

Management of giant retinal tear with vitrectomy and perfluorocarbon liquid as short term tamponade

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Introduction

Retinal detachment associated with giant retinal tear (GRT) represents a surgical challenge due to the increased risk of proliferative vitreoretinopathy, the high risk of retinal slippage as well as the high rate of failure. Perfluorocarbon liquid (PFCL) has been in use for many years and it is an extremely valuable tool in the management of complex retinal detachment. In the context of a retinal detachment associated with GRT it can help unroll the mobile posterior retinal flap. Nevertheless, avoiding retinal slippage when PFCL is removed presents a technical challenge especially in phakic patients with GRT extending more than 180 degrees. Some surgeons prefer to exchange PFCL directly with silicone oil in order to reduce this risk. Even so, silicone oil has been associated with inflammation, cataract formation, high intraocular pressure and other complications. Moreover, “sticky” oil can sometimes form following direct contact of PFCL with silicone oil.

In order to avoid these issues PFCL has been used as short term tamponade in the management of retinal detachment with extensive GRT. We hereby present our experience with this technique.

Case Presentation

The patient was a 45 year male who presented in our Unit complaining of left eye floaters and blurry vision. Past ophthalmic history was remarkable for bilateral pseudophakia and right eye retinal detachment surgery. Left eye visual acuity was 6/12 and on examination vitreous haemorrhage with macula on retinal detachment was noted. The retinal detachment was associated with a GRT extending 210 degrees from 6 to 1 o'clock.

Pars plana vitrectomy (25G) was performed with non-contact wide field system. After core vitrectomy and peripheral vitreous dissection PFCL was used to unroll the retina. Due to the extensive retina flap this manoeuvre was partially successful. 27G Chandelier endo-illumination was subsequently used to allow for bimanual manipulation and unfolding of the retinal flap with the use of forceps. The PFCL bubble was augmented until it filled the vitreous cavity completely. Endolaser was applied at the posterior GRT flap and cryopexy at the GRT edges. 0.5 ml of 100% SF6 were then injected into the vitreous cavity. Ports were removed and all sclerostomies were sutured.

The patient was brought back to the OR after 14 days and underwent 25G pars plana vitrectomy. After PFCL/BSS exchange and internal search by indentation, endolaser and cryopexy were applied for further re-reinforcement of the chorioretinal adhesion. Finally, fluid air exchange was performed.

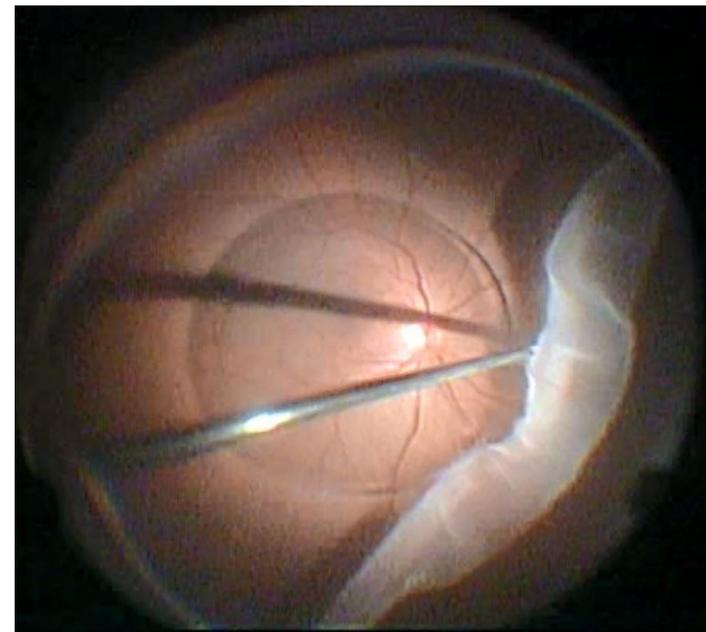


Figure 1. GRT retinal detachment extending 210 degrees

Figure 2. Retinal flap manipulation with PCFL and forceps

Results

Mild anterior chamber inflammation was noted whilst the patient was waiting for the second operation. This was managed with topical steroid drops and NSAID tablets. The inflammation subsided completely after PFCL removal.

Visual acuity improved to 6/6 and the retina remained flat under no tamponade at his last visit three months after the initial operation. No slippage was noted.

Discussion

PFCL has traditionally been used as an intraoperative tool for the management of complex retinal detachment. There are few reports in the literature that describe the use of PFCL as short term tamponade for the management of retinal detachment associated with GRT (1-2). We believe that this technique is advantageous as it is technically less demanding and has a shorter learning curve. Moreover, it prevents retinal slippage which is not uncommon during PFCL/air exchange especially in phakic eyes. The British Giant Retinal Tear Epidemiology Eye Study (3), which was published in 2010, showed that PFCL was used only intraoperatively and although almost 65% of the cases had no PVR silicone oil was used as primary tamponade in nearly 80%. The described two-step approach bypasses the use of silicone oil and prevents SO-related complications such as unexplained vision loss. This is especially relevant in eyes with good visual potential i.e. macula on retinal detachment without PVR as in our case. Finally, the use of PFCL as short term tamponade may possibly reduce the risk of inferior PVR and re-detachment.

References: 45 pt

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Link for video

<https://youtu.be/Eso9kTu4occ>



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