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Editorial

Exploring the role of laryngeal masks in neonatal resuscitation

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Key message

- Laryngeal masks (LMs) offer stable airway access and skill retention advantages, making them promising alternatives to positive-pressure ventilation in neonatal care.
- The ease of teaching LM insertion techniques to less experienced providers addresses the need for swift intervention and skill retention.
- Careful consideration of the benefits and challenges of LMs is essential in determining their effective integration into enhanced neonatal resuscitation protocols.

In neonatal care, progress is driven by an unwavering commitment to safe and effective practices. A recent study illuminated the potential of laryngeal masks (LMs) as an alternative interface for positive-pressure ventilation (PPV) during neonatal resuscitation.[1] The discussion on LMs in the most recent Textbook of Neonatal Resuscitation, 8th edition, differs from those in prior editions in which LMs were presented as alternatives in cases of challenging endotracheal intubation. The current version highlights the use of LMs during PPV.[2] Moreover, the International Liaison Committee on Resuscitation recommends employing LMs as alternative secondary airway devices for resuscitating infants older than 34 weeks of age.[3] However, as with any medical innovation, a measured and comprehensive assessment of their the advantages and potential limitations is essential prior to widespread LM adoption.

The study "Updates in neonatal resuscitation: routine use of laryngeal masks as an alternative to face masks" beckons us to examine the unique attributes of LMs within the context of neonatal care.[4] Their key advantage is the provision of a stable and less invasive airway access, which differs from conventional methods that require laryngoscopy. This novel approach may mitigate the risks associated with tracheal intubation and potentially sidestepping complications, such as esophageal intubation, cardiac arrest, endobronchial intubation, airway trauma, laryngospasm, hypotension, and compromised oxygen levels.[5] This proactivity toward risk reduction underscores the pragmatic appeal of integrating LMs into neonatal resuscitation protocols.

Furthermore, the advantages of LM insertion techniques merit consideration. The simplicity with which these techniques can be taught to less experienced healthcare providers is an asset that caters to the need for swift intervention. Equally important is the retention of skills tied to LM insertion, which surpasses those of both face mask ventilation and endotracheal intubation.[6] This attribute aligns with the demand for efficient and efficacious interventions, a crucial aspect of the intricate landscape of neonatal resuscitation.

However, as the healthcare community embraces the potential of LMs, a judicious approach entails acknowledging potential challenges. A pertinent concern revolves around the possibility of aspiration of gastric contents linked to LM use. Gastric air insufflation due to malpositioning or mask obstruction by the epiglottis can lead to gastric distension, posing a significant risk of reflux and aspiration and endangering affected infants.[7] Unlike endotracheal tubes (ETTs), LMs cannot be used for tracheal suctioning when required, prompting careful consideration in cases involving exposure to meconium-stained amniotic fluid. This limitation underscores the importance of rigorous research and exploration.[3]

In addition, gastric insufflation warrants further investigation. Although second-generation LMs offer potential solutions, ongoing examinations are required.[8] These products stand out because they enable access to and effective separation of the respiratory and digestive tracts. Moreover, the incorporation of a drain tube is a convenient option for evacuating the gastric contents.[9] Studies comparing gastric insufflation across various LM models and ETTs yielded varied results, underscoring the nuanced nature of these considerations.[10]

Moreover, adherence to manufacturer-recommended LM sizes is critical. Notably, the laryngeal mask airway (LMA) Classic and LMA Supreme size 1 lacked a lower

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weight limit but featured an upper limit of 5 kg. In contrast, the i-gel size 1 was designed for infants weighing 2–5 kg.[3] Clinical trials involving the LMA Supreme for neonatal resuscitation included infants with birth weights as low as 1.5 kg.[11] Moreover, there are reports of successful LM usage in an 800-g newborn, indicating a widening scope.[12] Furthermore, recent studies highlighted the potential applicability of LMs for administering surfactant. A pivotal randomized controlled trial evaluated surfactant delivery via the LMA in preterm infants with respiratory distress syndrome. Impressively, this study demonstrated the non-inferiority of surfactant therapy via LMA, showcasing its ability to outperform the ETT approach by yielding a lower early failure rate. This favorable outcome may be attributed to the avoidance of adverse effects associated with premedication, laryngoscopy, and intubation.[13] These findings underscore the potential of LMAs to function as reliable conduits for well-controlled surfactant administration, aligning seamlessly with their pivotal roles in neonatal resuscitation protocols.

In conclusion, the integration of LMs as a conduit for PPV in neonatal resuscitation holds potential but warrants prudent consideration. This necessitates a comprehensive evaluation and careful weighing of LM advantages and complexities. As innovation progresses, a discerning approach requires an in-depth understanding of its potential benefits, plausible drawbacks, and ongoing research. The true utility of LMs for enhancing neonatal resuscitation protocols will emerge through diligent investigation and deliberate implementation.

See the article "Updates in neonatal resuscitation: routine use of laryngeal masks as an alternative to face masks" via https://doi.org/10.3345/cep.2023.00619.

Footnotes

Conflicts of interest: No potential conflict of interest relevant to this article was reported.

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