

Short-term postoperative perfluorocarbon liquid-silicone oil combination tamponade for chronic rhegmatogenous retinal detachment: Initial experience

Sir,

We intend to share our initial experience evaluating the efficacy and safety of short-term postoperative perfluorocarbon liquid-silicone oil (PFCL-SO) combination tamponade for

chronic rhegmatogenous retinal detachment (RRD) and advanced proliferative vitreoretinopathy (PVR) changes. All the patients underwent 23-gauge pars plana vitrectomy, posterior vitreous detachment induction, vitreous base shaving, pre- and subretinal PVR membrane removal, internal limiting membrane peeling, endolaser, and PFCL-SO tamponade (PFCL till ora serrata, and rest with 1000-centistoke SO). The second stage of the surgery was performed after 2 weeks with PFCL-SO removal, multiple fluid-air exchanges, and a postoperative tamponade (5000-centistoke SO).

The mean age of eight patients (eight eyes) was 43.4 ± 10.1 years. The mean duration of symptoms was 3.6 ± 2.5 months. Two

Table 1: Details of the patients who underwent two-stage surgery with short-term postoperative perfluorocarbon liquid-silicone oil combination tamponade for chronic rhegmatogenous retinal detachment

Age/ Gender	Present BCVA	Lens status	PVR Grade	Other Present CF	Retine-ctomy	SOR	Anat Outcome	Final BCVA
36/M	20/600	Phakic	CA4	-	Inferior 6-o'clock hour	Yes	Attach	20/120
42/F	HMCF	Pseudo-phakic	CP3	-	No	No	Attach	20/80
47/M	HMCF	Pseudo-phakic	CA6	-	Inferior 6-o'clock hour	Yes	Attach	20/200
38/M	HMCF	Phakic	CA8	-	No	Yes	Attach	HMCF
60/F	HMCF	Pseudo-phakic	CA2	-	No	No	Attach	20/200
45/F	HMCF	Phakic	CA	Massive 360° CDs	Inferior 3-o'clock hour	No	Attach	20/300
27/M	FCCF	Phakic	CA6		No	Yes	Attach	FCCF
52/M	FCCF	Aphakic	CA3	MMD, My MH	Inferior 4-o'clock hour	No	Posterior pole detached	FCCF

Present BCVA=Presenting best-corrected visual acuity, PVR=Proliferative vitreoretinopathy, Present CF=Presenting clinical features, SOR=Silicone oil removal, Anat Outcome=Anatomical outcome, HMCF=Hand movement close to face, FCCF=Finger counting close to face, CD=Choroidal detachment, MMD=Myopic macular detachment, My MH=Myopic macular hole

eyes had already undergone an unsuccessful vitreoretinal surgery elsewhere for RRD. The presenting BCVA was logMAR 2.39 ± 0.39 (Snellen equivalent: finger counting). The presenting clinical features of all the patients are highlighted in Table 1. Relaxing retinectomy was required in four eyes (50.0%). The mean duration of postoperative PFCL-SO combination tamponade was 15.9 ± 2.4 days. The retina was attached in all the eyes during the second stage of surgery.

The retina was completely attached in 87.5% of eyes after 6 months of follow-up. Four eyes underwent successful SO removal (SOR) till the end of the study, while SO was still *in situ* in the other four eyes. Three patients were advised SOR; however, they did not undergo it, while one patient was advised to avoid SOR due to recurrent posterior pole RD under oil. The retina remained attached in all these eyes even after SOR. BCVA improved to logMAR 1.47 ± 0.79 (Snellen equivalent: 20/590). Visual improvement was seen in 62.5% of eyes, while the rest retained their preoperative vision. Five (62.5%) eyes developed BCVA $\geq 20/200$.

Three patients developed intraocular pressure rise, which was well controlled with topical antiglaucoma medications. Complications such as postoperative retained PFCL, exaggerated inflammation, posterior synechiae formation, granulomatous precipitates on the intraocular lens, corneal decompensation, macular changes, optic atrophy, or intractable IOP rise were not seen in any patient.

The anatomical and functional success rate (final BCVA $\geq 5/200$) of eyes with advanced PVR changes undergoing conventional surgery has been reported to be 45%–85% and 26%–67%, respectively.^[1-4] Enders reported that the relative risk ratio for recurrent detachment in the presence of preoperative PVR changes was 1.46, while 3.5% of eyes developed ≥ 2 recurrent detachments, and SO had to be left *in situ* in 3.7% of eyes.^[5]

The anatomical and visual success rate of eyes undergoing a two-stage surgery has been reported to be 76%–93.3% and 46.7%–86.6%, respectively, while SO had to be retained *in situ* in 32.8%–52.9% of eyes.^[6-14]

Although there is a potential risk of inflammation and raised IOP, the good anatomical and visual success as well as the lack of clinically apparent toxicity seen in the pilot study shows that the two-staged surgery with short- to intermediate-term PFCL-SO combination tamponade is a safe and effective approach for the management of chronic RRD

with advanced PVR changes. The combination prevents direct oxidative damage to the retina as SO engulfs the PFCL bubble and prevents direct PFCL-retina contact. However, there is no study to date to prove the superiority or inferiority of the novel PFCL-SO sandwich technique over the conventional technique.

Acknowledgement

We thank Dr Naresh Babu for teaching us the technique and inspiring us to write the manuscript.

Financial support and sponsorship: Nil.

Conflicts of interest: There are no conflicts of interest.

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Quick Response Code:	Website: https://journals.lww.com/ijo
	DOI: 10.4103/IJO.IJO_1879_23

Cite this article as: Nandhakumar OR, Khare G, Kohli P. Short-term postoperative perfluorocarbon liquid-silicone oil combination tamponade for chronic rhegmatogenous retinal detachment: Initial experience. *Indian J Ophthalmol* 2024;72:1224-6.

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