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VITRECTOMY WITH AIR TAMPONADE FOR RETINAL DETACHMENT REPAIR: 5 YEARS EXPERIENCE

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Rhegmatogenous retinal detachment (RRD) repaired by Pars Plana Vitrectomy (PPV) and gas-tamponade (GT) have significant clinical and quality-of-life impacts on patients compared to short acting air-tamponade (AT). With AT, most authors minimise cryotherapy use due to prolonged chorio-retinal scar formation and utilise perfluorocarbon to maximise sub-retinal fluid drainage. As these additional steps deviate from traditional surgical technique, this discourages popularisation of AT.

Prospective 60-month, single-centre, single-surgeon study from February 2020-January 2025 of all primary RRD cases. For the AT group, the Pneumatic Retinopexy vs. Vitrectomy for Retinal Detachment Trial inclusion and exclusion criteria was used, otherwise patients were assigned to GT or silicone oil.

508 patients were enrolled:102(20.1%) receiving AT and 359(70.7%) receiving GT. Remaining 47 (9.3%) cases received silicone oil. The primary success rate of AT:97(95%) and GT:340(94.7%), and 99% & 98.3% final success respectively. Cryopexy was utilised in AT:64% and GT:58%. Cataract surgery was required less when AT was used (20 out of 70 phakics [28.6%]) than when GT was used (126 out of 229 phakics [55%]) at sixth month post-operatively. AT was used in 43% of primary macula-on RRD and 20.1% of all primary RRD. GT equated to 73.33kg CO_2 emissions, and would increase 2.4-fold without AT use.

AT has comparable anatomical success, visual outcomes, and complication rate to GT with conventional vitrectomy techniques (using cryopexy and no PFCL use); with faster post-operative rehabilitation enabling swift return to normal daily activities compared to GT.

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