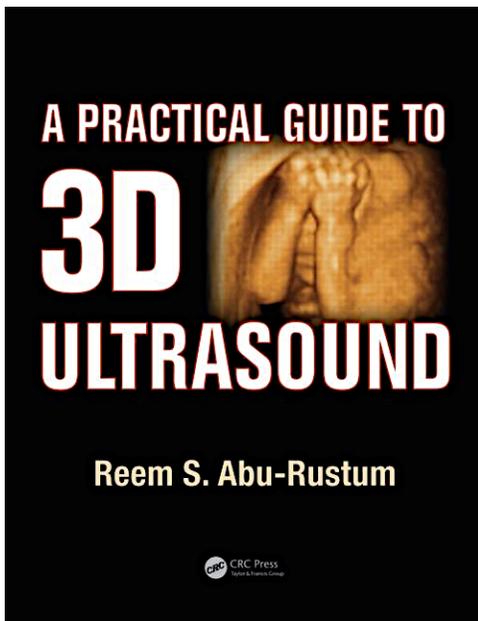


Book Review: "A Practical Guide to 3D Ultrasound," by Reem S. Abu-Rustum

Reviewed by Mark S. Sklansky, MD



A Practical Guide to 3D Ultrasound
by Reem S. Abu-Rustum, MD
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Over the past 25 years, the field and practice of diagnostic obstetric/gynecologic ultrasound has advanced like never before. Much of this progress is due to the development of increasingly powerful computing systems and sophisticated transducer technology. Advances in these areas have resulted in vast improvements in 2D image quality, with exponentially superior depth and resolution capabilities.

At the same time, these dramatic technological advances have also led to the development of profound 3D/4D imaging capabilities. Since the early pioneering work of Dolores Pretorius and Thomas Nelson in the late 1980s and early 1990s, the field of 3D/4D obstetric/gynecologic ultrasound has grown from an intriguing novelty in scattered academic centers, to an important, commercially-viable clinical tool in practices around the world.

While many thousands of papers have been written on 3D/4D obstetric/gynecologic ultrasound, few resources exist for the practitioner interested in a general review of the technique, and in a practical explanation of its clinical application. Dr. Reem S. Abu-Rustum, an internationally recognized authority and wonderfully-gifted teacher in the field, has recently published an outstanding, clinically-oriented "how-to" textbook to fill this void. *A Practical Guide to 3D Ultrasound* will be of great interest to those practitioners interested in introducing or expanding the use of 3D/4D obstetric/gynecologic ultrasound in their practice or at their institution.

The textbook begins with easy-to-read background chapters on terminology,

acquisition, evaluation and display of volume-data. Subsequent chapters discuss the application of specific techniques and software, such as STIC (spatiotemporal image correlation), VCAD (volume computer-aided diagnosis), and VOCAL (virtual organ computer-aided diagnosis), followed by multiple organ-specific chapters detailing the approach and rationale for application of 3D/4D ultrasound to various obstetric/gynecologic and (primarily) fetal areas (heart/spine/brain/face/GI/GU, among others). The text ends with an informative chapter on coding/billing and the role of medical ultrasound practices in providing "keep-sake" fetal images to expectant patients and their families.

This well-written and clinically grounded textbook has innumerable strengths, foremost among them: Dr. Abu-Rustum's years of experience, attention to detail, and candid, practical approach. Beautiful and instructional color images compliment the text throughout the book, practically on every page. These images are priceless, and can be reviewed alone along with their legends. Specific descriptions of various published algorithms and techniques can help readers translate what can be found in academic journals to actual clinical practice. Among the greatest assets of the book are the precious "practical pearls" found at the conclusion of each chapter. These pearls alone are worth the price of the text.

The textbook's primary weakness may represent the flip-side of one of its strengths. The inclusion of terminology, approaches and algorithms that are currently

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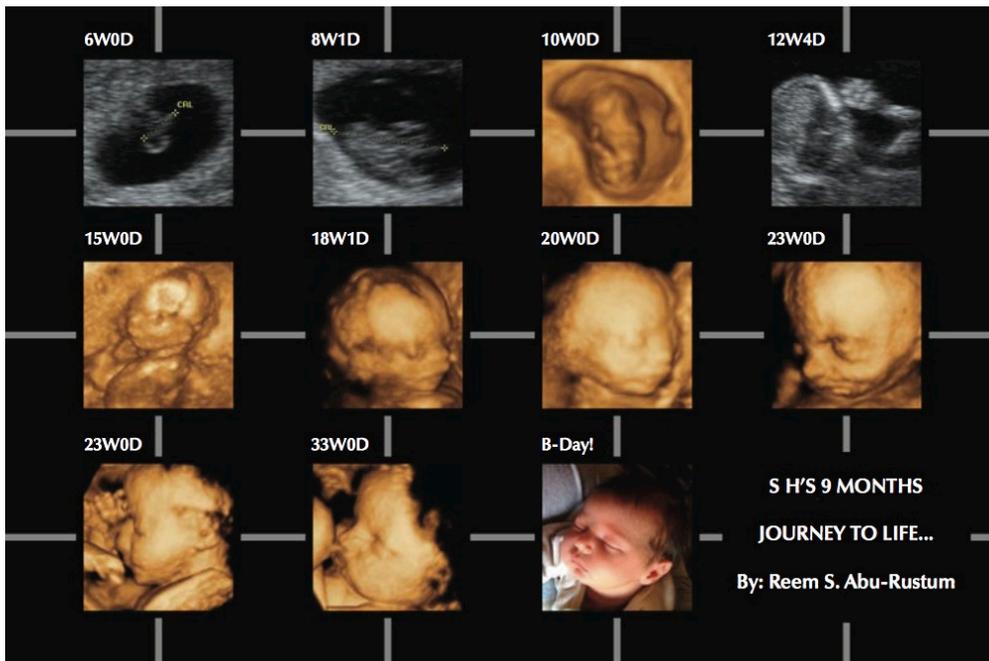


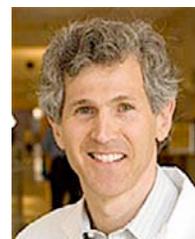
Image from the Preface. page xi. Reprinted with permission.

also by somewhat cumbersome vendor-specific algorithms/techniques.

Dr. Abu-Rustum's textbook represents a landmark "user's manual" for the practitioner of 3D/4D obstetric/gynecologic ultrasound, and teaches many valuable lessons beyond specific techniques. Among these lessons, as stated in her "practical pearls" section, is that "the key to a good 3D image is a good 2D image." Dr. Abu-Rustum appropriately emphasizes this caveat throughout the text, as well as the potential for artifact found in all applications of 3D/4D ultrasound. She offers numerous tips/pearls on how to obtain high quality 2D (and thus 3D/4D) images, and how to minimize artifact, including narrowing the field of view and obtaining proper angles of acquisition. But, the book's focus remains squarely on the practice of 3D/4D obstetric ultrasound.

Moving forward, practitioners of obstetric/gynecologic ultrasound around the world are sure to see 3D/4D applications continue to have an increasingly important and pervasive role in everyday practice. Dr. Abu-Rustum's Practical Guide to 3D Ultrasound will help us get there.

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