

## **Pediatric Patient Selection for Ambulatory Surgery Centers**

**2017**

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Dr. Alan Jay Schwartz: Hello. This is Alan Jay Schwartz, Editor-in-Chief of the American Society of Anesthesiologists' 2017 *Refresher Courses in Anesthesiology*, the latest research and educational findings. The focus of the *Refresher Courses in Anesthesiology*'s CME program and the modules featured is to educate learners on current developments in the science and clinical practice of the specialty of anesthesiology. Returning for a second year, we will be speaking directly with individual authors to learn about their expertise, perspective and insight regarding the featured module.

Today, we are pleased to present the following one-on-one conversation with Dr. Raafat Hannallah, and we'll be highlighting the module titled "Pediatric Patient Selection for Ambulatory Surgery Centers."

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Our author today, Dr. Raafat Hannallah, who is Professor Emeritus of Anesthesiology and Pediatrics at the George Washington University Medical Center and a member of the Children's National Health System – Dr. Hannallah and his colleague, Marjorie Brennan, have crafted a wonderful educational piece on pediatric patient selection for ambulatory surgery centers.

Dr. Hannallah, can you tell our audience two or three of the key points from this Refresher Course module that you want them to focus on?

Dr. Raafat Hannallah: Thank you, Dr. Schwartz. I think the basic message of this course is that, for the practitioner who is working at a freestanding ambulatory surgery center, doing the same cases, same patients, same procedures with the same surgeon, there are some requirements that will make the selection a little different from working in a hospital. And the main one is, besides the rapid turnover that's usually a hallmark of ASCs, is that facilities for prolonged recovery, prolonged observation or easy arrangement of overnight admission are going to be lacking. So, one needs to be extra careful in ensuring that these situations are very unlikely, or least likely, to occur.

The course actually looks at three groups of patients: the very small infant and premature infant; the child coming for adenotonsillectomy, or T&A procedure; and the obese child who is being scheduled at an ASC.

So, for the very small infants, there are some recent recommendations now by the American Academy of Pediatrics to try to safeguard the development of postanesthesia apnea after these babies are discharged home. It has been known for a long time that premature infants who are still under between 50 and 60 weeks of post-conceptual age may develop respiratory distress or apnea at home after discharge, and in some situations this can lead to respiratory and cardiac arrests.

So, the current recommendations are, for a full-term infant, if they are over four weeks of age but still under six months of age, they need to be watched for two hours following anesthesia and surgery. And most of the time anesthesia and surgery are for such procedures as hernia repair, or sometimes circumcision or hypospadias surgery. And that's longer than what we used to do in the past. In the past, we used to basically watch the infants and, as soon as they met discharge criteria, send them home.

Now, for premature babies, it's a little bit more restrictive than that. They need to be at least 60, or 50 to 60, weeks post-conceptual age. And if they are less than that, the requirement for observation is 12 hours, which basically excludes freestanding ambulatory surgery centers. And although the American Academy of Pediatrics did not specifically recommend avoiding opioids, in our practice, and I believe in many others, we depend mostly on using local or regional blocks to provide analgesia after surgery, and as much as possible try to avoid using opioids, and this will ensure very rapid recovery and safe discharge from the surgery center.

The other issue that we see frequently at a freestanding ambulatory surgery center is a child who is presenting for adenotonsillectomy—T&A, as we usually refer to it. And the issue here is that most of these children these days are presenting because of obstructive sleep apnea or sleep-disordered breathing. And the challenge is to be able to differentiate between a child who simply is a loud snorer, had sleep-disordered breathing, but is not at risk for developing apnea following anesthesia and surgery.

And the gold standard for making that differentiation is to have a sleep study done before surgery. However, this is not commonly done, at least not in this country, and it has been estimated that less than one in ten of these children would present with a sleep study. So, our challenge is to be able to make that distinction with the surgeons and the nurses based on clinical criteria.

And there's a very nice table—actually, a flow diagram—in the module that was developed by Dr. Patino, that basically looks at three things that will help make that differentiation. The age of the child—a child who is over three years of age is a potential candidate; under that, they should not be done in the surgery center – freestanding surgery center.

The other one is the presence of severe obstructive sleep apnea, which can be based on a sleep study if available, with an apnea-hypoxia index of over 10; or on the parents' storytelling that the child actually snores very loudly, they can hear the snoring through a closed door, they are somnolent during the day, and that they may have observed them having obstructive events.

And then the third issue is having other comorbidities, the most common being having obesity, having Down syndrome, having craniofacial problems, and so on.

If a child is over three years of age, has no other comorbidities, and no documented sleep apnea, these children are good candidates for ambulatory surgery centers. If all of that is negative—if the child is either under three years of age or has severe comorbidities like obesity and Down syndrome, or severe obstructive symptoms—they should not. They are at risk for postanesthesia, post-discharge apnea, and they should be observed overnight in a monitored bed in a hospital setting. And if one follows that outline, we are able to have these patients scheduled in a surgery center, undergo safe anesthesia and surgery, and meet discharge criteria fairly promptly after the end of surgery.

The other thing that we are very careful with in these patients is that even those who have mild obstructive symptoms can be extremely sensitive to the effect of opioids. So, we do not give them fixed doses of opioids during surgery. We titrate the dose of whichever opioids we choose to use, either fentanyl or morphine—depends on the preference of the anesthesiologist—and see what the response is in terms of respiratory rate and end-tidal CO<sub>2</sub> changes.

And if there is a good response—a child continues to breathe, there is no apneic episode, and no big increase in CO<sub>2</sub>—then we may be able to give the full dose and have the child very comfortable and discharged home soon after the end of surgery.

If the child does not respond well to that small test dose, which is usually half of what we normally would give, like, for example, half a microgram per kilo of fentanyl, then we will hold further doses of opioids and see how the child responds when they wake up in PACU.

They usually now go home with no further doses of opioids. The drug of choice now that is described by the surgeons is ibuprofen, and that is given to the children to take at home. And although it's not as concerning as it used to be in the past, we always ask them to watch out for possible increased bleeding or bleeding episodes at home.

Dr. Alan Jay Schwartz: Thank you, Dr. Hannallah. This is a very important topic. It's important for our pediatric patients. It's important for their parents and caregivers. I can only encourage all of our colleagues to read the entire module and learn all of the important topics that you and Dr. Brennan have covered. Thank you again.

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Dr. Raafat Hannallah: Thank you.

Dr. Alan Jay Schwartz: Thank you for joining us today and participating in this insightful conversation with this month's featured author. Be sure to join us for next month's one-on-one author interview. To purchase the full subscription of the 2017 *Refresher Courses in Anesthesiology* program, please visit [www.asahq.org](http://www.asahq.org), click on the Shop ASA link, and search for RCA.

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