



Prevalence of Soft Tissue and Bony Injuries in First-Time and Recurrent Shoulder Dislocations: A Prospective Study

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Abstract

Introduction: Shoulder dislocation, particularly anterior dislocation, is one of the most common traumatic injuries, especially in young, active individuals. Recurrent dislocations are associated with higher risks of soft tissue, muscle, labral, and ligament injuries. This study investigates the prevalence of these associated injuries and compares first-time versus recurrent shoulder dislocations.

Methods: In this prospective study, 30 patients with radiologically confirmed shoulder dislocations underwent arthroscopic evaluation to assess for soft tissue, muscle, labral, and ligament injuries. The prevalence of injuries like Hill-Sachs lesions, Bankart lesions, rotator cuff tears, and labral tears were evaluated and compared between first-time and recurrent dislocations.

Results: Soft tissue injuries were prevalent in 70% of first-time dislocations and 85% in recurrent dislocations. Recurrent cases had a significantly higher incidence of complex labral tears (65%) and rotator cuff involvement (50%).

Conclusion: Arthroscopy is crucial in diagnosing and managing associated injuries in shoulder dislocations. Early detection and treatment, particularly in recurrent dislocations, can improve functional outcomes and reduce recurrence.

Keywords: Shoulder dislocation, Soft tissue, Ligament injuries, Bony Injuries

Introduction

Shoulder dislocation is a common orthopedic injury, particularly in young, active populations, with an estimated incidence of 24 per 100,000 person-years in the general population ⁽¹⁾. It is most frequently anterior in nature and often associated with significant soft tissue

injuries, such as labral tears and rotator cuff damage, which can exacerbate the likelihood of recurrence. The rate of recurrence varies from 17% to 92%, with younger patients experiencing higher rates of recurrence ⁽²⁾.

Understanding the prevalence of associated injuries in both first-time and recurrent dislocations is essential for improving clinical outcomes. Multiple studies have indicated that early arthroscopic evaluation can help in identifying these injuries, potentially reducing the risk of future dislocations ⁽³⁾. This study aims to determine the prevalence of associated injuries and compare injury patterns between first-time and recurrent shoulder dislocations using arthroscopic evaluation.

Methods

Study Design

This was a prospective observational study involving 30 patients with radiologically confirmed acute shoulder dislocations who presented at a tertiary care center. Patients underwent diagnostic arthroscopy to assess associated injuries.

Inclusion Criteria

- Patients over 18 years of age with confirmed shoulder dislocation (first-time or recurrent).
- Patients willing to provide informed consent and undergo arthroscopy.

Exclusion Criteria

- Patients with fractures of the proximal humerus.
- Patients unfit for anesthesia or unwilling to participate.

Data Collection

Demographic data, type of dislocation (first-time or recurrent), and associated injuries (labral tears, rotator cuff injuries, etc.) were recorded. Arthroscopic evaluations were performed, and outcomes were

assessed based on the Rowe Shoulder Score for functional outcomes.

Statistical Analysis

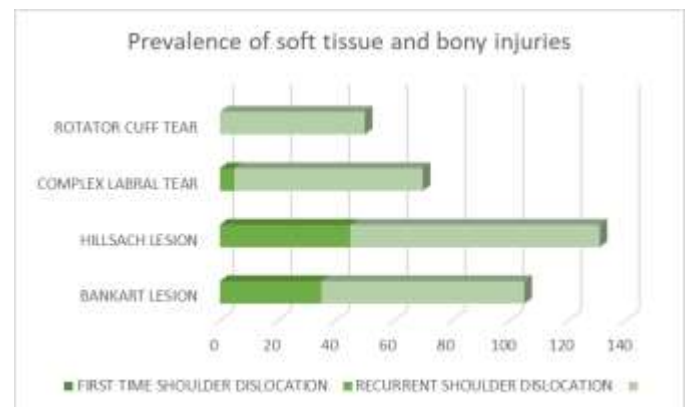
Descriptive statistics were used for data summarization. The chi-square test was used to assess the significance of injury prevalence between first-time and recurrent dislocations.

Results

Demographics and Injury Prevalence

The mean age of the study population was 31.5 years, with a male predominance (70%). Among the 30 patients, 12 experienced recurrent dislocations (40%), while the remaining 18 had first-time dislocations.

- **First-Time Dislocations:** 70% of first-time dislocation cases presented with associated injuries. Bankart lesions were present in 35%, and Hill-Sachs lesions were noted in 45%.
- **Recurrent Dislocations:** Recurrent dislocations showed a higher prevalence of injuries, with 85% presenting associated lesions. Complex labral tears were found in 65% of these patients, and rotator cuff tears were present in 50%.



Graph 1: Prevalence of soft tissue and bony injuries in acute shoulder dislocation

Discussion

Prevalence and Patterns of Injury

This study found that 70% of first-time dislocations had associated soft tissue injuries, while recurrent dislocations were more likely to show labral and rotator cuff damage, with a prevalence of 85%. The higher rate of associated injuries in recurrent dislocations is consistent with previous research, which highlights that with each successive dislocation, the risk of additional soft tissue and ligamentous injuries increases.

A similar study by Burkhart⁽⁵⁾ and De Beer reported that glenoid bone loss and labral tears, particularly Bankart lesions, were more prevalent in recurrent dislocations. This study found that Bankart lesions occurred in 35% of first-time dislocations and 65% of recurrent cases, indicating that the stabilizing structures of the shoulder degrade over time with repeated dislocations.

Rotator Cuff Involvement

The incidence of rotator cuff injuries was higher in recurrent dislocations (50%) compared to first-time dislocations, supporting findings by Taylor et al.⁽³⁾. Their study also demonstrated that arthroscopic techniques can more effectively diagnose rotator cuff damage, which may be missed on MRI in cases of chronic instability.



Figure 1: Rotator cuff tear

Hill-Sachs and Bankart Lesions

Hill-Sachs lesions, which are a result of the humeral head impacting the glenoid rim, were observed in 45% of first-time dislocations and were more prevalent in recurrent cases. This finding aligns with previous reports by Arciero et al.⁽⁶⁾, who noted that the severity of Hill-Sachs lesions often increases with recurrent instability, leading to a higher risk of persistent dislocations if not surgically addressed.

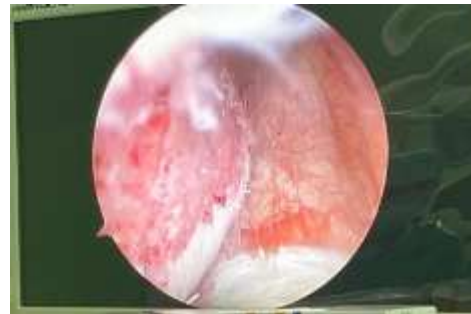


Figure 2: Hillsachs lesion



Figure 3: Bankart lesion

Comparison with Similar Studies

Several other studies have evaluated the importance of early arthroscopic intervention. Wheeler et al.⁽⁷⁾ found that in young, athletic populations, arthroscopic surgery reduced the recurrence rate of dislocations from 92% to 22%. Similarly, our study demonstrates that recurrent dislocations are more prone to complex injuries that necessitate early surgical intervention.

Clinical Implications

The findings emphasize the importance of prompt and accurate diagnosis of associated injuries in shoulder

dislocations. MRI, although useful, may not always detect subtle labral or rotator cuff injuries. Arthroscopy, as shown in this study, provides a definitive diagnosis and allows for simultaneous therapeutic interventions, potentially preventing further instability and improving long-term shoulder function.

Conclusion

This study highlights the high prevalence of associated soft tissue, labral, and ligament injuries in shoulder dislocations, especially in recurrent cases. Arthroscopy is essential for accurate diagnosis and management, particularly in detecting injuries that may not be apparent on MRI. Early intervention in recurrent cases can reduce the risk of further dislocations and improve patient outcomes.

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