INTRODUCTION

Low-integrity retinal attachment (LIRA) is characterized by retinal displacement on fundus autofluorescence (FAF) imaging. Recent evidence 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

REFERRENCES


RESULTS

- Enrollment: Eighty-three eyes of eighty-three patients were enrolled and hadgradable 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 detachment 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.

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

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<tr>
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<th>SB</th>
<th>PPV-SB</th>
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<tbody>
<tr>
<td>LIRA (Displaced)</td>
<td>6 (17.6%)</td>
<td>19 (38.8%)</td>
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<tr>
<td>Non-LIRA (No Displacement)</td>
<td>28</td>
<td>30</td>
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<tr>
<td>Total</td>
<td>34</td>
<td>49</td>
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Figure 1: Retinal vessel printing/LIRA following PPV-SB (A). No retinal vessel printing following SB (B).