Distal Radius Fractures

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Disclosures:
- Shareholder Progressive Orthopedics and Upex
- No conflicts regarding the content of this presentation

Goals of treatment:
- Reduce pain
- Restore length and alignment
- Allow for motion and improved function
- Decrease risk of arthritis
Most common fracture of human skeleton

85% Dorsal 15% Volar

Adults

50% Extra-articular 50% Intra-articular

Medoff 2005
Making sense of the fracture

Medoff 2005
How do we treat distal radius fractures?

Minimally or nondisplaced fractures
Cast or splint

Displaced fractures
Closed reduction

Closed Reduction

- Evaluate adequacy of closed reduction with Xray
- NV exam
- Weekly radiographs x 3wks
- ROM fingers and shoulder
Lafontaine Criteria:
≥ 3 = Loss of Reduction

- Age > 60
- Dorsal Angulation >20º
- Initial displacement >1cm
- >5mm Shortening
- Dorsal Comminution > 35%
- Palmar or articular comminution
- Intra-articular
- Associated ulna fracture
- Osteoporosis

Indications for operative treatment
Dorsal tilt >20-15
Volar tilt >15
< 15 Radial inclination
>5 mm Shortening
>2mm Articular step off

Unacceptable
- Grossly unstable
- Progressive displacement serial XR
- Articular rim fracture dislocations
- Open fractures
- Nerve injury
Experience = Knowing what is best for each particular patient

Pts > 62 yrs
Most concerned about functionality and outcomes pertaining to their individual circumstances

79 yo
“malunion”
Acceptable function at 6 weeks

65 yo foosh softball

Happy Patient

Imperfect Xray
Operative treatment options

- CRCP
- ORIF
  - Dorsal Plating
  - Volar Plating
  - Fragment specific fixation
- Bridge/ Distraction plating
- Others
  - External fixation
  - Intramedullary fixation
  - Intra-focal pinning

29 yo Skiing injury

CRPP
Unstable intra-articular fracture

CRPP

8-10 cm incision overlying the FCR tendon
Pronator Quadratus

Healed Intra articular Fracture

8 weeks
8 weeks

35 yo MCA

MCA
Fragment Specific Fixation
68 yo F displaced, comminuted, intra articular, osteoporotic

Traction Views
Severe Comminution

Dorsal spanning plate
External Fixation

- Supplement for tenuous internal fixation
- Open fractures with Severe Soft tissue injury

Rehabilitation

- Standard:
  - Start Digital ROM
  - Edema Control
  - CAST (4-6 wks) until fracture sufficiently consolidated
  - +/- Forearm rotation
  - 4-6 weeks Wrist F/E
  - 8-12 wks
  - Strengthening

- “Stable fixation”
  - Accelerated
    - Week 1‐2: FULL FINGER ROM
    - 3 wks: Removable splint at light ADL's
    - Week 4‐6: full forearm rotation
    - Week 12‐16: unrestricted activity
Wrist Mobilization Following Volar Plate Fixation of Fractures of the Distal Part of the Radius

- Prospective randomized study
- 2 vs 6 weeks of immobilization
- 2 vs 6wks wrist ROM
- No difference in final ROM, Grip strength, Satisfaction
- Slightly longer to regain ROM in 6 wk group

Association Between Distal Radial Fracture Malunion and Patient-Reported Activity Limitations
A Long-Term Follow-up

- Prospective study 12-14 years
- Pts treated with CRCP vs CR
- Age 18-65
- Primary Outcome Change in DASH scores
- No difference in ROM, Grip strength
- "Malunion" - significantly worse
- pain
- Activity limitation
- Satisfaction
- DASH scores (11pts lower)

Carpal Tunnel Syndrome 5-15%

- Recognize and treat promptly
- OCTR for worsening or unresolving nerve symptoms
- Vit C 500mg x 30-50 days
- Mg
- Bs2, B6
CRPS
Allodynia
Trophic changes
Stiffness
Sudek's Atrophy

Mirror Box Therapy
CRPS
Phantom Pain
Stroke

Traditional Dogma
- Brain and nervous system are hardened
- Damage is permanent
Rather
- Plasticity and inter-sensory interactions
- Visual Feedback
- Reorganized neural networks

EPL Rupture
12.5-15% ORIF
5-15 % Closed treatment
EIP to EPL Transfer

- Distal radius fractures are often fragility fractures
- 2 to 6 times increased risk of future fracture
- Ca, vitamin D and prevention programs, +/- pharmacologic agents can decrease risk by up to 50%
Thank you