

Subluxators and Dislocators Have Similar Recurrence Rates and Patient Reported Outcomes following Arthroscopic Stabilization of Anterior Shoulder Instability

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INTRODUCTION: Anterior shoulder instability is a common orthopedic condition with a large socioeconomic burden due to high rates of recurrent anterior shoulder instability, especially in high-risk populations such as military personnel and young athletes.(1,2) Anterior shoulder instability may manifest as glenohumeral dislocation, during which there is complete dissociation of the glenoid and humeral head interface, or glenohumeral subluxation, during which there is transient loss of articulation between the glenoid and humerus with spontaneous reduction.(3) Although glenohumeral subluxation comprises up to 85% of anterior shoulder instability events, much of the available literature on anterior shoulder instability focuses on patients who sustain glenohumeral dislocation.(3) As a result, there is a relative paucity of literature that evaluates clinical and patient-reported outcomes (PROs) between glenohumeral subluxators and dislocators.(4) Therefore, the purpose of this study was to evaluate mid- to long-term PROs and rates of recurrent anterior shoulder instability after arthroscopic stabilization of anterior shoulder instability in subluxators versus dislocators. The hypothesis was that patients who experience glenohumeral subluxation would have lower rates of recurrent anterior shoulder instability and superior PROs at final follow-up.

METHODS: A retrospective review was conducted of consecutive patients aged 13-47 years that underwent arthroscopic Bankart repair (ABR) with or without remplissage for anterior shoulder instability between 2008-2021. All patients had magnetic resonance imaging (MRI)-confirmed findings of an anterior shoulder instability event (Bankart tear and/or Hill-Sachs lesion). Exclusion criteria included glenoid bone loss >20%, revision surgery, concomitant rotator cuff tear, and less than 3-year follow-up. Patients were categorized as experiencing glenohumeral subluxation (no manual shoulder reduction required) or dislocation (manual reduction required). PROs including Western Ontario Shoulder Index (WOSI), pain Visual Analog Scale (pVAS), and Subjective Shoulder Value (SSV) scores, recurrent anterior shoulder instability, and subsequent surgery were collected and compared between groups. Patient Acceptable Symptom State (PASS) rates for WOSI and pVAS were also evaluated between groups. Significance was set at p<0.050.

RESULTS SECTION: A total of 96 patients (35 subluxators, 61 dislocators; age 24±9 years old; 30 (31.3%) females) were included at mean follow-up of 8.1 years (range: 3.0-17.2 years). Dislocators were more likely to have multiple anterior shoulder instability episodes prior to presentation (80.3% vs 48.6%; p=0.001), larger Hill-Sachs intervals (9.6 vs 6.7 mm; p=0.012), and smaller distance-to-dislocation (11.6 vs 15.1 mm; p=0.013) than subluxators. Dislocators were also more likely than subluxators to undergo ABR with remplissage versus isolated ABR (29.5% vs 8.6%; p=0.017). Rates of recurrent anterior shoulder instability (20.0% vs 21.3%; p=0.879) and subsequent surgery (17.6% vs 8.2%; p=0.168) were similar between subluxators and dislocators (Table 1). In addition, mean WOSI (297.9 vs 401.9; p=0.276), pVAS (1.9 vs 2.0; p=0.875), and SSV (83.5 vs 77.5; p=0.247) scores were similar between subluxators and dislocators at final follow-up (Table 1).

DISCUSSION: Although glenohumeral subluxators and dislocators present with unique risk profiles, both cohorts have similar rates of recurrent anterior shoulder instability and two-thirds of patients achieve PASS for PROs at mean follow-up of over 8 years after surgical stabilization of anterior shoulder instability. In the present study, glenohumeral dislocators were more likely to present with multiple instability episodes, larger Hill-Sachs intervals, and smaller distance-to-dislocation of HSLs, all of which have been identified as risk factors for recurrent instability after isolated ABR.(5,6) As a result, dislocators were more likely to undergo ABR with remplissage augmentation in the present study. Nevertheless, glenohumeral dislocators and subluxators were found to have similar clinical outcomes and PROs at final follow-up, suggesting appropriate management of risk factors in these unique patient populations may result in equivalent outcomes at mean 8-year follow-up after surgical stabilization.

SIGNIFICANCE/CLINICAL RELEVANCE: While glenohumeral dislocators and subluxators may present with unique risk profiles, both groups have equivalent clinical outcomes and PROs at mid- to long-term follow-up after surgical stabilization of anterior shoulder instability, provided there is appropriate management of risk factors for recurrent instability, such as remplissage for the larger and more medialized HSLs that may be found in glenohumeral dislocators.

REFERENCES: (1) Chalmers et al, JSES 2020; (2) Owens et al, AJSM 2009; (3) Owens et al, AJSM 2007; (4) Nazzal et al, OJSM 2024; (5) DiGiacomo et al, Arthroscopy 2014; (6) Li et al, JBJS 2021

Variable:	Subluxator (n = 35)	Dislocator (n = 61)	p-value
Follow-Up Length (months), mean (SD)	102.7 (39.2)	93.6 (43.0)	0.232
Recurrent Instability, n (%)	7 (20.0)	13 (21.3)	0.879
Subsequent Surgery, n (%)	6 (17.6)	5 (8.2)	0.168
WOSI, mean (SD)	297.9 (337.4)	401.9 (474.8)	0.276
WOSI PASS, n (%)	25 (71.4)	42 (68.9)	0.791
pVAS, mean (SD)	1.9 (2.6)	2.0 (2.7)	0.875
pVAS PASS, n (%)	18 (51.4)	40 (65.6)	0.173
SSV, mean (SD)	83.5 (18.4)	77.5 (23.3)	0.247
Western Ontario Shoulder Index (WOSI), pain Visual Analog Scale (pVAS), Subjective Shoulder Value (SSV), PASS = Patient Acceptable Symptom State			

Table 1. Comparison of Recurrent Instability, Subsequent Surgery, and Patient-Reported Outcomes between Subluxators and Dislocators