Anatomic Shoulder Arthroplasty Protocol

The intent of this protocol is to provide the clinician with a guideline of the postoperative rehabilitation course of a patient that has undergone Anatomic Total Shoulder Arthroplasty (TSA). Important rehabilitation management concepts to consider for a postoperative physical therapy TSA program are:

- Protection of the repaired subscapularis
- NO active IR x 12+ weeks
- NO supporting body weight with shoulder x 12+ weeks
- Avoid shoulder extension past trunk/body
- Do not push IR behind back
- Do not stretch into pain

As patients wean out of sling monitor for excessive passive external rotation or pain around the subscapularis repair - any sharp / severe / increasing pain or increase in passive ER / resistance to passive ER should be reported and patient slowed down.

Phase I – Immediate Post-Surgical (0-6 weeks):

Formal physical therapy starts 2-3 weeks

Goals:

- Joint protection
- Passive range of motion (PROM)
- Assisting with putting on/taking off sling and clothing
- Assisting with home exercise program (HEP)
- Cryotherapy
- Promote healing of soft tissue / maintain the integrity of the replaced joint.
- Restore active range of motion (AROM) of elbow/wrist/hand.
- Sling is worn for 4-6 weeks postoperatively and only removed for exercise and bathing once able. After 4 weeks can remove for sleeping but use during day.
- 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/wetting for 2 weeks); No whirlpool, Jacuzzi, ocean/lake wading for 3+ weeks and incision must be well healed.

Acute Care Therapy (Day 1 to 14):

- Begin passive pendulums / passive dangles out of sling 3x daily
- Continuous cryotherapy for first 48 hours postoperatively, then frequent application (4-5 times a day for 10-15 minutes).
- Scapular retractions / squeezes
- Ensure patient is independent in bed mobility, transfers and ambulation
- Ensure proper sling fit/alignment/ use.
- Instruct patient in proper positioning, posture, initial home exercise program

Weeks 2-4:

- Continue all exercises as above (typically 2-3 times per day).
- Initiate PROM: progress scaption to 90 degrees, ER to 20 wks 2+3, ER to 30 wk 4
- Begin sub-maximal pain-free deltoid isometrics in scapular plane (avoid shoulder extension when isolating posterior deltoid.)

4 Weeks to 6 Weeks:

- Continue exercises listed above.
- Progress ROM:
    - AAROM Elevation in the scapular plane to 120 degrees (must have PROM 90)
    - ER to 45
- Gentle resisted exercise of wrist, and hand.
- Submaximal pain free shoulder isometrics except for IR
- Gentle GH and scapulothoracic mobilizations
- **Precautions**
    - Limit lifting (nothing heavier than coffee cup)
    - No leaning on arm, no body weight on arm/hand on operative side
    - No sudden movements, no jerking of arm

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

- Tolerates shoulder PROM and AAROM isometrics
- Approximately 135 degrees PROM scaption, 40-45 degrees passive ER
- Patient able to actively elevate arm vs gravity with good mechanics to 90

Phase II –Active Range of Motion / Early Strengthening Phase (Week 6 to 12):

Goals:

- Wean sling
- Continue progression and gradually restore AROM
- Maintain scapulothoracic mechanics
- Control pain and inflammation.
- Allow continued healing of soft tissue / do not overstress healing tissue.
- Re-establish dynamic shoulder and scapular stability.

Precautions:

- No lifting of heavy objects - nothing heavier than a coffee cup
- No lifting or pushing activities
- No dynamic loading of shoulder
- No leaning on arm, no body weight on arm/hand on operative side
- No active IR
- In the presence of poor shoulder mechanics avoid repetitive shoulder AROM exercises/activity.

ROM

- Begin shoulder AAROM, AROM: start supine, reclined then progress as tolerated
- Progressive PROM stretching - do not stretch into pain
- Minimize substitution patterns

- Progress strengthening of elbow, wrist, and hand.
- Gentle glenohumeral and scapulothoracic joint mobilizations as indicated (Grade I and II).
- No shoulder adduction or cross body movements

STRENGTHENING:

- Continue isometrics
- Begin light functional exercises
- Begin gentle periscapular and deltoid sub-maximal pain free isotonic strengthening exercises - avoid shoulder hyperextension
- Scapular rows, extensions, side-lying ER, resisted ER in scapular plane
- Initiate resisted deltoid exercises at week 8+

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

- Improving function of shoulder
- Tolerates AAROM -> AROM -> strengthening maintaining mechanics and without increase in pain
- 120+ AROM flexion
- 100+ AROM abduction
- 45+ AROM ER in scaption
- ROM targets may be adjusted in setting of severe preoperative limitations / pathology

Phase III – Moderate strengthening (Week 12-16+):

Goals:

- Maintain pain free AROM
- Enhance functional use of operative extremity and advance functional activities.
- Enhance shoulder mechanics, muscular strength and endurance.

Precautions:

- Avoid exercises or tasks that stress the anterior capsule - no combined ER / ABD above 60 deg abduction
- No sudden lifting or pushing activities.

Strengthening

- Continue with the previous program as indicated.
- Progress to gentle resisted flexion, elevation in standing as appropriate.
- Initiate IR strengthening week 12+

Criteria for discharge from skilled therapy:

- Patient is able to maintain pain free shoulder AROM demonstrating proper shoulder mechanics.
- Patient has good functional use of involved upper extremity
- Typically able to complete advanced functional activities

Phase IV – Continued Home Program (Typically 4-6+ months postop):

- Typically the 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 outlined by surgeon and physical therapist.
* Ongoing PT for strengthening may be performed up to 6+ months postop for patients who may be returning to higher demand activities
* Return to recreational sporting activities (golf, swimming, doubles tennis, gym / light and moderate resistance training) is typically 6+ months
* HEAVY resistance training (e.g. bench, military press, etc) is generally contraindicated