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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 12 weeks post-op, unless the surgeon indicates otherwise.
  - No shoulder motion behind the back
    - Combined shoulder adduction, internal rotation and extension
  - 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 5 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
- Most patients will be seen 2 times a week during Phase I
- If the patient has met the Phase II criteria progression prior to 6 weeks, formal treatment can be decreased to 1 time a week for the remainder of Phase I
- **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
- Restore AROM of elbow, wrist and hand
- Modified independent with ADL's

Precautions:

- Sling is worn at all times for 5 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 shoulder AROM
- 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 the surgeon

Physical Therapy Treatment:

<u>Weeks 0 to 2</u>

- PROM
  - Forward elevation: to 70°
  - External rotation in the scapular plane: to 20°
  - No internal rotation
- Pendulums
- AAROM/AROM of cervical spine, elbow, wrist and hand
- Sub-max, pain-free periscapular isometrics

<u>Weeks 3 to 6</u>

- Progress ROM
  - Forward elevation: to 120°
  - External rotation in the scapular plane: as tolerated
- 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

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 holds x 5 reps (per ROM guidelines)
  - Self-PROM external rotation: 10 second holds x 5 reps (per ROM guidelines)
  - 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 to 12

Formal Physical Therapy:
- Patients will typically be seen 2 times a week
- If Phase II progression criteria has been met prior to week 12, patients can be seen 1 time a week for the remainder of Phase II

Goals:
- Continue to progress PROM (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.
- Continue to avoid hyperextension and combined internal rotation/horizontal adduction
- 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 to 8
- Continue Phase I exercises/treatments as appropriate
- Continue with PROM program
  - Begin internal rotation in the scapular plane, to tolerance (≤50°)
- Shoulder AAROM/AROM
  - Forward elevation in the scapular plane
    - Begin in side-lying/supine. Progress to sitting/standing
  - ER/IR in the scapular plane
    - Begin in supine. Progress to sitting/standing
- Gentle ST rhythmic stabilization
- Progress elbow, wrist and hand strengthening
- GH/ST joint mobilizations as tolerated

Weeks 9 to 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 isotonic 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 to 16

Formal Physical Therapy:
- The patient will be seen 1 time a week in Phase III for 2 to 4 visits to assure independence with a long-term strengthening program
- If the patient is behind schedule, continue PT 2 times a week as needed
- Discharge to HEP once patient demonstrates good form with functional strength

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.