

Fit and Function of the Laryngeal Mask Airway Supreme

In a study of 100 women, the mask was easy to insert, had high leak resistance, and allowed easy insertion of a nasogastric tube.

The Laryngeal Mask Airway Supreme (LMAS) is a new (2007), single-use airway device that the manufacturer claims to provide easier insertion and higher seal pressure than other laryngeal mask airways and to allow access for nasogastric tube insertion. Researchers evaluated these claims in a prospective study of 100 women without anticipated difficult airways who underwent LMAS insertion after induction of general anesthesia for elective surgery. If an air leak was heard after the cuff was inflated, the mask was repositioned (inserted more deeply or moved to one side or the other) until no leak was present. If ventilation was not possible, the mask was removed and reinserted.

Mask insertion was successful in 94 patients on the first attempt and in 5 on the second attempt. One patient was too small to accommodate the device. Median insertion time was 10 seconds. Repositioning was required and successful in 13 patients. Nasogastric tube insertion was successful in all patients on the first attempt. LMAS positioning was assessed using a fiber-optic scope and was scored as "optimal" in all patients, both immediately after insertion and at the end of surgery. Mean seal leak pressure was 28 cm H₂O. Eleven patients had unexpected vocal cord narrowing, three patients had increased inspiratory pressure, and two patients developed stridor. No patient required mask removal or surgery to be stopped. After mask removal, nine patients had minor upper airway trauma (slight blood on the mask edge), and eight complained of mild sore throat.

Comment: The LMAS combines the following advantages of other LMA models: a semirigid curved shaft (like the intubating LMA Fastrach), a port for nasogastric tube insertion (like the LMA ProSeal), and single-use design (like the LMA Unique). In addition, the LMAS has a higher seal pressure than the standard LMA does (useful in cases with high inspiratory resistance, such as patients with asthma, chronic obstructive pulmonary disease, pulmonary edema, and obesity). If additional studies confirm that the LMAS is reliably easy to place, it might become the preferred LMA model for prehospital and emergency department use when the ability to intubate is not required.

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