

The Effect of Postoperative Non-Steroidal Anti-Inflammatory Medications on Arthroscopic Glenoid Labral Repair: Clinical Outcomes and Return to Sport at Minimum 2-Year Follow Up

Zachary Li¹, Sharif Garra, Nathan Alexander Huebschmann, Jordan Eskenazi², Jairo Triana, Edward Stephen Mojica, Eric Jason Strauss, Laith M Jazrawi³, Kirk A Campbell

¹Department of Orthopedics, NYU Langone Health, ²NYU Langone Health, ³Center For Musculoskeletal Care
INTRODUCTION:

Arthroscopic labral repair has become a routine and effective outpatient procedure for active patients with glenohumeral instability. Amidst the current opioid epidemic in the United States, increased attention has been given to multi-modal postoperative pain control for orthopaedic procedures. Non-steroidal anti-inflammatory (NSAIDs) medications are often utilized, though some surgeons remain hesitant as these agents may interfere with the COX-mediated inflammatory cascade and thus impede healing. The purpose of this study was to evaluate whether there are differences in clinical outcomes, return to activities, and rates of revision surgery following arthroscopic glenoid labral repair in patients who received NSAIDs as part of their postoperative pain management regimen compared to those who did not.

METHODS: Patients aged 18 to 55 who underwent primary arthroscopic labral repair at a single urban academic institution from the years 2016-2020 were retrospectively reviewed. All procedures were performed by one of five fellowship-trained orthopaedic surgeons. Patients who underwent concomitant rotator cuff repair or did not have minimum 2-year postoperative follow up were excluded. Patients who received postoperative NSAIDs were propensity matched to those who did not in a 1:1 ratio based on age, sex, body mass index (BMI). Patient-reported outcome measures included the Visual Analogue Scale (VAS) for pain, the American Shoulder and Elbow Surgeons Shoulder Score (ASES), the Simple Shoulder Test (SST), the Single Assessment Numeric Evaluation rating (SANE), and satisfaction. In addition, pre-injury sport participation and work activity information, as well as their return to these activities, were recorded. Other outcomes recorded included complications and revision procedures within 2 years of the index surgery.

RESULTS:

There were 269 patients who completed all patient-reported outcome measures. Of these, 224 patients (mean age: 32.2 ± 9.8 years; BMI: 26.0 ± 4.5; 80.8% male) were successfully matched in a 1:1 ratio. Patients who received NSAIDs postoperatively had similar levels of pain (VAS: 1.2 vs. 1.0, p=0.527) and function (ASES: 90.8 vs. 89.9, p=0.824; SST: 91.9 vs. 90.6, p=0.646; SANE: 83.8 vs. 85.3, p=0.550) compared to those who did not receive NSAIDs. Rates of revision surgery (2.7% vs. 0.9%, p=0.622) and recurrent instability (5.4% vs. 8.0%, p=0.594) were also similar between NSAID and non-NSAID groups. The rate of return-to-sport was 83.5% in the NSAIDs group and 77.8% in the non-NSAIDs group (p=0.318). Rates of return to pre-injury sport level were also similar between groups (59.3% vs. 61.6%, p=0.177). A majority of patients returned to their prior work (93.3% vs. 95.3%, p=0.617). Multivariable regression analysis did not find postoperative NSAIDs to be significantly associated with subsequent revision (OR: 1.265, p=0.779), return-to-sport (OR: 1.621, p=0.173), or return-to-work (OR: 1.158, p=0.793).

DISCUSSION AND CONCLUSION:

Patients who received NSAIDs as a part of a postoperative pain management regimen following primary arthroscopic labral repair for glenohumeral instability had similar patient-reported outcomes, revision rates, and rates of return to pre-injury activities compared to those who did not receive NSAIDs. These findings provide additional support that NSAIDs, included in a multi-modal regimen, do not detrimentally affect short-term outcomes or limit a return to preoperative activities.

TABLE 1
Patient Demographics & Intraoperative Characteristics

Demographics	NSAIDs	Non-NSAIDs	p
N	112	112	
Age (years)	31.9 ± 10.1	32.5 ± 9.4	0.650
Sex, n (% male)	91 (81.3)	90 (80.4)	0.856
Body mass index	26.0 ± 4.9	26.0 ± 4.2	0.960
Laterality, n (% right)	52 (46.4)	64 (57.1)	0.109
Hand dominance, n (% right)	98 (87.5)	108 (96.4)	0.014
Smoker, n (%)	11 (9.8)	14 (12.5)	0.524
Intraoperative Characteristics			
No. anchors	3.5 ± 1.1	3.5 ± 1.4	0.392
Procedure time (min)	70.2 ± 28.4	63.6 ± 26.4	0.677
Labral tear type, n (%)			
SLAP	54 (48.2)	47 (42.0)	0.347
Bankart	53 (47.3)	55 (49.1)	0.789
Anterior	11 (9.8)	20 (17.9)	0.082
Posterior	34 (30.4)	27 (24.1)	0.293
Hill-Sachs lesion	47 (43.5)	55 (51.4)	0.247
Concomitant procedures, n (%)			
Rotator cuff debridement	13 (11.6)	8 (7.1)	0.252
Subacromial decompression	12 (10.7)	18 (16.1)	0.239
Biceps tenodesis/T-tenotomy	10 (8.9)	4 (3.6)	0.098
Acromioplasty	17 (15.2)	20 (17.9)	0.589
Distal clavicle resection	9 (8.0)	11 (9.8)	0.639
Bursectomy	12 (10.7)	12 (10.7)	1.000
Synovectomy	16 (14.3)	8 (7.1)	0.129
Remplissage	7 (6.3)	5 (4.5)	0.553
Loose body removal	9 (8.0)	3 (2.7)	0.135

TABLE 2
Clinical Outcomes

	NSAIDs (n=112)	Non-NSAIDs (n=112)	p
VAS Pain	1.2 ± 1.9	1.0 ± 1.9	0.527
Satisfaction	89.7 ± 21.0	88.1 ± 23.4	0.597
ASES	90.8 ± 14.7	89.9 ± 15.9	0.824
ADL subscale	45.9 ± 6.2	45.7 ± 7.3	0.597
PASS, % (n)	88 (78.6)	85 (75.9)	0.634
Simple Shoulder Test	91.9 ± 16.4	90.6 ± 16.5	0.646
SANE score	83.8 ± 20.7	85.3 ± 17.5	0.550
Subsequent ipsilateral procedure	7 (6.3)	2 (1.8)	0.171
Manipulation under anesthesia	4 (3.6)	1 (0.9)	0.369
Revision surgery	3 (2.7)	1 (0.9)	0.622
Recurrent instability, % (n)	6 (5.4)	9 (8.0)	0.594

Abbreviations: NSAID non-steroidal anti-inflammatory drug, VAS Visual Analogue Scale, ASES American Shoulder and Elbow Surgeons Score, ADL activities of daily living, SANE Single Assessment Numeric Evaluation

TABLE 3
Comparison of Rate and Time to Return to Sport after Arthroscopic Labral Repair

Sport Level	Cohort, n (%)		p-value
	NSAIDs (n=91)	Non-NSAIDs (n=99)	
Return to Any Level	76 (83.5)	77 (77.8)	0.318
Time to return (weeks)	30.2 ± 20.0	34.7 ± 20.7	0.177
Same or Higher Pre-Injury Level	54 (59.3)	61 (61.6)	0.177
Lesser Level	22 (24.2)	16 (16.2)	0.168
No Return	15 (16.5)	22 (22.2)	0.318