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PNEUMATIC VITRECTOMY

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To present a novel technique—pneumatic vitrectomy—as a method for preoperative stabilization of retinal detachment and macular reattachment, while reducing surgical time and intraoperative complications.

This retrospective study from two surgical centers includes 78 eyes diagnosed with predominantly superior retinal detachment. Due to high surgical workload, same-day surgery was not feasible in these cases. As a bridging measure, a small volume (0.3–0.5 ml) of pure C3F8 gas was injected preoperatively to stabilize the detached retina and facilitate macular reattachment, minimizing the risk of detachment progression or photoreceptor damage.

Patients underwent pars plana vitrectomy several days later, with treatment of retinal breaks using endolaser or cryopexy and the application of a tamponade agent.

Preoperative retinal flattening was achieved in 87% of cases. Intraoperative complications were minimal, attributed to improved retinal stabilization. The office-based preoperative intervention was well tolerated, with no significant adverse events or patient risk.

Pneumatic vitrectomy represents a promising approach for managing superior retinal detachments when same-day surgery is not possible. This technique prevents further detachment, enhances visual outcomes, and reduces operative time and complications. It is particularly recommended for high-volume centers facing surgical delays.