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Surgical stabilization for first-time shoulder dislocators: a multicenter analysis

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Background: Anterior shoulder dislocations in young patients are associated with high rates of recurrent instability. Although some surgeons advocate for surgical stabilization after a single dislocation event in this population, there is sparse research evaluating surgical treatment for first-time dislocators.

Methods: Patients undergoing surgical stabilization for anterior shoulder instability were prospectively enrolled at multiple institutions from 2015-2017 and stratified by number of dislocations before surgery. Demographic data, preoperative patient-reported outcomes, imaging findings, surgical findings, and procedures performed were compared between groups. Analysis of variance, χ^2 , and multivariate logistic regression were used for statistical analysis.

Results: The study included 172 patients (mean age, 25.3 years; 79.1% male patients) for analysis (58 patients with 1 dislocation, 69 with 2-5 dislocations, 45 with >5 dislocations). There were no intergroup differences in demographic characteristics, preoperative patient-reported outcomes, or physical examination findings. Preoperative imaging revealed increased glenoid bone loss in patients with multiple dislocation events ($P = .043$). Intraoperatively, recurrent dislocators were more likely to have bony Bankart lesions (odds ratio [OR], 3.26; $P = .024$) and biceps pathology (OR, 6.27; $P = .013$). First-time dislocators more frequently underwent arthroscopic Bankart repair and/or capsular plication (OR, 2.22; $P = .016$), while recurrent dislocators were more likely to undergo open Bristow-Latarjet procedures (OR, 2.80; $P = .049$) and surgical treatment for biceps pathology (OR, 5.03; $P = .032$).

Conclusions: First-time shoulder dislocators who undergo stabilization are more likely to undergo an arthroscopic procedure and less likely to have bone loss or biceps pathology compared with recurrent dislocators. Future studies are needed to ascertain long-term outcomes of surgical stabilization based on preoperative dislocation events.

Level of evidence: Level II; Prospective Cohort Design; Treatment Study

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Glenohumeral instability is a common clinical entity encountered by sports medicine and upper extremity specialists and encompasses a wide spectrum of injury. Affected patients may experience significant time lost from activities and an overall decrease in health.^{22,29,51} High rates of anterior instability have been described in high school athletes, collegiate athletes, and military cadets.^{33,34,44} Unfortunately, patients who have a single dislocation are at significant risk of recurrent instability.^{23,24,52} Robinson et al⁴⁰ prospectively studied a group of 252 patients with an anterior glenohumeral dislocation and found a 2-year recurrence rate of 55.7% and a 5-year rate of 66.8%. Cameron et al¹⁰ studied 714 military cadets during their 4-year academic tenure and found that subjects with a history of glenohumeral instability were 5 times more likely to have an instability event than those without a history of instability. Demographic risk factors for recurrence include age younger than 20 years, male sex, and participation in high-risk activities.^{40,49} In a systematic review of the literature, Wasserstein et al⁴⁹ reported that recurrence rates in young male patients approached 80%, whereas the pooled recurrence rate from included studies was 21%. Anatomic factors that predispose to recurrence include generalized hyperlaxity, presence of a bony Bankart lesion or off-track Hill-Sachs lesion, and an ipsilateral rotator cuff tear or neurologic deficit.^{23,39,42,45} Furthermore, the risk of recurrent instability may be related to repeated trauma to the joint. Yiannakopoulos et al⁵⁰ found that patients with chronic anterior instability were more likely to have partial articular-sided rotator cuff tears, anterior labral

periosteal sleeve avulsion (ALPSA) lesions, intra-articular loose bodies, and capsular laxity. Similarly, Shin et al⁴⁶ found an increase in attritional glenoid bone loss and ALPSA lesions in the recurrent instability group.

Given the high recurrence rates observed in the young, athletic population, some surgeons have advocated for early surgical intervention and have recommended stabilization after a single dislocation event.^{11,30} Studies of arthroscopic Bankart repair for first-time dislocators have shown satisfactory results, including decreased rates of recurrent instability compared with patients who receive nonoperative management consisting of immobilization and therapy.^{4,7,27,41} A meta-analysis of 5 trials compared patients who underwent stabilization after a single dislocation with those who received nonoperative management. The pooled findings of 288 patients from these studies indicated that athletes who underwent early stabilization had a higher return-to-play rate and a decreased recurrence rate compared with nonoperative groups.¹⁶ In practice, however, conservative surgeons (and patients) frequently prefer to use nonoperative management for first-time dislocators despite these recent studies.

The purpose of this study was to compare first-time versus recurrent shoulder dislocators undergoing surgical stabilization in terms of demographic data, preoperative physical examination and imaging findings, intraoperative findings, and surgical procedures performed in a large multicenter cohort. We hypothesized that patients undergoing surgery after a first-time anterior shoulder dislocation would have less concomitant

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