Total Shoulder Arthroplasty-Post-Operative Rehabilitation Protocol
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All patients after total shoulder arthroplasty will begin a rehabilitation program on post-operative day # 1. This will be initiated with Phase I stretching program as detailed below. The program is done 4 – 6 times daily and can be completed in less than 5 minutes. The session should be proceeded by application of moist heat and analgesic medication given about 30 minutes prior to the stretching program as recommended for the first several weeks.

Phase I – (0-3 weeks):

Goals:
• Control swelling/inflammation
• Adequate pain control
• Gradually increase passive range of motion (PROM) of shoulder; Initiate active-assisted range of motion of shoulder (AAROM)
- Restore active range of motion (AROM) of elbow, wrist and digits

• Protect subscapularis repair
• Prevent muscular inhibition
• Independent with activities of daily living (dressing, bathing, etc.).

Precautions:
• Sling should be used for sleeping and when out in public for the first 3-4 weeks. It may be taken off when at home
• While lying supine a small pillow or towel roll should be placed behind the elbow to avoid shoulder hyperextension and resultant subscapularis stress.
• You may do activities like "drinking coffee or reading the paper" immediately following surgery.
• No lifting of objects heavier than a coffee cup
• No combined extension and internal rotation
• Avoid sudden movements (particularly external rotation)
• No weight-bearing through involved extremity
• Keep incision clean and dry. May shower after one week.
• No driving until off all narcotic pain medication

Postoperative Day #1 (in hospital):

• Passive Forward Flexion in supine to 130 degrees
• Passive ER in scapular plane to range as noted by physician– usually around 30 degrees.
- Avoid placement of the arm into extension; the elbow should be supported with a folded towel/pillow when patient is supine

• Passive internal rotation to chest

• Active ROM of elbow/wrist/digits
• Frequent cryotherapy to control pain, and swelling

Postoperative Days # 2-10
• Continue above exercises
• Assisted flexion and abduction in the scapular plane
• Assisted external rotation (with a dowel)
• Begin sub-maximal, pain-free shoulder isometrics in neutral
• Begin scapula musculature isometrics / sets
• Continue active elbow/wrist/digital range of motion
• Pulleys (flexion and abduction) – **as long as greater than 90 degrees of PROM**
• Continue cryotherapy as much as possible for pain and inflammation control

Postoperative Days # 10-21:

• Continue previous exercises
• Continue to progress PROM as motion allow
- Elevation (scapula plane) and abduction as tolerated
- Limit ER to 30 degrees
- Gradually progress to AAROM in pain free ROM
    - Pulleys
- Continue isometrics for peri-scapula musculature

• Initiate strengthening distally: elbow/wrist/digits

Phase II – Regaining Full Passive and Initiation of Active Range of Motion (Weeks 3-6):

Goals:

• Continue PROM progression
- Goal is to have full passive elevation (in scapular plane) by 6 weeks post-op

• Initiate active motion as tolerated (typically week 4)
• Control Pain and Inflammation
• Protect healing tissue
- Continue subscapularis protection
- Weeks 3-6: Typically can allow ER to 50 degrees
- At 6 weeks post-op: no limitation on active or passive external rotation by side

• Re-establish dynamic shoulder stability

Precautions:
• Sling should be used as needed for sleeping and removed gradually over the course of three to four weeks after surgery.
• While lying supine a small pillow role 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 through affected upper extremity

Week 3:

• Continue with PROM, AAROM, Isometrics
• Scapular stabilizer strengthening
• Begin Assisted Horizontal adduction
• Progress Distal Extremity Exercises with light resistance as appropriate
• Gentle Joint Mobilizations as indicated
• Continued use of cryotherapy for pain and inflammation.

Week 4:
• 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

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

Goals:
- Restore full active range of motion
• Gradual restoration of shoulder strength, 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

Week 6:
• Increase active forward flexion, abduction as tolerated
• Active internal rotation and external rotation in scapular plane
• Advance PROM as tolerated. Continue PROM as needed to maintain ROM
• Initiate assisted IR behind back

Week 8
Begin progressive anterior deltoid strengthening with light weights (1-3 lbs) and variable degrees of elevation.
- Forward elevation best done in supine position

Weeks 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

Phase IV – (12 weeks-beyond)

Goals:
• Maintain full, active ROM
• Enhance functional use of UE

• Progressive strengthening. Improve endurance
• Progress closed chain exercises as appropriate.

Precautions:
• Ensure gradual progression of strengthening.
- Avoid development of stiffness
    - Maintain daily ROM exercises (2-3x/day)

Weeks 12+:
• Typically patient is on just a home exercise program by this point 4-5x per week.
• Gradually progress strengthening program
• Gradual return to moderately challenging functional activities.

4-6 months –
Return to recreational hobbies, gardening, sports, golf, doubles tennis