

**Challenger Fundamentals: EM ultrasound. Fundamentals for emergency and acute care physicians**

John L. Kendall, Mark Deutchman, Sarah A. Stahmer. 2008. Produced by Challenger Corporation. CD-ROM for Windows- or Macintosh-based systems. US\$395.00

I am an ultrasonography rube. Like most, I can identify whether the fetal head is down and I can pick out the fetal heart (because it moves if it's beating). When I was going through the additional training year in the emergency department, ultrasonography was not yet part of the curriculum. I imagined that, in order to gain a proficiency, I would have to attend a conference (preferably in Cancun). I was aware that there were online courses, for which I could register, but I had my doubts about distance education for such a visual and practical subject. I figured that so much of the training could only be hands-on.

Then I received *Challenger Fundamentals: EM ultrasound*<sup>1</sup> for review. This is a CD-ROM that cursorily outlines the history of the use of ultrasonography in the emergency department, mentions the physics underpinning ultrasonography, and then is divided into a further 8 sections (6 of which are anatomical, 1 for ultrasonography-guided procedures and 1 for trauma). So the tone of this review is not scholarly in the least; I cannot vouchsafe the CD-ROM's accuracy because I am a neophyte. I can only comment on how good the CD-ROM is as a teacher.

One of the big worries I have about this CD-ROM is the difference between the published recommendations by Ma and colleagues<sup>2</sup> about what an emergency ultrasonography course should include and the relative investments of this CD-ROM. For

example, the physics and orientation section took about 30 minutes to go through. In the curriculum outlined by Ma and colleagues, the amount of time that should be spent on physics is a *minimum* of 4 hours. Perhaps this is why I was perpetually confused; though the explicatory diagrams are simply rendered, I found that the ideas represented (e.g., gain, impedance) were presented too quickly and without enough examples to really get the hang of the concepts. Where this really became evident was in patient orientation: it would have been helpful to have image after image of, say, a kidney shown in transverse, sagittal and oblique views, as well as helpful orientation tips about what is superior and inferior, and what is right and left. This is the roadmap of ultrasonography, and one is unfamiliar with how the images appear until one places the probe on the patient and experiments. Without that ability, care should be taken to familiarize the viewer with the different perspectives before the images can make sense. Though the information is presented cleanly, the CD-ROM is sometimes too brisk.

Because this CD-ROM is structured somewhat differently than the curriculum outlined by Ma and coauthors, I picked a specific section that seemed close. The curriculum by Ma and colleagues spent a minimum of 7 hours on the subject of obstetrics and gynecology; yet it took me about 90 minutes to go through *EM ultrasound's* "Pelvic exam" section, often replaying the captioned minivideos 3 and 4 times. Most detail, understandably, is spent on the topic of ectopic pregnancy; but considerable time is spent on things like head circumference to abdominal circumference and other fetal biometrics that seemed to me to be in the bailiwick of radiologists and not emergency medicine

specialists. To its credit, there are a great deal of video and still images to hammer home the varieties of the empty uterus, the presence of free fluid, and so on; and there are many opportunities to measure things and compare one's measurements with standards. In short, there is a wealth of visual detail and individual topics are divided up into digestible "slides" that are long enough to provide morsels on which to chew. It is not so short that one is forever clicking the next slide, not so ponderously long that one is always clicking the previous slide and waiting and waiting until the missed tidbit can be heard.

But no matter how well organized, or how well presented, and this production is both, I think that this CD-ROM is essentially supplementary. It would be a good resource with which to familiarize oneself before travelling to Cancun in order to get the most out of formal training, or afterwards to reinforce the concepts. There is a certain quotient of guiding the probe oneself. There is hand-eye feedback that one just can't get by looking at canned images and video. It is an excellent primer, however, and I recommend it to all who want to get their feet wet before they get their feet wet in Cancun.

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**Competing interests:** None declared.

**Keywords:** ultrasonography, emergency, ectopic pregnancy

**REFERENCES**

1. Kendall JL, Deutchman M, Stahmer SA. *Challenger fundamentals: EM ultrasound* [CD-ROM]. Memphis (TN): Challenger Corp; 2008.
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