Low Rate of Revision following Arthroscopic Management of Shoulder Instability in Division 1 College Football

Camila Grandberg, Ian DeYoe Engler[1], Nicholas P Drain, Janina Kaarre[2], Guang-Ting Cong, Adam Popchak, Brian Michael Godshaw, Volker Musahl[3], Jonathan D Hughes[4]
[1]University of Pittsburgh Medical Center, [2]University of Pittsburgh, [3]UPMC Center for Sports Medicine, [4]UPMC Freddie Fu Sports Medicine Center

INTRODUCTION:
Shoulder instability is a common orthopaedic condition, especially in contact athletes. In Division 1 American football players, the risk of worse outcomes is greatly increased due to the uniquely high demands exerted upon their shoulders. Although the literature on shoulder instability is extensive, an optimal surgical technique has yet to be defined. The purpose of this study was to identify predictors of patient-reported outcomes and revision surgery following arthroscopic shoulder stabilization in a cohort of Division 1 collegiate football players.
METHODS: Division 1 collegiate football players undergoing arthroscopic shoulder stabilization between 2017 and 2021 at a single institution were included. Demographics, imaging data, surgical details, and postoperative outcomes were collected. The primary outcome was revision surgery, while the secondary outcome was Western Ontario Shoulder Instability Index (WOSI) score. Preoperative magnetic resonance imaging (MRI) was used to evaluate Hill-Sachs lesions and glenoid bone loss. Associations between outcomes and demographics, imaging, and surgical details were assessed. Categorical and continuous variables were analyzed using binary logistic regression and linear regression models, respectively, while Mann-Whitney U test or Kruskal-Wallis test were used for non-normally distributed variables.
RESULTS:
A total of 17 shoulders in 16 male athletes were included. The mean age was 19.8 ±1.1 years (range 18-22) and mean follow up was 1.9 ±0.9 years (range 1.0-4.9). Arthroscopic labrum repair without remplissage was performed in all shoulders, and two shoulders (12%) underwent concomitant open Bankart repair. One shoulder underwent only anterior stabilization, 8 underwent only posterior stabilization, and 8 underwent anterior and posterior stabilizations. Superior labrum repairs were performed in 8 shoulders. All shoulders had suture anchors placed in at least 2 quadrants, and a mean of 6.2 anchors were used in each shoulder. Hill-Sachs lesions were seen in 7 shoulders (41%). Fourteen (82%) shoulders had no glenoid bone loss, 1 (6%) had < 15% glenoid bone loss, and 2 (12%) had > 15% glenoid bone loss. Two shoulders (12%) experienced recurrent instability requiring revision surgery. Significant differences were found in postoperative WOSI scores between patients with recurrent instability and those without recurrent instability (33% ±11.5 vs. 6% ±5.3, p=0.02). Additionally, almost three times higher postoperative WOSI scores were found in patients with Hill-Sachs lesions compared to patients without Hill-Sachs lesions (16% ±13.5 vs. 6% ±5.8, p=0.03). No significant predictors of revision surgery were found.
DISCUSSION AND CONCLUSION:
Arthroscopic shoulder stabilization in Division 1 collegiate football players is associated with low recurrence (12%) despite no use of remplissage or bone block procedures and infrequent use of open Bankart repair. Low recurrence may be related to high anchor use of 6 per shoulder or anchor fixation in at least two quadrants. The presence of Hill-Sachs lesions and recurrent shoulder instability yielded inferior outcomes. These findings may guide surgeons toward more comprehensive surgical management in the setting of Hill-Sachs lesions in this high-risk population.