Background

The majority of proximal humerus fractures in pediatric patients can be treated non-operatively in an outpatient setting. There is limited literature directly comparing the effectiveness of non-operative vs. operative treatment for significantly displaced proximal humerus fractures in children and adolescents. Despite this, there is an increasing interest in surgically treating displaced proximal humerus fractures in this patient population.

Objectives

To assess trends in management of pediatric proximal humerus fractures treated within an inpatient setting. We hypothesized that the rate of operative treatment is increasing and that certain demographic factors are associated with increased rates of surgery.

Methods

The Healthcare Cost and Utilization Project (HCUP) Kids’ Inpatient Database (KID) was evaluated for the years 2000 – 2012.

- Proximal humerus fractures were identified using ICD-9 CM diagnosis codes.
- ICD-9 CM procedure codes were used to identify patients who underwent surgical treatment.
- Univariable and multivariable logistic regression analysis were used to determine variables associated with greater proportion of surgical treatment.
- Statistical analysis was performed utilizing SAS statistical software v9.4 (SAS Institute, Inc. Cary, NC). Statistical significance was set at P<0.05.

Results

4,594 proximal humerus fracture admissions identified 2,013 (43.8%) treated surgically

Factors associated with increased surgical treatment after multivariable logistic regression:

- Increased age (P<0.001)
- More recent year (P<0.001)
- Admission to children’s hospital (P<0.001)

Medicaid payer status associated with lower proportion of surgical treatment (P<0.001)

Conclusion

- The rate of operative treatment for proximal humerus fractures treated in an inpatient setting increased over time from 2000 – 2012.
- Increased surgical rates were associated with: increased age, treatment at a children’s hospital, and non-Medicaid insurance status.
- Further study is needed to provide fracture specific factors associated with increased surgical treatment as well as comparative effectiveness of surgical vs. non-surgical treatment of pediatric proximal humerus fractures.

References