

# Distal Radius Fractures

Martin J. Herman MD

Professor of Orthopedic Surgery and Pediatrics

Drexel University College of Medicine

St. Christopher's Hospital for Children

Philadelphia, PA, USA



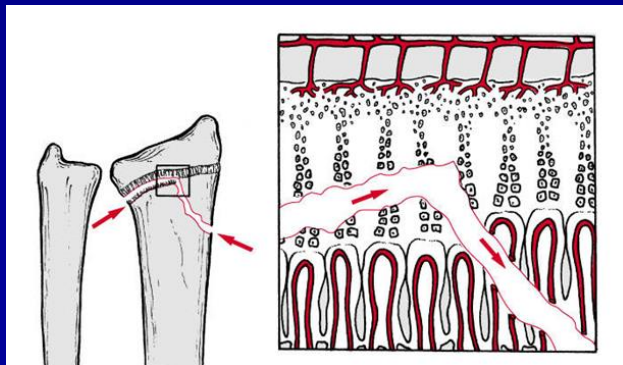
# Distal Radius Fractures

- 40- 50% of children's fractures
- Mechanism
  - FOOSH
    - Fall On Outstretched Hand
- Open fracture
  - Grade 1



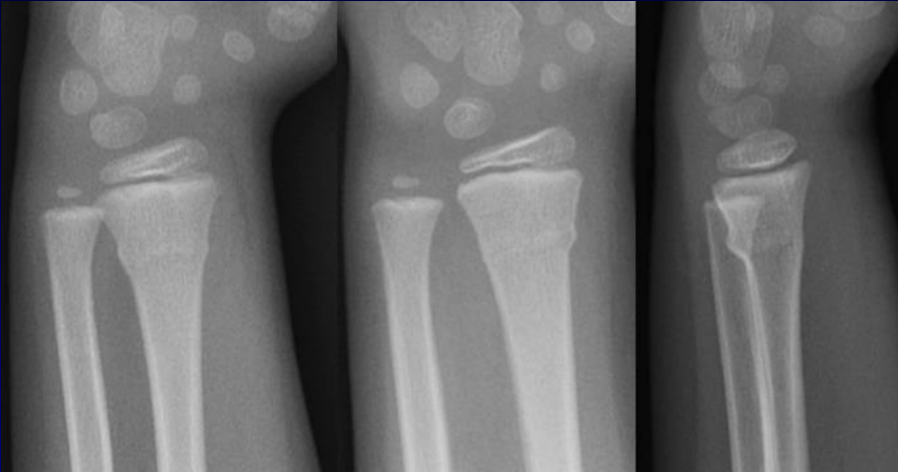
# Classification

- Salter-Harris fractures
  - SH1 and 2 most common
- Metaphyseal fractures
  - Buckle fracture
  - Complete fracture

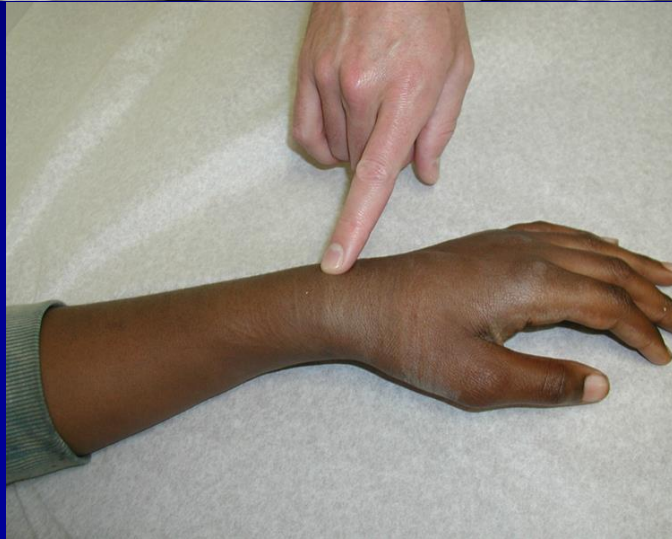


+/-Ulna fracture

# Buckle Fracture



- Stable fracture
  - Splint or cast



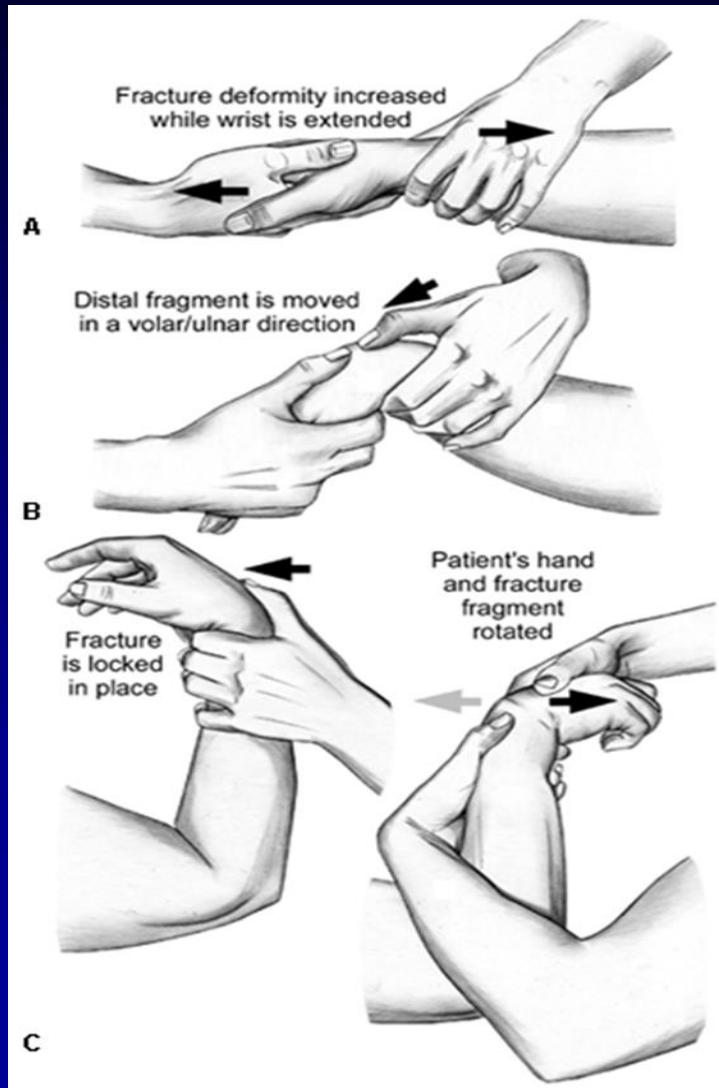
Beware ulna fracture

# Complete Metaphyseal Fractures

- Dorsal angulation most common
  - 1/3 need reduction
- Median nerve injury
  - Acute carpal tunnel syndrome
- Open fracture
  - Volar



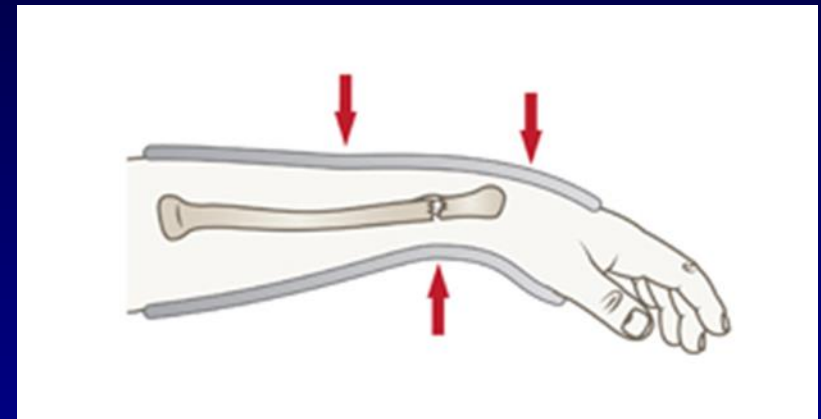
# Closed Reduction



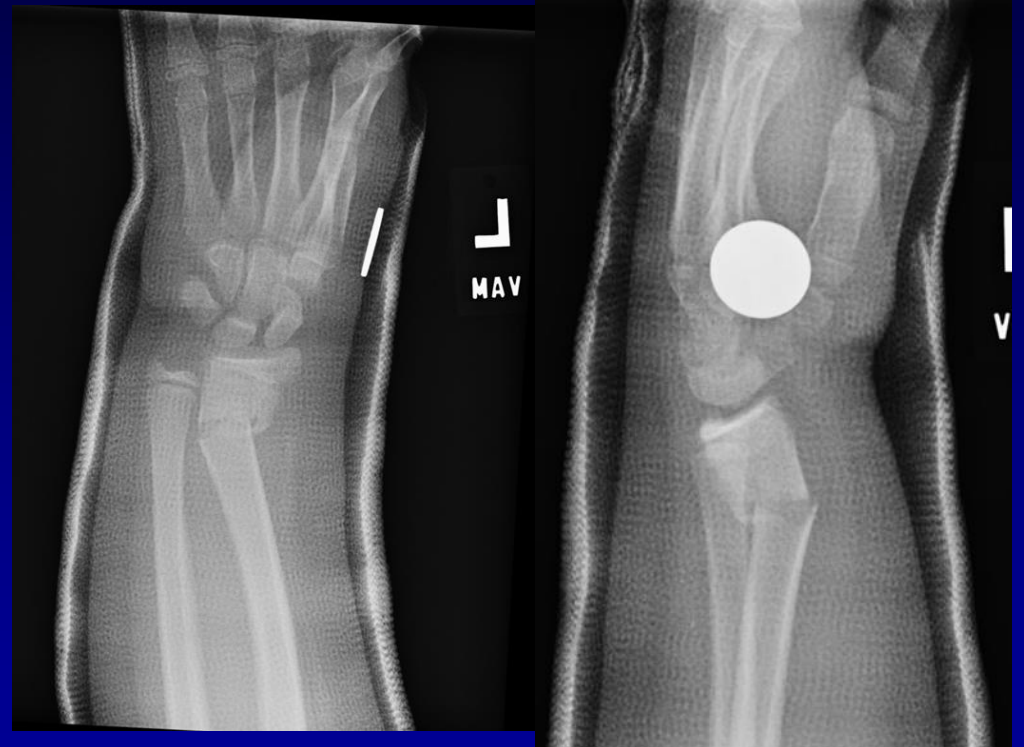
# Cast Index= A/B

*Ideal < 0.8*

- Long arm *or* short arm cast



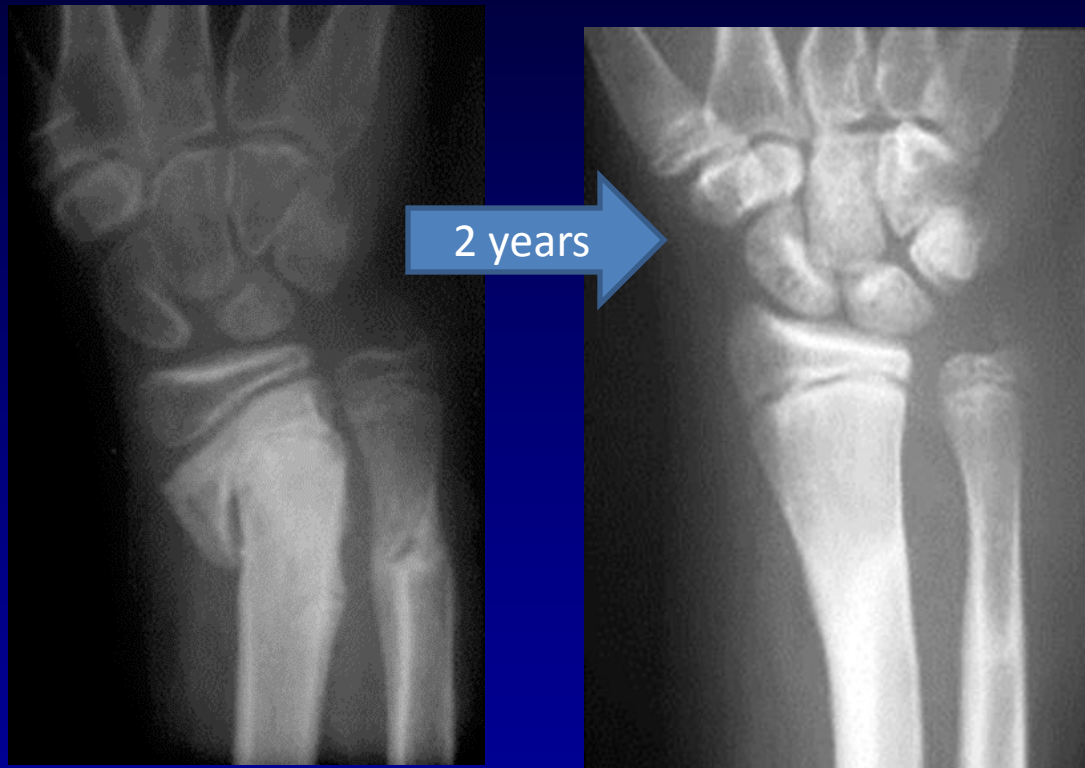
# Poor cast technique = Loss of reduction





# Acceptable Reduction

- 2 years of growth remaining
  - 20° AP angulation
  - 10° radial-ulnar angulation
  - 50% translation
    - 100% if < age 10



# Closed Treatment of Overriding Distal Radial Fractures without Reduction in Children

Scott N. Crawford, MD, Lorrin S.K. Lee, MD, and Byron H. Izuka, MD

*Investigation performed at Children's Orthopaedics of Hawaii, Pali Momi Medical Center, Aiea, Hawaii*

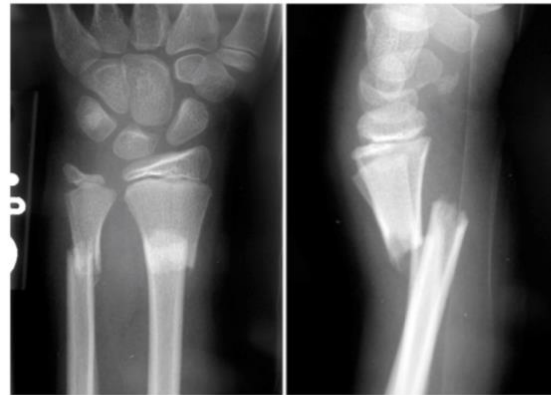


Fig. 2-A

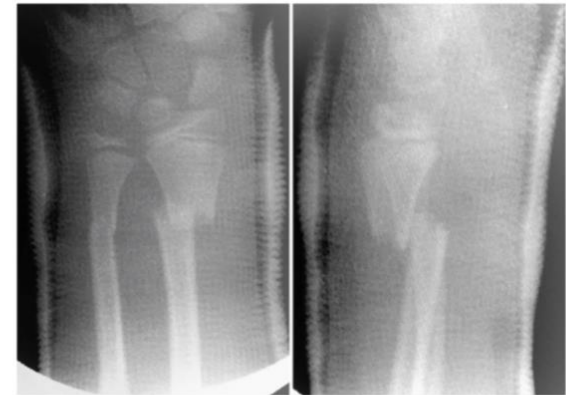


Fig. 2-B



Fig. 2-C

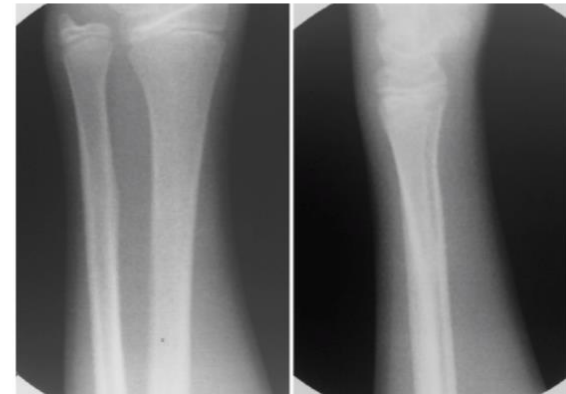
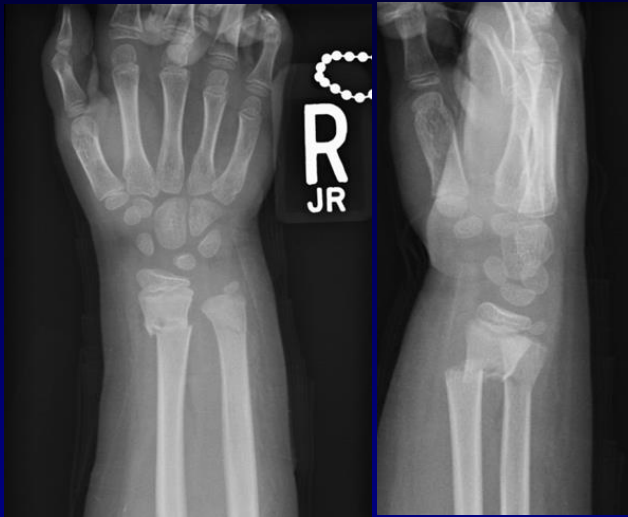


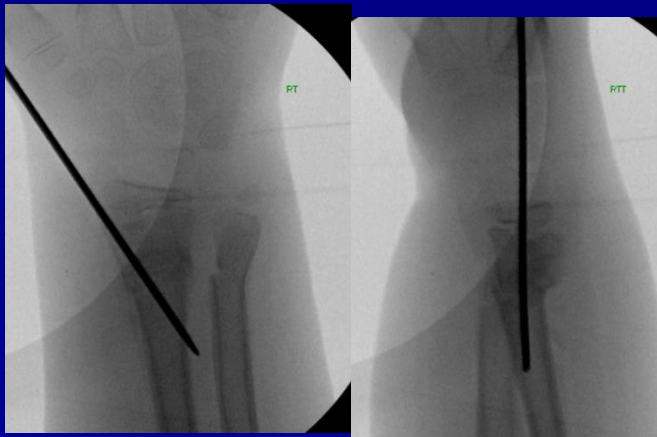
Fig. 2-D

# Surgical Treatment

## *Closed Reduction and Pinning*



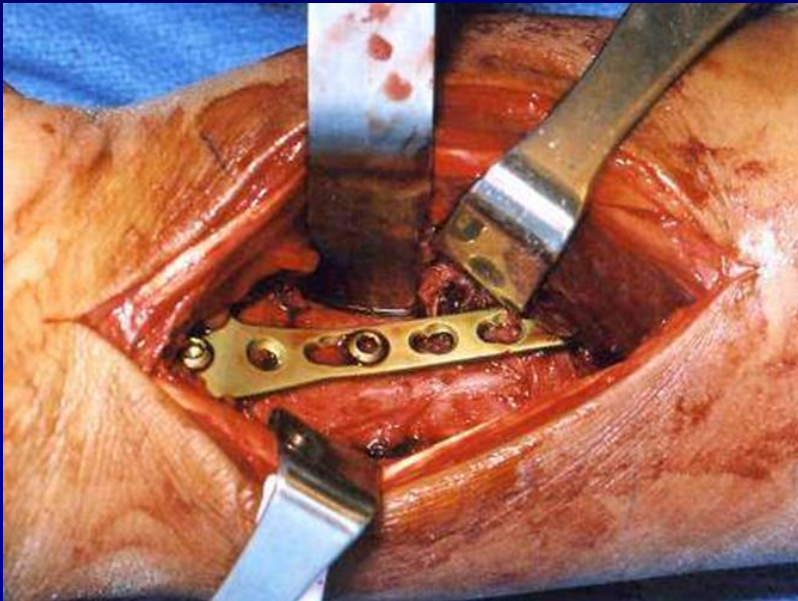
- Unstable or failed closed reduction
  - As late as 2-3 weeks after injury



# Surgical Treatment

## *Plating*

- Older child
- Comminution
- Volar approach



# Salter-Harris Fracture Management

- Similar to metaphyseal fractures *except*
  - May be intra-articular
    - SH 3-4
  - Repeat manipulation or manipulation after 10 days may damage physis
    - Growth arrest



# Surgical Management

- Closed reduction and pinning



- Plating
  - Older children
  - Severe comminution



# Complication : Growth Arrest

- ~ 5% of fractures
- Follow-up minimum of 2 years after injury
  - Displaced SH fractures
  - High-energy fractures



# Distal Radius Fractures



- Choices
  - 1. Closed reduction and casting
  - 2. Closed reduction and pinning
  - 3. Open reduction
    - Pinning
    - Plate fixation
- Follow-up for growth arrest