customized to the size of the defect. Objective, subjective, and demographic data were prospectively collected and retrospectively reviewed. ASES, SANE, QuickDASH, SF-12 and satisfaction outcome measures were collected pre and post-operatively.

Results: 34 patients (13 women, 21 men, mean 52 ± 7 years) were included in this study. 16 patients underwent ASCR and 18 patients underwent LDT. Failure of the repair occurred in 1 patient in the ASCR group (6.2%), who suffered a graft tear shown on MRI at 141 days postoperatively, and 2 patients (11%) in the LDT group, both whom progressed to rTSA. Two additional patients (11%) in the LDT group had further surgery around 1-year postoperatively - an arthroscopic cuff repair and hardware removal operation. In those who did not fail, pain significantly decreased postoperatively ($p<0.05$) in both groups. Only patients who underwent ASCR had a statistically significant functional improvement ($p=0.002$ vs. $p=0.161$). Mean change in abduction and flexion were -7.3° and 0.6° respectively in the LDT group, compared to 56.0° and 21.7° respectively in the ASCR group. At final follow-up, satisfaction was a median 8/10 points in both groups.

Conclusion: Patients who underwent ASCR had significantly improved postoperative scores and range of motion, compared to those who underwent LDT, but longer follow-up is required.

Influence of Preoperative Musculotendinous Junction Position on Rotator Cuff Healing After Double-Row Repair

SS-08

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Introduction: The purpose of this study was to determine the effect of the preoperative position of the musculotendinous junction (MTJ) on rotator cuff repair healing after double-row repairs.

Methods: Preoperative and postoperative MRIs were reviewed of 42 patients undergoing arthroscopic double-row rotator cuff repair. Preoperative MRIs were evaluated for anteroposterior tear size, tendon retraction, tendon length, muscle quality, and MTJ position with respect to the glenoid. The position of the MTJ was referenced off the glenoid face as either lateral or medial. Postoperative MRIs were evaluated for healing, tendon length, and MTJ position.

Results: 36 of 42 tears (86%) healed, with 27 of 31 small/medium tears (87%) and 9 of 11 large/massive tears (82%) healing. Repairs that failed to heal did have a significantly more medialized preoperative MTJ position (1.3 mm vs. 9.9 mm lateral to the glenoid, $p = 0.033$). 94% of tears that had a preoperative MTJ lateral to the face of the glenoid healed, while only 56% of tears that had a preoperative MTJ medial to the face of the glenoid healed ($p=0.0135$). Results from univariate regression analysis indicated that a preoperative MTJ medial to the glenoid face was correlated with worse tendon healing ($p=0.047$). The measured tendon length increased an average of 14.4 mm in patients who healed compared to shortening 6.4 mm in patients that did not heal ($p<0.001$). The MTJ lateralized an average of 6.1 mm in patients who healed compared to medializing 1.9 mm in patients who did not heal ($p=0.026$).

Conclusion: Preoperative MTJ position is predictive of postoperative tendon healing after double-row rotator cuff repair. The glenoid face can be used as a marker to reference MTJ position and predict postoperative healing rates. If the tendon heals, healing typically occurs with some tendon lengthening and some MTJ lateralization.

Higher Critical Shoulder Angle Increases the Risk of Re-tear after Rotator Cuff Repair

SS-09

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Introduction: No evaluation has been done on CSAs relationship with re-tear after repair. Our purpose was to evaluate if higher CSA is associated with re-tears after rotator cuff repair (RCR).

Methods: This was a retrospective review of 76 patients who had undergone RCR with postoperative ultrasounds. Ultrasounds were graded no re-tear (NT), partial thickness re-tear (PT) or full thickness re-tear (FT). Preoperative radiographs were used to measure CSA, glenoid inclination (GI), lateral acromial angle (LAA) and acromion index (AI).

Results: Average age was 61.9 yrs (45.3-74.9). On ultrasound, 57 shoulders (74.0%) had NT, 11 (14.2%) had PT, and 8 (10.3%) had FT. There was no significant difference in re-tear rate by age, gender or tension of repair. Average CSA for the NT group was significantly lower at 34.3±2.9 deg than FT group at 38.6±3.5 deg ($P<0.01$). If CSA was greater than 38 degrees the odds ratio of having a full thickness re-tear was 14.8 ($p<0.01$). In addition, higher CSA inversely correlated with postoperative ASES scores ($p<0.03$). Average glenoid Inclination was significantly lower in the NT group at 12.3±2.7 deg compared to 17.3±2.6 deg in the FT group ($p<0.01$). If glenoid inclination was greater than 14 degrees the odds ratio of having developing a FT re-tear was 15.0 ($p<0.01$).

Conclusion: At short-term follow up, higher CSA significantly increased the risk of a full thickness re-tear after rotator cuff repair. Also, increasing CSA correlated with worse postoperative ASES scores. This radiograph marker may help manage expectations for rotator cuff tear patients.