Book Review: *Principles and Practice of Keyhole Brain Surgery*

By: Charles Teo, Michael E. Sughrue
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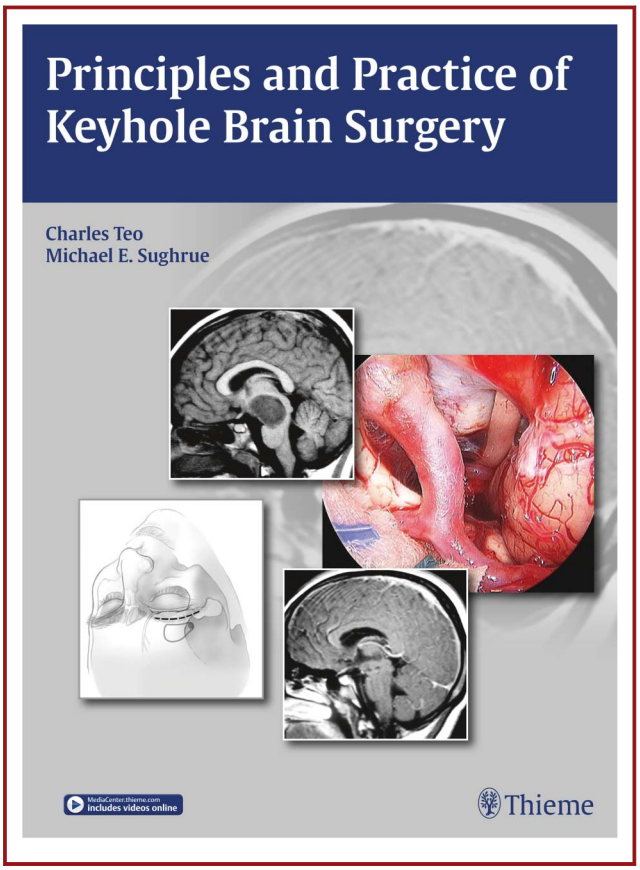
Principles and Practice of Keyhole Brain Surgery, by Drs Charles Teo and Michael E. Sughrue, is an authoritative, well-written, and beautifully organized book delivered by a world-class neurosurgical teacher and his team. It is organized into 16 chapters enhanced with a wealth of pictures, ranging from pre- and postoperative neuroradiology images, to illustrations of patient positions and skin incisions, intraoperative photos through the microscope and endoscope, numerous descriptive diagrams, and a rich collection of 109 high-quality, narrated intraoperative video clips.

The philosophy this book is based on is outlined by Dr Spetzler in the Foreword, the authors in the Preface, and Dr Teo in the Acknowledgements. It celebrates the concept of smaller (keyhole) surgical approaches, and simultaneous use of the microscope and endoscope to maximize the working space and minimize intrusion. This philosophy is manifested through state-of-the-art perioperative technology, team organization, and delivery.



The first chapter introduces the keyhole concept, and we particularly appreciate the authors' message that a "*Keyhole is a concept and not a size*." The second chapter emphasizes the importance of multifaceted preoperative planning, which is essential but sometimes downplayed, and summarizes this idea into 8 principles: (1) Study the films closely, (2) Find the long axis of the tumor, (3) Catalog the tumor and its component parts, (4) Use cerebrospinal spaces whenever possible, (5) Expose the surface when needed, (6) Know the steps of operation, (7) Keep incisions simple, and (8) Consider the endoscope.

The third chapter highlights the importance of technical equipment—the microscope, the endoscope, and other surgical tools—with an emphasis on an all-inclusive strategy that uses the microscope and endoscope simultaneously, not one to the exclusion of the other. The fourth chapter digs deeper into the role of the endoscope in keyhole surgery and its technical capabilities.

The fifth chapter is one of our favorites. It contains a wealth of high-quality intraoperative pictures documenting a variety of transcranial and endonasal approaches and endoscope positions. These include the parasellar, endonasal, transtubercular, transcallosal, transclival, and suboccipital approaches. The pictures are conveniently labeled and color-coded for better understanding of the intricate anatomy.

The sixth chapter gives us a tour of common keyhole approaches in step-by-step fashion, including the convexity, the eyebrow, the mini-pterional, the mini-subtemporal, the retrosigmoid, the interhemispheric, and the suboccipital.

Chapters 7 to 16 take us through an exciting, detailed journey loaded with technical pearls and teachings for using the keyhole approaches in endonasal surgery: supratentorial intra-axial tumors, tumors of the cribriform plate and orbit, parasellar masses and the interpeduncular space, craniopharyngiomas, and tumors of the middle fossa, the cavernous sinus and tentorium, the cerebellopontine angle, the petrous apex, the tectum and pineal region, the foramen magnum, and the fourth ventricle.

The important philosophical point in all of these approaches, one that seasoned neurosurgeons understand and one that the authors of this book clearly embrace and endorse, is that the microscope and the endoscope are complementary tools that do not mutually exclude the other but work in synchrony.

In his Preface, Dr Teo emphasizes a phenomenon in teaching. We see this phenomenon occasionally in our practices while teaching, and if we are lucky we see it more than once. The phenomenon is this: we learn from our fellows frequently more than we teach them. They open our eyes to see what we did not see even although we were

looking at the facts all the time. It takes a talented fellow to recognize an idea in the mentor's practice, take it, and further develop it into a beautiful product. This can be an anatomic or other scientific observation, a discovery and publication, or a review of the mentor's operative series during which the student discovers an important conclusion of which the mentor was not even aware. In this case, Dr Teo's former fellow has helped to put together a beautiful monograph, presenting to the neurosurgical readership a lifelong development of a simpler, better neurosurgical philosophy. We have only one small suggestion for a second edition—a chapter discussing surgical complications and pitfalls and how to prevent them.

On a personal note and for full disclosure, the senior author of this review crossed paths with Dr Teo in Little Rock, Arkansas, about 20 years ago. Dr Teo was a young attending at that time, and I was a resident in a great program led by Professor Al-Mefty, with Professor Yaşargil there too. I remember that we all advanced there under the umbrella of these 2 phenomenal teachers. I did a lot of difficult cases with Dr Teo, including many "large" skull-base craniotomies, and during that process learned from the exceptional, gifted, hands-on teacher he was even then. In reviewing this book and reflecting, I recognize how his philosophy (and mine too) evolved over time toward finer, smaller craniotomies and approaches. While I wholeheartedly embrace this concept, I respectfully suggest that, many times in neurosurgery, less is simply less and certainly is not more.

In the Preface, Dr Teo states that this book is not intended for beginning neurosurgeons, but for "a neurosurgeon who already knows to remove the brain tumor in question through some standard approach." I would suggest, however, that a novice neurosurgeon, a medical student, and even operating room personnel with an interest in neurosurgery can equally benefit from reading this text and reviewing the offered video clips, albeit from a different perspective. They can be inspired by the field of microneurosurgery and begin to think about the ever-existing quest for refined neurosurgical approaches, which the authors summarize in the concept of the "keyhole." I would suggest that this book should be a valuable addition to any neurosurgical library.

Disclosure

The authors have no personal, financial, or institutional interest in any of the drugs, materials, or devices described in this article.

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Book Review: *Imaging of Traumatic Brain Injury*

By: Yoshimi Anzai, Kathleen R. Fink
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Hardcover: 200 pp.
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Imaging of Traumatic Brain Injury by Drs Yoshimi Anzai and Kathleen R. Fink will have a welcome place on my bookshelf. This comprehensive textbook will be useful to radiologists, neurosurgeons, otolaryngologists, ophthalmologists, plastic surgeons, emergency physicians, and practitioners of neurocritical care. The tome includes 12 chapters amidst its 180 pages. The authors draw from material accumulated at Harborview, which is one of the world's great trauma centers. The particular value of this text, of course, is the excellent images that are really at the heart of this work.

The 12 chapters include:

- Epidemiology of Traumatic Brain Injuries in the United States
- Evidence-Based Imaging and Prediction Rules: Who Should Get Imaging for Mild Traumatic Brain Injury?
- Neuroimaging of Traumatic Brain Injury