Wrist Fractures: The Distal Radius

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Learning aims

- Epidemiology
- Anatomy
- Clinical Evaluation
- X-rays
- Classification
- Eponymous fractures
- Treatment
- Complications
Epidemiology

- Most common upper extremity fracture
- 1/6 of fractures treated in the Emergency Department
- Incidence increases with increasing age and osteopenia
- More common in white, females, low bone density, early menopause
# Mechanism of Injury

<table>
<thead>
<tr>
<th>Young patients</th>
<th>Elderly patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall from height</td>
<td>Low energy</td>
</tr>
<tr>
<td>RTC</td>
<td>Fall from standing height</td>
</tr>
<tr>
<td>Sport</td>
<td></td>
</tr>
</tbody>
</table>

**FOOSH with wrist in Dorsiflexion**
Clinical Evaluation

- Wrist deformity
- Swelling
- Ecchymosis
- Tenderness
- Painful ROM

- Neuro vascular assessment
  - Median nerve
- Condition of skin
# Frykman Classification

<table>
<thead>
<tr>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>I</td>
<td>Extraarticular</td>
</tr>
<tr>
<td>II</td>
<td>I + ulna fracture</td>
</tr>
<tr>
<td>III</td>
<td>Intraarticular – involving radiocarpal joint</td>
</tr>
<tr>
<td>IV</td>
<td>III + ulna fracture</td>
</tr>
<tr>
<td>V</td>
<td>Intraarticular – involving DRUJ</td>
</tr>
<tr>
<td>VI</td>
<td>V + ulna fracture</td>
</tr>
<tr>
<td>VII</td>
<td>Intraarticular – involving radiocarpal and DRUJ’s</td>
</tr>
</tbody>
</table>
Colles Fracture
Smith Fracture
Barton Fracture
Dorsal Barton Fracture
Chauffeur’s Fracture
Treatment

- Non-operative
- Operative

- <2-3mm loss of length
- Tilt < neutral
- < 2mm articular step
- < 5 degree loss of inclination
- Loss of carpel alignment

- Surgical procedure depends on:

  - Fracture pattern
  - Local factors
  - Patient factors
  - Surgeon factors
Non-Operative
Operative

- High energy
- Loss of reduction
- Articular gap or step
- Metaphyseal comminution
- Loss of volar buttress
- DRUJ incongruity

Consider
- Grafting, arthroscopic assistance, fixing ulna styloid
K-wires
Buttress Plate
Volar locking plate
Spanning External fixator
Non-spanning Ex-fix
Complications

- Median nerve
- Malunion or Nonunion
- CRPS
- Ex-fix
  - Pin tract infection, stiffness, #, neuritis
- Post Traumatic OA
- Finger, wrist, elbow stiffness
- Tendon Rupture (EPL)
- Midcarpal instability
Questions?

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