UT Physicians
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Total Shoulder Arthroplasty / Hemiarthroplasty Protocol:

The intent of this protocol is to provide the clinician with a guideline of the postoperative rehabilitation course of a patient that has undergone a total shoulder arthroplasty (TSA) or hemiarthroplasty (humeral head replacement, HHR). It is not intended to be a substitute for appropriate clinical decision-making regarding the progression of a patient's postoperative course. The actual post-surgical physical therapy management must be based on the surgical approach, physical exam/findings, individual progress, and/or the presence of postoperative complications. If a clinician requires assistance in the progression of a patient post-surgery, they should consult with Dr. Fullick.

Please Note:
Patients with a concomitant repair of a rotator cuff tear and/or a TSA/HHR secondary to fracture or cuff arthropathy should be progressed to the next phase based on meeting the clinical criteria (not based on the postoperative time frames) as appropriate in collaboration with Dr. Fullick.

Phase I – Immediate Post-Surgical Phase (0-4 weeks):

Goals:

- Allow healing of soft tissue
- Maintain integrity of replaced joint
- Gradually increase passive range of motion (PROM) of shoulder; restore active range of motion (AROM) of elbow/wrist/hand
- Reduce pain and inflammation
- Reduce muscular inhibition
- Independent with activities of daily living (dressing, bathing, etc.) with modifications while maintaining the integrity of the replaced joint.

Precautions:

- Sling should be worn for 1 week, then for comfort only
- Sling should be used for sleeping and when out in public for the first week. The sling should be removed gradually over the course of the week to move the elbow, wrist and hand.
- While lying supine, a small pillow or towel roll should be placed behind the elbow to avoid shoulder hyperextension / anterior capsule stretch / subscapularis stretch.

- You may do activities like “drinking coffee or reading the paper” immediately following surgery. Formal Physical Therapy will start 1 week after surgery.
- No lifting of objects heavier than a coffee cup
- No excessive shoulder motion behind back
- No excessive stretching or sudden movements (particularly external rotation)
- No supporting of body weight by hand on involved side
- Keep incision clean and dry (no soaking for 2 weeks)
- No driving until off all Narcotic pain medication

Criteria for progression to next phase:

- Tolerates PROM program
- at least 90° PROM flexion
- at least 90° PROM abduction
- at least 45° PROM ER in plane of scapula
- at least 70° PROM IR in plane of scapula
- Be able to isometerically activate all shoulder, RC and upper back musculature

<u>Postoperative Day #1 (in hospital):</u>

- Passive forward flexion in supine to tolerance
- ER in scapular plane to available PROM (as documented in operative note) – usually around 30° (Attention: DO NOT produce undue stress on the anterior joint capsule, particularly with shoulder in extension)
- Passive internal rotation to chest
- Active distal extremity exercise (elbow, wrist, hand)
- Pendulum exercises
- Frequent cryotherapy for pain, swelling, and inflammation management
- Patient education regarding proper positioning and joint protection techniques

<u>Postoperative Days #2-10 (out of hospital):</u>

- Continue above exercises
- Assisted flexion and abduction in the scapular plane
- Assisted external rotation
- Begin sub-maximal, pain-free shoulder isometrics in neutral
- Begin scapula musculature isometrics / sets
- Begin active assisted Elbow ROM
- Pulleys (flexion and abduction)- as long as greater than 90° of PROM
- Continue cryotherapy as much as able for pain and inflammation management

<u>Postoperative Days #10-21:</u>

- Continue previous exercises
- Continue to progress PROM as motion allows
- Gradually progress AAROM in pain free ROM
- Progress active distal extremity exercise to strengthening as appropriate

- Restore active elbow ROM

Phase II- Passive and Active Range of Motion (Weeks 1-6):

Goals:

- Continue PROM progression/gradually restore full passive ROM
- Gradually restore Active motion
- Control Pain and Inflammation
- Allow continue healing of soft tissue
- Do not overstress healing tissue
- Re-establish dynamic shoulder instability

Precautions:

- Sling should be used for sleeping and removed gradually over the course of the next 1-2 weeks after surgery.
- While lying supine a small pillow or towel should be placed behind the elbow to avoid shoulder hyperextension / anterior capsule stretch.
- Begin shoulder AROM against gravity.
- No heavy lifting of objects (no heavier than coffee cup)
- No supporting of body weight by hand on involved side
- No sudden jerking motions

Criteria for progression to next phase:

- Tolerates P/AAROM, isometric program
- Has achieved at least 140° PROM flexion
- Has achieved at least 120° PROM abduction
- Has achieved at least 60+° PROM ER in plane of scapula
- Has achieved at least 70° PROM IR in plane of scapula
- Be able to actively elevate shoulder against gravity with good mechanics to 100°

Week 3:

- Continue with PROM, AAROM, Isometrics
- Scapular strengthening
- Begin Assisted Horizontal adduction
- Progress distal extremity exercises with light resistance as appropriate
- Gentle joint mobilization as indicated
- Initiate rhythmic stabilization
- Continue use of cryotherapy for pain and inflammation

Week 4-5:

- Begin active forward flexion, internal rotation, external rotation and abduction in supine position, in pain free ROM
- Progress scapular strengthening exercises

- Wean from Sling completely
- Begin isometrics of Rotator Cuff and Periscapular muscles

Phase III – Active Range of Motion & Mild-Moderate strengthening (Week 6-12):

Goals:

- Gradual restoration of shoulder strength, power, and endurance
- Optimize neuromuscular control
- Gradual return to functional activities with involved upper extremity

Precautions:

- No heavy lifting of objects (no heavier than 5 lbs.)
- No sudden lifting or pushing activities
- No sudden jerking motions

Criteria for progression to the next phase (IV):

- Tolerates AA/AROM
- Has achieved at least 140° AROM flexion supine
- Has achieved at least 120° AROM abduction supine
- Has achieved at least 60+° AROM ER in plane of scapula supine
- Has achieved at least 70° AROM IR in plane of scapula supine
- Be able to actively elevate shoulder against gravity with good mechanics to at least 120°

Week 6-8:

- Increase anti-gravity forward flexion, abduction as appropriate
- Active internal rotation and external rotation in scapular plane
- Advanced PROM as tolerated, begin light stretching as appropriate
    - Typically patient is on just a home exercise program by this point 3-4x per week
- Continue PROM as need to maintain ROM
- Initiate assisted IR behind back
- Begin light Functional activities

Week 8-10:

Begin progressive supine active elevation (anterior deltoid strengthening) with light weights (1-3 lbs.) and variable degrees of elevation.

Week 10-12:

- Begin resisted flexion, Abduction, External rotation (therabands/sport cords)
- Continue progressing internal and external strengthening
- Progress internal rotation behind back from AAROM to AROM as ROM allows (pay particular attention as to avoid stress on the anterior capsule.)

Phase IV – Strengthening Equals Autotherapization (12 weeks- beyond)

Goals:

- Maintain full non-painful active AROM
- Enhance functional use of upper extremity
- Improve muscular strength, power, and endurance
- Gradual return to more advanced functional activities
- Progress closed chain exercises as appropriate

Precautions:

- Avoid exercise and functional activities that put stress on the anterior capsule and surrounding structures. (Example: no combined ER and abduction above 80° of abduction.)
- Ensure gradual progression of strengthening

Criteria for discharge from skilled therapy:

- Patient able to maintain full non-painful active ROM
- Maximized functional use of UE
- Maximized muscular strength, power and endurance
- Patient has returned to more advanced functional activities

Week 12+:

Gradually progress strengthening program
Gradual return to moderately challenging functional activities

4-6 Months:

Return to recreational hobbies, gardening, sports, golf, doubles tennis