

Original Research Article

RETURN-TO-SPORT OUTCOMES FOLLOWING ARTHROSCOPIC BANKART REPAIR: A RETROSPECTIVE OBSERVATIONAL STUDY FROM A TERTIARY CARE CENTRE

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ABSTRACT

Background: Anterior shoulder instability is a common orthopedic condition affecting young active adults, particularly those involved in sports requiring repetitive overhead activity or contact. Arthroscopic Bankart repair has become the preferred surgical treatment because it restores shoulder stability while preserving range of motion and facilitating return to sports. However, postoperative functional recovery and return-to-sport outcomes remain important indicators of surgical success. The objective is to evaluate return-to-sport outcomes and functional recovery following arthroscopic Bankart repair among patients with recurrent anterior shoulder instability.

Materials and Methods: A retrospective observational study was conducted at the Department of Orthopaedics, Katihar Medical College, Katihar. Medical records of patients who underwent arthroscopic Bankart repair between April 2024 and April 2025 were reviewed. Patients aged 25–35 years with at least 12 months of follow-up were included. Demographic details, injury characteristics, return-to-sport status, functional outcomes, complications, recurrence, and patient satisfaction were analyzed.

Results: A total of 50 patients fulfilled the eligibility criteria. The mean age was 29.3 ± 3.1 years, with males comprising 82.0% of participants. Excellent return-to-sport outcomes were achieved in 45 patients (90.0%), good outcomes in 4 patients (8.0%), and poor outcomes in 1 patient (2.0%). The poor outcome was associated with poor postoperative rehabilitation compliance. The recurrence rate was 2.0%, while 96.0% of patients reported satisfaction with surgery.

Conclusion: Arthroscopic Bankart repair provides excellent return-to-sport outcomes with low recurrence rates among young adults. Strict adherence to postoperative rehabilitation appears to be a major determinant of successful recovery.

Keywords: Arthroscopic Bankart repair, Shoulder instability, Return to sport, Shoulder dislocation, Functional outcome, Rehabilitation.

INTRODUCTION

Anterior shoulder instability is one of the most common orthopedic conditions affecting young, active adults, particularly athletes and individuals involved in physically demanding occupations. The glenohumeral joint possesses the greatest range of motion of any joint in the human body, making it inherently susceptible to instability.^[1-10] Traumatic anterior shoulder dislocation accounts for nearly 90–

95% of all shoulder dislocations and typically occurs following a forceful external rotation and abduction injury.^[11-18] Such injuries are frequently encountered during contact sports such as football, rugby, wrestling, and hockey, as well as overhead sports including cricket, volleyball, basketball, and badminton.^[15,16] Recurrent instability following a primary dislocation is a significant clinical concern, especially in younger individuals, where recurrence rates are considerably higher because of greater

physical activity levels and increased participation in sports.^[17,18] Repeated episodes of instability may lead to progressive damage to the glenoid labrum, capsule, cartilage, and humeral head, resulting in chronic pain, loss of shoulder function, reduced athletic performance, and an increased risk of degenerative joint disease.^[2,19]

The Bankart lesion, characterized by detachment of the anteroinferior glenoid labrum from the glenoid rim, is recognized as the principal pathological lesion responsible for recurrent anterior shoulder instability.^[1,2] In many patients, associated capsular laxity and ligamentous injury further compromise joint stability.^[2,5] Conservative treatment following recurrent instability often fails to restore adequate shoulder stability in young active patients, particularly athletes wishing to resume competitive sports.^[17,19] Consequently, surgical stabilization has become the preferred treatment option for individuals with recurrent traumatic anterior shoulder instability.^[5,10] Over the past two decades, arthroscopic Bankart repair has largely replaced traditional open stabilization procedures because of significant advances in arthroscopic instrumentation, suture anchor technology, and surgical techniques.^[3,6,8] Arthroscopic repair offers several advantages, including smaller surgical incisions, reduced soft-tissue trauma, improved visualization of intra-articular pathology, preservation of shoulder motion, reduced postoperative pain, shorter hospital stay, and faster rehabilitation.^[6,8,14]

The primary objective of arthroscopic Bankart repair is to restore the normal anatomy of the capsulolabral complex, thereby re-establishing shoulder stability while preserving physiological range of motion.^[3,5] Successful surgical repair not only prevents recurrent dislocation but also enables patients to regain confidence in shoulder function and return to their routine occupational and sporting activities.^[6,11] Modern rehabilitation protocols emphasize early controlled mobilization followed by progressive strengthening, proprioceptive training, and sport-specific exercises to optimize functional recovery.^[11,13] Adherence to these rehabilitation programs plays a crucial role in determining postoperative outcomes, as inadequate compliance may delay recovery and increase the risk of recurrent instability or persistent functional limitations.^[13,19]

In recent years, the assessment of surgical success has evolved beyond radiographic healing and prevention of recurrent dislocation. Return to sport has emerged as one of the most meaningful patient-centered outcome measures following shoulder stabilization surgery, particularly among young adults and athletes.^[11,13] Successful return to pre-injury levels of sporting activity reflects the combined restoration of shoulder stability, strength, endurance, range of motion, neuromuscular control, and psychological confidence.^[13,14] Several factors influence return-to-sport outcomes, including patient age, level and type of sports participation, duration of symptoms, severity of labral injury, associated bony defects,

surgical technique, rehabilitation compliance, and postoperative functional recovery.^[4,9,13] Although numerous international studies have reported favorable clinical outcomes after arthroscopic Bankart repair, considerable variation exists regarding the rate and timing of return to sports, recurrence of instability, and long-term functional performance.^[12-14]

Evidence regarding return-to-sport outcomes following arthroscopic Bankart repair from Indian tertiary care centers remains relatively limited. Regional data are important because patient demographics, sporting activities, healthcare accessibility, rehabilitation practices, and compliance with physiotherapy may differ from those reported in Western populations. Furthermore, understanding postoperative functional outcomes and factors associated with suboptimal recovery can assist surgeons in patient selection, counseling, rehabilitation planning, and expectation management. Therefore, the present retrospective observational study was undertaken at the Department of Orthopaedics, Katihar Medical College, Katihar, to evaluate return-to-sport outcomes following arthroscopic Bankart repair among patients aged 25–35 years who underwent surgery between April 2024 and April 2025. The study also aimed to assess functional recovery, recurrence of instability, patient satisfaction, and factors associated with poor postoperative outcomes.

MATERIALS AND METHODS

Study Design: This retrospective observational study was conducted to evaluate return-to-sport outcomes following arthroscopic Bankart repair in patients with recurrent anterior shoulder instability.

Study Setting: The study was carried out in the Department of Orthopaedics, Katihar Medical College, Katihar, Bihar, India.

Study Period: The study included patients who underwent arthroscopic Bankart repair between April 2024 and April 2025. Clinical records were reviewed retrospectively after obtaining approval from the Institutional Ethics Committee.

Study Population: The study population comprised patients aged 25–35 years who underwent arthroscopic Bankart repair for recurrent traumatic anterior shoulder instability during the study period. Patients fulfilling the eligibility criteria and having complete medical records with a minimum follow-up of 12 months were included in the analysis.

Sample Size: A total of 50 patients who met the inclusion and exclusion criteria were included in the study. Since this was a retrospective observational study, all eligible patients treated during the study period were analyzed.

Inclusion Criteria

1. Patients aged 25–35 years at the time of surgery.

2. Patients diagnosed with recurrent traumatic anterior shoulder instability with a confirmed Bankart lesion.
3. Patients who underwent primary arthroscopic Bankart repair between April 2024 and April 2025 at Katihar Medical College.
4. Patients with a minimum postoperative follow-up of 12 months and documented return-to-sport assessment.
5. Patients with complete medical records, including clinical, operative, and follow-up documentation.

Exclusion Criteria

1. Patients with multidirectional or posterior shoulder instability.
2. Patients with significant glenoid bone loss (>20%), engaging Hill–Sachs lesions, or those requiring additional stabilization procedures (e.g., Latarjet procedure).
3. Patients with associated shoulder pathologies, including rotator cuff tears, proximal humeral fractures, or SLAP lesions requiring additional surgical intervention.
4. Patients with a history of previous surgery on the affected shoulder or revision Bankart repair.
5. Patients with incomplete medical records, loss to follow-up before 12 months, or documented neurological disorders affecting shoulder function.

Surgical Technique: All patients underwent arthroscopic Bankart repair under general anesthesia by experienced orthopedic surgeons using a standardized surgical technique. The patient was positioned in either the beach-chair or lateral decubitus position based on surgeon preference. After establishing standard posterior and anterior arthroscopic portals, a thorough diagnostic arthroscopy was performed to assess the glenohumeral joint and confirm the presence of a Bankart lesion and any associated intra-articular pathology.

The detached anteroinferior labrum and capsule were carefully mobilized, and the anterior glenoid rim was prepared using a motorized shaver and burr to create a fresh bleeding bone surface, facilitating biological healing. Suture anchors were then inserted into the anteroinferior glenoid rim, and the capsulolabral complex was anatomically reattached using non-absorbable sutures. Capsular plication was performed when required to restore appropriate capsular tension and improve shoulder stability. The repair was assessed arthroscopically to confirm adequate fixation and restoration of the labral bumper before closure. Following surgery, the shoulder was immobilized in an arm sling, and all patients were enrolled in a standardized postoperative rehabilitation program with gradual progression from passive range-of-motion exercises to strengthening and sport-specific training before clearance for return to sports.

Postoperative Rehabilitation: A standardized postoperative rehabilitation protocol was followed

for all patients. The operated shoulder was immobilized in a shoulder sling for four weeks to protect the repair and facilitate soft tissue healing. During the immobilization period, patients were encouraged to perform hand, wrist, and elbow range-of-motion exercises, while passive shoulder movements were initiated under the supervision of a physiotherapist as tolerated.

After four weeks, active-assisted and active range-of-motion exercises were gradually introduced to restore shoulder mobility. Progressive strengthening exercises for the rotator cuff and scapular stabilizers were initiated between 6 and 8 weeks postoperatively. Sport-specific training and proprioceptive exercises were commenced after three months based on functional recovery. Return to unrestricted sports was generally permitted after six months, provided patients had regained full shoulder range of motion, adequate muscle strength, and shoulder stability, with clearance from the treating orthopedic surgeon.

Data Collection: Data were collected retrospectively from hospital medical records, operative notes, outpatient follow-up records, and physiotherapy documentation of patients who underwent arthroscopic Bankart repair during the study period. Demographic characteristics, clinical presentation, imaging findings, intraoperative details, and postoperative follow-up information were reviewed using a structured data collection form. The collected variables included age, sex, side of involvement, dominant shoulder, mechanism of injury, number of previous dislocations, interval between injury and surgery, type of sport, time to return to sports, functional outcome, recurrence of instability, postoperative complications, patient satisfaction, and compliance with the rehabilitation protocol. All patient information was anonymized before analysis to maintain confidentiality.

Outcome Measures:

Primary Outcome: The primary outcome of the study was return-to-sport status following arthroscopic Bankart repair. Return to sport was assessed during the final follow-up and categorized into three outcome groups based on functional recovery and ability to resume sports:

- **Excellent:** Return to the pre-injury level of sports without pain, instability, or functional limitation.
- **Good:** Return to sports with mild symptoms or slight reduction in performance but without recurrent instability.
- **Poor:** Failure to return to sports because of persistent pain, recurrent instability, or poor compliance with the postoperative rehabilitation protocol.

Secondary Outcomes:

The secondary outcome measures included:

- Time to return to sports (measured in months after surgery).
- Recurrence of shoulder instability or redislocation during the follow-up period.

- Postoperative complications, including infection, stiffness, or need for revision surgery.
- Patient satisfaction with the surgical outcome, recorded at the final follow-up.
- Compliance with the postoperative rehabilitation program and its association with functional recovery.

Ethical Considerations: The study protocol was reviewed and approved by the Institutional Ethics Committee (IEC) of Katihar Medical College, Katihar, prior to commencement of the study. As this was a retrospective observational study based on the review of existing medical records, the requirement for written informed consent was waived by the Ethics Committee. Patient confidentiality and anonymity were strictly maintained by de-identifying all collected data before analysis. The study was conducted in accordance with the ethical principles of the Declaration of Helsinki and adhered to institutional guidelines for biomedical research involving human participants.

Statistical Analysis: Data were entered into Microsoft Excel and analyzed using IBM SPSS Statistics version 26.0 (IBM Corp., Armonk, NY, USA). Continuous variables were expressed as mean $\pm$ standard deviation (SD), while categorical variables were presented as frequencies and percentages. Associations between categorical variables were analyzed using the Chi-square test or Fisher's exact test, as appropriate. Continuous variables were compared using the independent Student's t-test. A

two-tailed p-value <0.05 was considered statistically significant.

RESULTS

A total of 50 patients who underwent arthroscopic Bankart repair for recurrent anterior shoulder instability between April 2024 and April 2025 met the eligibility criteria and were included in the final analysis. The mean age of the study population was 29.3 ± 3.1 years (range: 25–35 years). Male patients constituted the majority of the cohort (82.0%). The mean postoperative follow-up duration was 15.8 ± 3.4 months, which was adequate for evaluating return-to-sport outcomes and functional recovery.

Baseline Demographic and Clinical Characteristics: A total of 50 patients who underwent arthroscopic Bankart repair for recurrent anterior shoulder instability were included in the study in [Table 1]. The mean age of the study population was 29.3 ± 3.1 years, with 28 patients (56.0%) aged 25–30 years and 22 patients (44.0%) aged 31–35 years. The majority of the participants were male (41; 82.0%), while 9 patients (18.0%) were female. The right shoulder was affected more frequently (34; 68.0%) than the left (16; 32.0%), and the dominant shoulder was involved in 32 patients (64.0%). The mean postoperative follow-up duration was 15.8 ± 3.4 months, which was adequate for evaluating return-to-sport and functional outcomes.

Table 1: Baseline Demographic and Clinical Characteristics of the Study Population (n = 50)

Variable	Value
Age (years), Mean $\pm$ SD	29.3 ± 3.1
Age 25–30 years	28 (56.0%)
Age 31–35 years	22 (44.0%)
Gender	
Male	41 (82.0%)
Female	9 (18.0%)
Affected Shoulder	
Right shoulder	34 (68.0%)
Left shoulder	16 (32.0%)
Dominant shoulder involvement	32 (64.0%)
Mean follow-up (months)	15.8 ± 3.4

Table Note: Values are presented as frequency (percentage) unless otherwise specified. Continuous variables are expressed as mean $\pm$ standard deviation (SD). The study population predominantly comprised young male patients, with the right and dominant shoulder being more commonly affected.

Injury Characteristics: The injury characteristics of the study population are summarized in [Table 2]. Sports-related injury was the most common mechanism of injury, accounting for 29 patients (58.0%), followed by road traffic accidents in 12 patients (24.0%) and falls in 9 patients (18.0%). Regarding the number of previous shoulder dislocation episodes, 21 patients (42.0%) experienced 4–5 episodes, 20 patients (40.0%) had 2–3 episodes, and 9 patients (18.0%) had more than five episodes before undergoing arthroscopic Bankart repair. The interval between the first dislocation and surgery was 1–2 years in 24 patients (48.0%), less than 1 year in 14 patients (28.0%), and more than 2 years in 12 patients (24.0%), indicating that most

patients underwent surgical stabilization after recurrent episodes of shoulder instability.

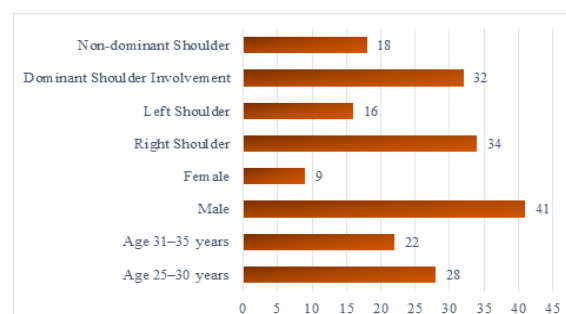


Figure 1: Baseline Demographic and Clinical Characteristics of the Study Population (n = 50)

Figure Note: The figure illustrates the distribution of patients according to age group, gender, affected shoulder, and dominant shoulder involvement. The study population predominantly comprised young

male patients, with the right shoulder and dominant shoulder more commonly affected. The findings summarize the baseline demographic and clinical characteristics of the patients included in the study.

Table 2: Injury Characteristics of the Study Population (n = 50)

Variable	Number of Patients (n)	Percentage (%)
Mechanism of Injury		
Sports-related injury	29	58.0
Road traffic accident	12	24.0
Fall	9	18.0
Number of Previous Dislocation Episodes		
2–3 episodes	20	40.0
4–5 episodes	21	42.0
>5 episodes	9	18.0
Time from First Dislocation to Surgery		
<1 year	14	28.0
1–2 years	24	48.0
>2 years	12	24.0

Table Note: Values are presented as frequency (percentage). Sports-related trauma was the leading cause of recurrent anterior shoulder instability in the study population. Most patients underwent surgical stabilization after experiencing multiple episodes of shoulder dislocation, with surgery commonly performed within 1–2 years of the initial injury.

Primary Outcome: Return-to-Sport Outcomes:

The primary outcome of the study was the evaluation of return-to-sport status following arthroscopic Bankart repair is presented in [Table 3]. At the final follow-up, 45 patients (90.0%) achieved an excellent outcome, successfully returning to their pre-injury

level of sporting activity without pain, instability, or functional limitation. Four patients (8.0%) demonstrated a good outcome, returning to sports with mild symptoms or a slight reduction in performance but without recurrent instability. One patient (2.0%) had a poor outcome and was unable to return to the pre-injury level of sports participation because of poor compliance with the prescribed postoperative rehabilitation protocol. Overall, 98.0% of patients achieved either excellent or good functional outcomes, demonstrating the effectiveness of arthroscopic Bankart repair in restoring shoulder stability and enabling successful return to sports.

Table 3: Return-to-Sport Outcomes Following Arthroscopic Bankart Repair (n = 50)

Return-to-Sport Outcome	Number of Patients (n)	Percentage (%)
Excellent	45	90.0
Good	4	8.0
Poor	1	2.0
Total	50	100.0

Table Note: Values are presented as frequency (percentage). An excellent outcome was defined as a return to the pre-injury level of sports without pain or instability, good as return to sports with minor functional limitations, and poor as failure to return to sports due to persistent symptoms or poor rehabilitation compliance. Overall, 98% of patients achieved either excellent or good functional outcomes following arthroscopic Bankart repair.

Time to Return to Sports: The time required to return to sports following arthroscopic Bankart repair is presented in Table 4. The mean time to return to sports was 6.1 ± 0.8 months. More than half of the patients (27; 54.0%) resumed sporting activities between 5 and 6 months after surgery. Early return within 5 months was achieved by 9 (18.0%) patients, whereas 10 (20.0%) patients returned between 6 and 7 months. A smaller proportion (4; 8.0%) required more than 7 months to resume sports because of delayed functional recovery and rehabilitation progress.

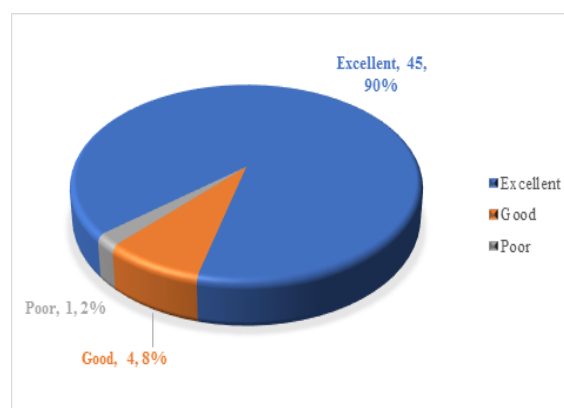


Figure 3: Return-to-Sport Outcomes Following Arthroscopic Bankart Repair (n = 50)

Figure Note: The figure illustrates the distribution of return-to-sport outcomes among patients following arthroscopic Bankart repair. The majority of patients (90.0%) achieved an excellent outcome, while 8.0% demonstrated good outcomes and 2.0% had poor outcomes, indicating a high rate of successful return to sports after surgical stabilization.

Table 4: Time to Return to Sports Following Arthroscopic Bankart Repair (n = 50)

Time to Return to Sports	Number of Patients (n)	Percentage (%)
≤5 months	9	18.0
5–6 months	27	54.0
6–7 months	10	20.0
>7 months	4	8.0
Total	50	100.0

Table Note: Values are presented as frequency (percentage). The majority of patients (54.0%) returned to sports within 5–6 months following arthroscopic Bankart repair, with an overall mean return-to-sport time of 6.1 ± 0.8 months, indicating favorable functional recovery after structured rehabilitation.

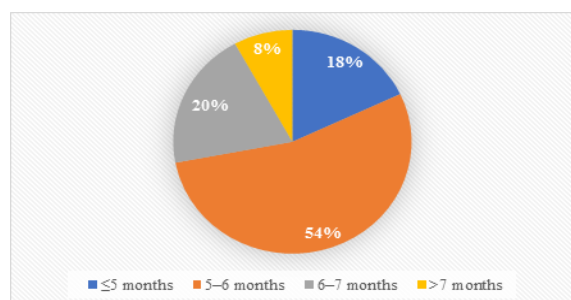
**Figure 4: Time to Return to Sports Following Arthroscopic Bankart Repair (n = 50)**

Figure Note: The figure illustrates the distribution of patients according to the time required to return to

sports after arthroscopic Bankart repair. The majority of patients (54.0%) resumed sporting activities within 5–6 months, while only a small proportion required more than 7 months to return. These findings indicate favorable postoperative recovery and effective rehabilitation following surgical stabilization.

Secondary Clinical Outcomes: Secondary clinical outcomes following arthroscopic Bankart repair are summarized in [Table 5]. At the final follow-up, 49 patients (98.0%) demonstrated a stable shoulder without recurrent instability. Recurrent shoulder instability was observed in 1 patient (2.0%). Postoperative complications were uncommon, with shoulder stiffness and superficial wound infection each occurring in 1 patient (2.0%). Revision surgery was required in 1 patient (2.0%) because of recurrent instability. Overall, 48 patients (96.0%) reported satisfaction with the surgical outcome, while 2 patients (4.0%) were dissatisfied. These findings indicate excellent clinical outcomes, a low complication rate, and high patient satisfaction following arthroscopic Bankart repair.

Table 5: Secondary Clinical Outcomes Following Arthroscopic Bankart Repair (n = 50)

Clinical Outcome	Number of Patients (n)	Percentage (%)
Stable shoulder at final follow-up	49	98.0
Recurrent shoulder instability	1	2.0
Postoperative shoulder stiffness	1	2.0
Superficial wound infection	1	2.0
Revision surgery	1	2.0
Patient satisfied	48	96.0
Patient dissatisfied	2	4.0

Table Note: Values are presented as frequency (percentage). Arthroscopic Bankart repair demonstrated a high rate of shoulder stability (98.0%), minimal postoperative complications, and excellent patient satisfaction (96.0%), highlighting the effectiveness of the procedure in restoring shoulder function and stability.

Association Between Rehabilitation Compliance and Functional Outcome: The association between postoperative rehabilitation compliance and functional outcome is presented in [Table 6]. Patients who demonstrated good compliance with the prescribed rehabilitation protocol achieved

significantly better return-to-sport outcomes than those with poor compliance. Among the 49 patients (98.0%) who adhered to the rehabilitation program, 45 (91.8%) achieved an excellent outcome and 4 (8.2%) achieved a good outcome. In contrast, the one patient (2.0%) with poor rehabilitation compliance experienced a poor functional outcome and was unable to return to the pre-injury level of sporting activity. Statistical analysis demonstrated a significant association between rehabilitation compliance and functional outcome (Chi-square = 50.00; $p < 0.001$), emphasizing the importance of adherence to postoperative rehabilitation.

Table 6: Association Between Rehabilitation Compliance and Functional Outcome (n = 50)

Rehabilitation Compliance	Excellent n (%)	Good n (%)	Poor n (%)	Total n (%)
Good compliance	45 (91.8)	4 (8.2)	0 (0.0)	49 (98.0)
Poor compliance	0 (0.0)	0 (0.0)	1 (100.0)	1 (2.0)
Total	45 (90.0)	4 (8.0)	1 (2.0)	50 (100.0)

Table Note: Values are presented as frequency (row percentage). Patients with good adherence to the

postoperative rehabilitation protocol achieved significantly superior functional outcomes compared

with those with poor compliance (Chi-square = 50.00; $p < 0.001$), highlighting rehabilitation as a key determinant of successful return to sports following arthroscopic Bankart repair.

DISCUSSION

The present retrospective observational study evaluated return-to-sport outcomes following arthroscopic Bankart repair in patients with recurrent anterior shoulder instability. Arthroscopic Bankart repair has become the preferred surgical treatment because it restores shoulder stability while preserving range of motion and facilitates successful return to sports in young, active individuals.^[5,6]

In the present study, 90.0% of patients achieved an excellent return-to-sport outcome, 8.0% achieved a good outcome, and only 2.0% experienced poor functional recovery. These findings are consistent with previous systematic reviews demonstrating high rates of successful return to sports after arthroscopic Bankart repair, with reported return-to-sport rates ranging from 80% to 95%.^[13,14]

The demographic characteristics observed in the present study are comparable with those reported in previous literature. The mean age of the study population was 29.3 ± 3.1 years, and males accounted for 82.0% of participants, reflecting the higher incidence of traumatic anterior shoulder instability among young adults involved in contact and overhead sports.^[11,16] Sports-related trauma was the most common mechanism of injury (58.0%), followed by road traffic accidents and falls. Similar observations have been reported by Dickens et al. and Robinson et al., who identified sporting activities as the leading cause of recurrent anterior shoulder instability in young athletes.^[15,18]

Return to sports has become one of the most important patient-reported outcome measures following shoulder stabilization surgery because it reflects restoration of shoulder stability, muscle strength, range of motion, and psychological confidence.^[11,13] In the present study, 98.0% of patients achieved either excellent or good functional outcomes, with a mean return-to-sport time of 6.1 ± 0.8 months. More than half of the patients (54.0%) resumed sporting activities within 5–6 months after surgery. These findings are comparable to those reported by Ide et al. and Rossi et al., who observed that most athletes successfully returned to unrestricted sports approximately six months after arthroscopic Bankart repair following structured rehabilitation.^[11,13]

The recurrence rate observed in the present study was 2.0%, which is lower than that reported in many published series. Previous studies have shown that recurrence following arthroscopic Bankart repair is influenced by younger age, participation in collision sports, glenoid bone loss, generalized ligamentous laxity, and inadequate rehabilitation.^[5,9,12,20] The low recurrence rate observed in this study may be

attributed to careful patient selection, standardized arthroscopic technique, secure suture-anchor fixation, and adherence to a structured postoperative rehabilitation program.^[5,6]

Postoperative complications were infrequent, with only isolated cases of shoulder stiffness, superficial wound infection, and revision surgery. Furthermore, 96.0% of patients reported satisfaction with the surgical outcome, indicating excellent restoration of shoulder function and stability. Similar high satisfaction rates have been reported following arthroscopic Bankart repair in previous systematic reviews and meta-analyses.^[6,8,14]

One of the most important findings of the present study was the strong association between rehabilitation compliance and functional outcome. Nearly all patients who adhered to the prescribed rehabilitation protocol achieved excellent or good return-to-sport outcomes, whereas the patient with poor rehabilitation compliance failed to return to pre-injury sporting activity. Previous studies have similarly emphasized that postoperative physiotherapy is essential for restoring muscle strength, proprioception, shoulder stability, and successful return to sports after arthroscopic stabilization.^[11,13,19]

The strengths of the present study include the use of a standardized arthroscopic surgical technique, uniform postoperative rehabilitation, complete follow-up of all included patients, and evaluation of clinically relevant outcomes including return to sports, recurrence, complications, and patient satisfaction. These factors improve the reliability and clinical applicability of the findings.

However, several limitations should be acknowledged. The retrospective observational design may have introduced selection and information bias. The study was conducted at a single tertiary care center with a relatively small sample size ($n = 50$), which may limit the generalizability of the findings. Furthermore, validated shoulder-specific functional outcome measures such as the Rowe Score, ASES Score, Constant-Murley Score, and WOSI were not consistently available because of the retrospective design.^[12,13] In addition, longer-term follow-up is required to evaluate late recurrence, persistent functional outcomes, and degenerative shoulder changes.^[17,20]

Overall, the findings of the present study demonstrate that arthroscopic Bankart repair is a safe and effective treatment for recurrent anterior shoulder instability. The procedure resulted in excellent return-to-sport outcomes, low recurrence, minimal postoperative complications, and high patient satisfaction. Adherence to a structured postoperative rehabilitation program appears to be a major determinant of successful functional recovery and return to pre-injury sporting activity.^[5,6,13,14]

Limitations of the study: The present study has several limitations. First, its retrospective observational design may have introduced selection and information bias because the analysis relied on

existing medical records. Second, the study was conducted at a single tertiary care center with a relatively small sample size (n = 50), which may limit the generalizability of the findings to other healthcare settings and patient populations. Third, validated shoulder-specific functional outcome measures, including the Rowe Score, American Shoulder and Elbow Surgeons (ASES) Score, Constant-Murley Score, and Western Ontario Shoulder Instability Index (WOSI), were not consistently available for all patients because of the retrospective nature of the study. Finally, the follow-up duration was limited, preventing assessment of long-term recurrence, shoulder function, degenerative changes, and sustained return-to-sport outcomes. Future prospective, multicenter studies with larger sample sizes, standardized functional outcome measures, and longer follow-up are needed to further validate these findings and establish the long-term effectiveness of arthroscopic Bankart repair.

CONCLUSION

Arthroscopic Bankart repair is a safe and effective surgical procedure for the management of recurrent anterior shoulder instability in young adults. In the present study, the majority of patients achieved excellent return-to-sport outcomes (90.0%), while an additional 8.0% demonstrated good functional recovery, resulting in an overall success rate of 98.0%. The procedure was associated with a low recurrence rate (2.0%), minimal postoperative complications, and a high level of patient satisfaction (96.0%), indicating favorable clinical and functional outcomes. Furthermore, adherence to a structured postoperative rehabilitation program was significantly associated with successful return to sports and optimal functional recovery. These findings support arthroscopic Bankart repair as a reliable treatment option for restoring shoulder stability, facilitating early return to sporting activities, and improving patient-reported outcomes. Further prospective multicenter studies with larger sample sizes and longer follow-up are recommended to validate these findings and assess long-term functional outcomes.

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