



Ruptured retinal macroaneurysm: A case report

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Abstract

Retinal arterial macroaneurysms are acquired, focal dilations of retinal arterial branches. It usually occurs in the first three orders of the arterial tree. It can present as insidious loss of central vision following leakage which involves the macula or less commonly it could cause sudden loss of vision following haemorrhage. The variable clinical presentation could make diagnosis difficult with a wide range of differentials

Introduction

Retinal arterial macroaneurysm (RAM) is described as an acquired, focal dilation of a retinal artery, typically occurring within the first three bifurcations of the central retinal artery.^{1,2} They are commonly found at arteriovenous crossings² or directly at a bifurcation.³ It is believed that less structural support of arteries exist at arteriovenous crossings due to the absence of the adventitial layer, making these areas more prone to aneurysm formation.⁴ Diagnosis is made on clinical examination and via imaging modalities such as fluorescein angiography (FA) and spectral-domain optical coherence tomography (SD-OCT). The Beijing Eye Study reported an incidence of 1 case per 9000 eyes primarily among the adult Chinese population.⁵ In hemorrhagic macroaneurysms, 10% of cases are bilateral.⁶ Asymptomatic cases can be observed until full involution. RAM with macular hemorrhage or secondary macular edema would require Argon green or Yellow Dye laser due to their absorption by haemoglobin or injections of anti-vascular endothelial growth factor.^{7,8} However Pars plana vitrectomy (PPV) may be considered in cases

of non-clearing vitreous hemorrhage, usually after 3 months of observation.^{3,9}

Case Report

We report a case of sudden loss of vision in a 78-year-old patient, who presented in the Ophthalmic Emergency department with a day history of visual loss in the right eye.

Examination revealed a visual acuity of 6/12 in the left eye and hand movements in the right eye. Anterior segment examination was normal, intraocular pressures were 15mmHg in both eyes, with a clear media and bilateral pseudophakia.

Fundal examination revealed a central pre-retinal haemorrhage and intra retinal haemorrhage overlying the posterior pole of the right eye, consistent with a ruptured macroaneurysm. Patient was observed initially for possible spontaneous resolution. He is scheduled to have argon laser photocoagulation following failure of spontaneous resolution of haemorrhage.

Her systemic blood pressure was 185/100mmhg, despite being on anti-hypertensive agents. No other significant morbidities were present. Patient was however referred for blood pressure control.

Retinal macroaneurysms are acquired dilatations of the retinal artery, whose incidence increases with age, peaking in the 7th and 8th decades of life¹⁰ as in the index case. It is known to be 4 times commoner in females.¹⁰ RAM is believed to result from a

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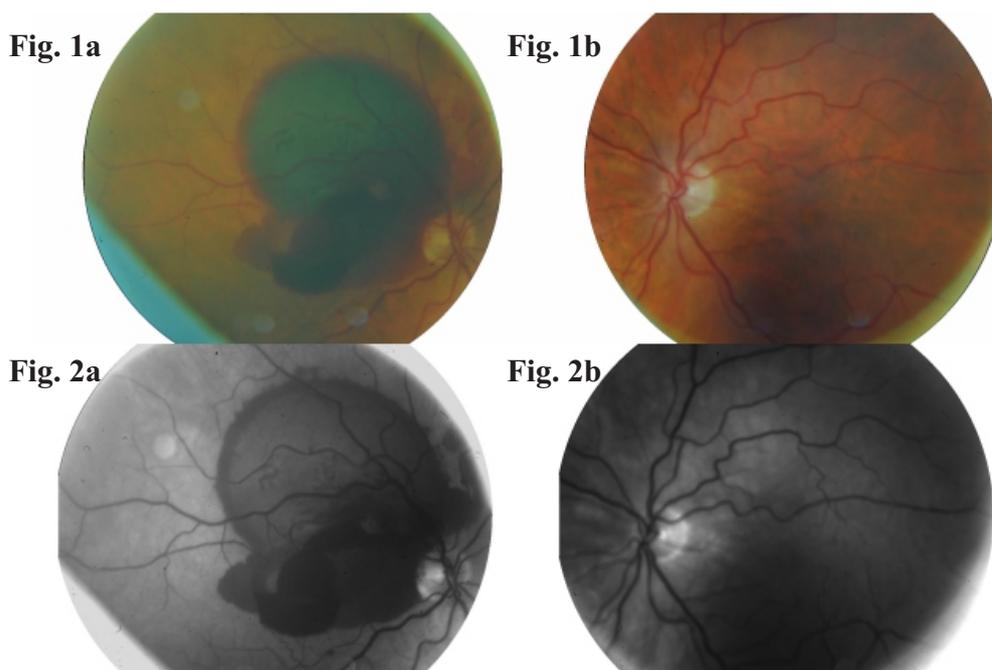


Fig 1a (upper left) Colour photograph of Right eye with Macula haemorrhage.
 Fig 1b (Upper right) Left Normal Fundus.
 Fig 2a (Lower left) Red free photograph of the right eye,
 Fig 2b (Lower right) Red free photograph of the left eye.

combined process of arteriosclerosis and hypertension. Our patient had systemic hypertension and it has been found that up to 75% of patients presenting with RAM have hypertension.^{1,2} It is common among elderly female hypertensives and have a predilection for one eye. Our patient was affected in only one eye which is in keeping with presentation of retinal macroaneurysms which are usually unilateral and solitary but may be multiple. Other morbidities associated with macroaneurysms include atherosclerosis, Ischaemic heart disease, dyslipaemias and polycythaemias. No other morbidity was seen in our patient. However, our patient was referred for thorough systemic assessment

Typically, they are located along a temporal arcade before the 3rd order arteriole. The majority of RAMs will follow a benign course of thrombosis, fibrosis and spontaneous resolution with return to prior visual acuity.^{11,12} While visual prognosis is generally good, vision loss can occur from macular edema, end-arteriole occlusion from thrombosis, or hemorrhage due to rupture of the aneurysm.^{13,14} The

hemorrhage is initially intra-retinal but may settle into the sub-retinal space or breakthrough the internal limiting membrane into the vitreous. Our patient had central pre-retinal haemorrhage and intra retinal haemorrhage overlying the posterior pole of the right eye, consistent with a ruptured macroaneurysm. The ruptured RAM accounts for the sudden loss of vision in this patient who presented with a day history of sudden loss of vision.

Conclusion:

Most asymptomatic patient would experience spontaneous resolution so a three-month period of observation may be necessary, however intervention is needed for those with visual loss from macular oedema and haemorrhage. This could range from injection of anti-vascular growth factor to pars plana vitrectomy.

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