

Dislocation and Fracture-Dislocation Patterns of the 4th and 5th Carpometacarpal Joints: A Five Year Retrospective Analysis

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Background

- Carpometacarpal (CMC) dislocations and fracture-dislocations are rare injuries caused by high energy trauma and commonly missed on radiographs.
- The most commonly affected carpometacarpal joints are the 4th and 5th CMC joints.
- There is a paucity of large prospective or retrospective studies that report the incidence, distribution, mechanism of injury and treatment of the various injury patterns of 4th and 5th CMC dislocations and fracture-dislocations.

Objectives

- Delineate the incidence, distribution, and mechanism of injuries to the ulnar carpometacarpal complex.
- Determine effects of dislocation and fracture-dislocation patterns on the management of such injuries.

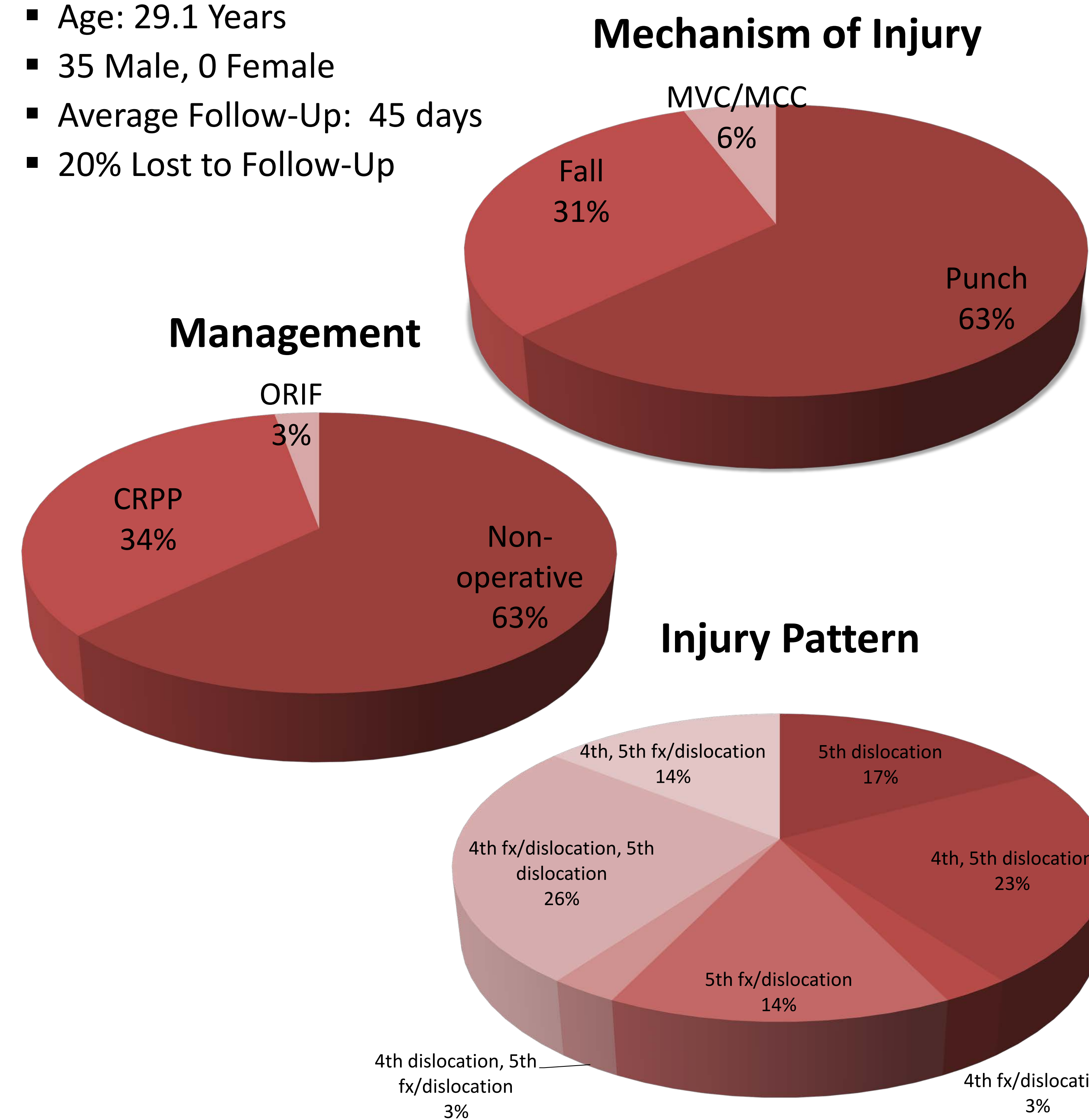
Methods

- A retrospective chart review was performed of 35 patients with 4th and 5th carpometacarpal dislocations and fracture-dislocations treated between years 2011 and 2016.
- Patients were stratified into eight groups based on the metacarpal involved and the presence of an associated dislocation, fracture-dislocation or a combination of both.
- Patient demographics, mechanism of injury, presence of hamate fracture, and treatment were compared across groups.
- Data was analyzed using Fischer's exact test and regression analysis.

Results

▪ Patient Characteristics

- Age: 29.1 Years
- 35 Male, 0 Female
- Average Follow-Up: 45 days
- 20% Lost to Follow-Up

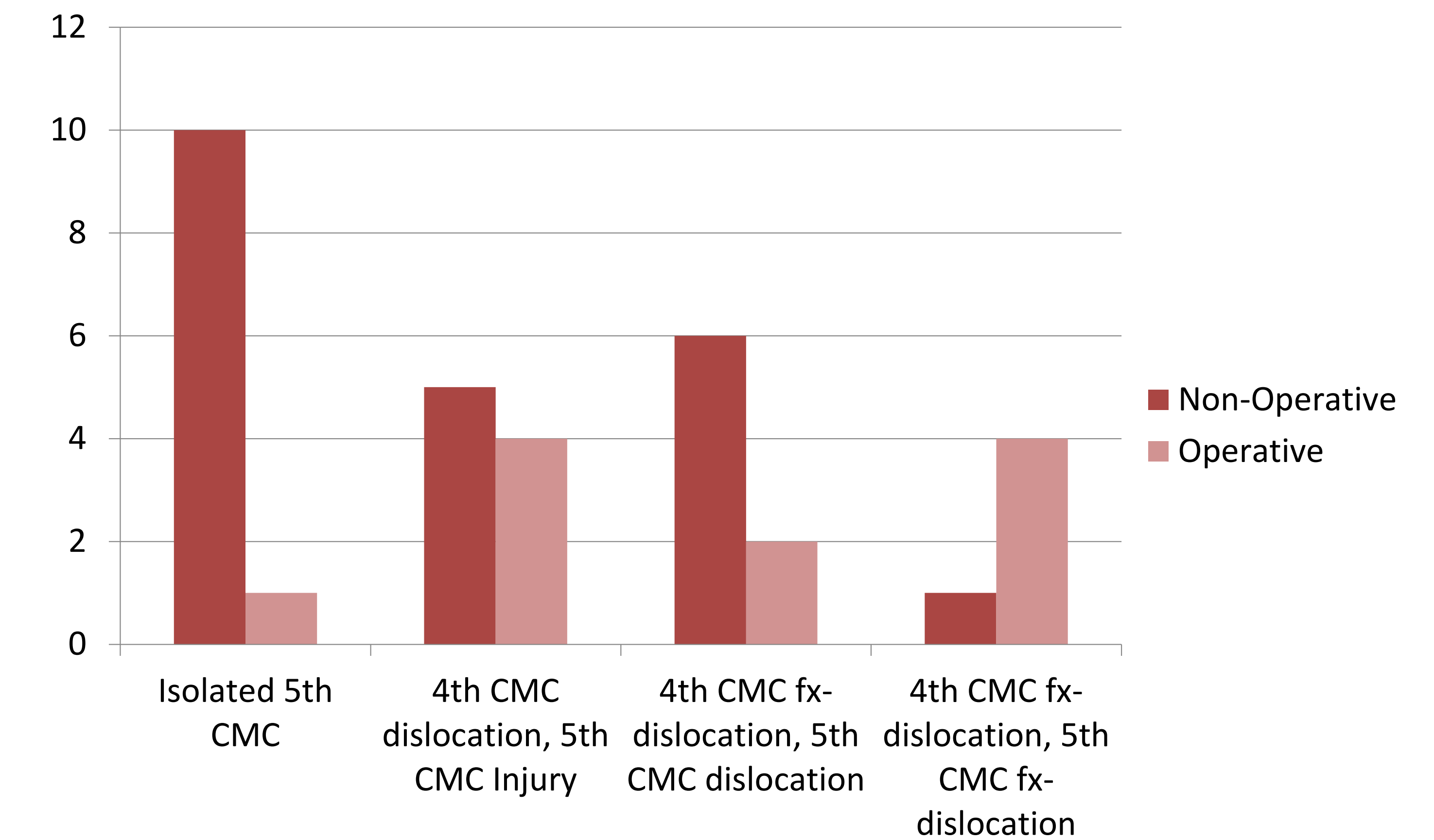


4th, 5th Metacarpal Fracture-Dislocation w/ Hamate Fracture

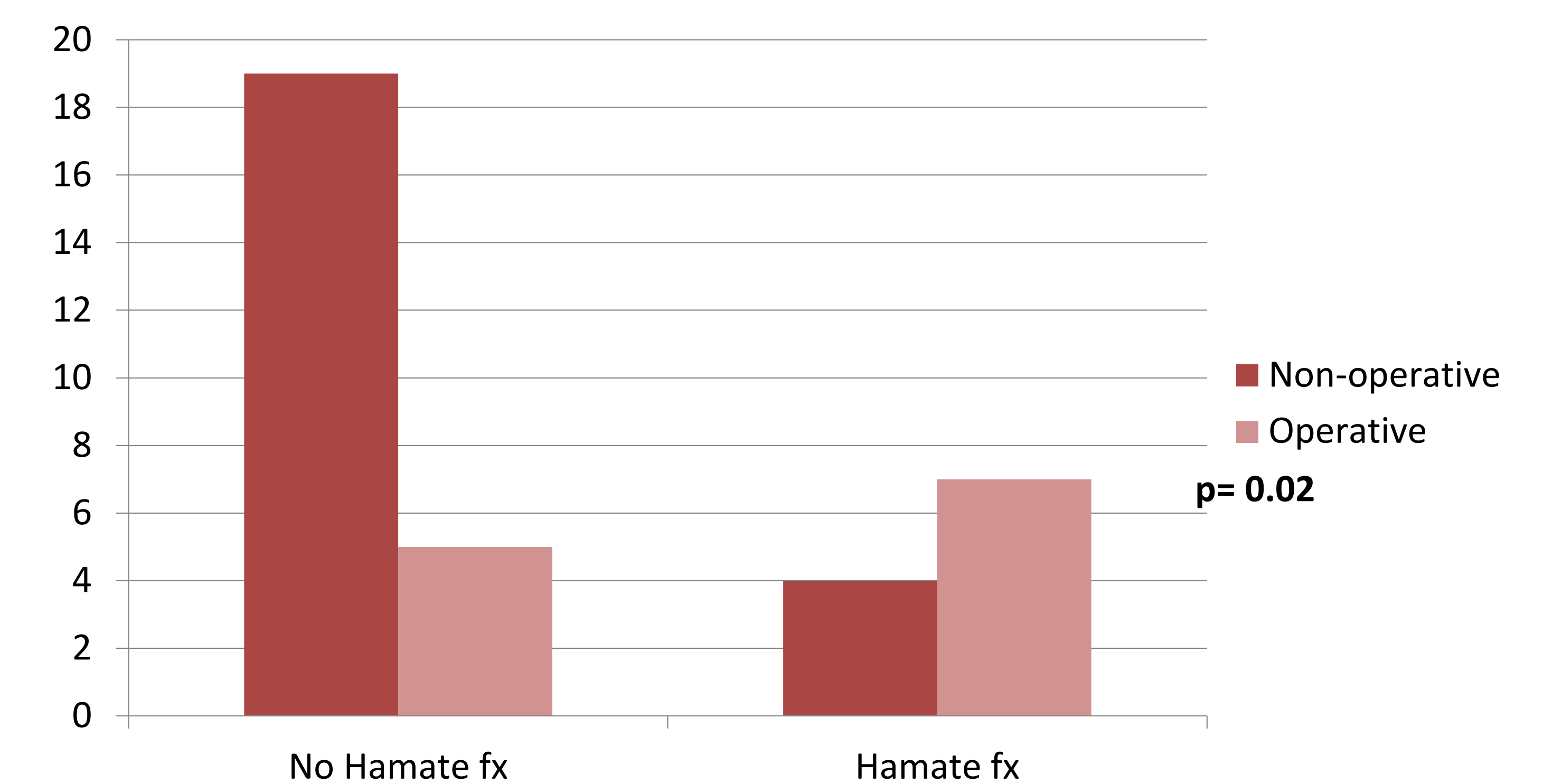


Results (cont.)

Extent of injury and operative management



Concurrent Hamate Injury and operative management



Conclusions

- Punching (62%) followed by fall (31%) were the most frequent mechanisms of injury. Mechanism of injury did not confer significance for operative intervention (p>0.05).
- 4th CMC fracture-dislocation with concurrent 5th CMC dislocation was the most common injury pattern (25%). Isolated injuries of the 4th CMC were the least common injury with only one isolated 4th CMC fracture-dislocation (2%).
- Presence of a hamate fracture for any injury pattern conferred significance for operative intervention (p<0.05).
- Only the combined 4th and 5th CMC fracture dislocation group had a significant difference in need for operative management compared to all others (p<0.05).