

Assessment of Arthroscopic Bankart Repair Among Patients of Recurrent Shoulder Dislocation

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Conflict of interest: Nil

Abstract

Background: The shoulder is one of the foremost common and regularly dislocated joints within the body, accounting for quite 50% of all dislocations. the commonest complication of shoulder dislocation is recurrent instability. It accounts for a mean of 70-90% recurrence in patients between the age bracket of 20-40 years. The shoulder joint is liable for a wide selection of motion at various positions in three-dimensional space by utilizing the glenohumeral joint as a fulcrum. **Material & Methods:** 30 patients with recurrent dislocation of shoulder with Bankart lesion, treated with arthroscopic stabilization with suture anchors for surgical and functional outcome according to inclusion and exclusion criteria were enrolled in the present study. Study participants were enrolled by simple random sampling. Clearance from the hospital ethics committee was taken before the start of the study. Written informed consent was taken from each study participant. **Results:** In the present study, out of total study participants, based on the number of suture anchors used, among the majority of patients 3 suture anchors were used (73.3%), and among 26.6% patients 2 suture anchors were used. In the present study, out of total study participants, based on the total ROWE score, the mean pre-operative score was 57, the mean total ROWE score at 3rd week was 69, the mean total ROWE score at 6th week was 71. the mean total ROWE score at 12th week was 82 and the mean total ROWE score at 1 year was 94. Postoperatively 90% of patients out of total attained a full range of external rotation in 90° abduction by the end of one year. **Conclusion:** We concluded from the present study that patients with recurrent dislocation of shoulder with Bankart lesion, treated with arthroscopic stabilization with suture anchors had a good surgical and functional outcome. This operative method provides excellent postoperative shoulder motion and lesser recurrence rates.

Keywords: Arthroscopic Bankart, Shoulder Dislocation.

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Introduction

The shoulder is one of the foremost common and regularly dislocated joints within the body, accounting for quite 50% of all dislocations. The commonest complication of shoulder dislocation is

recurrent instability [1]. It accounts for a mean of 70-90% recurrence in patients between the age bracket of 20-40 years. The shoulder joint is liable for a wide selection of motion at various positions in

three-dimensional space by utilizing the glenohumeral joint as a fulcrum[2]. During shoulder dislocations, the humeral head is usually forced anteriorly out of the glenoid fossa leading to detaching fibrocartilaginous labrum from the anterior rim of the glenoid fossa. This detachment of the glenoid labrum is named Bankart's lesion. Bankart's lesion is that the commonest lesion that needs treatment for anterior shoulder instability[3].

Bankart lesion is found in 85 percent of dislocations, most ordinarily within the two to 6 o'clock position within the right shoulder and within the six to 10 o'clock position within the left shoulder[4]. Treatment is by operating technique by reattachment of labro-ligamentous structure to the glenoid as the glenoid labrum results in maintaining good stability of the glenohumeral joint. Bankart operated patients of anterior shoulder instability and Bankart lesions operated by open repair[5]. Anterior shoulder instability is often treated either by open procedure or arthroscopic method. There has been growing interest within the arthroscopic management of anterior glenohumeral instability due to the benefits like less morbidity, improved range of motion, shorter time of surgery, improved cosmesis, and minimum postoperative pain[6].

There has been concern about recurrent instability in patients treated with arthroscopic technique due to various techniques used for stabilization, like stabilization with Staple Capsulorrhaphy, Bioabsorbable Tacks, and Suture Anchor, but all having their own merits and demerits. Better implants and refined techniques of arthroscopic stabilization with suture anchors resulted in patients with decreased perioperative morbidity, increased external rotation, and an increased return to throwing sports[7]. Hence, we conducted the present study is to assess the functional outcome of the patients with recurrent dislocation of shoulder with Bankart lesion, treated with

arthroscopic stabilization with suture anchors at or tertiary care hospital.

Materials and methods

The present cross-sectional, observational study was conducted at the department of orthopedics of our tertiary care hospital. The study was an observational study conducted for one year and six months. The study was done at a 95% confidence interval at 5% of maximum allowable error. The sample size of 30 patients was calculated by epi info software. 30 patients with recurrent dislocation of shoulder with Bankart lesion, treated with arthroscopic stabilization with suture anchors for surgical and functional outcome according to inclusion and exclusion criteria were enrolled in the present study. Study participants were enrolled by simple random sampling. Clearance from the hospital ethics committee was taken before the start of the study. Written informed consent was taken from each study participant.

For the study purpose, none of the study participants below the age of 18 years were enrolled in the present study. Previously diagnosed cases of Biceps rupture, significant defects of the humeral head, patients requiring bone graft or rotational osteotomy of the proximal humerus, Bony Bankart and rotator cuff tear, multidirectional instability, arthritis of the shoulder, and posterior instability of shoulder were excluded from the present study. All the study participants were subjected to general physical and clinical examination and detailed history was recorded from all of them. All the study participants were subjected to an X-ray of the involved shoulder (AP, axillary, and scapular Y view) and chest, Magnetic resonance imaging of the concerned shoulder to access the involvement of rotator cuff and to confirm the diagnosis of enrolled study participants. All the recorded data was entered in an Excel spreadsheet on Microsoft Excel 2016. The statistical analysis was done using the

Statistical software package SPSS v22 and Epi Info v7.2. A p-value <0.05 with 95% confidence intervals was considered statistically significant.

Results

In the present study, we enrolled a total of 30 patients with recurrent dislocation of shoulder with Bankart lesion, treated with arthroscopic stabilization with suture anchors for surgical and functional outcome according to inclusion and exclusion criteria. Among the study participants, all the patients were ranged from age 18 to 40 years with a mean age of 26.4 ± 2.6 years. None of the study participants below the age of 18 years was enrolled in the present study. Out of the total study participants, 80% of patients

were male and 20% of patients were female. Among all the study participants with recurrent dislocation of the shoulder, the right shoulder was involved in 73.3% of patients and the left shoulder was involved in 26.6% of patients.

Among all the study participants with recurrent dislocation of the shoulder, 56.6% of patients had no pain and no discomfort, 33.3% patients had the only discomfort, and 10% patients had pain. Among all the study participants with recurrent dislocation of the shoulder, 53.3% of patients had 5-9 previous shoulder dislocations, 36.6% patients had 1-4 previous shoulder dislocations and 10% patients had 10 or more previous shoulder dislocations. (Table 1)

Table 1: Distribution of study subjects according to the study parameters.

Parameters		Number of patients (%)
Mean age (Years)		26.4 ± 2.6 years
Gender	Male	80%
	Female	20%
Shoulder involved	Right	73.3%
	Left	26.6%
Symptoms	No pain and discomfort	56.6%
	Only discomfort	33.3%
	Pain	10%
Frequency of dislocation	1-4	36.6%
	5-9	53.3%
	>10	10%

In the present study, out of total study participants, based on the number of suture anchors used, among the majority of patients, 3 suture anchors were used (73.3%) and among 26.6% patients, 2 suture anchors were used. In the present study, out of total study participants, based on the total ROWE score, the mean pre-operative score was 57,

the mean total ROWE score at 3rd week was 69, the mean total ROWE score at 6th week was 71. the mean total ROWE score at 12th week was 82 and the mean total ROWE score at 1 year was 94. Postoperatively 90% of patients out of total attained a full range of external rotation in 90° abduction by the end of one year. (Table 2)

Table 2: Distribution of study subjects according to the study parameters.

Parameters	Number of patients (%)	
Number of suture anchors used	2	26.6%
	3	73.3%
Total ROWE score	Pre-operative	57
	At 3 rd week	69
	At 6 th week	71
	At 12 th week	82
	At 1 year	94

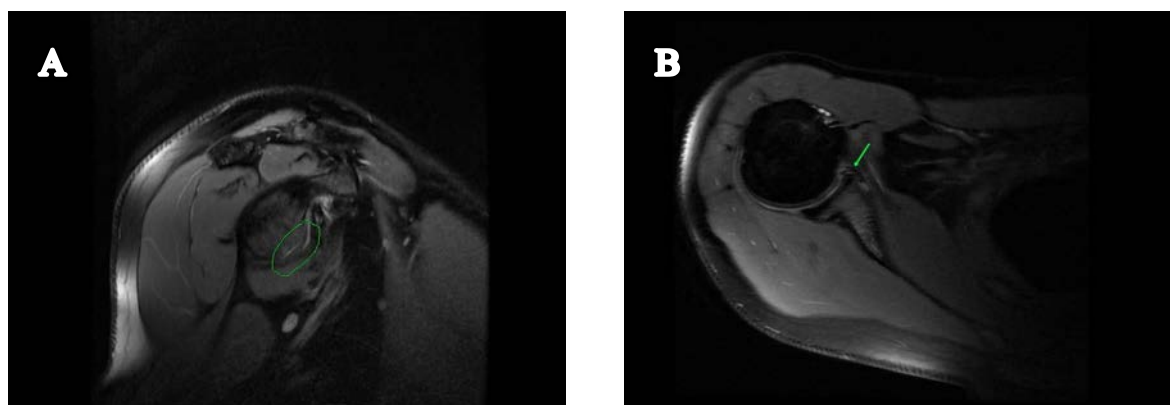


Fig.1. Showing Bankart lesions (A) PD sequence of Axial cut of shoulder joint (B) PD sequence of Transverse cut of shoulder joint

Discussion

In the present study, we enrolled a total of 30 patients with recurrent dislocation of shoulder with Bankart lesion, treated with arthroscopic stabilization with suture anchors for surgical and functional outcome according to inclusion and exclusion criteria. Among the study participants, all the patients were ranged from age 18 to 40 years with the mean age of 26.4 ± 2.6 years. None of the study participants below the age of 18 years were enrolled in the present study. Out of the total study participants, 80% of patients were male and 20% of patients were female. Among all the study participants with recurrent dislocation of the shoulder, the right shoulder was involved in 73.3% of patients and the left shoulder was involved in 26.6% of patients. Similar results were obtained in a study conducted by Mohapatra R et al among a total of 20 patients with recurrent dislocation of shoulder with Bankart lesion, treated with arthroscopic stabilization with suture anchors for surgical and functional outcome according to inclusion and exclusion criteria. They reported similar findings as to the present study[8].

In the present study, among all the study participants with recurrent dislocation of the shoulder, 56.6% of patients had no pain and no discomfort, 33.3% patients

had the only discomfort, and 10% patients had pain. Among all the study participants with recurrent dislocation of the shoulder, 53.3% of patients had 5-9 previous shoulder dislocations, 36.6% of patients had 1-4 previous shoulder dislocations and 10% patients had 10 or more previous shoulder dislocations. Similar results were obtained in a study conducted by Kevin B et al among the total of 172 patients with recurrent dislocation of shoulder with Bankart lesion, treated with arthroscopic stabilization with suture anchors for surgical and functional outcome according to inclusion and exclusion criteria. They reported similar findings as to the present study[9]. Similar results were obtained in a study conducted by Eugene M et al among a total of 14 patients with recurrent dislocation of shoulder with Bankart lesion, treated with arthroscopic stabilization with suture anchors for surgical and functional outcome according to inclusion and exclusion criteria. They reported similar findings as to the present study[10].

In the present study, out of total study participants, based on the number of suture anchors used, among the majority of patients, 3 suture anchors were used (73.3%) and among 26.6% patients, 2 suture anchors were used. In the present study, out of total study participants, based on the total ROWE score, the mean pre-operative score was 57, the mean total

ROWE score at 3rd week was 69, the mean total ROWE score at 6th week was 71. the mean total ROWE score at 12th week was 82 and the mean total ROWE score at 1 year was 94. Postoperatively 90% of patients out of total attained a full range of external rotation in 90° abduction by the end of one year. Similar results were obtained in a study conducted by Junji Ide et al among a total of 55 patients with recurrent dislocation of shoulder with Bankart lesion, treated with arthroscopic stabilization with suture anchors for surgical and functional outcome according to inclusion and exclusion criteria. They reported similar findings as to the present study[11]. Similar results were obtained in a study conducted by Abdulrahman D et al among a total of 32 patients with recurrent dislocation of shoulder with Bankart lesion, treated with arthroscopic stabilization with suture anchors for surgical and functional outcome according to inclusion and exclusion criteria. They reported similar findings as to the present study[12].

Conclusion

We concluded from the present study that patients with recurrent dislocation of shoulder with Bankart lesion, treated with arthroscopic stabilization with suture anchors had good surgical and functional outcomes. This operative method provides excellent postoperative shoulder motion and lesser recurrence rates.

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