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Reverse Total Shoulder Arthroplasty Protocol:

The intent of this protocol is to provide the therapist with a guideline for the post-operative rehabilitation course of a patient that has undergone a Reverse Total Shoulder Arthroplasty (rTSA). If a therapist requires assistance in the progression of a post-operative patient, they should consult with the referring surgeon directly.

Shoulder Dislocation Precautions:
Precautions should be implemented for the first 12 weeks post-operatively unless surgeon specifically advises patient or therapist differently

- No shoulder motion behind lower back and hip (no combined shoulder adduction, IR and extension
- No glenohumeral (GH) joint extension beyond neutral
- Progression to the next phase based on clinical criteria and time frames as appropriate.

Phase I: Immediate Post-surgical Phase, Joint Protection (Day 1 to week 6)

- Goals:
  - Patient and family independent with
    - o Joint protection
    - o PROM
    - o Assisting with putting on/taking off sling and clothes
    - o Assisting with home exercise program
    - o Cryotherapy
  - Promote healing of soft tissue
  - Maintain the integrity of the replaced joint
  - Enhance PROM
  - Restore AROM of elbow/wrist/hand
  - Independent with activities of daily living with modifications

- Precautions:

- Sling is worn 3-4 weeks post-operatively. The use of a sling may be extended for a total of 6 weeks, often, if it is a revision surgery
- While lying supine, the distal humerus/elbow should be supported by a pillow or towel roll to avoid shoulder extension. Patients should be advised to ``always be able to visualize their elbow while lying supine´´
- No shoulder AROM
- No lifting of objects with operative extremity
- No supporting of body weight with involved extremity
- Keep incision clean and dry (no soaking for 2 weeks); no whirlpool, Jacuzzi, ocean/lake wading for 4 weeks

Days 1 to 4 (acute care therapy)

- Begin PROM in supine after complete resolution of interscalene block
- Forward flexion and elevation in the scapular plane in supine to 90 degrees
- ER in scapular plane to available ROM as indicated by operative findings, typically around 20-30 degrees
- No IR ROM
- AROM/AAROM of cervical spine, elbow, wrist, and hand
- Begin periscapular submaximal pain-free isometrics in the scapular plan
- Continuous cryotherapy for the first 72 hours post-operatively; then frequent application (4-5 times/day for about 20 minutes)

Days 5 to 21

- Continue all exercises as above
- Begin submaximal pain-free deltoid isometrics in scapular plane (avoid shoulder extension when isolating posterior deltoid)
- Frequent cryotherapy (4-5 times/day)

Weeks 3 to 6

- Progress exercises listed above
- Progress PROM
  o Forward flexion and elevation in the scapular plan in supine to 120 degrees
  o ER in scapular plane to tolerance, respecting soft tissue constraints
- At 6 weeks post-operatively start PROM IR to tolerance (not to exceed 50 degrees) in the scapular plane
- Gentle resisted exercises of the elbow, wrist, hand
- Continue frequent cryotherapy

Criteria for progression to next phase (phase II):

- Patient tolerated shoulder PROM and AROM 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)

- Goals:
  - Continue progression of PROM (full PROM 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 stability

- Precautions:
  - Continue to avoid shoulder hyperextension
  - In the presence of poor should mechanics avoid repetitive shoulder ROM exercises/activities
  - Restrict lifting of objects to no heavier than a coffee cup
  - No supporting of body weight by involved upper extremity

Weeks 6 to 8

  - Continue PROM program
  - Begin shoulder AAROM/AROM as appropriate
    o Shoulder flex and elevation in scapular plan with progression to sitting & standing
    o ER and IR in the scapular plan in supine with progression to sitting & standing
  - Begin gentle glenohumeral IR and ER submaximal pain-free isometrics
  - Initiate gentle scapulothoracic rhythmic stabilization and alternating isometrics in supine as appropriate. Begin gentle periscapular and deltoid submaximal pain-free isotonic strengthening exercises, typically the end of the eight week
  - Progress strengthening of elbow, wrist, and hand
  - Gentle glenohumeral and scapulothoracic joint mobilization as indicated (grades I & II)
  - Continue use of cryotherapy as needed
  - Patient may begin to use hand of operative extremity for feeding and light ADL's

Weeks 9 to 12

  - Continue with above exercises and functional activity progression
  - Begin AROM supine forward flexion and elevation in the plan of the scapula with light weights of 1 to 3 lbs at varying degrees of trunk elevation as appropriate (i.e., supine lawn chair progression with progression to sitting/standing)
  - Progress to gentle glenohumeral IR and ER isotonic strengthening exercises

Criteria for progression to next phase (phase III):

- 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: Moderate Strengthening (Week 12+)

- Goals:
  - Enhance functional use of operative extremity and advance functional activities
  - Enhance shoulder mechanics, muscular strength, power, and endurance

- Precautions:
  - No Lifting of objects heavier than 6 lbs with the operative upper extremity
  - No sudden lifting or pushing activities

Weeks 12 to 16

- Continue with the previous program as indicated
- Progress to gentle resisted flexion, elevation in standing as appropriate

Phase IV: Continued Home Program (Typically 4+ Month Post-operatively)

- Typically, the patient is on a HEP at this stage, to be performed 3 to 4 times per week, with the focus on:
  - Continued strength gains
  - Continued progression toward a return to normal functional and recreational activities within limits, as identified by progress made during rehabilitation and outlined by surgeon and physical therapist

Criteria for discharge from skilled therapy:

- Patient is able to maintain pain-free shoulder AROM, demonstrating proper shoulder mechanics (typically 80 to 120 degrees of elevation, with functional ER of about 30 degrees)