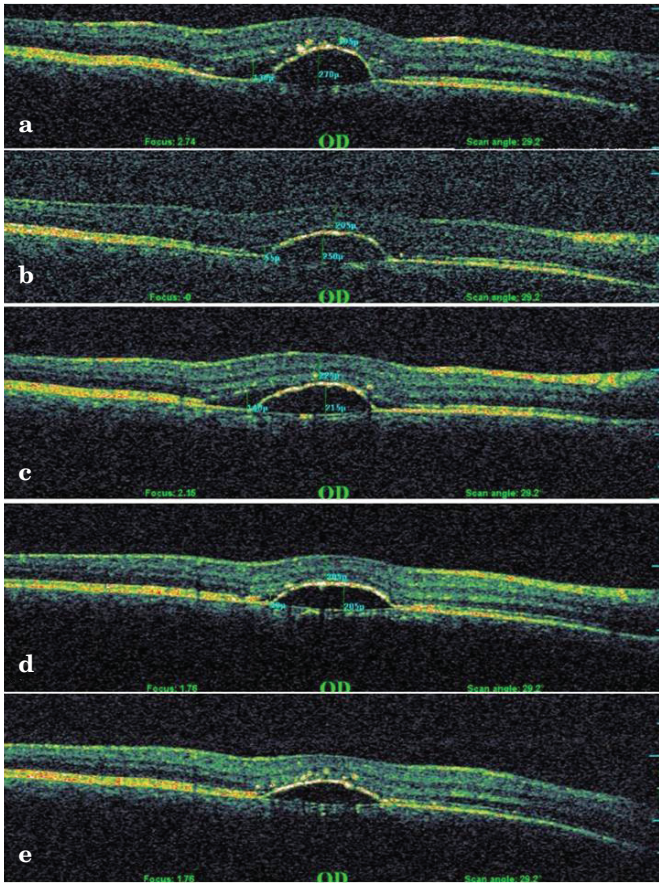

Figure 2a-e: *OCT scans of right eye. a: OCT scan showing RPE detachment and serous retinal elevation at presentation. b: OCT scan showing nearly total resolution in serous retinal elevation and reduced RPE detacment one month after intravitreal bevacizumab injection c: OCT scan showing a recurrent serous elevation two months after intravitreal bevacizumab injection. d: OCT scan showing nearly total resolution in serous retinal elevation and reduced RPE detacment one month after second intravitreal bevacizumab injection. e: OCT scan showing total resolution in serous elevation with a reduced height of RPE detacment, 3 months after the second intravitreal bevacizumab injection.*

One month after the second injection, his visual acuity improved to 1.0 and OCT demonstrated a decrease in neurosensory and RPE detachment (Figure 2d). FFA revealed the lack of a previous focal leakage in the foveal region in his right eye. Retinal examination, visual acuity and OCT (Figure 2e) remained stable for the last 3 months of the follow-up period. Visual acuity, OCT and FFA findings of the left eye did not change during the follow-up period.

DISCUSSION

This is a chronic CSC case presumably associated with trigger point steroid injection who was treated successfully with intravitreal bevacizumab injection. We observed a prompt resolution of both neurosensorial and RPE detachments one month after an intravitreal bevacizumab injection.

His visual acuity improved to 1.0 after the second injection and remained stable during the follow-up period of 3 months. Although CSC has been described as a benign and self-limiting disease, approximately 5% of patients develop chronic form which often occurs as bilateral, multifocal and recurrent disease and may be associated with permanent visual loss.[1]

The well-known associated risk factors are male gender, high blood pressure, type A achievement-oriented personality and steroid treatment.[2] Multiple routes of administration of corticosteroids have been implicated with the cause of chronic and recurrent forms of CSC.[3-6] The standard treatment of chronic CSC has still not been well established. Laser photocoagulation has been used to treat CSC in order to accelerate the resolution of detachment. However, laser treatment causes permanent scotomas and may be complicated with choroidal neovascularization. In recent years, several different studies have shown favorable results of photodynamic therapy (PDT) with verteporfin in chronic CSC treatment.[7] However, PDT is not completely harmless to ocular structures as it may cause severe choroidal ischemia.

Intravitreal use of bevacizumab for chronic CSC was first reported by Niegel and coworkers.[8] Since then several studies have been reported and the results of them suggest that intravitreal use of bevacizumab is safe and effective for the treatment of chronic CSC. The exact mechanism of intravitreal bevacizumab therapy in chronic CSC is unknown but it is possible that bevacizumab ameliorates choroidal hyperpermeability which is caused by choroidal ischemia.

Choroidal ischemia plays a role in the pathogenesis of CSC probably by causing an increase in VEGF concentration. Increased level of VEGF may lead to RPE and neurosensory detachments secondary to vascular leakage. We believe that bevacizumab decreases the choroidal hyperpermeability by reducing VEGF concentration. A rapid morphological and functional restitution of macula without relapse or complications have been reported by many authors with a single intravitreal bevacizumab injection in chronic CSC. Lim et al. reported a retrospective case series of six patients (eyes) with chronic CSC who were treated with intravitreal injection of bevacizumab. They found recurrences in four of six patients during the follow-up period. These occurred at the 4th and 5th months after the first injection.[9]

In our case, it is remarkable that a second injection was needed two months after the first injection. We presumed from the previous studies that chronic CSC, especially the form which develops following steroid administration, might be more resistant to treatment but it may be managed by intravitreal bevacizumab injection as the other forms.

It would be better, if choroidal neovascular membrane (CNVM) was excluded by performing indocyanine green angiography. This situation brings out a limitation for our study .as it is known that CNVM can be seen as a complication after CSC. Favorable response of the eye after injection of bevacizumab intravitreally is promising for the treatment of CSC and after excluding the CNVM, this case report may be important about supporting the possible role of VEGF in the pathogenesis of CSC, however a large series of similar cases treated with intravitreal bevacizumab injection with longer follow-up period is required in order to establish a new therapy option for the treatment of CSC caused by use of corticosteroids.

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