

Book reviews

Surgical techniques for the spine

Thomas R. Maher and Andrew A. Merola, 352 pages, Thieme Verlag 2003
ISBN 3-13-124761-4

This new textbook is an attempt to describe currently used techniques in spinal surgery from the occiput to the coccyx. The editors have brought together 84 coworkers to produce this 283-page volume and the contributors were chosen either as developers, modifiers or very experienced users of the individual procedures presented. Altogether, 59 different surgical procedures are described on 2–8 pages each, with many high-quality illustrations. The text of each chapter is strictly telegraphic and among the subtitles encountered are diagnosis, indication for surgery, contraindication, advantages/disadvantages, patient positioning, and in most chapters also a special section on pitfalls – which are very instructive and based on actual experience.

The aim has been to describe all kinds of procedures performed on the spine – from disc and fusion surgery to operations for tumors, fractures, inflammatory disorders and deformities. Without a doubt, the main focus of the book is on spinal deformities, which also produce the most complicated surgical challenges. The overall balance of the book is adequate, but the next edition could perhaps contain the following improvements: The book does not have sufficient coverage of spinal trauma. The treatment of spinal trauma is only described briefly in relation to C1–C2 injuries and posterior decompression for lumbar fractures. In the lumbar spine part, a chapter on PLIF (posterolateral interbody fusion) would seem relevant, as anterior and transforaminal lumbar interbody fusion have each been given a chapter. Endoscopic approaches have been described only in relation to anterior thoracoscopic release for spinal deformity. However, new types of operation are appearing continuously and it is most satisfying that the authors have included a chapter on vertebroplasty as well as kyphoplasty, and also

on disc arthroplasty as related to the Charité prosthesis. Today at least three other competitive types of disc arthroplasty are in use.

The extremely rapid evolution within spinal surgery, especially regarding new implants, creates the danger that this type of textbook will have a very limited shelf-life. By the time a book such as this has been edited and printed, still newer techniques will have emerged. Despite this, it is still the most up-to-date presentation and reflects the state of the art in spinal surgery today very well. The book can be recommended for the library of every orthopedic and neurosurgical department dealing with spinal surgery. It must, however, be complemented with one of the classical works on approaches to the spine. Although the book has been produced mainly for experienced spinal surgeons, it can also be used for educational purposes – due to its informative structure and good illustrations.

To conclude, this book is the result of a substantial effort to present surgical techniques of the spine in an up-to-date fashion. It is illustrated with many excellent drawings relating to the different techniques, which will make it very valuable when planning the next day's surgery. During the years used to produce this volume, a number of new techniques have emerged and some have disappeared from the market. This rapid development will be even more apparent in the future, but this should not discourage leading authorities from producing works such as "Surgical techniques for the spine".

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Daniel's knee injuries. Ligament and cartilage structure, function and repair, 2nd edition

Robert A. Pedowitz, John J. O'Connor, Wayne H. Akeson, 649 pages, Lippincott Williams & Wilkins 2003

ISBN 0-7817-1871-1

The editors have published the second edition of Dale Daniel's *Knee ligaments: Structure, function, injury and repair* with some modifications and alterations – in an attempt to make “the textbook current for students, researchers and clinicians”.

The book offers a comprehensive presentation of ligament and cartilage anatomy, physiology and biomechanics. A considerable number of articles have been reviewed, from historical to fairly recent publications, in an attempt to cover all fields.

The book is divided into 4 parts: Structure, Function, Injury and Repair, and Special Clinical Issues.

The Structure part covers macroscopic, histological and vascular anatomy with little to add over and above what is covered by other similar textbooks. The text is illustrated with fairly old black and white anatomical pictures and a few monochrome drawings. The layout appears not to be of the standard expected of a textbook in 2003/2004. No arthroscopic anatomy is included. The physiology chapter gives a fair introduction to biological transmission, while the biochemistry chapters do give a thorough overview of ligament anatomy, and collagen types and importance.

The Function part contains a numbers of chapters which run through more or less all available literature on biomechanics: from theoretical studies through to cutting studies and the *in vivo* studies from Burlington, Vermont. The chapters on these topics give a very comprehensive and thorough introduction to mechanics of the knee ligaments, although some of the latest studies on the postero-lateral corner are lacking. In part, these topics are illustrated with good color drawings.

The chapter on basics of cartilage anatomy, biochemistry and structure does not give due credit to the very high number of basic science studies that have been published recently.

In the third part on Ligament injury and repair, a number of animal and basic science studies are referred to, giving the reader good information on ligament healing potential and strength after healing. The relevance of this chapter to the clinical situation appears negligible, and the importance for the inexperienced student or young clinician is difficult to fathom. The chapter on meniscal healing and repair shuffles between historical information of lesser clinical importance and the valuable anatomical studies of Steven Arnoczky. Some of this information would have been more appropriate in the anatomic part. The introduction to treatment strategy and technique is inferior and somewhat old-fashioned.

The Injury and repair part contains some very good chapters on epidemiology, clinical tests and diagnosis, as well as on treatment of ligament injuries. The index gives a good overview and facilitates access to the different topics. The CD-ROM enclosed contains a supplement of mathematical 3D motions analysis of the knee joint and the ligaments. The attempt to upgrade the first edition to a modern textbook has been only partially successful.

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The adult knee

J J Callaghan, A G Rosenberg, H E Rubash, P T Simonian and T L Wickiewicz, 800 pages, Lippincott Williams & Wilkins 2002

ISBN 0-7817-3247-6

With this two-volume book, the editors have tried to cover all aspects of interest to orthopedic surgeons subspecializing in knee surgery. They have apparently attempted to keep every chapter independent from other chapters so that cross-references are kept to a minimum. This leads to a large number of chapters, but also to a very useful book in which special subjects can easily be located and studied.

The book is divided into 12 sections with no less than 117 chapters written by 217 authors (US 195, Canada 10, Japan 3, UK 2, Saudi Arabia 2, New Zealand 1, Germany 1, China 1, Switzerland 1, Australia 1). It must have been a formidable task to coordinate this large number of authors and chapters into a coherent presentation, and the editors should be complimented for succeeding.

Section I (24 pages) gives a brief and very educational overview of knee surgery in general and knee arthroplasty in particular, and section II (272 pages) covers relevant aspects of basic science (anatomy, biomechanics, biology of injury and repair, and biomaterials).

The third section (256 pages) is on clinical science and covers evaluation of the knee, physical examination, imaging, ratings for clinical outcomes and diagnostic algorithms, rehabilitation principles, and conditions of the knee unrelated to injury (arthritis, AVN, septic arthritis, complex regional pain syndrome etc).

Section IV (332 pages) discusses soft-tissue injuries of the knee. There is an introductory part which discusses arthroscopic and perioperative aspects of soft-tissue surgery. This is followed by a part on management of meniscal injury which contains 3 chapters on meniscal resection, repair and transplantation, and 7 chapters on single ligament injury – from discussion of graft selection for ligament reconstruction to revision PCL reconstruction. In addition, there are 6 chapters on multi-ligament injuries. A chapter on the arthritic

ACL-insufficient knee can be found in section VII.

Section V (44 pages) discusses osteochondral injuries. The techniques discussed are mainly microfracturing, chondrocyte transplantation and osteochondral allografts, while there is no in-depth discussion of mosaicplasty. For a European audience, this seems to be a deficiency.

Section VI (32 pages) presents three chapters on patellofemoral disorders, including OA.

Section VII (86 pages) presents 8 chapters on alternatives to arthroplasty for knee arthritis, including chapters on osteotomy and synovectomy.

Section VIII (244 pages) contains 22 chapters relating to primary total-knee arthroplasty. The strength of this section is the very strong clinical focus of the individual sections. There are, for example, dedicated sections on soft-tissue balancing in the varus knee, on the Asian knee and on bilateral total-knee arthroplasty.

Section IX (42 pages) contains an important discussion on perioperative management in TKR, including DVT, blood management and preoperative medical evaluation.

Section X (72 pages) discusses complications following TKR, including stiff knees, periprosthetic fractures and instability. A discussion of infection is i.e. postponed to section XI.

Section XI (120 pages) presents 14 chapters on revision TKR. There are detailed chapters on implant selection, surgical technique, and on management of the infected TKR.

Section XII (15 pages) discusses the future of both TKR and the treatment of ligament injuries.

Throughout the presentation, it is evident that the individual authors are great authorities on their individual subjects, and this is the case both for the more basic science-oriented chapters and for the directly clinically related chapters. One of the authors, for instance, writes “of the last 1000 TKR

that I have performed”, which should impress even the most productive reader!

The editors should be highly commended for creating a tightly edited book that allows both the subspecialist and the trainee easy access to highly relevant information in relatively short and self-contained chapters, and which at the same time allows the reader more extensive reading of the book. This balance is extremely difficult to achieve.

For the surgeon who is contemplating the purchase of a subspecialized knee book, this two-volume publication will probably be a good choice. There are other large edited knee books on the market and the final choice will probably depend on personal preference. The book being

reviewed does not contain chapters on fractures (except for periprosthetic fractures), on pediatric knee conditions, or on tumors around the knee. For these subjects the reader will have to look elsewhere. For the surgeon who is considering buying a subspecialised knee book for the departmental library, this book will probably prove popular – as one of its strengths, as already mentioned, is the tight editing which results in a large number of focused and very topical chapters. Together, these constitute an easily accessible reference.

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