

## Remplissage Versus Modified Latarjet for Off-Track Hill-Sachs Lesions with Subcritical Glenoid Bone Loss

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### Summary:

Both techniques achieve excellent results in the primary setting; remplissage may have higher reoperation rates in the revision setting.

### Abstract:

#### Background:

Off track Hill-Sachs lesions have been associated with high rate of recurrent shoulder instability. Both arthroscopic Bankart with remplissage and modified Latarjet have been described to treat off-track Hill-Sachs lesions. However, few comparative studies exist between the two techniques in heterogeneous populations. The purpose of this study was to examine the outcome of the two procedures in patients with off-track Hill-Sachs lesions with subcritical (<25%) glenoid bone loss.

#### Methods:

Between 2005 to 2015, one hundred eighty-nine patients were identified that had recurrent anterior shoulder instability, off-track Hill-Sachs lesion, and less than 25% glenoid bone loss. Arthroscopic Bankart with remplissage (group A) was performed in ninety-eight patients and modified Latarjet (group B) was performed in ninety-one patients. Surgeries were performed by multiple fellowship trained surgeons at two centers: a large academic center and a large regional health maintenance organization. The mean follow up time was 3.2 years. Patients were assessed for their risk of recurrence using the Instability Severity Index score and had preoperative 3-dimensional imaging to assess humeral and glenoid bone loss, along with measurement of the glenoid track. Single Assessment Numeric Evaluation (SANE), Western Ontario Shoulder Instability Index (WOSI), range of motion, recurrence rate, subsequent procedures and complications were analyzed.

#### Results:

The remplissage group had a higher VAS pain scale (2.2 vs. 1.55,  $p=0.041$ ) and less internal rotation motion in abduction ( $40.9^\circ$  vs  $53.2^\circ$ ,  $p=0.006$ ). Complication rate was higher in the Latarjet group (12.1% vs 1%,  $p=0.002$ ). There was no difference between the two groups in patient reported outcomes such as WOSI and SANE. Additionally, there was no difference between the two groups in revision rate and episodes of recurrent instability.

In sub-group univariate analysis of revision patients, the remplissage group had higher VAS pain (3.6 vs 2.2,  $p=0.001$ ), higher recurrence rate (34.8% vs 10.3%,  $p=0.042$ ), higher revision rate (43.5% vs. 15.4%,  $p=0.019$ ) and lower complication rate (4.35% vs. 28.2%,  $p=0.024$ ). For patients with >15% glenoid bone loss, Latarjet had lower recurrence rate (6.06% vs 28.6%,  $p=0.034$ ) and lower revision rate (3.03% vs. 21.4%,  $p=0.041$ ). In collision and contact athletes, Latarjet had better WOSI scores (138 vs. 231,  $p=0.019$ ) and lower recurrence rate (30% vs. 0%,  $p=0.005$ ). In multivariate analysis, the odds of recurrence in the remplissage group was higher than the Latarjet group in patients with previous instability surgery (3.56,  $p=0.006$ ), collision and contact athletes (2.37,  $p=0.02$ ), 10-15% glenoid bone loss (1.28,  $p=0.04$ ), and >15% glenoid bone loss (6.48,  $p=0.001$ ).

#### Conclusion:

For off-track Hill-Sachs lesions with subcritical glenoid bone loss, both the remplissage and modified Latarjet can achieve excellent clinical results in the general population, with higher complication rate in the Latarjet group. However, Latarjet appears to be a better choice in patients with previous instability surgery, collision and contact athletes, and >10% glenoid bone loss.