

## **Arthroscopic Bankart Repair with and without Arthroscopic Infrapinatus Remplissage in Anterior Shoulder Instability with Hill-Sachs Defect: Randomized Controlled Trial**

**P.B. MacDonald, J. Old, R. Mascarenhas, S. Prabhakar, S. McRae, Jonathan Marsh, J. Dubberley, G. Stranges, J. Leiter, P. Lapner**

**Purpose:** The purpose of this prospective randomized, double blinded controlled trial was to compare patient-reported outcomes and clinical results between arthroscopic Bankart repair with and without arthroscopic infrapinatus remplissage in patients with anterior shoulder instability with a Hill-Sachs lesion. Failure to recognize and address large Hill Sach's defects during arthroscopic stabilization surgery for glenohumeral instability is known to lead to high rates of recurrence. Arthroscopic remplissage has evolved in recent years as a reproducible technique with a proposed benefit of decreased dislocations. However, there are no high level clinical studies to conclusively support its efficacy in reducing redislocations.

**Method:** A hundred and four patients, aged 14 years and older, with a confirmed Hill Sach's lesion on ultrasound, CT or MRI, were randomized intraoperatively after confirming an engaging Hill Sach's lesion to either undergo arthroscopic infrapinatus remplissage (REMP) or no remplissage during arthroscopic Bankart repair (NO REMP). Exclusion criteria included a glenoid defect >15% of the AP glenoid diameter, significant shoulder arthropathy, infection, or medical comorbidities. The primary outcome measure was the Western Ontario Shoulder Instability score (WOSI). Secondary outcomes included the Simple Shoulder Test (SST), the American Shoulder and Elbow Society standardized assessment of shoulder function (ASES), active range of motion, stability tests, and incidence of revision surgery. Study time points were pre-, 3-, 6-, 12-, and 24-months post-operative. Significance level was 0.05.

**Results:** There were 53 patients (45 men, 8 women) randomized to REMP and 52 (46 men, 6 women) patients to NO REMP. The groups were comparable with regard to age, and body mass index (BMI). Both groups demonstrated a similar improvement in all subjective scores over time to 12-months post-operative with no difference between the groups (collection of data to 24-months post-operative is ongoing until 2019). The WOSI, which was the primary outcome measure, improved in REMP from a mean (SD) of 43.1(17.5) preoperatively to 81.1(14.9) postoperatively at 12 months and from 43.0 (21.7) to 79.1 (19.8) in NO REMP. There were no differences between groups at any time point. Similarly the ASES scores improved from 74.1 (18.2) to 89.1 (14.3) in REMP and 69.2 (22.3) to 89.1 (11.5) in NO REMP with the SST score following a similar trend. No differences between groups were found at any time point. Additionally, there were no differences in range of motion between groups. There were 2/53 re-dislocations in REMP postoperatively compared to 6/52 in NO REMP; this difference was not significant ( $p=0.161$ ). There were no differences between groups in reports of limitations in participation in sport attributed to the operated shoulder up to 12-months post-operative.

**Conclusion:** Based on this study, there is no difference in subjective outcome scores and redislocations rates between remplissage and no remplissage for an engaging Hill Sach's lesion while performing arthroscopic Bankart stabilization. As data continues to be gathered to 24-months post-operative including MRI, longer term benefits or drawbacks may become evident.