

Postoperative Care for Terrible Triad Injuries of the Elbow-- Dr. Trueblood

Indications: Fracture-dislocations of the elbow are rarely amenable to nonoperative management. One common pattern of injury is the so-called “terrible triad”: elbow dislocation with coronoid fracture and an unstable fracture of the radial head. These injuries are characteristically unstable and prone to recurrent instability, stiffness, and pain if neglected. Nondisplaced, concentrically reduced dislocations with no block to pronation or supination may be treated nonoperatively.

Technique: The patient is positioned supine with a sterile tourniquet above the level of the drapes. In most cases, an isolated lateral approach may be used, exposing the radial head via a either a Kocher (ECU- Anconeus interval) or Kaplan (EDC splitting) approach. The former is more commonly used when radial head replacement is planned. The latter is used when repair of the fracture seems more likely after preoperative planning. The lateral capsule is released sufficiently to allow inspection of both the anterior and posterior compartments of the elbow and any loose bone or cartilage shear fragments are removed. Dr. Trueblood tends to resect the radial head in cases where there is extensive comminution of the radial neck or where the articular surface has broken into more than 3 fragments. A nonunion, not uncommon, at these sites can have a serious, negative effect on function of the reconstructed elbow, even if the nonunion is revised later to a head replacement. We try to avoid this scenario. The elbow’s injuries are now addressed from the inside out. For small, avulsion fractures of the coronoid, a capsular stitch is placed at the bone-capsule junction and then passed around the ulna in cerclage fashion and out a small incision at the subcutaneous border of the olecranon. Larger fractures are reduced and secured with headless, compression screws. The radial head is then addressed either with reduction and lag screw fixation or radial head replacement. There is no role for radial head resection in treatment of traumatic instability. Avulsion injuries to the LCL/ LUCL, when present, are addressed at this time, as well--- usually with a transosseous repair. Elbow stability is now confirmed using live x-ray. The wounds are irrigated and closed in layers. Sterile dressings and a posterior mold splint are applied with the forearm in full pronation.

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 and must keep forearm pronated.
- 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

Phone: 573.335.8257
Toll Free: 800.321.3167
Appointments: 573.335.7040



Excellence in Motion

Main Location
48 Doctors Park
Cape Girardeau, Missouri 63703

Other Locations
Jackson • Poplar Bluff • Sikeston

- 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 pronation.
 - 1st 2 weeks- limit to 30-110 in brace.
 - weeks 2-4- limit to 15-130
 - weeks 4-6: no limits in brace.
 - keep forearm pronated.
- Gentle PROM of shoulder, wrist, and hand.
 - Avoid abduction of shoulder. No rotational stress (ER or IR).
- 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



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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