Direct Laryngoscopy Failed - What Now?

2017

{Music}

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 fellow RCA editor Dr. Laurence Torsher and author Dr. Richard Cooper. They will be highlighting the module titled "Direct Laryngoscopy Failed – What Now?"

{Music}

Dr. Laurence Torsher: This is Laurence Torsher. I'm an anesthesiologist from the Mayo Clinic in Rochester, Minnesota, and also one of the editors for the ASA Refresher Courses. Today I have Dr. Richard Cooper, who will be one of our speakers. Dr. Richard Cooper practices clinical anesthesiology at Toronto General Hospital with a focus on the management of the difficult airway. He's been involved in the development of video laryngoscopy, airway exchange catheters, and a systematic approach to extubation of the difficult airway. He's

the author of numerous articles, editorials, chapters, and is co-editor of *The Difficult Airway: An Atlas of Tools and Techniques For Clinical Management*. He's Past President of the Society for Airway Management and has been an invited lecturer on six continents.

This year, Dr. Cooper wrote a Refresher Course syllabus on managing the difficult airway. Dr. Cooper, welcome.

Dr. Richard Cooper: Thank you very much. It's my pleasure.

Dr. Laurence Torsher: In your article you commented on the vortex approach to airway management. This is a novel approach to thinking about airway management in a crisis. Could you tell me about it?

Dr. Richard Cooper: Certainly. I'd be happy to. The vortex airway approach is not really intended as an airway algorithm per se; it's not in competition with any of the existing algorithms. But if you look at the existing algorithms—the ASA algorithm, the Canadian Airway Focus algorithm, the Difficult Airway Society algorithm; the Italian, German, Japanese or Indian algorithms—they're all complex to varying degrees. And under stressful circumstances, it would be hard for anyone to know exactly where they are and know exactly what's expected to them. So, this is really intended as a conceptual or a cognitive aid that helps one focus on the limited number of choices that you encounter.

And I think the thing that's particularly appealing to me and to many others about this airway algorithm approach is the visual appearance. When you look at it from the top you see that the perimeter is a green rim, which is considered to be the safe zone, and toward the center it gets darker and darker blue. And if you look at it from a lateral aspect, it's shaped like a funnel or a vortex, which emphasizes the fact that, as you descend from the safe zone to the less safe zone, critical decisions have to be made with increasing speed.

So, it's important to have a clear head and realize that there are a limited number of choices that you have to make at each step. This emphasizes the limited number of steps. And it emphasizes commonality of terms, so that if one says, "Can't intubate, can't ventilate," or "Can't intubate, can't oxygenate," everyone is on the same page and they know what the next event is going to be; they know what's expected of them.

Dr. Laurence Torsher: That's a really neat approach to utilizing a cognitive aid in yet another crisis situation.

One of the other things I was struck by as I read your article was promotion of an alternative to needle cricothyrotomy, which is how I was always taught as my final step in the difficult airway approach. Can you discuss how the surgical airway approach that you describe may be a superior approach?

Dr. Richard Cooper: Well, until very recently there was limited data on what technique was superior. And in fact, even today, the data is quite limited, and that's not surprising given that an emergency surgical airway is not called upon very frequently. What we do know, particularly from the NAP4 study involving serious adverse events relating to the airway, is that when anesthesiologists were called upon to perform a surgical airway it was almost universally done poorly. So, there was some value in ensuring that there was a common approach taken.

And the UK society – the Difficult Airway Society, the Association of Anaesthetists of Great Britain and Ireland, decided that they ought to take a position to try to standardize the approach. And they made a decision at that point to advocate a simple technique that involved a scalpel, a bougie and a tube.

And subsequently, there was actually an interesting study that involved medical students using three different techniques on a total of 60 cadavers. And their outcomes were interesting. Because when they compared three techniques consisting of a needle cricothyrotomy that they used with the Cook Melker kit, a QuickTrach, and a surgical technique which was essentially the same as the one I've described, involving a scalpel, a – either a finger or a bougie and the endotracheal tube, the difference in the success rate was striking, the surgical technique having the highest success rate by far and the lowest complication rate by far. So, this provides limited evidence, of the three techniques, at least under those conditions, that the surgical technique had a higher success rate, fewer complications and was completed in less time than at least the needle cricothyrotomy technique.

The Difficult Airway Society in their guidelines in 2015 published a very detailed description of how this should be performed. And since most of us will not be doing this very often in our professional career, if at all in a real emergency situation, there's sufficient detail that you can visually imagine yourself actually going through it. And in fact, there are 18 steps that are described, that are detailed to the extent of saying which side of the patient you're standing on if you're right- or left-handed, which hand you hold the scalpel blade in, which hand you hold the bougie, and what direction the bougie is pushed. So, you could essentially imagine yourself performing this procedure mentally or – so that you're at least better prepared if you're called upon to do it in an emergency.

And they do advocate that each anesthesiologist be expected to be able to perform this, and that everyone take advantage of opportunities to practice it either on cadavers or on animal specimens, like pig tracheas, for example. I personally had been an advocate of the needle cricothyrotomy kit because I felt that anesthesiologists would likely intervene using a technique that was very similar to what we use when we cannulate arteries and veins, and that they more

likely would implement a surgical airway using a Melker kit, or at least a needle cricothyrotomy kit, in a more timely fashion than if they were required to use a scalpel blade in the neck; but I'm convinced now that they may intervene earlier but they're likely to do so with less success.

Dr. Laurence Torsher: Well, Dr. Cooper, thank you very much for your thoughts and input. Today, Dr. Cooper shared with us a description of the vortex approach, a cognitive aid for difficult airway management; and he also described for us an alternative approach to the emergency surgical airway. Thank you very much, Dr. Cooper. And now back to you, Dr. Schwartz.

{Music}

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, click on the Shop ASA link, and search for RCA.

{Music}

THE END