ISAKOS

International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine

12th Biennial ISAKOS Congress • May 12-16, 2019 • Cancun, Mexico

Paper #11

Arthroscopic Bankart Repair with and without Arthroscopic Infraspinatus Remplissage in Anterior Shoulder Instability with Hill-Sachs Defect: A Randomized Controlled Trial

Peter B. Macdonald, MD, FRCS, Dip Sport Med, CANADA
Jason A. Old, MD, FRCSC, CANADA
Randy Mascarenhas, MD, FRCSC, UNITED STATES
Sharad Prabhakar, MS(Orth), INDIA
Sheila Mcrae, PhD, MSc, CANADA
Jonathon Marsh, MD, CANADA
Jamie Dubberley, MD, CANADA
Gregory Adam Stranges, MD, CANADA
James Koenig, MD, CANADA
Jeff Leiter, PhD, CANADA
Peter Lapner, MD, FRCSC, CANADA

Pan Am Clinic/University of Manitoba
Winnipeg, MB, CANADA

Summary:
There is no difference in subjective outcome between Remplissage and no Remplissage for an engaging Hill Sach's lesion with arthroscopic Bankart stabilization. External rotation in an abducted position is less in patients undergoing Remplissage at 12-months post-operative which must be weighed against the non-statistically significant difference in re-dislocations that may have clinical relevance.

Abstract:

Introduction

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 randomized controlled trials to conclusively support its efficacy in reducing re-dislocations. The study objective was to compare subjective outcomes and re-rupture rates between arthroscopic Bankart repair with and without arthroscopic infraspinatus Remplissage in patients with anterior shoulder instability with a Hill-Sachs lesion.

Methods

This is a multi-centre, double-blinded, prospective randomized controlled trial with two parallel groups. Patients with a confirmed Hill Sach's lesion were randomized intraoperatively after confirming an engaging Hill Sach's lesion to either undergo arthroscopic infraspinatus Remplissage (REMP) or no Remplissage (No REMP) during arthroscopic Bankart repair. Randomization occurred between June 2011 and May 2017. Participants were 14 years or older and exclusion criteria were a glenoid defect >15% of AP glenoid diameter or significant shoulder arthropathy, infection, or medical comoribidites. The primary outcome measure was the Western Ontario Shoulder Instability score (WOSI) with a lower score reflecting improved outcome. Secondary outcomes included the Simple Shoulder Test (SST), American Shoulder and Elbow Society assessment of shoulder function (ASES), range of motion (ROM), and re-dislocation rates, assessed at pre-, 3-, 6-, 12-, and 24-months post-operative.

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Results

One hundred and four patients were randomized, 51 to No REMP (45 men, 6 women) and 53 (45 men, 8 women) to REMP with a mean age of 27.6 (8.6). Both groups demonstrated a similar improvement in all function scores over time with no difference between the groups (collection of data to 24-months post-operative is ongoing until Summer 2019). WOSI improved in REMP from a mean (SEM) of 46.9 (2.5) preoperatively to 18.2 (3.5) postoperatively at 24 months ($p<0.001$) and from 56.4 (3.1) to 18.2 (2.7) in NO REMP ($p<0.001$). ASES and SST scores followed a similar trends in both groups ($p<0.001$). There was a significant difference in external rotation in abduction ($p=0.01$) with a mean 86.4° (±10.7) for NO REMP compared to 78.3° ± 11.1 for REMP at 12-months. There were no other differences in ROM identified. There was no difference in re-dislocation rate between the two groups with 7/51(13.7%) re-dislocations in NO REMP versus 4/53(7.5%) re-dislocations in REMP ($p=0.34$) with a relative risk of 1.75 and number needed to treat of 17.7 ($p=0.35$).

Conclusion

There is no difference in subjective outcome between Remplissage and no Remplissage for an engaging Hill Sach's lesion with arthroscopic Bankart stabilization. External rotation in an abducted position is less in patients undergoing Remplissage at 12-months post-operative which must be weighed against the non-statistically significant difference in re-dislocations that may have clinical relevance.