Postoperative Protocol Latarjet Procedure- Dr. Trueblood

**Indications:** Bone loss from impaction and fragmentation of the anterior glenoid is a common finding in shoulder dislocations—particularly recurrent shoulder dislocations. By narrowing the available arc of bony support for the humeral head, bone loss is also a strong predictor of recurrent dislocations after soft-tissue only repairs of the glenoid labrum and its attached ligaments (Bankart repair). The Latarjet procedure is a variant of a common theme in shoulder surgery: filling the gap left by glenoid impaction with bone graft taken from a convenient, local source. In this case, the bone comes from the coracoid process. As an added benefit, the Latarjet procedure moves the origin of the conjoint tendon (coracobrachialis and short head of biceps) to the anterior rim of the glenoid. This acts as an additional soft-tissue buttress against anterior dislocation with the arm in an elevated position.

Indications for a Latarjet procedure include bone loss >20% of the anterior glenoid, recurrent dislocation after a soft-tissue Bankart repair and capsulorhaphy, and a relative consideration given to young (<30yo) patients playing collision sports (motocross, football, roller-derby).

**Procedure:** The patient is taken to the operating room where shoulder stability is assessed with an exam under anesthesia. A diagnostic arthroscopy is performed and the glenoid is assessed for bone loss. Associated injuries are repaired as indicated and the procedure is then transitioned to an open approach. The interval between the deltoid and pectoralis major is opened and the cephalic vein mobilized medially. The coracoid process is identified and the pectoralis major is released from its medial surface. The musculocutaneous nerve is identified and protected. A coracoid osteotomy is now performed and the conjoint tendon mobilized. The axillary nerve is identified and protected. An L-shaped flap of the subscapularis is then mobilized off of the anterior capsule to approximately one centimeter medial to the glenoid rim. The capsule is then released vertically from the glenoid neck to create an inferiorly based flap. The anterior glenoid is now prepared with a burr to accept the coracoid graft. The coracoid is then prepared back to a healthy bleeding surface, rotated 90° for optimal extension of the glenoid surface, and is then secured to the inferior, anterior glenoid with two lag screws. The graft is then excluded from the articular surface by repairing the capsule to the anterior edge of the articular surface and the subscapularis is repaired with a no-tension repair. The wounds are irrigated copiously and stability reassessed. The deltopectoral interval is then closed with non-absorbable stitch and the skin closed with absorbable, buried stitches. The patient is placed into a dressing, then a sling, and is then discharged to the recovery room. Most procedures are performed as an outpatient.
Days 0-14:

Precautions--

- No active range of motion (AROM) of the operative shoulder
- No excessive external rotation range of motion (ROM) past 30 degrees.
- *Do not perform combined scaption with internal rotation* (empty can) during any stage of rehabilitation due to the possibility of impingement of the lesser tuberosity on the coracoid graft.
- Remain in sling, only removing for showering. Shower with arm hanging at side
- No lifting of objects or supporting body weight with operative shoulder
- Keep incisions clean and dry for first four days after surgery. May shower on postoperative day 4, letting water run over shoulder and then patting it dry with a clean towel. Keep covered with a clean tee-shirt at all times, thereafter.

Phase I Therapy starts on Postop day 3-4:

- Arm in sling except when performing distal upper extremity exercises
- (PROM)/Active-Assisted Range of Motion (AAROM)/ (AROM) elbow and wrist/hand
- Begin shoulder PROM (do not force any painful motion)
  - Forward flexion and elevation to tolerance
  - Abduction in the plane of the scapula to tolerance
  - Internal rotation (IR) to 45 degrees at 30 degrees of abduction
  - External rotation (ER) in the plane of the scapula from 0-25 degrees; begin at 30-40 degrees of abduction; respect anterior capsule tissue integrity with ER range of motion
  - Scapular clock exercises progressed to scapular isometric exercises
  - Ball squeezes
  - Sleep with sling supporting operative shoulder, place a towel under the elbow to prevent shoulder hyperextension
  - Frequent cryotherapy for pain and inflammation

First postoperative visit between days 10 & 14

- Wound check.
- Pain assessment/ medication refills.
- Work/ School Note: May type and write at waist height. May not operate automobile or heavy machinery.
- Physical Therapy prescription/ protocol update (1-2x/wk x 6 weeks).
Weeks 2-6:
- Continue with immediate postoperative protocol. May advance to next phase after 4 weeks if/when following milestones are met:
  - Achieved at least 100 degrees of passive forward elevation and 30 degrees of passive external rotation at 20 degrees abduction
  - Completion of phase I activities without pain

Phase II Therapy
Goal: to be weaned from the sling by the end of week and begin light waist level activities

Precautions:
- No active movement of shoulder
- No lifting objects or supporting body-weight with affected upper extremity
- No excessive external rotation ROM / stretching
- Do not perform activities or strengthening exercises that place an excessive load on the anterior capsule of the shoulder joint (i.e. no pushups, pec flys, etc..)
- Do not perform scaption with internal rotation (empty can) during any stage of rehabilitation due to the possibility of impingement of the lesser tuberosity on the coracoid graft.

Therapy Parameters
- Progress shoulder PROM (do not force any painful motion)
- Forward flexion and elevation to tolerance
- Abduction in the plane of the scapula to tolerance
- IR to 45 degrees at 30 degrees of abduction
- ER to 0-45 degrees; begin at 30-40 degrees of abduction; respect anterior capsule tissue integrity with ER range of motion; seek guidance from intraoperative measurements of external rotation ROM
- GENTLE glenohumeral joint mobilizations as indicated when ROM is significantly less than expected. Mobilizations should be done in directions of limited motion and only until adequate ROM is gained.
- Begin incorporating posterior capsular stretching as indicated
  - Cross body adduction stretch
  - Side lying internal rotation stretch (sleeper stretch)
- Continued Cryotherapy for pain and inflammation
2nd Postoperative Visit at 6 weeks:

- Assess pain control/ Pain medication refills
- 3-views of shoulder—assess for coracoid union.
- Physical Therapy Prescription Update.
- Work Restrictions- Waist height work, <10# weight lifting, and no pushing or pulling.

**Therapy Parameters for 6-12 weeks:**

*Upper Extremity Therapy 2-3x/ week for 6 weeks*

- Progress shoulder PROM (do not force any painful motion)
  - Forward flexion, elevation, and abduction in the plane of the scapula to tolerance
    - Nearly full elevation in the scapula plane should be achieved before beginning elevation in other planes
  - IR as tolerated at multiple angles of abduction
  - ER to tolerance; progress to multiple angles of abduction once >/= 35 degrees at 0-40 degrees of abduction
  - Glenohumeral and scapulothoracic joint mobilizations as indicated (Grade I-IV as appropriate)
- Progress to AA/AROM activities of the shoulder as tolerated with good shoulder mechanics (i.e. minimal to no scapulathoracic substitution with up to 90-110 degrees of elevation.)
- Begin rhythmic stabilization drills
  - All activities should be pain free and without substitution patterns
  - ER/IR in the scapular plane
  - Flexion/extension and abduction/adduction at various angles of elevation
- Continue AROM elbow, wrist, and hand
- Strengthen scapular retractors and upward rotators
- Initiate balanced AROM / strengthening program
  - Initially in low dynamic positions
  - Gain muscular endurance with high repetition of 30-50, low resistance 1-3 lbs)
    - Exercises should be progressive in terms of muscle demand / intensity, shoulder
    - Exercises should consist of both open and closed chain activities
    - *No heavy lifting or plyometrics should be performed at this time*
  - Initiate full scapular plane raises to 90 degrees with good mechanics
  - Initiate ER/IR strengthening using exercise tubing at 0° of abduction (use towel roll)
  - Initiate sidelying ER with towel roll
  - Initiate manual resistance ER supine in scapular plane (light resistance)
  - Initiate prone rowing at 30/45/90 degrees of abduction to neutral arm position
Advance to Strengthening Phase when:

- Passive forward elevation at least 155 degrees
- Passive external rotation within 8-10 degrees of contralateral side at 20 degrees abduction
- Passive external rotation at least 75 degrees at 90 degrees abduction
- Active forward elevation at least 145 degrees with good mechanics
- Appropriate scapular posture at rest and dynamic scapular control with ROM and functional activities
- Completion of phase II activities without pain or difficulty

Strengthening Phase (approximately Week 10 – Week 15)

**Precautions:**

- Avoid contact sports/activities
- Do not perform strengthening or functional activities in a given plan until the patient has near full ROM and strength in that plane of movement
- Patient education regarding a gradual increase to shoulder activities

**Therapy**

- Continue A/PROM as needed.
- Initiate biceps curls with light resistance, progress as tolerated
- Initiate gradually progressed strengthening for pectoralis major; keep hands within shoulder width. No dips, wide grip bench press, or overhead pressing.
- Push up plus (wall, counter, knees on the floor, floor)
- Forward punch
  - Progress subscapularis strengthening to focus on both upper and lower segments
- Cross body diagonals with resistive tubing
- IR resistive band (0, 45, 90 degrees of abduction)

Advance to activity normalization phase when:

- Passive external rotation at all angles of abduction WNL
- Active forward elevation WNL with good mechanics
- Appropriate rotator cuff and scapular muscular performance for chest level activities
- Completion of phase III activities without pain or difficulty

Activity Normalization Phase Therapy

**Precautions:**

- Avoid excessive anterior capsule stress
- With weight lifting, avoid tricep dips, wide grip bench press, and no military press or lat pulls behind the head. Be sure to “always see your elbows”
• Do not begin throwing, or overhead athletic moves until 4 months post-op

Activity:
• Continue all exercises listed above
• Progress isotonic strengthening if patient demonstrates no compensatory strategies, is not painful, and has no residual soreness
  ○ Strengthening overhead if ROM and strength below 90 degree elevation is good
  ○ Continue shoulder stretching and strengthening at least four times per week
  ○ Progressive return to upper extremity weight lifting program emphasizing the larger, primary upper extremity muscles (deltoid, latissimus dorsi, pectoralis major)
• Start with relatively light weight and high repetitions (15-25)
• May do pushups as long as the elbows do not flex past 90 degrees
• May initiate plyometrics/interval sports program if appropriate/cleared by PT and MD
• Can begin generalized upper extremity weight lifting with low weight, and high repetitions, being sure to follow weight lifting precautions.