

## DIFFICULT AIRWAY MANAGEMENT

### Dr Paul Baker

Starship Children's Hospital  
Auckland

There is no doubt about the importance of safe airway management in anaesthesia. Although airway complications are relatively rare, the consequences tend to be severe (1-3). Common problems repeatedly contribute to this morbidity and mortality. This paper will review some of the basic principles involved in safe airway management, and discuss how to minimise the risk of complications.

Failure to assess a patient's airway is a leading cause of failed intubation (4). A detailed medical history and accurate assessment of the airway will help reduce the incidence of the unexpected difficult airway. Although airway tests tend to suffer from low positive predictive values, accuracy can be improved with proper technique (5).

Management of a known difficult airway should include consideration of awake intubation (6). The emphasis on endotracheal intubation with a known difficult airway, shifts to ventilation and oxygenation with an unexpected difficult airway. Early use of a supraglottic airway, coupled with intubation techniques which support ventilation, help to reduce the risk of hypoxia.

A recent review of airway related complications (1) identified problems at induction, particularly associated with intubation, leading to hypoxia and patient death or brain damage. This problem can be mitigated by careful adherence to the principles of maintaining oxygenation and ventilation, and by avoiding trauma. Pre-oxygenation prior to induction, followed by an optimum intubation attempt, helps to reduce the risk of complications.

An essential component of an optimum intubation attempt is expertise. Experience with direct laryngoscopy by anaesthetic registrars can be inadequate (7). A difficult airway requires skill and senior supervision. Careful patient positioning using the "head elevation laryngeal position" (HELP) (8), along with optimum external laryngeal manipulation (OELM) (9), an adequately relaxed patient (10), use of an appropriate bougie (11) or stylet (12), and laryngoscope selection tailored to the patient's anatomy, all help to minimise repeated intubation attempts.

Issues associated with equipment to manage the difficult airway (13) have now been addressed by ANZCA. A new guideline, TG4 "Equipment to manage the difficult airway during anaesthesia," appeared on the College website in July 2010 – [www.anzca.edu.au/resources/professional-documents/tg4.html](http://www.anzca.edu.au/resources/professional-documents/tg4.html)

An ever increasing array of airway devices requires a rational approach when selecting airway equipment. Equipment for an emergency airway container should be of high quality, reliable and its selection evidence based. Careful attention should be paid to quality control measures in an effort to avoid equipment failure. ANZCA guideline TG4 supports the principles of selectivity, redundancy and a culture of safety (14). However, an excessive fascination with airway devices can divert attention from the priorities of maintaining oxygenation, ventilation and avoiding trauma. The focus from airway devices and techniques back to gas exchange has recently been highlighted by Hung and Murphy (15). It must be recognised that every airway device and technique is associated with a failure rate and there is no substitute for careful and skilful airway management.

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