

# Predictors of Difficult Intubation and the Otolaryngology Perioperative Consult



Karla O'Dell, MD

## KEYWORDS

• Difficult intubation • Airway management • Airway obstruction

## KEY POINTS

- It is critical to identify patients with a difficult airway to mobilize sufficient physician and support staff, to ensure that airway management equipment is available, and to prepare the patient.
- History of prior difficult intubation, head and neck radiation, congenital malformations, cervical spine disease, obesity, and obstructive sleep apnea can be associated with increased difficulty in intubation.
- Physical examination findings of decreased mouth opening, Mallampati score, decreased neck extension, and increased neck circumference are associated with difficulty in intubation.
- When selecting an airway management plan, it is important to decide on an approach that successfully addresses the anatomic reason for the predicted difficulty with the tracheal intubation.
- Successful management of complex airway problems is a coordinated effort between multiple specialties and nursing support staff.

## INTRODUCTION

The incidence of difficulties related to airway intubation is low (1%–5.8%),<sup>1–3</sup> but failure to secure an airway can have serious consequences, including death, brain injury, and cardiopulmonary arrest.<sup>4</sup> Mistakes in the algorithm for difficult intubation are mainly caused by unpreparedness.<sup>5</sup> Recognition of those patients for whom intubation is expected to be difficult is critical to avoid morbidity and mortality associated with a difficult intubation. Early recognition of a complex airway allows for consultation services to assist and ensures that proper equipment is readily

---

Department of Otolaryngology, Head and Neck Surgery, Keck School of Medicine, University of Southern California, 1450 San Pablo Street, Los Angeles, CA 90033, USA

*E-mail address:* [kodell@usc.edu](mailto:kodell@usc.edu)

Anesthesiology Clin 33 (2015) 279–290

<http://dx.doi.org/10.1016/j.anclin.2015.02.002>

[anesthesiology.theclinics.com](http://anesthesiology.theclinics.com)

1932-2275/15/\$ – see front matter © 2015 Elsevier Inc. All rights reserved.

available and all staff are prepared. An airway history and physical examination should be conducted, when feasible, before the initiation of anesthetic care and airway management in all patients.<sup>4</sup> The purpose of the airway evaluation is to detect medical, physical, and surgical factors that may indicate the presence of a difficult airway. There are certain predictors of anticipated difficulty with intubation, but no individual factor or prediction model offers 100% sensitivity.<sup>3,6,7</sup> Therefore, multiple history and examination findings should be used to help predict difficult intubation. When a difficult intubation is anticipated, otolaryngologists and anesthesiologists should jointly plan the management of the difficult airway to ensure successful control.

### DEFINITION OF A DIFFICULT AIRWAY

There is no standard accepted definition of a difficult airway. The anesthesiology practice management guidelines define a difficult airway as a clinical situation in which a trained anesthesiologist experiences difficulty with face mask ventilation of the upper airway, difficulty with tracheal intubation, or both.<sup>4,8</sup>

- Difficult mask ventilation is when it is not possible to provide adequate mask ventilation because of inadequate mask seal, excessive gas leak, or excessive resistance. Signs of inadequate face mask ventilation include absent or minimal chest rise, absent or inadequate breath sounds, auscultatory signs of obstruction, cyanosis, decreasing or inadequate oxygen saturation, absent or inadequate spirometric measures of exhaled gas flow, absent or inadequate exhaled carbon dioxide, and hemodynamic changes associated with hypoxemia.<sup>4,8</sup>
- Difficult laryngoscopy is when it is not possible to visualize any portion of the vocal folds after multiple attempts at conventional laryngoscopy with external compression. This condition is also known as a Cormack-Lehane laryngeal grade 3 or 4 views (**Box 1**).<sup>9</sup>
- Difficult tracheal intubation is tracheal intubation that requires multiple attempts in the presence or absence of tracheal disorder.
- Failed intubation occurs when placement of endotracheal tube fails after multiple attempts.

### EVALUATION

An airway evaluation should be performed on every patient requiring airway management.<sup>5</sup> This evaluation should include key information in the patient's history and physical examination that may affect endotracheal tube placement. There

#### Box 1

##### Cormack-Lehane scale

Grade 1: full view of glottis

Grade 2: partial vocal fold/posterior commissure

Grade 3: epiglottic tip visualized

Grade 4: no exposure of glottic structures

*From* Cormack RS, Lehane J. Difficult tracheal intubation in obstetrics. *Anesthesia* 1984;39(11):1106.

Download English Version:

<https://daneshyari.com/en/article/2744332>

Download Persian Version:

<https://daneshyari.com/article/2744332>

[Daneshyari.com](https://daneshyari.com)