

## **Outcome of the influence of remplissage repair on shoulder range of motion after arthroscopic bankart repair**

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### **Abstract**

Recurrent shoulder dislocation can predispose to Hill-Sach's lesion. Failure to address humeral osseous defects during arthroscopic stabilization surgery leads to an increased rate of recurrence. This procedure is not much studied in terms of Range of Motion. To further study it we have done a prospective study of 2 patient populations (arthroscopic Bankart repair alone vs Bankart and remplissage). Main clinical outcome was the range of motion within Minimum follow-up was 2 years while Total Patients in each Group taken was 50. In arthroscopic remplissage, the posterior capsule and infraspinatus are sutured into the humeral head. The rate of recurrence was identical in both groups (6.25%) while the range of movement were significantly more in patients where remplissage repair was done along with bankart repair. When compared with Walch-Duplay score we got excellent result in 45 patients where remplissage repair was done out of 50 patients whereas with remplissage excellent range of movement was only 42 patients out of 50 patients. Our study to have some limitation like Sample size was small. All procedures were performed by the same surgeon. Study included postoperative care and follow-up assessments; therefore, the results of this study may not reflect general surgical outcomes of the procedure. The same operative indications and consistent surgical technique were applied in all patients. The conclusion of the study was its always better to do remplissage along with bankart repair for better result in term of range of movement.

**Keywords:** confrontation, oilseed cultivation, stabilization surgery

### **Introduction**

Arthroscopic repair is being widely used as the first-line treatment in the management of recurrent anterior dislocation. A Hill-Sachs lesion, the posterosuperior humeral head bone defect, has been described a common cause of arthroscopic Bankart repair failure<sup>[1]</sup>. The term, engaging Hill-Sachs lesion, was first used by Burkhart and De Beer<sup>[1]</sup> to describe a defect of the humeral head that was large enough for the edge of the humeral head to drop over the anteroinferior glenoid rim during abduction and external rotation when the arm was at the functional position. Previous studies reported that patients with a huge posterolateral bone loss in the humeral head were not good candidates for arthroscopic Bankart repair because of the risk of repair failure when performed alone<sup>[2]</sup>. In 1972, Connolly<sup>[3]</sup> recommended remplissage procedure, whereby the bone defect is filled by advancing the posterior articular capsule and the infraspinatus muscle tendon, is an augmentation method that may reduce the risk of re-dislocation after Bankart repair in patients with large Hill-Sachs lesions. As a modification of the Connolly's open infraspinatus tenodesis, Wolf and his associates<sup>[4]</sup> introduced arthroscopic Hill-Sachs remplissage in conjunction with Bankart lesion repair. Remplissage was developed in 1972 by Connolly, and was first applied clinically under arthroscopic guidance in 2004 by Purchase *et al.*<sup>[5]</sup> Several reports have described the outcome of treatment involving remplissage, with favourable outcomes

reported even in patients with high risk of instability recurrence expected after Bankart repair alone<sup>[6,7]</sup>.

### **Objective**

- Recurrent shoulder dislocation can predispose to Hill-Sach's lesion
- Failure to address humeral osseous defects during arthroscopic stabilization surgery leads to an increased rate of recurrence
- This procedure is not much studied in terms of Range of Motion.

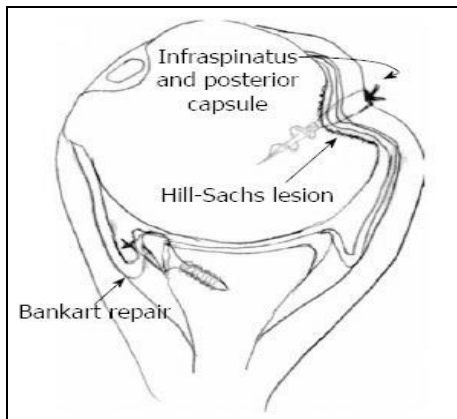
### **Materials and Method**

- A prospective study of 2 patient populations (arthroscopic Bankart repair alone vs Bankart and remplissage)
- Main clinical outcome was the range of motion
- Minimum follow-up was 2 years
- Total Patients in each Group - 50

Inclusion criteria
<ul style="list-style-type: none"> <li>• Traumatic unidirectional anterior shoulder instability</li> <li>• Hill-Sachs lesion of the humeral head</li> <li>• Evidence of engaging Hill-Sachs lesion during dynamic evaluation under arthroscopy</li> <li>• Arthroscopic Bankart repair in conjunction with arthroscopic remplissage</li> <li>• Follow-up period longer than 2 years</li> </ul>
Exclusion criteria
<ul style="list-style-type: none"> <li>• Anterior glenoid rim defect or fracture exceeding 25% of the inferior glenoid diameter confirmed intra-operatively</li> <li>• Humeral avulsion of the glenohumeral ligaments (HAGL) detected intra-operatively</li> <li>• Psychological disease or epilepsy</li> </ul>

**Operative Procedure**

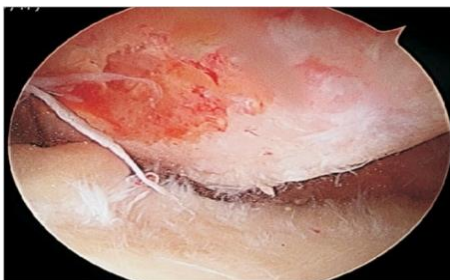
In arthroscopic remplissage, the posterior capsule and infraspinatus are sutured into the humeral head



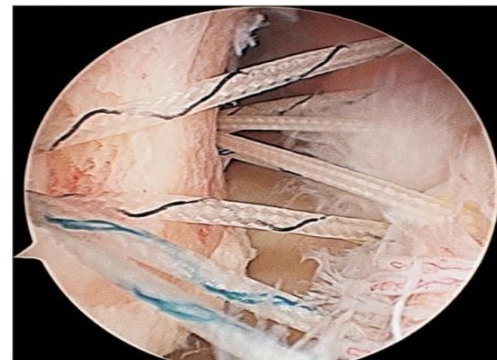
**Fig 1:** Arthroscopic finding of an inverted pear glenoid from the posterior portal.



**Fig 2:** Arthroscopic view of a huge engaging Hill-Sachs lesion



**Fig 3:** The anchor is placed in the center area of the Hill-Sachs lesion



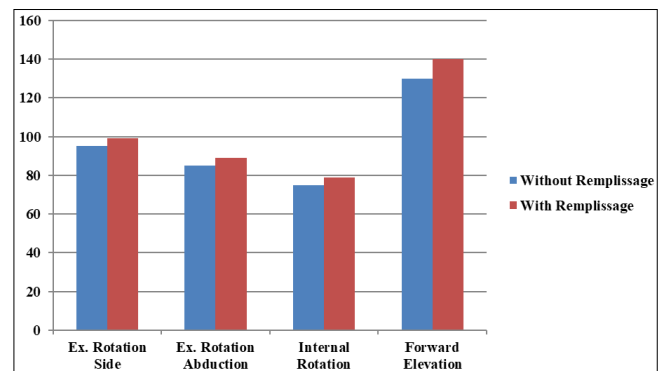
**Fig 4:** Anterior portal view of completed remplissage repair



**Fig 5**

**Results**

The rate of recurrence was identical in both groups (6.25%)



**Fig 6**

**Walch-Duplay Score**

Score	With Remplissage	Without Remplissage
Excellent	45	42
Good	5	8
Total	50	50

**Limitations**

- Sample size was small
- All procedures were performed by the same surgeon
- Study included postoperative care and follow-up assessments

**Discussion**

In a study of Argintar *et al.* [8] on The biomechanical effect of shoulder remplissage combined with Bankart repair for the

treatment of engaging Hill-Sachs lesions it was concluded that The addition of the remplissage procedure combined with Bankart repair for treatment of large Hill-Sachs lesions had no statistically significant effect on ROM or translation.

In another study by Buza JA 3<sup>rd</sup> *et al.* [9] on Arthroscopic Hill-Sachs remplissage: a systematic review stated that postoperative clinical outcome scores were generally good to excellent following arthroscopic remplissage. No studies indicated a significant loss of shoulder motion following the procedure.

In another study by Zhu YM *et al.* [10] on Arthroscopic Bankart repair combined with remplissage technique for the treatment of anterior shoulder instability with engaging Hill-Sachs lesion: a report of 49 cases with a minimum 2-year follow-up concluded that Arthroscopic Bankart repair combined with Hill-Sachs remplissage can restore shoulder stability without significant impairment of shoulder function in patients with engaging Hill-Sachs lesions..

While in my Study the ROM actually increases with supplementing remplissage along with bankart repair with increasing the rate of dislocation.

### Conclusion

- Remplissage technique did not significantly alter the range of motion
- Help in converting engaging Hill-Sachs in to non-engaging and promoting shoulder stability

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