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Reply to “Comment on: Treatment of Recalcitrant Cyclitic Neovascular Pupillary Membranes”

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Dear Editor

We would like to thank Drs. Kalamkar and Mukherjee for their thorough reading of our article “Treatment of Recalcitrant Cyclitic Neovascular Pupillary Membranes”[1] and for the insightful response. We appreciate their constructive comments and experience on this topic.

In our interventional retrospective case series, we described the use of a novel technique in the treatment of cyclitic vascularized pupillary membranes (CVPM) in three patients with neovascular glaucoma (NVG) involving intravitreal bevacizumab (IVB) injection 1 to 2 weeks prior to photodisruption of CVPM with Nd: YAG laser treatment. All patients received aggressive steroid eyedrops to control cell and flare after the laser treatment and were tapered off steroids over at least a month period. All three patients had an average follow up of 3 years following treatment. Two patients did not have any recurrence over the entire follow up period. One patient in whom the Nd: YAG laser aperture into the CVPM was initially small developed fibrotic contracture and narrowing of the aperture with no recurrence of membrane neovascularization, which was subsequently enlarged surgically. All three patients maintained an open aperture throughout the entire follow up period, and did not require further anti-vascular endothelial growth factor (VEGF) injection for the sole purpose of controlling CVPM or anterior segment neovascularization.

In their letter, Drs. Kalamkar and Mukherjee recommend the combined use of intravitreal triamcinolone (IVT) and anti-VEGF injection prior to attempted Nd: YAG laser membranectomy. The rationale behind their suggested modification to our approach is to further suppress the inflammatory component inherent to ischemic retinal disorders and neovascular glaucoma (NVG), which is theoretically inadequately controlled with anti-VEGF injections alone, possibly increasing the risk of recurrence of CVPM. In our opinion, the potential risks associated with intraocular steroid injection, namely inducing intraocular pressure (IOP) rise in eyes that may already suffer significant glaucomatous damage, outweigh the benefit.

IVT injection was shown to be associated with IOP elevation in 50% of glaucomatous eyes, irrespective of baseline pressure.[2] In a recent meta-analysis, a peak 33% increase in IOP compared to baseline was shown to take place one month following IVT injection.[3] Such

IOP elevation was also shown to persist for a relatively long duration, as the elevation in IOP was reduced to 8% compared with baseline six months following injection. Such magnitude and duration of IOP rise in patients with a severe form of glaucoma such as NVG that is often refractory to medical therapy may increase the risk of further optic nerve damage and vision loss. Therefore, we recommend the use of steroid eyedrops after Nd:YAG laser treatment that can be discontinued if steroid induces IOP elevation, as IVT would require surgical removal.

As discussed in our article, bevacizumab was shown to have anti-inflammatory and anti-vascular leakage properties in addition to its anti-angiogenic effects[4]. These properties of bevacizumab may, in part, be responsible for the non-recurrence of CVPM in our series. In our experience, the use of intravitreal bevacizumab alone 1–2 weeks prior to attempted Nd:YAG laser treatment was highly effective in achieving relatively easy, full membranectomy with no recurrence over long-term follow up. We therefore feel that no added benefit exists to combining IVB with IVT injection. We recognize the small sample size of our series, and acknowledge the need for larger case series or possibly controlled trials to establish the role of this technique in restoring visually permissive optical clarity with this visually devastating ocular disease.

Acknowledgments

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References

1. Spratt A, Blieden LS, Dubovy SR, Berrocal A, Lee RK. Treatment of Recalcitrant Cyclitic Neovascular Pupillary Membranes. *J Glaucoma*. 2017; 26:e160–e2. [PubMed: 27571445]
2. Smith LM, Ober MD, Maranan L, Spaide RF. Intravitreal triamcinolone acetonide and intraocular pressure. *Am J Ophthalmol*. 2004; 138:740–3. [PubMed: 15531307]
3. Yuksel-Elgin C, Elgin C. Intraocular pressure elevation after intravitreal triamcinolone acetonide injection: a Meta-analysis. *Int J Ophthalmol*. 2016; 9:139–44. [PubMed: 26949624]
4. Oh JY, Kim MK, Shin MS, Lee HJ, Lee JH, Wee WR. The anti-inflammatory effect of subconjunctival bevacizumab on chemically burned rat corneas. *Curr Eye Res*. 2009; 34:85–91. [PubMed: 19219678]