Postoperative Protocol For Reverse 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. Reverse total shoulder arthroplasty is indicated in cases co-existing with rotator cuff tears, tuberosity malunions/nonunions, and significant glenoid dysplasia (bony defects of the cup requiring bone grafting).

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 pectoralis 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 and occasionally bone grafts to neutral version and the glenoid ball component is secured in place. Various humeral cups 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.

HEP:
- 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
Postoperative Course:

1. No excessive shoulder motion beyond side pocket, especially into internal rotation (IR)
2. No excessive stretching or sudden movements (particularly external rotation (ER))
3. No supporting of body weight by hand or elbow on involved side
4. May shower at 7 days postop, letting water run over the skin and patting dry with a clean towel. No standing in a pool for 3 weeks. No swimming for 10 weeks.
5. No driving for 4 weeks

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, 1x visit with PT for HEP:

- 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.

NB: There is a 10-15% risk of exacerbating a cervical radiculopathy with reverse total shoulder arthroplasty. Please take this opportunity to ask the patient re: numbness, tingling, or burning symptoms in their operative arm. These may be progressive over the patient’s postoperative course and are best addressed early.
2\textsuperscript{nd} 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 HEP instructed in:

- Start AROM of operative shoulder.
- Isometric place-and-hold exercises in forward elevation and external rotation. 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.

\textbf{NB:} Overly aggressive IR/ER can precipitate significant pain by impingement of the semi-constrained components against the glenoid neck. This is not a normal shoulder. Glides and standard mobilization techniques work about as well here as they would with a total hip replacement.

- Full passive 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:
  - 110-130° AROM for scaption while supine.
  - Reaches top of head. “I can do my hair!”
  - Reaches back pocket.
  - 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 PROM. Many patients have problems breaking bad habits with periscapular compensation. This may also be addressed.

3\textsuperscript{rd} postoperative visit 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.