

The most puzzling aspect of the viewer is that the window size is fixed, and too small for the entire image, regardless of the size of the computer screen. Scrolling around images is cumbersome, and it is frustrating to try to find the label for a particular structure.

Some of the anatomical labeling is misleading: the subthalamic nucleus is mis-identified as the zona incerta [sic]; Papez circuit fails to register connections in the parahippocampal gyrus; there is no connection from the dentate fasciculus to Ammon's horn is revealed. Many connections are depicted in only a single plane, making it difficult to determine the actual trajectory of the pathway in question.

Searches are far too slow to be useful, and some search terms (for example, nucleus accumbens) yield no 'hits' after close to a minute of grinding and whirring. Nucleus gracilis yields only one 'hit, showing only a crude cartoon of ascending connections from the spinal cord; no depiction of a cross section of the lower medulla can be found; 'zygomatic arch' results in two 'hits', neither of which actually label the requested structure. On the other hand, some searches yield several useful illustrations, and the circuitry for some.

The image quality is modest, as they are principally cartoon-style with minimal detail. I was interested to assess the sprinkling of histologic images which flavour the anatomical line diagrams; sadly, most are unrecognizable, such as the pixellated view of the pineal gland which is reminiscent of a psammomatous meningioma.

One function which works reasonably well is the ability to transfer images to a Powerpoint presentation; however, I prefer to simply scroll through the raw data and find the jpeg from the finder and slide that directly into my presentations, something I can't do with the Thieme Collection. Obviously the problem locating desired images would be obviated by purchasing the paper version of the Atlas.

With respect to usability, the overall sluggishness of the DVD has already been mentioned. This pertains to start-up and shut down; on my PC I was unable to see the desktop disc icon and had to waste time ejecting the disc through the 'My Computer' link. The program hung several times, requiring relaunch, and perseverated on a selected image despite choosing an alternative from the search results.

In summary, this DVD represents a laudable first attempt at filling an important niche, but falls short in several key areas. Hopefully the next edition will see improvements to the above noted deficiencies.

*Rob Macaulay
Halifax, Nova Scotia*

SURGICAL MANAGEMENT OF LOW BACK PAIN. SECOND EDITION. 2009. By Daniel K. Resnick, Regis W. Haid Jr., Jeffrey C. Wang. Published by Thieme Medical Publishers. 232 pages. Price C\$159 approx.

Lower back pain is one of the most common reasons for patients to seek out the advice of a physician. Dr. V. Sonntag, in the foreword to this Second Edition, is quick to point out that surgical management is a last resort. Most Canadian spine surgeons perform few (if any) surgeries for low back pain that is not related to some clearly identifiable cause (e.g., spondylolisthesis, tumour, trauma). However, there is a growing body of evidence that clearly shows lumbar fusion to be an

effective treatment for properly selected patients with chronic low back pain whose symptoms have not responded to non-operative measures.

The text is divided into 23 chapters, and is organized using a "basic principles to advanced concepts" approach. The language and tone is straightforward, and each chapter is presented in nicely subdivided sections. The black-and-white illustrations are clear for the most part, but colour might have been helpful, especially for some of the pathology and intraoperative photos.

The first eight chapters deal with anatomy, imaging, pathophysiology, biomechanics (including the importance of sagittal balance), principles of patient selection and evidence-based medicine. The next four chapters describe common surgical techniques, including instrumented and non-instrumented posterolateral fusion and various interbody fusion techniques. Minimally invasive fusion (Chapter 13) and some controversial percutaneous techniques (Chapters 20 and 21) for lower back pain are also discussed.

Five chapters are devoted to biologic aspects of spine surgery including bone healing and the rapidly evolving fields of gene therapy and tissue engineering for spinal fusion and disc regeneration. A tremendous expansion of knowledge in this area has occurred in the last few years and the clinical application of bone morphogenic protein has become a popular method to enhance spinal fusion.

The text ends with two chapters on lumbar disc arthroplasty, and emphasize patient selection, technical pearls and complication avoidance. In both of these chapters, the authors correctly emphasize that early clinical success with arthroplasty has been shown to be equivalent to spinal fusion, but good-quality long-term outcome data are lacking.

This text will likely appeal most to the practicing spine surgeon as well as to the resident or fellow who is training to become a spine surgeon. The problem with textbooks in general, and especially those that attempt to summarize such a rapidly developing field, is that they age quickly. For example, there is a nice review of the Investigative Device Exemption (IDE) study of the Charité (DePuy Spine, Raynham, MA) disc arthroplasty from 2005 (Chapter 23), but the more recent ProDisc-L (Synthes Inc., Paoli, PA) IDE study¹ is not reviewed.

Although a text can at best only provide a snapshot of current technology, the strength of this book is its illustration basic principles that underlie the techniques used by leading practicing surgeons. Moreover, it captures surgeons' thought processes that are key to understanding the correct choice of procedure for the correct patient.

*Daryl R. Fourney
Saskatoon, Saskatchewan*

REFERENCE

1. Zigler J, Delamarter R, Spivak JM, Linovitz RJ, Danielson GO 3rd, Haider TT, et al. Results of the prospective, randomized, multicenter Food and Drug Administration investigational device exemption study of the ProDisc-L total disc replacement versus circumferential fusion for the treatment of 1-level degenerative disc disease. *Spine*. 2007 May 15;32(11):1155-62.