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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). 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 postoperative complications. If a clinician requires assistance in the progression of a patient post-surgery, they should consult with Dr. Shybut.

Please Note:
The rotator cuff is critical to the functional outcome of anatomic total shoulder arthroplasty; therefore, the rehabilitation for a patient following aTSA is different than the rehabilitation following a reverse shoulder (RSA). The surgeon, physical therapist and patient need to take this into consideration when establishing the postoperative treatment plan.

Important rehabilitation management concepts to consider for a postoperative physical therapy TSA program are:
• Rotator cuff protection: the subscapularis is typically surgically detached and repaired during TSA and so must be protected as function and stability of the anatomic total shoulder are dependent on the rotator cuff

- 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

Those patients with concomitant repair of a rotator cuff tear or patients undergoing revision surgery should be progressed more slowly to the next phase, based on meeting clinical criteria as appropriate in collaboration with Dr. Shybut. Initiation of this protocol will generally be delayed in those patients and time frames can be dialed back to progress more slowly.

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 to Dr. Shybut.

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

Goals:
• Patient and family independent with:
• 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.
• Enhance PROM.
• Restore active range of motion (AROM) of elbow/wrist/hand.
• Independent with activities of daily living (ADL's) with modifications.
• Independent with bed mobility, transfers and ambulation or as per pre-admission status.

Precautions:
• Sling is worn for 4-6 weeks postoperatively and only removed for exercise and bathing once able. The use of a sling often may be extended for a total of 6-8 weeks, if the TSA procedure is a revision surgery or complex fracture case.
• 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 4+ 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.)
• Cryotherapy as helpful, increase use of heat modalities.

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

* Dr. Shybut must clear patient for return to gym, sport, swimming, golf, tennis, etc
* 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 in the long term