

angiographic anatomy, approaches for stenting, equipment. There is also a section on management of acute stroke in this part.

The last part describes complications related to stenting, and post-procedural monitoring and follow-up.

The individual sections are comprehensive, and the text and schematic figures are of good quality. However, many of the angiographic images are dark, or poor quality, suggesting that they are either low matrix images, cine mode or fluoroscopic loop stored images, rather than high-detail multi-frame digital subtraction (DSA) images. In a field where high spatial resolution, as well as high quality angiography, are essential, as described in the equipment needed in Part II, this detracts from the otherwise good quality of the book.

At the end of Part III, there is a short section on training and credentialing, which comes after the section on reimbursement. It does not relate to the Canadian health care system, or other jurisdictions, merely the U.S. system. In my view, this is a minor deficiency. There is a larger section on training and credentialing - Chapter 8 - in Part III, which is more comprehensive, detailing training requirements for operators.

The sections on anatomy (apart from images, described above) are good, and the technique sections are also good.

The index is adequate.

Overall, this is a reasonable introduction to carotid artery stenting, allowing for the suboptimal image quality.

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NEUROTRAUMA AND CRITICAL CARE OF THE BRAIN. 2009. By Jack Jallo, Christopher M. Loftus. Published by Thieme Medical Publishers, Inc. 485 pages. C\$215 approx.

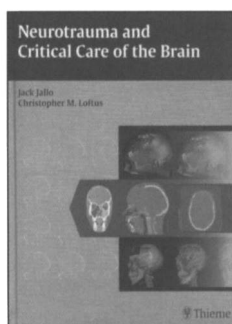
Rated ★★★★★

“Neurotrauma and Critical Care of the Brain” is a well compiled document on the current status of diagnosis and treatment of brain trauma. The team approach makes it possible for experts in the different subsections to write about each of those sections in an authoritative and up-to-date fashion. The subsections include:

- Epidemiology
- The Signs of Brain Injury
- Management of Brain Injury
- Critical Care
- Outcome
- Socioeconomics

Subdivisions in the book are very well organized. This lends itself to the book being used as a reference for current concepts in different aspects of neurotrauma. Of particular interest is the fact that most chapters have a summary of the content. Each chapter also has extensive references.

I particularly liked the fact that the authors include experts in Critical Care. They discussed different aspects of non-invasive,



and invasive monitoring. They were also able to separate concepts that are of research status from those that are of practical clinical value at this time.

“Mild brain injury” has become a major topic in recent years, especially as related to sports. This is often treated very lightly in books on brain injury. I was glad to note that a considerable space was spent on this subject, including a mention of the “Consensus Statement of the 2nd International Symposium on Concussion in Sports, Prague 2004”. Readers should of course note that there is now a “Consensus Statement of the 3rd International Symposium on Concussion in Sports, Zurich 2008”.

The section on “Introduction to Brain Injury Imaging” is very well done. Typical images of common types of brain injury are demonstrated. I would have liked a companion CD, or DVD, of more images that are described in the book, as well as all quoted references on the same CD.

Overall, I highly recommend this book for all who are interested in evidence based concepts in the management of patients with traumatic brain injury.

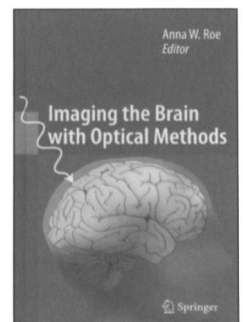
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IMAGING THE BRAIN WITH OPTICAL METHODS. 2010. Edited by Anna W. Roe. Published by Springer. 267 pages. C\$190 approx.

Rated ★★★★★

This volume is a good overview of the many uses of optical imaging to explore brain function. A wide range of methodologies discussed, and the techniques address research questions at different “levels of organization” (from intracellular imaging to systems level functional imaging of the brain). It is therefore likely that individual scientists will find only a few chapters directly relevant to their direct interests. For example, those looking at the cellular level will be interested in Chapter 2 concerning fluorescent sensors at the cell membrane level. Chapter 4 on somatosensory imaging will be of particular interest to those in exploring sensory-motor, but this section may also interest those dealing more generally with fMRI brain imaging.

Much of the book is concerned with optical imaging of intrinsic signals, with interesting applications of this technique include investigations of the representation of objects in monkey inferotemporal cortex and imaging of short-term working memory in prefrontal cortex (Chapter 5). A very interesting and useful methodological chapter is provided by Chapter 7, relating to intrinsic signal imaging in the human cortex intraoperatively. Another clinically relevant application of optical imaging, again relying on the detection of blood flow or a BOLD (blood oxygen level dependant) like effect, is provided in Chapter 8, which nicely



describes the use of near infrared spectroscopy to explore cortical activity in human infants.

The whole field of hemodynamic based imaging of the brain still has many unknowns regarding the origins of the hemodynamic signal and particularly the local changes in vasculature, which are responsible for changing blood flow/volumes and related BOLD signals. In this regard, Chapter 3 is very useful. It discusses the role of astrocytes in controlling brain hemodynamics. A further review relating to the control of cortical vasodynamics is given in Chapter 11, interestingly using another optical imaging modality, the two-photon laser scanning microscope.

For those interested in exploring brain physiology on a faster timescale, and not constrained by hemodynamic aspects of many imaging techniques (optical imaging of intrinsic signals; fMRI), Chapter 9 on the use of voltage sensitive dyes for probing visual cortical function will be of particular interest, as will Chapter 10 on fast optical neurophysiology.

Overall, this book contains very useful basic level reviews, other chapters cover systems-level and modality-specific (vision;

somatosensory) techniques. The volume does cover an interesting range of optical methods. The best chapter for a more general reader is Chapter 1, which is a superb overview of all of the optical methods that have been, or are currently used for exploring brain function. There is an historical perspective here, which will be of general interest and is very enjoyable to read. The author of this chapter, John George, covers a whole spectrum of topics in some detail. The review ranges from biological chromophores and their possible use as optical reporters, through functional imaging such as optical imaging of intrinsic signals and methods using BOLD signals. George reviews optical signals that have fast time resolution such as calcium imaging other non-hemodynamically based optical signals. Of interest he also describes how the techniques have followed technical advances for optical image capture, particularly the value of the CCD camera. This chapter and indeed this whole book very usefully support the final comment of Dr. John George that optical imaging techniques can be used to address the most difficult remaining issues in regard to understanding the function of the brain.

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