

## **Subacromial Injection Affects Preoperative Pain and Function in Arthroscopic Rotator Cuff Repair**

Vani Janaki Sabesan<sup>1</sup>, Sarah Jane Girshfeld, Katelyn Kane, Garrett Jackson<sup>2</sup>, Clyde Kehbuma Fomunung, Howard David Routman<sup>3</sup>

<sup>1</sup>Palm Beach Shoulder Service - HCA Atlantis Orthopa, <sup>2</sup>Palm Beach Shoulder Service At Atlantis Orthopaedi, <sup>3</sup>The Orthopedic Foundation

**INTRODUCTION:** Subacromial corticosteroid injections are widely used as conservative treatment to reduce pain and improve function in patients with rotator cuff pathology. However, there is limited clinical evidence for surgeons who use steroid injections in predicting which patients will ultimately undergo arthroscopic repair (RCR). The purpose of this study was to identify associated factors that impact patient decision to proceed with RCR following steroid injection.

**METHODS:** A retrospective review was performed on 295 patients who underwent RCR by a single fellowship-trained orthopaedic surgeon from 2017-2019. Patients were divided into two groups: 85 patients who received at least one steroid injection within one year prior to surgery were in the injection group (IG) and 203 were included in the control group (CG). Patient demographics, strength, range of motion (ROM), pain scores, and subjective shoulder value (SSV) collected from their preoperative visit were analyzed between groups.

**RESULTS:** The cohort consisted of 58% males with a mean age of 58.1 years, BMI of 29.8, and a mean preoperative time of 2.3 months from injection to preoperative visit. There were no significant differences in demographics aside from a higher proportion of males in the IG (56%) than the NG (50.7%) ( $p = 0.04$ ). Average preoperative ROM was significantly higher in IG for forward flexion ( $137.6^\circ$  vs.  $127.2^\circ$ ,  $p = 0.03$ ) and external rotation ( $60.8^\circ$  vs.  $54.8^\circ$ ,  $p < 0.01$ ). Average supraspinatus strength (4.19 vs. 3.99,  $p = 0.01$ ) and average infraspinatus strength (4.86 vs. 4.7,  $p = 0.046$ ) were also statistically higher in the injection group. There were no significant differences between groups for preoperative pain scores, satisfaction, or SSV.

**DISCUSSION AND CONCLUSION:** Patients who receive a subacromial steroid injection prior to arthroscopic rotator cuff repair demonstrated improved range of motion and rotator cuff strength. Despite the better function, patients who received a subacromial injection continued to experience similar pain, satisfaction, and SSV scores, likely leading to need for surgical intervention (RCR). This indicates that pain level and subjective shoulder assessments appear to be a stronger predictor than function preoperatively for patients to undergo surgical RCR.