Duke Orthopaedics: Upper Extremity Division

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Anatomic Total Shoulder Arthroplasty

<u>Subscapularis Safe Zones</u> established intraoperatively by the surgeon

- These ranges can start on Post-op Day 1, but may require a few weeks to achieve depending on patient comfort
- Supine, passive, well-arm assisted
- 140/40 Program: Max forward flexion to 140 deg, Max external rotation to 40 deg
- 130/30 Program: Max forward flexion to 140 deg, Max external rotation to 30 deg
- No abduction

Phase 1 (0-6 weeks): Passive Motion

Goals:

- PROM – forward elevation 140 by the end of week 6
- PROM – ER: to neutral POD 1-end of week 3; to 30 degrees 4-6 weeks
- Decrease pain, Decrease muscle atrophy, Educate regarding joint protection
- <u>Provide the patient with instructions for home exercises 5 x per day</u>

Precautions:

- Stay within precautionary range limits for subscapularis healing: first 3 weeks ER to neutral only; 3-6 weeks ER to 30 degrees in scapular plane; passive forward elevation to 140
- Week 1-2: Sling with abduction pillow at all times, removed only for 5x/day exercises, showering, and dressing
- Week 3-6: Sling while out of home/uncontrolled environment, continue wearing during sleep if patient is an active sleeper.
- Week 3-6: Ok to perform waist level activities WITH ELBOW AT SIDE in front of the body
    - Typing, eating utensils, combing hair and washing face with elbow at side
    - No lifting, reaching or pulling heavier than coffee cup with elbow at side

Teaching:

- Emphasize home PROM (elevation and ER as above)
- Instruct in regular icing techniques or cold therapy device (use as much as possible out of 24 hours for 8-10 days)
- Ice packs for 20 - 30 minutes intervals, especially at the end of an exercise session
- Monitor for edema in forearm, hand, or finger

Exercises:

- Pendulum exercises
    - *With the arm hanging, the patient gently swings the hand forward and backward, then side-to-side, and then clockwise and counterclockwise*

- Passive, supine well-arm assisted forward flexion, or table top supported forward flexion as tolerated up to 140 degrees
- Passive ER to 0 degrees for first 3 weeks, then to 30 degrees week 3-6 (seated with well arm or supine with cane assist and arm supported in scapular plane)
- Active scapular retraction, elevation in sitting or standing
- Active elbow, wrist, hand ROM - Grasping and gripping lightweight objects

Phase 2 (6-12 weeks): Active Range of Motion

Goals:

- Full range of motion by end of week 12. After 6 week physician visit, patient and therapist can move beyond the safe zones as pain allows.
- Emphasis should on range of motion before strengthening.
- Improve strength, Decrease pain, Increase functional activities, Scapular stabilization

Precautions:

- No sling use
- No resisted internal rotation until 12 weeks post-op
- No aggressive external rotation stretching – allow motion to return gradually without force

Teaching:

- Encourage continued stretching at home. Limited only by pain
- Ice after exercise.

Exercises:

- Encourage patient to use smooth, natural movement patterns
- Continue to work on Passive ROM until expected range is full: forward flexion 160, ER 60, IR T12
- Begin AROM and AAROM (using a cane), progressively, to full range of motion
- Assisted forward flexion supine using uninvolved arm to assist - progressing to active motion in a reclined position and then to sitting
- Side lying ER against gravity
- Encourage normal scapular mechanics with active motion
- Add Theraband exercises or light dumbbell weights (2lbs) for flexion, extension, external rotation
- Scapulothoracic strengthening (prone extension, prone T, etc.)
- Aquatic therapy, if available, can begin no earlier than 1 month post op if wound is completely healed
    - Week 1-6: Stay within established safe zone listed above. Passive motion only
    - Week 6 +: Shoulder fully submerged – slow, active motions for flexion, elevation, ER/IR and horizontal abduction/adduction out to scapular plane, range of motion limited by pain only

Phase 3 (10+ weeks): Final Strengthening

Goals:

- If acceptable motion has been achieved (>160 FF, >60 ER, IR T12 or above), then Maximize strength—otherwise continue with stretching program
- Improve neuromuscular control
- Increase functional activities

Precautions:

- No sudden, forceful resisted IR (e.g. golfing, wood splitting, swimming) until >3 months post-op

Teaching:

- Continue home stretching minimum 1x per day to maintain full range of motion

Exercises:

- Continue to increase difficulty of theraband and dumbbell exercises as tolerated
- Increase resistance exercises – must be light enough weight that >20 reps are achieved per set
- Continue aerobic training as tolerated, and modalities as appropriate
- Continue to progress home program

NOTES:

1. With proper exercise, motion, strength, and function continue to improve even after one year
2. The complication rate after surgery is 5 - 8%. Complications include infection, fracture, heterotopic bone formation, nerve injury, instability, rotator cuff tear, and tuberosity nonunion. Look for clinical signs, unusual symptoms, or lack of progress with therapy and report those to the surgeon
3. The therapy plan above only serves as a guide. Please be aware of specific individualized patient instructions as written on the prescription or through discussions with the surgeon
4. Please call Dr. Klifto if you have any specific questions or concerns @ (919) 403-3057
5. The patient's "Home exercise stretching program" (critical for first 10 weeks) is attached

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