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Airway management and neuromuscular block: what are we waiting for?

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Abstract

Airway management is an essential skill for anesthesiologists. Major complications related to airway management during the perioperative period rarely occurs but may be life-threatening. A long mainstay dogma states: “do not use neuromuscular blocker agents (NMBAs) until face mask ventilation has been determined to be possible”. This dogma not only lacks evidence, but could also be harmful for patients. Are we creating unnecessary problems by trying to be safe? Why do we wait before we use NMBAs’ effects in our favor whenever difficulties arise? This non-systematic review aims to highlight key moments in anesthetic airway management in which administration of NMBAs play a decisive role in improving patient’s safety outcomes.

Keywords

- *Airway management*
- *Neuromuscular block*
- *Face mask ventilation*
- *Neuromuscular block monitoring*
- *Residual neuromuscular block*

Introduction

Airway management is an essential skill for anesthesiologists. It is a key aspect of general anesthesia, allowing oxygenation and ventilation as well as providing a path for anesthetic gas delivery. Major complications related to airway management during the perioperative period rarely occur but may be life-threatening.

The incidence of failed endotracheal intubation ranges from 0.05 to 0.35%, and the incidence of impossible mask ventilation, failed intubation, transtracheal jet ventilation, tracheostomy, brain damage or death are between 0.0001 and 0.02% [1]. When studying mortality rates related to airway management, it was reported that 30% of deaths directly attributable to anesthesia involved failure in solving difficult airway scenarios [2].

Almost every drug routinely used to achieve loss of consciousness, neuromuscular block (NMB) and analgesia will or may have an impact on patient’s breathing condition.

Neuromuscular blocking agents (NMBAs) cause muscle relaxation by blocking the transmission of nerve impulses at the neuromuscular junction. Acetylcholine (ACh) binds to nicotinic acetylcholine receptors (nAChRs) on the postsynaptic motor end plate and the action potential is