



Dr. Klika & Dr. Kirkpatrick
Radial Head ORIF and Arthroplasty

Phase 1 – Early Protection of Repair (0 - 4 Weeks)

Goals for phase 1

- Protect radial head arthroplasty and healing structures
- Minimize pain and edema
- Initiate gentle active pain-free range of motion
- Educate patient in home program

Other considerations:

- Associated injuries are common with radial head fractures, so it is important to always check specific MD orders and operative notes for variations in the orthosis and protocol
- Initial assessment should include sensory testing as radial and ulnar nerve injuries can be common

Orthosis

- The patient is fitted with a hinged elbow orthosis with forearm neutral
 - 0-2 weeks: locked at 90 degrees of flexion
 - 3 weeks: allow 30-120 degrees of motion
- Patient is fitted with a wrist hand orthosis if extensor mechanism was violated, see MD orders or surgical report
- In cases of associated injuries or if the patient is too large or small to achieve a good fit in the prefabricated hinged elbow orthosis, the patient may be fitted with a long arm orthosis with elbow at 90 degrees of flexion and forearm in neutral

Edema Management

- Light compressive dressing or sleeve may be applied to elbow, forearm, and wrist
- Manual Edema Mobilization (MEM) as needed

Scar Management

- Scar mobilization may be initiated two days following suture removal as long as incision is well-healed with no open areas and no drainage; apply scar remodeling products as needed

Wound Care

- Keep incisions clean and dry
- Educate patient in sterile dressing changes as needed

ROM

- Begin gentle active / active assistive elbow flexion and extension with the forearm in neutral at 2 weeks unless there is medial or lateral instability. Begin with patient in supine and progress to seated position to pain tolerance or unrestricted outside of brace
 - To protect the lateral collateral ligament the forearm is pronated during elbow extension
 - To protect the medial collateral ligament the forearm is supinated during elbow extension
- Begin gentle active / active-assistive forearm rotation at 2 weeks with elbow at 90 degrees of flexion and forearm supported on a table
- No composite elbow and forearm motion at this time.
- A/PROM to wrist, digits and shoulder as needed to prevent and resolve stiffness
- Patient is issued a home program for gentle active exercises outside orthosis 5-6x/day for 10 min sessions
- Avoid end-range wrist motion if extensor tendon was violated until 6 weeks postoperatively



Phase 2 –Progress to full ROM (4 - 6 weeks)

Goals for phase 2

- Continue pain and edema control
- Continue scar management
- Restore full A and passive ROM

Other Considerations

- The supinated forearm with full elbow extension places the most stress on the radial head and should be avoided with early shoulder, wrist and hand strengthening and functional activities

Orthosis

- **Radial Head Arthroplasty:** at 4 weeks discontinue hinged elbow orthosis
- **Radial Head ORIF:** at 4 weeks continue hinged elbow orthosis but orthosis is unlocked to allow full elbow motion
- Continue wrist hand orthosis if applicable
- If the patient is in a long arm orthosis, follow specific MD orders

Continue phase 1 scar and edema management as needed

ROM

- Continue phase 1 A/AAROM elbow, forearm, and wrist exercises
- Initiate unrestricted passive ROM and stretching to elbow and forearm
- Slowly progress to composite active and passive elbow and forearm motion
- Avoid early aggressive passive stretching which may increase risk of repair failure and heterotopic ossification (HO)

Modalities

- Fluidotherapy for heat, ROM, and desensitization
- Paraffin may be used for deep heat prior to ROM

Strengthening

- Initiate submaximal pain-free elbow and forearm isometrics
- Submaximal shoulder, wrist and hand strengthening avoiding stress on repair
- Prone scapular stabilization exercises
 - Avoid prone shoulder external rotation with lateral elbow instability



Phase 3 –Strengthening and Return to Full Function 6+ weeks

Goals for phase 3

- Restore full active and passive ROM
- Gradually discontinue splint and return to functional activity
- Restore strength
- Return to work

Orthosis

- ORIF: discontinue hinged elbow orthosis
- Wrist hand orthosis is discontinued
- After fracture healing has been confirmed a static progressive elbow extension orthosis may be considered if a patient continues with limitations

ROM

- Continue with A/AA/PROM of elbow and forearm to maximize end range motion
- If applicable, initiate unrestricted PROM to wrist

Manual Therapy

- Gentle grade 1 & 2 joint mobilizations may be initiated as long as the fracture / implant is healed and there is no instability present at 6 weeks

Modalities

Continue heat modalities as needed to improve range of motion and tissue mobility

Strengthening

- 8 weeks: Initiate isotonic strengthening for elbow, forearm and wrist starting with 1 pound weight. Emphasis initially should be on low weight and high repetitions to increase endurance.
- Continue shoulder, wrist, and hand strengthening.
- 10 weeks: Initiate functional strengthening and work simulation as tolerated

Functional Activity

6-8 weeks: Gradually return to all activities of daily living emphasizing pain-free use of the involved arm

8-10 weeks: Gradually return to home management and work activities including functional lifting with MD consent

Work Conditioning

After 10 weeks and with MD consent a comprehensive work conditioning program for patients with high demand / heavy manual labor occupations may be appropriate



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References

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This protocol was reviewed and updated by Brian Klika, MD, Lacey Jandrin, PA, Andrew Kirkpatrick, MD, Tiffany Terp, PA, and the Hand Therapy Committee 8/9/2021.