

ORIGINAL ARTICLES

Acute Sporting Injuries to the Hand and Wrist in the General Population

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Abstract

We report the incidence of acute sporting injuries to the hand and wrist in the general population that required management in the Orthopaedic department. During a four month period, we prospectively identified all sports related injuries, which were referred for continued management in the Orthopaedic department. Eight hundred and fifty-one sports injuries were identified. Of them 400 (47%) were to the hand and wrist. There were 304 (76%) males and 96 (24%) females with an average age of 24.6 years and 26.5 years respectively. Injuries comprised of 286 (71%) fractures, 88 (22%) soft tissue injuries, 16 (4%) dislocations and 10 (3%) miscellaneous injuries. Twenty-eight (7%) patients required hospital admission. Thirty-seven different sporting activities were identified, with most injuries occurring in popular, physically demanding sports, such as football and rugby. Approximately half of all sporting injuries sustained by the general population are to the hand or wrist. In the majority of cases outpatient management was sufficient.

Introduction

Weight loss, improved cardiovascular status and a 'feel good' factor are some of the positive outcomes achieved through physical exercise. The Government White Paper, *Saving Lives: Our Healthier Nation*¹ emphasised the benefits of exercise to the general population.

There are numerous recreational activities but the distinction between sport and pastimes is often unclear.² Unfortunately, participation in these activities is associated with morbidity and occasionally mortality.³ We report the epidemiology and injury pattern of 400 patients, who sustained injuries to the hand and wrist during exercise.

Patients and Methods

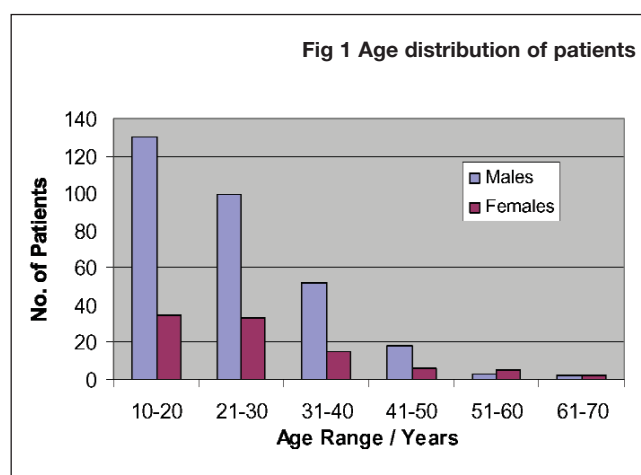
Between February 1999 and May 1999 inclusive, all patients who presented to the Royal Infirmary of Edinburgh Orthopaedic Unit with an acute injury sustained through sporting activity were prospectively identified. Of these, we identified a subgroup of patients whose injuries were to either the hand or wrist. The definition of sport for the basis of the study was defined as 'any leisure activity undertaken outwith a patient's normal routine of

daily living'. Patients were initially treated in the Accident and Emergency department before either being referred to fracture clinic or admitted directly to the orthopaedic ward.

Epidemiological data and nature of the sporting activity were documented for each patient. Injuries were either classified as a fracture, dislocation or a soft tissue injury. Miscellaneous injuries, such as fracture dislocations were grouped separately. Patients requiring hospital admission were identified separately and operative procedure was recorded.

Results

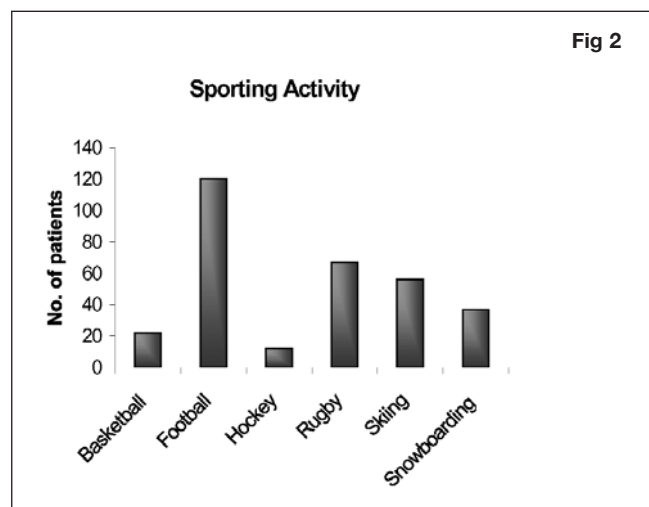
A total of 851 sporting injuries were identified. Four hundred



injuries were to the wrist or hand. There were 304 (76%) males and 96 (24%) females with an average age of 24.6 years (12 to 67) and 26.5 years (10 to 66) respectively (Fig 1).

Two hundred and eighty-six injuries (71%) were isolated fractures. There were 100 phalangeal fractures, 87 distal radial fractures, 75 metacarpal fractures and 17 scaphoid fractures. The seven remaining fractures occurred to the other carpal bones. There were 16 (4%) simple dislocations mainly involving the interphalangeal joints. Eighty-eight (22%) of injuries were isolated soft tissue trauma. Most were sprains involving various parts of the hand and wrist although 29 (33%) had originally been sent to fracture clinic with a possible scaphoid fracture which was never confirmed. In 10 patients (3%) miscellaneous injuries were sustained. Of these patients, five had fracture dislocations of either the metacarpophalangeal or interphalangeal joints and five had ligament instability following an avulsion fracture, such as an avulsion fracture of the ulnar collateral ligament.

A total of 37 different sporting activities were identified. Six individual activities led to the injury of at least ten or more patients (Fig 2), causing 79% of the total injuries. The remaining activities accounted for the minority of the injuries (21%).



Twenty-eight patients (7%) required in-patient management of their injuries. All inpatients had sustained fractures except one patient who was admitted for drainage of a digital abscess following a rugby injury. Four of these patients (14%) required re-admission due to loss of position of distal radial fractures, which had been manipulated under general anaesthesia and had a moulded plaster applied. Re-manipulation and fixation with k-wires (No.=2) and an external fixator (No.=2) was undertaken. The average inpatient stay was one day.

Discussion

The distinction between when an activity is sport rather than recreation is not clear. Similarly, it is not clear when the decision should be made to categorise an injury as a 'sport injury'? These deficiencies in classification do not allow a meaningful collection of comparable sports data.² The collection of sports injury data is just one limb of a loop in the process of sports injury surveillance. The second limb is the identification of the aetiology and mechanism of the injury which eventually should lead to preventative measures, although surveillance should be tailored to the specific sport.^{4,5} For the basis of this study, any activity undertaken outside the normal routine of daily life was defined as sporting activity and injuries sustained during participation requiring orthopaedic assessment were defined as sporting injuries.

Most literature refers to injury patterns in specific sports, such as rugby union⁶ or injury patterns in a group of athletes.⁷ During a 10 year period at the Olympic Training Centre in Colorado Springs, of 8311 reported injuries 729 (8.7%) involved the hand or wrist sustained during 36 different sporting activities.⁸ The overall incidence of hand and wrist injuries in athletes is reported as 3 % to 9%.⁹

A regional audit of hand and wrist injuries in Northern Ireland found that 15% of injuries to the general population are sports related.¹⁰ A previous audit of hand injuries in Edinburgh found

23% of injuries were sustained during sport, with 14% of these patients requiring inpatient treatment.¹¹ Our study found that 47% of sporting injuries to the general population involve the hand and wrist. This is much higher than the athletic population.⁹ The majority of these injuries can be managed via the fracture clinic, with only 7% requiring inpatient treatment, with an average stay of one day.

Most injuries are sustained by patients under 40 years of age. This would be consistent with a higher participation rate in these age groups. A wide variety of sporting activities were recorded but the higher injury rate in some sports is due to their popularity and physical nature. Winter and alpine type sports, such as football, rugby and skiing featured very predominantly in our study, but this is no doubt due to the time period over which the study was undertaken.

Fractures constituted the majority of injuries (71%) but soft tissue injuries are not uncommon (22%) and require appropriate treatment to allow the participant to return to their activity.

Sporting activity is beneficial to the population.¹ There is associated morbidity to the wrist and hand but outpatient treatment is usually appropriate. Methods of preventing sports injuries are being evaluated¹², but the difficulty is in creating a balance that will protect the participant from injury whilst not inhibiting the full active participation in the sport.

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