Isolated & Associated Radial Head Fractures: Tips for Successful Management

SF Trauma Course 2023

Anthony Ding, MD
Assistant Professor
Orthopaedic Trauma, Hand & Upper Extremity
Department of Orthopaedic Surgery
University of California, San Francisco

5/25/2023
Tips for Successful Management

➢ Choose the right indications

➢ Choose the right procedure

➢ Beware the PIN
Indications

Isolated Radial Head Fractures

• No history or findings of instability
Indications

**Isolated Radial Head Fractures**

- No history or findings of instability
- Mason I (nondisplaced) → nonoperative
Indications

Isolated Radial Head Fractures

• No history or findings of instability

• Mason I (nondisplaced) ➔ nonoperative

• Mason II (displaced > 2mm)
Indications

The treatment of isolated Mason type II radial head fractures: a systematic review

Fabian Lanznerath*, Michael Hackl, MD, Kilian Wegmann, MD, PhD, Lars P. Müller, MD, PhD, Tim Leschinger, MD

Department of Orthopedic and Trauma Surgery, University Hospital Cologne, Cologne, Germany

Systematic Review
Nonoperative vs operative treatment Type II RH

Key Findings:
• Comparable functional outcome scores
• Higher rates of OA with nonop Rx (11.9% vs. 5.2%)
Indications

Isolated Radial Head Fractures

• No history or findings of instability

• Mason I (nondisplaced) $\rightarrow$ nonoperative

• Mason II (displaced $>2$mm)
  • Mechanical rotation block $\rightarrow$ operative
Indications

Isolated Radial Head Fractures

- No history or findings of instability
- Mason I (nondisplaced) $\rightarrow$ nonoperative
- Mason II (displaced > 2mm)
  - Mechanical rotation block $\rightarrow$ operative
- Mason III (comminuted) $\rightarrow$ operative
Indications

Associated Instability

RH contribution to elbow stability:

• 2° Valgus Stability
• Longitudinal Stability (Essex Lopresti)
Indications

Associated Instability

⇒ OPERATIVE
Indications

Associated Instability

⇒ OPERATIVE
ORIF

Screw Fixation
- Isolated or associated displaced radial head
- Lateral approach to elbow
ORIF

Screw Fixation

- Isolated or associated displaced radial head
- Lateral approach to elbow
ORIF

Screw Fixation

- Isolated or associated displaced radial head
- Lateral approach to elbow
ORIF

Plate Fixation

• Displaced radial head and neck fracture
ORIF

Plate Fixation

• Beware PRUJ impingement
• Safe zone between Lister’s and styloid
Arthroplasty

Indications

- Comminuted radial head (Mason III)
- Comminuted radial neck
Arthroplasty

Do NOT overstuff – better to undersize

Finding the correct implant size:

• Length – PRUJ notch, native RH
• Diameter

Which implant??
Surgical Outcomes in Isolated vs Associated

Open Reduction and Internal Fixation of Radial Head Fractures

Do Outcomes Differ Between Simple and Complex Injuries?

Jeffrey M. Pike MD, MPH, Ruby Grewal MD, MSc,
George S. Athwal MD, Kenneth J. Faber MD, MHPE,
Graham J. W. King MD, MSc

Indications for Surgery:

- Isolated:
  - >2mm displacement
  - >30% articular surface
  - Mechanical block
  - Associated fracture or ligament injury
  - ORIF or arthroplasty

Outcomes:

Comparable PREE functional outcomes between isolated and associated RH fractures
ORIF vs Arthroplasty

Indications

• Comminuted radial head (Mason III)
• Comminuted radial neck
Beware the PIN

PIN courses along radial neck as it courses to dorsal compartment

- Supination – crosses 4 cm distal to RH
- Pronation – crosses 6 cm distal to RH
Tips for Successful Management

➢ Choose the right indications
   • Nonop for Mason I-II
   • Operative for Mason II+, associated instability

➢ Choose the right procedure
   • ORIF vs Arthroplasty

➢ Beware the PIN
Thank You