Postoperative Care for Transolecranon Fracture-Dislocation of the Elbow-- Dr. Trueblood

Indications: Fracture-dislocations of the elbow are rarely amenable to nonoperative management. One common pattern occurs with direct impact on the subcutaneous border of the proximal ulna with the elbow in a flexed position. In these cases, the distal humerus acts as a log-splitter into the wedge of the proximal ulna. These tend to be complex injuries and associated injuries to the radial head, articular surface of the humerus, and collateral ligaments are common.

Technique: The patient is positioned supine on an operating table with the arm draped across the patient’s body. A posterior approach is made to the elbow, elevating full-thickness flaps medially and laterally. The ulnar nerve is identified and decompressed from the Arcade of Struthers to the FCU aponeurosis. The fracture site is exposed with extra-periosteal dissection and hematoma removed. Any loose fragments of bone or stripped cartilage are removed and the joint surface is carefully inspected. In cases of severe comminution of the radial head or neck, a radial head hemiarthroplasty may be performed through the fracture site. The articular surface is then reduced and secured provisionally with buried, mini-fragment screws that raft the articular surface into acceptable position. Once the pattern has been converted to two pieces with rigidly fixed, anatomic articular surfaces, these are reduced and secured provisionally with wires or, in the case of significant metaphyseal comminution, mini-fragment plates. The construct is then neutralized with a posterior olecranon plate and screws, inset into the triceps with a longitudinal split incision. Ligament injuries, often the LUCL, are now repaired with transosseous fixation vs. suture anchors, and elbow stability is tested under live x-ray. Once confirmed, the wounds are closed in layers, cleaned, and dressed steriley. A posterior mold splint is applied in neutral position and the

Precautions--
- Full-time protection in either postoperative splint or hinged elbow brace. May remove hinged brace to shower but may not move out of brace.
- No abduction of the shoulder until advanced to Phase 2.
- No weight bearing to operative extremity.

Therapy begins on the 5-7th day after surgery--
Phase 1 Therapy (Protect Repair, Regain ROM)
Therapy 2-3x/ week x 6 weeks
- Dressing is removed and the patient is placed in a hinged elbow brace with the forearm in neutral rotation. Teach the patient to don and doff/ lock and unlock the brace. The brace should be locked at all times when not working on range of motion. This includes sleeping.
- AROM/ AAROM with gravity assisted extension in hinged brace, forearm set in neutral.
- Gentle PROM of shoulder, wrist, and hand.
- Non-weightbearing at all times. May type, write, and use hand for assistance in feeding.
- Dry dressing to patient’s wounds, change daily. Patient may shower at 7 days after surgery.
- modalities prn
- HEP

1st postoperative visit 10-14 days after surgery--
- 3 views of the elbow to monitor for maintenance of reduction.
- Wound assessment. Stitches out when wound is well-coapted.
- Pain assessment. Refill pain meds as appropriate.
- Review postoperative limitations.
- Work Note: may type and write. no driving. No lifting, pushing, or pulling. Non-weight bearing to the operative extremity.
- Therapy Note: Continue Phase 1 Therapy
- Return to Office at 6 weeks after surgery.
- Expected Return to Work:
  - Cognitive/ Sedentary: 2 weeks
  - Light Labor: 8 weeks
  - Medium/ Heavy Labor: 3-4 months

2nd Postoperative Visit at 6 weeks after surgery--
- Three views of elbow. Assess for bridging bone at repair sites.
- Pain assessment. Refill pain meds as appropriate.
- If bridging bone visible on x-ray and elbow non-tender to palpation, then advance to phase 2 of therapy. If still tender or if there is concern for delayed union, continue with phase 1 therapy and see the patient back in 2 weeks to reassess.
- Phase 2 work restrictions: At 8 weeks, may return to lifting up to 20#. No pushing/pulling. May drive.
- Return to Office at 12 weeks after surgery.
- Expected Return to Work:
  - Cognitive/ Sedentary: 2 weeks
  - Light Labor: 8 weeks
  - Medium/ Heavy Labor: 3-4 months

Phase 2 Therapy (Regain ROM and wean from protection)
- Splinting-- may wean from hinged brace as tolerated. Start ROM out of brace.
Range of Motion--
- AROM/ PROM of shoulder, elbow, wrist, and hand.
  - may allow abduction of elbow.
- AROM/ AAROM as tolerated in flexion, extension, pronation, and supination.
- PROM
  - may add static progressive splint for extension or flexion as needed if extension is < -30 degrees or if flexion is <130 degrees at 8 weeks postoperatively.
  - may use light dumbbell hangs to facilitate elbow extension.

Strengthening-
- Isometric rotator cuff and scapular strengthening
- Light grip strengthening.

Modalities prn
- HEP
- Advance to Phase 3 when:
  - Patient has painless range of motion between 30-130 degrees of flexion.
  - Able to perform exercises with good mechanics.

Phase 3 Therapy (Normalize Function and Regain Strength)
Therapy 1-2x/ week
- AROM/ PROM
  - Shoulder, elbow, wrist, and hand. Goal is for at least 10-140 degree arc of motion.
- Strengthening
  - Isotonic Rotator Cuff, Scapular Shrugs and Prone Rowing.
  - Biceps and triceps strengthening
  - Grip strengthening
  - When strength is 80% of contralateral side, patient’s with unusually high demands either for occupation or recreation may benefit from a work conditioning or sport-specific conditioning program. Please contact Leslie Hedge, RN at 573-388-3026 to arrange for a referral if needed.
  - Throwing athletes may add interval throwing program after week 10.
- modalities prn
- HEP

3rd office visit 12 weeks after surgery--
- x-rays: 3-views of elbow.
- pain assessment
- DASH score
Work note: Depends on patient's clinical performance. Patients with very high demand, manual laboring jobs may require further work hardening. Majority of patients may return to normal life demands without restrictions at this point.

MMI at one year from surgery