

A Study of Clinical and Functional Outcome of Arthroscopic Repair versus Open Latarjet Surgery for Bankart Lesion (Minimum Six (6) Months Follow Up

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Abstract: Both Arthroscopic and open Latarjet surgery are considered main treatment for recurrent anterior shoulder instability. Choices between both procedure as per surgeon's preference but now a days trend towards Arthroscopic repair but this procedure contains recurrence rate as compare to open Latarjet surgery. We here compared both procedures in form of clinical and functional outcome with various scoring system. **Objectives:** To evaluate clinical and functional outcomes after arthroscopic repair of bankart lesion versus open Latarjet procedure. **Material and Method:** This was a retrospective study based on the hospital records of 32 patients who had bankart lesion treated with open Latarjet surgery and arthroscopic repair in orthopaedics department of government hospital affiliated with medical college. Detailed records of preoperative x rays, postoperative x rays, CT scan, MRI scan and clinical assessment data of 6 months follow up of each patients were recorded and assessed. **Results:** In this study ROWE SCORE FOR INSTABILITY, The Disabilities of the Arm, Shoulder Hand (DASH) Score, ASES (American Shoulder and Elbow Surgeons) SCORE, WALCH - DUPLAY SCORE (OUT OF 100), UCLA (University California at Los Angeles) SCORE was used for objective quantification of the outcome of bankart lesion. In our study 93.75% patient had excellent outcome, and only 6.25 % patient had poor outcome as per ROWE score and in our study 75% patient had excellent outcome, 18.75% patient had good result as per quickDASH score. **Conclusion:** In this study, as per outcome based on ROWE SCORE FOR INSTABILITY, The Disabilities of the Arm, Shoulder Hand (DASH) Score, ASES (American Shoulder and Elbow Surgeons) SCORE, WALCH - DUPLAY SCORE (OUT OF 100), UCLA (University California at Los Angeles) SCORE, treatment results were excellent and comparable with that of similar other studies.

Keywords: Bankart lesion, ROWE SCORE FOR INSTABILITY, The Disabilities of the Arm, Shoulder Hand (DASH) Score, ASES (American Shoulder and Elbow Surgeons) SCORE, WALCH - DUPLAY SCORE (OUT OF 100), UCLA (University California at Los Angeles) SCORE, outcome, open Latarjet surgery and arthroscopic repair.

1. Introduction

Glenohumeral dislocation is a common entity affecting approximately 2% of general population. Recurrent dislocation of the shoulder is leading complication of anterior glenohumeral dislocation and it accounts for 74% recurrence rate in patients aged 20 to 40years.

Traumatic glenohumeral dislocation may result in an avulsion or impression fracture in anteroinferior portion of glenoid rim in association of soft tissue damage, causing anterior instability of the shoulder. Several authors have mentioned the importance of lesions of the glenoid rim and glenoid labrum and adjacent soft tissue in the pathogenesis of this condition.

Tauber M, Resch H clearly stated that reason for failed bankarts repair was bone loss in anterior glenoid rim. Similarly Boileau P, Villalba M stated that primary reason for failed Bankarts repair was glenoid bone loss and shoulder hyperlaxity. In a cadaveric study done by Itoi E, Lee SB, Berglund LJ, et al they found out that an osseous defect with a width that is at least 21 percent of the glenoid width may cause instability and limit the range of motion of the shoulder after Bankart repair.

The standard procedure for operative treatment of anterior glenohumeral instability is an open Latarjet surgery and arthroscopic repair, which closely restores normal anatomy.

The purpose of present study is to verify and compare outcome of the patients with recurrent dislocation of shoulder with bankart lesion, treated with open Latarjet surgery against arthroscopic stabilization with suture anchors.

Objective:

- 1) To evaluate clinical and functional outcomes after arthroscopic repair of bankart lesion versus open Latarjet procedure
- 2) To evaluate the complications occurring during and after these procedure.
- 3) To evaluate redislocation rate after arthroscopic repair of bankart lesion versus open Latarjet procedure
- 4) To evaluate factors like pain relief, range of motion of shoulder joint, return to preinjury of activity and overall patient satisfaction after this surgery.
- 5) To evaluate effects of certain factors on outcome of surgery like:
 - Age
 - Sex
 - Body mass index

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- Occupation
- Dominant arm
- Indication of surgery
- Symptom duration

2. Material and Method

Type of study: This is a retrospective study

Duration of study: January 2019 to December 2022

Data was collected from the record section of the hospital's orthopaedics department.

Patients were called and examined to record outcomes at least after 6 months of open Latarjet surgery and arthroscopic repair.

Indoor and outdoor case records, preoperative x rays and postoperative x rays, CT scan, MRI scan and clinical assessment data are assessed.

Preoperative x rays are assessed for classifying lesion. Case records are assessed for treatment received by each patient, and for recording associated injury to soft tissue and other organs, if any.

Immediate postoperative x rays are assessed for adequacy of reduction and alignment.

Immediate complications were recorded from case records.

On final follow up examination, at least after 6 months of open Latarjet surgery and arthroscopic repair, bony union and maintenance of reduction and alignment are assessed using x rays, and functional outcome assessed using ROWE SCORE FOR INSTABILITY, The Disabilities of the Arm, Shoulder Hand (DASH) Score, ASES (American Shoulder and Elbow Surgeons) SCORE, WALCH - DUPLAY SCORE (OUT OF 100), UCLA (University California at Los Angeles) SCORE, and complications noted.

3. Results

In our study OUT OF 32 Patients

Retrospective study involving 18 years to 60 years both male and female patients with recurrent shoulder dislocation with bankart lesion admitted to tertiary level Hospital, Jamnagar. In this study, 32 cases of recurrent shoulder dislocation with Bankart lesion were treated by Arthroscopic bankart repair or Open Latarjet surgery were evaluated.

- The study shows that recurrent shoulder dislocation with bankart lesion were common in age group of 26 - 35 years they are more engaged in labor work.
- Road traffic accident was the most common cause 37.5% of it followed by fall on the shoulder and outstretched hand 34.38%.
- In our study, Most patients 13 (81.25%) cases were having right side as dominant side and out of it 9 (56.25%) of cases were having with recurrent shoulder dislocation with bankart lesion on Right side.
- All the recurrent shoulder dislocation with bankart lesion were of closed variety.

- 72% of the cases were operated within 5years of admission.
- Out of 32 cases, 2 patients (6.25%) developed with recurrent shoulder dislocation for which only one required Open latarjet surgery as revision surgery.
- Out of 32 cases, 93.75% of the patients were having Excellent result, 6.25% were having poor result as per ROWE Score.
- Mean ROWE Score in our study is 92 points.
- Out of 32 cases, 75% of patients were having Excellent result and 18.75% of patients were having Good result according to quickDASH score.

4. Discussion

The most important findings of our study were that the differences in clinical and functional outcomes between the two groups were statistically significant. TWO patients in the Bankart group developed redislocation, whereas no complications occurred in the Latarjet group. Arthroscopic Bankart repair (ABR) was more costly than the open Latarjet (OL) procedure.

The Latarjet procedure for recurrent shoulder dislocation is an established method for treating recurrent shoulder dislocation. However, trends toward minimally invasive procedures have led surgeons worldwide to choose arthroscopic Bankart repair. Thomazeau et al. ²⁴ conducted a survey to determine whether shoulder surgeons preferred Latarjet or arthroscopic Bankart repair. They found that irrespective of the patients' status and glenoid bone loss, 72% of French shoulder surgeons would choose the Latarjet procedure whereas 90% of shoulder surgeons from other countries would choose arthroscopic Bankart repair. Several studies have shown that Bankart repair is more anatomically correct and provides better shoulder range motion, greater stability and less recurrence. In contrast, other reports have suggested that the Latarjet procedure is superior to Bankart repair because it provides a triple - stabilizing effect (anterior glenoid augmentation, capsular repair, and sling effect) that significantly reduces the recurrence rate and allows for a better return to the preinjury status, especially in young and active individuals. " It is even effective in patients with significant glenoid bone loss patients and patients undergoing revision for failed stabilization procedures. In their systematic review and meta analysis. An et al. concluded that the Latarjet procedure is superior to Bankart repair because provides better patient reported outcomes, does not restrict external rotation, and provides better stability without increasing complications. Our results showed that the open Latarjet procedure produced better patient - reported outcomes than the arthroscopic Bankart procedure; additionally, external rotation was not reduced in the Latarjet group. Our results add to the literature showing that the Latarjet procedure is a viable option with satisfactory clinical and functional outcomes.

Patient - reported outcomes following surgical stabilization are solely dependent upon postoperative function, pain, and recurrence. These factors also determine functional satisfaction. Surgery for recurrent shoulder dislocation is mainly indicated in young and active individuals. who not only require high function but also often have aesthetic

concerns. This one reason for high - activity patients choosing arthroscopic Bankart repair. However, the functional satisfaction rate was higher in the Latarjet group than in the Bankart group. These results resemble previous findings that most patients are satisfied with the surgery; however, some are not

8.11.12.28 Another reason for choosing an arthroscopic procedure is the surgeon's discretion. Because of its aesthetic effects, surgeons often insist on performing arthroscopic Bankart repair even in patients with significant glenoid bone loss or Hill - Sachs lesions.

In the study by An et al., " the overall recurrence rate was 21% in the Bankart group and 11% in the Latarjet group. In our study, two cases of recurrence occurred in the Bankart group

The cost - effectiveness of both surgeries controversial. Min et al.30 found that arthroscopic Bankart repair was more cost - effective: the actual cost of an open Latarjet procedure was 21, 398 USD, where as that for arthroscopic Bankart repair was 20, 385 USD. However, they still mentioned that the recurrence rate of the arthroscopic Bankart procedure was higher than that of the open Latarjet procedure, and they recommended the open Latarjet procedure for a selected group of patients with high - demand activities. " In contrast, Makhni et al. " found that arthroscopic Bankart repair was more expensive than the open Latarjet procedure, leading the Latarjet procedure to be more dominant because it was more effective and less costly. The surgical cost in a developing country such as INDIA is a major burden for many people, especially those who do not have basic medical insurance; even if patients do have insurance, implant costs are not covered. This is why many patients undergo an open Latarjet procedure that is less expensive than the arthroscopic Bankart procedure. In our study, the average cost of the Latarjet procedure was significantly lower than that of the Bankart procedure, even when we reused arthroscopic instruments multiple times that were supposed to be single - use only.

Although this is not a novel study for the Western population, it represents the scenario of patients and surgeons from countries with limited resources such as INDIA. Despite being a comparative study, it has the inherent biases of a retrospective study with a relatively small sample size and short follow - up. A larger sample size and longer follow - up period would have resulted in different recurrence rates. There also might be an institutional bias because this study was performed in a single government hospital by where most economically deprived patients come for treatment.

5. Conclusion

Both procedures provided satisfactory clinical outcomes. The Latarjet group had a higher rate of functional satisfaction and lower operating cost then there was a trend toward more recurrence in the arthroscopic bankart group. These results indicate that although arthroscopic Bankart repair is an aesthetic and minimally invasive procedure, Latarjet Procedure may still be priority in a developing

country such as INDIA where financial cost is an extremely large burden. Sleep dislocators and manual heavy workers operated in form of Open Latarjet surgery are much more beneficial compare to Arthroscopic Repair.

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