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Use of Glide-scope in Trial Extubation of the Difficult Airway: Letter to the Editor

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Letter to the Editor

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Re: Case Report
Use of Glide-scope in Trial Extubation of the Difficult Airway,
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The article published in SSRP Journal of Anesthesia and Surgery by Narjeet Khurmi, MD points out an important use of the glidescope.

Most of the trauma literature about airway management addresses intubation and offers little help with extubation. Analysis of the American (ASA) closed claims database has demonstrated that outcomes related to complications at time of intubation anesthesia, but not other phases of anesthesia, decreased in 1993–1999 compared with 1985– 1992 [1].

Extubation failure is defined as the need for reinstitution of ventilatory support within 24 to 72 hours of planned endotracheal tube removal. In the ICU, reintubation rates are between 4-20% and [0.1- 0.45%] in the immediate postoperative period [2].

The decision to extubate is one that has to be made carefully. Multiple weaning parameters have been investigated as possible predictors of extubation outcome. In an evidence-based review, Meade concluded that these indices have only limited utility in predicting weaning outcome. Not surprisingly, these parameters are even less accurate predictors of extubation outcome. The most accurate and well-studied test is the frequency–tidal volume ratio, although this parameter rarely leads to moderate or large changes in the probability of success or failure [3].

Additionally, even when a spontaneous breathing trial (SBT), with either a T-piece or low-pressure support, has been successfully passed, failure of planned extubation occurs in approximately 15% of patients [4].

Among various conditions that put patients at increased risk for extubation failure are postextubation upper airway obstruction such as laryngeal edema. Edema may result from multiple intubation attempts, upper airway and neck surgery, prone or trendelenburg position during surgery and prolonged intubations such as in the intensive care unit. Other risk factors include a tight fitting tube, trauma at intubation, change of head and neck position during surgery. Laryngeal edema is an important cause of upper airway obstruction (UAO) in neonates and infants and presents as inspiratory stridor within 6 hours of extubation. Prediction of extubation outcome using parameters that assess upper airway patency are essential as decision to extubate is influenced by upper airway patency and the capacity to protect the airway. SBT'S do not assess patency of the airway. Supraglottic edema may displace the epiglottis posteriorly blocking the glottis on inspiration. It is also common in adults after prolonged intubation in the critically ill. Trauma (e.g. excessive suctioning, traumatic intubation or extubation) may damage the airway and cause UAO. A qualitative leak test done by auscultation of breath sounds over the larynx with the cuff deflated is commonly done. Alternatively, a quantitative cuff-leak test could be performed by comparing the exhaled tidal volume with the cuff inflated and deflated while the patient is ventilated on a volume-controlled mode. A difference of 110 -130 mls in an adults is suggestive of a low probability of laryngeal edema [5]. Cuff leak test has a reported sensitivity of 15-85% and a specificity of 70-90%. It is therefore not a perfect predictor of post -extubation stridor by itself [6].

The availability of the glidescope to view the airway in regard to airway patency, edema of the vocal cords is now available to us and should be used particularly in these situations. The difficult extubation guidelines of the ASA mention use of bougies for anticipated difficult extubation but use of a glidescope to assess the patency of the upper airway in not include in their guidelines.

The glidescope is also used by anesthesiologists to switch from a double lumen tube to a single lumen ETT when the patient needs to remain intubated post operatively. The video-laryngoscope picture helps to visualize the cords and is therefore easier to exchange endotracheal tubes than attempting to insert an exchange catheter into a double-lumen tube to do a tube exchange.

Additionally, Han Joon Kim et al in 2018 published reports of a randomized clinical study showing successful nasogastric tube placement using a glidescope and a modified Magills forceps [7]. The tip of the forceps is bent at two points which conforms to the curve of a curved laryngoscope blade, thus providing easier handling of a tube at the glottis [8].

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