Reverse Total Shoulder Arthroplasty REHAB Protocol

Joint protection: There is a higher risk of shoulder dislocation following RTSA than a conventional TSA

- Avoidance of shoulder extension past neutral and the combination of shoulder abduction and internal rotation should be avoided for 12 weeks postoperatively
- Patient with reverse total shoulders don't dislocate with their farm and abduction and external rotation. They typically dislocate with the arm and internal rotation and abduction in conjunction with extension; such as, tucking in a sugar or performing personal hygiene movements with the operative arm particularly in the immediate perioperative phase;
- Deltoid function: Stability and mobility of the shoulder joint is now dependent upon the deltoid and periscapular musculature. This consult becomes the foundation for the postoperative physical therapy management for a patient that has undergone a reverse total shoulder arthroplasty

Function

As with conventional total shoulder arthroplasty, maximize overall upper extremity function, wall respecting the soft tissue constraints

Shoulder dislocation precautions

- No shoulder motion behind back
- no combined shoulder abduction, external rotation and extension
- No glenohumeral extension beyond neutral
- precautions should be implemented for 12 weeks postoperatively

ROM

Expectation for range of motion gain should be set on a case by case basis depending upon her underlying pathology. Normal/full active range of motion of the shoulder joint following reverse total shoulder arthroplasty is not expected

PHASE I: Day 1 – 6 weeks

Goals:

1. The patient and family independent with:
   -Joint protection
   - Passive range of motion
   - Assisting with clothing and sling application
   - Assistant home exercise program
   - Cryotherapy
2. Probable healing of soft tissue/maintain integrity of the replaced joint
3. Enhanced passive range of motion
4. Restore active range of motion of elbow/wrist/hand
5. Prevent muscular inhibition independent with bed mobility, transfers and ambulation
6. Independent with ADLs with modifications wall maintaining the integrity of the replaced joint

Precautions:

1. Sling should be worn at all times except for PT and exercises at home and bathing
2. While laying supine a small pillow or towel roll should be placed behind the elbow to avoid shoulder hyperextension/anterior capsule/subscapularis stretch. Patient should always be advised to visualize elbows while laying supine
3. Avoid shoulder active range of motion
4. No lifting
5. Keep incision clean and dry (no soaking for 2 weeks)
6. No supporting body weight by hand on the involved side

POD #1-4

- Begin P ROM and supine after complete resolution of interscalene block
- Forward flexion and elevation in scapular plane in supine to 90°
- ER in scapular plane to available ROM as indicated typically around 20-30°
- No IR range of motion
- A/AAROM of cervical spine, elbow, wrist, hand
- begin periscapular sub-maximal pain free isometrics in the scapular plane
- continuous cryotherapy for the first 72 hours.
- insure patient is independent in bed mobility, tranfers, ambulation
- Insure proper sling fit/alignment/use
- Instruct patient on proper positioning, posture, initial HEP
- Provide patient/family with written home program

POD #5-21

- Continue previous exercises typically 2-3 times per day
- Begin sub-maximal pain free deltoid isometrics in scapular plane (avoid shoulder extension when isolating posterior deltoid)
- Frequent cryotherapy 4-5 times per day

Week 3 - 6

- Progress exercises listed above
- Continue PROM
  - Forward flexion and elevation in the scapular plane in supine to 120 degrees.
  - ER in scapular plane to tolerance, respecting soft tissue constraints
- Gentle resisted exercise of elbow, wrist, hand
- Continue frequent cryotherapy

PHASE II: Weeks 6-12 (AROM/early strengthening)

Goals:
1. Continue PROM progression
2. Gradually restore active motion
3. Control pain and inflammation
4. Allow continued healing of soft tissue
5. Reestablish dynamic shoulder and scapular stability

Precautions:
1. Wean out of sling
2. Continue to avoid shoulder hyperextension
3. Due to the potential of an acromion stress fracture one needs to continuously monitor the exercise and activity progression of the deltoid. A sudden increase of deltoid activity during rehab could lead to excessive acromion stress. A gradually progressed pain free program is essential.
4. No lifting
5. No supporting of body movements by hands and arms, no sudden jerking motions

Week 6-8
- Continue with PROM program
- At 6 weeks start PROM IR to tolerance not exceeding 50 degrees in the scapular plane
- Begin shoulder AA/AROM
- FF and elevation in scapular plane in supine with progression to sitting/standing
- ER and IR in the scapular plane in supine with progression to sitting/standing
- Initiate gentle scapulothoracic rhythmic stabilization and alternating isometrics supine. Minimize deltoid recruitment during all activities
- Progress strengthening of elbow, wrist, hand
- Gentle GH and ST joint mobilizations as indicated Grade I/II
- Continue cryotherapy as needed
- May begin use of hand for feeding, light activities such as dressing, washing

Weeks 9-12
- Continue with above exercises
- Begin gentle IR and ER sub-maximal pain free isometrics
- Begin gentle periscapular and deltoid sub maximal pain free isotonic strengthening exercises. Being AROM supine FF and elevation in scapular plane with weights (1-3lbs) at varying degrees of trunk elevation as appropriate (ie supine lawn chair progression to sitting/standing)
- Progress to gentle GH IR and ER isotonic strengthening exercises in sidelying position with weight (1-3lbs) and/or with light resistance bands or sport cords.

Criteria for progression to the next phase
- improving function of shoulder
- Patient demonstrates the ability to isotonically activate all components of the deltoid and periscapular musculature and is gaining strength

PHASE III: Weeks 12+ (Moderate strengthening)

Goals:
1. Enhance functional use of upper extremity
2. Improve strength, power, endurance

Precautions:
1. No lifting > 6lbs with the operative UE
2. No sudden lifting or pushing activities

Weeks 12-16
- Continue with previous program
- Progress to gentle resisted flexion, elevation in standing

PHASE IV: Months 4+ (Home program)
- Typically the patient is on a HEP at this stage to be performed 3-4 times per week
- Continue strength gains
- Continue progression toward a return to functional and recreational activites within limits as identified by progress made during rehabilitation and outlined by surgeon and PT

Criteria for discharged from skilled therapy
1. Patient able to maintain nonpainful active range of motion (8-120 degrees of elevation with functional ER of about 30 degrees)
2. Maximized functional use of upper extremity
3. Able to complete light household and work activities.