

Fracture Patterns Following Gunshot Wounds to the Upper Extremity

Ahmed M.S. Ibrahim, MD, PhD; Milad El Hajj, BS; Anthony Saliba, BS; Patrick I. Emelife, MD; Jonathan S. Lam, MD; Frank H. Lau, MD; Charles L. Dupin, MD; Kelly Babineaux, MD

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INTRODUCTION: Upper extremity fractures following gunshots are a commonly encountered scenario for surgeons in the emergency room. Despite this, there is sparse data published on fracture patterns associated with this mechanism of injury within a civilian population. The aim of this study was to describe fracture patterns in the upper extremity associated with gunshots at a Level 1 Trauma Center.

MATERIALS AND METHODS: A retrospective review of data collected from 2010 to 2014 at a Level 1 Trauma center based on a single Hand Surgeon's experience was performed. Demographic data and information on fracture patterns were collected and analyzed.

RESULTS: Two hundred fifty-nine patients were included in this study. A majority were male (90%) and African American (90%). Mean age was 31 years. 66.9% of upper extremity gunshot wounds affected the hand. The most prevalent forearm fractures involved the distal radius (39.65%) of which 18.97% were associated with concurrent hand injury. The most prevalent hand fractures were those of the metacarpal (25%) and phalangeal (22.8%) bones. Deeper structures of the hand and wrist were affected in only 13.4% and 6.8% of patients with minor hand and wrist lacerations, respectively. 39.1% of patients underwent operative intervention, 19.7% were admitted to the ICU for management of other injuries and 4.8% expired in the ED.

CONCLUSION: Analysis of upper extremity fractures identifies the most common fracture sites and their characteristics. This is the first study to describe fracture patterns in the UE resulting from gunshots within a civilian population. Further comparison of complication rates may permit broader insight into how patients are currently managed.