Management of a “Floating Angioma” with Sequential barrage and feeder vessel photocoagulation followed by Transpupillary Thermotherapy

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Introduction

Von Hippel angiomatosis is a congenital hereditary capillary angiomatous hamartoma of the retina and optic nerve. Visual loss in this condition occurs due to lipid-rich exudation at the macula, exudative retinal detachment, vitreous hemorrhage, epiretinal membrane formation and rhegmatogenous retinal detachment. Though cryotherapy and photocoagulation are the most common treatment modalities they are associated with various complications like increased macular exudation, macular scar, macular hole and combined traction and rhegmatogenous retinal detachment. This case report describes the management of an angioma dragged forward due to vitreous traction (floating angioma) in an eye with good visual potential.

Case report

18 year old male presented to us in 2001 with complaints of sudden loss of vision in the right eye. The fundus examination showed vitreous hemorrhage. He was managed conservatively and improved from the initial vision of hand motions to 6/6. On examination, the anterior segment was normal (OU). The fundus (OS) was also normal. Fundus (OD) showed resolving vitreous hemorrhage inferiorly. There was a retinal angioma which was dragged forward into the posterior 1/3rd of the vitreous due to traction (Figure 1). The feeder vessels were dilated and tortuous. There was lipid exudation close to the posterior pole (Figure 2 A) and a serous retinal detachment surrounding the angioma. Surface neovascularization and vitreous traction over the angioma were evident on clinical evaluation. The goals of treatment in this case were to prevent further increase in serous detachment, macular...

Fig. 1. Floating angioma
exudation and vitreous traction. The initial step was to barrage the area of serous detachment with confluent grade 3 to 4 photocoagulation burns using a laser indirect ophthalmoscope (LIO). The feeder vessels were carefully avoided so as to prevent any increase in exudative detachment (Figure 3). A reduction in the amount of macular exudation was seen at 2 weeks after LIO (Figure 2 B). The 2nd step in the management was feeder vessel treatment to shrink the tumor. It was done in 2 sittings – 1st sitting was directed towards obliterating the feeder artery and then the vein was treated directly after 1 week. One month later the patient was reevaluated and a modified transpupillary thermotherapy using frequency-doubled Nd:YAG (532 nm) (1000 m spots, 300 mW, 1000 ms, 10 burns) was done. The burns were placed directly on the tumor.

The only complication encountered during the management was a hemorrhage from the artery during the feeder vessel treatment (Figure 4). It was managed by applying pressure on the contact lens alone. After

the resolution of serous detachment following feeder vessel treatment, further barrage LIO photocoagulation was done till the tumor base. At final visit, the tumor size had markedly reduced. There was a reduction in the macular exudation and the serous detachment.
The dilatation and tortuosity of the feeder vessels also reduced (Figure 5). The visual acuity was maintained at 6/6 and the intraocular pressure by applanation was 12mm Hg.

**Discussion**

Management of “floating angiomas” is difficult as there is a risk in causing visual loss due to increasing traction, macular exudation and exudative retinal detachment.\(^1,2\) Sequential barrage and feeder vessel photocoagulation followed by transpupillary thermotherapy is a better approach in managing these difficult angiomas.

The feeder vessel treatment controlled the exudation and the modified TTT markedly reduced the tumor size. The barrage laser photocoagulation to prevent worsening of serous detachment and vitreous traction is a new concept in the management of these difficult tumors.

**References**