Airway Management Changes - 2015-2020 ACLS Guidelines
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The American Heart Association’s (AHA) Guidelines for advanced cardiac life support (ACLS) continue to evolve. The most recent recommendations for airway management support the steps that we, as Oral & Maxillofacial Surgeons (OMS), typically take when faced with a compromised airway. Let’s look at some of the latest airway management changes to the AHA’s ACLS Guidelines.1

(1) Since January 2014, the use of capnography has been recommended for daily use in OMS practices for anesthesia monitoring.2 The new ACLS Guidelines recommend the use of capnography, in addition to clinical assessment, during airway management. If an advanced airway, like an endotracheal tube is placed during a respiratory event, continuous waveform capnography is recommended to be used to confirm3 and monitor appropriate tube placement, assist in monitoring the quality of CPR provided, and determining when a patient has return of spontaneous circulation (ROSC).4 As OMS, while we are very comfortable using capnography with an open system like a nasal cannula or a nasal hood, it is essential we make sure we also have the appropriate connectors to adapt the capnography device to an emergency airway as well.

(2) The use of a bag-valve-mask device to maintain, reestablish, or rescue the airway is clinically acceptable and vital to managing an airway emergency. Current ACLS Guidelines discourage the use of bag-mask ventilation (BMV) by a single practitioner5, and recommend bag-valve-mask ventilation be “performed by two trained and experienced providers”.6 Because BMV is a difficult skill to master, it is important staff be trained and provided ongoing education.

(3) In addition to the use of a bag-mask device, ACLS Guidelines promote the use of a blindly placed supraglottic airway as a means of achieving ventilation during the initial management of sudden cardiac arrest. The Guidelines suggest a laryngeal mask airway (LMA), Combitube (esophageal-tracheal tubes), or laryngeal tube can be used as an alternative to endotracheal tube intubation, if tracheal intubation will interrupt chest compressions.7 As OMS, in addition to being trained at inserting supraglottic airways, it is essential we have the appropriate connectors to sample CO2 from the supraglottic airway device, as well.

(4) According to the ACLS Guidelines, the use of cricoid pressure is no longer recommended during cardiac arrest.8 Cricoid pressure may reduce the effectiveness of ventilation and may affect the placement of an advanced airway.9

How Do These New Recommendations Affect The OMS?
First, an OMS and his/her TEAM must be able to discernibly recognize airway compromise, and then they must be able to quickly and efficiently correct it. OMSNIC Patient Safety & Risk Management recommends regular TEAM training with a focus on the compromised airway.

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Why Is Ongoing Training Important?
Managing an airway can be a life or death situation. Every day, we must ask ourselves, am I prepared to manage an airway emergency on this patient? Then ask if your TEAM is prepared to assist in managing that same emergency. Because each patient is different, planning and preparation may vary.

Your Patient Is In Respiratory Distress: What Do You Do?
The ACLS algorithm for management of respiratory arrest recommends:10

Step 1: Manage the airway! Be alert for the early signs of airway distress. The head tilt/chin lift or jaw thrust technique can open an obstructed airway. If there is fluid or a foreign body obstruction, which is most common in oral surgery, consider using suction. An airway that is unobstructed quickly and efficiently may not require positive pressure oxygen, but oxygen should always be considered. The goal should be to get the patient's respiratory rate and O2 saturation normalized. If this does not solve the problem, consider Step 2.

Step 2: Provide ventilation by switching to a bag-valve-mask or a closed system if you have an anesthesia machine. Remember to obtain assistance for effective bag-valve-mask ventilation. If this does not solve the problem, consider Step 3.

Step 3: Utilize an artificial airway. Consider placing an oral-pharyngeal or nasal-pharyngeal airway to help manage the soft tissues of the posterior airway, after initial consideration of the patient's state of consciousness. If this does not solve the problem, consider Step 4.

Step 4: While working within your comfort zone and using the techniques you are the most confident with, consider placement of a supraglottic airway device. Placement of an LMA is technique-sensitive. The AHA recommends use of this student website (www.heart.org/eccstudent) to help in preparation. A Combitube and laryngeal tube are less technique-sensitive, but they can be complicated by vomitus and potential aspiration. These are additional supraglottic options that can be attempted if there is an optimal level of familiarity and comfort with these tools. To stay sharp with airway management skills, consider consulting with your anesthesia colleagues for possible practice opportunities. If this does not solve the problem, consider Step 5.

Step 5: Intubation using an endotracheal tube has the potential to improve oxygenation and ventilation if a supraglottic airway device is unsuccessful. As a final option, if a patent airway is still not obtained, a surgical airway might be necessary. A cricothyroidotomy should only be attempted by a skilled and experienced individual, and it should be accomplished quickly and efficiently. Appropriate connections to the oxygen delivery system should be available for all of the advanced airways.

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Conclusion
Fundamental knowledge of the ACLS Guidelines, and practice with these advanced airway devices is recommended prior to attempting them in a real life emergency. In the end, you and your team’s preparedness for managing a compromised airway can significantly enhance the likelihood of successfully managing the emergency.

References

6. Id.
9. Id.