

Book Review

A Practical Guide to 3D Ultrasound

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Three-dimensional ultrasonography (3DUS) continues to be refined with a bewildering array of 3D volume acquisition techniques and image analysis tools. Over the years, I have met many physicians and sonographers who desire to improve their skills and knowledge about 3D volume sonography. Dr. Abu-Rustum has compiled a practical and easy-to-read Guide that will certainly be welcomed by many who wish to better understand how this technology can be applied to the evaluation of problems encountered in obstetrics and gynecology.

The Guide is initially divided into succinct sections on 3D volume acquisition and related image analysis tools. This is followed by specific clinical examples that are practical and well illustrated using figures. Although the emphasis is on fetal applications, Dr. Abu-Rustum also touches upon how 3DUS can be used for gynecological patients as well.

By design, the Guide is brief and succinct. The Terminology and Basics chapter defines image analysis tools as well as a description of how they work with examples. Practical tips are shared as if one was learning from a personalized mentor who is providing ideas and suggestions to students based on her knowledge and experience. The Volume Manipulation chapter is very helpful although could have benefitted from the availability of supplemental video clips to better demonstrate basic concepts. Dr. Abu-Rustum uses 3D graphic illustrations of the fetus to correlate multi-planar views with transducer orientation. An important contribution is her presentation on the use of 3DUS during the first trimester of pregnancy, including an update on early evaluation of the fetal heart. For obvious reasons, many practitioners are particularly interested in evaluation of the fetal face and this Guide provides a dedicated chapter that explains different approaches for relevant qualitative and quantitative assessment. Other similar sections cover the fetal central nervous system, skeleton, heart, chest, gastrointestinal tract, genitourinary system, as well as specific OBGYN applications. Finally, an abbreviated list of key references are provided at the end of the Guide for readers who need to know more detail about the described techniques.

3DUS hardware and image analysis tools will continue to improve. Indeed, we will discover more innovative applications for this technology as an important complement to other diagnostic imaging modalities such as 2D ultrasonography and fetal MRI. Despite primary use of examples and software from a specific ultrasound manufacturer, Dr. Abu-Rustum explains general concepts about 3DUS that should be common to all OBGYN practitioners. *A Practical Guide to 3D Ultrasound* fills an important gap for these who wish to quickly learn more about how ultrasound volume imaging can be applied to clinical practice.

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