ACE Podcast #1

2017

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Host: Welcome to the “ACE Behind the Scenes” podcast, giving you an exclusive look at the creation of the popular continuing education program from the American Society of Anesthesiologists. ACE: testing your knowledge of the fundamentals of anesthesia.

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Dr. Rick Dutton: Hello, everyone, and welcome to the “ACE Behind the Scenes” podcast. This is Rick Dutton. I am an anesthesiologist and chief quality officer at US Anesthesia Partners in Dallas. I am a long-time editor with ACE and with the companion product, SEE. And I have with me today the co-editors-in-chief of ACE, and I will let them introduce themselves. Dr. Johnson?

Dr. Joel Johnson: Hello. This is Dr. Joel Johnson. I’m an anesthesiologist at the University of Wisconsin School of Medicine and Public Health in Madison, Wisconsin. I’m currently one of the ACE co-editors in chief and have been an ACE editor for a number of years.

Dr. Rick Dutton: And Dr. Stacy Jones.

Dr. Stacy Jones: Hello. I’m Stacy Jones. I’m at the University of Arkansas for Medical Sciences. I’m the co-editor-in-chief of ACE. I’ve been, just like Dr. Dutton, an editor with SEE and with ACE for about three years now.
Dr. Rick Dutton: All right. Let me say a few words about the ACE program, first of all. ACE stands for Anesthesia Continuing Education. It’s a product of the American Society of Anesthesiologists for continuing education of anesthesiologists, obviously. Our first issue was published in 2004. Development of ACE corresponded with the beginning of maintenance of certification requirements in anesthesia, so it was viewed as a way for the average anesthesiologist to learn things that were considered accepted knowledge—the kind of things that would be in textbooks of anesthesiology.

Each question includes a stem; a number of distractors; a right answer, obviously; and then a critique of why the right answer is right and the wrong answers are wrong. For the ACE product, these are typically referenced to textbooks. So, as I say, standard knowledge or expected knowledge in anesthesia is the goal. We publish two volumes a year, each 100 questions. And the product as a whole is available by annual subscription to any anesthesia provider who wants to sign up.

ACE is certified by the ACCME for 60 Category 1 CME credits per year, and it can be subscribed to in either the Web or paper format. So, you can do it online, on a mobile application, or on paper, to get your 60 credits.

The purpose of this podcast is to give our audience, and those who might be considering signing up, a behind-the-scenes look at how we develop ACE items, and just a little informal discussion about some that we felt were particularly interesting.

I’m going to begin with Dr. Jones, who picked out an item to discuss based on a new experience in her practice. Stacy?
Dr. Stacy Jones: Well, the item we’re talking about really focuses on the subcutaneous defibrillators. And I came across an article in the *Journal of Cardiothoracic and Vascular Anesthesia* that had some great pictures, and it was a device that I was unfamiliar with. So, I thought, this is interesting; I’m going to write an ACE question on this.

Interestingly enough, just a couple of weeks later, we had a patient come in that had one of these devices. They’re fairly uncommon. We do see patients that come in wearing a LifeVest, that they’re being worked up for potentially implantation of a defibrillator but haven’t really gotten there yet; but we’d not really seen anybody with this subcu device in. And I was able to help my partners decide how we were going to manage this in the operating room.

And it’s really sort of interesting. These subcu defibrillators really can do some things that you don’t necessarily expect with a traditional transvenous device that we see almost every day. The sensing area is essentially the entire thorax, so they’re much more susceptible to electromagnetic interference. They do respond with a magnet the way you would expect for a standard defibrillator, but you have to be more careful with magnet placement.

Dr. Rick Dutton: As a chief quality officer for a large practice and a former chief quality officer for the ASA, I know that the most common anesthetic done in America is sedation for colonoscopy, and the next most common is sedation for upper endoscopy—the EGD procedures. We did a question recently on the most common adverse event during sedation for EGD. Dr. Johnson, do you want to talk about that one?

Dr. Joel Johnson: Sure. I’d love to. I participate in the gastroendoscopic procedures and the anesthesia for that on a fairly regular basis, and one of the things that sort of got me thinking about this question was, okay, how am I going to approach a
patient as far as informed consent? And as everybody knows, these procedures are pretty quick. You might do anywhere from 10 to 15 of them in a day. And you don’t get a whole lot of time to talk to your patient. And so, the question was, well, even though it’s a very safe thing, how do you proceed with informed consent, and how do you phrase the most common adverse events versus ones that are very uncommon and unlikely? And so, that led me to explore the literature as to what kinds of rates are out there.

And as most anesthesiologists know – that pulmonary aspiration is the most likely adverse event for this type of procedure, with rates somewhere around 0.14% to 0.16%. So, it’s pretty rare. And then the question is, well, do you also mention to these patients the even more rare possibilities of having the need to go to a general anesthetic; having heart problems; lung problems; stroke; seizure? And all of this is touched upon in the discussion part of the ACE format.

So, what we try to do is get the reader interested by looking at the different possibilities—the different, what we call, distractors for the question. And then, whether they get the question right or wrong when they’re looking at it, to get them interested enough to go on and read the discussion.

Dr. Rick Dutton: Stacy, another thing the ACE commonly does is begin a question with a clinical scenario—something we would expect the average anesthesiologist to confront in their practice—that might lead to a difficult decision or an unusual finding. Can you tell us about one of these questions?

Dr. Stacy Jones: Well, one of the questions from the most recent edition focuses on a 72-year-old woman who presented to the emergency department after a hip fracture. It lists her medications and states that she’s not been able to eat or
drink for a certain amount of time, so she’s potentially a little hypovolemic. Her EKG was normal. However, she had a very high potassium.

Sometimes we’ll present a case like this with an example of an EKG, and then ask a question based on the clinical scenario. This particular patient in this item had some EKG changes consistent with hyperkalemia and was on a litany of medications, all of which combined contributed to the situation. She was not on dialysis; had normal renal function. But it allowed us to discuss the implications of ACE inhibitors, potassium-sparing diuretics and even nonsteroidal anti-inflammatory drugs as all contributory to this event. So, I think another value of ACE is, we do make an effort to draw in clinical scenarios.

Dr. Rick Dutton: Yes. And this was based on a case you saw in your own practice. Is that right?

Dr. Stacy Jones: Actually, it was. It was a patient that had an unexpected and potentially unexplained hyperkalemia. And when we looked into all of her medications we discovered that, actually, almost every drug she was taking could cause her potassium to be elevated.

Dr. Rick Dutton: So, what did you do about that in real life?

Dr. Stacy Jones: Well, in real life, we did what you typically do. We hydrated her. We gave her some insulin and glucose and rechecked her potassium. It came down to a normal level. And then we were able to proceed with her case later in the day.
Dr. Rick Dutton: Interesting. Another one that you did recently—another ACE question—was based on an item that I actually wrote, involving emergent endotracheal intubation. Can you tell us about your thinking on that one?

Dr. Stacy Jones: Well, it focused predominantly on issues in a busy trauma center, where your patients are coming in severely injured, either with burn injuries or spinal cord injuries, and the airway needs to be protected in an expedited fashion. And the question is, well, when can you give succinylcholine after a burn? Is there a time frame? What’s safe?

And we discussed that the potential causes for hyperkalemia after succinylcholine administration were due to the proliferation of receptors along the injured muscle or secondary to denervation; and within the first 48 hours after a burn injury or a spinal cord injury, succinylcholine was safe.

Dr. Rick Dutton: I think that’s something that many anesthesiologists will find as useful knowledge. There’s often a lot of fear about using succinylcholine, and knowing which patients are particularly at risk is important.

Dr. Stacy Jones: Well, and the open globe discussion. I think that it’s reassuring for people to know that the actual increase in intraocular pressure is minimal. And you do need to weigh your risks and benefits but, with a full stomach and a potential risk for aspiration, probably we should not avoid using succinylcholine for an open globe.

Dr. Rick Dutton: Good. So, risks and benefits, just like in real life.

Dr. Stacy Jones: Uh-huh [affirmative].
Dr. Rick Dutton: Joel, let me ask you about a question that you got wrong the first time you read it.

Dr. Joel Johnson: Yes. And this goes back to something that Dr. Dutton mentioned at the beginning, that the ACE product is all about walking-around knowledge. However, every anesthesiologist knows that the walking-around knowledge that a pediatric anesthesiologist might have may be different than that of an echocardiographic expert that we would have, for instance, in cardiology or cardiac anesthesia. And we have a number of fine editors who are really well versed in echocardiography and we have a number of questions, for instance, with TEE images, which are really instructional. And I, as a neuroanesthesiologist, tend – and particularly as somebody who trained quite a while ago – tend to not to be really, really up on TEE and the different views, and what you’re seeing with each of these views.

And so, to a certain extent, the ACE questions for the editors, as well as the people looking at the product, are also something that is a teaching tool. So, not only does it remind you of knowledge that you should have, but it teaches you about knowledge that may have come about since the time that you were trained.

And that happened to me. This particular item was looking at a short-axis view of the aortic valve, and we were examining structures and trying to name a structure on that short-axis view. And of course, for me, it’s, well, which one am I going to choose? I can see an aortic valve, but what are these other things? And so, that really got me looking at not only the pictures but then reading the discussion to again get myself up to par on looking at TEE images.
Dr. Rick Dutton: Yes. As another dinosaur, I’ve really enjoyed the TEE items and interacting with our younger editors on these, because I’ve learned a lot. Clearly, anesthesiology training’s very different than it used to be.

Dr. Joel Johnson: Yes.

Dr. Rick Dutton: Either of you: has there been an item that went by that you thought about deleting, but eventually decided to include?

Dr. Stacy Jones: Well, I think one good example, and that really precipitated some lively discussions, was questions based on the anesthesia machine. The newer machines are automated; digital. You know, glass flow meters are really a thing of the past. We may have one anesthesia machine left with true glass flow meters on it, here at UAMS. How much longer are we going to put questions on, you know, the – in the product, that deal with anesthesia machines? Because they’re so different now. And how important is it for people, as part of their walking-around knowledge, to know where the failsafe is? And it may not be in this machine where it is in another.

Dr. Joel Johnson: Yes. Even anesthesia checkouts. As everybody knows, these new machines, the checkout process is entirely automated. You push a button. It says, okay, do this to the machine; you know, flip the switch, and the machine checks everything. And so, as the – somebody who’s done a lot of anesthesia machine checkouts, you stand back and you go, oh, that’s great not to have to do that again. But how much are we missing? How much are we not learning about anesthesia machines by doing that? And so, it is a real quandary for the board as to asking questions about, you know, machine function and how exactly they work.
Dr. Rick Dutton: Yes. So, that’s an area where the dinosaurs might have an advantage over the younger providers, and obviously we have to figure out how to balance that in the ACE product—old current knowledge from new current knowledge.

On that topic, the ASA and anesthesia leadership in general usually has a few issues that we’re particularly focused on. How do you guys see the ACE product as participating in that kind of discussion? Are there examples of that in the ACE, where you’ve picked an item that’s high on the national agenda?

Dr. Joel Johnson: Yes. I looked at one—actually, a couple of them—that seem to have cropped up recently. And the one that I’m thinking about is looking at adequate reversal of intraoperative neuromuscular block. And there’s a number of ways to address these kinds of items. And part of our hope is that we make a question interesting, and focus on something to do with neuromuscular block; and at the same time in the discussion then have the opportunity to talk about, for instance, the need for objective measurement.

And in this particular item, I was looking at the site of measurement. So, I wrote a question that was comparing the extraocular muscles—measurement of the extraocular muscle twitch to the twitch on the thumb, as to which one was more sensitive. Do you use the measurement for induction and onset of neuromuscular blockade, or is it better to use the thumb for reversal of neuromuscular blockade? And by doing so, we were able to address a pertinent question, and at the same time bring a lot of other information into that same discussion, so that you don’t learn about just one thing; you learn about a variety of areas.

Dr. Rick Dutton: Interesting. You mentioned you had a couple of examples. Is there another one?
Dr. Joel Johnson: Well, the other thing is more of a hospital or JCAH requirement, and that’s looking at CAUTI. And so, everybody knows that nowadays we are having fewer and fewer urinary catheters put in. And so, then what you’re confronted with is a problem sometimes of postoperative urinary retention. And so, the question is, how can anesthesia and how can anesthesiologists get involved in trying to not only address the issue of urinary tract infection by decreasing the use of Foley catheters, but also, how can we make it so that patients – that we’re aware of the different issues that might cause a patient to have postoperative urinary retention? And so, that caused me to write an item specific to that area.

Dr. Rick Dutton: That makes sense. We had a very interesting discussion at the last editors’ meeting about whether a particular item was too new or too novel, and whether it should be in ACE as continuing information or established knowledge versus in SEE as emerging knowledge. Stacy, can you give me an example of a question that’s sort of right on the fence for emerging best practice?

Dr. Stacy Jones: Depending on where you are in the country, there’s a push toward using antifibrinolytics. We’re administering tranexamic acid like it’s water, right? We’ve found a use for it in trauma. We’ve seen a use for it in spine surgery and orthopedic surgery, as a clot stabilizer. I believe that the first responders in Little Rock are actually giving tranexamic acid in the field for multi-trauma.

So, the question we get a lot is, is it prothrombotic? Can I give it to this patient that has fresh coronary stents? Who’s a good candidate for that? What are common side effects? As a cardiac anesthesiologist, we’ve been using antifibrinolytics for decades, so it’s pretty common knowledge that
high-dose tranexamic acid can be associated with seizures. But that’s not as well-known in other settings. So, we did have an interesting discussion of, is this too new; is it commonplace in some areas; is it something that we really need to put out, or would it be better suited for the other product—for SEE? But I think our consensus was that it is being used pretty frequently and would be a good question for ACE.

Dr. Rick Dutton: Yes. And of course, you know, we’re often working on a question that’s going to be published six months or a year from now and we have to guess, is this going to be established knowledge by the time it comes out; is this going to be obsolete, in some cases, by the time it comes out; or will this still be controversial?

Dr. Stacy Jones: The same thing with the ERAS protocols for bowel surgery. There are some areas where we’re sort of adapting those processes to other types of surgery, but, you know, the data’s still rolling in. So, it does contribute to some lively conversations.

Dr. Rick Dutton: Yes. Let me ask you, finally, has there been a question recently that struck you as not typical ACE material, but you decided to go with anyway?

Dr. Stacy Jones: I think one of the most recent ones was actually an item of Dr. Johnson’s, talking about, what is your surge limit in a mass casualty unit? Not necessarily something your average anesthesiologist would need to worry about; very common in a major Level-I trauma center. But there are protocols for mass casualty. There are color designations that are recognized for each type of injury that, you know, goes in with triage.

And we thought, well, it’s not really going to really affect a lot of people, but it was still pretty interesting. And then, again, you know, real life imitating art,
a couple of weeks ago we actually had a mass casualty event in Little Rock, and they were down in the ER triaging people, sort of with that same process. So, I think maybe is a little more attributable to everyday practice for some people.

Dr. Rick Dutton: Yes. The kind of knowledge we want all anesthesiologists to have but hopefully never use.

Dr. Stacy Jones: Have to use. Exactly {laughter}.

Dr. Rick Dutton: Any other comments from either of the editors?

Dr. Joel Johnson: Dr. Dutton, you’ve done a wonderful job of keeping us on track here. And I would just say that it seems, just listening to this podcast, that we are really looking at things that affect anesthesiologists directly, not only in a knowledge sense but also in a practice sense, and hopefully the ACE product and anything else the ASA is doing is really focused on direct patient care and safety.

Dr. Rick Dutton: Thanks, Joel. Stacy?

Dr. Stacy Jones: I would just reiterate what Joel said. I think that the ACE product is of value to anesthesiologists in clinical practice, and that we continue to evolve the product based on what our subscribers say they need and say they want.

Dr. Rick Dutton: Feedback is good. Thank you both very much for participating. For those listening, ACE issue 14B will be out in October. If you’re not currently a subscriber to ACE, you can get signed up at asahq.org and just type in ACE. Thank you all very much for listening.
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