Tenosynovitis, repetitive strain injury, cumulative trauma disorder, and overuse syndrome, et cetera

These four terms, and many other synonyms, are increasingly invoked to support claims for disability, injury, or disease caused by modern work practices. Much difficulty and anguish may result, not least for the patients, from the attempts of the Law Courts to resolve whether or not an employer has been guilty of negligence in allowing or causing the problem to arise. It is a remarkable paradox that such complaints have increased in number as the physical effort required at the workplace has been reduced by labour-saving devices. Allan and Waddell (1989) have made parallel comments regarding low back pain in modern society.

Since early recorded time, compensation has been awarded to those suffering physical injury, such as the loss of a finger or a hand; matters of cause and effect were then usually straightforward. But in recent years there has been an enormous increase in the incidence of 'industrial' complaints related to the upper limb and of ensuing litigation. Orthopaedic surgeons are often required to give opinions on the basic diagnosis, the cause, and its relation to a particular form of manual activity. The term manual has to be taken in its broadest sense: keyboard workers such as secretaries and journalists have made numerous claims, especially in Australia during the height of the repetitive strain injury (RSI) epidemic. Another paradox is seen here: few of the compensation claims came from such people as foundry workers or agricultural labourers, who often do heavy and repetitive work.

It is therefore important that orthopaedic surgeons clarify their views, try to define what is definable, and attempt to explain, by experiment or rationalisation, that which remains uncertain.

Tenosynovitis is well-described and understood; most orthopaedic surgeons are familiar with the signs of crepitus and tenderness along the line of a tendon sheath, or just proximal to it. This may follow a period of
unaccustomed work or exercise, and is characteristically seen in the "crossover" zone of the thumb extensor tendons. Such tenosynovitis is 'Prescribed Disease A8' in the UK Department of Health schedule of industrial diseases. This is a genuine, although uncommon, condition in manual workers, particularly when they return to work after a holiday or an illness. The symptoms usually settle in a matter of days, with return to full normality after appropriate rest, or modification of the work routine (Thompson, Plewes and Shaw 1951).

The term tenosynovitis can also be used, quite properly, to describe the common 'triggering' conditions such as de Quervain's syndrome affecting the extensor tendons of the thumb and the flexor tendons to the thumb, middle and ring fingers. This tendon sheath abnormality is often termed tendovaginitis stenosans, and can be cured by a simple release operation. It has been claimed that such stenosing conditions are caused by repetitive movements, but there is no objective evidence for this theory, and in some cases the symptoms arise immediately after a period of rest. If a condition such as de Quervain's syndrome is to be considered as caused by repetitive work, it must be shown that such work leads to a significant increase in the incidence of the condition over that in the population at large. Upper limb enthesopathies, particularly tennis or golfer's elbow, have also been claimed to be due to strenuous or repetitive physical work. There is little evidence to support such a claim, and considerable statistical evidence to show that there is a high incidence in the general population in the age group usually involved, between 35 and 55 years (Allander 1974). Various aetiologies have been proposed, but most authorities consider that true lateral epicondyli- tis, with precisely localised tenderness, arises spontaneously: it is rare for the condition to result from a specific injury, though elbow injuries are common. It seems likely that tennis elbow is a mild degenerative condition of fibrous connective tissue where several muscles attach to a small bony point. It is common in middle age, as are other connective tissue problems such as rupture of the calcaneal tendon. Carpal tunnel syndrome is common in the general population, especially in women from 30 to 55 years of age (RCGP 1986). It can occur acutely after trauma to the wrist, essentially as a compartment syndrome, but most cases develop spontaneously with no obvious precipitating cause. An industrial aetiology has been claimed but although an eight-hour working day might accentuate, or aggravate, such a neuropathy, there is little evidence that it can be caused by a particular manual activity.

Overuse? Where there are no physical signs, what is the diagnosis for work-related discomfort? There may be no diagnosable condition: we all experience indeterminate aches and pains in the upper limb from time to time. We may well be doing a severe disservice to our patients, and to society, when we strive too hard to categorise every ache or pain into a disease entity or syndrome. A caring doctor may often treat his patient most effectively by confident reassurance that there is no significant pathology.

Where no clear disease or syndrome can be identified, numerous vague and indistinct pathological concepts have been suggested. These include RSI, cumulative trauma disorder (CTD), and overuse syndrome. The first two terms lack definition on any recognised pathological basis, and have been criticised as implying an injury where none exists. Unspecified excessive, repetitive loading of the arm or hand is implied. This suggests, without foundation, that repetition is itself harmful. These easy acronyms have gained considerable credence in the media, and at the workplace, in Australia, the UK and the USA, despite criticism by authoritative medical organisations (Hadler 1986; Blair and Bear-Lehman 1987).

The term overuse syndrome was originally proposed by Fry, in Australia, to explain symptoms of pain and weakness in the arms of musicians. He claimed to have made the diagnosis in 30% of this professional group, a remarkable statistic which has not been reproduced by other researchers. The only physical sign was tenderness of the affected muscles and a sceptic might consider this less than objective. Fry and Dennett (1988) have presented histological evidence to support their concept, but this attracted critical comment, and has not yet been independently verified.

The large increase in complaints and claims concerning the upper limb in many occupations means that orthopaedic surgeons must carefully consider the implications of their diagnoses, both for the patients and for society as a whole. If many people are really suffering the consequences of modern working conditions, then the pathological processes should be defined, the causes discovered and the matter resolved by prevention. Little research has been reported in this field; Scandinavia has the best record.

If it is true that chronic use of a keyboard, or jointing chickens all day, actually causes disease or injury to the upper limb, then it should be an easy matter to prove it, but at present there is little positive evidence. Common sense suggests that the present epidemic of RSI is more likely to be a product of preconceived disability in the workplace, with its opportunity for compensation claims, rather than a widespread 'industrial' injury or disease (Viikari-Juntura 1984).

The RSI epidemic in Australia was well documented and reviewed; it would be prudent for others to learn from that large and costly experience (Ferguson 1987). Few relevant figures are available for the UK since most claims are being fought individually in the courts, and statistics relating to 'tenosynovitis' have not been published since 1983. Every week attention is drawn in some branch of the media to the problems caused by repetitive work, but a careful study of the available
literature strongly suggests that this particular emperor has few, if any, clothes.

Orthopaedic surgeons should carefully examine patients who complain of symptoms which they think are related to their work. A detailed history and the detection of objective physical signs may lead to the diagnosis of a recognised injury or syndrome. However, if there is no such condition, then it is important to say so as this may prevent unwarranted claims, and reduce distress in our patients.

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REFERENCES


