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Reverse Total Shoulder Arthroplasty Protocol

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- **Deltoid function**: The deltoid and periscapular muscles provide the stability and motion of the shoulder. This is the foundation of shoulder rehabilitation after this procedure.

- **Range of motion**: Patients and therapists must have a realistic goal of ROM gains. This is determined on a case by case basis. Normal or full ROM should not be expected.

- **Joint protection**: A higher risk of shoulder dislocation exists with the RTSA and therefore, the precautions must be followed.
  - **No shoulder extension beyond neutral – avoid combination of adduction and IR for first three months postoperatively**
  - Adduction and IR place the shoulder at risk for dislocation; therefore, avoiding these activities (i.e. tucking in a shirt, personal hygiene) in the postoperative phase should be stressed.

The purpose of this protocol is to provide a guideline for the postoperative management of patients with the RTSA. For any questions, the therapist should consult the referring surgeon.

Phase I – Immediate Postoperative Surgical Phase (Day 1-6 weeks):

Goals:

- *Joint protection, progressive shoulder **PROM***
- *Family/independent living with:*
  - *Joint protection*
  - *PROM*
  - *Assisting with sling use and clothing*
  - *Assisting with HEP*
  - *Cryotherapy*
- *Progressive restoration active range of motion (AROM) of elbow/wrist/hand.*
- *Promote healing of soft tissue / maintain integrity of replaced joint*
- *Independence with ADLs*

Precautions:

- *Sling x 4-6 weeks per surgeon decision. May be used up to 8 weeks if revision or fracture surgery.*
- *In supine position, elbow must be supported with pillow to prevent shoulder extension. Patient should always see their elbow.*
- ***NO shoulder AROM**.*
- *NO lifting of objects with operative extremity and no supporting body weight.*
- *Keep incision clean and dry (no soaking/wetting for 2 weeks); No whirlpool, Jacuzzi, ocean/lake wading for 4 weeks.*

Immediate Care Therapy (Day 1 to 4):

- Begin PROM in supine/bed after resolution of block:
  - FF to 90 degrees in scapular plane
  - ER in scapular plane to 20-30 degrees
  - **NO Internal Rotation!**
- Start Active/Active Assisted ROM (A/AAROM) of cervical spine, elbow, wrist, and hand.
- Utilize continuous cryotherapy for the first 72 hours postoperatively, then frequent application (4-5 times a day for about 20 minutes).
- Gain patient independence in terms of bed mobility, transfers, and ambulation
- Give patient/family HEP. P**lease teach patient to avoid position of dislocation: Extension/IR**

Day 5 to 21:

- Start sub-maximal pain-free deltoid isometrics in scapular plane (avoid shoulder extension when isolating posterior deltoid.)
- Frequent (4-5 times a day for about 20 minutes) cryotherapy.

3 Weeks to 6 Weeks:

- Continue with above exercises
- Progress PROM with goal of: FF 120, ER to tolerance in scapular plane respecting soft tissue constraints and being sensitive to end-feel.
  - -Tablewalks, pendulums, shrugs, scapular retractions avoiding shoulder extension
  - -Resisted wrist exercises, grip exercises
  - -Gentle elbow resistance exercises

Criteria for progression to the next phase (Phase II):

- *Satisfactory PROM, deltoid and periscapular isometrics.*
- *Tolerates shoulder PROM and isometrics and AROM- minimally resistive program for elbow, wrist, and hand.*
- *Patient demonstrates the ability to isometrically activate all components of the deltoid and periscapular musculature in the scapular plane.*

<u>Phase II –Active Range of Motion Phase (Week 6 to 10-12):</u>

Goals:

- *Progress PROM though 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 and scapular stability.*

***Precautions**:*

- *Continue to avoid shoulder hyperextension and internal rotation*
- *In patients with poor mechanics, avoid repetitive AROM exercises.*
- *Restrict lifting of objects to no heavier than a coffee cup. Still no supporting body weight.*
- *Due to the potential of an acromion stress fracture one needs to continuously monitor the exercise and activity progression of the deltoid. A sudden increase of deltoid activity during rehabilitation could lead to excessive acromion stress. A gradually progressed pain free program is essential.*

Week 6 to Week 8:

- Continue PROM and start PROM IR to tolerance (not to exceed 50 degrees) in scapular plane.
- Start shoulder AA/AROM to tolerance, progress from supine to standing position.
- Start ER and IR isometrics (sub-maximal and pain free)
- Start scapulothoracic rhythmic stabilization and alternating isometrics in supine as appropriate
- Progress strengthening of elbow, wrist, and hand.
- Gentle glenohumeral and scapulothoracic joint mobilizations as indicated (Grade I and II).
- Continue use of cryotherapy as needed.
- Patient may begin to use hand of operative extremity for feeding and light activities of daily living including dressing, washing.

Week 9 to Week 12:

- Continue and progress above exercises.
- Begin AROM supine forward flexion and elevation in the plane of the scapula with light weights (1-3lbs. or .5-1.4 kg) 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 in side lying position with light weight (1-3lbs) and/or with light resistance resistive bands or sport cords.

Criteria for progression to the 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 and endurance.*

Precautions*:*

- *No lifting of objects heavier than 2.7 kg (6 lbs) with the operative upper extremity*
- *No sudden lifting or pushing activities.*

Week 12 to Week 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 + months postop):

Typically, the patient is on a HEP at this stage to be performed 3-4 times per week with the focus on:

- Continued strength gains
- Continued progression toward a return to functional and recreational activities within limits as identified by progress made during rehab 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 – 120 degrees of elevation with functional ER of about 30 degrees.)
- Able to complete light household and work activities.