OVERUSE INJURY IN SPORT AND WORK

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For various socio-economic reasons participation in sport in the United Kingdom as in the world generally, has increased enormously since the end of the Second World War. This increase has taken place both quantitatively and qualitatively in standards of performance and the severity of training required to achieve success particularly at top level. The situation has now been reached in which a significant proportion of the population voluntarily engage in physical activity at intensities previously thought unattainable (other than in personal survival situations) and certainly far in excess of what would be acceptable at work. In consequence there has been a parallel increase in the number of injuries arising from participation in sport, in particular an increase in those deriving purely from training processes. The intensity of training, particularly at International level has given rise to a group of pathological conditions previously unrecorded. Pilot studies undertaken several years ago indicated annual injury rates in sport in the United Kingdom alone of the order of one and a half million of which it appeared that some 10% caused significant loss of working time. The effect in terms of added load on the National Health Service and loss of working hours must be apparent and indeed has led recently to more sophisticated studies, under the aegis of the Sports Council, the results of which are awaited with interest.

Sports injuries may be divided into two basic aetiological categories, the first including those which are inflicted by some other party (typically seen in body contact sports and in sports involving vehicles) and the second consisting of those that the sportsman inflicts upon himself. In this latter category a sub-division can be made as between those injuries which occur instantaneously in a specific incident (such as the acute muscle tear) and those which occur as a result of continuing overuse: The latter can be further sub-divided into those which occur during one particular episode of overuse and those due to repeated chronic excess training stress over a long period of time. As an example of acute overuse injury may be taken the case of the International canoeist who recently won in record time a major race over a distance far longer than he had previously ever attempted. He presented immediately thereafter with acute crepitating tenosynovitis of the extensors of the wrist. By contrast take the case of the middle or long distance runner pounding out 100 miles or more week in week out - his Achilles tendon lesions are hardly surprising.

It may be difficult to differentiate aetiologically between acute overuse injury and an incidental injury arising in a muscle or tendon that was previously the site of some more or less chronic overuse injury.

We have recently analysed attendance at our sports injuries clinics and have noted that 185 out of 450 cases (41 percent) were due to overuse causes. We are forced to wonder whether the limiting factors in athletic performance will not in future be the ability of the body to withstand the training loads without breakdown.

Already one of the major problems in the preparation of sportsmen for competition particularly at the highest level is that the degree of improvement in performance diminished progressively and demands a progressively greater training effort to produce it (the curve of performance in relation to training is asymptotic). The training necessary to produce those miniscule improvements in performance which are so highly significant in terms of gold medals won or lost in International Championships demands what is in effect gross stressing of the cardiovascular, respiratory and locomotor systems of the body which is why overuse injuries become so predominant a sequel of top class athletic training.

The management of all cases of overuse injury whether acute or chronic **must** involve rest but in this context rest is a relative term. It does not mean that the patient must completely stop all physical activity, but rather that he must curtail the load or alter it in such a way as to allow adequate local recovery between bouts of training or different types of training. Furthermore, the sportsman requires early and efficient definitive treatment to enable him to resume normal training. This is because for him any interruption of the training programme comes as a disaster, particularly if he is

aiming for the highest International honours. In fact the effective treatment of overuse injury is relatively simple bearing in mind that the cardinal features in all instances is inflammation.

Quite apart from cutting down on the workload to a level at which pain is no longer provoked, early resolution of the inflammatory response is encouraged by the use of physical treatment including shortwave diathermy and ultra sonics and of suitable medication. In the latter case the use of systemic anti-inflammatory drugs such as Phenylbutazone and Indomethacin is often effective as is local injection of steroid such as hydrocortisone acetate. Strong claims have also been made for the effectiveness of anti-inflammatory enzymes and they are worth a try since the least that can be said of them is that they are harmless.

The significance of the sportsman's overuse injury should not be lost in the industrial and occupational context. Just as one sees examples of overuse injuries in sports injuries clinics so too one often sees other examples of overuse injury in people who have recently changed their jobs or have been faced with a significant increase in the tempo at work either in terms of load or speed. Examples of such injuries include carpenter's tenosynovitis, the forearm strain of the heavy lorry driver and capsulitis of the shoulder in decorators.

In some cases the diagnosis may be obscure particularly if the history is somewhat vague or the clinical findings not well defined, but diagnosis and therefore effective treatment can be considerably facilitated when the possibilty of straight forward overuse injury is remembered. In such instances the same rules apply as in sportsmen. Firstly, provided that the subject is initially fit enough to cope with the workload, it will cause him no harm as long as the build up in the load is slow and progressive. Secondly once overuse injury occurs treatment involves a degree of rest with alterations in the pattern of activity to allow for effective recovery. Complete rest should usually be avoided since upon resumption of activity in such instances recurrence of overuse injury is only too likely. Finally the pathology of the overuse injury should be deduced from the circumstances which provoked it and will in any case involve a considerable amount of local inflammation. Definitive treatment is therefore logically directed towards:

1. promoting the rapid resolution of the inflammatory response and:
2. redefining the work pattern as to avoid recurrence or further breakdown.

ADVANCE NOTICE.

ANNUAL GENERAL MEETING

for year ending December 31st, 1971.

The Annual General Meeting of the British Association of Sport and Medicine will be held on the morning of Saturday, July 15th, 1972 at the Royal Society of Medicine, 1 Wimpole Street, London W.1.

Any member wishing to raise matters to be included in the Agenda of this meeting should notify the Hon. Secretary, Dr. Peter Sperryn, 63 Alric Avenue, NEW MALDEN, Surrey, in writing before June 6th.

After the Meeting the ADOLPHE ABRAHAMS MEMORIAL LECTURE will be presented by Professor Ernst Jokl, M.D. of the University of Kentucky.

Further details, balance sheets and reports, shall be published later.