

Tips from the Top

Poor Man's LMA: An Alternative Approach to the Patient Who is Difficult to Mask Ventilate

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Until the year 2000, all the literature on the topic of management of the patient with a difficult airway focused on predictors of difficult laryngoscopy and intubation and different techniques to address the difficulties. In 2000, *Anesthesiology* published a paper from France¹ which identified predictors of difficult mask ventilation. The authors concluded that patients who snored, were edentulous, greater than 55 years, bearded and whose body mass index was greater than 26 would be difficult to mask ventilate after routine intravenous induction of anesthesia. This publication was welcomed enthusiastically because it highlighted the distinction between mask ventilation and direct laryngoscopy/intubation. This distinction is identified in the ASA algorithm² for management of the patient with the difficult airway, but its importance is not emphasized. Actually answering the question “will this patient be difficult to ventilate prior to intubation attempts?” is of greater importance than answering the question “will this patient be difficult to intubate?” because hypoxemia is not a real threat as long as ventilation can be maintained during various attempts to cannulate the trachea with an endotracheal tube.

Our experience with patients difficult to ventilate was similar to the French, and often our solution was insertion of an Laryngeal Mask Airway (LMA) supraglottic ventilation device.³ However prior to its common use and general acceptance, LMAs were expensive and not always immediately available. Therefore I would improvise by using the regular endotracheal tube rather than the conventional LMA as the supraglottic device to facilitate ventilation. The term Poor Man's LMA comes from the difference in cost between a LMA and a regular endotracheal tube.

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Once a patient is induced with intravenous anesthetic agents and neuromuscular paralysis established, preferably with nondepolarizing neuromuscular blockers, an endotracheal tube is placed into the patient's mouth behind the tongue as one would place an oral airway (Figure 1). The cuff is inflated with approximately 10 ml of air. The nose is pinched and the lips sealed around the tube to prevent egress of air during positive pressure ventilation. Ventilation is established by having an assistant squeeze the bag, or by turning on the ventilator. As long as a) the endotracheal tube is positioned behind the tongue b) the cords are abducted with neuromuscular blockade and c) the inflation pressures do not exceed 25 cm H₂O, gastric insufflation will not occur. In morbidly obese patients (in our last reported series,⁴ the average BMI was 56), reverse Trendelenburg to 25 degrees made ventilation with the Poor Man's LMA easy and, in most cases, an oxygen saturation of 100% was attained. Teaching the Poor Man's LMA to emergency medical technicians, medical students and residents can be accomplished in a couple of minutes prior to their intubation attempts. Many residents have found the technique useful on codes when they encounter a patient whose posture and position are not amenable to Ambu bag-mask ventilation prior to intubation.

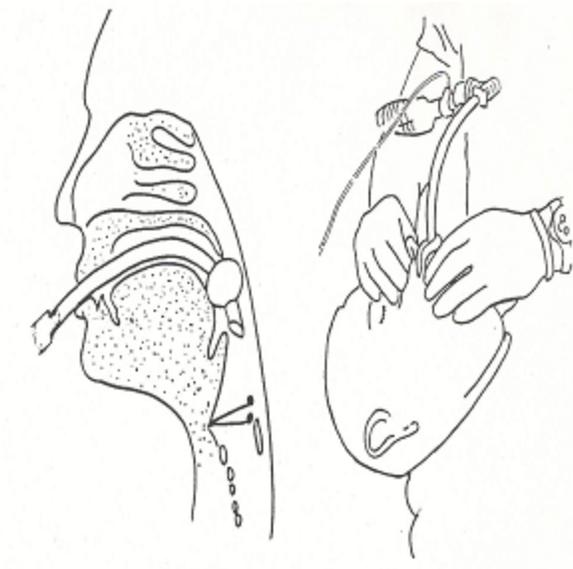


Figure 1. The endotracheal tube is positioned in the oropharynx behind the tongue. The nostrils are compressed and the lips make a seal around the tube to prevent egress when positive pressure is applied. An assistant

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can squeeze the bag or the ventilator can be deployed to establish ventilation.

Bibliography

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- ⁴ Boyce JR, Ness T, Castroman P, Glysteen J. A preliminary study of the optimal anesthesia positioning for the morbidly obese patient. *Obesity Surgery* 2003; 13:4-9.

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