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Rehabilitation Protocol for Anatomic Total Shoulder Arthroplasty

General Information

- **Wound care**
 - After surgery, you will have a bandage on your wound that is to remain in place until your first post-op visit. This dressing is waterproof and you are permitted to shower after 72 hours post-op with the dressing in place. See bathing instructions below
 - DO NOT get into a pool, bathtub, spa, lake, or ocean until 1-month post-op
 - Please contact our office immediately if you notice any of the following as these could be signs of infection:
 - Significant wound drainage or bleeding, some bleeding on dressing post-op can be expected
 - Foul odor from the wound/dressing
 - Any significant redness or warmth around the wound/dressing
 - Please check your temperature if you begin to feel ill, warm, or have body chills. Contact our office immediately if your temperature is above 101 degrees or you think you may have an infection anywhere in your body. It is common to have a low temperature within the first week of surgery. Make sure to stay well hydrated as this will help minimize this
 - It is common to have swelling and/or bruising after surgery and is expected. The bruising may start out black-red-purple and change to a yellowish-green color over a few weeks. The bruising may go down the arm. You also may have swelling in your hand. This will go away with time; squeezing a ball or making a fist repeatedly will help with this
- **Blood clots**
 - Surgery may slow the blood flow in your legs, which rarely may result in a blood clot. If a clot does form, your leg will usually become swollen and painful. Walking regularly early after surgery can prevent blood clots as moving the ankle and toes frequently. You should additionally avoid crossing your legs in the initial post-op period
 - Please contact our office right away if you have any leg swelling, tenderness, pain, warmth or redness
 - Call 911 immediately if you begin to have any chest pain, trouble breathing, rapid breathing, sweating, or confusion as this is a sign that a blood clot may have moved to your lungs
- **Rehab diary**
 - Please keep track of therapy visits and exercises done at home. Please bring this diary to each clinic visit

Strategies for Independence with Activities of Daily Living (Review with Therapist)

- **Upper body dressing**
 - Select loose-fitting clothing
 - Always dress operative arm first
 - Use nonoperative arm to pull shirt onto the operative arm, pulling the shirt as far up the arm as possible. Use the nonoperative arm to pull the shirt over your head or behind your back and down your body. The nonoperative arm goes into the shirt last
 - Always undress the operative arm last
 - Consider large shirts with buttons or zippers in the first few weeks following surgery or obtain sling specific shirts (www.slingshirt.com OR www.reboundwear.com for shirts with snaps that are easy to wear/remove or search “post-operative shoulder surgery shirt” on Amazon)
 - Remember to keep your operative arm close to your body while assisting with buttoning or zipping
 - Females may consider wearing a camisole or tank top as an alternative to a bra following surgery. If a bra is preferred, consider sports bras that zip or close in the front or a strapless bra to avoid irritation at incision site
- **Lower body dressing**
 - Utilize your nonoperative arm to thread both feet into pants while sitting. Stand up to pull pants up past your hips using your nonoperative arm. When securing pants, the operative arm may assist, but be sure to keep it close to your body
 - Consider pants with elastic
- **Sling management**
 - Week 1-2: sling with abduction pillow at all times, removed for showering and dressing only.
 - Week 3-6: sling while out of home/uncontrolled environment, continue wearing while sleeping if patient is active sleeper. May remove sling at home for home exercises and when at rest and perform waist level activities in front of body with elbow at side:
 - Typing, eating utensils, washing face with elbow at side
 - No lifting, reaching, pushing or pulling anything heavier than cup of coffee with arm at side
 - No reaching to the side or behind the body/back
 - No using the arm to push up from a chair
 - After 6 weeks the sling can be discontinued entirely
 - Make sure your elbow remains at a 90° angle while in sling. If your hand becomes swollen, it may be a sign that your elbow is too straight and the elbow position is not 90°. Discuss additional options for edema control with your therapist
 - While in sling remember to move wrist and fingers, may remove intermittently throughout day to move elbow/wrist/fingers keeping arm at side
- **Eating**

- After 2 weeks it is permitted to bend at the elbow and bring food to your mouth
- Begin with foods that do not require cutting
- **Bathing**
 - You may shower after 72 hours post-op, the post-op dressing can get wet
 - Your arm comes out of the sling and rests at your side during the shower
 - Do not scrub the surgical site or dressing
 - To wash and clean the underarm of your surgical arm, bend at the waist and let the arm passively move away from your body as you bend forward, similar to pendulum exercises
 - No submerging under water in a bath, pool or hot tub until 4 weeks post-op
 - Consider purchasing a bath mat for prevention of falls while showering
- **Grooming**
 - Bend forward from your trunk, similar to pendulum exercises) to move your arm away from your body for activities such as bathing, deodorant, and shaving underarms
- **Toileting**
 - Use your nonoperative arm
 - Place toilet paper on nonoperative side
 - Consider using toileting aid
- **Sleeping**
 - Keep sling on when sleeping
 - It is preferred that you sleep on your back or in a semireclined position
 - While lying on your back, place a small pillow behind your operative arm so that it stays aligned with your body
 - Consider sleeping in a recliner if available
 - If you must sleep on your side, it is best to sleep on the nonoperative side, the abduction pillow can be removed but keep the sling on and prop the operative arm up on a stack of pillows in front of your body keeping it in a slight abducted position
- **Home management**
 - Consider preparing meals and freezing them prior to surgery
 - Temporarily move frequently used items from higher shelves to counter top level
- **Driving**
 - No driving until 6 weeks post-op
 - Start with low risk driving on local streets and progress to riskier freeway driving

General Guidelines

- The patient is to begin therapy at 2 weeks after surgery
- It is ok for consultation prior to 2 weeks to review home exercise program that will start at 2 weeks post op and self care activities
- The patient should work with the therapist 1-3x/week until cleared by surgeon
- Please review home exercise program with patient as detailed on this guide
- Please do not add or modify any portions of this protocol without discussing with the surgeon

Initial Home Exercise Program – 2-6 Weeks

- **Precautions**
 - All shoulder exercises should be performed as passive range of motion (PROM)
- Exercises
 - Passive forward elevation (FE) supine (0-2 weeks: 90°, 2-6 weeks: 90-140°)
 - Passive external rotation (ER) supine (not beyond 30 degrees)
 - Active range of motion (AROM) elbow, forearm, wrist, and hand (including thumb opposition)
- **Frequency**
 - Perform 2 sets of 10 repetitions of all the above exercises 3-4 times daily

Phase I: Joint Protection and Passive Range of Motion - 2-6 Weeks Post-Op

- **Goals**
 - Protect subscapularis repair
 - Diminish pain, inflammation, and swelling
 - Set up independent home program (see above)
 - Initiate PROM: FE to 140° and ER to 30° and not beyond
 - Initiate neuromuscular control exercises for periscapular muscles
- **Precautions**
 - Week 1-2: sling with abduction pillow at all times, removed for showering, dressing only.
 - Week 3-6: sling while out of home/uncontrolled environment, continue wearing while sleeping if patient is active sleeper. May remove sling at home for home exercises and when at rest to perform waist level activities in front of body with elbow at side but no active motion of the shoulder:
 - Typing, eating utensils, washing face with elbow at side
 - No lifting, reaching, pushing or pulling anything heavier than cup of coffee with arm at side
 - No reaching to the side or behind the body/back
 - There should be NO INTERNAL ROTATION of the shoulder during this phase and patient should avoid using the arm to push themselves up from a chair
 - There should be no initiation shoulder AROM during this phase
- **Teaching / Exercises**
 - Regular icing/cold therapy usage (as much as possible for first 10 days)

- Monitor edema in elbow, forearm, hand
- Pendulums (passive)
- Supine well-arm assisted PROM (FE to 140° max and ER to 30° max)
- Table slides and wall climbs in FE only, no abduction
- Active and manually resisted scapular retraction, elevation, and depression
- Scapular clock
- Active elbow/wrist/hand ROM – grasping and gripping
- Submaximal rotator cuff and deltoid isometrics (beginning at week 4)
- Cervical, levator scapulae and pectoralis minor stretching
- Manual retrograde massage, PROM, and gentle scar mobilization once healed
- Recumbent bicycle while wearing sling

Phase II: Active Range of Motion and Neuromuscular Control - 6-10 Weeks Post-Op

- **Guideline for progression to Phase II**
 - Minimal pain and symptoms at rest
 - Functional PROM
 - Good scapular control
- **Goals**
 - Maintain reduced inflammation and pain
 - Discontinue sling
 - Begin active assisted (AAROM) to active range of motion (AROM)
 - Achieve full AROM by end of phase
 - Demonstrate good muscle activation and normalize arthrokinematics of shoulder complex
 - Main focus on motion with progression to light strengthening
 - Update home exercise program to include AAROM and AROM
- **Precautions**
 - No resisted internal rotation until 12 weeks post-op
 - Patient should still avoid using arm to push up from chair
 - Avoid any heavy lifting with the arm
- **Teaching / Exercises**
 - Cryotherapy to decrease pain and swelling
 - Moist heat packs
 - Continue PROM progression in FE and ER
 - Abduction and IR initiated gently via PROM of other hand
 - Begin therapist and equipment/well arm assisted AAROM
 - Progress to AROM in supine position with progression to increasing degrees of inclination
 - Progress to AROM in side lying position: FE, abduction (ABD), horizontal abduction (HABD), ER
 - AROM combined with neuromuscular retraining
 - Inclined forward elevation with isometric ball compression, HABD, and ER
 - Submaximal rotator cuff and deltoid isometrics
 - Place and holds
 - Gentle rhythmic stabilization: Open and closed kinetic chain

- Isometric inferior glide and low row
- Lawnmower
- Manual therapy and patient mobilization exercises to improve thoracic extension and rotation
- Continued cervical stretching, mobilization, and manual therapy as indicated
- Light weight or Theraband (2 lb) rotator cuff and periscapular muscle isotonic exercises for flexion, extension, ER (week 8)
- Aquatic therapy ok at 6 weeks

Phase III: Late Range of Motion and Early Strengthening - 10-14 Weeks Post-Op

- **Guideline for progression to Phase III**
 - Full nonpainful AROM
 - Muscular strength (good grade or better)
- **Goals**
 - Establish and maintain full PROM and AROM
 - Improve muscular strength
 - Gradually increase functional activities
 - Update home exercises to include strengthening
- **Precautions**
 - No sudden, forceful resisted IR until 12 weeks postop
 - Golfing, hammering, swimming
 - No prolonged overhead activities
 - No lifting activities overhead
- **Teaching / Exercises**
 - Initiate PROM and stretching beyond initial limits
 - Passive hand behind back IR stretching
 - Traditional rotator cuff and periscapular muscle isotonic exercise program
 - Exercises with maximum voluntary isometric contraction 21%-50% for rotator cuff and periscapular muscles
 - Continue to increase weight and theraband progression
 - Light enough weight that 20 reps are achieved per set
 - Continue aerobic training
 - Discharge from therapy if needs met and no advanced sport preparation required

Phase IV: Advanced Strengthening and Return to Sport Preparation - 14+ Weeks Post-Op

- **Guideline for progression to Phase IV**
 - Satisfactory static stability
 - Full nonpainful AROM, at least 90% of contralateral side
 - Muscular strength 80% of contralateral side
 - ER/IR ratio of at least 70%
 - Communication with surgeon regarding plan to progress
- **Goals**
 - Enhance muscular strength, power, and endurance
 - Improve neuromuscular control for sports-specific movements
 - Maintain shoulder flexibility and AROM

- **Precautions**
 - Patient will be advanced back to sport as directed by the therapist and surgeon based on their progression
- **Teaching / Exercises**
 - Continue all previous stretching and ROM exercises of shoulder, cervical spine, and thoracic spine
 - Continue isotonic strengthening program with a progression in speed
 - Plyometric strengthening
 - Core / low back / lower extremity strengthening and conditioning
 - Integrate sports specific movements during rehabilitation
 - Identify sports-specific dysfunctional movement issues