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REHABILTATION PROTOCOL

Procedure: Reverse Total Shoulder Arthroplasty

Reverse or Inverse Total Shoulder Arthroplasty (rTSA) is a prosthesis indicated for glenohumeral joint arthritis with irreparable rotator cuff tears, fractures, and failed shoulder arthroplasty. While this prosthesis has been used in Europe since the 1980s, the implant was approved by the FDA in 2004 and has been used for glenohumeral joint arthritis with irreparable rotator cuff tears, complex fractures, and in revision shoulder arthroplasty. Because the rTSA utilizes principally utilizes the deltoid muscle for shoulder motion, the rehabilitation is different than rehabilitation following a TSA. The following points should be considered:

1. 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.
2. 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.
3. 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:

1. Joint protection, progressive PROM, family/independent living and family independent with:
2. Progressive restoration active range of motion (AROM) of elbow/wrist/hand.

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Precautions:

1. Sling x 6 weeks. May be used for 8 weeks if revision surgery.
2. In supine position, elbow must be supported with pillow to prevent shoulder extension. Patient should always see their elbow.
3. NO shoulder AROM.
4. NO lifting of objects with operative extremity.
5. Keep incision clean and dry (no soaking for 4 weeks); No whirlpool, Jacuzzi, ocean/lake wading for 4 weeks. Patient may begin showering post-operative day #2. Wash lightly over incision with Hibiclens. Do not pick or scrub at the Dermabond.

Immediate Care Therapy (Day 1 to 4):

1. Begin PROM in supine/bed after resolution of block:
    - FF to 90 degrees
    - ER to 20 degrees
    - NO IR!
2. Start Active/Active Assisted ROM (A/AAROM) of cervical spine, elbow, wrist, and hand.
3. Utilize continuous cryotherapy for the first 72 hours postoperatively, then frequent application (4-5 times a day for about 20 minutes).
4. Gain patient independence in terms of bed mobility, transfers, and ambulation
5. Give patient/ family home program

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Day 5 to 21:

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

3 Weeks to 6 Weeks:

1. Continue with above exercises
2. Progress PROM with goal of:
    - FF 120, ER to tolerance respecting soft tissue constraints.

In order to progress to phase II of they must have satisfactory PROM and ability to complete deltoid and periscapular isometrics

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

Goals:

1. Progress PROM though full PROM is not expected
2. Gradually restore AROM.
3. Control pain and inflammation.
4. Allow continued healing of soft tissue / do not overstress healing tissue.
5. Re-establish dynamic shoulder and scapular stability.

Precautions:

1. Continue to avoid shoulder hyperextension and internal rotation
2. In patients with poor mechanics, avoid repetitive AROM and exercises.
3. Restrict lifting of objects to no heavier than a coffee cup.

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Weeks 6- 8:

1. Continue with PROM program.
2. At 6 weeks post op start PROM IR to tolerance (not to exceed 50 degrees) in the scapular plane.
3. Start shoulder AA/AROM to tolerance, progress from supine to standing position.
4. Start ER and IR isometrics (sub-maximal and pain free)
5. Start scapulothoracic rhythmic stabilization and alternating isometrics in supine as appropriate
6. Progress strengthening of elbow, wrist, and hand.
7. Gentle glenohumeral and scapulothoracic joint mobilizations as indicated (Grade I and II).
8. Continue use of cryotherapy as needed.
9. Patient may begin to use hand of operative extremity for feeding and light activities of daily living including dressing, washing.

Weeks 9-12

1. Continue and progress above exercises.
2. 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).
3. Progress to gentle glenohumeral IR and ER isotonic strengthening exercises in sidelying position with light weight (1-3lbs or .5-1.4kg) and/or with light resistance resistive bands or sport cords.

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

1. Improving function of shoulder.
2. 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:

1. Enhance functional use of operative extremity and advance functional activities.
2. Enhance shoulder mechanics, muscular strength and endurance.

Precautions:

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

Weeks 12-16:

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

Phase IV – Continued Home Program (Typically 4 + months postop):

1. Typically the patient is on a home exercise program at this stage to be performed 3-4 times per week with the focus on:
2. Continued strength gains

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3. Continued progression toward a return to 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:

1. 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.)
2. Typically able to complete light household and work activities.

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