1 DEFINING INDICATIONS FOR ROTATOR CUFF REPAIR: PREDICTORS OF FAILURE OF NONOPERATIVE TREATMENT OF CHRONIC, SYMPTOMATIC, FULL-THICKNESS ROTATOR CUFF TEARS

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Objectives: The purpose of this study is to help define the indications for rotator cuff repair by identifying predictors of failure of non-operative treatment using a multicenter prospective cohort study design. **Methods:** A prospective multi-center cohort study design was used. Inclusion criteria included all patients with full thickness rotator cuff tears seen on MRI without other disease states. Baseline data from this cohort was used to examine risk factors for failing a standard rehabilitation protocol. Subjects that ultimately underwent rotator cuff surgery were defined as failing nonoperative treatment. A Cox proportional hazards model was fit to determine what baseline factors predicted surgery, or failure of rehabilitation. The dependent variable was time to surgery; tear severity and baseline patient factors (age, activity level, BMI, sex, SANE score, VAS pain level, education, handedness, comorbidities, duration of symptoms, strength, employment, smoking status, and patient expectations) were the independent variables. **Results:** Of the 433 subjects in this study 87 had surgery with 93% f/u at 1 year, and 88% f/u at 2 years. The median age was 62, and 49% were female. The dominant shoulder was involved in 69% of the cohort. The median baseline VAS was 4.4. The proportion of subjects with symptoms <1month was 8%, 1-3 months was 22%, 4-6 months was 20%, 7-12 months was 14%, and over a year was 37%. Isolated supraspinatus tears were found in 73%, 21% had tears involving the supraspinatus and infraspinatus +/- teres minor, and 6% had subscapularis involvement. Tendon retraction was minimal in 48%, mid-humeral level in 34%, glenohumeral in 13%, and 5% had retraction to the glenoid. Subjects that had surgery declared themselves early with a median f/u time of 120 days (interquartile range (IQR): 72, 176), while those that responded to rehab contributed a median of 731 days of f/u time (IQR: 366, 739). Multivariable modeling, adjusted for the independent variables listed above, identified patient expectations regarding physical therapy (p<0.0001) as the strongest predictor of surgery. Higher activity level (p=0.011), and not smoking (p=0.023) were also significant predictors of having surgery. **Conclusion:** Severity of cuff pathology (size of tear, retraction), pain level, and weakness were not associated with failure of rehabilitation. The strongest predictor was low patient expectation about the effectiveness of physical therapy. Other factors found to affect having surgery were higher activity level, and not smoking. A patient's decision to have surgery is influenced more by low expectations regarding the effectiveness of physical therapy than by patient symptoms or anatomic features of the rotator cuff tear. As such, patient symptoms and anatomic features of the chronic rotator cuff tear may not be the best features to use when deciding on surgical intervention. **Level of Evidence:** Level I, Prospective Cohort Study, Prognosis Study.
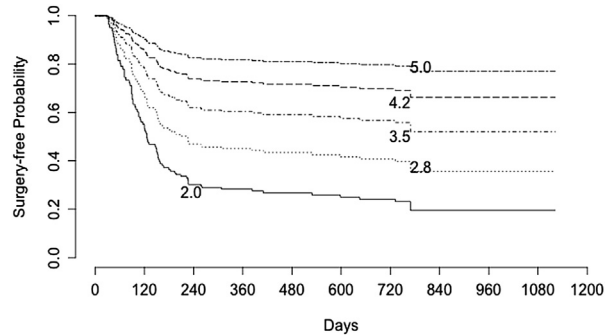

Figure 1 Survival plot of surgery-free probability stratified by patient expectations regarding physical therapy with a 5 indicating high expectations that rehab will lead to improvement, and lower scores indicating lower expectations.

2 CLINICAL AND RADIOGRAPHIC RESULTS OF ARTHROSCOPIC PARTIAL REPAIRS FOR MASSIVE IRREPARABLE ROTATOR CUFF TEARS: DETERIORATION OF THE RESULTS AT MINIMUM TWO YEAR FOLLOW-UP

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Introduction: The purpose of this study was two-fold, first to report the clinical and radiographic results of arthroscopic partial repair (force couple repairs) for patients with large to massive rotator cuff tears and second, to see if there was any change in the clinical and radiographic outcome as time progressed. Our hypothesis was that at final follow-up (minimum 2 years) arthroscopic partial repair should not deteriorate at minimal 2 year follow-up, compare to postoperative 1 year follow-up. **Methods:** From July 2005 to November 2009, 30 consecutive cases of large-to-massive irreparable rotator cuff tears with arthroscopic partial repairs were included in this study. **Surgical Procedure:** Partial repair was defined as remaining posterior cuff tissue repair (mainly infraspinatus and teres minor) with 1 or 2 suture anchors and with or without subscapularis tendon repair. **Clinical and Radiographic Evaluation:** Clinical and radiographic results were evaluated preoperatively and serial postoperative follow-up: approximately at 1 year and at final follow-up (minimal two years or more). For clinical outcome measurement; visual analogue scale for pain (PVAS), American Shoulder and Elbow Surgeons (ASES) score and Simple shoulder Test (SST) score was assessed. For the radiographic evaluation, acromiohumeral (AH) distance and degenerative change by Hamada classification were applied and evaluated. **Results:** At the final follow-up, 27 were available for evaluation. Three patients were excluded due to loss of follow-up. There were 14 male and 13 female patients with the mean age at surgery of 66.0 years (57~76). Dominant arm was involved in 23 cases (85.2%). Mean duration from symptom onset to surgery was 40.6 ± 54.6 months. The mean PVAS