e-ISSN: 0976-822X, p-ISSN:2961-6042

Available online on http://www.ijcpr.com/

International Journal of Current Pharmaceutical Review and Research 2026; 18(2); 1130-1134

Original Research Article

Functional Outcome of Arthroscopic Bankart Repair in Recurrent Anterior Shoulder Dislocation: A Prospective Interventional Study

Nagaraju Honnegowda[1], R. Dileepan Chakrawarthi[2], Avinash R.[3], Muthu Aravinth J.[4]

[1]Senior Resident, Department of Orthopaedics, Sri Chamundeshwari Medical College Hospital & Research Institute, Channapatna, Ramanagar, Karnataka, India

[2]Consultant Orthopedic Surgeon, Department of Orthopaedics, One Health Super Speciality Hospital, Vandalur, Chennai, Tamil Nadu, India

[3]Assistant Professor, Department of Orthopaedics, Sri Chamundeshwari Medical College Hospital & Research Institute, Channapatna, Ramanagar, Karnataka, India

[4]Consultant Spine and Ortho Surgeon, Department Orthopaedics, GVN Riverside Hospital Tiruchirapalli, Tamil Nadu, India

Received: 21-12-2025 / Revised: 21-01-2026 / Accepted: 23-02-2026

Corresponding Author: Dr. Nagaraju Honnegowda

Conflict of interest: Nil

Abstract:

Background: Recurrent anterior shoulder dislocation is a common condition affecting young, active individuals and is associated with significant functional impairment. Conservative management has a limited role in recurrent cases. Arthroscopic Bankart repair with suture anchors has gained popularity due to reduced morbidity, improved cosmesis, and faster rehabilitation. This study aimed to evaluate the surgical and functional outcomes of arthroscopic stabilization in patients with recurrent anterior shoulder dislocation.

Methods: A prospective interventional study was conducted in the Department of Orthopaedics, Government Stanley Medical College, Chennai, from April 2019 to November 2020. Twenty patients above 18 years with recurrent anterior shoulder dislocation and glenoid bone loss <25% were included. Patients with significant bone defects, rotator cuff tears, multidirectional instability, or arthritis were excluded. All patients underwent arthroscopic Bankart repair with suture anchors. Functional outcome was assessed using the Rowe score at 3 weeks, 6 weeks, 12 weeks, 6 months, and 1 year postoperatively.

Results: The mean age was 32.8 ± 10.58 years, with 90% males. Right shoulder involvement was seen in 60% of patients. Preoperatively, 95% had anterior translation and 90% had a positive apprehension test. The mean preoperative Rowe score was 48.25. At one-year follow-up, the mean Rowe score improved significantly to 93.53. No recurrence of dislocation or subluxation was noted. Full forward elevation was achieved in all patients, and 85% regained full external rotation at 90° abduction. Only one patient reported postoperative pain following a traumatic episode.

Conclusion: Arthroscopic Bankart repair with suture anchors is a reliable and effective procedure for recurrent anterior shoulder dislocation, providing excellent functional recovery, improved stability, and low recurrence rates.

Keywords: Arthroscopic Bankart Repair, Recurrent Anterior Shoulder Dislocation, Suture Anchors, Rowe Score, Shoulder Instability, Functional Outcome.

DOI: 10.25258/ijcpr.18.2.188

Introduction

The shoulder (glenohumeral) joint is the most mobile joint in the human body, predisposing it to instability, particularly in young and active individuals. The incidence of recurrent glenohumeral instability is approximately 16 per 100,000 population per year,[1] with anterior instability being the most common type. In recurrent anterior glenohumeral instability, conservative management has little role, as spontaneous recovery is unlikely.[2] Repeated episodes of dislocation lead to progressive structural damage involving the humeral head, capsule, glenohumeral ligaments, and labrum, resulting in persistent instability and functional limitation.

Most patients present with a definite history of trauma. Various operative techniques are currently employed for the management of recurrent anterior shoulder instability. Traditionally, open anterior repair procedures were widely performed; however, there has been continuous evolution in treatment strategies. Arthroscopic procedures [3] have gained

significant popularity due to advances in surgical techniques and instrumentation. Nevertheless, certain pathologies, particularly those involving significant bone loss or revision cases, may still require open procedures for optimal outcomes.

Bankart's repair [4] remains the most commonly performed procedure for anterior dislocation. However, it may not be sufficient in cases with significant glenoid bone loss, large Hill-Sachs lesions, or attenuated anteroinferior glenohumeral ligaments. Modified Bristow's repair offers stability by addressing both osseous and soft tissue deficiencies. With improved understanding of shoulder biomechanics and bone loss, bone block transfer procedures have emerged as effective options in selected patients.

Glenohumeral dislocation affects nearly 2% of the general population, with recurrence rates as high as 74% among individuals aged 20–40 years. Although open Bankart repair demonstrates low recurrence rates (approximately 7%), arthroscopic stabilization offers advantages such as reduced morbidity, improved range of motion, better cosmesis, and less postoperative pain. With better implants and refined techniques, arthroscopic stabilization using suture anchors has shown excellent outcomes, particularly in carefully selected patients.

Aims and Objectives: The present study aims to evaluate the functional outcome of arthroscopic surgery in patients with recurrent anterior shoulder dislocation and to compare the results with international literature. The objectives of the study are to assess the effectiveness of the postoperative rehabilitation program and to analyze the final surgical and functional outcomes following arthroscopic stabilization, with particular reference to improvement in shoulder stability, range of motion, recurrence rate, and overall functional recovery.

Materials and Methods

Study Design: This prospective interventional study was conducted in the Department of Orthopaedics at Government Stanley Medical College, Chennai. A total of 20 patients with recurrent anterior shoulder dislocation who underwent arthroscopic surgery were included. The study population comprised patients treated at Government Stanley Medical College as well as those operated elsewhere but followed up at this institution between April 2019 and November 2020. All patients who met the inclusion criteria and were available for regular follow-up during the study period were enrolled in the study.

Inclusion and Exclusion Criteria: The study included all patients above 18 years of age with recurrent anterior dislocation of the shoulder and glenoid bone loss of less than 25%, in whom arthroscopic Bankart repair was performed, with remplissage added in cases of off-track lesions as indicated. Patients were excluded if they had other associated shoulder pathologies such as glenoid bone loss greater than 25% with off-track engaging Hill-Sachs lesions, biceps tendon rupture, rotator cuff tear, significant humeral head defects greater than 30% requiring bone grafting or rotational osteotomy of the proximal humerus, multidirectional or posterior shoulder instability, arthritis of the shoulder joint, or generalized ligamentous laxity indicated by a Beighton score greater than 6 out of 9.

Data Collection Tools: Data collection tools included a structured clinical evaluation format incorporating detailed history, physical examination findings, and standardized functional assessment using the Rowe score. Radiological investigations such as preoperative X-rays and necessary imaging studies were used to assess bony defects and joint status. Intraoperative findings, including the number of suture anchors used and associated lesions, were documented. Postoperative evaluation tools included serial clinical examinations, range of motion assessment, stability testing (anterior translation and apprehension test), and periodic functional scoring at 3 weeks, 6 weeks, 12 weeks, 6 months, and 1 year.

Data Collection Method: Adult patients with recurrent anterior shoulder dislocation who underwent arthroscopic stabilization were prospectively followed from admission through postoperative rehabilitation up to one year. Baseline demographic data, clinical findings, and investigation reports were recorded at admission. Surgical details were documented intraoperatively. Immediate postoperative radiographs were evaluated. Patients were assessed during hospital stay and subsequently at scheduled follow-up intervals to evaluate rehabilitation progress, shoulder stability, range of motion, recurrence of dislocation, complications, and overall functional outcome using the Rowe scoring system.

Table 1: Demographic Characteristics (n = 20)

Variable	Category	Frequency	Percentage (%)
Age Group (in years)	<25	5	25
	25–35	7	35
	35–45	2	10
	≥45	6	30
Sex	Male	18	90
	Female	2	10

Table 1 illustrates the demographic distribution of patients. The majority (35%) were in the 25–35 years age group with a mean age of 32.8 ± 10.58 years. Most patients were males (90%), indicating a higher incidence among young active males.

Table 2: Clinical Profile and Shoulder Involvement

Variable	Category	Frequency	Percentage (%)
Occupation	High demand	11	55
	Low demand	9	45
Side Involved	Right	12	60
	Left	8	40

Table 2 observes that 55% of patients were engaged in high-demand occupations requiring overhead activity. The right shoulder was more commonly involved (60%) compared to the left (40%).

Table 3: Pre-Operative Clinical Status

Variable	Category	Frequency	Percentage (%)
Stability	Very unstable	13	65
	Stable	7	35
Pain/Discomfort	Discomfort	14	70
	Pain	5	25
	No pain	1	5
Anterior Translation	Present	19	95
Apprehension Test	Positive	18	90

Table 3 illustrates that 65% had very unstable shoulders preoperatively. Discomfort was reported by 70% of patients. Anterior translation was present in 95% and the apprehension test was positive in 90% of patients before surgery.

Table 4: Duration and Number of Dislocations

Variable	Category	Frequency	Percentage (%)
Duration (in years)	<1	4	20
	1–5	14	70
	>5	2	10
No. of Dislocations	1–4	9	45
	5–9	6	30
	≥10	5	25

Table 4 shows that most patients (70%) had symptoms for 1–5 years. Nearly 55% had more than five dislocation episodes prior to surgery.

Table 5: Intra-Operative Details

No. of Suture Anchors	Frequency	Percentage (%)
2 Anchors	15	75
3 Anchors	5	25

Table 5 demonstrates that two suture anchors were used in 75% of patients, while three anchors were used in 25% of cases.

Table 6: Pre- and Post-Operative Stability & Range of Motion

Parameter	Pre-Operative	Post-Operative
Anterior Translation	19	0
Apprehension	18	0
ER1 Full ROM	20	18
ER2 Full ROM	13	17
Forward Elevation	20	20
Cross Body Adduction	20	19

Table 6 illustrates complete resolution of anterior translation and apprehension postoperatively. External rotation at 90° abduction (ER2) improved from 65% limitation preoperatively to 85% achieving full range at one year.

Table 7: Rowe Score Progression (Mean Values)

Follow-up Period	Total Rowe Score	Stability	ROM	Function
Preoperative	48.25	21.00	16.00	11.25
3 Weeks	70.00	30.00	14.00	25.00
6 Weeks	72.75	30.00	16.00	25.75
12 Weeks	74.00	31.00	17.25	26.75
6 Months	85.00	40.00	17.78	27.22
1 Year	93.53	48.82	17.94	27.06

Table 7 shows progressive improvement in the Rowe score from a mean of 48.25 preoperatively to 93.53 at one year. The stability component improved markedly from 21 to 48.82, reflecting excellent postoperative shoulder stability.

Discussion

Recurrent anterior shoulder instability predominantly affects young, active individuals. In the present study, the majority of patients were between 25 and35 years old, with a mean age of 32.8 ± 10.58 years. This correlates with epidemiological observations that anterior shoulder instability is more common in younger populations. [5,6] Adla et al. reported a mean age of 24 years at the time of surgery, and Karlsson et al. [7] observed recurrent episodes following traumatic anterior dislocation with an average of 4.8 episodes per patient. The marked male predominance (90%) in our study is consistent with previously reported demographic trends. [1,6]

More than half of the patients (55%) were engaged in occupations requiring overhead activity, predisposing them to recurrent instability. Most patients had symptoms for 1–5 years (70%), indicating progressive capsulolabral damage before surgical intervention. Right shoulder involvement (60%) was more common, likely reflecting dominant limb use.

Preoperatively, 65% of patients had very unstable shoulders and 95% demonstrated anterior translation, while 90% had a positive apprehension test. Ferretti et al. [8] described pain as a significant positive finding in apprehension testing even without frank apprehension, suggesting anterior subluxation. In our study, 70% experienced discomfort and 25% had pain. Muscle atrophy around the shoulder was noted in 90% of patients, particularly involving supraspinatus and infraspinatus, which are key components of the rotator cuff [7,9] and essential for concavity compression and dynamic stabilization. [9,10]

The mean preoperative Rowe score was 48.25, indicating moderate functional impairment. Following arthroscopic Bankart repair, the mean Rowe score improved progressively to 93.53 at one year. These findings are comparable to Dickson and Devas,[11] who reported a 4% failure rate following open Bankart repair. Wolf et al. [12] first described arthroscopic stabilization using suture anchors with favourable outcomes. Bacilla et al. [13] reported a 7% recurrence rate in high-demand patients, while Mahapatra [14] observed 8% recurrence in arthroscopic repair compared to 2% in open repair. Hoffmann et al. [15] reported a 12% recurrence rate, particularly in patients with more than 10 dislocations preoperatively.

In our study, no recurrence of dislocation or subluxation was observed during the one-year follow-up. Two suture anchors were used in 75% of cases. Although Boileau et al. [16] suggested that multiple anchor fixation reduces recurrence rates, satisfactory stability was achieved with two to three anchors in our series. Postoperatively, all patients regained full forward elevation, and 85% achieved full external rotation at 90° abduction. Only one patient complained of postoperative pain following a traumatic episode. These results are consistent with systematic reviews and meta-analyses showing that modern arthroscopic techniques provide outcomes comparable to open procedures with reduced morbidity and improved range of motion.[16]

Thus, the findings of the present study support arthroscopic Bankart repair with suture anchors as a reliable and effective procedure for recurrent anterior shoulder instability, offering excellent functional recovery and minimal recurrence.

Conclusion

Arthroscopic Bankart repair with suture anchors is a reliable and effective treatment for recurrent anterior shoulder dislocation. It provides significant improvement in shoulder stability, range of motion, and functional outcome, with a low recurrence rate and minimal complications. The procedure enables patients to return to their daily activities with excellent overall results.

References

1. Akpinar S, Demirhan M, Kilicoglu O, et al. Modification of Bankart reconstruction with lateral capsulotomy and selective anatomic repair using suture anchors. Bulletin (Hospital for Joint Diseases (New York, NY)) 2000;59(2):88-93.
2. Bhagia SM, Ali MS. Bankart operation for recurrent anterior dislocation of the shoulder using suture anchor. Orthopedics 2000;23:589-91.
3. Bottoni CR, Smith EL, Berkowitz MJ, et al. Arthroscopic versus open shoulder stabilization for recurrent anterior instability: a prospective randomized clinical trial. The American Journal of Sports Medicine 2006;34(11):1730-7.
4. Bottoni CR, Wilckens JH, DeBerardino TM, et al. A prospective, randomized evaluation of arthroscopic stabilization versus nonoperative treatment in patients with acute, traumatic, first-time shoulder dislocations. Am J Sports Med 2002;30:576-80.
5. Burkhart SS, De Beer JF. Traumatic glenohumeral bone defects and their relationship to failure of arthroscopic Bankart repairs: significance of the inverted-pear glenoid and the humeral engaging Hill-Sachs lesion. Arthroscopy 2000;16:677-94.
6. Laurencin CT, Stephens S, Warren RF, et al. Arthroscopic Bankart repair using a degradable tack: a followup study using optimized indications. Clin Orthop 1996;332:132-7.
7. Karlsson J, Magnusson L, Ejerhed L, et al. Comparison of open and arthroscopic stabilization for recurrent shoulder dislocation in patients with a Bankart lesion. Am J Sports Med 2001;5:538-42.
8. Ferretti A, De Carli A, Calderaro M, et al. Open capsulorrhaphy with suture anchors for recurrent anterior dislocation of the shoulder. Am J Sports Med 1998;26:625-9.
9. Karlsson J, Kartus J, Ejerhed L, et al. Bioabsorbable tacks for arthroscopic treatment of recurrent anterior shoulder dislocation. Scand J Med Sci Sports 1998;8:411-5.
10. Kazar B, Relovszky E. Prognosis of primary dislocation of the shoulder. Acta Orthop Scand 1969;2:216-24.
11. Dickson JW, Devas MB. Bankart's operation for recurrent dislocation of shoulder. J Bone Joint Surg (Br) 1957;39:114-9.
12. Wolf EM, Wilk RM, Richmond JC: Arthroscopic Bankart repair using suture anchors. Oper Tech Orthop 1991;1:184-91.
13. Bacilla P, Field LD, Savoie FH. Arthroscopic Bankart's repair in a high demand patient population. Arthroscopy 1997;13:51-60.
14. Mohapatra RA, Kumar J. Evaluation of arthroscopic Bankart repair in recurrent shoulder dislocation. Int J Res Orthop 2019;5(4):675.
15. Hoffmann F, Rief G: Arthroscopic shoulder stabilization using Mitek anchors. Knee Surg Sports Tramatol Arthrosc 1995;3:50-4.
16. Hobby D. Dunbar GM, Boileau P. Is arthroscopic surgery for stabilisation of chronic shoulder instability as effective as open surgery? a systematic review and meta-analysis of 62 studies including 3044 arthroscopic operations. J Bone Joint Surg (Br) 2007;89-B:1188-96.