# Commentary: Fibrin sealant for temporary retinopexy

Retinal detachment (RD), uncomplicated by proliferative vitreoretinopathy (PVR) was primarily treated with scleral buckling, the current flavor being vitrectomy. Vitrectomy necessarily requires the use of a tamponading agent, most common being gas in RDs without PVR. The disadvantage of gas tamponade of an inferior RD is the need to maintain a face-down/lateral position for a period of time, the other being delayed visual rehabilitation while waiting for the gas to absorb. In patients who cannot maintain the prescribed position may need silicone oil tamponade, with its attendant disadvantages of another surgery to remove the oil, silicone oil glaucoma, and delayed visual rehabilitation. Pneumoretinopexy is a simpler procedure with the caveat being its inability to treat retinal breaks in the inferior 4 o'clock hours.

The authors in this study report the use of fibrin glue for temporary closure of the retinal break.[1] The idea of using glue to close the retinal break is not novel, the earliest report dating back to the 1950s and 1960s.[2,3] Renewed interest in using glue to close the retinal break is possibly linked to recent trend of RD primarily being treated with vitrectomy than with scleral buckling. Glues are unlikely to reach the retina or stay on its surface in a non-vitrectomized eye.

Using a glue to close the retinal break offers some advantages:

1. The absence of tamponade induced refractive change can result in earlier visual rehabilitation
2. Post-operative positioning is avoided thus allowing one to treat patients who cannot maintain position for systemic reasons. Maintaining post-operative position can be difficult even for able bodied individuals and avoidance of the same using glue would be welcome
3. Additional surgery to remove silicone oil would be avoided
4. The closure of the break completely with the glue will also prevent migration of the retinal pigment epithelium in to the vitreous cavity in the post-operative period; this can result in lesser incidence of PVR, but this of course remains to be proven in larger, long-term studies
5. Lesser incidence of cataract in the absence of a long-term intravitreal tamponade.

While the technique described by the authors sounds promising, we need to exercise caution as the study has been performed on a small sample size with a short follow-up. The limitations of this technique as mentioned by the authors and as I see it are:

1. It has been used to treat simple cases without PVR, the ones that can also be managed by scleral buckling. Scleral buckling also would allow earlier rehabilitation, no additional surgery to remove the tamponade or increased risk of cataract. Of course scleral buckling would induce a refractive error. While it remains to be seen if it can be used in eyes without PVR, I would think the role of glue obviating the need for long-term tamponade would be rather limited in these cases. Precise application of the glue over multiple breaks or retinectomy edges would be challenging and if there were residual folds over which the glue flows, it can result in a retino-retinal adhesion as well
2. Visualization through air can be tricky and to precisely place the tiny amounts of two components of the glue at the break without letting it spread to adjacent areas/posterior pole can be a challenge. Coloring the glue may aid better visualization and its placement at the break
3. While fibrin sealant has been used in few cases of optic disc pit maculopathy and morning glory associated RD, long-term toxicity/result of using intravitreal glue are yet to be understood[4,5]
4. Anaphylactic reaction to aprotinin in the fibrin sealant has rarely been reported (when used elsewhere in the body), the risk being higher with repeat exposure[6]
5. Considering that the glue is produced out of human biological components, there is a rare possibility of transmission of slow viral diseases
6. We need to factor in the additional cost of the glue into the surgical cost
7. A thorough vitrectomy would be necessary as the presence of vitreous gel may not allow the glue to occlude the break adequately
8. A thorough fluid air exchange would also be preferable to disallow slippage of the glue before adhesion.

We look forward to further elucidation by the authors and others by means of larger controlled studies of the use of glue to seal the retinal breaks. There would be a learning curve, but then it would be an useful technique in at least a subset of patients with simple rhegmatogenous RD.

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**Quick Response Code:**

**Website:** www.ijo.in

**DOI:** 10.4103/ijo.IJO_67_19

**Cite this article as:** Shanmugam PM. Commentary: Fibrin sealant for temporary retinopexy. Indian J Ophthalmol 2019;67:682-3.