

The Difficult Airway: Developing a Consistent Approach

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Introduction

The primary objectives were to determine the best practices in managing difficult airways (DAs) and to generate a simplified algorithm for a consistent approach. Additional objectives included organizing a DA cart, and integrating the information into the electronic medical record (EMR).

A DA is found in a patient in which any of the following situations occur^{1,2}:

- Can't intubate, can oxygenate
- Secured airway that fails
- 3 or more failed attempts to intubate

DAs are estimated to occur in 3-15% - or more – of all intubation attempts²

The difficult airway (DA) needs a consistent approach for the following reasons^{1, 3}:

- Reduce morbidity and mortality
- Rural/smaller community facilities may have fewer resources
- Need to predict problems that can arise if patient is extubated and reintubation is required
- Must anticipate likely issues with a DA if intubation is needed in the future
- Develop a training program with providers following the same algorithm
- Plan and budget for required supplies
- Know best practices to optimize patient care

It is critical to secure the DA quickly, to avoid possible sequelae of arrhythmias, aspiration of gastric contents, trauma to the oropharynx or airway, or hypoxia. Hypoxia could lead to irreversible brain damage or death³.

Need to determine best practices and develop standard operating procedures (SOPs) for every facility for quality improvement (QI) and patient-safety initiatives. The proposed scale-up algorithm (see Figure 1), use of novel techniques, provision of a DA cart, and data entry into the EMR could be included. Use SOPs for quality improvement (QI) and patient safety initiatives¹⁻⁴.

Scale-Up Technique

When approaching the DA, it is important to have a variety of techniques available. A scale-up technique was determined to be the best approach from the literature. This was gleaned from a variety of algorithms, which were consolidated into a simplified, cohesive algorithm^{1, 2, 5, 6} (see Figure 1):

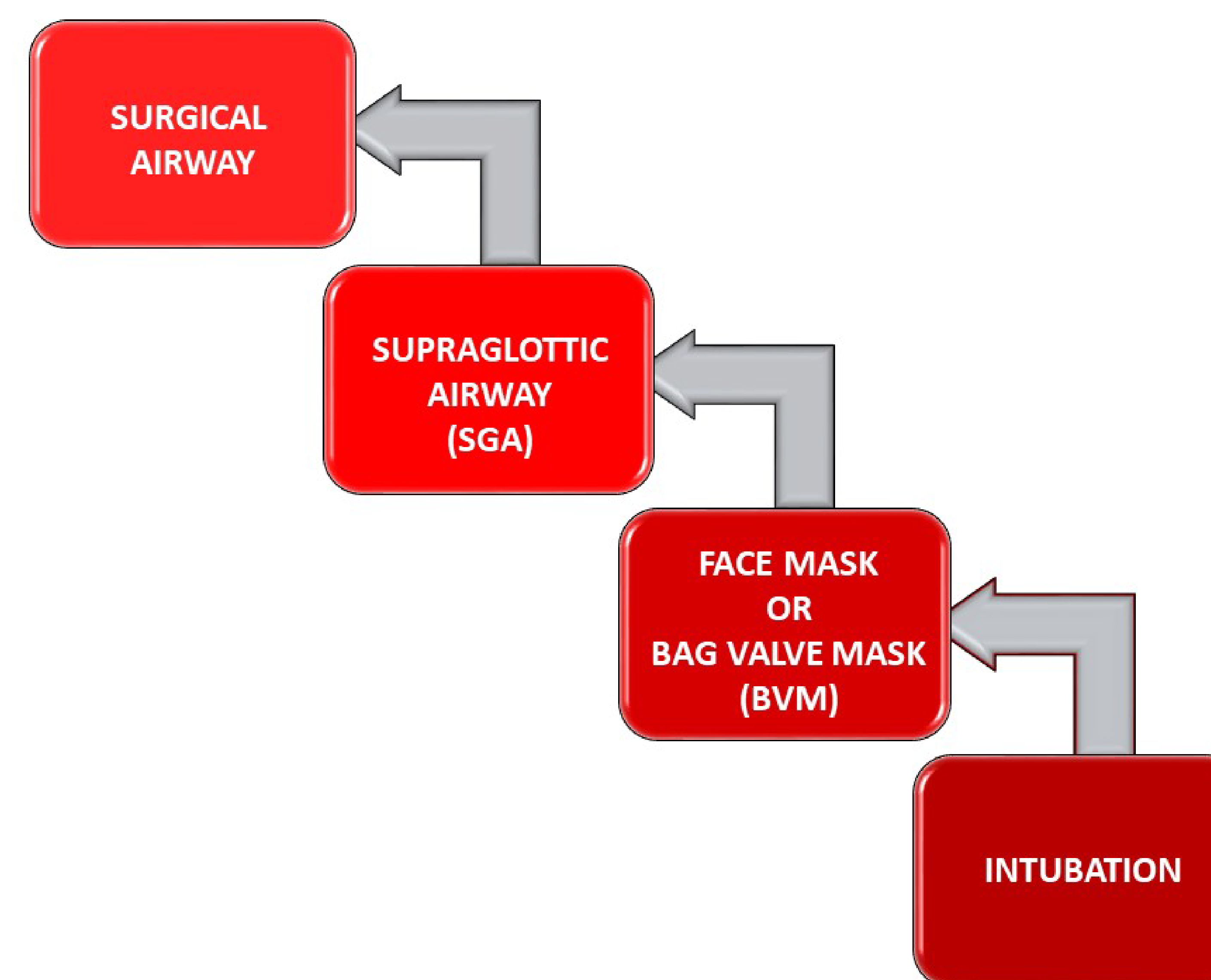


Figure 1. A simplified algorithm to scale up to approach the DA.

When attempting to secure an airway, the practitioner starts at the bottom of the cascade and “scales up” to the top, attempting different approaches.

Each technique must be evaluated in the context of the patient presentation, as there are advantages and limitations to any approach⁷.

Novel airway tools outside of the algorithm may help with the DA:

- Fiberscopes and intubating stylets¹
- Retrograde intubation could help in the case of patients with narrow oral openings⁸
- The most successful novel tool involves the use of lighted stylets, enabling at least 96% of DAs to be intubated when clinically indicated¹

The Organized DA Cart

It is a good idea to plan and organize a DA cart that stands ready for airway challenges⁹ (see Figure 2 for an example). The drawers can be organized using lean methodologies as follows:

- Top: Algorithms, important phone numbers
- 1st Drawer: 3 P's (preoxygenation, pretreatment, paralysis/induction)
- 2nd Drawer: Intubation supplies
- 3rd Drawer: Supraglottic airways
- 4th Drawer: Surgical airway supplies
- Side: Longer bougies



Figure 2. Example of a simple cart that can be stocked with equipment for difficult airways.

Electronic Medical Record Integration

One of the best predictors of a DA is a prior challenge, with a positive predictive value up to 78%, underscoring the need for proper documentation into the EMR to avoid making the same mistakes¹.

One method is to leverage “dot phrases”- templates that can be inserted into notes. This can include any of the four main DA technique, physical exam findings and medical history that contributed, and the number of attempts for each approach⁴.

Consider flagging DAs in the Allergies section of the EMR¹⁰.

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