Arthroscopic Anterior Capsulolabral Repair Protocol

DR. EASTWOOD

POSTOPERATIVE PHASE I:
(0-6 Weeks)

GOALS

- Maximally protect the surgical repair (capsule, ligaments, labrum, sutures)
- Achieve staged ROM goal. Do not significantly exceed them:
  - POW 3
    - Do not force ROM (perception of light stretch at less than staged ROM)
    - Passive forward elevation (PFE): 90˚ (e.g., assisted pulley, self-assisted A supine or wand A supine or table step-back)
    - Passive external rotation (PER) at 20˚ of ABD, 10-30˚ (in scapular plane)
    - PER at 90˚ ABD, **contraindicated**
    - Active forward elevation (AFE) N/A
  - POW 6
    - Do not force ROM (perception of light stretch less than staged ROM)
    - PFE: 135˚ (in scapular plane)
    - PER at 20˚ ABD: 35˚-50˚ (scapular plane)
    - PER at 90˚ ABD: 45˚ (scapular plane)
    - AFE: 115˚ (scapular)
- Patient education in postoperative restrictions
- Minimize shoulder pain and inflammatory response
- Ensure adequate scapular function

PRECAUTIONS

- Do not allow or perform ROM/stretching significantly beyond staged ROM goals, especially external rotation both by the sides and in abduction
- Do not allow the patient to use arm for heavy lifting or any use of the arm that requires ROM greater than the staged ROM goals

ACTIVITIES OF PRIMARY IMPORTANCE

- Patient education regarding limiting use of the arm despite lack of pain or other symptoms
- Protection of repair
- Achieve staged ROM goal through gentle ROM activities
- Minimize shoulder pain and inflammation

SUPPLEMENTARY ACTIVITIES

- Normalize scapular position, mobility and dynamic stability (no scapular protraction with concomitant ABD)
- ROM of uninvolved joints (elbow/wrist)
- Begin restoration of shoulder strength through isometric exercises (submaximal; arm ADD to side in neutral rotation)

If you have any problems or questions, please call your doctor's office (8am-5pm).

Answering service for after hours.

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IMMOBILIZATION

- Via standard sling
- Absolute immobilization (no glenohumeral ROM exercises and constant sling use) for variable time of 0-4 weeks, based on patient-specific factors and surgeon recommendation
- Relative immobilization (out of sling for ROM exercises, sitting with the arm supported and standing for short periods), starting after the period of absolute immobilization and continuing for the remainder of Phase I, followed by sling use for comfort

PATIENT EDUCATION

- Discuss precautions specific to the nature of the surgical repair
- Importance of not significantly exceeding staged ROM goals
- Importance of tissue healing
- Proper sling use (assure sling provides upward support to the glenohumeral joint)
- Limiting use of arm for ADLs

ROM

- Following the absolute mobilization period begin:
  - Unweighted pendulum exercises
  - Passive/active-assisted forward elevation to achieve staged ROM goals listed earlier. ROM should not be forceful.
  - Passive/active-assisted external rotation with shoulder in slight abduction to achieve staged ROM goals listed earlier. ROM should not be forceful.
  - Scapular clock exercises or alternately elevation, depression, protraction, retraction. Progress to scapular strengthening as patient tolerates (avoid protraction with concomitant horizontal ABD).
  - AROM of uninvolved joint

MISCELLANEOUS

- Submaximal rotator cuff isometrics as tolerated (arm to side)
- Postural awareness/education

PAIN MANAGEMENT

- Activity restrictions
- Proper fitting of sling to support arm
- Electrophysical agents
- Prescription or OTC medication

MILESTONES: TO PROGRESS TO NEXT PHASE

- Appropriate healing of the surgical repair by adhering to the precautions and immobilization guidelines
- Staged ROM goals achieved but not significantly exceeded
- Minimal to no pain (NPRS, 0-2/10) with ROM

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POSTOPERATIVE PHASE II:
(6-12 Weeks)

GOALS

- Achieve staged ROM goals to normalize passive ROM and AROM. Do not significantly exceed:
  - POW 9
    - PFE: 155˚
    - PER @ 20˚ abduction: 50˚-65˚
    - PER @ 90˚ abduction: 75˚
    - AFE: 145˚
  - POW 12
    - PFE: within normal limits (WNL)
    - PER @ 20˚ abduction: WNL
    - PER @ 90˚ abduction: WNL
    - AFE: WNL
- Minimize shoulder pain
- Begin to increase strength and endurance
- Increase functional activities

PRECAUTIONS

- Do not perform any stretching significantly beyond staged ROM goals
- Do not perform any stretch to gain end range external rotation or external rotation at 90˚ of abduction unless significant tightness is present
- Do not allow the patient to use arm for heavy lifting or any activities that require ROM beyond the staged ROM goals
- Do not perform any strengthening exercises that place a large load on the shoulder in the position of horizontal abduction or the combined position of abduction with external rotation (e.g., no pushups, bench presses, pectoralis flys)
- Do not perform scapular plane abduction with the internal rotation (empty can) at any stage of rehabilitation due to the likelihood of impingement

ACTIVITIES OF PRIMARY IMPORTANCE

- Continued patient education
- Passive/active-addicted ROM as needed to achieve but not significantly exceed staged ROM goals
- Establish basic rotator cuff and scapular neuromuscular control within the allowed ROM

SUPPLEMENTAL ACTIVITIES

- Introduction of functional patterns of movement
- Progressive endurance exercises

PATIENT EDUCATION

- Counsel about using the upper extremity for appropriate ADLs in the pain-free ROM (starting with waist-level activities and progressing to shoulder-level activities and finally to overhead activities over time)
- Continue education regarding avoidance of heavy lifting or quick, sudden motions
- Education to avoid positions that place stress on the anterior inferior capsule during ADLs (ABD with ER @ 90˚)

ROM

- Passive/active-assisted ROM as needed to achieve staged ROM goals in all planes. Many times only light stretching or no stretching is needed.
- If ROM is significantly less than staged ROM goals, gentle joint mobilizations may be performed. However, they should be done only into the limited directions and only until staged ROM goals are achieved
- Address scapulothoracic and trunk mobility limitations. Ensure normal cervical spine ROM and thoracic spine extension to facilitate full upper extremity ROM

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NEUROMUSCULAR RE-EDUCATION

- Address abnormal scapular alignment and mobility PRN
  - Strengthen scapular retractors and upward rotators
  - Increase pectoralis minor flexibility if limited
  - Biofeedback by auditory, visual or tactile cues
  - Weight bearing exercises with a fixed distal segment. (e.g., quadruped position while working to maintain proper position of the scapular, quadruped with scapula protraction, progressing from quadruped to tripod position, no pushups)
- Address core stability deficits PRN
- Activities to improve neuromuscular control of the rotator cuff and shoulder girdle such as the use of unstable surfaces, Bodyblade®, manual resistance exercises

STRENGTH/ENDURANCE

- Scapula and core strengthening
- Balanced rotator cuff strengthening to maintain the humeral head centered within the glenoid fossa during progressively more challenging activities
  1. Should be initially performed in a position of comfort with low stress to the glenohumeral joint, such as less than 45˚ elevation in the place of the scapula (e.g., elastic band or dumbbell external rotation, internal rotation, forward flexion)
  2. Exercises should be progressive in terms of shoulder elevation (e.g., start with exercises performed at waist level progressing to shoulder level and finally overhead activities)
  3. Exercises should be progressive in terms of muscle demand. It is suggested to use activities that have muscle activity levels documented with EMG.
  4. Elevation activities may progress from assistive exercises (e.g., rope and pulley, wall walks) to active, to resistive upright exercises, then, finally, to prone exercises
  5. Nearly full active elevation in the plane of the scapula should be achieved before progressing to elevation in other planes
  6. Exercises should be progressive in terms of adding stress to the anterior capsule, gradually working toward a position of elevated external rotation in the coronal plane, the 90°-90° position PRN
  7. Rehabilitation activities should be pain free and performed without substitutions or altered movement patterns
  8. Rehabilitation may include both weight-bearing and non-weight-bearing activities
  9. Rehabilitation may include both isolated and complex movement patterns (PRI therapies within stated ROM guidelines)
  10. Depending on goals of exercise (control vs. strengthening), rehabilitation activities may also be progressive in terms of speed once the patient demonstrates proficiency at slower speeds
  11. The rotator cuff and scapula stabilizer-strengthening program should emphasize high repetitions (typically 30-50 reps) and relatively low resistance (typically 1-2kg)
  12. No heavy lifting or plyometrics should be performed during this stage
  13. Elbow flexion/extension strengthening with elbow by the side can begin in this phase

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PAIN MANAGEMENT

- Ensure appropriate use of arm during ADLs
- Ensure appropriate level of therapeutic interventions
- Electrophysical agents as needed

MILESTONES: TO PROGRESS TO NEXT PHASE

- Staged active ROM goals achieved with minimal to no pain (NPRS 0-2/10) and without substitution patterns
- Appropriate scapular posture at rest and dynamic scapular control during ROM and strengthening exercises
- Strengthening activities completed with minimal to no pain (NPRS 0-2/10)

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POSTOPERATIVE PHASE III:
(12-24 Weeks)

GOALS

- Normalize strength, endurance, neuromuscular control and power
- Gradual and planned build-up of stress to anterior capsulolabral tissue
- Gradual return to full ADLs, work and recreational activities

PRECAUTIONS

- Do not increase stress to the shoulder in a short period or in an uncontrolled manner
- Do not perform advanced rehabilitation exercises (such as plyometrics or exercises requiring end range ROM) if the patient does not perform these activities during ADLs, work or recreation
- Do not progress into activity-specific training until patient has nearly full ROM and strength
- Do not perform weight-lifting activities that place excessive stress on the anterior capsule. For instance, latissimus pull-downs, and military press performed with the hands behind the head stress the anterior capsule with no additional benefit in terms of muscle activity. Similarly, activities that encourage end range shoulder extension, such as dips, should also be avoided.

SPECIFIC INTERVENTIONS

- Activities of primary importance
  - Progressive strengthening and endurance exercises
  - Progressive neuromuscular control exercises
  - Activity-specific progression: sport, work, hobbies
- Supplemental activities
  - Normalize core and scapular stability
- Patient education
  - Counsel in the importance of gradually increasing stress to the shoulder while returning to normal ADLs, work and recreational activities, including heavy lifting, repetitive activities and overhead sports
- ROM:
  - Passive ROM, stretching and joint mobilizations as needed to address any remaining deficits
- Neuromuscular re-education
  - Address any remaining deficits of the rotator cuff, scapula musculature or trunk musculature
- Strength/endurance/power
  - Continue shoulder-strengthening program, as initiated in Phase II, with increasing emphasis on high-speed multiplanar activities that incorporate the entire kinetic chain (progress PRI per PRI and protocol guidelines)
  - Gradually progress rehabilitation activities to replicate demanding ADL/work activities
  - Progressive return to weight-lifting program emphasizing the larger, primary mover upper extremity muscles (deltoid, latissimus dorsi, petoralis major)
    - Start with relatively lightweight and high repetitions (sets of 15-25 repetitions) and gradually decrease repetitions and increase weight after several months
  - Suggested upper extremity exercises for early Phase III
    - Bicep curls, shoulder adducted (added in Phase II)
    - Triceps press-downs or kick-backs, shoulder abducted (added in Phase II)
    - Shoulder shrugs
    - Rows (scapular retraction), shoulder abducted
    - Latissimus bar pull-downs , with hands in front of the head

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- Dumbbell overhead shoulder press with hands starting in front of the shoulders (not in the abducted/externally rotated position)
- Push-ups as long as the elbows do not flex past 90˚

- Suggested upper extremity exercises to be added in the intermediate Phase III
  - Isotonic pressing activities (e.g., flat or incline presses using machines, barbells or dumbbells)
  - Dumbbells shoulder raises to 90˚
  - Rows (scapular retraction), shoulders elevated
  - Machine or barbell shoulder presses that do not require end range abduction/external rotation
- Upper extremity exercises that are not advisable for this patient population
  - Dips
  - Latissimus pull-downs or military press with the bar behind head
- Plyometric program (as necessary):
  - Criteria to initiate plyometric program
    1. Goal of returning to overhead athletics or other work or recreational activities requiring large amounts of upper extremity power
    2. Adequate strength (4+/5) of the entire shoulder girdle musculature
    3. Pain free with basic ADLs and current strengthening program
    4. At least 3 weeks of tolerance to high-speed multiplanar activities that progressively mimic functional demands
  - Parameters
    1. Due to the explosive nature of this type of exercise, emphasis of plyometrics exercises should be on quality not quantity
    2. Perform a few times a week and utilize moderate repetitions (example: 3-5 sets of 15-20 repetitions)
    3. Begin with unweighted balls and progress to lightly weighted balls (plyoballs)
    4. Interval sport programs for activities such as throwing, swimming and golf, once approved by the physician (usually POW 16 or longer)

MILESTONES: TO PROGRESS TO WORK, HOBBIES, SPORTS, NORMAL LIFE

- Clearance from physician
- No complaints of pain at rest and minimal to no pain (NPRS 0-2/10) with activities
- No or minimal sensation of instability with activities
- Restoration of sufficient ROM to perform desired activities
- Adequate strength and endurance of rotator cuff and scapular muscles to perform activities with minimal to no pain (NPRS 0-2/10) or difficulty
- If the patient struggles with confidence or shoulder stability, a stabilizing brace may be considered for return to activity, but is most commonly used only for collision sports

Protocol adapted from: Grant, BW, et al. The American society of shoulder and elbow therapists' consensus rehabilitation guideline for arthroscopic anterior capsulolabral repair of the shoulder. J Orthop Sports Phys Ther 2010; 40(3):155-168

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