

FRACTURES AT THE BASE OF THE FIFTH METACARPAL: EPIDEMIOLOGY AND RADIOGRAPHIC FEATURES

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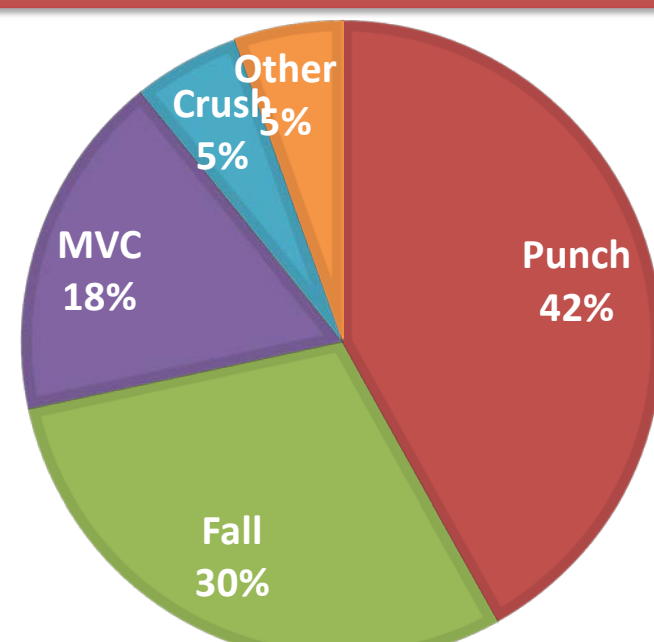
Introduction

- Fractures of the metacarpals encompass 18-44% of all hand fractures.
- The 5th metacarpal is the most commonly fractured metacarpal
 - Fracture of the base of the 5th metacarpal is second only to metacarpal neck fractures.
- This study evaluates the incidence, distribution, mechanism of injury and treatment of fractures of the base of the 5th metacarpal.

Methods

- Retrospective chart review of 74 patients with fractures at the base of the 5th metacarpal seen within a 5-year period.
- Reviewed:
 - Patient demographics
 - Mechanism of injury
 - Intra- vs extra-articular
 - Comminution
 - Displacement
 - Non-op and operative treatment
- Fracture patterns analyzed using Pearson's Chi-Squared Test to determine influence of each variable on operative vs. non-operative management.

Figure 1: Mechanism of Injury



Results

- 74 Fractures (53 male, 21 female)
- Average follow-up time was 35.19 ± 56.86 days. 39.1% lost to follow-up*.
- Intra-articular fractures of the 5th metacarpal were significantly more likely to require operative management than extra-articular fractures
 - $\chi^2(1, N=74) = 5.94, p=0.015$.
- Fully displaced fractures required operative treatment significantly more often than minimally displaced or nondisplaced fractures
 - $\chi^2(1, N=74) = 3.93, p=0.047$.
- Comminution had no significant effect on whether a fracture was managed operatively or non-operatively
 - $\chi^2(1, N=74) = 0.32, p=0.57$.

Table 1: Radiographic Features and Treatment

Radiographic Feature	Operative	Non-Operative	P-Value
Intra-Articular	13	35	
Extra-Articular	1	25	0.015
Comminuted	7	25	
Non-Comminuted	7	35	0.57
Minimally Displaced	7	32	
Displaced	5	8	
Non-Displaced	2	20	0.1

Figure 4: Comminution

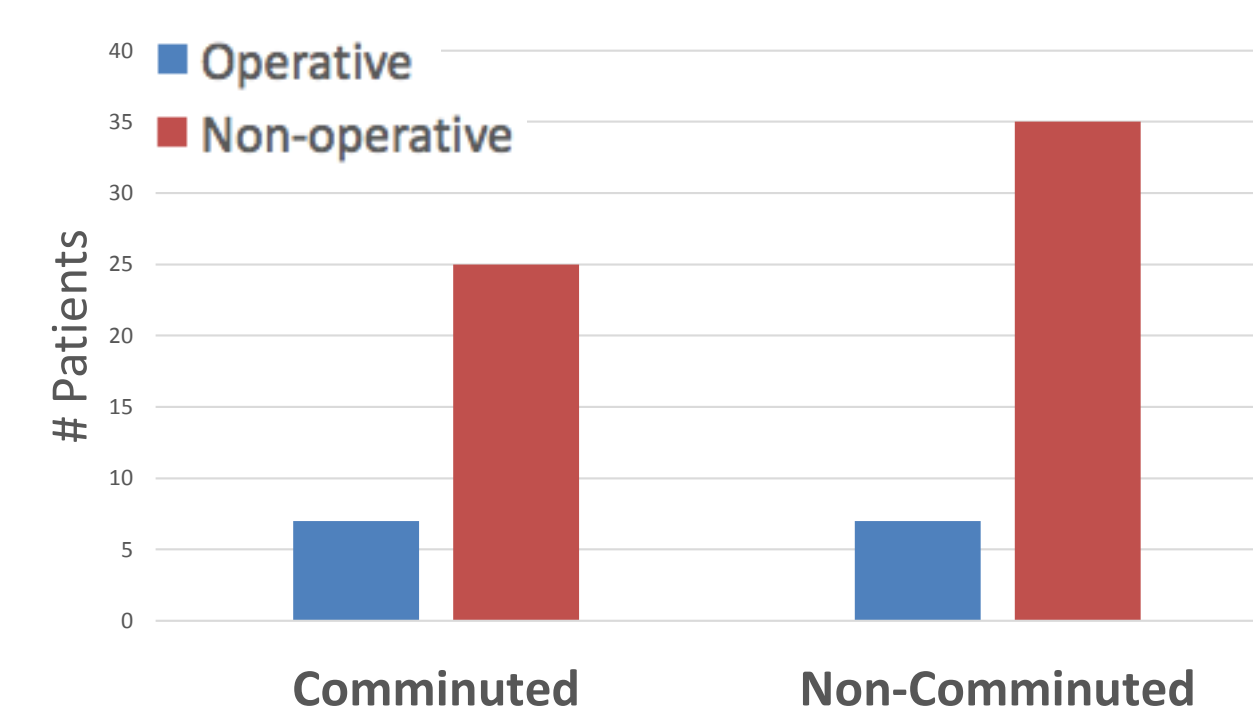


Figure 2: Pre- and Post- Closed Reduction with Percutaneous Pinning



Figure 3: Pre- and Post- Conservative Treatment and Splinting



Conclusions

- This study demonstrates that fractures of the base of the 5th metacarpal occur in a wide variety of patterns
- Particular features may increase the need for operative management.
 - Articular involvement and fracture displacement had a significant effect on the decision to operate.
 - Fracture comminution did not.
- Poor patient follow-up is common with hand trauma. This unfortunately limits analysis of functional outcomes.

Figure 5: Intra v Extra-Articular

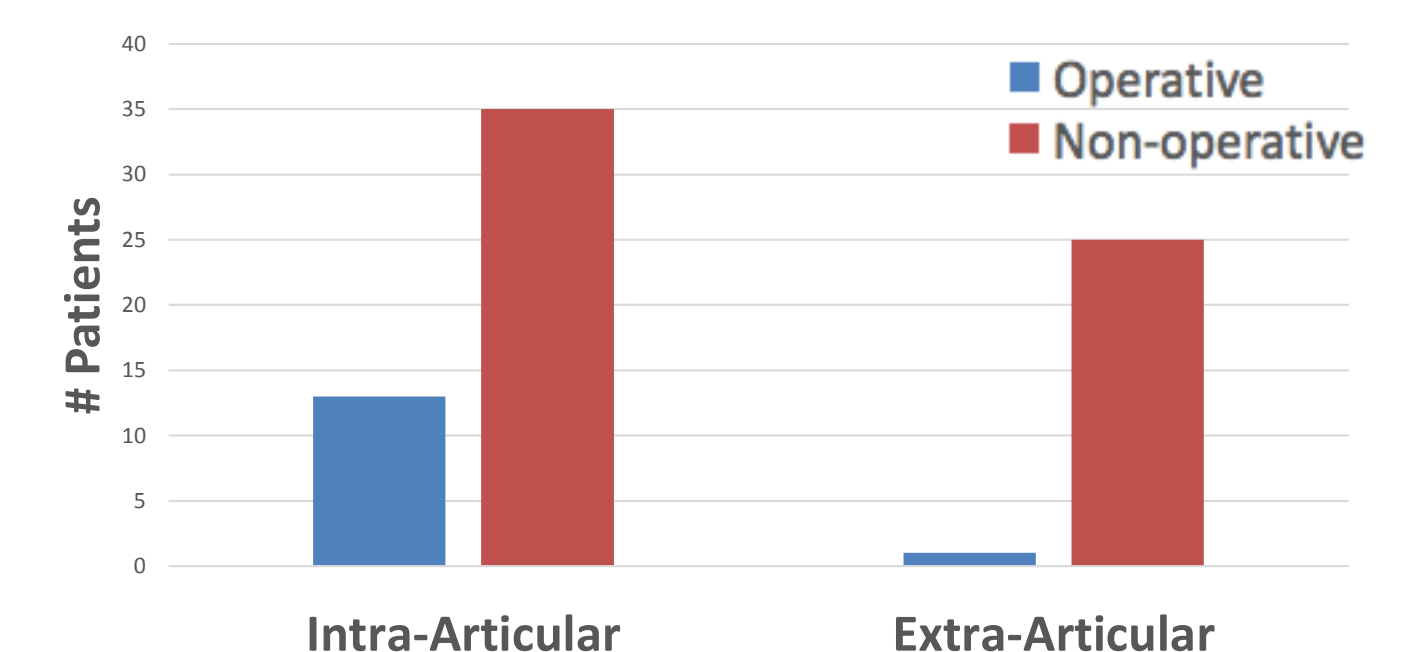


Figure 6: Displacement

