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Rotator Cuff Rehabilitation Protocol

Rotator cuff repair is a well proven and durable operation which results in decreased pain, improved strength and range of motion for many years after surgery. However the torn tendon has a poor blood supply and is frequently weaker than healthy tissue. Because of this the repair requires protection for up to four months following the surgery.

Cuff tears vary greatly in their size and the cuff tissue varies greatly in its strength. Thus a large tear with poor quality tissue requires considerably more protection than a 1cm tear with good quality tissue.

To guide you in the post operative period I will grade the repair as Grade 1; a small tear with good quality tissue, Grade 2; a larger tear with good tissue or a small tear with poor tissue, Grade 3; a large tear with poor tissue requiring maximal protection.

The rehabilitation period will be divided into five phases. The time in each phase will be determined by the grade of the repair. The phases are as follows.

Phase 1

Patient is immobilized in a sling. The sling may be removed for showering. The easy way to do this is with a shower stool and the patient rests their forearm across their lap while they wash. The sling is reapplied and can be worn under or over clothing. The sling is removed 2 or 3 times per day to fully straighten the elbow to avoid a flexion contracture. The patient is encouraged to lean forward in a seated position and gently swing their arm as a pendulum. Gentle table slides are also a useful closed chain exercise. In the first 2 or 3 days after surgery even pendulum exercises may well be too painful. Patients are advised to avoid pushing their shoulder too hard in this early period to avoid a cycle of pain and inflammation. Ice packs can be useful in the early period. Apply for 10 minutes, 3 or 4 times per day. Shoulder shrug exercises, ball squeezes to keep the hand moving. The patient is advised to wear the sling at night to avoid uncontrolled arm movement while the patient is sleeping. It is frequently more comfortable to sleep propped up with 4 or 5 pillows or alternatively in a Lazy Boy chair during the early phase.

Phase 2

The patient is still wearing the sling but passive range of motion exercises are encouraged. This is done both by the patient and by the therapist. The goal is to have a near full range of motion at the end of Phase 2. The first movement to

encourage is flexion. This can be achieved lying prone and gently taking the arm over the head so that gravity assists. External rotation can be achieved holding a broomstick in both hands and gently pushing with the non-operated arm. If the repair involves subscapularis, this external rotation stretch should be avoided for 6 to 8 weeks. Internal rotation can be achieved with the sleeper stretch. The patient lies on their side with the operated arm down and flexed to 90°. The non-operated arm can then gently internally rotate the operated arm pushing it towards the bed. Straight abduction is avoided during this period.

Phase 3

The sling is no longer used. Passive range of motion exercises are continued. Active assisted exercises are commenced.

Flexion Exercises

Wall climbs, pulley exercises, external rotation exercises, broomstick or golf club, internal rotation exercises, gentle belly press exercise. The therapist will continue to use modalities as needed. Heat packs are very useful prior to an exercise session. High symmetric exercises can be added - internal/external rotation, flexion and extension.

Phase 4 Active Strengthening.

Continue shoulder range of motion exercises. Active exercises using theraband can be introduced with both internal and external rotation exercises as well as flexion and extension. Straight abduction should be avoided. As strength improves the patient can progress to free weights.

1. External rotation can be performed with the patient lying on their side with the operated arm up and the elbow against the chest wall.
2. Internal rotation performed supine with the arm at the side and the elbow flexed at 90°. When using theraband for external rotation, make sure the patient keeps a magazine held between the elbow and their side to avoid abduction using the powerful deltoid muscle. Subscapularis strengthening can be achieved with the patient standing facing the theraband with their arm in the belly press position with the elbow forward and wrist straight.

Phase 5 – Global Strengthening Resistance Exercises

Shoulder range of motion exercises are continued as required. A shoulder bar hang exercise can be added to increase range of motion in shoulder flexion and abduction. Continue isotonic exercises with an emphasis on eccentric strengthening of the cuff. Supraspinatus exercises can be added in the scapular plan provided these remain painfree. Scaption above 70° should generally be avoided as it brings the patient into a challenging impingement position. Scapula strengthening is very important to maintain a normal scapulo humeral rhythm with shoulder shrugs, bracing the shoulders with rhomboid exercises and serratus anterior exercises with shoulder protraction. This can also be achieved lying prone and punching a dumbbell towards the ceiling with a straight arm.

It is important to be on the lookout for adhesive capsulitis which can complicate any shoulder surgery. If the patient starts to lose range of motion and have increasing pain I would be grateful for a phone call or to send the patient back to see me as soon as possible. Although in the early healing phases I would like to avoid the use of cortisone because of its effect on healing connective tissue, it can be useful in the later part of the rehabilitation period.

The following is a guideline for the time in each phase for the various grades of repair.

	Grade 1	Grade 2	Grade 3
Phase 1	0-2 weeks	0-3 weeks	0-4 weeks
Phase 2	2-4 weeks	3-6 weeks	4-8 weeks
Phase 3	4-8 weeks	6-12 weeks	8-16 weeks
Phase 4	8-12 weeks	12-16 weeks	16-24 weeks
Phase 5	12-16 weeks	16- weeks	24- weeks