

Low Revision Rate After Arthroscopic Management of Shoulder Instability in Collegiate American Football Players

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Background

- Shoulder instability – common orthopaedic condition among contact athletes¹
- American football players – higher risk of worse outcomes and career limitations^{2,3}
- Management^{4,5,6}
 - Nonoperative – faster return to play (RTP), higher risk of persistent instability
 - Operative – lower recurrence rates, greater career longevity
- Purpose: identify predictors of patient-reported outcomes (PROs) and revision surgery after surgical management of shoulder instability in top level (Division 1) collegiate American football players

Methods

- Prospective cohort study
- Outcomes – revision surgery and Western Ontario Shoulder Instability Index (WOSI)
- Inclusion – surgical management of shoulder instability; top level collegiate American football players; between 2017-2021; single institution
- Exclusion – < 1 year left of RTP eligibility; < 1 year follow-up; previous ipsilateral shoulder surgery
- Statistical analyses: binary logistic regression, linear regression models, Mann-Whitney U test, Kruskal-Wallis test

Results

Table 1. Baseline characteristics

Variable	Total (n=17)
Sex, male, n (%)	17 (100) *
Age, years, mean \pm SD (range)	19.8 \pm 1.1 (18–22)
Follow-up time, years, mean \pm SD (range)	1.9 \pm 0.9 (1.0–4.9)
Laterality, dominant side, n (%)	8.9 (52.9)
Shoulder dislocations, yes, n (%)	5 (29.4)
Anterior, n (%)	4 (0.8)
Posterior, n (%)	1 (0.1)
Labrum tear on MRI, yes, n (%)	17 (100)
Anterior	4 (23.5)
Posterior	7 (41.2)
Anterior and Posterior	6 (35.3)
Hill-Sachs lesion, yes, n (%)	7 (41.2)
Glenoid bone loss, yes, n (%)	3 (17.6)
<15%	1 (0.33)
>15%	2 (0.67)
SLAP tear, yes, n (%)	9 (52.9)
Preop WOSI, mean \pm SD (range)	47.5% \pm 18.0 (13.0-71.7) **

*17 shoulders from 16 male athletes

** Data regarding the variable “Preop WOSI” was available for 10 shoulders

Results

Table 2. Treatment characteristics

Variable	Total (n=17)
Labrum tear on arthroscopy, quadrants, n (%)	
2	8 (47.1)
3	5 (29.4)
4	4 (23.5)
Arthroscopic labrum repair without Remplissage, yes, n (%)	
Posterior	5 (29.4)
Anterior + Posterior	4 (23.5)
Anterior + Superior	1 (5.9)
Posterior + Superior	3 (17.6)
Anterior + Posterior + Superior	4 (23.5)
Concomitant open Bankart repair, yes, n (%)	2 (11.8)
Anchors, mean \pm SD (range)	6.2 \pm 1.9 (3-10)
Anchors placement, quadrants, n (%)	
2	8 (47.1)
3	5 (29.4)
4	4 (23.5)

Results

Table 3. Postoperative patient characteristics

Variable	Total (n=17)
Recurrent instability, yes, n (%)	2 (11.8)
Revision surgery, yes, n (%)	2 (11.8)
RTP, yes, n (%)	15 (93.8) *
Time to RTP, mean \pm SD (range)	24.9 \pm 6.6 (17.6-44.7) **
Postop WOSI***, mean \pm SD (range)	
Total study population	90.2 \pm 10.8 (58.8-100.0)
Patients with recurrent instability	67.0 \pm 11.5 (58.8-75.1)
Patients without recurrent instability	94.0 \pm 5.3 (80.8-100.0)
Patients with Hill-Sachs lesion	84.1 \pm 13.5 (58.8-95.8)
Patients without Hill-Sachs lesion	94.5 \pm 5.8 (81.7-100.0)

*Calculated for the 16 included athletes

**Data regarding the variable "Time to RTP" was available for 14 athletes

*** The postop WOSI score was reported by using %

Results

Table 4. Predictor analyses for postoperative WOSI

Predictor	Total (n)	Postop WOSI (mean \pm SD)	P
Recurrent instability			0.019
No	13	94.02 \pm 5.34	
Yes	2	67.00 \pm 11.53	
Hill-Sachs lesion			0.033
No	10	94.50 \pm 5.84	
Yes	7	84.09 \pm 13.52	

- No predictors of revision surgery were found

Conclusion

- Low recurrence and revision rates, and high RTP rate
- High number of suture anchors
- Anchor fixation in at least two quadrants in all shoulders
- No predictors of revision surgery were found
- Hill-Sachs lesions and recurrent shoulder instability – predictors of inferior PROs

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