Delayed Diagnosis of Hand Injuries in Polytrauma Patients
(Poster)

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Delayed Diagnosis Of Hand Injuries In Poly-Trauma Patients


Abstract
Hand injuries represent 5-10% of emergency room visits in the U.S. with significant economic effects. Trauma patients are at high risk for delayed diagnosis of concomitant injuries, including hand injuries, with reports in the literature as high as 50%. Our goal was to examine the risk factors for and incidence of the delayed diagnosis of hand injuries at a Level 1 Trauma Center. A retrospective review was performed on all admitted trauma patients from 2000 through 2009. Patient demographics, ISS, GCS, injury specifics, length of stay, and timing of hand injury diagnosis related to admission date were noted. With an increase in ISS and a decreased GCS, trauma patients are increasingly at risk for delayed diagnosis of hand injuries with a concomitantly increased length of stay. As a delayed diagnosis of hand injuries is identified, physical and economic implications for patients, every effort should be made to expedite diagnosis in the poly-trauma patient. A standardized evaluation of the trauma patient with a focused tertiary survey is mandatory, particularly in patients with an altered mental status or multiple injuries.

Methodology
A retrospective review of admitted trauma patients with hand injuries from January 1, 2000 through December 31, 2009 were noted. Patients were assessed for:

- Age
- Gender
- Blood alcohol level
- Glasgow coma score (GCS)
- Injury severity score (ISS)
- Mechanism of injury
- Length of stay (LOS)
- Timing of hand injury diagnosis

A multiple linear regression model was used to determine risk factors for delayed diagnosis of hand injuries using SPSS 15.0.

Exclusion Criteria
- Isolated or conspicuous hand injuries.
- Distal radius fractures

Results
- 36,586 patients identified with 2736 with hand injuries. 738 patients met inclusion criteria.

Objective
To examine the risk factors for and incidence of the delayed diagnosis of hand injuries at a Level 1 Trauma Center.

Discussion
- 78.3% of patients were diagnosed on the day of admission, with 91.3% diagnosed by the following day.
- Patients with a decreased GCS and elevated ISS were noted to have a statistically significant delay in diagnosis.
- Length of hospitalization was also noted to be longer in the subset of patients with a delayed diagnosis of hand injuries.
- Metacarpal fractures were the predominant injury in our study and also the most likely injury to be initially missed.
- Motor vehicle collisions were the most common mechanism for injury in our patient population and the most common mechanism associated with a delay in diagnosis.

Limitations
- Retrospective review
- Unable to assess function outcomes or if patients required surgical intervention as a result of delay

Conclusions
- With an increase in ISS and a decreased GCS, trauma patients are increasingly at risk for delayed diagnosis of hand injuries with a concomitantly increased length of stay.
- Every effort should be made to expedite diagnosis in the poly-trauma patient.
- A standardized evaluation of the trauma patient with a focused tertiary survey is mandatory, particularly in patients with an altered mental status or multiple injuries.
- In this subset of patients, however, a short delay in the diagnosis of hand injuries may be unavoidable.