Alan Jay Schwartz, M.D., M.S. Ed., Editor

Intraoperative Neurophysiology; Interactive Case Studies. Edited by Alan D. Legatt, M.D., Ph.D. Brooklyn, New York, Demos Medical Publishing, 2015. Digital Media (DVD) for Win 7, 8, or 8.1 and MAC OSX 10.7 and above. Price: $110.

Every anesthesiologist has some knowledge of how to monitor the function of the nervous system. Those who specialize in the anesthetic management of neurosurgical and complex spine cases are engaged, directly or indirectly, in intraoperative monitoring of the nervous system on a regular basis. Given the importance of team performance in patient safety, understanding the factors affecting the ability of the neurophysiology team to monitor a patient for a particular procedure has assumed a greater level of importance. The DVD, *Intraoperative Neurophysiology; Interactive Case Studies*, provides the material necessary for a practicing anesthesiologist to acquire a deeper understanding of the techniques and analysis required to interpret neurophysiological data from the perspective of a neurophysiologist with the use of an interactive case-based methodology.

The series of 50 cases include carotid endarterectomies, cerebral aneurysms, intracranial and spinal cord tumors, and complex spinal deformity correction. A brief history, a short summary of physical findings, and relevant imaging are presented for each case. The author then presents the monitoring modalities selected for the case and the rationale for their use, followed by a focus on baseline data, changes from baseline, and the implications of the changes. In each case, the user is challenged to explain the data using the principles of intraoperative neurophysiology. Embedded video clips are used to enhance the learning experience for modalities such as electromyography when static images are insufficient to demonstrate an important principle. The DVD provides the user the opportunity to evaluate their understanding of the material presented by taking a 50-question "quiz." The multiple-choice format and the commentary provided for both correct and incorrect answers provide the user a useful self-assessment tool.

The cases are indexed by the surgical procedure, but consecutive cases involve different surgical procedures. The SEARCH tab allows one to find specific types of cases or cases relevant to specific monitoring modalities. Alternatively, the SEARCH can be used to find cases that discuss specific topics such as anesthesia effects on evoked potentials or assessment of "depth" of anesthesia, from the perspective of the neurophysiologist. The neurophysiologist is especially concerned about anesthetic effects on evoked potentials in patients with preexisting neurological comprise. Selected cases in the series demonstrate that the most permissive anesthetic techniques may be required to obtain reliable neurophysiological data. Understanding how the neurophysiologist assesses depth, using a combination of electroencephalographic, electromyographic, and evoked potential data, rather than a single device enables the anesthesiologist to interpret terms such as "light" and "too deep" in the context from which they were derived.

The primary audience for this DVD is the group of practitioners who engage in the acquisition and/or interpretation of intraoperative neurophysiological data; from the perspective of an anesthesiologist, this is both its strength and weakness. The questions and discussion that accompany the cases presume a more-than-basic knowledge of how somatosensory, motor, and auditory evoked potentials are generated as well as relevant neuroanatomy. The user without an extensive background in intraoperative neurophysiology can frequently follow the discussion; however, preparatory reading is recommended. The chapters covering somatosensory, motor, and auditory evoked potentials as well as electromyography in one of the standard texts on intraoperative neurophysiology will provide the background needed to achieve maximum benefit from the case studies. Completing the cases studies and the quiz will not qualify someone to interpret intraoperative physiological data *per se*; however, the information conveyed in the case discussions can enhance the experience of the anesthesiologist who participates in monitored cases on a regular basis. Evaluating the DVD as both an anesthesiologist and a practitioner of the real-time interpretation of intraoperative neurophysiological data, this reviewer believes that by completing *Intraoperative Neurophysiology; Interactive Case Studies* an anesthesiologist can gain insights into what is important to the intraoperative neurophysiology team and learn how neurophysiologists view and interpret data. As a consequence, the anesthesiologist is in a better position to facilitate communications among the teams and to improve team performance during the critical situations that arise when neurophysiological signals are lost or are severely compromised.

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