The Lumbar spine and back pain
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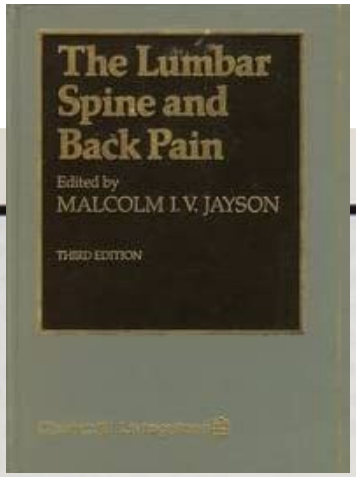

Introduction

Since the first edition of this book was planned fifteen years ago, much has changed in the field of the lumbar spine and back pain. Third and fourth generation computerized axial tomography and magnetic resonance imaging scanning systems have been developed, giving new insights into the anatomy of the living back, especially the role of disturbance of venous drainage. Science has undoubtedly advanced and the main problem facing doctors now is the delivery of some of the benefits of those advances to patient-sufferers. There are 139 joints in the spine and numerous bursae, all of them equipped with sensitive pain nerve endings. We are now beginning to bridge the gap between the common clinical back pain syndromes and their underlying pathological anatomy.

Indeed back troubles are so common, that the reader is likely to be well aware from his own unpleasant experience just what they feel like. It is a doubtful compliment to point out that he is in interesting company. The skeleton of the thirty foot long gigantosaurus at the British Museum (Natural History) reveals that spinal disease existed all those millions of years ago. But what of it? – he shares our common vertebrate inheritance. It is not of much comfort to anyone off work because of a painful back, to know that of all rheumatic complaints, back troubles are the greatest cause of lost time in industry, and it suggests that he is but a single statistic in a sum total so large that by implication he must accept it. Indeed many students of back pain think that the changes of spinal aging are so inevitable as to be regarded as normal and by implication unpreventable.

In his role as sufferer from back pain, the reader will want evidence of a more positive and optimistic attitude. Such an attitude is not hard to justify since death itself has a normal and natural association with aging. Science cannot prevent death but death has been delayed and postponed for up to twenty years for most of us, so why not postpone and delay back disease? A few lucky people live to vigorous old age without any spinal problems at all. If nature can do this for a few, why not the many? Can research really be powerless in the face of the question, 'How can one prevent or delay degenerative disease of the spine?' Put like this the task becomes familiar and it is a truism that modern science is such that if a question can be clearly put, technology can almost certainly answer it.

In 1976 a Back Pain Working Party, representing a range of therapists and researchers concerned with back pain was set up by the Department of Health. Out of mountains of evidence only ten carefully controlled trials of treatment existed in the world literature at that time. These uniformly concluded that the benefits, if any, of the various manipulations, injections, applications and immobilizations used traditionally were at best temporary in their effect. Since one treatment did not differ markedly from another or from no treatment at all, the studies could be regarded as exercises in the natural history of back pain. The outstanding finding was of the high frequency of spontaneous improvement or recovery. Even chronic low back pain sufferers, culled from hospital orthopaedic out patient referrals, showed a 60–70% 'cure' or improvement if carefully followed for twelve months or more. Only for surgical removal of a prolapsed intervertebral disc which had been pressing on a nerve root was there scientifically

acceptable evidence of a benefit caused by that particular treatment. The Working Party drew attention to the increasing problem of back pain in children and adolescents, a group not normally identified with back pain. It recommended that heterodox treatments were worthy of investigation by the method of the controlled trial, not forgetting that perceived benefit, even if significant, might not necessarily be the result of the therapist's manoeuvres nor even support his theories. The placebo effect of the various forms of manipulation and of the laying on of hands is very strong.

One of the important effects of the scientific study of lumbar spine and back pain is the removal of traditional myths. One of these myths is the 'slipped disc'. Discs do not 'slip' in the way that most laymen and not a few doctors imagine, like orange pips squeezed between the finger and thumb. Because the vast majority of painful spinal conditions are never operated on, nor cause death, the source and site of pain can not usually be verified by direct observation.

Back pain is as much a problem of pain as a problem of the back, hence the study of back pain is both a job for the anatomist and for the neuro-physiologist. Because the normal anatomy can become diseased and the disease state can often heal, the anatomist and neuro-physiologist must also be concerned with the remarkable powers of healing, repair, regeneration and compensatory overgrowth that the body can deploy in order to restore reasonable function. Not least amongst these is the concept of differences in pain threshold, whereby a miner may be able to keep at work when one of his office-bound relatives with apparently similar radiological back disturbances is unable to do so. Nor will any serious study of low back pain be able to ignore the problems of motivation. The industrial and politicial questions raised in the introduction to the first edition of this book included problems of pre-employment screening, problems such as 'should people with unilateral sacralization be denied to work in the docks?' Can an equitable system of compensation for job related back injury be worked out? Is it possible to agree a legal limit to the weight that a worker could be asked lift? In contrast, the television coverage of the 1988 Olympics reminded us what enormous weights can be safely handled by trained athletes. We have still not applied these lessons to lifting at work. Yet the social climate is now much more favourable to the introduction of legislation to protect the worker from back injury. The Health & Safety & Welfare At Work provisions are effective and have force. Paradoxically we may now find that embalmed in new laws are provisions which by the time they are enacted are scientifically out of date as the study of training programmes for prevention of back injury advances. The study of the treatment of back pain has paradoxically been retarded by the relatively benign nature of most instances of back pain and the tendency to spontaneous recovery. Only one or two in every thousand incidents of back pain that occur in the population become so severe that they lead to hospital style investigation or to operation. Because of this, heterodox treatments of all sorts have flourished and seem successful. Each therapist has his own theory ranging from the plausible to those which can only be described as systematized delusions. In the past, this has tended to frighten off scientific workers capable of applying strict disciplines and critical attitudes to their work but in the fifteen years since this book was first published, there has been considerable change. The need for this change has become apparent from various sources but primarily from epidemiologists who have counted the cost in numbers of people who lose time from work because of episodes of back pain.They have compared the consequential loss to the economy with a very small investment into back pain research. Specialist scientific societies have been set up and have spear-headed the study of back pain and much has been achieved. But there is still little evidence that the American rheumatological community regards the study of back pain as part of its work judging from the official journal of the American Rheumatism Association. In some countries there are two sorts of rheumatologist. There are the classical rheumatologists who view the cure of rheumatoid arthritis and of systemic lupus as their crock of gold at the other end of an immunological rainbow. There are also the 'back-necks-and-shoulders' rheumatologists who in some countries are more or less

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synonymous with rehabilitationists and physical medicine specialists. However, in many countries in Europe, back pain is closely associated with orthopaedic surgery, an association now historically inappropriate in that back pain is relatively rarely operated on and the majority of treatments are medical. Thus in many parts of the world, the community response to the back pain problem is inappropriate, and it is the function of this book to help redress the situation.

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