

Comments on: Internal Limiting Membrane Peeling and Gas Tamponade for Full-Thickness Macular Holes of Different Etiology – Is It Still Relevant? [Letter]

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Dear editor

Sir,

We have read with great interest the article entitled “Internal Limiting Membrane Peeling and Gas Tamponade for Full-Thickness Macular Holes of Different Etiology – Is it Still Relevant?” by Ruban et al.¹ The authors evaluate 38 eyes of 37 patients with full thickness macular hole (FTMH) who were underwent classic 25-gauge pars plana vitrectomy (PPV) with internal limiting membrane (ILM) peeling and gas tamponade (GT). We would like to thank the authors for their detailed study, and we want to contribute further on the surgical method and complications of GT.

Pars plana vitrectomy with ILM peeling and GT is the key for the management of Stage 2–4 FTMH.² There are several GTs used with different concentrations and application methods. Most surgeons have used these GTs in isovolumetric gas concentrations of 12% perfluoropropane (C3F8) and 20% sulfur hexafluoride (SF6) for better surgical results and intraocular pressure (IOP) control.² The use of these GTs in the higher concentrations can cause severely elevated IOP resulting in optic nerve damage, retinal ischemia, and subsequent visual loss. Almeida et al have evaluated the anatomical and visual outcomes of patients with FTMH who underwent PPV with ILM peeling and 20% SF6 gas tamponade, and found 98% of anatomical closure.³ In addition, they have reported that IOP did not change significantly after the procedure. In the study of Wong et al, it has been stated that after the administration of 30% SF6, 20.4% of the patients experienced an increased IOP above 30 mmHg on the first post-operative day.⁴ On the other hand, Ruban et al have used a different technique for the GT. They have injected 1.5 cc of undiluted SF6 gas into the eye after liquid air exchange. Assuming that the vitreous volume is approximately 4 mL,⁵ it may be stated that 37.5% SF6 GT (1.5 mL of SF6/4 mL of air filled vitreous) could have been injected in to the eye in their study. This concentration is much higher than the non-expansile SF6 concentrations and can cause increased IOP at the post-operative periods. However, Ruban et al have reported only 4 cases of increased IOP, which improved with topical anti-glaucomatous drugs. In our opinion, severely elevated IOP may be encountered in more cases with their technique, depending on the gas delivery method. For injection of undiluted SF6, an infusion line or a trocar can be used. The post-operative gas concentration may be lower when using the trocar due to possible undiluted SF6 leakage. Conversely, using the infusion trocar may result in a higher gas concentration due to no leakage of undiluted SF6. However, Ruban et al have not specified their method used in their study. Therefore, we are curious about the surgical method of the authors in terms of undiluted SF6 administration. In addition, different axial lengths may cause unpredictable SF6 concentrations postoperatively. Also, increased IOP may be seen more frequently in patients with short axial length in this technique.

Disclosure

The authors report no conflicts of interest in this communication.

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