Common Fractures

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Objectives

- **Identify Common Fractures**
- **Discuss initial treatment of fractures**
- **Discuss definitive treatment of common fractures and expected outcomes**

Statistics

- **About 18.5 million visits to physicians per year are for fractures**
- **The majority of these occur in the outpatient setting**
- **MSK injuries result in loss of function and negatively impact our economy**
- **Our aging population will result in increased fracture – especially fragility fractures – with even more loss of function**

Most Common Fractures

- **Clavicle**
- **Ankle**
- **Pediatric Forearm Fractures**
- **Wrist**
- **Hip**

Initial Evaluation

- Identify injured extremity
- Is there deformity?
- Neurovascular Evaluation
- Skin integrity
- Radiographs

Radiographic Principles

- Image the injured bone
- Obtain radiographs of the joint ABOVE and BELOW the injured bone

Initial Treatment

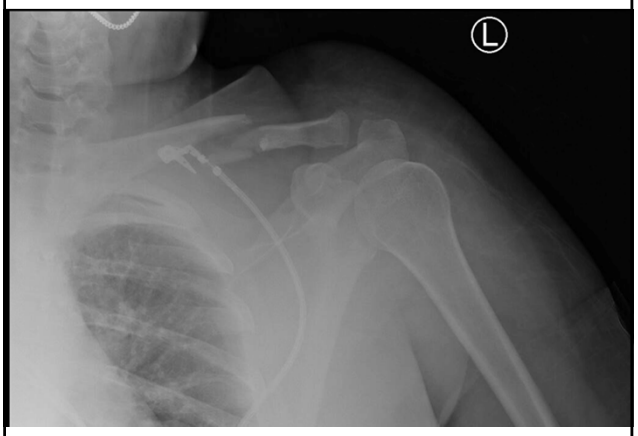
- Immobilize with splint
- Elevate injured extremity to lessen swelling
- Ice
- Anti-inflammatory medication for pain/swelling
- Opioids for severe pain
- Refer for definitive management

General Treatment Principles

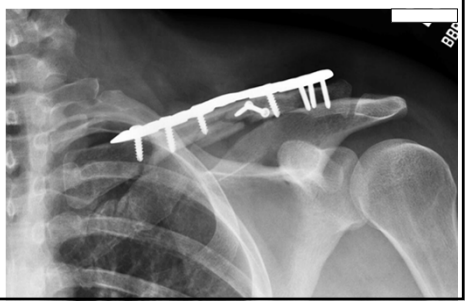
- Non-displaced and stable fractures can be treated with non-operative management
- Displaced, open and unstable fractures should be treated surgically
- Encourage early range of motion when able
- Weight bearing is limited for minimal necessary time
- Immobilization may be necessary for appropriate healing

Clavicle Fractures

- **Common in falls onto an extremity**
- **Non-operative management with sling has been the traditional approach**
- **A large number can still be treated non-operatively**



- **Recent research points more towards operative management for severely displaced fractures**



- **Regardless of treatments – patients are treated in a sling for 6-8 weeks**
- **Weight bearing as tolerated**
- **Range of motion above shoulder level is restricted for 4-6 weeks**
- **Full weight bearing and strengthening is permitted after about 3 months**

Ankle Fracture

- **Twisting injury leads to predictable injury pattern**
- **Fibula fractures alone can often be treated non-operatively – decision depends on stability of the ankle joint**
- **Bimalleolar and Trimalleolar fractures often require operative fixation**

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- **Stable fractures can be treated without surgery**
  - **Early weight bearing**
  - **Edema Control**
  - **RICE**
  - **RANGE OF MOTION**
- **Bone healing takes 6-8 weeks, but full recovery can be 3-6 months**

- **Unstable injuries require operative fixation**
- **Non-weight bearing after operative fixation for 6-12 weeks depending on the severity of the injury**
- **Encourage ROM after early immobilization period**
- **Full recovery can be 6-12 months**

Special Populations

- **Diabetic patients require more aggressive treatment and longer non-weight bearing**
- **Obese patients should be considered for longer non-weight bearing**
- **Skin condition in geriatric patients should be carefully monitored**

Pediatric Forearm/Wrist Fractures

- **Pediatric forearm and wrist fractures are among the most common fractures in children under 14**
- **These fractures are often caused by a fall from a height – monkeybars and trampolines**
- **Open physes allow for non-operative management of these fractures in most circumstances**
- **Closed reduction and casting is the most common method of treatment**

Source: eORIF.com

- 6-8 weeks of cast treatment followed by removable splint for an additional 4-6 weeks
- After cast removal – encourage range of motion and slow return to activity
- Open physes allow for remodeling of fractures and differing acceptable angles of reduction depending on patient age
- Older patients require more perfect reductions and may require surgical fixation

Fragility Fractures

- 8.9 million fractures worldwide related to osteoporosis
- Hip, wrist and vertebral fractures occur in nearly equal numbers
- 1:3 women over 50 incur fractures
- 1:5 men over 50 incur fractures
- These numbers are expected to increase dramatically as our population ages

Distal Radius Fracture

- Often caused by fall on outstretched hand
- Early treatment includes reduction and splinting
- Non-surgical treatment can be acceptable in cases of appropriate alignment after reduction and splinting with transition to casting
- Surgical treatment is indicated for younger, active patients and in those with unacceptable reduction

- **In non-operative management, cast for 6-8 weeks, followed by brace wear and focus on wrist range of motion**
- **Even with significant deformity – function can be appropriately regained in low demand individuals**

- **Operative fixation allows for early range of motion**
- **Bone healing can take 6-8 weeks**
- **Return to function is expected with appropriate treatment**

Hip Fracture

- 75% hip fractures occur in women
- 10-20% of patients who were community ambulators prior to their injury lose their ability to function independently
- Current incidence around 1.6million/year – expected to increase to as much as 6 million/ year by 2050
- 20-25% of patient die within one year after sustaining a hip fracture

- Much research is focused on improving outcomes after hip fracture
- Identification of at-risk patients and measures to protect bone health
- Earliest possible treatment of appropriately risk stratified patients may lead to improved mortality and preservation of pre-injury functional status
  - This is a subject of ongoing research at OSU participating in an international study

- Patients are treated in a fashion similar to acute coronary patients with dedicated teams and surgical fixation of their fractures in an expedited fashion

- Risk/benefit analyses are always necessary when considering surgical procedures and not every patient should undergo emergent procedures.
- Some patients with acute medical conditions benefit from medical optimization prior to surgery.
- A minority of patients are not surgical candidates and palliative measures should be discussed with the patient and family.

- **Patients who have never undergone osteoporosis workup should have workup initiated by hospital medical/orthopaedic personnel**
  - **Laboratory workup for secondary osteoporosis**
  - **DEXA**
  - **Geriatric Consultation**
  - **Endocrine evaluation**
- **Follow-up after hospitalization should be arranged with appropriate personnel to initiate appropriate treatment**

- **Goals of surgical treatment are to mobilize patients quickly with full weight bearing**
  - **Options are fixation of the fracture or arthroplasty procedure**
- **Fixation is reserved for non-displaced or younger patients with displaced fractures**
- **Partial arthroplasty is indicated in low demand individuals**
- **Total hip arthroplasty is indicated in younger, more active individuals**


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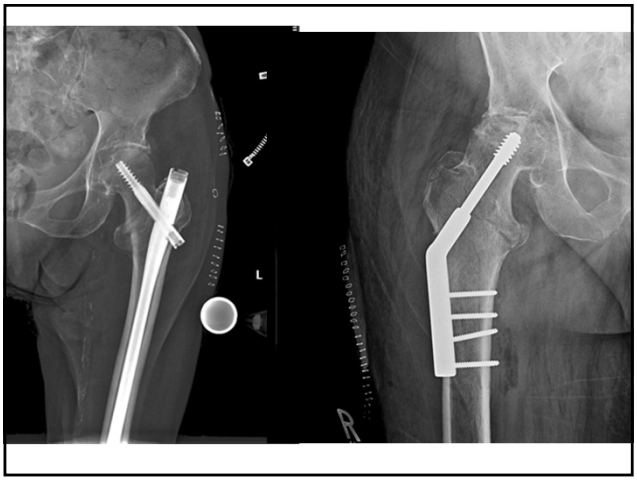
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