

MD, Christopher Ahmad, MD, William Levine, MD, Louis Bigliani, MD

Summary: Using validated outcome instruments, this study indicates that operative treatment of rotator cuff disease results in greater pain relief and functional improvement than non-operative treatment.

Purpose: To compare the outcomes of operative and non-operative treatment in patients with rotator cuff disease using validated, patient-derived outcome instruments.

Methods: All patients with a diagnosis of rotator cuff disease over a 5-year period (2000-2005) were surveyed using a questionnaire which included the validated patient-derived outcome assessment instruments: SF-36, Euroqol (EQ), VAS, ASES (American Shoulder and Elbow Surgeons) score, and SST (Simple Shoulder Test). Non-operative treatment consisted of NSAIDs, corticosteroid injections, and physical therapy. Operative treatment included arthroscopic acromioplasty and rotator cuff repair when indicated. Of the patients with completed questionnaires and minimum one-year follow-up data, 90 patients (92 shoulders) who underwent operative treatment of rotator cuff disease were demographically matched by age and gender with 90 patients who underwent non-operative treatment. Statistical analysis was performed using a paired student's t-test.

Results: At minimum one year follow-up (average 2.9 ± 1.3 years), improvement in pain relief (percent reduction) was significantly better in the operative group than non-operative group (VAS 42.8% v. 23.9%, $p < 0.05$). Functional improvement (percent increase) was also significantly better in the operative group relative to the non-operative group (SST 40.7% v. 20.5%, ASES function 40.3% v. 23.6%, $p < 0.05$). No statistically significant differences were observed post-treatment in quality of life scores (Euroqol, SF-36, Health Scale), although patients who elected surgical treatment had a greater percent improvement at follow-up (22.6% v. 9.8%, $p < 0.05$).

Conclusions: The present study supports the success of both operative and non-operative treatment of rotator cuff disease using validated outcome instruments and quality of life scores. Results from operative treatment were superior to non-operative treatment in both pain relief and functional improvement. These findings may have significant impact on the decision between operative and non-operative treatment in rotator cuff disease.

Functional Outcomes of Arthroscopic Rotator Cuff Repair: Correlation of Fatty Degeneration in the Cuff Muscles with Shoulder Function (SS-25). Hiroshi Takeda, MD

Summary: Preoperative degree of fatty degeneration in cuff muscles was negatively correlated with postoperative overall shoulder functioning after the arthroscopic rotator cuff repair.

Purpose: There have been several reports on the correlation of fatty degeneration of rotator cuff muscles with functional outcomes after open rotator cuff repair. The purpose of this study was to determine whether the fatty degeneration in cuff muscles predicts functional outcomes after arthroscopic rotator cuff repairs.

Methods: From February 2003 to March 2004, fifty-one shoulders were treated by arthroscopic rotator cuff repair. Of these, forty-nine shoulders were followed up. Mean age at surgery was 59 years. Mean follow-up time period was 26 months (24 – 39 months). There were 4 partial thickness tears, 15 small tears, 19 medium tears, 7 large tears, and 6 massive tears. Preoperative degree of fatty degeneration was determined by the Global Fatty Degeneration Index (GFDI), developed by Goutallier. The isometric strength of shoulder flexion was quantified utilizing a hand-held dynamometer. Outcome assessment was evaluated using the Japanese Orthopaedic Association Shoulder Scoring system (JOA score: 100 total points).

Results: The mean JOA score was significantly improved from 63 preoperatively to 94 postoperatively ($p < 0.001$). GFDI was positively correlated with the size of the tear ($p < 0.01$). Postoperative JOA score and isometric flexion strength were negatively correlated with GFDI ($p < 0.01$). If the fatty degeneration index in supraspinatus muscle was smaller than or equal to one, then the mean isometric flexion strength at follow-up was ninety percent of the unaffected side.

Conclusions: Preoperative degree of fatty degeneration in cuff muscles was negatively correlated with postoperative overall shoulder functioning after the arthroscopic rotator cuff repair. GFDI was found to be a very useful index to predict functional results after the arthroscopic rotator cuff repairs.

Arthroscopic Debridement of Massive Irreparable Rotator Cuff Tears (SS-26). Dennis Liem, MD, Nina Lengers, MD, Wolfgang Poetzl, MD, Joern Steinbeck, MD, Bjoern Marquardt, MD

Purpose: The purpose of this study was to evaluate clinical and radiological results of arthroscopic debridement of massive rotator cuff tears. 31 patients (av. Age 70.6 years) were retrospectively reviewed an average of 47 months (24 – 69) after arthroscopic debridement of an irreparable rotator cuff tear. The ASES Score was improved from 24.0 to 69.8 points. Scores for pain were