

Modified Cricothyroidotomy: A Novel Approach

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Dear Editor,

I am writing to submit an article on the significance and modifications of the needle cricothyroidotomy procedure, a vital life-saving intervention performed primarily by anaesthesiologists and intensivists in emergency situations where intubation or ventilation is not feasible.

Needle cricothyroidotomy is a procedure that becomes imperative when conventional airway management techniques are unsuccessful and the patient is in critical need of respiratory support. The cricothyroid membrane, a small area located between the thyroid and cricoid cartilages in the neck, serves as the entry point for this procedure. While this method is typically employed by anaesthesiologists and intensivists, it is essential for healthcare professionals across disciplines to be acquainted with the technique, as emergencies can occur in various healthcare settings.

In the standard procedure, a needle is inserted through the cricothyroid membrane, and needle is then connected to a syringe and an ambu bag, facilitating manual ventilation. However, as with any medical procedure, continuous improvement is a driving force in enhancing patient outcomes.

One critical modification we propose involves confirming the needle placement using end-tidal carbon dioxide (EtCO₂) monitoring. EtCO₂ provides a real-time assessment of carbon dioxide levels during ventilation, serving as a reliable indicator of proper needle placement. This modification not only ensures the effectiveness of the procedure but also adds an additional layer of safety and precision.

To further enhance the procedure, we implemented a three-way connection to the side stream module, as depicted in Figure 1. This modification allows for continuous monitoring and real-time assessment of each breath. The three-way connection improves the accuracy of the procedure by incorporating a dynamic feedback mechanism, enabling healthcare providers to make instant adjustments based on the patient's respiratory response.

Figure 1 illustrates the modified assembly, showcasing the integration of the three-way connection with the side stream module. This visual representation aims to assist healthcare practitioners in implementing the modification effectively. The added components are seamlessly integrated into the existing procedure, requiring minimal adjustments to the standard protocol.

In addition to its practical benefits, our modification addresses the need for ongoing research and innovation in emergency medical procedures. By incorporating continuous monitoring and real-time assessment, we contribute to the evolving landscape of critical care and emergency medicine. We envision that this modification will not only enhance the needle cricothyroidotomy procedure but also pave the way for future advancements in emergency airway management.

In conclusion, needle cricothyroidotomy remains a crucial life-saving procedure in emergency situations where traditional airway management methods fall short. Our proposed modification, incorporating EtCO₂ monitoring and a three-way connection to the side stream module, aims to improve the precision and safety of the procedure. By providing a comprehensive understanding of the modification and its implementation, we hope to contribute to the ongoing dialogue surrounding advancements in emergency airway management.

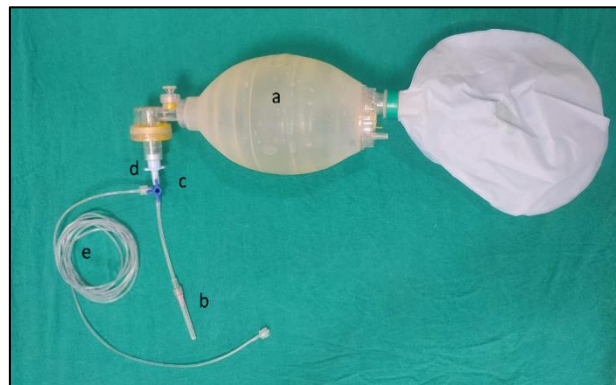


Fig 1: Needle cricothyroidotomy with EtCo₂ monitoring facility (Side stream). a) Manual resuscitation bag, b) 16G Needle, c) 10cm extension, d) 7.00 mm ETT connector, e) EtCo₂ sampling line

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