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CASE REPORT

RETINAL ARTERIAL MACROANEURYSM: A CASE REPORT

Sushma Chaudhary[1,*], Sharad Gupta[1], Reena Yadav[1], Vidisha Gupta[1], Satbodh Shrestha[1], Bipin Bista[1], Shrawan Kumar Choudhary[1]

[1]Sagarmatha Choudhary Eye Hospital, (SCEH), Lahan, Siraha, Nepal.

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***Correspondence to:** Sushma Chaudhary, Sagarmatha Choudhary Eye Hospital, (SCEH), Lahan, Siraha, Nepal.
Email: sus56chaudhary@gmail.com

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ABSTRACT

Retinal arterial macro-aneurysms are pathological dilatations of retinal arterial branches mostly found in posterior pole. Here we present a 51 years old female with a diagnosis of retinal artery macro-aneurysm in the superior temporal arcade associated with macular edema based on clinical and optical coherence tomography (OCT) finding. Patient was treated with intra-vitreal injection (1.25 mg in 0.05 ml) of anti-vascular endothelium growth factor (bevacizumab) which showed both improvement in visual acuity and resolution of macular edema. Intra-vitreal injection of bevacizumab (Avastin) is safe and effective in treatment of macular edema associated with retinal arterial macro-aneurysms.

INTRODUCTION

Retinal arterial macroaneurysms was first introduced in 1973 by Robertson which are acquired saccular or fusiform dilatations of the large arterioles of the retina, usually within the first three orders of bifurcation[1-3] and are frequently associated with retinal vascular occlusions, retinal emboli, systemic hypertension and vascular diseases. In majority of the cases there might be spontaneous involution, bleeding, chronic macular edema, serous retinal detachment, subretinal and preretinal hemorrhage which are major causes of vision loss.[4] The underlying pathophysiology of macro-aneurysms is not fully understood. One hypothesis is that arteriosclerosis leads to vessel wall fibrosis and combined elevated luminal pressure lead to decrease in wall's elasticity and ultimately results in aneurysmal dilation. An accessory hypothesis is that emboli (which have been associated with vessels harboring macro-aneurysms) or intra-arterial thrombosis leads to mechanical damage of the endothelium which predisposes the vessels for aneurysm formation. Chronic venous stasis from hypertension and arteriosclerosis may also play a role for its pathogenesis.[4]

There are several treatment options with various outcomes but not proven yet. Recent studies have revealed that laser, intravitreal injection with anti-vascular endothelium growth factor (anti-VEGF) and combination therapies could provide encouraging outcomes.[5] Here we present a case report of RAM associated with macular edema treated with intravitreal injection of 1.25 mg in 0.05 ml of bevacizumab (Avastin).

CASE REPORT

Fifty one years old female with history of hypertension under medication came to out-patient department with chief complaints of blurring of vision in her right eye since 6 months. She did not give history of trauma, redness, watering or discharge from affected eye. On examination, her visual acuity was 6/60 in the right eye which did not improve with the pinhole or even after refraction whereas best corrected visual acuity of the left eye was 6/6. On slit-lamp bio-microscopic examination, anterior segments of both eyes were unremarkable. Fundoscopy of the right eye showed yellowish lesions in the superior temporal arcade suggestive of hard exudates which was associated with retinal hemorrhage and macular edema (Figure 1).

Figure 1: Fundoscopy of the right eye showed yellowish lesions in the superior temporal arcade suggestive of hard exudates which was associated with retinal hemorrhage and macular edema

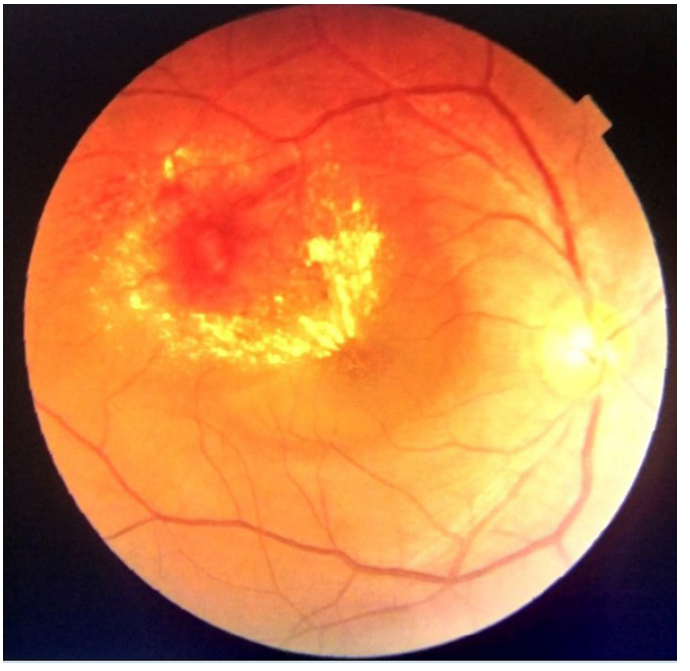

Figure 2: Partial resolution of hemorrhage after intravitreal injection

Fundus examination of the left eye was normal. Intraocular pressure of both eyes was 15 mmHg each. OCT of the right eye revealed low reflective intraretinal spaces (CME) and separation of neurosensory retinal from retinal pigment epithelium.(SRD) with central macular thickness of 685µm (Figure 3) whereas OCT of the left eye was normal. With above finding we made a diagnosis of RAM with macular edema of the right eye. Patient was treated with intravitreal injection of 1.25 mg in 0.05 ml of bevacizumab (Avastin) and asked her to follow up after one month. On her first follow-up, her vision has improved from 6/60 to 6/18 and BCVA was 6/9. During fundus examination, there was partial resolution of hemorrhage. The central macular thickness has also decreased from 685 µm to 162µm (Figure 2 and 4).

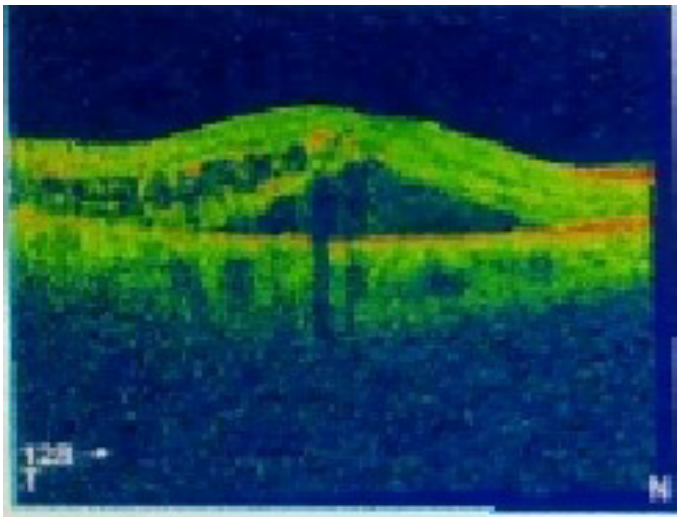

Figure 3: OCT of the right eye revealed low reflective intraretinal spaces (CME) and separation of neurosensory retinal from retinal pigment epithelium (SRD)

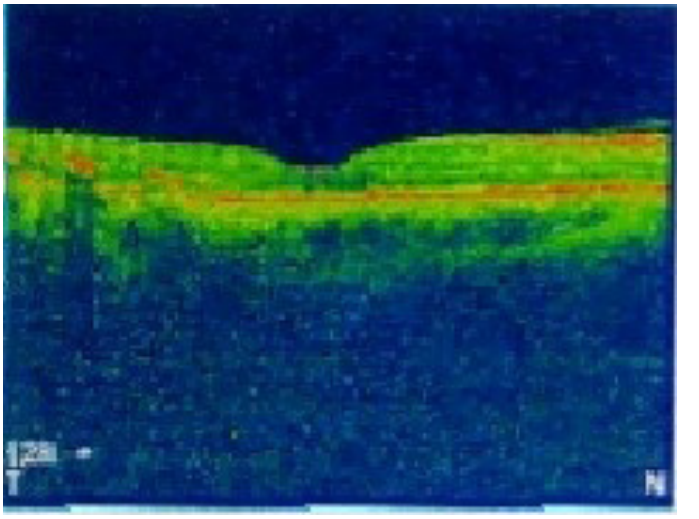

Figure 4: Partial resolution of macular edema after intravitreal injection

DISCUSSION

RAM is an acquired, monocular localized saccular or fusiform dilation of retinal arterial branches, possibly resulting in macular edema with serous retinal detachment along with intraretinal lipid accumulation and usually affect elderly females and are commonly associated with systemic hypertension.[4,6] Lavin and colleagues classified RAM into 3 clinical forms: quiescent, hemorrhagic and exudative.[7] The majority of RAM patients have a benign course. Unless macula is affected either by edema, SRD or intra- retinal lipid exudates, observation is still considered to be the preferred treatment. Early intervention depends on the individual's decision and their visual needs. The most common or traditional treatment is laser photocoagulation at the site of RAM but leads to many complications such as

several retinal traction, enlargement of the laser scar, an increase in retinal exudation sub retinal fibrosis and choroidal neovascularization.[6,8] Few studies showed that intravitreal injection of bevacizumab is a safe and effective treatment therapy for complex RAM, leading to rapid improvement in BCVA and central retinal thickness.[9,10] Wenkstern et al. showed resolution of macular edema secondary to RAM after two intravitreal ranibizumab injections followed by focal argon laser coagulation surrounding the retinal macroaneurysm.[11]

We preferred injection Intravitreal injection of bevacizumab (Avastin) as first line therapy. Intravitreal injection of bevacizumab (Avastin) showed improvement in visual acuity and resolution of macular edema secondary to retinal artery macroaneurysm after first dose.[12,13]

CONCLUSION

Intravitreal injection of bevacizumab (Avastin) is safe and effective treatment option for improvement in visual acuity and resolution of macular edema associated retinal arterial macroaneurysm.

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