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Total Shoulder Arthroplasty Post-Operative Care

(This protocol is for patients with an intact rotator cuff)

This protocol was developed to provide the physical therapist with guidelines for treatment of a patient who has undergone total shoulder arthroplasty surgery. These guidelines are not a substitute for appropriate clinical decision making. The protocol is divided into 3 phases. Patients will typically continue with formal physical therapy in some capacity until they are independent with Phase III home exercises (~12 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.

Phase I: Immediate Motion Phase
Weeks 0 to 5

Immobilization:

- Sling is 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
- Prevent rotator cuff inhibition

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 surgeon

Physical Therapy Treatment:

Weeks 0 to 2

- PROM
  - Forward elevation: to 75°
  - External rotation in the scapular plane at 30° abduction: to 0°
  - Internal rotation in the scapular plane at 30° abduction: to 25-30°
- Pendulums
- AAROM/AROM of cervical spine, elbow, wrist and hand
- Grip strengthening
- Scapular retraction/depression
- Sub-max, pain-free isometrics (POD 10)
  - Abduction
  - ER/IR
  - Elbow flexion
- Postural education/re-education as needed
- ST joint mobilizations as tolerated

Weeks 3 to 4

- Continue above exercises as appropriate
- Progress PROM
  - Forward elevation: to 120°
  - External rotation in the scapular plane: to 30°
  - Internal rotation in the scapular plane: as tolerated
- Internal/external rotation AAROM: supine with cane assist
- Gentle, resisted exercises for elbow, wrist and hand
- Sub-max, pain-free isometrics
  - Internal/external rotation
  - Flexion/extension
  - Abduction
- Continue postural exercises as needed
- ST joint mobilizations as tolerated

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:

- Forward elevation PROM: 110°
- External rotation PROM: 45°
- 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 5 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
- 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/strength

Precautions:

- Avoid AROM in the presence of poor shoulder mechanics
- Restrict lifting objects heavier than a coffee cup
- Avoid shoulder extension beyond neutral
- No supporting of bodyweight with involved extremity
- No sudden jerking motions

Physical Therapy Treatment:

Weeks 5 to 8

- Progress shoulder AAROM
  - Forward elevation in the scapular plane: to tolerance
    - Begin in side-lying/supine. Progress to sitting/standing
  - ER/IR in the scapular plane at 90° abduction: to tolerance
    - Begin in supine. Progress to sitting/standing
  - Horizontal adduction: to tolerance
- Forward elevation AROM
  - Begin in side-lying. Progress to supine/sitting/standing as appropriate
- Pulleys (forward elevation)
- Internal rotation towel stretch (gentle)
- Pendulums
- Gentle ST rhythmic stabilization
- GH rhythmic stabilization
  - Flexion, extension, ER, IR
- Progress elbow, wrist and hand strengthening
- Gentle ST joint mobilizations as tolerated

Weeks 9 to 12

- Continue and progress with above exercises
- PROM goal:
  - Forward elevation: 140°
  - External rotation at 90° abduction: 60°
  - Internal rotation at 90° abduction: 60-65°

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
- Forward elevation PROM: 0-140° (progressing to 160°)
- Forward elevation AROM: 0-100° without compensation
- External rotation PROM: 0-60°
- Internal rotation PROM: 0-60°
- 4/5 Strength (ER, IR, abduction)

Phase III: Activity Phase
Week 12 onward

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:

- Return to recreational sports and activities, if appropriate (4-6 months)
- Enhance functional use of involved extremity and advance functional activities
- Enhance shoulder mechanics, muscular strength and endurance
- Progress weight-bearing exercises as appropriate

Precautions:

- Gradual progression of strengthening
- Avoid anterior shoulder capsule strain with exercise and functional activities (e.g. combined ER with abduction >80°)

Physical Therapy Treatment:

- Continue with appropriate Phase I and II exercises as needed
- AAROM/AROM to tolerance
  - Forward elevation
  - ER/IR at 90° abduction
- Strengthening exercises
  - Theraband ER/IR
  - Side-lying ER
  - Side-lying shoulder flexion
  - Scapular strengthening exercises
  - Prone rowing (≤0° shoulder extension)
  - Prone extensions – not beyond neutral
  - Deltoid isometrics – in neutral rotation
- Prone scapular program with light resistance
- Initiate interval sport program if appropriate (weeks 20-26)

Recommended HEP:

- Continue Phase I, II, and III exercises as needed
- The patient will be instructed on which exercises need to be continued and how to progress with resistance and weights.