

Ultrasound and airway; Time is coming

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The use of ultrasound for vascular access, regional anesthesia, and trans-esophageal echocardiography is well established for anesthesia practice, however its use for airway assessment and management is not. The earliest reports dealing with US applications in clinical medicine include the description of soft-tissue imaging of the pretracheal structures and anterior tracheal wall¹. The first detailed reports of using US to assist various applications in airway management date from only a few years ago². Ultrasonography has been utilized as a valuable adjunct to the clinical assessment of the airway; a review of the literature was conducted with the objective of summarizing the available evidence concerning the use of ultrasound for assessment of the airway, with special emphasis on head and neck cancers. Ultrasonography was found to give high-resolution images of the anatomic structures of the upper airway comparable to computed tomography and magnetic resonance imaging. It also provided valuable information regarding tumours, infiltration, and oedema as well as fibrosis of the head and neck³. Further study was conducted to compare and correlate the ultrasound view of the airway and the Cormack Lehane classification of the direct laryngoscopy⁴, and they observed that there was a correlation of the distance between the epiglottis and the vocal cords (EVC) with the Cormack Lehane Grading. Subsequently, the correlation of the preepiglottis space (Pre-E) with the Cormack Lehane Grading was strong in positive direction, and the ratio of Pre-E and E-VC distances with the Cormack Lehane Grading had the strongest

positive correlation. Three reported cases demonstrating the usefulness of ultrasound techniques in this setting, where it shows key elements of airway anatomy, non-invasive observation of vocal cord motion, and percutaneous periglottic steroid injection via the cricothyroid membrane in 3 different patients. This report reveals the possible usefulness of ultrasound imaging in clinical anaesthesia care, specifically airway management in children⁵. Furthermore a case report describes a novel use of real-time ultrasonography to direct the insertion of the endotracheal tube during intubation without performing laryngoscopy in a patient who failed traditional direct laryngoscopy⁶. In anaesthesia daily practice difficulty with tracheal intubation is the most common cause of serious adverse respiratory events for patients undergoing anesthesia. Repeated attempts of difficult intubation can result in serious soft tissue injury and rapidly deteriorate into a "cannot intubate cannot oxygenate" situation that requires a surgical cricothyrotomy as a potentially life-saving procedure. However, cricothyrotomy is an infrequently performed procedure with complication rates ranging from 9 to 40%. Accurate identification of the cricothyroid membrane is crucial for the success and minimal complications in performing a cricothyrotomy. Ultrasound guidance of the cricothyroid membrane improves correct device insertion and reduces the severity of injuries when performing cricothyrotomy using ultrasound on human cadavers. An ultrasound guidance of the cricothyroid membrane.