Thesis

A Retrospective study on Clinical and Functional Outcomes of Arthroscopic Bankart's Repair Surgery for Traumatic Shoulder Instability

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Abstract

Background: Traumatic anterior glenohumeral dislocation is common in young active individuals and often leads to recurrent instability. Arthroscopic Bankart repair with selective remplissage aims to restore labro-ligamentous anatomy and address engaging Hill-Sachs lesions.

Methods and materials: Seventy patients with traumatic anteroinferior labral tears and glenoid bone loss <25% underwent arthroscopic labral repair between 2014 and 2016. Preoperative assessment included history, examination, radiographs, MRI, outcome scores (UCLA, Oxford Instability, SF-36) and counselling. Operative technique used suture anchors; remplissage was added when engaging humeral defects were present. All patients followed a rehabilitation programme and were reviewed at 3 weeks, 3 months, 6 months and 12 months to assess function, range of motion and stability.

Results: At twelve months most patients showed improvement in shoulder-specific scores and in general health domains, restoration of near-normal range of motion, conversion of positive instability tests to negative, and low rates of complications and recurrent dislocation. Transient postoperative stiffness occurred in a minority and resolved with physiotherapy.

Conclusion: Arthroscopic Bankart repair with selective remplissage provides reliable restoration of shoulder stability and function for appropriately selected patients after traumatic dislocation, with low morbidity and good one-year outcomes.

Keywords: Arthroscopic Bankart repair; Traumatic shoulder instability; Remplissage; Hill-Sachs; Functional outcome

Introduction

The shoulder trades bony stability for a remarkable range of motion, and that trade helps explain why anterior dislocation is common after a traumatic blow to an abducted, externally rotated arm. Young patients who sustain a primary traumatic dislocation have a substantial risk of recurrence when managed nonoperatively, particularly if they remain active in sports or manual work. Long-term prospective data highlight the heightened recurrence risk in younger age groups and support early intervention in selected patients. [1]

Clinical overviews of glenohumeral dislocation emphasise that primary traumatic events disrupt the anteroinferior capsulolabral complex, producing instability patterns that are predictable in mechanism and sequelae. These reviews also describe the variable natural history of first-time dislocation and the factors that increase the likelihood of later episodes. [2]

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DOI: https://doi.org/10.13107/jmt.2021.v07.i01.152

Large cohort studies of athletes and active populations underline the frequency of shoulder instability in contact and collision sports and draw attention to the functional implications for return to play. These data inform counselling and selection of patients for surgery versus conservative management. [3]

In adolescents and young adults, management remains debated, but consensus leans toward surgical stabilization for those with clear labral detachment and ongoing high functional demand because recurrence rates without surgery are high. [4]

Randomized and comparative trials have compared open bone and soft-tissue procedures with arthroscopic soft-tissue stabilization; these trials inform contemporary practice by showing that, in patients without critical glenoid bone loss, arthroscopic repair can deliver comparable stability with less soft-tissue morbidity and faster early recovery. [5]

Materials and methods

We performed a combined prospective and retrospective series at a tertiary orthopaedic centre from June 2014 to December 2016. Seventy patients aged 18 years and older with traumatic anterior-inferior labral tears and glenoid bone loss under 25% were included after institutional review board approval and informed consent. Exclusion criteria were atraumatic or multidirectional instability, glenoid bone loss exceeding 25% that required bony augmentation, and prior stabilizing procedures mandating open reconstruction. These selection criteria reflect prior trials that examined immobilization and surgical thresholds for intervention. [6]

Preoperative evaluation recorded the mechanism of injury, hand dominance, occupation and sporting demands, frequency of dislocations and previous treatments. Focused clinical testing included apprehension, relocation and anterior-drawer maneuvers; generalized laxity was documented when present. Factors influencing outcomes were prospectively noted and used in case selection and counseling. [7]

Radiological workup comprised true AP and axillary radiographs and MRI to define labral tears and Hill–Sachs lesions; CT scans were obtained when glenoid bone loss was suspected to quantify defect size and plan surgery. Long-term arthropathy risk after recurrent dislocations was considered when counselling patients about definitive treatment. [8]

All operations were arthroscopic under general anaesthesia with the patient in the beach-chair position. Diagnostic arthroscopy defined the lesion set and any concomitant pathology. The glenoid neck was decorticated to provide a bleeding bed; suture anchors were placed along the anteroinferior rim and the labro-ligamentous complex secured to restore concavity and appropriate capsular tension. When an engaging Hill–Sachs lesion was identified intraoperatively, remplissage was performed to fill the defect with posterior capsule and infraspinatus tendon.

Outcomes were recorded at 3 weeks, 3 months, 6 months and 12 months using the UCLA Shoulder Score, Oxford Shoulder Instability Score, ROM measurements and SF-36; paired comparisons assessed change from baseline.

Results

Seventy patients completed the surgical protocol and followed up to one year. The mean age was 30.4 years (±9.6); the cohort was largely male and predominantly right-hand dominant. Most injuries resulted from sports or falls with the arm in abduction and external rotation. At six months a number of patients exhibited modest restrictions in external rotation consistent with protective capsular healing; by twelve months the majority had regained near-normal range of motion compared with the contralateral shoulder.

Functionally, shoulder-specific scores improved substantially from baseline to twelve months, and SF-36 domains for physical functioning and vitality showed parallel gains. Preoperative positive instability tests converted to negative in the overwhelming majority by final follow-up. Complications were uncommon and included isolated transient stiffness and minor superficial wound issues; recurrent redislocation was rare. Overall, more than 90% of patients achieved a stable, pain-limited shoulder and returned to routine work and recreational activity with satisfactory tolerance at one year.

Literature review

The classic Bankart description of recurrent shoulder dislocation first highlighted the importance of the anteroinferior labrum and periosteum in restoring the glenoid concavity and maintaining stability; this foundational work continues to inform current repair strategies. [10]

As arthroscopic equipment and fixation technology matured, surgeons described techniques for anatomic labral reattachment via suture anchors and minimally invasive portals. Early prospective series documented promising functional results and established the technical feasibility of arthroscopic Bankart repair. [11]

Long-term follow-up studies of arthroscopic repair show good outcomes in appropriately selected patients, with many series reporting low recurrence and durable function when bone loss is not critical. These outcomes support arthroscopic approaches in centers with appropriate expertise. [12]

Technical variations—knotless anchors, anchor placement strategies and capsular plication techniques—have been described and evaluated in medium-term studies; suture anchor-based arthroscopic repair became widely adopted as instrumentation improved. [13]

Concerns regarding open soft-tissue or bone procedures include possible subscapularis muscle insufficiency and functional trade-offs from tendon splitting or transfer; such complications motivated the shift toward less invasive arthroscopic options when feasible. [14]

Cost and patient-subjective outcome analyses have compared

arthroscopic and open Bankart repairs and considered resource utilization alongside functional recovery; these studies help inform system-level decisions about the preferred approach for particular patient groups. [16]

Prospective series investigating arthroscopic Bankart repair report consistent gains in function and low complication rates when repairs are anatomically accurate and rehabilitation is disciplined. These reports contributed to the evidence base that informed our surgical technique and postoperative pathway. [17]

Age-related differences in presentation and outcome have been documented; older patients with primary traumatic dislocation often demonstrate different patterns and may require individualized consideration compared with younger, athletic cohorts. [18]

Comparative analyses of anatomic Bankart repair versus nonoperative treatment in first-time dislocators highlight that carefully selected nonoperative management may be appropriate for low-demand patients, but younger, active individuals have higher failure rates with conservative care and therefore are often better served by early stabilization. [19]

Discussion

The outcomes in this consecutive series are consistent with the modern shoulder literature showing that, when lesion patterns are appropriate and osseous defects are recognised and treated, arthroscopic Bankart repair reliably restores stability and function with low morbidity [5, 11, 15, and 12]. The demographic profile of our cohort — younger, active patients — mirrors groups shown to have higher recurrence after conservative care and therefore to benefit most from early operative stabilization [1–4]. Early definitive repair in such patients also helps limit the cumulative episodes that can produce progressive bone loss and later arthropathy [8].

Transient postoperative stiffness observed in some patients at six months is a recognized consequence of capsulolabral retensioning and early healing; structured, staged rehabilitation programs are effective in restoring motion by twelve months without compromising repair integrity [12]. Patient counselling about the expected recovery timeline and close coordination with physiotherapy are essential to optimize outcomes and patient satisfaction.

Neutralizing engaging Hill–Sachs lesions with an arthroscopic remplissage proved a useful adjunct in our practice, allowing us to address mechanical contributors to instability without resorting to open bone-transfer procedures in those shoulders [9, 17]. Conversely, when critical anterior glenoid deficiency is present, soft-tissue repair alone is unlikely to be durable and bony augmentation (for example Latarjet) should be considered to restore the articular arc and mechanical stability [8, 19]. Awareness of these pathoanatomic distinctions is central to choosing the correct procedure.

Open techniques can produce durable stability but carry the risk of subscapularis compromise and restrictions in rotation, factors that have driven the shift to arthroscopic anatomic repair where appropriate [14]. Cost and patient-reported outcome analyses also favour arthroscopic approaches in selected patients because of lower perioperative morbidity and faster early recovery [16].

Limitations of this work include its single-centre design, mixed prospective-retrospective data collection and follow-up limited to one year — features that constrain assessment of very late recurrence or degenerative change and that suggest caution in generalizing to older or distinctly different patient populations [18,20]. Nonetheless, our results—together with randomized and comparative data—support a lesion-specific, tailored approach in which arthroscopic labral repair, supplemented by remplissage or bony augmentation as indicated, offers a reliable pathway to durable stability and preserved motion [5,11,15].

Conclusion

Arthroscopic Bankart repair, combined with remplissage when indicated, restores stability and function in most patients who sustain traumatic anterior shoulder dislocation and have limited glenoid bone loss. In this series the majority regained near-normal motion by twelve months, experienced meaningful improvements in shoulder-specific and general health measures, and encountered a low rate of complications or recurrent dislocation. Key elements of success were careful preoperative assessment, precise anatomic reattachment of the labro-ligamentous complex, thoughtful intraoperative management of humeral and glenoid osseous lesions, and a disciplined staged rehabilitation programme. For young, active patients at high risk of recurrence, arthroscopic stabilization provides a minimally invasive route to durable shoulder stability while preserving motion and minimizing soft-tissue morbidity.

Reference:

1. Hovelius L, Augustini BG, Fredin H, Johansson O, Norlin R, Thorling J. Primary anterior dislocation of the shoulder in young patients: a ten-year prospective study. J Bone Joint Surg Br. 1996; 78-B (1):1677–84.

2. Dodson CC, Cordasco FA. Anterior glenohumeral joint dislocations. Orthop Clin North Am. 2008; 39(4):507–18.

3. Kaplan LD, Flanigan DC, Norwig J, Jost P, Bradley J. Prevalence and variance of shoulder injuries in elite collegiate football players. Am J Sports Med. 2005; 33(8):1142–6.

4. Taylor DC, Krasinski KL. Adolescent shoulder injuries: consensus and controversies. J Bone Joint Surg Am. 2009; 91(2):462–73.

5. Mohtadi NG, Chan DS, Hollinshead RM, Boorman RS, Hiemstra LA, Lo IK, et al. A randomized clinical trial comparing open and arthroscopic stabilization for recurrent traumatic anterior shoulder instability. J Bone Joint Surg Am. 2014;96(5):353–60.

6. Liavaag S, Brox JI, Pripp AH, Enger M, Soldal LA, Svenningsen S. Immobilisation in external rotation after primary shoulder dislocation did not reduce the risk of recurrence. J Bone Joint Surg Am. 2011; 93(10):897–904.
7. Rhee YG, Cho NS, Cho SH. Traumatic anterior dislocation of the shoulder: factors affecting outcome. Clin Orthop Surg. 2009; 1(4):188–93.
8. Hovelius L, Saeboe M. Arthropathy after primary anterior shoulder dislocation — 223 shoulders followed for twenty-five years. J Shoulder Elbow Surg. 2009; 18(3):339–47.
9. Erkoçak ÖF, Yel M. Functional results of arthroscopic Bankart repair with knotless anchors for anterior glenohumeral instability. Eur J Gen Med. 2010; 7(2):179–86.
10. Bankart ASB. Recurrent or habitual dislocation of the shoulder-joint. Br Med J. 1923; 2(3285):1132–3.
11. Fabbriciani C, Milano G, Demontis A, Fadda S, Ziranu F, Mulas PD. Arthroscopic versus open treatment of Bankart lesion of the shoulder: a prospective randomized study. Arthroscopy. 2004; 20(5):456–62.
12. Ee GW, Mohamed S, Tan AH. Long-term results of arthroscopic Bankart repair for traumatic anterior shoulder instability. J Orthop Surg Res. 2011; 6:14.
13. Sedeek SM, Tey IK, Tan AH. Arthroscopic Bankart repair for traumatic anterior shoulder instability with the use of suture anchors. Singapore Med J. 2008; 49(9):676–80.
14. Scheibel M, Tsynman A, Magosch P, Schroeder RJ, Habermeyer P. Postoperative subscapularis muscle insufficiency after primary and revision open shoulder stabilization. Am J Sports Med. 2006; 34(10):1586–93.
15. Bottoni LP, Smith ME, Berkowitz MM, Towle CR, Moore CJ. Arthroscopic versus open shoulder stabilization for recurrent anterior instability: a prospective randomized clinical trial. Am J Sports Med. 2006; 34(11):1730–7.
16. Wang C, Ghalambor N, Zarins B, Warner JJ. Arthroscopic versus open Bankart repair: analysis of patient subjective outcome and cost. Arthroscopy. 2005; 21(10):1219–22.
17. O'Neil BD. Arthroscopic Bankart repair of anterior detachment of glenoid labrum: a prospective study. Arthroscopy. 2002; 18:755–63.
18. Pevny T, Hunter RE, Freeman JR. Primary traumatic anterior shoulder dislocation in patients 40 years of age and older. Arthroscopy. 1998; 14(3):289–94.
19. Chahal J, Marks PH, MacDonald PB, Shah PS, Theodoropoulos J, Ravi B, Whelan DB. Anatomic Bankart repair compared with nonoperative treatment and/or arthroscopic lavage for first-time traumatic shoulder dislocation. Arthroscopy. 2012; 28(4):565–75.
20. Mishra DK, Fanton GS. Two-year outcome of arthroscopic Bankart repair and electrothermal-assisted capsulorrhaphy for recurrent traumatic anterior shoulder instability. Arthroscopy. 2001; 17(8):844–9.

Conflict of Interest: Nil
Source of Support: None

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Year of Acceptance of Thesis: 2019

How to Cite this Article: Haidermota MJ, Ajri A, Kamat N, Shevte I, Sonawane D, Shyam A, Sancheti P| A Retrospective study on Clinical and Functional Outcomes of Arthroscopic Bankart's Repair Surgery for Traumatic Shoulder Instability | Journal Medical Thesis | 2025 January-June; 7(1): 5-8.