The Need for Improved Airway Management Techniques at a Moment's Notice

The use of sedation has increased significantly with the advent of propofol and the expansion of procedures outside hospital-based operating rooms.[1] During deep sedation, the goal is to provide comfort while preserving spontaneous ventilation and avoiding apnea.[2,3] Maintaining a patent airway is essential for mitigating adverse outcomes from inadequate ventilation and oxygenation—respiratory events being the most prevalent source of reported deep sedation/monitored anesthesia care (MAC) anesthesia closed claims.[4,5]

While heightened vigilance, preoxygenation[6], and improved monitoring techniques (e.g. capnography and bispectral index)[7] have contributed to sedation safety, the availability of airway devices optimized for sedation has lagged.[2] Oropharyngeal airways (OPAs) often cannot reach the redundant distal pharyngeal tissue within the upper airway near the epiglottis to stent it open.[8] A recent survey of anesthesia professionals indicated that 88% use jaw thrust and chin lift maneuvers in conjunction with OPAs to maintain patency.[8] These maneuvers can result in post-operative jaw and chin pain for patients, as well as hand pain for clinicians.[8,9] Additionally, this occupies the providers' hands, limiting their ability to address other tasks. OPA-related adverse effects include coughing, gagging, swelling, damage to teeth intraoral structures, and postoperative sore throat.[10-13] Nasopharyngeal airways may cause epistaxis or increased cardiovascular response, can be difficult to place in patients with nasal abnormalities, and should be avoided in anticoagulated patients.[14,15]

Because of the paucity of airways optimized for sedation, clinical workarounds—including use of nasal airways in the oral cavity—have emerged. Smaller-diameter, flexible nasal

airways inserted through the mouth are easier to position than hard plastic OPAs, decrease the need for jaw thrust and chin lift maneuvers, and may also reduce postoperative sore throat.[10] In a 2012 survey of 293 U.S. anesthesia professionals, more than half (52.8%) have used a nasal airway orally.[10] Despite these perceived benefits, nasal airways are not designed for this purpose and can pose patient safety risks including dislodgement into the airway and airway occlusion, which poses patient safety and liability issues that is under reported.[10]

A New Device

To reduce this off-label practice and provide a much-needed solution, a newer hybrid airway device combines the flexibility and longer tubing length of the nasal airway with the structural integrity of existing rigid oral devices. The additional tubing length stents open the distal pharyngeal tissue that current airways are unable to reach. Smaller diameter tubing also eases insertion and mitigates potential oral injury associated with hard airways. One such hybrid airway includes additional patient safety components such as an integrated cushioned bite block to aid in placement and decrease dental trauma, as well as an optional connector that connects to an anesthesia circuit or manual resuscitator. As recent nasal cannulas and masks have been developed to improve oxygenation under deep sedation, the McMurray Enhanced Airway or MEA opens the airway to help improve ventilation.[16]

As the use of deep sedation grows with the increase of NORA and ASC, anesthesia providers need a safe, intuitive, effective, and easy-to-place tool designed to reduce apnea and improve oxygenation and ventilation at a moment's notice. This distal pharyngeal airway (DPA) opens the upper airway, provides apnea oxygenation during intubation or extubation, and turns

difficult positive pressure mask ventilation into easy intraoral ventilation. The DPA can help to improve patient outcomes and patient safety.

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The Distal Pharyngeal Airway (DPA)