

## Arthroscopic Bankart Repair with Remplissage for "On-Track" Shoulders Has Similar Rates of Return to Play and Games Played Following Surgery Compared to Arthroscopic Bankart Alone

Ryan T. Lin, Shaquille Charles, Tyler M. Hauer, Andrew Liu, Tyler Williams, Michelle Zhang, Sophia McMahon, Jenna Dvorsky, Joseph Mullen, Asher Mirvish, Pittsburgh Shoulder Institute, Albert Lin

UPMC Freddie Fu Center for Sports Medicine, Department of Orthopaedic Surgery, Pittsburgh, PA.

**Background:** Recurrent anterior shoulder instability after arthroscopic stabilization surgery represents a challenging clinical problem, with failure rates as high as 40% after arthroscopic Bankart repair (ABR) in young high-risk athletes and active military members. For these high-risk patients, alternative surgical approaches to ABR have been found to be successful, such as ABR plus remplissage (ABR+R). However, the impact of ABR vs. ABR+R on athlete return to play and games played after surgery is poorly understood. The objective of this study is to utilize online sports statistics databases to compare athlete return to play and games played between patients with "on-track" Hill-Sachs lesions who underwent either ABR or ABR+R.

**Methods:** We retrospectively reviewed patients aged 14-40 with "on-track" Hill-Sachs lesions who underwent either ABR or ABR+R between 2007 to 2022 for anterior instability. Patients were excluded if the surgery was a revision surgery, less than 1-year follow-up, greater than 20% glenoid bone loss, and missing data on online sports statistics databases. Each athlete was queried on online sports statistics databases, and games played were recorded for the season before and for 3 seasons after surgery, if available. The primary outcome was relative change in games played in the seasons after surgery. Secondary outcomes included return to play and recurrent shoulder instability as defined by recurrent dislocation and/or subluxation postoperatively.

**Results:** 69 patients were included in the analysis (ABR: 53 | ABR+R: 16) with an average age of  $18.5 \pm 2.0$  years and follow-up time of  $4.2 \pm 3.0$  years. 44 (63.8%) were football players, 15 (21.7%) were hockey players, 7 (10.1%) were basketball players, and 3 (4.4%) were baseball players. There were no statistically significant differences between age, male sex, body mass index, contact athlete status, greater than 1 preoperative instability episode, hyperlaxity, time from injury to surgery, and rates of return-to-play. Glenoid bone loss was similar between groups, but the average Hill-Sachs interval was significantly higher in the ABR+R group (ABR:  $7.6 \pm 5.0$  mm | ABR+R:  $15.0 \pm 5.25$  mm,  $p < 0.0001$ ), resulting in a significantly lower distance-to-dislocation compared to ABR (ABR:  $15.2 \pm 5.9$  mm | ABR+R:  $6.6 \pm 3.8$  mm,  $p < 0.00001$ ). In the first season after surgery, the ABR+R group had significantly lower games played relative to the season before surgery compared to the ABR group (ABR:  $1.49 \pm 1.5$ ;  $n = 38$  | ABR+R:  $0.82 \pm 0.55$ ;  $n = 12$ ,  $p = 0.03$ ). In the second and third season after surgery, there were similar relative games played recorded between groups. Rates of recurrent shoulder instability were also similar between groups.

**Conclusion:** Remplissage augmentation for on-track shoulders in high-risk patients were shown to have similar rates of return-to-play and rates of recurrent shoulder instability. These results suggest that patients undergoing ABR+R may experience reduced performance, as measured by games played, in the season immediately following surgery. However, performance appears to return to pre-injury levels after the first post-injury season.

**Figure 1.** Comparing games played in each season after surgery relative to the pre-injury season between ABR and ABR+R

