

## Macular internal limiting membrane peel for eyes undergoing vitrectomy for retinal detachment: Rationalizing selection based on the severity of proliferative vitreoretinopathy

Dear Editor,

Internal limiting membrane (ILM) peeling is often considered essential while managing eyes with rhegmatogenous retinal detachment (RRD) to reduce the risk of postoperative epiretinal membrane (ERM) formation and recurrent RRD.<sup>[1-4]</sup> However, it is important to know whether ILM peeling reduces the formation of symptomatic ERM's and helps to improve visual outcomes across the spectrum of RRD's with and without significant proliferative vitreoretinopathy (PVR). To determine the effectiveness of ILM peeling in reducing the incidence of ERM formation for RRD with and without proliferative vitreoretinopathy (PVR), we compared the anatomical and visual outcomes in a retrospective cohort. We reviewed all consecutive cases of primary RRD operated between November 2016 and December 2017 who underwent PPV with silicone oil tamponade and completed a minimum follow-up of 6 months. The PVR was graded as per the modified Retina Society classification and PVR  $\geq$ C1 was considered as significant PVR.<sup>[5]</sup> The need for performing ILM peeling was based on the surgeon's personal experiences and intraoperative judgment. We looked for the difference in the incidence of ERM in eyes that underwent ILM peeling as compared to those without ILM peel. We also looked for the differences in visual outcomes between the two groups at 6 months. Out of the 83 eyes qualifying our inclusion criteria, ILM peeling was performed in 41 eyes (group A), while 42 eyes did not undergo ILM peeling (group B). The patient demographics, time to presentation, and baseline clinical features were compared between the groups [Table 1]. The mean time to silicone oil removal was comparable between group A (3.6 months) and group B (3.2 months) ( $P=0.21$ ). The mean follow-up duration in the study population was 9.08

months, in group A it was 8.68 months and in group B it was 9.42 months. An ERM developed in 13/83 eyes (16%), out of which two eyes (5%) belonged to group A while 11 eyes (26%) belonged to group B ( $P < 0.05$ ). Interestingly, among eyes in group B, a greater number of eyes presenting with significant PVR developed ERM ( $n = 4/7$ , 57.14%), compared to eyes with less significant PVR ( $n = 7/35$ , 20%). The odds for developing ERM in eyes with surgically significant PVR was 5.52. The improvement in corrected distance visual acuity (CDVA) at 6 months was found to be significant for both group A (LogMAR  $1.08 \pm 0.15$ ) and group B (LogMAR  $1.12 \pm 0.18$ ) ( $P < 0.05$ ); and was comparable between the two groups ( $P = 0.21$ ). The mean CDVA of the eyes developing ERM dropped from 1.02 LogMAR to 1.20 LogMAR in group B. However, 7 of the 11 eyes in group B which developed ERM showed no deterioration of vision by the last follow-up (11 months). The eye without ERM had better final visual acuity (LogMAR 1.08) as compared to those with ERM (LogMAR 1.31); however, this was not statistically significant. Similarly, although the rate of retinal redetachment was found to be statistically insignificant, 7.31% in group A and 11.9% in group B. ( $P=0.47$ ), more eyes in group B had redetachment than group A [Table 2].

In corroboration to previous studies,<sup>[6,7]</sup> our data also showed a higher incidence of postoperative ERM in eyes with PVR  $\geq$ C1. What we also found was that ILM peel led to a greater reduction in the risk of ERM formation in eyes with significant PVR, suggesting beneficial effects of additional ILM peel in this subgroup. The advantage of ILM peel in eyes with PVR has been demonstrated by Forlini *et al.* who showed a reduction in risk of ERM formation by 75% in the cases undergoing ILM peel.<sup>[8]</sup> The higher propensity to develop ERM in these eyes was probably due to an exaggerated fibroglial response with additional factors such as size and number of breaks also playing a contributory role. Unlike the majority of the studies that excluded cases with preexisting PVR, we included and classified the PVR subgroups that helped us elucidate their outcomes with or without ILM peel. Although limited by retrospective nature and small sample size, the results of our study give a good basis for designing a prospective randomized controlled trial that can provide further insights into the role

**Table 1: Characteristics of the patients who underwent peeling (group A) or nonpeeling (group B) with vitrectomy for rhegmatogenous retinal detachment**

	Overall (83)	Group A (41)	Group B (42)	P
Age (years)	54.54±12.63	52.88±13.58	56.17±11.58	0.237
Sex (male/female)	48/35	20/21 (49%/51%)	28/14 (67%/33%)	0.154
Mean duration of presentation (days)	28.46 (Range 2-180)	27.83 (Range 3-90)	29.07 (Range 2-180)	0.265
CDVA (LogMAR±SD)	2.14±0.21	2.15±0.18	2.13±0.23	0.189
CDVA at 6 months	1.10±0.19	1.08±0.15	1.12±0.18	>0.05
PVR ≥C-1	16/83 (19%)	9/41 (22%)	7/42 (17%)	0.298
Extent of RD (≥ 180°)	78/83 (94%)	39/41 (95%)	39/42 (93%)	0.542
Median No. of breaks	1	1	1	

Group A: Internal limiting membrane peel group; Group B: No internal limiting membrane peel group; CDVA: corrected distance visual acuity; PVR: Proliferative vitreoretinopathy; RD: Retinal detachment

**Table 2: Comparison of anatomical parameters between the two groups during the 6-month follow-up**

	Overall (83)	Group A (41)	Group B (42)	P
ERM	13 (16%)	2 (4.87%)	11 (26.19%)	0.007
Macular edema	5 (6.02%)	2 (4.87%)	3 (7.14%)	0.66
Redetachment	8 (9.63%)	3 (7.31%)	5 (11.90%)	0.47
Macular hole	1 (1.20%)	0 (0%)	1 (2.38%)	-

Group A: Internal limiting membrane peel group; Group B: No internal limiting membrane peel group; ERM: Epiretinal membrane

of ILM peeling in RRD. To conclude, the adjunctive use of ILM peeling during vitrectomy for RRD decreases the risk of ERM formation in eyes with and without PVR, with maximum benefit being observed in eyes with preexisting PVR greater than C1.

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#### Conflicts of interest

There are no conflicts of interest.

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