

Maxillofacial and Dental Injuries Sustained in Hurling

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Abstract

The incidence of facial injuries in hurling has decreased since the introduction of helmets with facial protection. The aim of this study was to identify the incidence of facial and dental injuries sustained in hurling training or matches and compliance with wearing helmets, with or without modified or unmodified faceguards. This prospective study included all patients who attended the Mid Western Regional Hospital Limerick, with injuries sustained while playing hurling during 2007 and 2008 seasons. The study population included 70 patients. Forty two (60%) injuries occurred during practice and 28(40%) during matches. Fifty two players (75%) sustained facial injuries whilst no helmet was worn. Eighteen injuries (25%) were sustained by players wearing helmets. The study demonstrates that 60% of injuries occur during training when players do not wear helmets. We support the recent introduction by the GAA making it compulsory to wear helmets with faceguard protection from January 1st 2010.

Introduction

Maxillofacial and dental trauma from sports injuries contributes a significant proportion of workload for any Oral and Maxillofacial Surgery Department. Various studies indicate that sports injuries account for 6 â 33 % of maxillofacial trauma ^{1,4}. In Ireland these are commonly from hurling, gaelic football, soccer, rugby and horse riding. Previously those playing hurling could opt to wear helmets with no faceguards, helmets with modified faceguards or helmets with approved faceguards. Adult players were not required, by the governing association, to wear protective headgear until 2010. Recent regulations from the Gaelic Athletic Association require players to wear standardised helmets with faceguard protection for both training and competitive matches. Hurling is currently played by approximately 200,000 players in Ireland and the game is regulated by the Gaelic Athletic Association. It is played by two teams each comprising 15 players. Injuries most commonly occur when two players compete for the ball or a defender is trying to dispossess the opposing player. Injuries to the face (28%) and hands (33%) predominate ¹.

Carroll ³, in a 1 year retrospective study in 1993, revealed 110 sports related facial fractures presented to Cork University Hospital. Hurling contributed to 21% (23) of these. O Donoghue ², identified 55 facial fractures from hurling in the same unit in 1975. The introduction of protective headgear resulted in a 50% reduction of hurling related facial fractures. The first helmet used in hurling was the skull cap introduced to University College Cork hurling team in 1969. The Canadian ice hockey helmet was introduced to Ireland in the mid 1970â s and these were subsequently modified with faceguards added ². The first helmet with unmodified faceguard was introduced in the late 1980â s. This prospective study evaluates the incidence of maxillofacial and dental injuries sustained whilst playing hurling presenting to Mid Western Regional Hospital Limerick. We also aimed to identify whether injuries were occurring in practice or matches and the level of compliance with wearing helmets and what type of protective headgear was worn by players.

Methods

All patients treated for facial hurling injuries in the Accident and Emergency, Ear Nose and Throat and Oral and Maxillofacial Departments in Mid Western Regional Hospital Limerick between April 31st 2007 and July 1st 2008 were recorded. The research and ethics committee of Mid Western Regional Hospital Limerick granted permission for this prospective study. The following variables were recorded 1) age; 2) gender; 3) aetiology of injury; 4) nature of injury and treatment; 5) whether a player was wearing a protective helmet and what type; and 6) site of injury, practice or match.

Figure 1: Photo reproduced with permission of Brian Lohan

Results

The study population included 70 patients (65 male, 5 female). The majority of injured patients were male, with women accounting for 7% of injuries. The mean age of those injured was 20 years (range 6-36 years). The aetiology of injury was from 1) impact from hurley, 58 (84%); 2) collision accounted for 10 (13%) injuries; and 3) blow from sliotar accounted for 2 (3%). The facial injuries were divided into two groups 1) Injuries with no helmet, n =52 which accounted for 75% of study population. These consisted of 32 facial lacerations, 10 facial fractures, 5 soft tissue injuries and 5 dental injuries. 2) Injuries with helmet n =18 which accounted for 25% of all injuries, 6 facial lacerations, 5 facial fractures, 6 soft tissue injuries and 1 dental injury. The helmet injuries group(n=18) was subdivided into three groups 1) helmet with no faceguard, 2) helmet with modified faceguard and 3) helmet with unmodified faceguard.

These results show that the majority of injuries (75%) in the study group occur when no helmet was worn. The helmet injuries group comprised 25% of injuries. The small number of injuries in the helmet with no faceguard group may be attributed to the fact that these helmets are less commonly worn by players. When comparing the helmet with modified faceguards group (n=12) to helmet with unmodified faceguards group (n=3), the results reveal that the modified faceguard group has significantly more injuries. This may be attributable to the fact that these modified helmets afford less protection as there is less lateral facial coverage and bars are removed to improve vision.

Injuries occurred during practice sessions or matches. The results show that 42 (60%) of injuries occurred during practice. Of these, 31 wore no helmet and 11 wore a helmet when injured. Competitive matches accounted for 28 (40%) injuries, of these 21 wore no helmet and 7 wore a helmet at time of injury. The helmet with modified faceguard in Figure 2a provides insufficient lateral facial coverage. The player using this helmet suffered fractured zygoma and fractured mandible in two successive seasons while wearing this helmet. He required open reduction and internal fixation of both injuries under general anaesthesia. The helmet with unmodified faceguard in Figure 2b provides sufficient lateral facial coverage.

Figure 2a: Helmet with modified faceguard

Figure 2b: Helmet with unmodified faceguard

Discussion

This prospective study reports the incidence of Facial and Dental injuries from hurling presenting to a regional Accident and Emergency department. The introduction of helmets with faceguards has significantly reduced the incidence of injury. There has been a 50% reduction in facial fractures from 1975 to 1993 which coincides with their introduction . These results concur with a study by the Ophthalmology Department at Waterford Regional and Cork University Hospitalâ s. Flynn revealed that 310 patients attended from 1994 to 2002 with ocular injuries sustained in hurling. Six patients from this study population were rendered legally blind in one eye as result of injury resulted in introduction of a rule from 1st January 2005 making headgear with faceguards mandatory for under 18 players. Khan assessed the effects of this rule observing ocular injuries in this region for 15 months before and after introduction of this rule. This showed a significant reduction in ocular injuries from 43 before to 17 after This rule was subsequently extended to include under 21 players from 1st April 2006.

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There are still significant numbers of players sustaining injuries despite rule changes as demonstrated by the results. Seventy players with facial injuries were identified during the study for 2007 and 2008 seasons, 75% of injuries were sustained by players with no facial protection. There were 15 facial fractures sustained 10 of which required surgery under general anaesthesia. There were 38 facial lacerations identified which required treatment in the accident and emergency department. This study recorded 6 dental injuries, 5 of which occurred when no helmet was worn. The number of dental injuries recorded was lower than expected. This may attributable to the fact that many patients with dental injuries elect to attend their general dental practitioner and are discouraged to attend accident and emergency departments.

Prior to 1st January 2010 there were significant numbers of adult players who played without facial protection. Players who opted to use helmets with protective faceguards modified them by removing bars resulting in insufficient facial coverage. This is highlighted by the fact that there were 12 injuries sustained by those wearing modified faceguards compared to 3 injuries in the unmodified helmet group. The most common reasons by players to modify helmets were to improve field of vision and comfort . Many facial and ocular injuries in hurling may be prevented by wearing

helmets thus players must be encouraged to persevere until they become accustomed to them. This study also revealed that significant numbers of injuries (60%) are occurring during practice. This figure may not surprise, as players spend more sessions training than playing matches. We found there was poor compliance with wearing helmets during training. We identified 42 players injured in training and 31 of these were not wearing protective headgear. We questioned this group of 31 players injured in training without helmets, 21 of whom said had they been playing a match they would have worn protective headgear. This reveals poor compliance with helmet usage in training.

There are various personal and economic consequences of serious facial injuries. These visits to the A/E department place significant demands on medical staff^{9,10}. Surgery for management of these injuries requires hospital beds and utilise services which are already in great demand. There are implications for insurance cover for players who get injured without wearing protective headgear. It is also imperative to ensure that all players wear facial protection which conforms to European Union Medical Devices Directives¹¹. This will help reduce injuries from those with modified faceguards. It is therefore necessary to introduce rules making it compulsory for all players to wear standardised facial protection in practice and in competitive matches. The recent change in regulations by the GAA, making it compulsory for all players to wear standardised helmets with faceguards for matches and practice sessions is to be wholeheartedly supported. This will improve player welfare and safety and prevent significant facial injuries in the future.

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