Pathophysiology of orthopaedic diseases

H. J. Mankin

ISBN: 0-89203-416-5. £93.50

Henry Mankin has an outstanding reputation as an orthopaedic surgeon, teacher and researcher, over a period of five decades. He is a master of the lecture and those of us who have had the benefit of hearing him will not forget the experience. It was thus with great pleasure that I read this text. Based upon the Jaffe-Campbell-Erdheim-Mankin collection, commencing with material accumulated by Dr Henry Jaffe from 1925, Dr Mankin has added material from Drs Erdheim, Campbell and himself. The collection now resides in Boston. He pays particular homage to Henry Jaffe who had a profound effect on his own approach to the musculoskeletal system.

The text itself is a collection of chapters on major orthopaedic conditions, including fracture healing. They are presented in systematic order to cover natural history, histology, clinical features, diagnosis, treatment, and conclusions. Many conditions are now less common in Western Medicine but still very relevant worldwide – tuberculosis, syphilis, anterior poliomyelitis and haematogenous osteomyelitis. Other conditions are rare but represent a challenge, in that the diagnosis and the aetiology remain unknown. Dr. Mankin presents current knowledge on these varying topics with assurance.

The historical descriptions of articular cartilage, osteoarthritis and metabolic bone disease are outstanding. I was particularly impressed by the chapters on pigmented villonodular synovitis, synovial chondromatosis, Langerhans cell histiocytosis, osteogenesis imperfecta, Gaucher disease, osteopetrosis and extra-abdominal desmoid tumour.

It is traditional to make criticisms in book reviews, although doing so seems ungracious, and in this instance, hard. In the chapter on poliomyelitis a mention is made of the ‘post-polio’ syndrome which is indeed ill-understood. It is surprising that Dr Mankin did not mention that this may simply be a phenomenon of ageing, globally effected through metabolic and neurological degeneration.

In the chapter on synovial chondromatosis, a minor observation is that in modern practice, such patients quite often present before there is any radiologic evidence, and are diagnosed by the appearance of a ‘snow storm’ in the form of osteocartilaginous loose bodies in the joint seen at arthroscopy. The diagnosis can be missed and it is therefore important always to empty the fluid from the joint through a wide bone cannula into a suitable container to search for such fragments. In the chapter on Paget’s disease of bone, Dr Mankin concentrates on many possible aetiologies but does not mention the possibility of some influence in the local water supply which is thought by some to be responsible for the varying regional incidence.

I have only one significant criticism of the book’s production and that is in the illustrations. Some of the radiographs lack clarity, and the absence of colour throughout the text is a pity when there is so much excellent histological material. Other than these I think this book achieves precisely what Dr. Mankin intended, namely to indicate “the nature, appearance and clinical behaviour of an array of Orthopaedic diseases”.

G. Bentley

Bone repair biomaterials

J. A. Planell

ISBN: 978-1-84569-385-5. £145.00

This book is a source book on a topic which is central to all modern interventions in orthopaedic surgery. Its title belies its comprehensive overview of all aspects of bone structure and function, and its response to trauma – both accidental and planned – in terms of the effects implants have on this finely balanced and incompletely understood metabolic entity.

We have manipulated the mechanical environment of bone for as long as man has attempted to influence natural bodily processes. There are clearly very powerful evolutionary forces at work which make restoration of mobility after bony injury or disease imperative. In short all animals including humans are unlikely to survive very long if they stay immobile for any length of time – predators would simply eat them!

Counter-intuitively, orthopaedic surgeons for the bulk of the 20th century seemed to bypass this basic philosophy and for too long we sought to immobilise bones and joints as a central tenet of management. Early visionaries such as Sarmiento ran counter to this and, like Darwin, who had no knowledge of the underlying powerful molecular processes his theories relied upon, accurately predicted the realities of bone healing in the presence of a degree of motion.

The contents of this book demonstrate the complexity and as yet not fully understood molecular basis for the unique aspect of bone as a connective tissue which is to be repaired by bone and not as a scar. The book provides us with a look through a glass
increasingly less darkly and as such, later chapters indicate that we can begin to understand better how to manipulate the chemical and physical environment to the advantage of more predictable healing and restoration of function.

The book is beautifully referenced and certain chapters are recommended for all orthopaedic surgeons (particularly the first 100 pages). For a new researcher it is an invaluable introduction from start to finish.

Professor D. I. Rowley

Pediatric bone sarcoma: epiphysiolysis before excision
J. Cañadell and M. San-Julian
ISBN: 978-1848-8213-09 £80.00

This slim monograph by Professor Cañadell and his colleagues at the University of Navarra in Pamplona, Spain, describes the development of their special technique for the treatment of metaphyseal bone tumours in children in whom the growth plate is still open. The aim of the technique is to preserve the limb and the epiphysis by the use of epiphysiolysis or growth plate distraction to obtain a sufficient margin between the growth plate and the tumour for safe en bloc resection of the tumour. The technique relies on the comparative resistance of the growth plate to invasion by tumour cells and the lack of a vascular connection between the epiphysis and metaphysis while the growth plate remains open.

Following a number of clinical and experimental studies in the early 1980s and the emergence of MRI as the most reliable method of imaging the extent of the tumour in relation to the growth plate, the authors have treated around 130 children with this method since 1984 with a mean follow-up of ten years four months (1 to 24). The youngest patient was three years of age but the average was ten years four months. The technique cannot be used once the growth plate has developed or when the bone is already more than 60% mature with other methods used in this age group. They report excellent results but an infection rate of 7%, and 14% for non-union of the graft requiring a second operation. Since 1986 the majority of reconstructions have used allografts and various forms of osteosynthesis with a mean consolidation time of 16 months for the diaphyseal end of the graft and 6.5 months for the metaphyseal end. Epiphysiolysis preserved the majority of the growth plate but continued growth is not always reliable and further treatment for leg inequality may be necessary.

The final chapter, derived from questions and answers given at a number of international meetings, is very useful, consolidating and clarifying many of the important points of this unique method of bone tumour management.

J. A Fixsen

Adams’s outline of orthopaedics (14th Edition)
D. L. Hamblen and A. H. R. W. Simpson
ISBN: 978-0702-03061-1. £38.99

This is the 14th edition of a classic which was first published in 1956. It is also the first in which John Crawford Adams has not had direct involvement, although he writes a masterly introductory note which shows that he has lost none of the clarity of expression which marks the previous editions.

The organisation of the book remains essentially unchanged. The first part is devoted to the principles of diagnosis and treatment which are concise but in no way incomplete. Dr Nigel Raby has contributed a new chapter on imaging which is welcome. The second part surveys orthopaedic disorders in general, taking the reader progressively through definition, pathology, clinical features, imaging, investigation, complications and treatment. Although, in some cases, these are little more than vignettes, the authors manage to extract the essence of each of the diseases they describe. Important or life-threatening diseases are described in much greater detail. The third part addresses the regional manifestations of the diseases described in the second part while also amplifying the finer points of history-taking and clinical examination applicable to the particular anatomical region.

Omissions, inaccuracies and infelicities are few. For example, one note on the clinical assessment of chronic glenohumeral instability would be helpful, particularly as the authors remind the reader to check for instability of the acromioclavicular and sternoclavicular joints when examining the shoulder. The Hill-Sachs lesion appears to have lost its final ‘s’ at one point and ‘thoracic outlet syndrome’ is surely the preferred term for the condition in 2010 rather than ‘scalenus syndrome’. These, however, are minor matters in the context of the whole volume.

One surprising feature: - despite the rapid expansion of orthopaedics over the last 50 years, the book which was originally meant for undergraduates but may now be read with benefit up to registrar level and for pleasure thereafter, has increased in size by only 60 pages. This has been achieved not only by relaying the text but by strict adherence by the authors to the essentials.

The overall appearance of the book is excellent. The layout and line drawings are impeccable. If I have one reservation, it is about the quality of the half-tone illustrations. This is a constant gripe among authors and editors and is regularly, and on the whole appropriately, laid at the door of the publishers.

While reviewing this volume, I had to hand my own student copy of the seventh edition, now nearly 40 years old. It is remarkable how much of Crawford Adams’ original text remains unchanged in this new edition. This is not to say that the 14th edition is anything other than completely up-to-date, which it is. It merely emphasises the importance of basic principles and admiration for transparent exposition. David Hamblen and Hamish Simpson are to be congratulated on having held fast to that which is good while judiciously, but unobtrusively, updating it.

A. Ross