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## **Shoulder Arthroplasty Rehabilitation Protocol**

### **General Information**

Shoulder Replacement for arthropathy is an operation for pain relief. These patients often have severe limitations in shoulder function secondary to the joint derangement. Significant gains in function during rehabilitation may be achievable following joint arthroplasty.

### **Prehabilitation**

- Apply ice (PolarCare if available) as much as tolerated within a 24 hour period for first week. If using ice packs, encourage icing 20-30 minutes every 3-4 hours while awake. This is also useful after therapy.
- Aquatic programs may be very beneficial in treating this condition and may be instituted at week 3
- Sling used for 3 weeks

### **Inpatient Physiotherapy:** (0-2 days)

#### **ROM**

- Pendulum exercises - with the arm down at the side, gently swing the hand forward and backward, then side-to-side, and then clockwise and counterclockwise.
- PROM - limit ER to 20 degrees, and aim for 0 to 90 degrees of forward flexion by the end of 2 weeks.
- AROM - initially, only the elbow, wrist and hand. Grasping and gripping lightweight objects. Active shoulder flexion as pain allows.
- Instruct in home program, and begin, self-assisted forward elevation and external rotation
- Instruct in home program and begin cervical, elbow and wrist ROM and grip strengthening

#### **Strength**

- Instruct in home program, and begin, closed chain external rotation isometric exercises
- Instruct in home program and begin scapular retraction and depression

#### **Other**

- Instruct to don and doff sling or shoulder immobilizer
- Instruct on proper use of ice or PolarCare
- Arrange for outpatient physiotherapy to begin one day after clinic follow-up
- Provide written copy of home exercises to be done 5x/day

### **Goals** (prior to discharge from hospital)

- initiation of arm being used for functional activities such as eating, combing hair (ADLs requiring minimal force)
- independence in home exercise program
- understanding of precautions

### **Wound Instructions**

- Mepore to wound until dressing totally dry
- may shower at 7 days but no bath or hot tub for 3 weeks
- no anti-inflammatory medications x 6 weeks unless on ASA for other reasons

### **Outpatient Physiotherapy Phase 1:** (Weeks 2-4)

Instruct in basic progression of rehabilitation program and expectations for time course to recovery

#### **ROM**

- Continue PROM exercises, and gently increase external rotation as tolerated
  - o No ER beyond 40
- Continue pendulum exercises.
- Begin AROM and AAROM (canes), limited to painfree arcs.
  - assisted elevation supine using uninvolved arm to assist
  - assisted external rotation supine
  - assisted flexion and extension of the shoulder
  - encourage motion in flexion without scapular compensation
- Wall walking with hands for forward flexion and elevation

#### **Strength**

- Continue isometrics
- Instruct in a home program, and begin, closed chain isometric abduction, forward elevation
- Begin scapular retraction and depression but no shrugs
- Begin and encourage aerobic conditioning such walking or stationary bike

**Sling**

- Continue to wear for comfort except for between exercise sessions and bathing

**Other**

- Incision mobilization and desensitization
- Modalities for pain, inflammation and edema control (no e-stim)
- Cryotherapy as needed

**Goals:** decrease pain, increase active shoulder motion, begin to increase strength, and improve functional activities

**Outpatient Physiotherapy Phase 2:** (Weeks 4-8)**ROM**

- Continue program of self-assisted forward elevation and external rotation
  - No ER beyond 40 until Week 6 and then progressive return to full in 10-15 increments per week
- Start posterior capsule stretching with cross-body adduction and internal rotation in abduction
- Gentle anterior chest wall stretching
- Grades I/II glenohumeral and scapulothoracic mobilization techniques
- Continue cervical, elbow, wrist ROM and grip strengthening

**Strength**

- Light UBE for warm-up
- Continue submaximal isometrics (no IR or extension)
- Instruct in home program and begin progressive supine two-hand press
  - Start with hands close together and progressively widen
- Continue scapular retraction and depression
- Begin biceps/triceps strengthening with elbow supported

**Sling**

- May discontinue use of sling

**Outpatient Physiotherapy Phase 3:** (Weeks 8-12)**ROM**

- Continue program of self-assisted forward elevation and external rotation with goal of return to full range
- May begin ER stretch in progressive degrees of abduction
- Emphasize posterior capsule stretching
- Anterior chest wall stretching
- Grade III/IV glenohumeral and scapulothoracic mobilization techniques

**Strength**

- Begin isotonic rotator cuff and deltoid strengthening starting with light resistance
  - Start in non-impingement position and progress through increasing degrees of abduction as tolerated
- Assess for substitutions and focus on anterior deltoid strength in combination with scapular retraction and depression
- Advance periscapular strengthening of posterior shoulder girdle (trapezius, rhomboids, latissimus dorsi, serratus)
- UBE with light resistance especially in reverse direction to promote scapular strengthening
- Closed chain scapular clocks, table top ball rolls and wall washes if tolerated
- Continue biceps and triceps strengthening
- Continue aerobic conditioning

**Outpatient Physiotherapy Phase 4:** (Weeks 12-24)**ROM**

- Continue maintenance flexibility program until full ROM and emphasize posterior capsular stretching with side-lying IR stretch and cross body abduction stretch
- Emphasize rope and pulley (flexion, abduction, and elevation) and exercise tubing (internal and external rotation) to gradually increase range of motion

**Strength**

- Progressive cuff, deltoid and periscapular strengthening
  - Emphasize strengthening force couples
- Continue UBE with progressive resistance
- Continue aerobic conditioning and core body strengthening
- Begin light weight (<5lbs.) strengthening of the shoulder muscles (flexion, extension, abduction, internal and external rotation) in addition to previous biceps and triceps
- Continue aerobic training as tolerated, and modalities as appropriate
- Continue to progress home program