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Arthroscopic Bankart Repair (ABR) with Arthroscopic Subscapularis Augmentation (ASA) in the Treatment of Chronic Anterior Shoulder Instability in Bangladesh

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Abstract

Background: Anterior shoulder instability is very common in Bangladesh. Arthroscopic Bankart repair (ABR) is used to treat this condition, but its recurrence rate is very high. To solve this problem, the aim of this study is to determine the effectiveness of arthroscopic Bankart repair (ABR) with arthroscopic subscapularis augmentation (ASA) for treating anterior shoulder instability patients in Bangladesh.

Methods: A cross-sectional study was performed among 36 patients who underwent arthroscopic Bankart repair (ABR) with arthroscopic subscapularis augmentation (ASA) procedures for treatment of anterior shoulder instability from 2022 to 2023 at Bangladesh Specialized Hospital (BSH). Participants were purposively selected and data was collected in a semi-structured data collection sheet. Informed consent was taken from each participant before starting the interview on a consent form. Both descriptive and inferential statistics were performed according to the objective and nature of the data.

Results: According to the study, the mean age of the 36 patients was 25.44 ± 9.700 years, and the majority of them (91.7%) were male. The procedure's outcome greatly improved (88.9%), and most of the patients (88.9%) expressed satisfaction. The mean Rowe score was 62.08 in pre-operative assessment which improved to 81.53 in post-operative assessment and there was significant association (p=0.007).

Conclusion: The combination of arthroscopic subscapularis augmentation (ASA) and arthroscopic Bankart repair (ABR) has been shown to be safe and effective, as evidenced by the improved outcomes and high percentage of satisfied patients with few complications. Our recommendation for treating anterior shoulder instability is to use ASA in combination with ABR.

Keywords: ASA; ABR; Anterior shoulder instability; Orthopedic; Bangladesh; Injuries

Introduction

Anterior shoulder instability is a prevalent orthopedic issue in Bangladesh. Anterior shoulder instability can be caused by injuries to the labrum, joint capsule (particularly the inferior glenohumeral ligament), cartilage, or glenoid periosteum [1]. For nearly thirty years, the most common surgical procedure for treating recurrent anterior dislocation of the shoulder joint has been arthroscopic Bankart repair (ABR). Despite the favorable postoperative

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results and high rates of return to normal activities that the majority of these patients experience, the frequency of recurrent instability persists [2]. Four risk factors for recurrent instability following arthroscopy were identified by Cheng et al. [3] in 2021: skeletal immaturity, decreased glenoid retroversion, glenoid bone loss, and more than one presurgical instability episode [3]. Its failure rate, according to some research, can be more than 20% [4]. The primary risk factors for ABR failure include shoulder hyperlaxity, male sex, contact sports, bone abnormalities, and younger age [5].

An innovative arthroscopic approach was devised based on the procedure of Johnson. It involved combining the standard Bankart repair with an upper-third subscapularis tenodesis at the anterior border of the glenoid rim. This method was called arthroscopic subscapularis augmentation (ASA) [6]. Without limiting external rotation, it has been shown to be beneficial in treating adolescents and young adults with mild glenoid bone loss (GBL) and capsular deficit for recurrent anterior shoulder instability [7].

Many research explores treating anterior shoulder instability with arthroscopic Bankart repair (ABR), however, few of them show anterior shoulder instability may be treated with both ABR and ASA procedures. The purpose of this study is to demonstrate that arthroscopic Bankart repair (ABR) with arthroscopic subscapularis augmentation (ASA) can be an effective surgical procedure for treating anterior shoulder instability in Bangladesh.

Methods and Materials

This cross-sectional study included 36 patients who who underwent arthroscopic Bankart repair (ABR) with arthroscopic subscapularis augmentation (ASA) procedures for the treatment of anterior shoulder instability from 2022 to 2023 at Bangladesh Specialized Hospital (BSH). A purposive type of non-probability sampling technique was used for the selection of participants. Approval for the study was granted by the Local Ethics Committee. All the operations in the study were performed by a single orthopedic surgeon. The patients included in the study all had anterior shoulder instability. Patients were excluded from the study if they had more extensive anterior tears (anterior and posterior, multidirectional, and concurrent superior tears) and a history of previous isolated Bankart repair.

Informed consent was taken from each participant before starting the interview on a consent form which will contain details about the aim and objectives of the study, study procedure, benefits and risks of participation, right to refuse to participate or withdraw from the study, confidential handling of data and the responsible principal investigator's identity. Anonymity and confidentiality were maintained

Functional and Radiologic Assessments

Clinical and radiographic evidence of anterior shoulder instability (history of dislocation or subluxation, positive anterior apprehension test, and anterior labral tear detected on magnetic resonance imaging (MRI) verified the injuries. The Rowe score was used for functional assessments. Two independent observers conducted preoperative and postoperative ratings of functional outcomes using consistent methods. The Rowe Score is a total of 100 points divided into three domains: (1) stability (50 points), (2) mobility (20 points), and (3) function (30 points).

Surgical Technique

The patient underwent an arthroscopic procedure using standard posterior, anterior, and anterior portals. The anterior portal was placed over the superior border of the subscapularis tendon for easy suture-passing devices. Articular structures were carefully inspected to assess capsular redundancy, capsule-labral insufficiency, anterior glenoid defects, hypoplastic labrum, and Hill-Sachs lesions. Labrum repair was performed using 1 or 2 nonmetallic suture anchors. The subscapularis fixation bone hole was done over the top of the glenoid corner, slightly posterior to the anterior margin of the glenoid surface. The tendon was perforated at least 5mm from its upper border and fixed at the 2 o'clock position on the right shoulder and the 10 o'clock position on the left shoulder to re-tension the subscapularis tendon.

Postoperative Protocol

Following surgery, the shoulder was braced and the arm was adducted for four weeks. The sling is taken off during the fourth week, and active-assisted range of motion exercises and pendulum exercises are introduced. Shoulder resistance band exercises are permitted after seven weeks.

Patient-Reported Outcomes

After two months, the patients were questioned about any complaints they had, any additional shoulder treatments they had undertaken, and any recurrence instability (subjective subluxation or dislocation). All of the patients who were included had their MRI scans examined to verify the successful outcome.

Statistical Analysis

Data was collected from all the participants with a pre-tested, semi-structured data collection sheet. After collection, the data was checked and cleaned, followed by editing, compiling, and coding, and was categorized according to objectives and variables to detect errors and maintain consistency, relevancy, and quality control. Then these were entered into the computer for analysis.

A database in SPSS for Windows (IBM Corporation, New York) was developed according to the data collection sheet. Data regarding all questions was entered into the developed database. Outliers and missing values will be

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checked and corrected. Statistical analysis will be done using SPSS. Variables were descriptively expressed by frequency, percentage, range, mean, and standard deviation. The chi-square test and Fisher exact test were performed as inferential statistics. A p-value of less than 0.05 was considered statistically significant.

Results

In this study, a total of 36 patients were evaluated; the mean age of the patients was 25.44 ± 9.700 years (range: 18–58 years), with 33 (91.7%) men and 3 (8.3%) females (Table 1).

Table 1: Socio-demographic characteristics of patients.

Age (Years)	Mean ± SD	25.44 ± 9.700
	Range	18- 58
Gender	Male f (%)	33 (91.7%)
	Female f (%)	3 (8.3%)

f= Frequency; %= Percentage

Table 2: Improvement of the patients after surgery.

Variables		Frequency	Percentage
Outcome	Unchanged	4	11.1
	Improved	32	88.9
Complications	No	35	97.2
	Yes	1	2.8
Satisfaction	Dissatisfied	1	2.8
	Neutral	3	8.3
	Satisfied	32	88.9

Most of the patients (88.9%) improved after surgery, only very few patients (11.1%) outcome was unchanged. Only 1 patient report complication, other 35 patients had no complications. In case of satisfaction, majority of the patients (32) were satisfied, just 1 patient was dissatisfied and 3 were neutral (Table 2).

Before surgery, most of the patients (86.1%) had an average Rowe score (51-74 pts) and very few (13.9 %) had a Good score (75-89 pts). After surgery, Most of the patients (55.6)%) had good scores (75-89 pts) and some (25.0%) had excellent scores (90-100 pts). Pre-operative and post-operative Rowe scores had a significant association (p=0.007) as shown in Table 3.

Table 3: Comparison Rowe score before and after surgery.

Rowe score	Pre-operative f (%)	Post-operative f (%)	Significance
60	31 (86.1)	3(8.3)	Fisher's exact test
75	5 (13.9)	4(11.1)	p=0.007
80	0	20(55.6)	
95	0	9(25.0)	
Mean ± SD	62.08 ± 5.261	81.53 ± 9.623	

f= Frequency; %= Percentage; Significant at p ≤0.05

Discussion

As a treatment for shoulder instability, arthroscopic capsulolabral complex repair gained immense popularity, despite a very high failure rate [8]. Several publications have proposed that a patient with a Bankart lesion who does not have glenohumeral bone abnormalities or capsular laxity would be the best candidate for an arthroscopic surgery [9]. The purpose of this study was to evaluate the efficacy of an innovative approach called arthroscopic subscapularis augmentation (ASA) combined with arthroscopic Bankart repair (ABR). For Bangladesh, this is novel for the treatment of chronic anterior shoulder instability.

In this study, the age range was from 18-58 years with a mean age of 25 years. The male was found predominant. Similar findings were found in another study where 53 (64%) males and 30 (36%) females with a mean age of 35.9 ± 10.4 years (range, 17–56 years) [10]. Comparable results were seen in another investigation [11]. So, it can be assumed that young, male patients are mostly suffered from chronic anterior shoulder instability.

After surgery, 88.9% of patients' condition improved and they were satisfied with their outcome. The majority of the patients had no complications. This finding demonstrated that the treatment of chronic anterior shoulder instability might be effectively achieved by combining arthroscopic subscapularis augmentation (ASA) with arthroscopic Bankart repair (ABR).

Various research employed different techniques to evaluate the functional outcome. A number of scores were utilized, including the ASES score [10,12,13], the Rowe score [10,13], the QuickDASH [11], and the SANE score (Single Assessment Numeric Evaluation) [11]. The functional result was evaluated in this study using the Rowe score. The majority of the patients had good Rowe scores after surgery, indicating that the operation was successful and very beneficial. The mean score of the patients was 62.08 ± 5.261 before surgery, and it improved to 81.53 ± 9.623 after surgery. Similar results were observed in a different study [13], where the mean Rowe score increased from 68.5 ±4.5 to 92. 7 ± 2.5. In a different trial, the same surgery was effective, and after the procedure, the mean Rowe score climbed dramatically from 33.3 ± 4.7 to 82.6 ± 5.6 [10].

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Conclusion

Recurrent anterior shoulder dislocation is an annoying problem for patients. The combination of arthroscopic subscapularis augmentation (ASA) and arthroscopic Bankart repair (ABR) has been shown to be safe and effective, as evidenced by improved outcomes and a high percentage of satisfied patients with few complications. Our recommendation for treating anterior shoulder instability is to use ASA in combination with ABR. Although this study was limited to a small number of patients in a single center and was conducted with patients on short-term follow-up, problems that could emerge in the long run, such as osteoarthritis, were not evaluated. Because there was no control study group that underwent another treatment performed by the same doctors, it is not feasible to apply this approach extensively; more research is needed before this approach can be used globally.

Conflict of interest: There is no conflict of interest.

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References

1. Kompel AJ, Li X, Guermazi A, et al. Radiographic evaluation of patients with anterior shoulder instability. Current Reviews in Musculoskeletal Medicine 10 (2017): 425-33.
2. Castagna A, Delle Rose G, Borroni M, et al. Arthroscopic stabilization of the shoulder in adolescent athletes participating in overhead or contact sports. Arthroscopy 28 (2012): 309-315.
3. Cheng TT, Edmonds EW, Bastrom TP, et al. Glenoid pathology, skeletal immaturity, and multiple preoperative instability events are risk factors for recurrent anterior shoulder instability after arthroscopic stabilization in adolescent athletes. Arthroscopy 37 (2021): 1427-1433.
4. Abouali JAK, Hatzantoni K, Holtby R, et al. Revision arthroscopic Bankart repair. Arthroscopy 29 (2013): 1572-1578.
5. Randelli P, Ragone V, Carminati S, et al. Risk factors for recurrence after Bankart repair. A systematic review. Knee Surg Sports Traumatol Arthrosc 20 (2012): 2129-2138.
6. Johnson LL. Principle and practice. In Arthroscopic surgery: Mosby (Ed.), St. Louis (1986): 1420- 1424.
7. Ren S, Zhang X, Zhou R, et al. Arthroscopic subscapularis augmentation combined with capsulolabral reconstruction is safe and reliable. Knee Surg Sports Traumatol Arthrosc 27 (2019): 3997-4004.
8. Burkhart SS, De Beer JF. Traumatic glenohumeral bone defect and their relationship to failure of arthroscopic Bankart repairs: significance of the inverted-pear glenoid and the humeral engaging HillSachs lesion. Arthroscopy 16 (2000): 677-694.
9. Cole JB, L'Insalata J, Irrgang J, et al. Comparison of arthroscopic and open anterior shoulder stabilization. J Bone Joint Surgery 82 (2000): 1108-1114.
10. Karakus O, Oztermeli A. Bankart repair with subscapularis augmentation: A case control study. Medicine 102 (2023).
11. Orner CA, Bastrom TP, Pennock AT, et al. Clinical Outcomes of Adolescents with Anterior Shoulder Instability and Glenolabral Articular Disruption Lesions Compared with Isolated Bankart Lesions. Orthopaedic Journal of Sports Medicine 11 (2023): 23259671231214007.
12. Hussein IA, Hassan MA, Nematallah SA. Arthroscopic Bankart Repair with Subscapularis Augmentation in The Treatment of Recurrent Anterior Shoulder Instability with Bone Loss. The Egyptian Journal of Hospital Medicine 74 (2019): 1473-80.
13. Maiotti M, Russo R, Zanini A, et al. Bankart repair with subscapularis augmentation in athletes with shoulder hyperlaxity. Arthroscopy: The Journal of Arthroscopic & Related Surgery 37 (2021): 2055-62.

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