TB&J

TEXAS BONE & JOINT

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Dr. Payne Reverse Total Shoulder (rTSA) Protocol

The intent of this protocol is to provide the clinician with a guideline of postoperative rehabilitation course. 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 post-operative complications. If a clinician requests assistance in the progression of a patient post-surgery, they should consult Dr. Payne.

Important rehabilitation management concepts to consider for a post-operative physical therapy rTSA program are:

- **Joint protection**: there is a higher risk of shoulder dislocation following a rTSA than a conventional TSA
    - **Avoidance of shoulder extension past neutral and the combination of shoulder adduction and internal rotation should be avoided for 12 weeks post-operatively**.
    - Patients with rTSA don't dislocate with the arm in internal rotation and adduction in conjunction with extension. As such, tucking in a shirt or performing bathroom/personal hygiene with the operative arm is an especially dangerous activity, particularly in the immediate post-operative phase.
- Deltoid function: stability and mobility of the shoulder joint is now dependent upon the deltoid and periscapular musculature. The concept becomes the foundation for the postoperative physical therapy management for a patient that has undergone rTSA.

Surgical considerations:

- The start of this protocol is delayed 3-4 weeks following a revision rTSA and/or in the presence of poor bone stock based on the surgeons assessment of the integrity of the surgical repair.

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

Goals:

- Patient and family independent with joint protection, passive ROM, assisting with putting on/taking off sling and clothing, assisting with home exercise program, cryotherapy promoting healing of the soft tissue, maintaining the integrity of the replaced joint.
- Restoring active ROM of the elbow, wrist, and hand.

- Independent with activities of daily living with modifications.
- Independent with bed mobility, transfers, and ambulation or as per pre-admission status.

Precautions:

- Sling is worn for 3-4 weeks post-operatively and only removed for exercise and bathing once able.
- The use of a sling often may be extended for a total of 6 weeks for revision rRTSAs.
- While lying supine, the distal humerus/elbow should be supported by a pillow or a towel roll to avoid shoulder extension.
- Patients should always be advised to be able to "see their elbow while lying supine."
- No shoulder active ROM
- No lifting of objects with the operative extremity
- No supporting of body weight with the involved extremity.
- Keep incision c/d/i for 2 weeks. May shower.
- No submersion (whirlpool, Jacuzzi, ocean/lake) for at least 4 weeks.

Acute Care therapy (Day 1 to 4):

- Begin PROM in supine after complete resolution of interscalene block
- Forward flexion and elevation in the scapular plane in supine to 90°
- External rotation in scapular plane not to exceed 20-30°
- **No internal rotation.**
- Active/Active assisted ROM of cervical spine, elbow, wrist, and hand.
- Begin periscapular submaximal pain-free isometrics in the scapular plane.
- Continuous cryotherapy for the first 72 hrs post-operatively, then frequent application (4-5 times a day for about 20 mins)
- Insure patient is independent in bed mobility, transfers, and ambulation.
- Insure proper sling fit, alignment, and use.
- Instruct patient in proper positioning, posture, initial home exercise program.
- Provide patient/family with written home program including exercises and protocol information.

Days 5-21:

- Continue all exercises as above (typically 2-3 times per day)
- Begin submaximal pain-free deltoid isometrics in scapular plane (avoid shoulder extension when isolating posterior deltoid).
- Frequent (4-5 times a day for about 20 mins) of cryotherapy.

Weeks 3-6:

- Progress exercises listed above.
- Progress PROM
    - FF and elevation in the scapular plane while supine to 120°
    - ER in the scapular plane to tolerance, respecting soft tissue constraints.

Weeks 3-6 (continued)

- Gentle resisted exercise of elbow, wrist, and hand.
- Continue frequent cryotherapy

Criteria for progression to next phase (Phase II):

- Tolerated shoulder PROM and isometrics
- Pt demonstrates the ability to isometrically activate all components of the deltoid and periscapular musculature in the scapular plane.

Phase II – Active ROM and Early Strengthening (Weeks 6-12):

Goals:

- Continue PROM (full PROM is not expected)
- Gradually restore AROM
- Allow continued healing of soft tissue/ do not overstress healing tissue
- Re-establish dynamic shoulder and scapular stability

Precautions:

- Due to the potential of an acromial stress fracture, one needs to continuously monitor the exercise and activity progression of the deltoid. A sudden increase in deltoid activity during rehabilitation could lead to excessive acromial stress.
- A gradually progressed pain free program is essential.
- Continue to avoid shoulder hyperextension.
- In the presence of poor shoulder mechanics avoid repetitive shoulder AROM exercises/activity.
- Restrict lifting of objects to no heavier than an coffee cup
- No supporting of weight by the operative extremity.

Weeks 6 to 8:

- Continue PROM program.
- At 6 weeks post-op start PROM IR to tolerance (not to exceed 50°) in the scapular plane.
- Begin shoulder AA/AROM as appropriate.
    - Forward flexion and elevation in the scapular plane in supine with progression to sitting/standing.
- Initiate gentle scapulothoracic rhythmic stabilization and alternating isometrics in supine as appropriate. Minimize deltoid recruitment during all exercises.
- Progress strengthening of the elbow, wrist, and hand.
- Gentle glenohumeral and scapulothoracic joint mobilizations as indicated.
- Patient may begin to use operative extremity for feeding, dressing, washing, etc.

Weeks 9 to 12:

- Continue with above exercises and functional activity progression.
- Begin gentle GH IR and ER submaximal pain free isometrics.
- Begin gentle periscapular and deltoid sub-maximal pain free isotonic strengthening exercises.

- Begin AROM supine forward flexion and elevation in the plane of the scapula with light weights (1-3 lbs) with trunk elevation as appropriate (ex: supine lawn chiar progression to progression to sitting/standing).
- Progress to gentle GH IR and ER isotonic strengthening exercises in sidelying position with light weight (1-3 lbs) and/or with light resistance bands or 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

Week 12-16: Moderate Strengthening

Precautions:

- No lifting of objects heavier than 5 lbs with the operative extremity
- No sudden lifting or pushing activities

Weeks 12-16:

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

Phase IV: Continued Home Program

- Typically patient is on a home exercise program 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 rehabilitation and outline by surgeon and physical therapist

Criteria For discharge from skilled therapy:

- Pt is able to maintain pain free shoulder AROM demonstrating proper shoulder mechanics (Typically 80-120° of elevation with function ER about 30°).
- Able to complete light household and work activities.