



## **“Gold Standard” Airway Management**

I’m back and we’re going to focus on airway management yet again. This time, the emphasis will be on intubation. As I’ve pointed out in the past, if you are performing good, non-intubated, face-mask ventilation, then you are doing everything the patient needs. Go back and review the column on the algorithmic approach to airway management before you continue reading this column.

The “gold standard” (for now) of airway management is trans-laryngeal endotracheal intubation. While it is critically important that you learn how to perform the skills of intubation, knowing the sequence and tasks alone does not guarantee success. As the front-line provider, you have an obligation to “get the job done.”

Every time you place a laryngoscope blade in someone’s mouth, no matter how skilled you are at the procedure, you are causing some trauma. Each visualization attempt results in some swelling and, if you’re less careful, some bleeding. In other words, every time you don’t get the tube in, you make the next attempt harder. Therefore, you need to make your first attempt your best attempt. Aside from truly learning the skill and practicing as much as possible, there are four techniques you can use to maximize your chances of success. They are: 1) place the head and neck into the optimal position 2) use a stylette 3) have your equipment, particularly your suction, ready and 4) have an assistant to hold the larynx.

What is the optimal head positioning? In general, the two main errors I’ve seen when providers attempt to intubate are that they leave the patient flat supine (no positioning at all) or they leave the patient in the head tilt – chin lift position that the patient was placed into for ventilation. In both cases, the oropharynx, hypopharynx, larynx, and trachea are not optimally aligned. The optimal alignment is obtained with the classic “sniffing the spring air” position. To attain this, you flex the neck forward by placing towels behind the occiput of the head and then you extend the head (tilt it backwards) at the atlanto-occipital joint (the joint where the spine connects to the base of the skull). To simulate the position in yourself, while sitting or standing upright, flex your neck forward until your chin touches your chest and then slowly bring your face up until it is facing forward. Your whole head should be about 3 inches forward of where it usually sits. We’ll talk about other positing strategies in the near future, particularly for obese. Remember that you can’t move the neck in trauma patients; we’ll discuss trauma in the near future as well.

If you spent time in an operating room when you learned to intubate, probably at least one person told you to never use a stylette because you “shouldn’t need one.” Nonsense. Simply put, every field intubation is a difficult intubation and you need every advantage you have. Use a stylette. Having your equipment ready should be an obvious concept, but the first field tube I ever got was a handoff from a much more experienced paramedic who “couldn’t get the tube.” Why couldn’t he get the tube? He hadn’t checked his equipment and the laryngoscope

bulb was burnt out. I changed blades and got an easy tube. The piece of equipment I suspect that is most poorly used in the field is suction. Electrical suction units are finally becoming more reliable, but if you don't have your unit with you, you can't suction. Make sure your suction unit has all its parts and works at the start of every shift and take it with you on any call where you might need to manage an airway (which is basically every call you go on).

Finally, having someone hold the larynx is also critical. The three approaches to this are cricoid pressure (the Sellick's maneuver), Backwards Upwards Rightwards Pressure (the BURP maneuver), and External Laryngeal Manipulation (ELM). For the Sellick's maneuver, your assistant simply locates the cricoid ring (first ring BELOW the thyroid cartilage or voice box) and pushes it posteriorly. In theory this moves the cords into better view and partially occludes the esophagus. In practice, your assistant will often locate the largest and easiest to find structure, the thyroid cartilage, and push it backwards. Since the thyroid cartilage is not a complete ring, this tips the cords posteriorly (harder to see) and does nothing to the esophagus. Therefore, the BURP maneuver probably preferable. Your assistant locates the thyroid cartilage and pushes it backwards, upwards (towards the head) and rightwards (patient's right). This will often give you an excellent view. A warning: in thin patients and pediatric patients, it is easy to apply too much pressure which actually also obscures your view with both Sellick's and the Burp Maneuver. If possible, do the manipulations under direct visualization. I prefer to have some control so my favorite technique is External Laryngeal Manipulation. Have your assistant hold onto the thyroid cartilage. With your left hand holding the laryngoscope and you visualizing the hypopharynx / larynx, use your right hand to move your assistant's hand and the larynx. When you get a good view, tell your assistant not to move, let go of his or her hand, and intubate the patient.

Remember, it is critical that you be skilled in intubation and practice it as much as possible. Using these techniques will greatly increase your chances of first attempt success. It is even more important that you be skilled in good bag valve mask ventilation. Do what's best for your patient, oxygen in and CO<sub>2</sub> out, by any means possible. We'll talk about the challenges of managing trauma patients next time.

As always, please send your thoughts, comments, suggestions and solutions to [streetsense@otwo.com](mailto:streetsense@otwo.com).