Outcome of relaxing retinectomies in management of failed rhegmatogenous retinal detachment surgery cases with proliferative vitreoretinopathy changes

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To the Editor:

The more aggressive Proliferative Vitreoretinopathy (PVR) changes that ensue after failed retinal detachment (RD) surgeries often need relaxing retinotomies/retinectomies (RR) to achieve anatomical success after the surgery. The technique involves excision of the contracted retina, usually in the peripheral area to facilitate the attachment of normal retina, supported by suitable internal tamponade. We aim to find out the outcomes of peripheral RR in recurrent rhegmatogenous RD cases as very few studies have exclusively studied the role of RR in this subset of patients.

We retrospectively obtained the records of patients who underwent RR in re-surgery following failed primary surgery for rhegmatogenous RD in Aravind Eye Hospital, Coimbatore. Outcomes were evaluated in terms of anatomical re-attachment, functional improvement of vision and complications.

The study included 30 patients of 8 to 80 years age range. 18 (60%) cases had PVR grade C changes at the time of presentation. Most of the patients ($n = 20$, 67%) had visual acuity of hand movement or less before the primary surgery. All of the patients underwent pars plana vitrectomy with two patients having additional scleral buckling as primary procedure. The RR surgery was performed within 15 days in five patients (16.7%), within 3 months in 20 cases (66.7%) and after 3 months in 5 cases (16.7%). At the end of 1 year, 27 (90%) cases had attached retinas as shown in Table 1. The success rate of RR in similar

studies is 72–93% [1–3]. Single RR surgery was successful in 50% ($n = 15$) of cases and another 44.4% ($n = 12$) cases with anatomical success needed additional 1.2 surgeries after RR. 17(56.7%) cases had improvement of vision and eight cases had stable vision after RR. The visual benefits of RR surgery have also been documented in other studies [1–4].

16 (53%) patients underwent silicon oil removal by the end of one year. A total of 10 eyes (33%) had one or more complications in this study. Hypotony defined as IOP < 8 mm Hg ($n = 5$, 16.7%) was the most common complication followed by keratopathy (13.3%) and postoperative epiretinal membrane formation (6.6%). All patients with hypotony had poor postoperative visual acuity of 1/60 or less. The area of RR had no clinically significant association with postoperative hypotony, as also reported by Tseng et al. [5].

We combined anatomical and functional success to grade overall surgical success as shown in Table 2. Smaller size of RR (Pearson correlation coefficient = 0.371, $p < 0.05$) and silicon oil removal by one year (Pearson Correlation Coefficient = 0.485, $p < 0.05$) were found to have statistically significant association with overall surgical success. Lesser size of RR and early silicon oil removal might also indicate less severe disease process, resulting in greater success. PVR changes before first surgery, tamponade used in primary surgery and the number of surgeries performed before RR had no significant association with the overall success.

Our study shows that RR can be useful to manage recurrent RD cases when conservative management fails to work. Further studies on the outcomes of RR in real clinical scenarios can help to alleviate apprehension about RR among vitreoretinal surgeons.

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Table 1 Area of RR and anatomical success.

RR Position	Retina status			Clock hour of RR	Retina status		
	Attached	Detached	Total		Attached	Detached	Total
Superior	2	0	2	<90	14	2	16
Inferior	18	3	21	90-180	3	0	3
Temporal	1	0	1	>=180	4	1	5
360	6	0	6	360	6	0	6
Total	27	3	30		27	3	30

Table 2 Grading of Overall success of RR surgery.

Grading	Name of the grade	Description	No. of cases (%)
1	Good outcome	Attached retina + VA greater than or equal to 6/60	12 (40%)
2	Borderline outcome	Attached retina + VA less than 6/60 and greater than or equal to 3/60	3 (10%)
3	Poor Outcome	Attached retina + VA less than 3/60	12 (40%)
4	Failure	Detached retina	3 (10%)

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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