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United States Trends in Medial Ulnar Collateral Ligament Reconstruction: A retrospective Review of a Large Private-Payer Database from 2007 to 2011

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Objectives: Purpose: Overuse injuries to the elbow in the throwing athlete are common. Ulnar collateral ligament reconstruction (UCLR), commonly known as Tommy John surgery, is performed on both recreational and high-level athletes. There is no current literature regarding the incidence and demographic distribution of this surgical procedure in relation to age, location within the United States (U.S.), and gender. The purpose of this study is to determine the current demographic distribution of UCLR within the U.S.

Methods: Methods: A retrospective analysis of private payer database using the PearlDiver Supercomputer (Warsaw, IN) was performed to identify UCLR procedures performed between the years of 2007-2011. The Current Procedural Code (CPT) 24346 (reconstruction of the ulnar collateral ligament of the elbow with the use of a tendinous graft) was used. Statistical analysis was performed as appropriate using STATA (Version 12.1; Statacorp; College Station, TX, USA).

Results: Results: Between 2007-2011, 790 patients underwent UCLR. The overall average annual incidence was 2.16+/-.027 per 100,000 patients, but was 31.9+/-.39 for patients aged 15-19. The average annual growth was 5.72%. There were 695 males and 95 females. Fifteen to 19 year olds accounted for significantly more procedures than any other age group 56.8% (p<0.001), followed by 20 to 24 year olds 23.4%. The incidence of UCLR in the 15-19 year old group increased at an average rate of 6% per year (incidence rate ratio = 1.06, p=0.025). The south region performed significantly more UCLR than any other region p<0.001. The number of procedures significantly increased over time (p=0.039).

Conclusion: Conclusion: UCLR was performed significantly more in patients aged 15-19 than any other age group. The average annual incidence of UCLR per 100,000 people for patients aged 15-19 is 31.9. The number of UCLR is increasing over time. Further work should address risk-reduction efforts in this at-risk population.
Extremity Fractures Associated With ATVs and Dirt Bikes: A 6 Year National Epidemiological Study

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Objectives: All-terrain vehicle (ATV) and dirt bike use is increasing in the US and is associated with risk of traumatic injury. Extremity fractures are common injuries associated with these vehicles. The purpose of this study is to compare and contrast the patterns extremity fractures associated with ATVs and dirt bikes. Our hypothesis is that these different vehicles will result in similar rates of high impact injuries, but differences in vehicle stability will result in greater proportions of upper extremity fractures associated with ATV use.

Methods: The National Electronic Injury Surveillance System (NEISS) was used to acquire data for extremity fractures related to ATV (3-wheels, 4-wheels, and number of wheels undefined) and dirt bike use from 2007-2012. Locations were coded as shoulder, upper arm, elbow, lower arm, wrist, hand, upper leg, knee, lower leg, ankle, foot, and toe. The data were stratified according to age and gender for each year. Incidence rates were calculated on a per vehicle basis using previous estimates of the number of ATVs and dirt bikes in the country.

Results: The database yielded an estimate of 229,362.52 extremity fractures from 2007-2012. An estimated total of 130,319.20 fractures were associated with ATVs, while 99,043.37 were associated with dirt bikes. The incidence rates of extremity fractures associated with ATV and dirt bike use were 3.87 and 6.85 per 1000 vehicle-years. Most fractures were in patients 10-19 years of age, after which the number of fractures decreased with age. The largest proportion of all fractures occurred in the shoulder (27.19%), followed by the wrist and lower leg (13.77% and 12.36%, respectively). This distribution of fractures was consistent among ATV use for all age groups except in the 0-9 year olds, where the lower arm and wrist were the most commonly fractured locations. Fracture distribution associated with dirt bike use also followed this general pattern, with the exception of 0-9 and 10-19 year olds having increased proportions of lower arm fractures. When comparing the genders, males had much larger proportions of fractures than females at all locations, except for the upper arm. When comparing the specific injury locations for different vehicle types, there were no differences in the distribution of the location of fractures among 4-wheeled or unspecified ATVs. However, 3-wheeled ATVs and dirt bikes had much larger proportion of lower leg, foot and ankle fractures compared to the other vehicle types.

Conclusion: Extremity fractures are among the most common type of injury resulting from ATV and dirt bike use. Our results demonstrated a pattern of injury where the shoulder and lower arm were the most commonly injured locations. This pattern was inconsistent among females, the very young, and 3 wheeled ATVs and dirt bikes. These differences could be due to both rider related factors and vehicle design factors. Knowing commonly fractured locations, the use of additional protective equipment specific to these injuries may be beneficial. Additionally, participants should be cautioned of the