

Open Rotator Cuff Repair Rehabilitation Program

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Rotator Cuff Repair is a surgical procedure utilized for a tear in the musculo-tendinous unit of the rotator cuff group. The surgical procedure is performed through open arthrotomy. The patient is placed in a semi-sitting posture and the shoulder and arm are prepared in the usual sterile manner. The deltoid muscle fibers are split from the anterolateral acromion several centimeters distal, and the deltoid is dissected off. The anterior acromion is beveled with an osteotome, power burr, and hand rasp. The inferior portion of the acromioclavicular joint is smoothed to remove prominent inferior osteophytes. Thickened or fibrotic bursal tissue is removed to visualize the superior portion of the rotator cuff. Debridement of necrotic rotator cuff tissue is performed and inspection of intact tissue follows. To repair a supraspinatus tear, a trough is made in the greater tuberosity at the normal cuff attachment site. Drill holes are placed through the lateral cortex of the tuberosity. Sutures are placed through the torn edge of the supraspinatus and then passed through the bone trough cortical holes. Rotator cuff tissue is drawn into the bone bed as sutures are securely tied. Anterior and posterior edges of the cuff are sutured closed, sealing tendon edges together. The arm is placed through a normal range of motion to assess possible impingement and tension on the repair site. The shoulder joint is irrigated and closed and the deltoid is secured back to acromion. Steri-strips and sterile dressings are applied, and an arm immobilizer and a Cryo/Cuff are also placed on the extremity.

Precaution with this procedure must be taken to protect the rotator cuff and deltoid repair during Phase II and III following surgery due to the fact that rotator cuff healing is a very individualized and slow process.

The rehabilitation process is divided into five phases. These phases may overlap depending on the individual progress of each patient. The goals of Phase I are pre-operative education and baseline data collection for ROM and function. Phase II rehabilitation goals are to protect the repair from undue or injurious forces and to increase passive ROM. Phase III rehabilitation goals are to restore complete ROM and increase strengthening. Later rehabilitation (Phases IV and V) concentrates on the functional return of the patient to prior levels of activity.

Phase I: Pre-operative

With this protocol, patients presenting with a rotator cuff tear must be seen in physical therapy prior to a rotator cuff repair. The area of focus with the preoperative visit includes preparing the shoulder for surgery and mental preparation of the patient to deal with surgery and the postoperative rehabilitation course. Patients with rotator cuff tears will be placed on appropriate rehabilitation to decrease pain and restore range of motion and strength as tolerated. Appropriate patient education of the surgical techniques and postoperative rehabilitation will assist in mental preparation of the patient.

Clinical Goals

- ◆ Restore active and passive range of motion as tolerated
- ◆ Decrease the patient's pain level
- ◆ Ensure complete understanding of surgery and postoperative rehabilitation
- ◆ Issue Breg Shoulder Kit
 - Wand
 - Door pulley
 - Therabands
 - Exercise booklet

Testing

- ◆ Bilateral ROM
- ◆ Assess functional ability

Exercises

- ◆ Codman's
- ◆ PROM exercises for flexion, extension, external rotation, and internal rotation
 - Pulley exercises for elevation
- ◆ Wand exercises if tolerated
- ◆ Thera-tubing if tolerated

Phase II: 0 to 6 Weeks

Clinical Goals

- ◆ Pain free ADL's in immobilizer 24/7
- ◆ Daily compliance with HEP 4x/day
- ◆ Pain free sleep through the night

Testing

- ◆ Bilateral ROM

Exercises

- ◆ The patient's shoulder will be protected to allow healing of the repaired musculo-tendinous unit. This protection is 24 hours per day except when performing passive ROM exercises and bathing. However, patients are allowed waist level and hand to face activities (e.g. eating, writing, keyboarding) as tolerated. Protection is achieved with a shoulder immobilizer.
- ◆ Early Passive Range of motion exercises for flexion, and external rotation will begin one day post operative. The patient is instructed in these exercises as well as Codman and pulley exercises for elevation. Each exercise is performed four times per day as outlined on the passive ROM handout
- ◆ The Cryo/Cuff should be utilized after exercise during this phase to control pain and swelling

Clinical Follow-up

- ◆ Patient will return to see both the physician and therapist at 6 weeks postop
- ◆ Patient will follow-up as needed during this phase to check progress
- ◆ Patient should have 75% of passive range of motion compared to the noninvolved side, measured in flexion, external rotation in neutral, and internal rotation behind the back.

Phase III: 6 Weeks to 3 Months

Clinical Goals

- ◆ Passive ROM at 6 weeks equal to 75% of noninvolved side for:
 - flexion
 - external rotation
 - internal rotation
- ◆ Full ROM (equal to noninvolved side) between 6 and 12 weeks
- ◆ Begin strengthening

Testing

- ◆ Bilateral ROM
- ◆ Assess functional ability

Exercises

- ◆ The patient will discontinue using the immobilizer or abduction splint
- ◆ Active ROM exercises:
 - Active assistive ROM using wand
 - Gravity assisted pendulum exercise
 - Active shoulder flexibility exercises
- ◆ The Patient will begin progressive resistance exercises as tolerated including the following:
 - Isometrics exercises for the shoulder musculature in all planes
 - Theraband exercises; grade of tubing and exercise disposition (concentric or

- eccentric) will vary according to the patient's strength and tolerance. The exercise planes will include first internal/external rotation with the elbow tucked at the patient's side then progress to flexion/abduction to 90°, extension, and adduction
- Dumbbell exercises for the rotator cuff are implemented. Standing flexion, extension, and abduction exercises, side-lying external rotation, and supine internal rotation exercises are performed. Hughston exercises are performed in a prone position
 - Isokinetic exercises are discouraged by our physicians
 - Emphasis must be made on proper scapular stabilization and control. Accurate assessment of the scapular stabilizing musculature strength and flexibility is critical to proper shoulder function.

Clinical Follow-up

- ◆ The patient will follow-up weekly with the physician and therapist for home exercise program updates during this time
 - The patient should have full active and passive ROM (equal to noninvolved side) with good scapular control.
 - Adequate strength to perform pain free ADL's and non-labor, work related activities.

Phase IV – 3 to 6 Months

Clinical Goals

- ◆ Full ROM
- ◆ Maximize strength and function

Testing

- ◆ Bilateral ROM
- ◆ Strength evaluation using hand held dynamometer

Exercises

- ◆ The patient will begin a more aggressive shoulder stretching program as indicated. This may include self-stretching or partner stretching
- ◆ The patient will increase the resistive strengthening program to include heavier weight
- ◆ Implementation of a sport/activity specific functional progression will be utilized depending on the patient's activity level
- ◆ Strengthening continued in areas of weakness as documented by hand held dynamometer
- ◆ Generally it takes 3-4 four months for return to full activity and 9-12 months to reach full rehabilitation potential

Clinical Follow-up

- ◆ The patient will follow-up monthly or as needed between 3 an 6 months postop
- ◆ The patient will return at 6 months postop to see the physician and the therapist:
 - 90% strength compared to non-involved side determined by hand held dynamometer
 - patient should be performing pain free activities of daily living
- ◆ Pain free with any and all activities at home, work, leisure sports or hobbies

Phase V – 6 Months to 1 Year

Clinical Goals

- ◆ Full ROM
- ◆ Full return of strength (equal to noninvolved side) if possible

Testing

- ◆ Bilateral ROM
- ◆ Strength evaluation with hand held dynamometer

Exercises

- ◆ Continue with daily stretching if needed
- ◆ Regular workout routine 3x/week for strength
- ◆ Increase participation in sports, hobbies, and activities at home and work

Clinical Follow-up

- ◆ Patient will be discharged at one-year postoperative if patient has reached full rehabilitation potential

DISCLAIMER

These general rehabilitation guidelines are created by physical and occupational therapist for the rehabilitation of various shoulder and elbow pathologies. These are to simply be used as guidelines. This information is provided for informational and educational purposes, only. Specific treatment of a patient should be based on individual needs and the medical care deemed necessary by the treating physician and therapists. The University of Kentucky and The American Society of Shoulder and Elbow Therapists take no responsibility or assume no liability for improper use of these protocols. We recommend that you consult your treating physician or therapist for specific courses of treatment.