

# RETINAL DISPLACEMENT AFTER SCLERAL BUCKLE VERSUS COMBINED SCLERAL BUCKLE AND VITRECTOMY FOR THE MANAGEMENT OF RHEGMATOGENOUS RETINAL DETACHMENT: ALIGN SB VS PPV-SB

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## INTRODUCTION

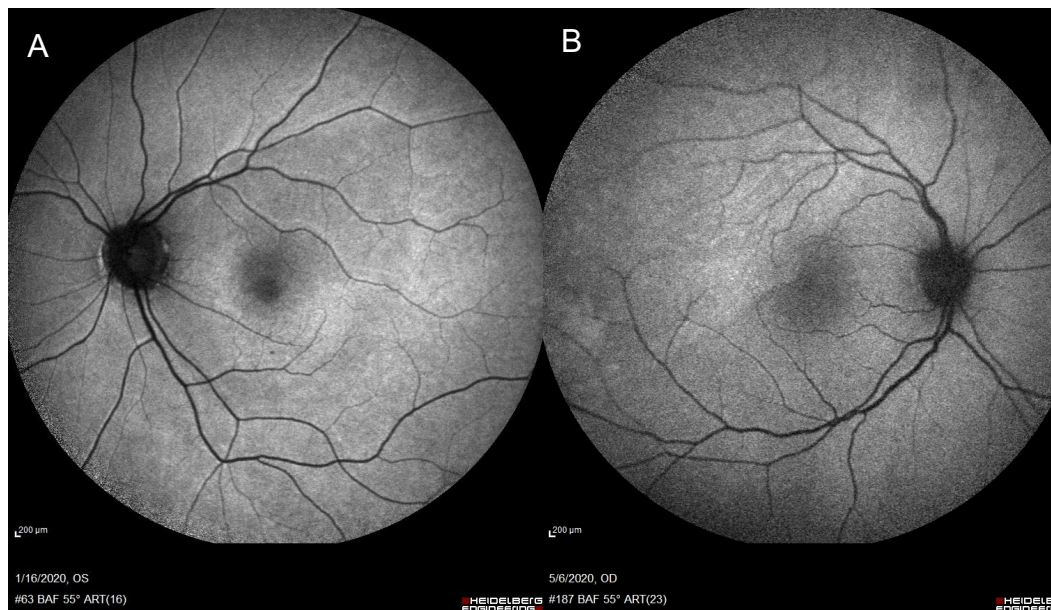
- Low-integrity retinal attachment (LIRA) is characterized by retinal displacement on fundus autofluorescence (FAF) imaging
- Recent evidence<sup>1,2</sup> suggests LIRA occurs more commonly with pars plana vitrectomy (PPV) compared to RPE-pump based procedures such as pneumatic retinopexy.
- We set out to assess the risk of LIRA following RRD repair with scleral buckle (SB), an RPE-pump based procedure, versus combined PPV-SB.

## METHODS

- Multicenter prospective non-randomized comparative trial
- **Inclusion:** Patients (age >18 years) presenting with primary macula-off RRD undergoing SB or PPV-SB
- **Exclusion:** Patients with significant media opacity or proliferative vitreoretinopathy grade B or worse; poor quality ungradable FAF images
- All patients had FAF and assessment of functional outcomes, with FAF assessed for LIRA by two masked graders
- Statistical analysis included Pearson Chi-Square test, odds ratio for displacement, multivariable logistic regression, kappa between graders, and Mann Whitney U test
- **The primary outcome was the risk of LIRA following SB vs. PPV-SB**

## REFERENCES

1. Francisconi CL, Marafon SB, Figueiredo NA, Juncal VR, Shaikh S, Bhambra N, Kim DT, Brosh K, Qian J, Chaudhary V, Berger AR. Retinal displacement after pneumatic retinopexy versus vitrectomy for rhegmatogenous retinal detachment (ALIGN). *Ophthalmology*. 2022 Apr 1;129(4):458-61.  
 2. Lee WW, Bansal A, Sarda S, Sarraf D, Berger AR, Wong DT, Kortjes PJ, Kohly RP, Hillier RJ, Muni RH. Outer Retinal Folds Following Pars Plana Vitrectomy vs Pneumatic Retinopexy for Retinal Detachment Repair: Post Hoc Analysis from PIVOT. *Ophthalmology Retina*. 2021 Sep 11.



**Figure 1:** Retinal vessel printing/LIRA following PPV-SB (A). No retinal vessel printing following SB (B).

## LIRA following SB and PPV-SB (p=0.09)

	SB	PPV-SB
LIRA (Displaced)	6 (17.6%)	19 (38.8%)
Non-LIRA (No Displacement)	28	30
Total	34	49

## RESULTS

- **Enrollment:** Eighty-three eyes of eighty-three patients were enrolled and had gradable FAF images. 40.96%(34/83) underwent SB and 59.03%(49/83) underwent PPV-SB.
- **Grader Agreement:** Substantial agreement between the two graders in detecting LIRA (85.5%, Kappa=0.629(95%CI=0.439-0.819).
- **Baseline characteristics:** younger phakic patients in the SB group and patients with more extensive detachments in the PPV-SB group.
- **LIRA (Displacement):** 17.6%(6/34) of patients had LIRA in the SB group vs. 38.8%(19/49) in the PPV-SB group (p=0.039 with Chi-Square). The association between LIRA and procedure type remained statistically significant after a multivariable logistic regression adjusting for gender, lens status, extent of retinal detachment in quadrants and baseline logMAR visual acuity, with an **odds of retinal displacement of 3.875(95% CI=1.18-12.723, p=0.026) in the PPV-SB group vs. the SB group.** There were no statistically significant differences in functional outcomes between the two groups.

## DISCUSSION

- SB, an RPE-pump based procedure, is associated with less retinal displacement/LIRA compared to PPV-SB. There were no significant differences in functional outcomes between the groups.