ISAKOS

International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine

10th Biennial ISAKOS Congress • June 7-11, 2015 • Lyon, France

Paper #92

Outcomes of Arthroscopic Anterior Shoulder Instability in the Beach Chair versus the Lateral Decubitus Position: A Systematic Review and Meta-Regression Analysis

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Summary:
Arthroscopic anterior shoulder stabilization can be performed with excellent clinical outcomes in either the beach chair or the lateral decubitus position, however, significantly lower recurrence rates are noted in the lateral decubitus position at a minimum follow-up of two years.

Abstract:
BACKGROUND
Arthroscopic anterior shoulder stabilization can be performed in either the beach chair (BC) position or the lateral decubitus (LD) position, however the potential effect of patient positioning and its relationship to clinical outcomes has not yet been evaluated. The purpose of this study was to systematically review the clinical outcomes and recurrence rates following arthroscopic anterior shoulder stabilization in the BC and LD positions. The authors hypothesized that clinical outcomes and recurrent instability rates would be similar regardless of the choice of patient positioning.

METHODS
The authors performed a systematic review of multiple medical databases using Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. All English-language peer-reviewed literature from 1990 to 2013 reporting clinical outcomes following arthroscopic anterior shoulder stabilization with suture anchors or tacks with a minimum 2-year follow-up period were reviewed by 2 independent reviewers. Data on recurrent instability rates, return to activity/sport, range of motion, and subjective outcomes measures was collected. Study methodological quality was evaluated with Modified Coleman Methodology Scores (MCMS) and Quality Appraisal Tool (QAT) scores. To quantify the structured review of observational data, meta-analytic statistical methods were utilized. Linear regression analysis was used to analyze any relationship between level of evidence (LOE), publication date, and study quality (as determined by the MCMS and QAT scores).

RESULTS
Sixty-four studies (38 BC, 26 LD) met the inclusion criteria. A total of 3668 shoulders were included, with 2211 in the BC position (average age 26.7±3.8 years, range 18 to 35, 84.5% male) and 1457 in the LD position (average age 26.0 ±3.0, range 18 to 30, 82.7% male). The average follow-up was 49.8±29.5 months in the BC group compared to 38.7 ±23.3 months in the LD group. The average recurrent instability rates were 14.6±8.4% in the BC group (range, 0 to 38%) compared to 8.5±7.1% in the LD group (range, 0 to 30%), which was statistically significant (P=0.004). The average postoperative loss in external rotation motion (in abduction) was reported in 19 studies in the BC group and 13 studies in the LD group, with an average loss of 2.4±1.0 degrees and 3.6±2.6 degrees in each group, respectively (P>0.05). The average return to activity/sport rates, when reported, were 83.2±11.1 % in the BC group, compared to

79.9±18.5 in the LD group (P>0.05). For all 64 studies, the average MCMS score was 44.1±12.9 (maximum score 77) and the average QAT score was 13.7±4.5 (maximum score 22). There were no significant differences between the BC and LD studies with regard to MCMS score (P=0.656) or QAT score (P=0.813). Studies with higher LOEs had significantly higher MCMS scores (P=0.047) and QAT scores (P=0.019) compared to studies with lower LOEs.

CONCLUSION
Excellent clinical outcomes with low recurrence rates can be obtained following arthroscopic anterior shoulder stabilization in either the BC or the LD positions, however lower recurrence rates are noted in the LD position. Additional, long-term, randomized clinical trials comparing these positions are needed to better understand the potential advantages and disadvantages of each position.