American Journal of Biomedicine and Pharmacy
https://biojournals.us/index.php/AJBP
ISSN: 2997-7177

Improvement of Operative Treatment of Chronic Dislocation of the Shoulder Joint

Raxmonov Shoximordon Sherqul o‘g‘li
Samarkand State Medical University. Intern assistant at the Department of Traumatology and Orthopedics

Received: 2024, 15, Aug
Accepted: 2025, 21, Sep
Published: 2025, 07, Oct

Annotation: Chronic dislocation of the shoulder joint is one of the most challenging orthopedic conditions, often resulting from repeated trauma or unsuccessful primary treatment of acute dislocation. The complexity of this pathology lies in soft tissue contractures, bone defects, and capsular insufficiency, which make reduction and stabilization difficult. This study focuses on improving surgical approaches to achieve optimal stability and functional recovery of the shoulder joint in chronic cases. By comparing traditional open reduction and modern reconstructive techniques, the study evaluates the effectiveness of different surgical interventions, aiming to develop a standardized operative protocol for better outcomes. Chronic shoulder dislocation represents one of the most complex and disabling pathologies in orthopedic practice. It often results from neglected acute dislocation or repeated traumatic episodes that gradually destroy the normal anatomy and function of the shoulder joint. Long-term dislocation leads to contracture of the periarticular soft tissues, atrophy of rotator cuff muscles, and significant degenerative changes in the glenoid and humeral head. The study aims to evaluate and improve the surgical management of chronic shoulder dislocation by introducing modified techniques that provide stronger stabilization, reduced recurrence, and enhanced shoulder mobility. The focus is placed on comparative analysis between classical open

reduction with capsule-ligament reconstruction and advanced bone-grafting methods such as the modified Latarjet procedure.

Keywords: Chronic shoulder dislocation, surgical treatment, Bankart repair, Latarjet procedure, shoulder instability, rehabilitation, orthopedic surgery, trauma, glenoid defect, rotator cuff.

Introduction:

Chronic dislocation of the shoulder joint remains a significant problem in orthopedic and trauma surgery due to its recurrent nature and functional impairment. It occurs when the humeral head remains displaced from the glenoid cavity for an extended period, often exceeding three weeks, leading to degenerative changes in the articular surfaces and soft tissue contractures. The pathology is usually caused by neglected primary dislocation, repeated traumatic events, or inadequate conservative management. Chronic cases frequently present with pain, limited motion, muscle atrophy, and joint instability. The primary goal of treatment is to restore the normal anatomy of the shoulder joint, ensure joint stability, and regain full functional activity. Surgical management is often required as conservative methods rarely provide satisfactory results. The present research aims to analyze and improve operative techniques for the treatment of chronic shoulder dislocation based on clinical experience and modern surgical advancements. The shoulder joint is the most mobile joint in the human body, allowing a wide range of movements necessary for upper limb function. However, its high mobility also makes it the most frequently dislocated joint. While acute dislocations can often be managed conservatively, chronic dislocation presents a far more difficult challenge. When the humeral head remains displaced for several weeks or months, pathological changes occur: the joint capsule contracts, the labrum degenerates, and bony defects appear on the glenoid and humeral head surfaces. These changes make closed reduction impossible and create instability even after open reposition. Chronic shoulder dislocation is often encountered in patients who either did not receive timely treatment after initial injury or had repeated recurrences after inadequate surgical repair. The consequences include pain, restricted movement, decreased muscle strength, and functional impairment of the limb. The aim of improving operative treatment in such cases is to restore the congruity of the articular surfaces, reinforce anterior stabilization structures, and preserve as much shoulder motion as possible.

Materials and Methods:

The study included 40 patients aged between 20 and 60 years who were diagnosed with chronic anterior dislocation of the shoulder joint. All patients were treated at the Department of Traumatology and Orthopedics, Samarkand State Medical University, from 2020 to 2024. Preoperative assessment included X-ray, computed tomography (CT), and magnetic resonance imaging (MRI) to determine the extent of glenoid bone loss and soft tissue involvement. Patients were divided into two groups: Group I (n=20) underwent traditional open reduction with capsular repair, and Group II (n=20) underwent modified Latarjet procedure combined with capsulolabral reconstruction. The evaluation criteria included postoperative range of motion, recurrence rate, pain (VAS scale), and functional assessment using the Constant-Murley and Rowe scoring systems. Rehabilitation started on the second postoperative week with gradual passive and active exercises under physiotherapist supervision.

Results:

In Group I, anatomical reduction was achieved in all cases, but residual instability was noted in

25% of patients during follow-up. The average Constant-Murley score was 72.4±6.5, and the Rowe score averaged 70.2±5.8 after six months. In contrast, Group II demonstrated better outcomes with complete joint stability and improved range of motion. The Constant-Murley score reached 89.1±5.2, and the Rowe score averaged 88.5±4.7. Pain intensity decreased significantly compared to preoperative values. No major neurovascular complications were observed. Radiographic evaluation confirmed stable fixation and satisfactory bone healing in all patients of Group II. The modified Latarjet technique allowed for better anterior support of the glenoid, reduced recurrence rate, and faster rehabilitation.

Clinical evaluation of patients undergoing improved surgical methods revealed significant advantages compared to conventional techniques. In patients treated with traditional open reduction and capsulolabral repair, satisfactory anatomical reduction was achieved, but functional recovery was limited, and instability recurred in several cases. The modified approach, based on the Latarjet principle with optimization of graft placement and tension balance of soft tissues, provided better mechanical stability and prevented redislocation. Postoperative assessments showed that patients regained nearly 85–90% of shoulder function within six months of surgery. Range of motion improved notably in abduction and external rotation, while postoperative pain levels were substantially reduced. Radiological imaging confirmed complete bone graft integration and restored alignment of the glenoid cavity. No cases of neurovascular injury or postoperative infection were recorded. The rehabilitation period was shortened due to early initiation of passive exercises and gradual activation of rotator cuff muscles, which contributed to faster functional adaptation.

Discussion:

The findings indicate that surgical management of chronic shoulder dislocation should be individualized depending on the degree of bone defect, duration of dislocation, and condition of soft tissues. Traditional open reduction with capsular repair remains suitable for cases with minimal bone loss and preserved soft tissue elasticity. However, when glenoid bone loss exceeds 20–25% or when the labrum is severely damaged, the modified Latarjet procedure provides superior stability by transferring the coracoid process to the anteroinferior glenoid rim. This technique not only restores the bony anatomy but also reinforces the dynamic sling effect of the conjoined tendon. Postoperative rehabilitation is crucial for achieving good functional recovery, as early mobilization prevents joint stiffness while maintaining surgical fixation integrity. The study’s results align with other recent research emphasizing the biomechanical advantages of the Latarjet technique in chronic dislocations.

The complexity of chronic shoulder dislocation requires a multifactorial treatment approach. Standard open reduction alone often fails to restore long-term joint stability because of the combined nature of the pathology involving both bone and soft tissue elements. The modified Latarjet procedure, which involves coracoid process transfer with its attached muscles, addresses this issue effectively. The coracoid graft provides both a static bony buttress and a dynamic muscular sling, stabilizing the joint during motion. This dual mechanism plays a critical role in preventing further anterior translation of the humeral head. Moreover, the modified technique used in this study allowed for precise graft placement at the anteroinferior glenoid margin, optimizing contact between the graft and native bone for better fusion. The use of strong fixation materials further enhanced stability. Another important aspect of operative improvement is individualized surgical planning based on the degree of bone loss and soft tissue elasticity. For patients with minimal bone deficiency, augmented capsulolabral reconstruction was sufficient, while in those with significant defects, bone grafting was essential. The integration of early rehabilitation protocols also contributed to the success of the treatment by preventing joint stiffness and promoting muscle re-education. The combination of biomechanical reconstruction and functional therapy resulted in better overall shoulder performance and patient satisfaction.

Conclusion:

Improving the operative treatment of chronic shoulder dislocation requires an integrated approach combining accurate preoperative assessment, appropriate surgical technique, and structured rehabilitation. The modified Latarjet procedure offers reliable stabilization, minimizes recurrence, and ensures functional recovery, making it the preferred method for chronic cases with significant bone and soft tissue deficits. Further studies with larger patient samples and long-term follow-up are necessary to refine operative protocols and improve patient outcomes.

The study demonstrates that the improvement of operative treatment for chronic shoulder dislocation significantly enhances functional and anatomical outcomes. The modified Latarjet procedure, when applied according to specific indications, provides reliable stability and long-term joint integrity. Incorporating careful preoperative imaging, precise intraoperative technique, and structured postoperative rehabilitation ensures optimal results. The approach effectively minimizes recurrence, restores a full range of motion, and enables patients to return to their normal physical activities more rapidly. Therefore, this improved surgical method can be recommended as the preferred option in the management of chronic shoulder dislocation cases with bone and soft tissue damage, representing a valuable advancement in modern orthopedic surgery.

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