Host: Welcome to the SEE podcast, presented by the American Society of Anesthesiologists. SEE: translating emerging anesthesia knowledge for your daily practice.

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Robert L. Hsiung, MD: Hi. Welcome to this edition of the SEE podcast. I’m Robert Hsiung, one of the SEE editors and an anesthesiologist in Seattle. I’m joined by our SEE editor-in-chief, Dr. Regina Fragneto, a Professor of Anesthesiology at the University of Kentucky. Regina, would you please give me a quick highlight of this newest edition of SEE?

Regina Fragneto, MD: I’d be happy to, Robert. All of our editors are practicing anesthesiologists, and at each of our meetings we always discuss among ourselves how much we learn from SEE and how relevant many of the topics are to our daily clinical practice.

There were several topics in this newest issue of SEE that we found especially useful. For instance, I’m an obstetric anesthesiologist, and nearly every day I am placing epidurals or spinals in women with extensive tattoos on their lower backs, and I’ve always wondered about that. One of the items in this issue summarizes a study that looked microscopically at what occurs when a needle is inserted through tattooed skin during a neuraxial procedure.
Another issue I sometimes have to confront on labor and delivery is what to do after an accidental dural puncture. In this issue, we discuss a review article that very nicely summarizes the management options. Do I resite the epidural or place an intrathecal catheter? Will epidural saline after delivery be helpful? Many of us are now using sugammadex in our practices. I was surprised to learn that due to lab artifact, administration of sugammadex can affect coagulation laboratory measurements.

Ultrasound is a technique that we are all using increasingly in our daily practices. This issue has several items discussing its varied use, and not just for nerve blocks. We have an item explaining its use to distinguish tracheal versus bronchial intubation. And wouldn’t it be great if we could predict preoperatively who is most likely to become hypotensive after induction? Well, we discuss a study that used ultrasound exam of the inferior vena cava to do just that.

I always find that SEE helps me stay up to date with the most cutting-edge work being done in anesthesiology. In this issue, I learned about a new molecule-encapsulating drug called calabadin 2. It not only reverses rocuronium and vecuronium, similar to sugammadex, but also reverses other neuromuscular blocking drugs, specifically cisatracurium, and some induction agents like etomidate and ketamine. Now, that is a drug that could have a huge impact on our practice.

And we don’t just cover clinical anesthesiology; we also look at systems issues. For instance, depending on which state you practice in, you may have been impacted by your state’s decision to opt out of physician supervision of nurse anesthetists. We discuss a study that found patient access to surgical care didn’t improve in states after they opted out of the required supervision. And then, of course, there are the problems we encounter in our practices on a
daily basis. Who doesn’t wish there were more ways to deal with what we all like to call anesthesia’s big little problem: postop nausea and vomiting? Well, Robert is now going to talk in greater detail about two items in this issue of SEE that investigated the management of this problem, with drugs I never would have considered.

Robert L. Hsiung, MD: Thank you, Regina. We will start with our first question. It is question 46 in our newest issue. According to a recent meta-analysis on patients undergoing general anesthesia, which of the following findings was most likely an effect of intravenous midazolam used either pre- or intraoperatively?

Is it “A,” no increased occurrence of significant sedation in the postoperative recovery room; “B,” increased risk of postoperative nausea and vomiting—PONV—in female patients; “C,” increased risk of requirement for rescue antiemetic; “D,” increased risk of PONV following nitrous oxide anesthesia?

So, the answer is “A,” no increased sedation in the recovery room, which I found surprising. This was a meta-analysis published in Anesthesia & Analgesia in 2016, where the authors looked for randomized controlled trials in adult patients undergoing general anesthesia who got IV midazolam pre- or intraoperatively. There were 12 RCTs for 841 patients, and what they found was that there was a significant decrease in the risk of PONV in patients who received midazolam. The number needed to treat to prevent a case of PONV was 3.6 to 4.0, which sounds like an amazing result. Regina, what did you find interesting about this particular item?

Regina Fragneto, MD: Well, this is a problem every anesthesiologist encounters every day in their practice, isn’t it? When I think about ways to help my patient by preventing postop nausea and vomiting, I’ve always thought about the
traditional antiemetics, like 5-HT\textsubscript{3} receptor antagonists. And now, here’s a study that suggests another drug I commonly use to help my patient through their surgical experience—midazolam—seems to be helpful not only in alleviating the patient’s preoperative anxiety but also at decreasing the risk of postop nausea and vomiting. That seems like a bonus to me.

Robert L. Hsiung, MD: You make a very good point. Sometimes in our conclusions, our editors may include what sounds like a line of caution. In this case it writes, “Despite these findings, it is important to remember the limitations of a meta-analysis.” Does this mean this paper wasn’t done right?

Regina Fragneto, MD: No, not at all, Robert. This is just another way to further educate our readers. Anyone who follows the literature realizes that meta-analyses are being published with ever-increasing frequency. There are many advantages to meta-analyses, like the large number of subjects that can be included. However, there are also drawbacks to this study design, and in order to critically analyze an article I think it is important to understand what those issues are.

Robert L. Hsiung, MD: Well, let’s move on to our next question. This is item #77. A 49-year-old woman is presenting for a vaginal hysterectomy. She has a history of experiencing postoperative nausea and vomiting after a previous surgery. You recommend that she receive a single dose of 1200 milligrams of gabapentin on the morning of the operation. Based on the recent meta-analysis of the effect of preoperative gabapentin on PONV, which of the following is the most likely outcome? “A,” decreased risk of vomiting in the first 24 hours after surgery; “B,” no difference in the risk of sedation in the first 24 hours after surgery; “C,” increased risk of dizziness in the postanesthesia care unit, or the PACU; or “D,” increased risk of dry mouth in the PACU?
So, the answer is “A”: gabapentin decreases the risk of vomiting in the first 24 hours. This item also comes from a meta-analysis involving nearly 3,500 patients, where the same authors of the previous article we just discussed looked at the relationship between gabapentin and PONV. They found that gabapentin was also associated with a significant reduction of PONV within the first 24 hours after surgery. Regina, what did you find most interesting about this topic?

Regina Fragneto, MD: Again, I was surprised to see a drug that is being used commonly by anesthesiologists for another purpose—part of a multimodal analgesic regimen in order to decrease opioid requirements—now appears to also be an effective tool in preventing that pesky postop nausea and vomiting that we and our patients often dread. To be honest, I never would have considered using gabapentin for this purpose.

I do want to point out that gabapentin was not without its drawbacks in this study. There was a higher rate of sedation for patients who received gabapentin. However, that problem was not as bad as you might think, because the researchers only found this increased risk when patients received a large dose of 1200 milligrams. For lower doses this didn’t seem to be a problem.

Robert L. Hsiung, MD: Well, I noticed that both of these questions were based on meta-analyses. Regina, could you comment on what kind of articles are represented in SEE?

Regina Fragneto, MD: Sure. Since SEE content is developed from what our editors consider to be the most relevant recent anesthesiology literature, you will find all types of studies and articles covered in each issue of SEE. As I mentioned
before, we are seeing an increasing number of meta-analyses published, so we cover plenty of those types of studies. But there are still lots of good randomized controlled trials being done in our specialty that you will find in SEE, along with retrospective and observational studies. We also will include review articles that we find useful to our daily practice, and also make a point of including recent practice guidelines, both those produced by the ASA as well as other organizations.

Robert L. Hsiung, MD: Thank you, Regina. And we are out of time for today. Thank you for joining us for this installment of the SEE podcast. For more information or to purchase SEE, please visit the ASA website at asahq.org, go to the Education tab and click on Online Learning. SEE is available in booklet and electronic formats. The electronic format includes both an app and online access. For each issue of SEE, you can earn up to 30 AMA PRA Category 1 Credits for a total of up to 60 credits per annual subscription. These credits also help fulfill Part 2 of ABA’s MOCA requirement.

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