The effectiveness of Arthroscopically Inserted Onlay Bioinductive Implant On Revision Rotator Cuff Repair in Workers Compensation Patients: A Case Controlled Cohort Study with Minimum 2 year Follow-Up

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INTRODUCTION: Retear following rotator cuff repair is relatively common. Onlay biological grafts offer a potential solution, as a source of additional healing. The purpose of this study was to determine whether the addition of an onlay bioinductive implant would improve repair integrity and examiner-measured and/or patient-rated shoulder function at 2+ year post revision arthroscopic rotator cuff repair in workers' compensation patients. We hypothesised that the addition of the onlay bioinductive implant in arthroscopic revision rotator cuff repairs would improve repair integrity and functional outcomes at minimum two years follow up compared to standard repair.

METHODS:

A post hoc matched-cohort study was conducted on prospectively recruited workers' compensation patients who had revision rotator cuff repair with an onlay bioinductive implant (Regeneten bioinductive implant) (n=16). The control group were workers' compensation patients who had revision rotator cuff repair without the bioindictive implant and was matched for age and tear size (n=24). Kaplan-Meier curves were used to compare the primary outcome of repair integrity.

RESULTS:

No adverse effects with the bioinductive implant were identified. The retear rate in the bioinductive implant group was 50% (8/16) compared to 38% (9/24) in the control group at minimum 2 year follow up (P = 0.522). There were no significant differences in patient-rated or examiner-measured outcomes between the groups at a median of 2.3 years follow up.

DISCUSSION AND CONCLUSION:

Our previous study indicated the addition of a biological patch to revision rotator cuff repair offered no advantage at 6 months. This study amplifies those findings and shows that revision rotator cuff repairs continue to fail from 6 months (16%) to 2+ years (50%), with the onlay bioinductive implant having no additional benefit to the longer term health of the repair in this difficult population.

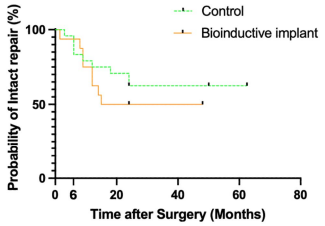

Figure 3. Kaplan-Meier survival estimates of revision rotator cuff repair in the bioinductive implant and control groups.

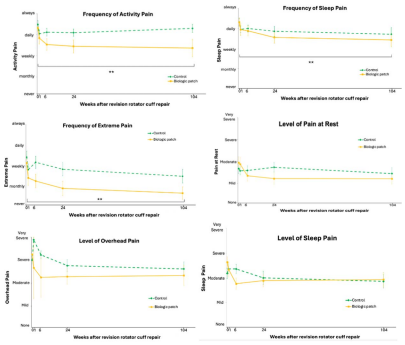

Figure 4. Frequency and Level of pain in bioinductive group and control group.
Significant difference between groups: * P< 0.05, ** P< 0.01,*** P< 0.001 (Mann-Whitney U test). Data is presented as mean ± SEM

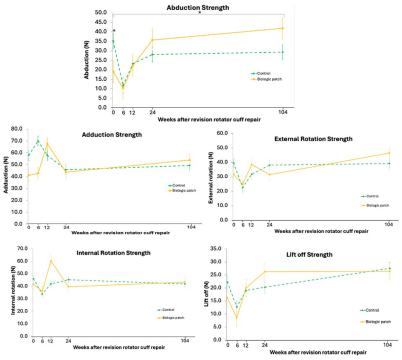

Figure 6. Shoulder strength in the bioinductive implant and control group. Significant difference between groups: * P< 0.05, ** P< 0.01,*** P< 0.001 (Mann-Whitney U test). Data is presented as mean ± SEM.