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**Specialty Imaging: Pain Management: Essentials of Image-guided Procedures, First Edition.** Edited by Donald V. La Barage III, M.D., Lubdha M. Shah, M.D. Philadelphia, Lippincott, Williams & Wilkins, 2011. ISBN-10: 1931884196. ISBN-13: 978-1931884198. Pages: 200. Price: \$139.00.

In the past decade, interventional pain management has undergone tremendous growth as a result of improved understanding of the pathophysiology of various pain syndromes and advances of imaging tools to aid in their diagnosis and treatment. *Specialty Imaging: Pain Management: Essentials of Image-guided Procedures*, which is part of the Specialty Imaging series by Amirsys publishing, is an excellent source that depicts the most common image-guided pain management procedures performed today. The stated purpose of the book is to present pain management providers with a quick, concise reference to assist them in the evaluation of anatomic details of radiographic images of common clinical procedures and to provide a step-by-step guide to equipment preparation, procedural steps, and expected outcomes.

In its first edition, *Specialty Imaging: Pain Management: Essentials of Image-guided Procedures* is written for medical students, residents, and fellows or clinicians involved in interventional pain management. It consists of nine sections (general principals, diagnostic techniques, skull base, cervical spine, thoracic spine, lumbar spine, vertebral body, intervertebral disc, and pelvis) presented in a bulleted text format of only 191 pages. It is specifically designed to be an effective quick reference guide to some of the key principles of the most commonly performed pain management procedures.

Each chapter begins with a brief but clear outline of the anatomy of the topic to be discussed. The section is further divided into four main parts (terminology, gross anatomy, imaging anatomy, and anatomy imaging issues) that we found to be particularly interesting and useful. The accompanying text is supported by colorful, high-quality, three-dimensional volume rendering technique (3D-VRT) graphics positioned on a black backdrop that allows the anatomical illustrations to stand out. The placement of fluoroscopic radiographs adjacent to the anatomic graphics is useful when interpreting each radiograph.

After each anatomy section, there are four to six common clinical procedures that are each divided into five subtitled sections labeled terminology, preprocedure, procedure, postprocedure, and outcomes. A short list of current references is also included in each section of the book. The bulleted text allows the reader to easily comprehend the systematic approach to describing the clinical entity, stressing the importance of indications and contraindications, patient positioning, equipment preparation, docu-

mentation, and issues to avoid. Consistent with the Specialty Imaging series, each clinical topic contains a "Key Facts" section summarizing and highlighting the most critical facts for each procedure. The fluoroscopic radiographs and computed tomography images presented in the procedure sections typically are high quality and demonstrate classic findings clearly and accurately.

The text also includes information on procedures, such as sacral augmentation and intradiscal procedures, rarely found in recently published texts. Unfortunately, the section on piriformis syndrome includes only computed tomography images of the injection; fluoroscopy and ultrasound are not mentioned. In general, the preprocedural images in each section are an excellent addition and benefit the understanding of the postprocedural radiographs. The abundant use of arrows on the images to depict relevant anatomy is helpful.

An added benefit of this book is the Amirsys eBook Advantage (Salt Lake City, UT), which comes complimentary with the purchase of the hardcover book. It offers an online version of the book with fully searchable text and images. A minor drawback is that only one view of the image is offered and no method is provided to add notations or notes.

Overall, the variety and content of the image-guided procedures are appropriate and would be useful for medical students, residents, and interventional pain medicine fellows or clinicians because it provides focused examination of radiologic diagnoses, treatments, and expected outcomes of common image-guided procedures encountered by pain management clinicians. A few less common procedures, such as temporomandibular joint injections, sacroplasty, vertebral biopsy, and pubic symphysis injection, also are included, but stellate injections, superior hypogastric plexus, lumbar sympathetic, and ganglion impar injections are overlooked and would be beneficial for the reader. A limitation of the text is the lack of ultrasound-guided procedures or techniques, despite the widespread and expanding use of this imaging modality for multiple interventional pain blocks, such as lumbar facet block, cervical facet block, and stellate ganglion block. Thus, this book should not be viewed as a comprehensive pain management text, but it deserves a place in the reference collections of all interventional pain practices.

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**Capnography, Second Edition.** Edited by J. S. Gravenstein, M.D., Michael B. Jaffe, Ph.D., Nikolaus Gravenstein, M.D., David A. Paulus, M.D. New York, Cambridge University Press, 2011. Pages: 474. ISBN: 978-0-521-514781. Price: \$150.00.

Measurement of the partial pressure of expiratory carbon dioxide has evolved as an important physiologic and safety

metric. The continuous evaluation of the adequacy of ventilation by capnography is a standard for basic anesthetic monitoring (Committee of Origin: Standards and Practice Parameters, approved by the American Society of Anesthesiologists House of Delegates on October 21, 1986, and last amended on October 20, 2010, with an effective date of July 1, 2011). In recent years, recognition of the role of capnography for both operative and nonoperative applications has expanded tremendously. Acknowledging this evolution, the authors of the second edition of *Capnography* have significantly and successfully updated and added to the canon of knowledge and our understanding of carbon dioxide physiology and monitoring, as well as their use in newer, emerging applications. This book combines the knowledge of numerous experts across multiple and diverse medical specialties, including biomedical engineering and veterinary science.

Although succinct, each chapter in this new edition is lucid and comprehensive. The textbook is organized into six broad sections and is structured in a logical sequence, targeted to answer questions arising from not only the medical specialties of anesthesiology and critical care medicine but also emergency medicine and emergency medical services, sleep and neurologic sciences, and medical disciplines exploiting biofeedback behavioral treatment therapies. Although it is considered customary to include historical chapters at the beginning of a textbook, the authors have intentionally concentrated initially on the clinical utility of capnography after an excellent introductory chapter on clinical perspectives.

The utility of capnography depends on an understanding of the relationship between arterial carbon dioxide, alveolar carbon dioxide, and end-tidal carbon dioxide, especially in numerous clinical scenarios, some of which, such as a pul-

monary embolism, are life threatening. In sections two and four, the authors have successfully provided a better understanding of the above relationship by clarifying key concepts in carbon dioxide physiology in association with capnography. The technical section is well written and appears equally important in complementing a thorough understanding of capnography.

Appropriate illustrations and tables have been exploited throughout the textbook to the authors' advantage to emphasize the relevance of capnography, as well as make the case for its growing need. The book is well indexed, with a useful appendix on capnogram patterns that are of substantial diagnostic value.

Capnography is essential to confirming the appropriate placement of endotracheal tubes and supralaryngeal devices in the operative and the out-of-hospital settings. In addition, during lifesaving cardiopulmonary resuscitation, the generation of adequate circulation can be assessed by the detection or restoration of carbon dioxide waveform. These are a few of the prime examples of daily clinical scenarios described in this textbook that necessitate a thorough understanding of capnography.

This new edition on capnography reaffirms the status that the first edition enjoyed of being a "gold standard" on the subject of capnography in multiple roles, as a standard reading tool, a reference source, and a teaching aid to enhance the clinical application of capnography. This textbook will continue to remain an exceptionally valuable and comprehensive resource as long as capnography remains an indispensable tool for end-tidal carbon dioxide monitoring.

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