Journal of Athletic Training 2018;53(2):181–183
doi: 10.4085/1062-6050-232-16
© by the National Athletic Trainers' Association, Inc
www.natajournals.org

Outcomes of the Latarjet Procedure Compared With Bankart Repair for Recurrent Traumatic Anterior Shoulder Instability

Kellie C. Huxel Bliven, PhD, ATC*; Gail P. Parr, PhD, ATC†

*Department of Interdisciplinary Health Sciences, A.T. Still University, Mesa, AZ; †Department of Kinesiology, Towson University, MD

Reference/Citation: An VV, Sivakumar BS, Phan K, Trantalis J. A systematic review and meta-analysis of clinical and patient-reported outcomes following two procedures for recurrent traumatic anterior instability of the shoulder: Latarjet procedure vs. Bankart repair. *J Shoulder Elbow Surg*. 2016;25(5):853–863.

Clinical Question: Are clinical and patient-reported outcomes different between the Latarjet and Bankart repair stabilization procedures when performed for recurrent traumatic anterior shoulder instability?

Data Sources: Ovid MEDLINE, PubMed, Cochrane databases, American College of Physicians Journal Club, and Database of Abstracts of Review of Effectiveness were searched up to June 2015. The search terms used were *Bankart AND Latarjet OR Bristow*.

Study Selection: Criteria used to include studies that (1) were written in English; (2) compared the outcomes of any Latarjet procedure (Bristow-Latarjet, coracoid transfer, or modified Bristow) with Bankart repair (anatomic); (3) reported a minimum of 1 outcome of recurrence, redislocation, revision, or patient-reported outcome measure; and (4) reported original data.

Data Extraction: Data presented in any format (text, table, figure) were extracted from all included studies. The quality of each study was assessed using the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) checklist. Summary statistics were reported as relative risks and weighted mean differences. Fixed-effects (the assumed treatment effect was the same across studies) and random-effects (variations in treatment effect were assumed among studies) models were tested. Heterogeneity between trials was assessed using the χ^2 statistic, and the amount (percentage) of variation across studies due to heterogeneity was calculated using the I^2 statistic. Forest plots were used to present pooled results.

Main Results: After the initial search, 245 articles were identified. After we applied the inclusion criteria, a total of 8 studies reporting on 795 patients (Latarjet = 379, Bankart = 416) were included in this review. Using the National Health and Medical Research Council's level of evidence, the authors scored 7 of the studies at level III and 1 study at level II. All Latarjet procedures were performed using an open technique, whereas the Bankart procedure was performed open in 6 studies and arthroscopically in 2 studies. The demographics of the patients (age, proportion of males to females, proportion with surgery on the dominant side, and proportion of revisions) were similar between the 2 surgical procedures. Four groups reported that patients who underwent the Latarjet procedure had fewer recurrences than patients in the Bankart repair group (11.6% versus 21.1%, respectively), irrespective of whether the Bankart was performed open or arthroscopically. Similarly, 4 groups observed that the Latarjet procedure resulted in fewer postsurgical redislocations (5.0%) than the Bankart (9.5%) procedure, irrespective of whether the repair was open or arthroscopic. The authors of 7 studies noted no differences between the 2 procedures in revision rates (Latarjet: 3.4%, Bankart: 4.5%), and 8 studies demonstrated no differences in complications requiring reoperation (Latarjet: 5.0%, Bankart: 3.1%). Investigators in 7 studies used the Rowe score to measure patient-reported satisfaction and function; patients who underwent the Latarjet procedure reported better Rowe scores postsurgically than patients who underwent the Bankart repair (scores: 79.0 and 85.4, respectively). Researchers in 4 studies reported a loss of external-rotation range of motion, which was less in the Latarjet (11.5°) compared with the Bankart (20.9°) procedure. Of the 5 groups that reported return to function, a trend suggested that a greater proportion of patients who underwent the Latarjet procedure returned to work, sport, and throwing activities compared with those who underwent the Bankart repair.

Conclusions: The Latarjet procedure produced fewer recurrences, better patient-reported outcomes, and less restricted external-rotation motion than the Bankart repair.

Key Words: glenohumeral joint, dislocation, recurrence rate, patient satisfaction, range of motion, return to function

COMMENTARY

Anterior shoulder instability has been reported to occur at one of the highest rates (0.12 per 1000 exposures) in collegiate athletes.[1] Although most individuals elect nonoperative management after a first-time dislocation, significant delays in return to sport and poorer functional outcomes are frequent.[2] Further, nonoperative management has led to recurrence rates as high as 55%, and the pathoanatomy of recurrent dislocations was associated with more severe Bankart lesions and bony defects.[3,4] Therefore, surgical stabilization is typically recommended for individuals such as young adult athletes to address soft tissue insufficiency and bony lesions.[4,5] It is important for athletic trainers (ATs) to understand the decision-making process

Downloaded from https://prime-pdf-watermark.prime-prod.pubfactory.com/ at 2025-06-17 via free access

for selecting surgical stabilization procedures and the subsequent postoperative rehabilitation implications.

It is generally understood that recurrent anterior shoulder instability presents with soft tissue damage to the glenoid labrum in the form of a Bankart lesion. Early surgical procedures, such as the Bankart repair, were developed to address the soft tissue deficiency using suture anchors. The Bankart repair was first described in 1923 and has been considered the criterion standard for stabilizing the anterior shoulder, even with failure and recurrent dislocation rates up to 67%.[3] Further study[3,4,6] led to an improved understanding of the pathoanatomy in shoulders with recurrent anterior instability that recognized the presence of bony defects of the glenoid or humerus (or both) in the presence of Bankart lesions and provided an explanation for the less than desirable outcomes after Bankart repair in a subset of patients with bony lesions (eg, Hill-Sachs) and revision procedures. However, most surgeons agreed that a Bankart repair was preferred for athletes, both contact and noncontact, with negligible bone loss and healthy soft tissue.[7]

In the presence of bone loss or as a revision surgery, the Latarjet procedure has typically been preferred by surgeons.[7] The Latarjet procedure was first described in 1954.[3,4,8] It addresses both soft tissue and bony lesions that affect the anterior glenohumeral joint by separating the subscapularis to create a window to the anterior glenohumeral joint and transposing the horizontal aspect of the coracoid process to the anteroinferior glenoid rim.[3,4,8] It should be noted that the Latarjet procedure has been referred to as the *Latarjet-Patte*, *Bristow-Latarjet*, and *coracoid transfer*, with the primary differences being the number of screws used and concurrent repair of the anterior capsule.[3,8] As surgeons studied and ultimately adopted the Latarjet procedure, the reported outcomes were positive and comparable with, if not better than, the Bankart repair. The systematic review and meta-analysis by An et al[8] demonstrated that the Latarjet procedure produced better outcomes than the Bankart repair procedure. The proposed mechanism for the Latarjet procedure's success is the use of a "triple-blocking" mechanism designed to restore stability to the anterior shoulder.[3] The procedure includes (1) the use of a coracoid graft to restore, and in some instances increase, the glenoid's pear-shaped anteroposterior diameter to allow for greater bony congruency and bone-to-bone contact during range of motion (ROM); (2) having the conjoint tendon (short head of the biceps brachii and coracobrachialis) and lower subscapularis create a sling effect and reinforce the anterior joint capsule when the arm is in an overhead position (ie, abduction and external rotation); and (3) repair of the anterior joint capsule using the coracoacromial ligament.[3,4] It should be noted that the mechanisms and repair approaches of the Latarjet procedure continue to evolve, emphasizing the need for the AT to understand the surgeon's specific technique before initiating postsurgical rehabilitation.

As part of this systematic review and meta-analysis,[8] clinical measures of stability outcomes were assessed. Statistical differences were present for 4 measures: recurrence, redislocation, loss of external-rotation (ER) ROM, and patient-reported outcomes.[8] Findings related to loss of ER ROM and patient-reported outcomes are provided here as they are most relevant to clinicians delivering postoperative rehabilitation. Calculated mean ER ROM losses were 20.9° and 11.6° with the Bankart repair and the Latarjet, respectively.[8] Although full ER ROM may not be regained after either procedure, less restriction in ER after the Latarjet compared with the Bankart repair is advantageous for functioning in overhead positions. Using the Rowe score, which measures stability, motion, and function to assess patient-reported satisfaction and function, the Latarjet group reported greater satisfaction.[8] Overall, An et al[8] evaluated outcomes between 2 commonly used surgical procedures and demonstrated more favorable support for the Latarjet procedure. However, the studies used in the analysis provided level III evidence, with weaknesses including small sample sizes and inconsistent reporting of outcomes; thus the ability to generalize the findings is limited.

As the Latarjet procedure is becoming a viable option selected by surgeons for patients with bony lesions or undergoing a revision procedure, it is imperative that clinicians understand the Latarjet anterior shoulder stabilization procedure, outcomes, complications, and postsurgical rehabilitation. Such knowledge is essential to appropriately manage postsurgical rehabilitation, ensure effective communication with physicians, and aid in counseling patients throughout the process. Although postrehabilitation protocols are similar for the Bankart repair and Latarjet procedures, certain differences should be noted. For example, after a Latarjet procedure, in addition to bony union of the coracoid process, damage to the subscapularis tendon and muscle should be considered as well as the potential effects of immobilization and pain on muscle atrophy and dysfunction of the rotator cuff.[5] The clinician must have a clear understanding of the surgeon's rehabilitation protocol and maintain clear communication throughout the rehabilitation process. Reported complications after the Latarjet procedure are rare but may include shoulder stiffness, loss of ER ROM, and neurologic injury, particularly involving the musculocutaneous and axillary nerves.[3,4]

Generally, post-Latarjet rehabilitation protocols recommend immobilizing the arm during the initial 3 weeks postsurgery while initiating passive shoulder abduction and ER.[3–5] During this time, the coracoid process bony union is forming along the newly constructed glenoid. As such, it is important to protect the surrounding soft tissue, mainly the biceps brachii and coracobrachialis attachments, by limiting shoulder extension and aggressive ER. The patient must carefully progress into gaining ER ROM so that anterior capsule and subscapularis healing is not disrupted.[4] By 6 weeks postsurgery, the patient should no longer be using a sling and should be progressing in passive- and active-assisted motion in all shoulder ranges to active ROM as tolerated.[4,5] Strengthening begins with the scapular stabilizers at about 6 to 8 weeks postsurgery and progresses to include the anterior muscles, such as the subscapularis, pectoralis major and minor, and biceps brachii, during weeks 8 to 12. Exercises to address proprioceptive deficits should also be integrated for the anterior soft tissue during this phase. When full passive and active shoulder ROM and

Downloaded from https://prime-pdf-watermark.prime-prod.pubfactory.com/ at 2025-06-17 via free access

adequate strength are achieved, the patient can progress to functional overhead activity, with a full return to activity at approximately 12 to 16 weeks postsurgery.[3–5] Patients are typically released to full activity at this time, but it is important for the AT to be aware that deficiencies in rotator cuff strength may be present. Edouard et al[5] demonstrated decreased rotator cuff strength, particularly in internal rotation, at 3 months postsurgery, which was restored to presurgical levels by 6 months postsurgery.

As clinicians and researchers continue to implement and develop existing and new treatment alternatives for addressing problems associated with recurrent traumatic anterior shoulder instability, a general framework for evaluating these treatment strategies must be considered. Although general protocols for the rehabilitation process have been defined, patient responses can vary and, therefore, it may become necessary to alter rehabilitation activities subsequent to the AT's and physician's reviews of the patient's status. It is also important to use patient-reported outcome measures throughout the rehabilitation process. The value of the patient's perceptions of his or her pain, function, disability, and overall health-related quality of life should not be overlooked. The AT should help to ensure that a framework is in place for looking at the whole person. Positive clinical outcomes in the absence of positive patient-reported outcomes should be recognized as problematic in the treatment process.

REFERENCES

1. Owens BD, Agel J, Mountcastle SB, Cameron KL, Nelson BJ. Incidence of glenohumeral instability in collegiate athletics. *Am J Sports Med*. 2009;37(9):1750–1754.
2. Longo UG, Loppini M, Rizzello G, Ciuffreda M, Maffulli N, Denaro V. Management of primary acute anterior shoulder dislocation: systematic review and quantitative synthesis of the literature. *Arthroscopy*. 2014;30(4):506–522.
3. Joshi MA, Young AA, Balestro JC, Walch G. The Latarjet-Patte procedure for recurrent anterior shoulder instability in contact athletes. *Clin Sports Med*. 2013;32(4):731–739.
4. Fedorka CJ, Mulcahey MK. Recurrent anterior shoulder instability: a review of the Latarjet procedure and its postoperative rehabilitation. *Phys Sportsmed*. 2015;43(1):73–79.
5. Edouard P, Beguin L, Degache F, Fayolle-Minon I, Farizon F, Calmels P. Recovery of rotators strength after Latarjet surgery. *Int J Sports Med*. 2012;33(9):749–755.
6. Kinsella SD, Chauvin NA, Diaz T, Morey JM, Wells L. Traumatic shoulder dislocation among adolescents: Hill-Sachs lesion volume and recurrent instability. *J Pediatr Orthop*. 2015;35(5):455–461.
7. Garcia GH, Taylor SA, Fabricant PD, Dines JS. Shoulder instability management: a survey of the American Shoulder and Elbow Surgeons. *Am J Orthop (Belle Mead NJ)*. 2016;45(3):E91–E97.
8. An VV, Sivakumar BS, Phan K, Trantalis J. A systematic review and meta-analysis of clinical and patient-reported outcomes following two procedures for recurrent traumatic anterior instability of the shoulder: Latarjet procedure vs. Bankart repair. *J Shoulder Elbow Surg*. 2016;25(5):853–863.

Address correspondence to Kellie C. Huxel Bliven, PhD, ATC, Department of Interdisciplinary Health Sciences, A.T. Still University, 5850 East Still Circle, Mesa, AZ 85206. Address e-mail to kbliven@atsu.edu.

Downloaded from https://prime-pdf-watermark.prime-prod.pubfactory.com/ at 2025-06-17 via free access