

# **Nonoperative Proximal Humeral Fracture Management**

## ***STABLE PROXIMAL HUMERAL FRACTURE MANAGEMENT***

### **PHASE 1 Stable Fractures (impacted or minimally displaced two part fractures) (2-4 weeks)**

#### **GENERAL GUIDELINES AND 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

#### **CRITERIA TO PROGRESS TO PHASE 2**

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

### **PHASE 2 Patient returns to the Shoulder Clinic at 4 weeks for radiographs (4-6 week)**

#### **GENERAL GUIDELINES AND PRECAUTIONS *Proximal humerus fracture guidelines***

- ♦ 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

## CRITERIA TO PROGRESS TO PHASE 3

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

## PHASE 3 Patient returns to the Shoulder Clinic at 6 weeks for radiographs (6-12 weeks)

### GENERAL GUIDELINES AND PRECAUTIONS

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

## GOALS

- ♦ Emphasis on restoring passive range of motion.
- ♦ Restore full passive motion of the glenohumeral 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

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

#### **CRITERIA FOR RETURN TO WORK/SPORT *Proximal humerus fracture guidelines***

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

#### **PHASE 4 Patient returns to the Shoulder Clinic at 12 weeks for radiographs (12 weeks +)**

##### **GENERAL GUIDELINES AND PRECAUTIONS**

- ♦ Per MD 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 range 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 2 if cleared following radiographic assessment.

- ❖ For **UNSTABLE** fractures
  - ♦ Phase 1 above is not included
  - ♦ Phase 2 covers weeks 4-8
  - ♦ Phase 3 covers weeks 8-12
  - ♦ Phase 4 is as above

### **KEY CLINICAL 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 should 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**