Postoperative Therapy Protocol Following Anatomic Shoulder Arthroplasty--
Dr. Trueblood

Indications:
Total shoulder arthroplasty is indicated when pain, instability, or limitations in a patient’s range of motion interfere significantly with activities of daily living and a patient’s quality of life. This may be the result of inflammatory (ex. Rheumatoid) arthritis, osteoarthritis, avascular necrosis, trauma, or tumor.

Procedure Notes:
An incision is made over the deltopectoral interval and the cephalic vein is identified, mobilized, and retracted out of the way for the duration of the case. The long head of the biceps is sewn to the pectoral major insertion and the proximal segment is traced back to the glenoid where it is divided and excised. A subscapularis tenotomy is then used to open the glenohumeral joint and the shoulder dislocated anteriorly. The humeral head is then excised in 30 degrees of retroversion and the proximal humerus component is then inserted. The proximal humerus is dislocated posterior to expose the glenoid face. With the axillary nerve protected, the anterior, inferior, and a limited section of the posterior capsule (to 7 o’clock) is then released from the glenoid neck and the glenoid labrum is excised. The glenoid is then prepared with reamers to neutral version and the glenoid component is secured in place, usually with bone cement. Various humeral heads are then trialed until optimal restoration of anatomic parameters and stability of the shoulder is achieved. The definitive implant is then placed and the subscapularis repaired with locked, #2 Fiberwire suture. The deltopectoral interval is closed over drains with #2 Fiberwire suture. The skin is sutured with a subcuticular stitch, supplemented with acrylic skin glue, and the patient is placed into a sling. A one or two day postoperative stay is typical.

Post-operative education:
- Instruct in scapular elevation, depression, retraction, and protraction (clock exercises)
- Instruct family member in PROM exercises for shoulder.
- Preview safety and ADLs for life in a sling. Emphasize donning and doffing of shirts.
- Patient may remove sling for short periods of time and allow elbow to extend fully.
- **Review postoperative precautions with patient and care-partner.**
  - Avoid shoulder AROM.
  - No lifting of objects
  - When reclining or lying supine, the patient is encouraged to keep a pillow or blanket behind their elbow, preventing extension through the shoulder, to reduce stress on the anterior repair site. As a rule of thumb, the patient should always be able to see their elbow.
  - No excessive shoulder motion beyond side pocket, especially into internal rotation.
Postoperative Course:

**Weeks 0-2 (Immediate Postoperative Course)**
- Patient is encouraged to perform scapular elevation, depression, retraction, and protraction frequently during the day.
- Gentle passive range of motion, NOT stretching, in the plane of the scapula (the position halfway between forward flexion and abduction) only. Limit this motion to a sense of light resistance.
- IR allowed to chest/ belly. ER to no more than 30 degrees.
- Elbow, wrist, and hand AROM and PROM
- Regular and intensive use of cryotherapy unit to minimize swelling around surgical site.

**1st postoperative visit @ 10-14 days postop.**
- 3-view x-ray of operative shoulder.
- Postoperative restrictions reviewed and questions answered.
- Pain medication refills.
- Physical therapy referral for pulley exercise education to start at 4 weeks postop.
- Patients with unusual stiffness/ difficulty in HEP may benefit from PT/OT referral for conventional TENS, ROM, and scapular stabilization, mobilization exercise.

**4 weeks postop:**
- Patient can start pulley exercises in scaption.
- Continue with elbow, wrist, and hand AROM and PROM.
- May start light PROM for ER at waist height. NO ER with arm elevated or abducted.

**2nd postoperative visit at 6 weeks:**
- No XR needed unless patient has history of recent injury or unusual pain.
- May discontinue sling.
- Check range of motion. Start formal therapy if patient unable to passively forward
elevate >90°.

- Otherwise, HEP with a checkup in therapy at 8 weeks. Pain meds refilled if needed.

6 weeks postop:
- Start AROM of operative shoulder.
- Isometric place-and-hold exercises in forward elevation and isometric internal and external rotation strengthening. Patient should perform 3-5 sets of 10-12 repetitions providing resistance with a hand or with the wall.
- Continue strengthening scapular stabilizers.
- AROM/ PROM for ER/ IR, gentle. I prefer cane exercises at waist height using a cane or dowel.
- Full range of motion is expected by 8 weeks postoperatively, but abduction may remain limited until external rotation improves.

8 weeks postop:
- Gentle external and internal rotation and forward elevation without limits.
- Expected range of motion at this point:
  - 140° AROM scaption while supine.
  - Has achieved at least 60° AROM ER in plane of scapula supine
  - Has achieved at least 70° AROM IR in plane of scapula supine in 30° of abduction
  - Able to actively elevate shoulder against gravity with good mechanics to at least 120°.
  - If motion has not reached the above milestones, then initiate PT 1-2x/ wk for gentle oscillation/ mobilization and formal AROM/ PROM.

3rd postoperative visis 12 weeks postop office visit:
- 3-views of operative shoulder
- HEP for scapular stabilization and light rotator cuff strengthening (theraband exercise).
- If patient making good progress and is independent with home-exercise program, then the patient should be followed for maintenance of prosthesis/ wear on a biannual basis.