

A Prospective Analysis of Patients with Anterior Versus Posterior Shoulder Instability: A Matched Cohort Examination and Surgical Outcomes Analysis of 198 Patients

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Summary:

In a cohort of patients with otherwise similar demographic characteristics, there are important differences in the injury mechanism and primary complaints of patients with anterior versus posterior shoulder instability.

Abstract:

Introduction:

While patients with anterior and posterior glenohumeral instability are unique cohorts with distinct historical and surgical findings, often, these patients are lumped together as "shoulder instability" patients, making it difficult to extrapolate relevant data from the literature. The purpose of this study is to compare a matched cohort of anterior and posterior instability patients in order to identify differences in presentation, examination, and overall outcomes following surgical stabilization.

Methods:

Consecutive patients with either anterior or posterior glenohumeral instability undergoing were prospectively evaluated and excluded if they had glenoid bone loss >10%, multidirectional instability, neurologic injury, and prior surgery. Patients were classified as predominantly anterior versus posterior instability based upon history and clinical examination of primary direction of instability. Preoperative demographic data, injury history, and physical examination findings were assessed and compared among groups. Outcomes following arthroscopic stabilization for both groups were assessed at a minimum of 2-year follow-up and included the American Shoulder and Elbow Society Score (ASES), Single Assessment Numeric Evaluation (SANE), and Western Ontario Shoulder Index (WOSI) score. All findings were statistically compared between the anterior and posterior cohorts.

Results:

A total of 102 patients undergoing anterior stabilization (mean age 23.5 years, range 18-36), and 96 patients undergoing posterior stabilization (mean age 24.2 years, range 18-39) were included, with an average follow-up of 39.2 months (range, 24-65 months). Patients in both groups had statistically similar mean age, sex, body mass index (BMI), and pre-injury activity levels. The primary mechanism of injury in the anterior cohort was a dislocation event (82% - of which 46% required reduction by a medical provider), followed by shoulder subluxation (12%), and "other" (6% - no forceful injury). The primary mechanism of injury in the posterior cohort was "other" (78% - no specific injury, lifting/pressing injury (11%), and contact injury (10%), with football blocking as the leading injury ($p < 0.01$). The primary complaints for patients with anterior instability were joint instability (84%) and pain with activities (32%) while those for the posterior cohort were pain (92%) and instability (18%). Clinical outcomes following arthroscopic stabilization were statistically superior in the anterior cohort versus the posterior cohort for all outcomes including

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ASES (94.5 versus 88.9, $p < 0.01$), SANE (90 versus 85, $p < 0.01$), and WOSI (92% versus 84% of normal, $p < 0.01$).

Discussion and Conclusion:

In a cohort of patients with otherwise similar demographic characteristics, there are important differences in the injury mechanism and primary complaints of patients with anterior versus posterior shoulder instability. Furthermore, clinical outcomes following arthroscopic stabilization demonstrate better scores for patients with anterior instability compared to patients with posterior instability. This study serves to highlight the important differences between anterior and posterior instability and likely speaks to the underlying pathophysiological differences in patient injury, complaints, mechanism, and outcomes.