**Reverse Total Shoulder Arthroplasty Post-Operative Care**

This protocol was developed to provide the physical therapist with guidelines for treatment of a patient who has undergone reverse total shoulder arthroplasty surgery. These guidelines are not a substitute for appropriate clinical decision making. The protocol is divided into 4 phases. Patients will typically continue with formal physical therapy in some capacity until they are independent with Phase III home exercises (12 to 16 weeks post-op). Anticipated number of visits range from 18 to 27 formal PT sessions. Progression from phases should not occur prior to the appropriate post-op timeframes; however, phase progression should be delayed if the patient does not meet the progression criteria. Tolerance to exercise should be closely monitored. Patients should not have a significant increase in pain after treatment or exercise. If this occurs, treatment is too vigorous and should be modified accordingly. UBE’s should not be used during the rehab process due to high injury rates. Heat can be used pretreatment as needed, but no sooner than 2 weeks post-op.

Precautions:

* Followed for 4 weeks post-op, unless the surgeon indicates otherwise.
  + No shoulder extension beyond neutral
  + No active external rotation behind head or neck
  + No shoulder horizontal abduction posterior to the frontal plane

**Phase I: Protection Phase; Weeks 0 to 6**

Immobilization**:**

* Sling worn at all times for 4 weeks post-op, removing only for exercises and showering
* No abduction wedge is used

Formal Physical Therapy:

* Patients will be scheduled for 1st PT visit on POD 3-5
* **Staples will be removed by the PT on POD 12-14**

Goals:

* Patient and family independent with
  + Joint protection
  + PROM/HEP
  + Donning/ doffing sling and clothing
* Promote soft tissue healing/ maintain the integrity of the replaced joint
* Enhance PROM and introduce AAROM/ AROM
* Restore AROM of elbow, wrist and hand
* Modified independent with ADL’s

Precautions:

* Sling is worn at all times for 4 weeks post-op, removing only for exercises and showering
* Avoid shoulder extension beyond neutral
  + Place towel under distal humerus when supine
  + Advise patient to always be able to visualize their elbow
* No IR/ behind the back motions until week 5
* No lifting objects with involved extremity
* No supporting of body weight with involved extremity
* Keep incision clean and dry
* No driving until out of sling, unless cleared by surgeon

PT Treatment:

Weeks 0-2

* PROM
  + Forward elevation: to 80˚
  + External rotation in the scapular plane: to 25˚
  + Internal rotation in the scapular plane: to 45-50.
* Pendulums
* AAROM/AROM of cervical spine, elbow, wrist and hand
* Sub-max, pain-free periscapular isometrics

Weeks 3-6

* Progress ROM
  + Forward elevation: to 130˚
  + External rotation in the scapular plane: to 35. Respect tissue constraints.
  + Internal rotation in scapular plane: as tolerated. Respect tissue constraints.
* Gentle, resisted exercises for the elbow, wrist, and hand
* Sub-max, pain-free deltoid isometrics in the scapular plane
  + Avoid shoulder extension with posterior deltoid
* Week 3- Introduce AAROM with a slow progression to AROM as tolerated.
* Week 5- Slowly introduce IR/ behind the back motions.

Recommended HEP:

* If the patient cannot demonstrate correct performance of these exercises in the clinic, they should not be performed at home
* Perform 5 times daily
  + Pendulums
  + Self-PROM forward elevation: 10 second hold x5 reps (per ROM guidelines)
  + Self-PROM external rotation: 10 second hold x5 reps (per ROM guidelines)
  + Week 3: AAROM forward elevation, external rotation
  + Scapular retraction/ depression
  + Cervical ROM as needed
  + Elbow and wrist AAROM/ AROM

Criteria for Progression to Phase II:

* Tolerates shoulder PROM, isometrics and minimally- resisted program for elbow, wrist and hand
* Patient demonstrates ability to isometrically activate all components of the deltoid and periscapular musculature in the scapular plane

**Phase II: AROM/Early Strengthening Phase; Weeks 6-12**

Goals:

* Continue to progress PROM and AAROM (full ROM is not expected)
* Gradually restore AROM
* Control pain and inflammation
* Allow continued healing of soft tissue/ do not overstress healing tissue
* Re-establish dynamic shoulder and scapular stability

Precautions:

* Due to potential of acromion stress fracture, the PT needs to continuously monitor the exercise and activity progression of the deltoid. A sudden increase of deltoid activity during rehab can lead to excessive acromion stress. Progress gradually and pain-free
* Avoid AROM in the presence of poor shoulder mechanics
* Restrict lifting objects heavier than a coffee cup
* No supporting of body weight with involved extremity

Physical Therapy Treatment

Weeks 6-8:

* + Continue phase I exercises/ treatments as appropriate
  + Continue with PROM program
  + Shoulder AAROM/ AROM: begin in side-lying/ supine and progress to sitting/ standing
    - Forward elevation in the scapular plane
    - ER/IR in the scapular plane
  + Gentle ST rhythmic stabilization
  + Progress elbow, wrist and hand strengthening
  + GH/ST joint mobilization as tolerated

Weeks 9-12

* + Continue with above exercises
  + Forward elevation PROM: to 125˚
  + External rotation PROM: to 45-50˚
  + Pain-free, sub-max IR/ER isometrics
  + Gentle periscapular/ deltoid sub-max, pain-free strengthening
  + Forward elevation AROM in supine with light weight (1-2 pounds)
    - Progress from supine 🡪 beach chair position 🡪 sitting/ standing
  + Progress gentle IR/ER isotonic strengthening in side-lying with light weight (1-2 pounds) and/ or light Theraband

Criteria for Progression to Phase III:

* Improving shoulder function
* Patient demonstrates ability to isotonically activate all components of the deltoid/ periscapular musculature and is gaining strength

**Phase III: Moderate Strengthening Phase; Weeks 12-16**

Goals:

* Enhance functional use of involved extremity and advance functional activities
* Enhance shoulder mechanics, muscular strength and endurance

Precautions:

* No heavy lifting (≤ 5 pounds)
* No sudden lifting or pushing activities

Physical Therapy Treatment

* Continue with appropriate Phase I and II exercises as needed
* Theraband strengthening program
  + Internal/ external rotation
  + Deltoid press to 90˚ forward elevation
  + Scapular program
* Supine deltoid strengthening
* Prone scapular program with light resistance (if prone position is tolerated)

Recommended HEP:

* Continue Phase I, II and III exercises as needed
* Begin home strengthening Theraband program 1 time daily

Criteria for Progression to Phase IV:

* *Note: Some patients will not be able to enter this phase*
* Restoration of dynamic shoulder stability
* Demonstrates good form and progress with Phase III strengthening exercises
* PROM
  + Forward elevation: 0-145˚
  + ER at 90˚ abduction: 35-55˚
  + IR at 90˚ abduction: 45-55˚
* 4/5 strength (ER, IR, abduction)

**Phase IV: Continued Home Program; Month 4 onward**

Formal physical therapy has been completed. The patient will be instructed on which exercises need to be continued and how to progress with resistance and weights.

Updated: August 2023 SK, ZZ