MIDWEST ORTHOPAEDICS at RUSH
SPORTS MEDICINE & SHOULDER

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ROTATOR CUFF REPAIR REHAB GUIDELINES

PHASE 1 – PROTECTIVE/HEALING PHASE:
(0-4 weeks for small/medium; 0-6 weeks for large/massive)

PRECAUTIONS/ACTIVITY GUIDELINES

- **Sling** wear at all times (except below) with abduction pillow in place, including sleep.
    - Sling may be removed with arm dangling down (pendulum) and the patient can lean to the side to provide space for axillary hygiene and don/doff garments (surgical arm first in/last out) without any active abduction.
    - Sling may be removed if sitting in a chair or desk and arm supported.
    - Sling should be removed for exercises 3-5 x per day (as below)
- **Small/medium**: wean sling over 1-2 days beginning at **4** weeks
- **Large/massive**: wean sling over 1-2 days beginning at **6** weeks
- **Exercises**
    - Please teach supine, passive, well-arm (or wand-) assisted range of motion. 3-5 times per day (depending on level of stiffness)
    - Max forward flexion 130°, max external rotation 30° until end of Phase 1
        - Patients are not expected to achieve this early on, but as this range is progressively achieved, do not exceed this range until end of Phase 1
    - For patients with difficulty performing the exercise properly, wand can be held in line with the body as a "force multiplier". Alternatively, table-top step-backs can be used.
    - Please teach pendulums for 3 x per day
- Ok for light hand/wrist/finger motion (knife and fork, smartphone, typing). No weight bearing.
- Avoid passive tension across repaired rotator cuff tendon(s) (no excessive cross body adduction for supraspinatus repairs, and no IR up the back)
- **Therapy visits:**
    - Once per week for patients that are not overly stiff until end of phase 1
    - Twice per week for patients who are overly stiff in therapist's judgement
    - Goal to achieve **90° passive elevation** and **30° passive ER at 0° abduction** by first post-op (10-14 days)

- Driving is not recommended during Phase 1
- Dressings should be removed 5 days after surgery (steri-strips left in place) and ok to shower and let water/soap run over wound at that time
    - No dressing needs to be worn after this time, but band-aids can be used if suture tails are irritated by clothing.
- No submersion of the wounds (hot tub, bath, pool) until 2 weeks and wound totally healed

GOALS

- Education: Patient education about the nature of the surgery, associated precautions and expected rehabilitation progression
    - Please educate on the fact that load to failure/pull-out strength is only 25% of normal and abduction of only 30 degrees places a force on the repair equivalent to 1 body weight!! Patients need to be careful!

- Teach patient supine, passive, well-arm/wand-assisted ROM max FF 130/max ER to 30 and pendulums
- Protect rotator cuff repair and create an environment for optimal healing
- Control pain, swelling and inflammation
- Achieve PROM limits established above
- Establish stable scapula

EXERCISES/PT INTERVENTIONS

Initial post-operative home exercises:

- Teach Elbow, wrist and hand AROM without weight only if patient has hand/digit swelling. Otherwise do not spend time on this.
- Teach supine, passive, well-arm/wand-assisted ROM max FF 130/max ER to 30
- Teach pendulums
- Teach Posture: active seated and standing thoracic extension and scapular sets (retraction to neutral), depression and protraction, cervical ROM/upper trapezius stretch as needed

Therapy interventions

- Grade I/II mobilization as indicated for pain relief
- For patients who have access to a therapy pool, aquatic therapy can begin at 3 weeks with shoulders totally submerged, very slow active motion within precautionary ROM (130/30) with cue such as "Don't let the water ripple."
- NO ROM behind the back in this phase; No cross-body adduction past midline

PHASE 2 – MOTION RECOVERY PHASE:
(end of Phase 1 through week 12)

PRECAUTIONS /ACTIVITY GUIDELINES

- Discontinue sling at the end of Phase 1 (end of week 4 for small/medium; end of week6 for large massive)
- Begin using arm for light activity with elbow close to side.
- Emphasis is on range of motion and no significant weight
  - "Nothing heavier than a full coffee cup"
  - No supporting of body weight by hands and arms
- PROM progressed toward normal including past 130/30 limits above and adding internal rotation
- AAROM initiated and progressed toward AROM gradually with goal for full or near full AROM at 12 weeks
- As AROM is restored, ensure proper biomechanics of elevation with avoidance of "scapular shrug"
- Return to work is on a case-by-case basis depending on the type of work and the tear size/tissue quality. Patients should ask the Garrigues team regarding return to work.

GOALS

- Education: Please educate the patient on the fact that load to failure of the repair is still only at ~50% by the *end* of 12 weeks! Motion is key in this phase but not strengthening!

- Continued protection of healing tissue with slow progression of activity (exercises and ADL's) from waist level first, and then slowly in more elevated positions
- Restore full PROM by week 12 (gradual restoration) with an emphasis on home stretching moving past prior ROM limits and adding IR
- Normalize AROM without overstressing healing tissue
- Minimize pain and inflammation (may ice after exercise)

EXERCISES/PT INTERVENTIONS

- Continue thoracic extension and scapular set (retraction to neutral plus depression) prior to any passive or active exercise for optimal positioning
- PROM to tolerance with gentle overpressure in all planes; begin cross body adduction and IR hand slide up spine. May begin ER at 90 deg abduction in scapular plane.
- Integrate grade 3 and 4 only in anterior/posterior direction glenohumeral mobilization as needed prior to PROM.
- AAROM: Continue AAROM progression. Emphasize HEP building on supine, passive motion taught in phase 1 but now make these AAROM with over-pressure; move past 130/30 limits; add IR.
- AROM: ER in side-lying; prone extension to hip (not past 20 degrees extension) with end range scapular retraction; supine serratus punches; supine long lever arm motion in controlled range from balanced position
- Aquatic: no range restrictions; may add cross body adduction and may progress speed as directed by PT/MD
- Rhythmic stabilization in balanced position (90 degrees elevation in supine) with submaximal force. Gradually increase force and move out of balanced position: 60, 120, 150 degree positions of elevation
- Side-lying manually resisted scapular protraction and retraction

CRITERIA TO PROGRESS TO PHASE 3

- Full passive range of motion
- AROM with normalized mechanics for elevation without scapular shrug or other substitution patterns
- Pain level less than 2/10 with exercise and ADL

<u>Phase 3- FUNCTIONAL RECOVERY PHASE</u>: (end of week 12 through week 24)

PRECAUTIONS/ACTIVITY GUIDELINES

- Use of the arm at and above shoulder level may occur with light weight, as long as mechanics for elevation remain normalized.
- Strengthening gradually introduced
    - 13-16 weeks: up to 5 lbs lifting/pushing/pulling
    - 17-20 weeks: up to 8 lbs
    - 21-24 weeks: up to 10 lbs

    - 25 + weeks: advance as tolerated
- Normalization of ADL's with the exception of very strenuous yard work (shoveling snow, chopping wood, etc.)
- *Gradual* progression of exercises to begin to restore strength, endurance, and work/sport specific movement
- Return to work and sport is on a case-by-case basis depending on the nature of the work/sport and the tear size/tissue quality. Patients should ask the Garrigues team regarding return to work/sport.
- **Resistance exercises should only be initiated when there is Full AROM with normalized mechanics—motion comes first!**

GOALS

- Education: Please educate the patient that load to failure is still increasing until the 6 month point. Maintaining full PROM and normal movement patterns are more important than strength as the strengthening remains limited by the slow healing nature of the rotator cuff.
- Full AROM with normalized mechanics in all planes
- Gradual and controlled initiation of muscle strength improvement in the rotator cuff, scapular stabilizers, and shoulder primary movers
- Return to ADL's, work and recreational activities without pain or disability
- Teach Home exercise program
    - TheraBand, high-rep, 1x per day
        - ER at 0° abduction
        - Seated rows with emphasis on scapular retraction and upward tilt.
    - Stretching in all planes

EXERCISES/PT INTERVENTION

- Continued end range stretching and mobilizations as needed, particularly posterior capsule (cross body adduction, sleeper stretch with scapula stabilized, ER > 90 degrees for throwers/tennis). Rotator cuff strengthening: "full can" scaption, initially to 90, then throughout range, no weight, to max 3-5 lb. resistance; ER and IR strengthening with hand weights or TheraBand, initially below shoulder level, progressing to above shoulder level as needed for work or sport. Emphasize high repetitions (30-50) with low resistance (1-5 lbs); progress in increments of one pound when 30-50 repetitions are easy and painless
- Scapular stabilization exercises: Extension to hip and horizontal abduction with ER, either prone with hand weights, or standing with TheraBand; serratus presses in supine with hand weight; serratus wall presses with shoulder in neutral and in ER, then progress to weight bearing on incline when well controlled without scapular winging.
- May begin biceps curls with weight at this point if a biceps tenodesis was performed in addition to the RCR
- Deltoid: forward raises and lateral raises with bent elbow to 90 degrees with light hand weight
- Use of weightlifting machines (chest press, lat pull downs, seated row...) only anterior the plane of the body; incorporate scapular work to end range; low resistance and high reps
- Combined muscle patterns: PNF diagonals progressing from supine to standing, seated on ball for core added, progressing resistance from none to TheraBand or hand weight

- Aquatics: may do full motion for all exercises, with cupped hand, progressing to use of gloves or paddle for added resistance and then increasing speed of movement
- Advanced strengthening activities (not needed for all patients - must have 4/5 in cuff and scapular mm and be closer to end stage rehab) useful for overhead athletes or heavy laborers:
  plyoball chest passes on minitramp; body blade ER neutral, 90 deg elevation in scapular plane; sports specific arm movement simulation with TheraBand or Body blade (eg. tennis swing)

CRITERIA FOR RETURN TO WORK/SPORT

- Clearance from physician
- Pain free at rest and minimal pain with the work or sport specific activity simulation
- Sufficient ROM and strength with normalized mechanics for the activity

<u>Phase 4- STRENGTH RECOVERY PHASE</u>:
(end of week 25 for life)

PRECAUTIONS/ACTIVITY GUIDELINES

- Continue stretching once daily for life
- Continue HEP for strengtheing
- Return to all work/sport activity included heavy/strenuous vocation/avocation
- Gradual progression of exercises to restore full strength, endurance, and work/sport specific movement

GOALS

- A strong, supple, and pain free shoulder for life!
- Education: Please educate the patient that while the connection of the tendon to the bone is now at full strength, the muscles around the shoulder and flexibility will continue to improve with effort for up to 2 years post-op
- Educate that while the tear is at full strength, it is *no stronger* than the original tendon and can tear again. Caution with high risk activities such as weights overhead (e.g. overhead luggage on airplane) is warranted
- Gradual and controlled initiation of muscle strength improvement in the rotator cuff, scapular stabilizers, and shoulder primary movers
- Return to ADL's, work and recreational activities without pain or disability
- Continue to emphasize HEP
  - TheraBand, high-rep, 1 x per day
    - ER at 0° abduction
    - Seated rows with emphasis on scapular retraction and upward tilt.
  - Stretching in all planes

EXERCISES/PT INTERVENTION

- Continued stretching for any residual deficits
- Strengthening to focus on
  - High rep, low weight (15-20 in a set)

- Avoid exercises that are overly strenuous on the rotator cuff
    - Dips
    - Military press
    - Lateral raises with heavy weight
    - Lat pull-down behind the head
- Encourage exercises that work the periscapular stabilizers and contribute to good mechanics
    - Seated row with emphasis on scapular “pinching” and sticking out chest
    - Cable ER
    - Cable extension
    - Lat pull-down with bar on chest

CRITERIA FOR RETURN TO WORK/SPORT

- Clearance from physician—even the most strenuous sports/work activities are typically cleared by 6 months but please refer patient to Garrigues team