Brennen Lucas, M.D.
Advanced Orthopaedic Associates

2778 N. Webb Rd.
Wichita , KS 67226

316-631-1600
Fax: (316) 631-1674
1 (800) 362-0591

Arthroscopic Rotator Cuff Repair Protocol
Massive / Revision

This protocol was developed to provide the rehabilitation professional with a guideline of postoperative rehabilitation course for a patient who has undergone an arthroscopic *massive* size rotator cuff tear repair. It should be stressed that this is only a protocol and should not be a substitute for clinical decision making regarding a patients progression. Actual progression should be individualized based upon your patient's physical examination, individual progress and the presence of any postoperative complications.

The rate limiting factor in arthroscopic rotator cuff repair is the biologic healing of the cuff tendon to the humerus, which is thought to be a minimum of 8-12 weeks.
Progression of AROM against gravity and duration of sling use is predicated both on the size of tear and quality of tissue and should be guided by referring physician. Refer to initial therapy referral for any specific instructions.

Phase I: Immediate Post Surgical Phase (Weeks 0-8)
Goals

- Maintain/protect integrity of repair
- Gradually increase PROM
- Diminish pain and inflammation
- Prevent muscular inhibition
- Independence in modified ADLs

Precautions

- No active range of motion (AROM) of shoulder
- No lifting of objects, reaching behind back, excessive stretching or sudden movements
- Maintain arm in brace, sling – remove only for exercise
- Sling use for 8 weeks – massive tear size
- No support of body weight by hands
- Keep incisions clean and dry

Day 1 to 14

- Use of Abduction brace/sling (during sleep also) – remove only for exercise
- Passive pendulum exercises (3x/day minimum)
- Finger, wrist, and elbow AROM (3x/day minimum)
- Gripping exercises (putty, handball)
- Cervical spine AROM
- Passive shoulder (PROM) done supine for more patient relaxation
    - Flexion to 100°
    - ER/IR in scapular plane </= 20°
- Educate patient on posture, joint protection, importance of brace/sling, pain medication use early, hygiene
- Cryotherapy for pain and inflammation
    - Day 1-3: as much as possible (20 min/hour)
    - Day 4-7: post activity, or as needed for pain

Week 2-8

- Continue use of abduction sling/brace until the end of week 8.
- Pendulum exercises
- Begin PROM to tolerance (supine, and pain-free)
- May use heat prior to ROM
    - Flexion to 130°

ER in scapular plane = 30°
IR in scapular plane to body/chest @ 0° abduction up to 40°
IR in scapular plane to body/chest in slight (30°) abduction </= 30°
Continue elbow, hand, forearm, wrist and finger AROM
Begin resisted isometrics/isotonics for elbow, hand, forearm, wrist and fingers
Begin scapula muscle isometrics/sets, AROM
Cryotherapy as needed for pain control and inflammation
May begin gentle general conditioning program (walking, stationary bike) with caution if unstable from pain medications
No running/jogging
Aquatherapy may begin approximately 10 **weeks** post operative if wounds healed

Criteria for progression to next phase (II)
Passive forward flexion to >/= 125°
Passive ER in scapular plane to >/= 25° (if uninvolved shoulder PROM > 80°)
Passive IR in scapular plane to >/= 30° (if uninvolved shoulder PROM > 80°)
Passive abduction in scapular plane to >/= 60°
No passive pulley exercise

Phase II: Protection and Protected Active Motion Phase (Weeks 8 to 16)
Goals
Allow healing of soft tissue
Do not overstress healing soft tissue
Gradually restore full passive ROM (~ week 12-16)
Decrease pain and inflammation

Precautions
No lifting
No supported full body weight with hands or arms
No sudden jerking motions
No excessive behind back motions
No bike or upper extremity ergometer until week 10

Weeks 8-10
Continue with full time use of sling/brace until end of week 8
Continue scapular exercises
Gradually wean from brace starting several hours/day out progressing as tolerated
Use brace sling for comfort only until full DC by end of week 9
Initiate AAROM shoulder flexion from supine position week 8-10
Progressive PROM until full PROM by week 12-16 (should be pain-free)
May require use of heat prior to ROM exercises/joint mobilization
Can begin passive pulley use
May require gentle glenohumeral or scapular joint mobilization as indicated to obtain full unrestricted ROM
Initiate prone rowing to a neutral arm position
Continue cryotherapy as needed post therapy/exercise

Weeks 10-16
Continue AROM, AAROM, and stretching as needed
Begin IR stretching, shoulder extension, and cross body, sleeper stretch to mobilize posterior capsule (if needed)
Begin gentle rotator cuff submaximal isometrics (10-12 weeks)
Begin glenohumeral submaximal rhythmic stabilization exercises in "balance position (90-100º of elevation) in supine position to initiate dynamic stabilization
Continue periscapular exercises progressing to manual resistance to all planes
Seated press-ups

Initiate AROM exercises (flexion, scapular plane, abduction, ER, IR) (should be pain-free) low weight – initially only weight of arm
Do not allow shrug during AROM exercises
If shrug exists continue to work on cuff and do not reach/lift AROM over 90° elevation
Initiate limited strengthening program (weeks 12-14).
*Remember RTC and scapular muscles small and need endurance more than pure strength
ER and IR with exercise bands/sport cord/tubing
ER isotonic exercises in side lying (low-weight, high-repetition) may simply start with weight of arm
Elbow flexion and extension isotonic exercises
Full can exercise in scapular plane – no weight/load
Prone series (extension, rowing, horizontal abduction

Criteria for progression to Phase III
Full AROM

Phase III: Early Strengthening (Weeks 16-22)
Goals
Full AROM (weeks 12-16)
Maintain full PROM
Dynamic shoulder stability (GH and ST)
Gradual restoration of GH and scapular strength, power and endurance
Optimize neuromuscular control
Gradual return to functional activities

Precautions
No lifting objects > 5 lbs, no sudden lifting or pushing
Exercise should not be painful

Week 16
Continue stretching, joint mobilization, and PROM exercises as needed
Dynamic strengthening exercises
Initiate strengthening program
Continue exercises as above weeks 9-16
Continue periscapular muscle strengthening
Scapular plane elevation to 90° (patient must be able to elevate arm without shoulder or scapular hiking before initiating isotonic exercises. If unable then continue cuff/scapular exercises)
Full can (no empty can abduction exercises)
Prone series as described earlier

Week 18
Continue all exercise listed above
May begin BodyBlade, Flexbar, Boing below 45º
Begin light isometrics in 90/90 or higher supine, PNF D2 flexion/extension patterns against light manual resistance
Initiate light functional activities as tolerated

Week 20
Continue all exercises listed above
Progress to fundamental exercises (bench press, shoulder press)
Initiate low level plyometrics (2-handed, below chest level – progressing to overhead and finally 1-handed drills)

Criteria for progression to Phase IV
Ability to tolerate progression to low-level functional activities
Demonstrate return of strength/dynamic shoulder stability
Reestablishment of dynamic shoulder stability

Demonstrated adequate strength and dynamic stability for progression to more demanding work and sport-specific activities

Phase IV: Advanced Strengthening Phases (Weeks 20-26)

Goals

Maintain full non-painful AROM
Advanced conditioning exercise for enhanced functional and sports specific use
Improve muscular strength, power and endurance
Gradual return to all functional activities

Week 18

Continue ROM and self-capsular stretching for ROM maintenance
Continue progressive strengthening
Advanced proprioceptive, neuromuscular activities
Light isotonic strengthening in 90/90 position
Initiation of light sports (golf chipping/putting, tennis ground strokes) if satisfactory clinical exam

Week 24

Continue strengthening and stretching
Continue joint mobilization and stretching if motion is tight
Initiate interval sports program (eg, golf, doubles tennis) if appropriate