



After Arthroscopic Subacromial Decompression Intact Rotator Cuff (Distal Clavicle Resection)

Rehabilitation Protocol

Phase 1: Weeks 0-4

Restrictions

- ❖ ROM
 - ✓ 140 degrees of forward flexion
 - ✓ 40 degrees of external rotation
 - ✓ 60 degrees of abduction
- ❖ ROM exercises begin with the arm comfortably at the patient's side, progress to 45 degrees of abduction and eventually 90 degrees. Abduction is advanced slowly depending on patient comfort level
- ❖ No abduction or rotation until 6 weeks after surgery. This combination re-creates the impingement maneuver
- ❖ No resisted motions until 4 weeks postoperative
- ❖ (No cross-body adduction until 8 weeks postoperatively if distal clavicle resection)

Immobilization

- ❖ Early motion is important
- ❖ Sling immobilization for comfort only during the first 2 weeks
- ❖ Sling should be discontinued by 2 weeks after surgery
- ❖ Patients can use sling at night for comfort

Pain Control

- ❖ Reduction of pain and discomfort is essential for recovery
- ❖ Medications
 - ✓ Narcotics-10 days-2 weeks following surgery
 - ✓ NSAIDS for patients with persistent discomfort following surgery
- ❖ Therapeutic modalities
 - ✓ Ice, ultrasound, HVGS
 - ✓ Moist heat before therapy, ice at end of session

Motion: Shoulder

Goals

- ❖ 140 degrees of forward flexion
- ❖ 40 degrees of external rotation

- ❖ 60 degrees of abduction

Exercises

- ❖ Begin with Codman pendulum exercises to promote early motion
- ❖ Passive ROM exercises
- ❖ Capsular stretching for anterior, posterior, and inferior capsule, using the opposite arm
- ❖ Active-assisted ROM exercises
 - ✓ Shoulder flexion
 - ✓ Shoulder extension
 - ✓ Internal and external rotation
- ❖ Progress to active ROM exercises as comfort improves

Motion: Elbow

- ❖ Passive-progress to active
 - ✓ 0-130 degrees
 - ✓ Pronation and supination as tolerated
- ❖ Muscle Strengthening
 - ✓ Grip strengthening with racquetball, putty, Nerf ball

Phase 2: Weeks 4-8

Criteria for Progression to Phase 2

- ❖ Minimal pain and tenderness
- ❖ Nearly complete motion
- ❖ Good "shoulder strength" 4/5 motor

Restrictions

- ❖ Progress ROM goals to
 - ✓ 160 degrees of forward flexion
 - ✓ 45 degrees of internal rotation (vertebral level L1)

Immobilization

- ❖ None

Pain Control

- ❖ NSAIDS for patients with persistent discomfort
- ❖ Therapeutic modalities
 - ✓ Ice, ultrasound, HVGS
 - ✓ Moist heat before therapy as needed at week 6, ice at end of session
- ❖ Subacromial injection: lidocaine/steroid-for patients with acute inflammatory symptoms that do not respond to NSAIDS

Motion

Goals

- ❖ 160 degrees of forward flexion
- ❖ 60 degrees of external rotation
- ❖ 80 degrees of abduction
- ❖ 45 degrees of internal rotation (vertebral level L1)

Exercises

- ❖ Upper extremity ergometer (an instrument for measuring the amount of work done by human muscles)
- ❖ Increasing active ROM in all directions
- ❖ Focus on prolonged, gentle passive stretching at end ranges to increase shoulder flexibility
- ❖ Utilize joint mobilization for capsular restrictions, especially the posterior capsule

Muscle Strengthening

- ❖ Rotator cuff strengthening (only three times per week to avoid rotator cuff tendinitis)
- ❖ Begin with closed-chain isometric strengthening
 - ✓ Internal rotation
 - ✓ External rotation
 - ✓ Abduction
- ❖ Progress to open-chain strengthening with Therabands
- ❖ Exercises performed with the elbow flexed to 90 degrees
- ❖ Starting position is with the shoulder in the neutral position of forward flexion, abduction, and external rotation (arm comfortably at the patient's side)
- ❖ Exercises are performed through an arc of 45 degrees in each of the five planes of motion
- ❖ Six color-coded Theraband bands are available; each provides increasing resistance from 1 to 6 pounds, at increments of one pound
- ❖ Progression to the next band occurs, usually in 2- to 3-wk intervals. Patients are instructed not to progress to the next band if there is any discomfort at the present level
- ❖ Theraband exercises permit both concentric and eccentric strengthening of the shoulder muscles and are a form of isotonic exercises (characterized by variable speed and fixed resistance)
 - ✓ Internal rotation
 - ✓ External rotation
 - ✓ Abduction
 - ✓ Forward flexion
 - ✓ Extension
- ❖ Progress to light isotonic dumbbell exercises
 - ✓ Internal rotation
 - ✓ External rotation
 - ✓ Abduction
 - ✓ Forward flexion
 - ✓ Extension
- ❖ Scapular stabilizer strengthening

- ❖ Closed-chain strengthening exercises
 - ✓ Scapular retraction (rhomboides, middle trapezius)
 - ✓ Scapular protraction (serratus anterior)
 - ✓ Scapular depression (latissimus dorsi, trapezius, serratus anterior)
- ❖ Progress to open-chain scapular stabilizer strengthening

**Note: Do not perform more than 15 repetitions for each set, or more than three sets of repetitions. If this regimen is easy for the patient, then increase the resistance, not the repetitions. Upper body strengthening with excessive repetitions is counterproductive.*

Phase 3: Weeks 8-12

Criteria for Progression to Phase 3

- ❖ Full painless ROM
- ❖ Minimal or no pain
- ❖ Strength at least 50% of contralateral shoulder
- ❖ "Stable" shoulder on clinical examination-no impingement

Goals

- ❖ Improve shoulder strength, power, and endurance
- ❖ Improve neuromuscular control and shoulder proprioception
- ❖ Prepare for gradual return to functional activities

Motion

- ❖ Achieve motion equal to contralateral side
- ❖ Utilize both active and passive ROM exercises to maintain motion

Muscle Strengthening

- ❖ Advance strengthening of rotator cuff and scapular stabilizers as tolerated
- ❖ Eight to 15 repetitions for each exercise, for three sets
- ❖ Continue strengthening only three times per week to avoid rotator cuff tendinitis from overtraining

Functional Strengthening

- ❖ Plyometric exercises

For Patients with Concomitant Distal Clavicle Resection

- ❖ Now begin cross-body adduction exercises
- ❖ First passive, advance to active motion when AC joint pain is minimal

Phase 4: Weeks 12-16

Criteria for Progression to Phase 4

- ❖ Full, painless ROM
- ❖ No pain or tenderness
- ❖ Shoulder strength that fulfills established criteria
- ❖ Satisfactory clinical examination

Goals

- ❖ Progressive return to unrestricted activities
- ❖ Advancement of shoulder strength and motion with a home exercise program that is taught throughout rehabilitation

Progressive, Systematic Interval Program for Returning to Sports

- ❖ Throwing athletes
- ❖ Tennis players
- ❖ Golfers
- ❖ Institute "Thrower's Ten" program for overhead athlete
- ❖ Maximum improvement is expected by 4-6 mo following an acromioplasty, and 6-12 following an acromioplasty combined with a distal clavicle resection

Warning Signals

- ❖ Loss of motion-especially internal rotation
- ❖ Lack of strength progression-especially abduction
- ❖ Continued pain-especially at night

Treatment of above "Problems"

- ❖ These patients may need to move back to earlier routines
- ❖ May require increased utilization of pain control modalities as outlined above
- ❖ If no improvement, patients may require repeat surgical as outlined
- ❖ It is important to determine that the appropriate surgical procedure was done initially
- ❖ Issues of possible secondary gain must be evaluated