

Point of Care Ultrasound: Have We Gone Too Far?

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Full disclosure: I absolutely love and believe in point of care ultrasound (POCUS). I spent an extra year in fellowship to enhance my knowledge and skills. I was the director of our residents' ultrasound (US) rotation and continue to be active in our residency US education program. We have fantastic US faculty who provide excellent education to our residents, covering a broad range of basic and advanced topics over three years. Recently, one of my residents who was nearing graduation asked me a simple question that really got me thinking: "When I go out into community practice, what US skills do I need to know that are really going to make a difference?" The more I thought about it, the more I began to wonder, have we taken POCUS a little too far?

POCUS is, at its core, physician recognition that certain diagnoses can be made at the bedside with US, saving time, money, and radiation. Ultimately, POCUS should enable high quality and timely patient care. For instance, we can diagnose a AAA or identify free fluid in a hypotensive trauma patient with hemoperitoneum. Research has shown time after time that emergency physicians (EPs) are facile with US, enabling faster dispositions. Better patient care arose from the integration of focused clinical questions and bedside imaging to make the right diagnosis.

When I entered fellowship, I wanted to get more advanced and push the limits of what US can do at the bedside. I found an ever-increasing list of

new US applications to learn and perfect. As time goes on, however, I find myself most often using the basics in the clinical setting. The question arises, can you do too much US? While difficult, I think the answer is yes.

A study was recently published in *The Lancet Respiratory Medicine* looking at POCUS in undifferentiated dyspnea.¹ Patients presenting to the emergency department with dyspnea of unknown origin were randomized to either standard workup as determined by the provider, or POCUS performed by a single experienced operator. The study found that while the correct initial diagnosis was made more often in the US group, there was no difference in patient-oriented outcomes. Patients had no change in hospital length of stay between the US and control groups, and those in the US group got more thoracic CT scans, more echocardiograms, and more thoracentesis. Rory Spiegel (@EMnerd_) and others have written some great reviews regarding this study,^{2,3,4} and they are certainly worth reading for more details. While the study itself is not perfect, it does raise important questions. As POCUS experts have become more advanced, the mantra seems to be that more is better. Yet, if patient-oriented outcomes are not improved, are our investigations really finding things that benefit the patient, or are we just contributing to over-testing and over-diagnosis?

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From an educational standpoint, let us consider residents who may not have great enthusiasm for US, or our more experienced colleagues who are being told they need to learn to use it after years of practicing without it. Our residents' milestones include transcranial doppler as an advanced modality, a test I have yet to utilize in the emergency department. I keep thinking back to what my resident asked — what do EPs really need to know to have the greatest impact on patient care and patient-oriented outcomes? Will such advanced topics entice the skeptics to learn US, or drive them away?

If we, as proponents of POCUS, truly believe EPs should be using this technology universally, we need to focus on how to create as many believers as possible. The 2008 ACEP Emergency Ultrasound Guidelines say, "Typically, emergency ultrasound is a goal-directed focused ultrasound examination that answers brief and important clinical questions in an organ system or for a clinical symptom or sign involving multiple organ systems."⁵ Our basic skills — AAA, basic echocardiography, FAST, biliary, intrauterine pregnancy evaluation, basic renal ultrasound, and procedural guidance — are what truly change management and affect our patients the most. Demonstrating the impact these skills have when added to excellent clinical care will attract those skeptical EPs to learn US and incorporate it into their clinical practice.

We must continue pushing the envelope with US research and clinical practice. Experts will continue to be the leaders in emergency ultrasound, and the continued movement of the frontier in this area is crucial.

However, if we are to convert nonbelievers then POCUS enthusiasts must aim to raise the bar on basic skills. While striving to advance our specialty, we should emphasize that you don't have to master advanced US applications to deliver great clinical benefits. Perhaps most importantly, we must continue to do studies and ask ourselves hard questions. Ultimately, we first got interested in POCUS because of the positive impact it had on patient care. That should continue to be our goal, and we need to make sure our scans are accomplishing what we think they are.

References

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