



In the Rough: Facial Trauma Resulting from Golf

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ABSTRACT

Objectives/Hypothesis:

Golf has a strong historical foundation in USA and is a popular sport among all ages. Over time, safety considerations must constantly adapt to incorporate the changes within a sport. We aimed to use a nationwide database to estimate incidence of facial trauma sustained from golf and further delineate injury patterns, as this information may potentially assist patient evaluation and counseling.

Methods: The Consumer Product Safety Commission's Nationwide Electronic Injury Surveillance System was evaluated for ED visits resulting from golf-related injuries. Patient entries were evaluated for demographics, mechanism of injury, and clinical injury characteristics.

Results: Median patient age was 9 years, 67.9% were male, and the most common diagnoses were laceration (70.4%), contusion/abrasion (20.0%), and fracture (7.3%). Most common locations involved in fractures were nose, orbit, and mandible. Most common devices involved in injuries were golf clubs (65.7%), golf balls (14.8%), and carts (9.3%).

Conclusions: Golf-related injuries are inevitable; however, equipment related injuries can be prevented with safer teaching and usage.

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INTRODUCTION

Golf has a strong foundation internationally and is a popular sport among all ages. An estimated 60 million play across the world.⁴ Changing technology has allowed for equipment improvement such as golf carts for faster travel¹, clubs that aid in superior swing and ball distance, and even alterations to physical technique.

New technology can come at a cost, however; reports of injuries in golf are not uncommon. Commonly reported causes are variable including being struck with equipment or missile, golf carts, or technique. Multiple reports of injuries in the literature have traditionally focused on orthopedic and neural complications.² In fact, some recent literature has begun to reveal that head trauma complications are a concerning area especially within children and adolescents who enjoy this sport.³ Golf carts are especially dangerous with many papers reporting their tragedies.^{5,6}

This information leads the authors to believe that safety considerations must constantly adapt. To the authors' knowledge golf-related facial trauma has not been investigated database to estimate incidence of facial trauma sustained from golf and further delineate injury patterns, as this information may potentially assist patient evaluation and counseling.

METHODS AND MATERIALS

The NEISS database offered by the U.S. Consumer Product Safety Commission contains information about ED visits for injuries stemming from consumer products. This database was searched for ED visits with the diagnosis of "golf" in the face for the most recent 5-year period available (2010-2014). This resource has proven invaluable in numerous prior analyses in the emergency medicine and pediatric literature examining incidence and demographic trends of injuries related to consumer products, as it offers information regarding national incidence, patient demographics, types of injuries, and outcomes.⁷⁻¹⁴ A stratified probability sample of visits to the nearly 5,000 EDs nationwide are extrapolated from the 100 hospital EDs participating in this database,^{7,9,13} allowing for an estimate of national incidence organized by diagnoses and specific products.

Each relevant case entry was examined for patient demographics and outcomes. Furthermore, the 751 total golf-related facial injury cases found included 1-2 sentence narratives, and each of these narratives were examined in an attempt to elucidate the mechanism or circumstances surrounding the injury. Data collection was completed in October 2015.

RESULTS

From 2010-2014, there were 751 entries extrapolating to an estimated 27,101 ED visits (Figure 1) for golf-related injuries. Median patient age was 9 years, 67.9% were male, and the most common diagnoses were laceration (70.4%), contusion/abrasion (20.0%), and fracture (7.3%) (Figure 2).

Most common locations involved in fractures were nose, orbit, and mandible. Most common devices involved in injuries were golf clubs (65.7%), golf balls (14.8%), and carts (9.3%) (Figure 3). Children and teenagers were involved in the majority of injuries (Figure 4). A trend from years 2010 to 2014 showed decreasing amounts of lacerations and abrasion/contusion with stable fracture incidence (Figure 5). A small amount of these injuries were related to miniature golf (2.7%).

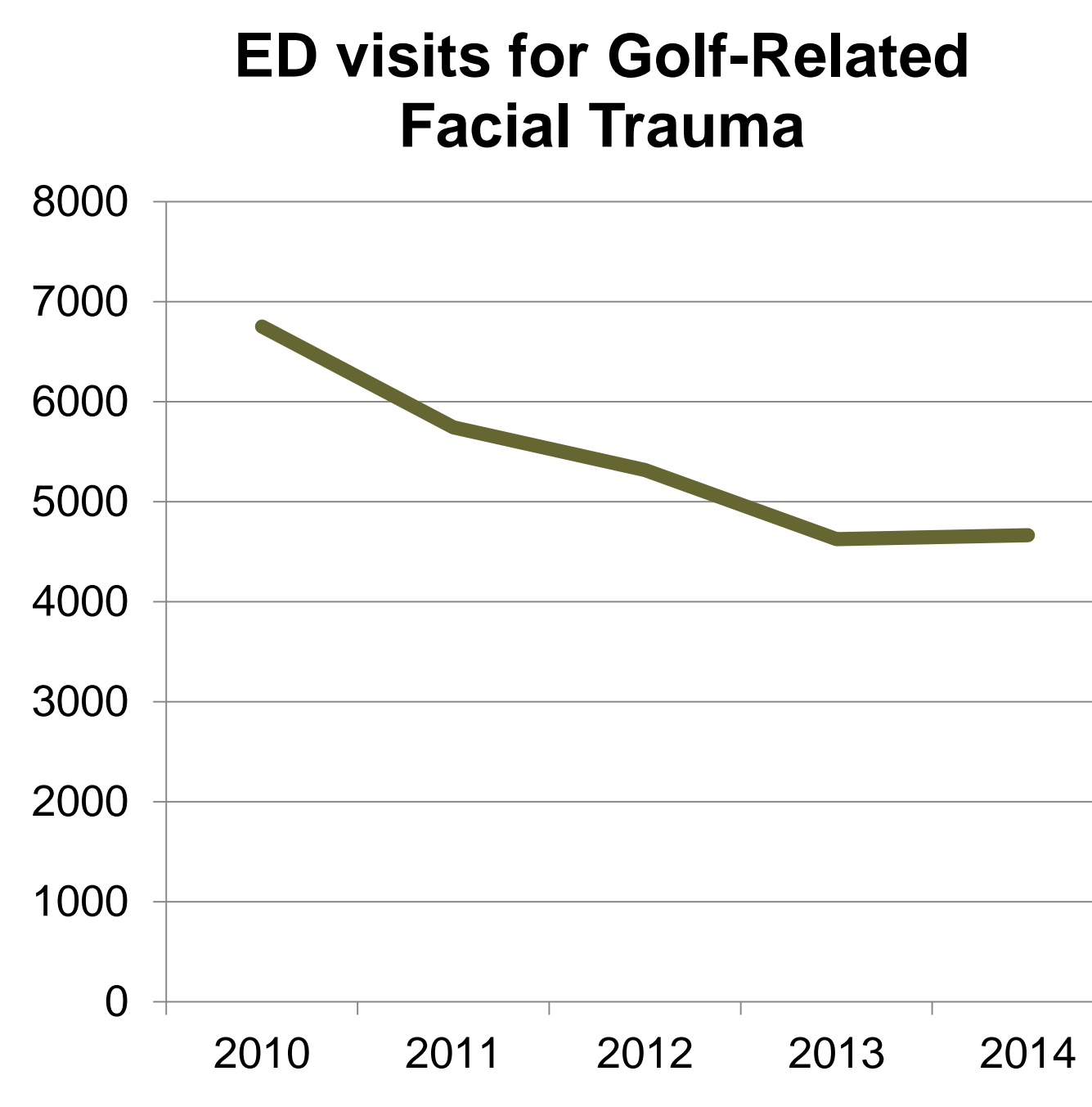


Figure 1. Estimated Nationwide Incidence of ED Visits for Golf-Related Facial Trauma

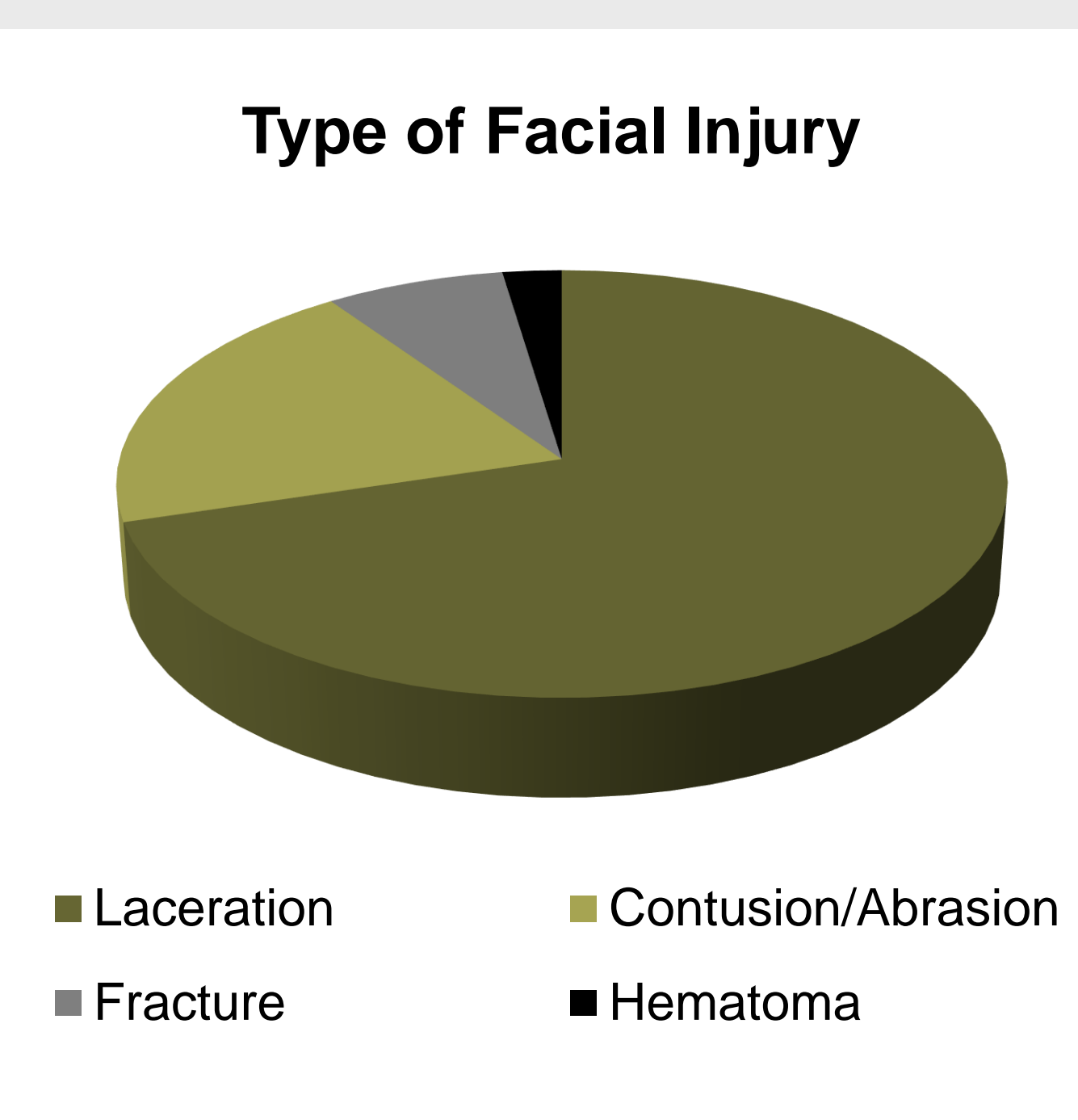


Figure 2. Types of golf-related facial injuries in percentages: laceration 70.40%; contusion/abrasion 20.00%; fracture 7.30%; hematoma 2.40%

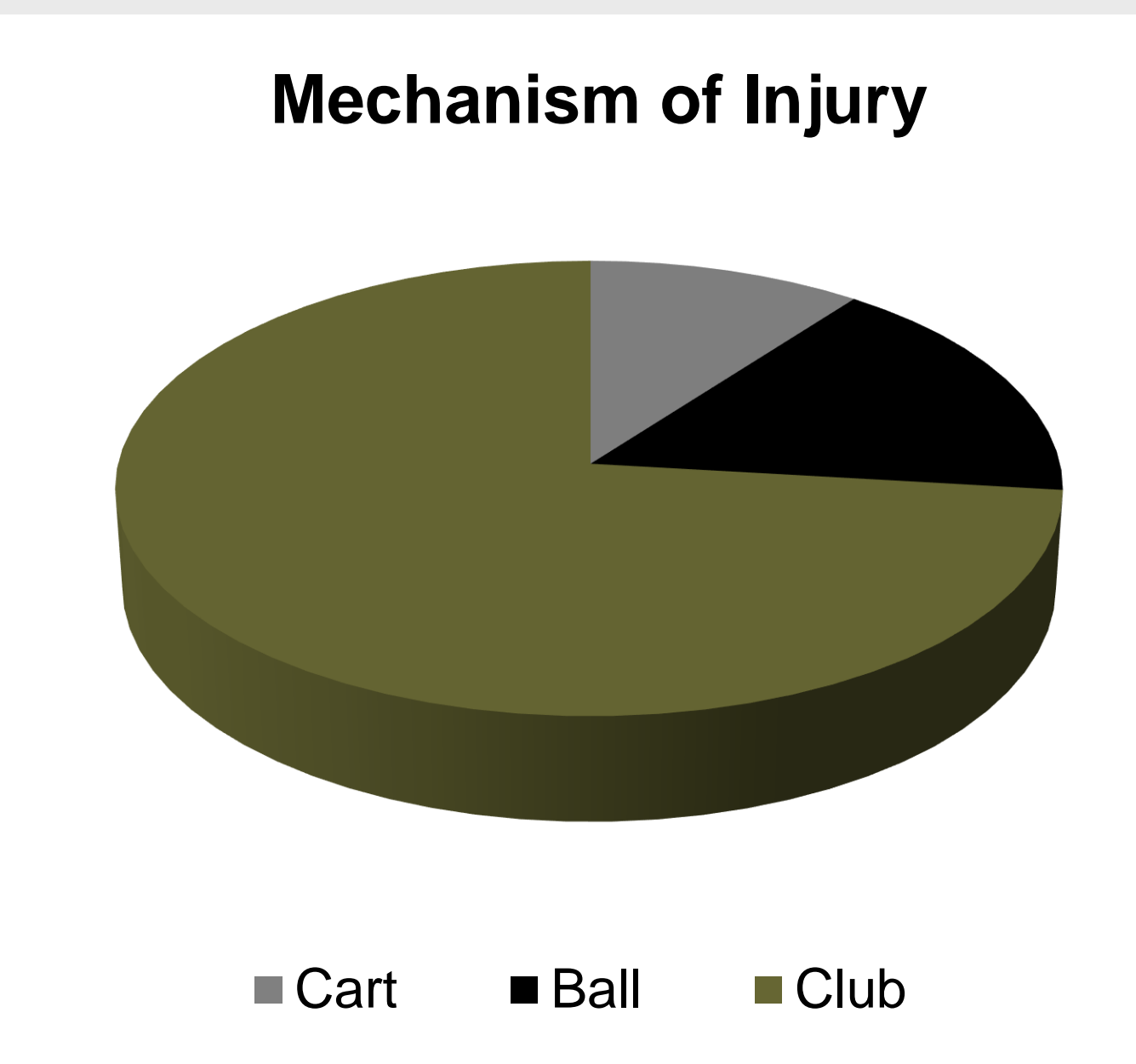


Figure 3. Mechanism of golf-related facial injuries in percentages: golf club 65.70%; golf ball 14.80%; golf cart 9.30%

Age Distribution

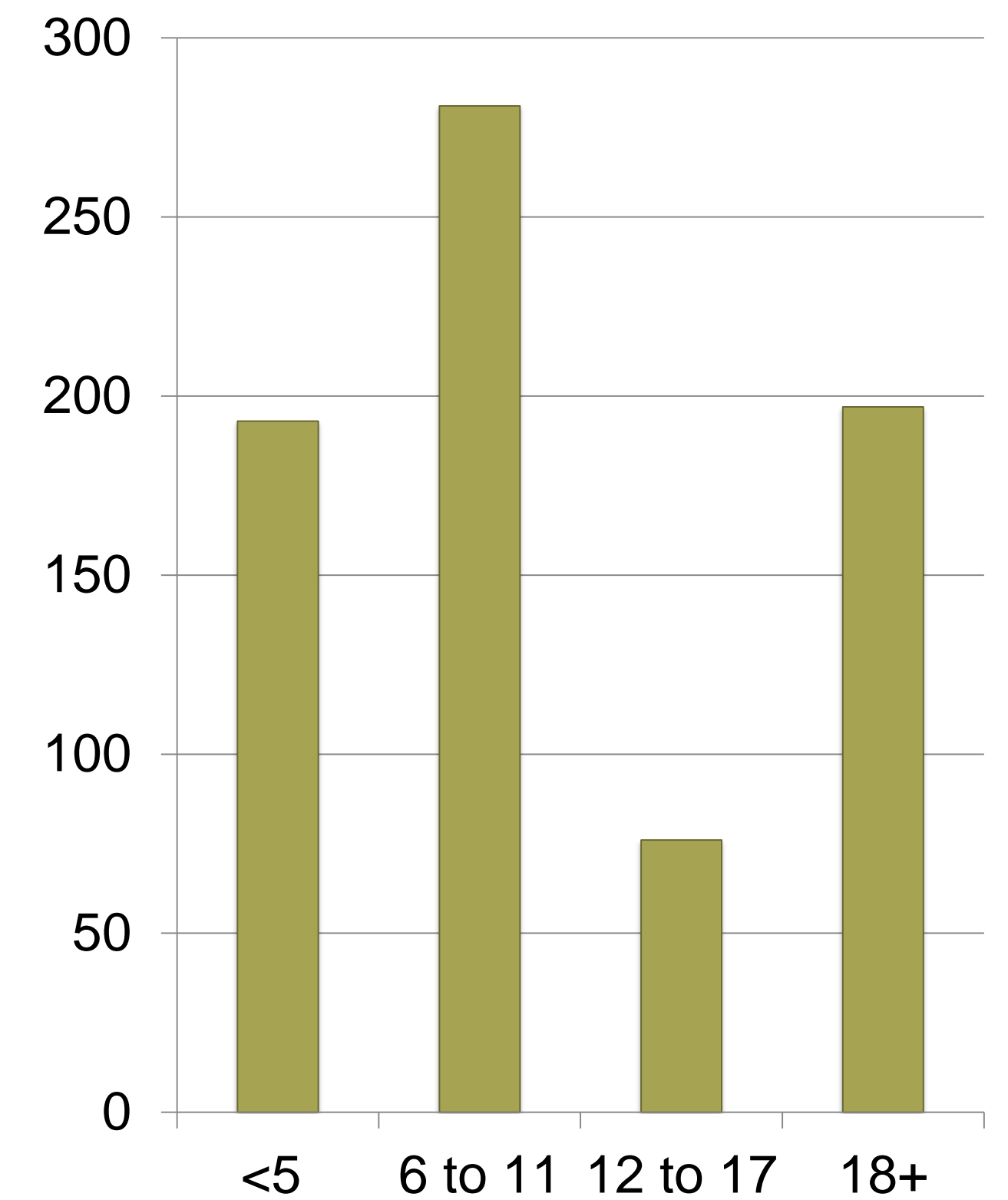


Figure 4. Age distribution of patients presenting to an ED golf-related facial trauma

Incidence of Injury Type

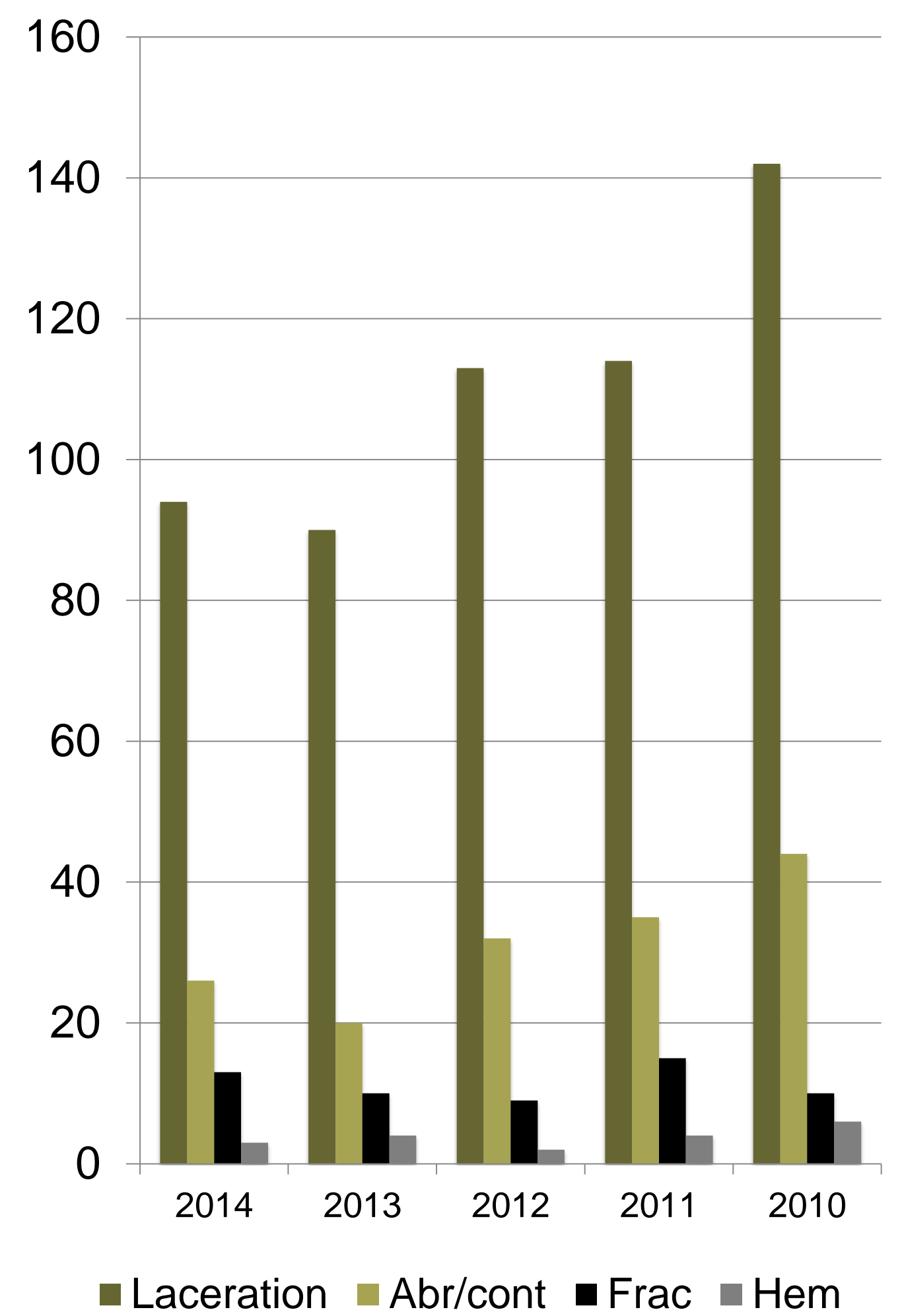


Figure 5. Incidence of injury type by year 2010-2014

CONCLUSIONS

Golf-related injuries are inevitable; however, equipment related injuries can be prevented with safer teaching and usage. Also, with the majority of injuries were reported in patients who were under 18 years of age, safety regulations may need reconsidered regarding minors who are present at golf courses and the safe equipment usage by these age groups.

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