Salina Regional Orthopedic Clinic
Salina Regional Health Center

Martin Reilly, D.O.
520 S. Santa Fe Ave., Suite #400, Salina, KS 67401
Ph: (785) 452-7366 | Fax: (785) 452-7354
www.salinaregionalorthopedicclinic.com

# Non-Operative Proximal Humeral Fracture Management

## GENERAL GUIDELINES

The first two weeks for all proximal humerus fractures managed non-operatively entails complete shoulder immobilization in a sling until the patient is seen in clinic for radiography assessment. Subsequent progression will depend on if the fracture is categorized as **stable** (such as an impacted fracture, or minimally-displaced 2-part fracture) or **unstable** (more displacement/more fragments) to be determined by the provider in clinic. At in all, recovery progression should not create pain in the involved shoulder nor create a feeling of movement across the fracture site.

# *Stable Proximal Humeral Fracture Management*

## *PHASE 1 (2 - 4 weeks)*

### Precautions

- Sling immobilization at all times except therapy (home or clinic) and personal hygiene
- No active use of the involved arm
- No rotation of the involved arm (internal or external)
- PAIN-FREE PROM forward elevation – max 90 degrees elevation

### Goals

- Protect fracture site from movement to optimize healing environment
- Decrease risk for stiffness associated with immobilization
- Promote distal circulation of hand and forearm
- Education patient about activity guidelines and rehab progression/expectations

### Exercises

- Active grip, wrist flexion/extension; forearm pronation/supination; elbow flexion/extension; scapular retraction/protraction as tolerated
- Small circle pendulum clockwise and counterclockwise
- Passive forward elevation to 90 degree maximum

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**Criteria to progress to Phase 2**

- Pain not increased with passive elevation to 90 degrees
- Clearance based on radiography evidence of lack of fracture fragment displacement at 4 week radiographic assessment

***PHASE 2 (4 weeks)***

- Patient returns to the Salina Regional Health Center Orthopedic and Sports Medicine Clinic at 4 weeks for radiography

**Precautions**

- Remain in sling at all times other than PT (home or clinic) and personal hygiene
- No active motion or active use of the arm
- **PAIN-FREE** Passive elevation – max to 140; ER max to 40
- No internal rotation (vertebral or at 90)

**Goals**

- Protect fracture site with immobilization to optimize healing environment
- Encourage motion in pain free range up to stated limits to prevent stiffness while healing in immobilization

**Exercises**

- Passive forward elevation up to max 140 (supine well arm assisted; table top step back; table top supported using well arm to slide)
- Passive external rotation with arm at neutral (alongside of body) up to max 40 (seated well arm assisted; supine cane assisted with arm supported into scapular plane)
- May begin aquatics for Basic UE program with slow speed of motions; avoid hook and rotate exercise and cross body adduction (hug yourself)
- Continue pendulum, elbow, wrist, hand, and scapular retraction

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**Criteria to progress to Phase 3**

- Pain-free passive forward elevation to 140; ER to 40
- Clearance by physician based on evidence of early callus at 6 week radiographic assessment

***PHASE 3 ( 6 - 12 weeks)***

- Patient return to the SRHC Orthopedic and Sports Medicine Clinic at 6 weeks for radiographs

**Precautions**

- Wean from sling gradually at home first, then in community
- Avoid lifting more than 5 lbs
- Avoid weight bearing of affected arm

**Goals**

- Emphasis on restoring passive range of motion.
- Restore full passive motion of the glenohumerul joint first, then progress to active assisted, then active motion through the full range
- Restore functional use of the arm for ADL's below shoulder level (feeding, grooming…)
- Protect healing fracture from stress overload

**Exercises**

- PAIN-FREE Passive range of motion without range limits for elevation, ER (0); ER(90) and IR toward full motion in all planes
- Continue aquatic program in all planes and may gradually increase speed of motion
- Forward elevation progression: supine active assisted, active, to incline, to vertical supported, to vertical unsupported (after full passive range is established)
- ER/IR AROM against gravity when full passive range is established
- Scapular protraction and retraction

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- Active motion through short arc from balanced position and rhythmic stabilization in balanced position (90 deg elevation in supine)

**Criteria to Return to Work or Sport**

- Per physician clearance based on demands of such, status of fracture healing, status of motion and strength – determined on a case by case basis

***PHASE 4 (12 weeks +)***

- Patient returns to the SRHC Orthopedic and Sports Medicine Clinic at: 12 weeks for radiography

**Precautions**

- Per physician clearance based on sufficient fracture healing

**Goals**

- AROM to equal PROM for elevation with normalized mechanics and no pain against gravity (in vertical position) and also for ER at neutral and 90 degrees
- Strength to equal opposite UE in all major muscle groups
- Functional return to work/sport; GFR > 90%; DASH < 10%

**Exercises**

- Continue stretching to end rand as tolerated in all planes until full motion is achieved if this has not already been accomplished.
- Begin strength progression with light band/hand weight resistance for all major upper extremity muscles, including rotator cuff and scapular stabilizers.
- Begin functional progression as needed specific to sport and work demands.

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# UNSTABLE PROXIMAL HUMERAL FRACTURE MANAGEMENT

The progression for unstable proximal humeral fractures differs in that these fractures require 4 weeks of complete shoulder immobilization in a sling, followed by initiation of the rehab process at Phase II if cleared following radiographic assessment.

- For **UNSTABLE** fractures
  - Phase I above is not included
  - Phase II covers weeks 4-8
  - Phase III covers weeks 8-12
  - Phase IV is as above

**KEY CLINIC CONCEPTS**

1. Rehabilitation activities should not ever create a feeling of motion at the fracture site; any pain with rehab activities should be less than 3/10 and transient with resolution within one hour of such activity

2. Full passive motion shoulder be restored in all planes prior to beginning the active assisted to active motion progression

3. Full active motion with good mechanics should be restored prior to strengthening exercises