Olecranon and Radial Head/Neck Fractures
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• None pertinent to this presentation
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Olecranon Fractures

Mechanism of Injury
• Rapid Tension Overload: Eccentric contraction of the triceps with flexion of the elbow
• Direct Trauma
• Chronic Overload: osteopenia, stress fracture
Olecranon Fractures

**Evaluation**
- Skin Integrity
- Assess for active elbow extension
- Neurovascular exam
- Radiographs: AP, lateral, and oblique

Olecranon Fractures

**Treatment Goals**
- Restore articular congruity
- Restore elbow extensor mechanism
- Rigid Fixation
- Achieve Stable arc of motion and prevent stiffness
  - Begin early range of motion
- Avoid Complications

Olecranon Fractures

**Indications for Operative Management**
- Disruption of the Extensor Mechanism
  - Unable to actively extend
- Articular Incongruity
  - Any displaced fracture
Olecranon Fractures

**Treatment Options**
- Open Reduction Internal Fixation
  - Tension Band
  - Plate Fixation
- Olecranon Excision and Triceps Advancement

**Positioning**
- Lateral Decubitus
- Sterile Tourniquet
- Regional or General
- Direct Posterior Approach
- Padded Mayo

**Reduction**
- Wires
- Clamps
- Mini-Fragment Plates
Olecranon Fractures

Simple Fractures

- Tension band or Plate

Comminuted Olecranon Fractures

- Plate Fixation

Olecranon Excision

- Olecranon critical in traumatic elbow instability
- Linear decrease in stability with incremental excision

Olecranon Fractures

Olecranon Excision

Osteoporosis
<50% of the joint

Post Operative Protocol

Non weight bearing for 6 weeks
Splint 1 week to allow soft tissues to calm down
Commence early PROM
Progressive weight bearing after week 6

Radial Head Fractures
Radial Head Fractures

Importance of the Radial Head

Strut to axial translation

Radial Head Fractures

Importance of the Radial Head

Resists posterior dislocation of the elbow

Radial Head Fractures

Importance of the Radial Head

Provides Valgus Stability
Radial Head Fractures

Importance of the Radial Head

Radial head ~ 30% valgus stability with MCL intact (Hotchkiss et al. JOR, 1987)
Radial head important 2nd stabilizer to valgus stress without MCL

Radial Head Fractures

Mechanism of Injury

- Typically Axial Load with combined valgus force
- Can be seen in high energy injuries
  - Elbow dislocation
  - Coronoid fracture
  - Collateral ligament injury

Radial Head Fractures

Blood Supply
Radial Head Fractures

Modified Mason Classification

Type I: Nondisplaced
  - No block to forearm rotation, displacement <2mm
Type II: Displaced
  - Possible ORIF
Type III
  - Irreparable
  - Replacement

Radial Head Fractures

Approaches

Kocher: Anconeus-ECU interval

Radial Head Fractures

Approaches

Kaplan

Suprcondylar Ridge
  - Anterior to mid-axis of RC
  - Use LCL tear if present
  - Anterior Capsule
Radial Head Fractures

Approaches

Arthroscopy: release visualized capsule and annular ligament

Radial Head Fractures

Internal Fixation

- Repair radial head
- Secure radial head to radial neck
- Avoid impingement of plate with forearm rotation

Radial Head Fractures

Safe Zone for Fixation

- Neutral
- Supination
- Pronation
Radial Head Fractures

- Use Modular
- Do not overstuff

Replacement

Radial Head Fractures

Post Operative Protocol

Individualized but in general:
- Early Motion
- NWB 10 weeks
- Progressive Lifting
- No H.O Prophylaxis
Radial Head Fractures

Thank You