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Characterization of Sports Injuries Requiring Hospitalization and Associated Procedures among Child and Adolescent American Football Players: An Analysis of the Kid's Inpatient Database from 1997-2012

Introduction: American football is a contact sport associated with high injury and hospitalization rates. There is a lack of high-powered, nationwide analyses characterizing the types of injuries and associated procedures among football-related injuries requiring hospitalization.

Methods: The Kid's Inpatient Database (KID) was queried from 1997 to 2012 for American football injuries in pediatric patients using Ecodes (E007.0). Patient demographics, admitting diagnoses, surgical procedures, and perioperative outcomes were analyzed.

Results: 2,420 American football injuries were identified. Mean patient age was 14.4 years with a male prevalence (99%) and a majority of patients being white (55%). 32% of patients were admitted on a weekend with 10% undergoing elective surgery. Average length of stay was 2 days and 96% of patients underwent routine discharge. Most prevalent diagnoses were concussion (8%), closed femoral shaft fracture (8%), closed tibial/fibular shafts fracture (7%), unspecified closed lower leg fracture (5%), closed radial/ulnar shafts fracture (3%), closed upper end tibia fracture (2%), and closed lower end radius fracture (2%). Most prevalent primary procedures were open reduction/internal fixation (ORIF) of the tibia/fibula (14%), ORIF of the femur (7%), closed reduction/internal fixation (CRIF) of the femur (5%), ORIF of the radius/ulna (5%), CRIF of the radius/ulna (3%), and CRIF of the tibia/fibula (3%). 99 patients (4%) experienced a complication, most commonly anemia (34, 1%) followed by bowel (30, 1%) and neurologic (10, 0.4%) complications.

Discussion: Pediatric football players, when hospitalized for a sports injury, were most likely to present with a concussion, followed by closed femoral, tibial/fibular, or radial/ulnar fractures. Patients were most likely to undergo an ORIF of the tibia/fibula, with ORIF of the femur a close second. Most patients had an uncomplicated hospital stay and were discharged within three days of admission.