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Conservative Treatment of Chronic Rotator Cuff Tears

Rehabilitation Protocol

Phase 1: Weeks 0-4

Restrictions

- Avoid provocative maneuvers or exercises that cause discomfort
 - Includes both offending ROM exercises and strengthening exercises.
- Patients may have an underlying subacromial bursitis, therefore ROM exercises, and muscle strengthening exercises should begin with the arm in less than 90 degrees of abduction.
- Avoid abduction-rotation-re-creates impingement maneuver.
- Avoid "empty-can" exercises.

Immobilization

- Brief sling immobilization for comfort only.

Pain Control

- Reduction of pain and discomfort is essential for recovery.
- Medications
 - NSAIDs-for the older population with additional comorbidities, consider newer cyclooxygenase-2 (COX-2) inhibitors.
 - Subacromial injection of corticosteroid and local anesthetic; judicious use for patients with acute inflammatory symptoms of a concomitant bursitis;
 - limit of three injections.
- Therapeutic modalities
 - Ice, ultrasound, HVGS.
 - Moist heat before therapy, ice at end of session.

Shoulder Motion

Goals:

- Internal and external rotation equal to contralateral side, with the arm positioned in less than 90 degrees of abduction.

Exercises:

- Begin with Cadman pendulum exercises to gain early motion.
- Passive ROM exercises (see Fig. 3-35)
 - Shoulder flexion.
 - Shoulder extension.
 - Internal and external rotation.
 - Capsular stretching for anterior, posterior, and inferior capsule by using the opposite arm
- Avoid assisted motion exercises
 - Shoulder flexion.
 - Shoulder extension.
 - Internal and external rotation.
- Progress to active ROM exercises
 - "Wall-walking".

Elbow Motion

- Passive to active motion, progress as tolerated
 - 0-130 degrees.
 - Pronation to supination as tolerated. .

Muscle Strengthening

- Grip strengthening (putty, Nerf ball, racquetball).
- Use of the arm for activities of daily living below shoulder level.

Phase 2: Weeks 4-8

Criteria for Progression to Phase 2

- Minimal pain and tenderness.
- Improvement of passive ROM.
- Return of functional ROM.

Goals

- Improve shoulder complex strength, power, and endurance.

Restrictions

- Avoid provocative maneuvers or exercises that cause discomfort for the patient.
- Includes both ROM exercises and strengthening exercises.

Immobilization

- None.

Pain Control

- Reduction of pain and discomfort is essential for recovery.
- Medications
 - NSAIDs-for older population with additional comorbidities, consider newer COX-2 inhibitor formulas.
 - Subacromial injection of corticosteroid and local anesthetic; judicious use for patients with acute inflammatory symptoms of a concomitant bursitis; limit of three injections.
- Therapeutic modalities
 - Ice, ultrasound, HVGS.
 - Moist heat before therapy, ice at end of session.

Motion

Goal:

- Equal to contralateral shoulder in all planes of motion.

Exercises:

- Passive ROM.
- Capsular stretching.
- Active-assisted motion exercises.
- Active ROM exercises.

Muscle Strengthening

- Three times per week, 8 to 12 repetitions, for three sets.
- Strengthening of the remaining muscles of the rotator cuff.
- 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 0 degrees of forward flexion, abduction, and external rotation.
 - Exercises are done through an arc of 45 degrees in each of the five clinical planes of motion.
 - Six color-coded bands are available, each provides increasing resistance from 1 to 6 pounds, at increments of 1 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 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.
- Strengthening of deltoid.
- Strengthening of scapular stabilizers
 - Closed-chain strengthening exercises
 - Scapular retraction (rhomboides, middle trapezius).
 - Scapular protraction (serratus anterior).
 - Scapular depression (latissimus dorsi, trapezius, serratus anterior).
 - Shoulder shrugs (upper trapezius).
- Progress to open-chain scapular stabilizer strengthening.

Phase 3: Weeks 8-12

Criteria for Progression to Phase 3

- Full painless ROM.
- No pain or tenderness with strengthening exercises.

Goals

- Improve neuromuscular control and shoulder proprioception.
- Prepare for gradual return to functional activities. · Establish a home exercise maintenance program that is performed at least three times

per week for both stretching and strengthening.

Functional Strengthening

- Plyometric exercises

Progressive, Systematic Interval Program for Returning to Sports

- Throwing athletes
- Tennis players
- Golfers

Maximal improvement is expected by 4-6 mo.

Warning Signals

- Loss of motion-especially internal rotation.
- Lack of strength progression-especially abduction, forward elevation.
- Continued pain-especially at night.

Treatment of Warning Signals

- These patients may need to move back to earlier routines.
- May require increased utilization of pain control modalities as outlined above.
- May require surgical intervention.