Arthroscopic Repair of Massive Contracted Rotator Cuff Tears: Aggressive Release with Anterior and Posterior Interval Slides Do Not Improve Cuff Healing and Integrity

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Background: Few studies of large-to-massive contracted rotator cuff tears have examined the arthroscopic complete repair obtained by a posterior interval slide and whether the clinical outcomes or structural integrity achieved are better than those after partial repair without the posterior interval slide.

Method: The study included forty-one patients with large-to-massive contracted rotator cuff tears, not amenable to complete repair with margin convergence alone. The patients underwent either arthroscopic complete repair with a posterior interval slide and side-to-side repair of the interval slide edge (twenty-two patients; Group P) or partial repair with margin convergence (nineteen patients; Group M). The patient assignment was not randomized. The Simple Shoulder Test (SST), American Shoulder and Elbow Surgeons (ASES) score, University of California at Los Angeles (UCLA) shoulder score, and range of motion were used to compare the functional outcomes. Preoperative and six-month postoperative magnetic resonance arthrography (MRA) images were compared within or between groups.

Results: At the two-year follow-up evaluation, the SST, ASES score, UCLA score, and range of motion had significantly improved (p < 0.001 for all) in both groups. However, no significant differences were detected between groups. Even though the difference in preoperative tear size on MRA images was not significant, follow-up MRA images identified a retear in twenty patients (91%) in Group P and a significant difference in tear size between groups (p = 0.007).

Conclusions: The complete repair group with an aggressive release had no better clinical or structural outcomes compared with the partial repair group with margin convergence alone for large-to-massive contracted rotator cuff tears. In addition, the complete repair group had a 91% retear rate and a greater defect on follow-up MRA images. Even though this study had a relatively short-term follow-up, a complete repair of large-to-massive contracted rotator cuff tears, with an aggressive release such as posterior interval slide, may not have an increased benefit compared with partial repair without posterior interval slide.

Level of Evidence: Therapeutic Level III. See Instructions for Authors for a complete description of levels of evidence.

Arthroscopic repair of a massive contracted rotator cuff tear is a challenging procedure. To gain acceptable mobility of the torn tendon, margin convergence and interval slide were introduced in addition to meticulous release of fibrous bursal tissue and adhesions.  

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V-shaped tear to a smaller crescent-shaped tear. Thus, the lateral free margin is allowed to be reattached under reduced tension.

Several biomechanical and clinical studies have demonstrated its effectiveness in reducing tension and strain of the torn tendon, and have noted satisfactory outcomes with arthroscopic rotator cuff repair using the margin convergence technique. The interval slide technique was first described by Tauro. It was theorized that this technique would improve the mobility of a torn supraspinatus tendon by releasing the coracohumeral ligament and contracted tissue in the rotator interval, where the supraspinatus tendon was tethered. With large-to-massive contracted cuff tears, any attempt to repair without releasing the tethered tendon would result in tension overload and failed repair. Lo and Burkhart expanded on this concept and added the posterior interval slide technique when an anterior interval slide alone was not sufficient to gain the acceptable mobility. The posterior interval slide is the release between the supraspinatus and infraspinatus tendons along the scapular spine to improve mobility of the retracted supraspinatus as well as infraspinatus and teres minor. Lo and Burkhart reported that these interval slides allowed the repair of previously irreparable massive contracted rotator cuff tear, and the functional improvement was promising. However, there was no comment related with the structural integrity in their study. The purpose of the present study was to compare the structural integrity in magnetic resonance arthrography (MRA) images and clinical outcomes at two years after an arthroscopic repair with either the posterior interval slide and margin convergence or margin convergence alone for large-to-massive contracted rotator cuff tears. We hypothesized that the posterior interval slide and side-to-side repair of the interval slide edges would facilitate complete repair by improving the mobility of the torn tendon. We also hypothesized that structural integrity and clinical outcomes at two years after surgery would be similar to those of a partial repair using margin convergence without the posterior interval slide.

Materials and Methods

Study Population

This study included fifty-two patients with large-to-massive contracted rotator cuff tears of ≥3 cm or at least two tendon involvements, not amenable to complete repair with anterior interval slide and margin convergence alone. Patients underwent either arthroscopic complete repair with a posterior interval slide and side-to-side repair of the interval slide edge (Group P) or partial repair with margin convergence alone (Group M) from March 2008 to June 2010. Patient assignments for each group were not randomized.

The inclusion criteria were (1) a rotator cuff tear with an anterior-to-posterior diameter of ≥3 cm or at least a two-tendon involvement noted in the preoperative MRA and intraoperative period, (2) a tear not amenable to complete repair after the anterior interval slide, and (3) a follow-up MRA image acquired at six to eight months after surgery and availability for functional assessment for a minimum of two years after surgery. The exclusion criteria were (1) partial repair despite the posterior interval slide, (2) glenohumeral arthritis of grade 2 or higher (the Hamada classification system), (3) a previous operation on the affected shoulder, (4) an arthroscopically irreparable subscapularis tear due to severe medial retraction to the coracoid process, and (5) a Workers’ Compensation claim. Forty-one patients, twenty-two in Group P (complete repair with a posterior interval slide and side-to-side repair of the interval slide edge) and nineteen in Group M (partial repair with margin convergence alone without posterior interval slide), were included in this study. The data were retrospectively reviewed, and approval of the institutional review board was obtained with a waiver of informed consent.

Functional and Radiographic Assessment

For the functional assessment, the Simple Shoulder Test (SST), the University of California at Los Angeles (UCLA) shoulder score, and the American Shoulder and Elbow Surgeons (ASES) score were used, and an independent examiner rated the preoperative and postoperative shoulder function, pain, and active range of motion including forward flexion in the scapular plane, external rotation with the elbow at the side, and internal rotation. Internal rotation was rated on the basis of how far the patient was able to reach his or her thumb up to the spinal segment. To facilitate the statistical analysis, spinal column levels were converted to continuous numbers. For example, T1-T12 corresponded to 1 through 12, L1-L5 corresponded to 13 through 17, and the sacrum was given the number 18.

All patients had MRA images made on a 3-T magnetic resonance scanner (MAGNETOM Tim Trio; Siemens, Erlangen, Germany) preoperatively and at six months after surgery. To improve the reliability in measuring the imaging studies, assessments were performed by two independent orthopaedic surgeons blinded to the repair technique and group designation. After individual values were measured by two examiners, individual mean values were determined. The tear size was defined as the maximum anterior-to-posterior width, measured on T1-weighted fat-suppression sagittal oblique images using the PACS (picture archiving and communications system) (Centricity PACS; GE Healthcare, Milwaukee, Wisconsin) (Fig. 1). In most lateral T1-weighted, sagittal oblique images where the scapular spine was seen in contact with the scapular body (Y-shaped view), the degree of fatty infiltration in the supraspinatus and infraspinatus muscles was categorized as follows: stage 0 indicated a completely normal muscle without any fatty streak; stage 1, occasional fatty streaks in the muscle; stage 2, obvious fatty infiltration but with still more muscle than fat; stage 3, equal amount of fat and muscle; and stage 4, more fat than muscle.

Operative Procedures

The patients underwent arthroscopic rotator cuff repair in the beach-chair position under general anesthesia. For evaluating the subscapularis tendon integrity at the footprint of the lesser tuberosity, a 70° arthroscope was utilized as needed. If the subscapularis tear required repair, the rotator interval and adhesions around the coracoid base as well as bursal tissue in front of the subscapularis were carefully released. Repair was performed using simple repair

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**Fig. 1**

The maximum anterior-to-posterior width measured on the T1-weighted fat-suppression sagittal oblique MRA image.

P (complete repair with a posterior interval slide and side-to-side repair of the interval slide edge) and nineteen in Group M (partial repair with margin convergence alone without posterior interval slide), were included in this study. The data were retrospectively reviewed, and approval of the institutional review board was obtained with a waiver of informed consent.

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in a single-row fashion or mattress repair with transtendon technique. Next, the subacromial space was explored, and the tear configuration was evaluated by viewing through the lateral portal. The mobility of both the anterior and posterior leaves of the torn cuff was assessed through the anterolateral portal with an arthroscopic grasper (KingFisher; Arthrex, Naples, Florida). The anterior interval slide was performed systematically by releasing the coracoacromial ligament with arthroscopic scissors and electrocautery (ArthroWand; ArthroCare, Austin, Texas) to gain mobility of the anterior leaf.3,4

In Group M, although mobility of the posterior leaf was not sufficient for complete repair, a margin convergence and partial repair of the converged lateral free margin of the tendon were performed in a single row, or medial to, the footprint (within 5 mm from the articular margin), leaving a defect in the lateral free margin, or a suture-bridge technique was used for the lower portion of the infraspinatus, if feasible.

In Group P, an additional posterior interval slide was performed to gain additional mobility of the supraspinatus tendon. The interval slide was performed systematically by releasing the coracoacromial ligament and traction sutures are placed on the anterior and posterior leaves. These traction sutures were pulled and spread to move the retracted tendon away from the scapular spine and to prevent injury to the suprascapular nerve, which runs adjacent to the scapular spine, during the interval release. The interval between the supraspinatus and infraspinatus was released using arthroscopic scissors and electrocautery (Fig. 2), and meticulous release of each tendon was again performed. After confirming acceptable mobility of both leaves, complete repair with side-to-side repair of the interval slide edges was performed in the same manner. Limited arthroscopic acromioplasty was performed on the impinged area to preserve the coracoacromial ligament as much as possible.5

Postoperative Rehabilitation

After surgery, the arm was placed in an abduction brace positioned in 30° of abduction for six weeks. On the day after surgery, pendulum exercises were begun. Gentle, self-assisted, passive range-of-motion exercises, such as supine forward elevation or table sliding stretch, were begun six weeks postoperatively. Cross-body adduction and external rotation using a stick were initiated at the same time. Patients were taught these self-assisted passive range-of-motion exercises by a physician prior to discharge and were supervised by a physical therapist. Self-assisted active exercises were begun eight weeks postoperatively, and isotonic strengthening exercises with use of an elastic band were encouraged three months after surgery. After six months, patients could return to all sports.

Statistical Analysis

The IBM SPSS Statistics for Windows software program (version 20; IBM, Armonk, New York) was used for statistical analysis. The Mann-Whitney test was used to compare continuous or continuous ranked data (tear size, SST score, UCLA shoulder score, ASES score, and range of motion) between groups. For categorical data such as fatty infiltration, the chi-square test was used to compare between groups. The Wilcoxon signed-rank test was used to compare preoperative and postoperative values. Significance was set at a p value of <0.05.

Source of Funding

There was no external funding for this study.

Results

Patient Demographics

Group P comprised eight men and fourteen women, and Group M comprised seven men and twelve women. The mean age of the patients at the time of surgery was 60.2 years (range, forty-eight to seventy-one years) in Group P and 61.5 years (range, fifty-two to seventy years) in Group M. The mean duration of symptoms before surgery was 26.5 months in Group P and 28.2 months in Group M. The dominant arm was involved in seventeen patients (77%) in Group P and in fourteen patients (74%) in Group M. Differences among groups were not significant (see Appendix)

Arthroscopic Findings and Concomitant Procedures

Eight patients (36%) in Group P and seven patients (37%) in Group M had a partial or complete subscapularis tear. The SLAP (superior labral anterior-posterior) or biceps lesion was identified in nine patients (41%) in Group P and in nine patients (47%) in Group M and was treated with a biceps tenotomy or tenodesis. In Group M, the mean residual defect (and standard deviation) after a partial repair was 10.9 ± 3.6 mm (range, 5 to 20 mm). In repairing the torn cuff, the simple repair was used in seventeen patients in Group P and fifteen patients in Group M; the suture-bridge technique was used in five patients in Group P and in four patients in Group M.

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**Functional Assessments**

The mean preoperative SST scores (and standard deviation) were 4.9 ± 1.3 in Group P and 4.7 ± 1.4 in Group M. The mean postoperative SST scores improved to 8.6 ± 1.6 in Group P (p < 0.001) and 8.8 ± 1.8 in Group M (p < 0.001) at the time of the two-year follow-up; the postoperative difference was not significant between groups. The mean ASES score improved significantly from 40.3 ± 7.5 preoperatively to 81.5 ± 9.2 at the time of the two-year follow-up in Group P (p < 0.001) and from 40.3 ± 9.3 to 85.6 ± 8.3, respectively, in Group M (p < 0.001), but the postoperative difference was not significant between groups (Table I). The UCLA scores also significantly improved from 14.6 ± 3.4 preoperatively to 27.0 ± 3.3 at the two-year evaluation in Group P (p < 0.001) and from 15.4 ± 2.9 to 28.4 ± 3.2, respectively, in Group M (p < 0.001); the postoperative difference was not significant between groups (Table II).

The mean preoperative active forward flexion was 113.9° ± 14.0° in Group P and 115.5° ± 15.7° in Group M. The mean postoperative active forward flexion improved significantly to 138.6° ± 12.6° in Group P (p < 0.001) and 141.1° ± 10.5° in Group M (p < 0.001). The mean external rotation improved significantly from 31.4° ± 7.4° preoperatively to 48.4° ± 8.5° postoperatively in Group P (p < 0.001) and from 31.8° ± 7.9° to 50.8° ± 7.5°, respectively, in Group M (p < 0.001), and the mean internal rotation improved significantly from 13.8 ± 2.4 to 10.9 ± 2.0, respectively, in Group P (p < 0.001) and from 13.2 ± 2.2 to 11.2 ± 1.8 in Group M (p = 0.001). However, in all active range-of-motion measurements, no postoperative differences between groups were significant (Table III).

**Radiographic Assessment**

Preoperatively, the mean tear sizes (and standard deviation) measured on the T1-weighted fat-suppression, sagittal oblique MRA image were 30.9 ± 5.4 mm in Group P and 31.8 ± 5.3 mm in Group M. The MRA images made at the time of the six-month follow-up identified a retear in twenty patients (91%) in Group P, with a mean tear size of 20.6 ± 8.0 mm on the sagittal oblique image. In the shoulders in Group M, which could not have a retear as the patients had had only a partial repair that left a residual defect, the mean tear size was reduced to 16.9 ± 5.0 mm. A significant difference between Group P and Group M with regard to tear size was detected on the follow-up MRA images (p = 0.007) (Table IV).

The preoperative fatty infiltration stage in the supraspinatus and infraspinatus was 3.3 and 2.9 in Group P and 3.4 and 2.9 in Group M, respectively; the differences were not significant. At the time of follow-up, the supraspinatus and infraspinatus stages on the MRA images were 3.2 and 3.0 in Group P and 3.3 and 2.8 in Group M, with no significant difference between groups.

**TABLE II University of California at Los Angeles Shoulder Scores for Both Groups**

<table>
<thead>
<tr>
<th></th>
<th>Group P*</th>
<th>Group M*</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preop. score</td>
<td>14.6 ± 3.4</td>
<td>15.4 ± 2.9</td>
<td>0.733</td>
</tr>
<tr>
<td>Pain</td>
<td>4.2 ± 1.6</td>
<td>4.2 ± 1.5</td>
<td>0.978</td>
</tr>
<tr>
<td>Function</td>
<td>4.0 ± 1.2</td>
<td>4.2 ± 1.6</td>
<td>0.607</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>0 ± 0</td>
<td>0 ± 0</td>
<td></td>
</tr>
<tr>
<td>Active forward flexion</td>
<td>3.2 ± 0.5</td>
<td>3.5 ± 0.6</td>
<td>0.139</td>
</tr>
<tr>
<td>Strength of forward flexion (manual muscle testing)</td>
<td>3.2 ± 0.5</td>
<td>3.2 ± 0.6</td>
<td>0.988</td>
</tr>
<tr>
<td>Two-year postop. score</td>
<td>27.0 ± 3.3</td>
<td>28.4 ± 3.2</td>
<td>0.188</td>
</tr>
<tr>
<td>Pain</td>
<td>7.6 ± 1.3</td>
<td>7.9 ± 1.6</td>
<td>0.599</td>
</tr>
<tr>
<td>Function</td>
<td>7.2 ± 1.3</td>
<td>7.9 ± 1.4</td>
<td>0.163</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>4.1 ± 2.0</td>
<td>4.2 ± 1.9</td>
<td>0.841</td>
</tr>
<tr>
<td>Active forward flexion</td>
<td>4.5 ± 0.6</td>
<td>4.4 ± 0.6</td>
<td>0.170</td>
</tr>
<tr>
<td>Strength of forward flexion (manual muscle testing)</td>
<td>3.7 ± 0.5</td>
<td>4.0 ± 0.6</td>
<td>0.115</td>
</tr>
</tbody>
</table>

*Group-P shoulders underwent a complete repair with margin convergence and a posterior interval slide, and Group-M shoulders underwent a partial repair with margin convergence only, without a posterior interval slide. The values are given as the mean and standard deviation.

**TABLE III Active Range of Motion for Both Groups**

<table>
<thead>
<tr>
<th></th>
<th>Group P*</th>
<th>Group M*</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forward flexion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preop.</td>
<td>113.9° ± 14.0°</td>
<td>115.5° ± 15.7°</td>
<td>0.732</td>
</tr>
<tr>
<td>Two-year postop.</td>
<td>138.6° ± 12.6°</td>
<td>141.1° ± 10.5°</td>
<td>0.588</td>
</tr>
<tr>
<td>External rotation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preop.</td>
<td>31.4° ± 7.4°</td>
<td>31.8° ± 7.9°</td>
<td>0.762</td>
</tr>
<tr>
<td>Two-year postop.</td>
<td>48.4° ± 8.5°</td>
<td>50.8° ± 7.5°</td>
<td>0.345</td>
</tr>
<tr>
<td>Internal rotation†</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preop.</td>
<td>13.8 ± 2.4</td>
<td>13.2 ± 2.2</td>
<td>0.420</td>
</tr>
<tr>
<td>Two-year postop.</td>
<td>10.9 ± 2.0</td>
<td>11.2 ± 1.8</td>
<td>0.699</td>
</tr>
</tbody>
</table>

*Group-P shoulders underwent a complete repair with margin convergence and a posterior interval slide, and Group-M shoulders underwent a partial repair with margin convergence only, without a posterior interval slide. The values are given as the mean and standard deviation. †For the internal rotation, the spinal segments as reference were converted into continuous numbers, with T1-T12 corresponding to 1-12; L1-L5, to 13-17; and the sacrum, to 18.
On the Wilcoxon signed-rank test, no significant difference was detected between the preoperative and postoperative stages within Group P or Group M (Table V).

The mean preoperative acromiohumeral distance was 8.2 ± 0.8 mm in Group P and 8.3 ± 0.7 mm in Group M. At the time of the two-year follow-up, the mean acromiohumeral distance was 8.0 ± 0.9 mm in Group P and 8.0 ± 1.0 mm in Group M. No significant difference was detected between the preoperative and postoperative mean values within each group.

**Discussion**

This study was designed to investigate whether complete repair of large-to-massive contracted rotator cuff tears with side-to-side repair of the interval slide edges shows improved clinical outcomes compared with a partial repair with margin convergence alone. The posterior interval slide facilitates complete repair of a massive contracted cuff tear. In contrast, the partial repair with margin convergence recreates the transverse force couple and converts a massive contracted cuff tear into a functional cuff tear. These two concepts were introduced by Lo and Burkhart. We aimed to determine which option should be chosen if a complete repair is not feasible with margin convergence after an anterior interval slide.

In the current study, the posterior interval slide improved the mobility of the torn tendon and facilitated the complete repair. However, as Iagulli et al. indicated, there is a potential risk for devascularization of the torn tendon when a concomitant anterior and posterior interval slide is performed. In the anterior interval slide, continuity is feasible without disrupting the tear margin, by releasing the coracohumeral ligament at the coracoid base. However, to perform the posterior interval slide, the tear margin of the supraspinatus and infraspinatus should be disrupted and separated into two flaps, even though these flaps are repaired later by side-to-side repair.

In addition to the devascularization issue, the supraspinatus and infraspinatus are closely related to each other; these two tendons are retracted together and share their footprint insertion on the greater tuberosity and nerve innervation. Through the double (anterior and posterior) interval slide, the muscle-tendon length could be shortened and the muscle-tendon unit might not be functioning optimally on its force-length curve. Thus, the overall outcome could worsen with a chronic massive rotator cuff tear in which the elasticity of the muscle-tendon unit was already impaired. Since numerous studies have indicated relatively high retear rates after repair, especially in large-to-massive rotator cuff tears, we postulated that completely repaired tendons with an additional posterior interval slide would be more resistant to retear.

The longer-term effects of...
the aggressive release technique pursued in Group P remain unclear.

On the other hand, the outcomes of the partial repair (Group M) with margin convergence alone were promising. Despite the remaining defect with a mean size of 11 mm at the completion of surgical repair and an increased defect size seen on the follow-up MRA images, improved functional and radiographic outcomes were comparable with those of complete repair (Group P), and the tear size on the follow-up MRA images was significantly smaller in Group M. Kim et al. reported satisfactory outcomes after arthroscopic partial repairs with margin convergence in irreparable large-to-massive rotator cuff tears despite residual defects with a mean size of 12 mm at the conclusion of surgery. They concluded that creating a balanced force couple and converting the tear into a functional cuff tear might be helpful in improving the functional outcome and reducing pain. Iagulli et al. compared the results of complete and partial repairs of massive rotator cuff tears and found that postoperative outcomes were not significantly different between these groups. These results were obtained even though preoperative tear sizes were significantly greater in the partial repair group and the mean residual defect in the partial repair group was 2.39 ± 0.92 cm. Iagulli et al. utilized the anterior and posterior interval slide prior to margin convergence without the distinction of groups. Considering the greater tear size and failed attempt at complete repair, the partial repair group seemed to have worse results, although the outcomes of the partial repair group were comparable with those of the complete repair group.

Biceps tenotomy or tenodesis is another option to address the massive contracted rotator cuff tear. Several investigators have shown that the biceps tendon is one of major causes of pain in shoulders with a massive rotator cuff tear, and simple biceps tenotomy or tenodesis alone can provide pain relief and functional improvement. When even partial repair is not possible, biceps tenotomy or tenodesis may be an appropriate surgical option.

We compared the biceps conservation subgroup with the biceps tenotomy or tenodesis subgroup to determine whether the biceps tenotomy or tenodesis subgroup would have better outcomes. Even though the biceps tenotomy or tenodesis subgroup showed higher shoulder scores in both Groups P and M, there were no significant differences in each group. In the follow-up MRA imaging, even though both groups showed significantly reduced tear sizes compared with those on preoperative imaging, the mean tear size on the follow-up MRA image at a mean of six months (range, six to eight months) after surgery was a medium-sized tear, raising the question as to whether the tear would progress over time. Koh et al. reported serial clinical and structural assessments, including follow-up with serial MRI scans, at six and nineteen months after rotator cuff repair in thirty-one patients with medium to large-sized cuff tears amenable to complete repair. Although the retear size was not measured, seven patients (23%) had a partial or complete retear, and serial magnetic resonance imaging (MRI) scans revealed an unchanged status with regard to the Sugaya retear classification, muscle atrophy, and fatty infiltration. However, the preoperative tear sizes were mostly medium-sized tears (twenty-five; 81%), and the status with regard to muscle atrophy and fatty infiltration in preoperative MRI and follow-up MRI was substantially lower than that in our series.

In our study, the fatty infiltration status at the six-month follow-up was not significantly different from the preoperative status within or between groups. Gladstone et al. indicated that fatty infiltration and muscle atrophy did not improve after rotator cuff repair and showed evidence of progression on follow-up MRI scans as early as one year after surgery. In our study, some patients had progression or substantial improvement to a different stage. However, among the shoulders graded as stage 4 by preoperative MRI images, further deterioration within stage 4 could not be reflected in the outcomes.

Our study has some limitations. First, the study was a nonrandomized retrospective study. Second, with the limited number of patients reported, the present study had a relatively low power of statistical analysis. Third, the follow-up period is relatively short. Given the larger retear size and aggressive release during the surgery, the outcomes of Group P may become worse over time. Fourth, the clinical outcomes at the time of the two-year follow-up do not match with those at the time of the six-month MRA imaging follow-up. Thus, both results may not be compared directly. Fifth, in this study, both anterosuperior and posterosuperior rotator cuff tears were included. If only posterosuperior cuff tears were included, our findings could have more impact.

In conclusion, the complete rotator cuff repair with a posterior interval slide and side-to-side repair of the interval slide edges did not show better clinical or structural outcomes compared with the partial repair group with margin convergence alone for large-to-massive contracted rotator cuff tears. In addition, the complete repair group had a 91% retear rate and a greater mean retear size than those of the partial repair group. Even though this study had relatively short-term follow-up, in the setting of large-to-massive contracted rotator cuff tears, a complete repair with an aggressive release such as posterior interval slide may not have an increased benefit compared with partial repair without posterior interval slide.

Appendix

A table showing demographic data on the patients is available with the online version of this article as a data supplement at jbjs.org. Sung-Jae Kim, MD, PhD
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Yong-Min Chun, MD, PhD

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References


