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BRIEF COMMUNICATION

Temporising pneumatics for the initial management of rhegmatogenous retinal detachment

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There is current debate about the timing of fovea-involving rhegmatogenous retinal detachment (RRD) amongst vitreoretinal surgeons and ophthalmic departments across Europe. Traditionally, urgency of treatment has been determined by whether the macula is attached or not preoperatively. Yorston et al. recently demonstrated in a large series of 2074 eyes that a macula-off time of under 72 h may be the most important modifiable risk factor impacting visual recovery [1]. However, within this 72 h period, patients with foveal detachment have good visual outcomes, with Williamson et al. demonstrating a median final visual acuity (VA) of 6/9 [2]. Early foveal-sparing superotemporal RRD is the most likely to progress to macula-off and shows the highest primary surgical success rates, promoting this group as an immediate priority. Furthermore, RRD is liable to convert from macula-on to macula-off intraoperatively, so prioritizing patients based solely on preoperative foveal involvement may not be appropriate [3].

In some centres without out-of-hours cover, vitreoretinal surgery for such patients may be difficult to achieve consistently within 72 h of presentation. "Temporising pneumatic" retinopexy is an adjunct procedure for RRD repair that can be performed easily in clinic to improve visual outcomes whilst allowing time for definitive surgery to be scheduled. Intravitreal injection of gas tamponade can be performed in a clinical room without requiring theatre space. Choice of gas includes air, sulfur hexafluoride (SF_6), hexafluoroethane (C_2F_6), and perfluoropropane (C_3F_8). The aim of this temporising measure is to reduce the risk of macular involvement in macula-on RRD or shorten the duration of foveal detachment.

Felfeli et al. performed this technique prior to pars plana vitrectomy (PPV) in 109 eyes with multiple, large and/or inferior RRDs, and achieved a 95% anatomical success rate over a median follow-up period of 177 days and a final VA of 20/50 or better in 65% [4]. The authors postulate that temporising pneumatic retinopexy provides a more gradual, physiological resorption of subretinal fluid than that achieved by manual drainage during PPV without preoperative gas. This may facilitate subsequent vitrectomy through less mobile RRDs, better visibility of flattened breaks for lasering, and reduced reliance on posterior retinotomies [4].

The PIVOT trial randomized 176 patients with RRD to receive either pneumatic retinopexy or PPV. The former group had superior EDTRS VA at 3 months (78.4 ± 12.3 letters vs 68.5 ± 17.8 letters) and 6 months (79.2 ± 11.1 letters vs 68.6 ± 17.2 letters), less vertical metamorphopsia and reduced morbidity (16% vs 65% required cataract surgery in 12 months). However, the PPV group achieved better primary anatomical success at 12 months (93.2%) than the pneumatic group (80.8%) [5]. The sequential use of both techniques in Felfeli et al's series may have contributed to their overall impressive functional and anatomical success.

In our centre, we have undertaken temporising pneumatics to manage urgent cases presenting in situations with limited theatre and staffing capacity, with excellent results in simple and complicated RRD. This process may be of benefit to any ophthalmologist in stretched healthcare settings where definitive treatment within 72 h is not possible.

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AUTHOR CONTRIBUTIONS

MD wrote the article. AC was supervising author.

COMPETING INTERESTS

The authors declare no competing interests.

ADDITIONAL INFORMATION

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