Abstracts

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Relation Between Preoperative Magnetic Resonance Imaging Findings and the Functional Outcome of Massive Rotator Cuff Repairs (SS-01)

Purpose: To determine whether preoperative MRI abnormalities, such as muscle atrophy and fatty infiltration, affects the functional outcome of arthroscopically repaired massive (≥5 cm) rotator cuff tears. Type of Study: Retrospective. Methods: Between January 1997 and December 2001 a total of 203 massive rotator cuffs were repaired. A total of 125 of this series had MRI scans available for review. These MRI images were assessed by a musculoskeletal radiologist to determine the degree of muscle atrophy (MA), and fatty infiltration (FI). The MA and FI were graded as normal, mild, moderate or severe based upon their MRI scans. The radiologist was blinded to the functional outcomes of this series of patients. Fifty-seven of these patients were assessed using previous validated scoring systems (American Shoulder and Elbow Surgeons [AS&E], Constant, Rowe and Walch-Duplay) to determine their functional outcomes. Results: The average postoperative forward elevation was 166.8° ± 25.9° and abduction was 165.9° ± 25.1°. The average rotational motion postoperative was 53.4° ± 16.7° of external rotation and 60.0° ± 19.8° of internal rotation. A majority of patients in this series had a good functional outcome based upon AS&E, Constant, Rowe, and Walch-Duplay scores regardless of the preoperative MRI findings. The average Constant score was 78.6 ± 14.2 and the average AS&E score was 91.3 ± 10.4. In this series, 87.7% of patients had a good-excellent result using the Rowe score for assessment while 84.2% of patients had a good-excellent result based upon the Walch-Duplay criteria. All patients in this series had muscle atrophy of their supraspinatus with 19.2% of these patients having severe atrophy. A majority of patients (94.7%) had significant fatty changes to their supraspinatus. Most patients also had significant degenerative changes with their infraspinatus (MA = 98.2%; FI = 91.3%). Teres minor had less significant changes with 43.9% having no muscle atrophy and 57.9% having no fatty infiltration. The subscapularis was more likely to have muscle atrophy (63.2%) than fatty changes (52.6%). Only one patient in this series expressed dissatisfaction and stated that they had no improvement postoperatively. Conclusions: Not only is it possible to repair massive rotator cuff tears arthroscopically, but arthroscopic repair of such tears leads to a good functional outcome regardless of the preoperative MRI findings of muscle atrophy and/or fatty infiltration.

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Evaluation and Treatment of Stiffness in Patients With Rotator Cuff Tears (SS-02)

The independent problems of shoulder stiffness and rotator cuff tearing have been extensively studied. In this study, a subgroup of patients who have both problems simultaneously is evaluated. This was a prospective evaluation of 72 consecutive arthroscopic rotator cuff repair patients. Preoperative range of motion (ROM) deficits in abduction, forward flexion, external rotation (ER) and internal rotation (IR) were recorded. These measurements were then added together to calculate the total ROM deficit (TROMD). The patients were then divided into three groups depending on their TROMD. In group 1 there were 42 patients with a 0° to 20° TROMD. In group 2 there were 24 patients with a 25° to 70° TROMD. In group 3 there were 6 patients with greater than a 75° TROMD. Patients in group 3 initially had standard frozen shoulder treatment consisting of intra-articular cortisone injections and physical therapy. The relative sizes of the RCT in each group were compared using a "cuff tear index" (CTI) which is the A/P dimension times the M/L dimension of the tear. The CTI in group 1 was 3.7, in group 2 it was 7.7 and in group 3 it was 12. In group 1, 33% of the patients had hypertension or heart disease, 42% in group 2 and 50% in group 3. In group 1, 5% of the patients had diabetes, 8% in group 2 and 50% in group 3. Preoperative Modified UCLA scores were the highest in group 1 (total score 25) and lowest in group 3 (total score 17). Bursal inflammation was seen in 76% of group 1 patients, 83% of group 2 patients and 100% of group 3 patients. Capsular abnormalities were common in all of the groups but a thick and