SPORTS INJURIES AND SOCIETY

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ABSTRACT

Injuries are classified and examples of the ways in which they can arise are given. Treatment, rehabilitation and the value of exercise are considered. A review of the effects of increasing leisure time and sports have been given, the value of legislation, education, protective clothing and close supervision in preventing the occurrence of injuries in sport is discussed.

INTRODUCTION

Within our society the symptoms and signs of increasing sports participation and resulting increased injury rate are well established, but the method of management and treatment is questionable. Can the National Health Service, which has finite resources, absorb the increasing demands of injuries in sport, which now exceed injuries from road traffic accidents in number, (though not in severity). Studies have been carried out at Leeds, Southampton and Glasgow, and in 1979, of the 60,000 people in Glasgow who attended casualty departments, 3,500 cases were due to sports injuries, which was more than those caused by road traffic accidents. In this country the Department of Health and Social Security have not hidden their thoughts on policy regarding this particular problem, as they will make no firm commitment towards sports medicine in the UK, so the question arises whether this phenomenon should be catered for outside the National Health Service, and within the sector of private medicine.

A DHSS handbook, published a few years ago, set out guidelines for positive action to promote health. It suggested:

action which individuals could take in relation to the health and well-being of themselves and their family; action in planning and reorientating local and national services to give a greater emphasis to prevention within whatever resources can be made available; prevention is the key to healthier living and higher quality of life.

People are living longer and there is increasing leisure

time; more and more people are taking up sports and the injury rate is increasing. The relevance of preventive medicine can be summarised as follows:

- (1) Prevention and health are everybody's business.
- (2) Curative medicine may be increasingly subject to the law of diminishing returns.
- (3) Longevity and leisure time are increasing, and people are becoming more aware of the importance of fitness and health.
- (4) It is important that injuries should be prevented where possible. As injuries do occur they must be managed properly in order to avoid complications that could lead to disability.
- (5) Education plays an important role.

The success stories of preventive medicine are well known — vaccinations, immunisations, improvements in public health standards and lower infant and maternal mortality. We now have people who obviously do not attract the diseases that they did 30 or 40 years ago. The role of education can be illustrated thus. The Royal College of Obstetricians was established in the 1930s, and total infant and maternal deaths have decreased rapidly over the last 40 years; this must be due partly to the fact that doctors are better educated. In sports medicine a few individuals have been informing and educating the medical profession as well as lay people about the need for increased knowledge about sports injuries in this country.

Apart from education, preventive medicine in relation to sport involves the prevention of injuries, and adequate treatment of complications after injury. The practicalities

of prevention include consideration of risk factors. With coronary heart disease, for example, the following cumulative risk factors apply: obesity; lack of exercise; high blood pressure; high blood fat levels; family history; and smoking. The more risk factors present, the greater the risk of heart problems later in life.

To indicate the risk factors in sport one needs to have injury surveys, designed properly and with statistical advice. Three years ago, a sports injuries survey of rugby football was undertaken at Guy's Hospital by Davies and Gibson (1978), and the results highlighted the large percentage of injuries that were probably caused by foul play. Several other surveys in rugby union have been carried out before in the UK and elsewhere, but none has looked at the case of deliberate fouls in relation to injury. In addition, other areas of risk studied were playing position – was there any one particular player at risk? – and phase of the game – was there any part of the game which carried a greater risk of injury? The overall findings were that a total of 185 players entered the survey; 151 injuries were reported among 98 of them (53%) during the season. Forwards sustained significantly more injuries than did backs, the prop forward being the position most at risk. The standard of rugby, players' body weights and presence of joint hypermobility were not found to affect the risk of injury. The leg was the most common site of injury. Head and neck injuries tended to occur on wet pitches and while play was static. Scrummages did not account for any neck injuries (but compare Hugh Burry's account of NZ neck injuries). It may be relevant that referees had received explicit instructions at the beginning of the previous season to prohibit the collapsed scrum because of alarming reports of neck injuries. Almost half the injuries occurred during the last quarter of the games, which is to be expected since people are more fatigued.

The most alarming point is that foul play may have caused as many as 31% of all reported injuries. Twelve per cent were caused by deliberate punches or gouges, whereas the remaining 19% were due to the player being kicked. In a few cases the players concerned were unsure whether they had been kicked deliberately or not, but an injury did result. As these percentages of increased violence were deliberate attempts to harm opposing sportsmen this was an ugly indictment of rugby football as played today. Vigorous prohibition of deliberately dangerous play is clearly needed to reduce the very high rate of injury in the sport.

Another interesting fact that emerged was that only one quarter of the injuries sustained during foul play resulted in a penalty being awarded. The authors commented that this is perhaps a case for linesmen adjudicating at the top level of rugby, or for two referees to be put in charge. The survey having been carried out and the results evaluated obviously recommendations

should be made and some action may follow. In fact this particular survey has, in 1980, for the first time led to linesmen at senior and international representative level being allowed to adjudicate. This should lead to a reduction in the foul play occurring on the blind side of referees. Other measures, such as padded posts, use of mouth-guards and suitable boot studs all help to reduce the risk of injury.

CLASSIFICATION OF SPORTS INJURIES

For the purpose of this paper, sports injuries will be grouped into three classes: psychological; soft-tissue; and overuse.

Psychological injuries. It is not surprising that the majority of sportsmen have problems due to the intense pressure and competitive nature of the sports in which they are involved. For instance, a first class golfer travels around the world and suddenly comes to face a situation where one putt could mean the difference between £5,000 and £15,000: this is a tremendous burden for any man to take. On personality, it is important first to clarify one or two things that, to the layman, might sound odd or even unlikely. We tend to think of people as being very much alike, and if somebody has a personality rather different from ours we believe that this is due to their upbringing, and that with a bit of persuasion he can be made to be much like anybody else; in fact, this view is fundamentally erroneous. The worst difficulty for a sportsman is when his emotional instability interferes with his play, as stated by Eysenck (1979). It is not only the neurotic person who experiences anxiety, depression and other emotions resulting from continued lack of success or adverse effects such as wrong line calls in tennis or bad refereeing decisions in football. Such emotional reactions interfere considerably with success and an individual with a personality that makes him prone to such reactions is unlikely to be very successful. On the other hand, almost complete absence of emotional responses is also bad and, up to a point, emotion can either mar a person's performance or act as a useful drive. It is very important in sport that a doctor, as far as he can, liaises with the coach who probably understands the athlete better than anybody else. Coaches, in particular, should know far more about the psychological phases of personality differences, particularly as they are related to success in sport, and should also be acquainted with methods of behaviour therapy and modification which can be used to alleviate bad effects of certain personality traits. Consider motivation in an international rugby game. There may be dominant and subordinate races and a highly charged audience, but also, of any 30 rugby players, two or three may already have problems and bad disciplinary records. This is a selectorial rather than a coaching problem but one must accept that there are certain players who can be motivated very highly and who play extremely well whereas others, perhaps with an underlying psychopathic

personality, have to be handled extremely carefully in emotionally charged situations. There is need for care in motivating players, and this is the responsibility of the coach who ought to know his players very well.

Almost all sport imposes an intense strain on the mental and physical wellbeing of players. Such are the pressures of fame in competition that some sportsmen, according to Pattmore in 1979, say they really want to kill their opponents. Brian Close in his book "I Don't Bruise Easily" says that on one or two occasions "I felt so completely out of my depth that I even contemplated killing myself"; this is the kind of pressure found in cricket. The delivery speed of Jeff Thompson, the Australian fast bowler, has been determined with the use of cameras as 99.6 miles per hour. His bowling hand is concealed behind his back until the last moment, and this makes him a very difficult bowler to anticipate, or "pick" as the batsmen say; by the time the batsman's central nervous system is processing information about the delivery he has approximately half a second to determine what his response should be. If the ball deviates after pitching, as it often does, he has considerably less than half a second, and it is possible to produce figures to prove that he should begin playing his stroke before the ball is delivered. Many technically accomplished batsmen, under this kind of pressure, have failed for want of psychic gifts! But injuring a batsman seriously does not apparently fill fast bowlers with pleasure; usually they are overcome with remorse. It is suggested that physical injury to a batsman, though serious, is perhaps less crucial than the threats to his emotional stability, which are part and parcel of a professional sportsman's lot. Many batsmen have made themselves physically ill through trying to resolve the contradictory pressures of their task, especially if asked to bear official responsibilities such as captaincy. Some are struck down by mysterious physical maladies, which clear up as soon as the crisis is past; they are not malingerers, their illness is real. This is the psychosomatic aspect of sports injuries.

Soft tissue injuries. These can perhaps be prevented initially, and certainly complications can be avoided if the right treatment is given. Treatment by ice, compression and elevation (ICE) has been well tried over the last few years by many people, and it is interesting that Galen and Hippocrates, centuries ago, could not agree on the use of heat or cold in the management of sprains and strains.

The role of exercise has been misunderstood until recently, but in the last few years a great deal of work has been done on this, especially on the use of exercise with ICE therapy in the first 48 to 72 hours after injury. The value of exercise lies in increased blood flow, increased rate of healing, stretching of scar tissues and avoidance of adhesions.

Injuries can be prevented by the use of protective clothing. Who would have thought, a few years ago, that batsmen would ever wear helmets? This may perhaps be found in rugby union over the next 10 years, but it is doubtful. Occasionally the wearing of protective clothing can in itself cause injury and the helmet has caused real problems in American football. About two or three years ago it had to be modified, and even now these enormous men weighing 260 to 270 pounds charge into each other using various techniques whereby the helmet is used as a direct weapon against the other man's chest or abdomen, causing internal injury. Over the last few years progress has been made. For example, it obviously makes sense for a rugby prop forward to wear a gum shield and the dangers have been eliminated provided the shield is well fitted and made by the player's own dentist; ungoverned use is not advised.

Overuse injuries. It is not surprising that we find tissues breaking down under stress when we consider the muscular effects on top athletes in training. Geoff Capes may lift six tons of weights in one session, and it has been estimated that the man who runs 150 miles a week gets five million foot impacts a year, and it is not therefore surprising that his feet hurt and he has problems with shin soreness. Improved design of running shoes, for example, is important here and people must have correct, comfortable shoes for their particular activity.

Muscle tears can be caused by overuse. Some recent American work on hamstring injuries shows that there must be a correct balance between the quadriceps muscle at the front of the thigh and the hamstring at the back. Without this correct balance there is increased risk of injury to the hamstring muscles. This is therefore a preventive factor to be taken into consideration and a factor that doctors would be wise to check in patients with recurring hamstring injury.

Overuse can lead to incapacitation at an early age. A recent review of sports injury and osteoarthritis has been carried out by Adams (1976). Some of the points made which are relevant to this paper are as follows:

- (1) Osteoarthritis is often reported in former sportsmen but causal connections have not been established.
- (2) Injury affecting the muscle ligaments around a joint will affect normal joint action and thus impose greater stresses in the cartilage and bone.
- (3) Adolescents are more prone to injuries, because of immaturity, weakness, hypermobility and lack of coordination.
- (4) Those previously injured are more prone to further injury.
- (5) The man most likely to develop osteoarthritis is the professional sportsman who continues to play although injured.

Selection is another important factor; obviously, a 13-year-old-boy who is 6 ft 2 in tall with a long neck should not be put in the front row of a rugby scrum. The same applies to other, less obvious incompatibilities. A boy who was quite an able runner until he reached the age of 13 or 14 started to develop effusions in both knees; this was due to an anatomical disparity of having an abnormality in both patellae which were displaced medially. Some people can obviously be selected because of their size, weight, height, etc; others, with an abnormality, may need to be considered extremely carefully to ensure that they do not enter into sports for which they are not suited.

Another preventive aspect of sports medicine relates to back pain. Billings, Burry, et al (1977) reviewed 100 sports people who came to the sports injuries clinic at Guy's Hospital with back pain, and found a high proportion (30%) of people with a stress fracture at the back of the spine. The majority of people with this stress fracture took part in weight training, frequently unsupervised. For young people, between 14 and 19 years of age, this is a factor about which physical educationists need to be extremely careful.

A good example of overuse in the adolescent javelin thrower, where too much throwing can result in a fracture, or a lack of fusion in the epiphysis of the olecranon. If this is happening to elbows in adolescence one wonders what is happening to spines. Exercise is good for you but even the popular sport of jogging can cause injuries. A recent review of sudden deaths in sport by Fentem and Bassey (1979), came to the conclusion that there was no increase in sudden death during sport. Exercise on the whole does you good but there are problems and these are what we see at the hospital clinics.

Hazardous activities

Some of the maeuvres in the more esoteric sports, such

as ski-jumping and hang-gliding, defy description but bring feelings of satisfaction and wellbeing through personal expression, self-fulfilment and freedom. Society itself has created some of our problems for us. A few years ago there was the skateboard boom and accident and emergency departments throughout the country were treating people for broken arms, etc, but at least they were protected in part when they wore protective clothing.

SPORTS INJURY TREATMENT WITHIN THE NHS?

In conclusion, let us return to the earlier question of whether the National Health Service can cater for the injury boom that man has created for himself. Pringle (1980) in a recent critical article said that sports medicine was a pseudospeciality, which was dangerous, meddlesome and wasteful. The author, an orthopaedic surgeon, made the point that the grouping of patients according to the origin of their injuries was artificial and he felt that the main emphasis in this field, as in industrial medicine, should be on prevention. He also made the point that NHS resources were being diverted towards treating and rehabilitating sportsmen at the expense, indirectly at least, of the remainder of the population. He suggested that those taking part in sport should have compulsory accident insurance which would cover the expense of private treatment.

I firmly believe that the future development of the involvement of the medical and physiotherapy professions in the diagnosis and treatment of injured sportsmen and sportswomen will be predominantly in the private section, and less so within the National Health Service. What is important, however, is to ensure the involvement of registered medical practitioners and chartered physiotherapists in any private medical insurance schemes, for the diagnosis and treatments of sports injuries. This would eliminate the unqualified "back street" sports injury clinics which are appearing at present.

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