

## Role of Sonography for Post Intubation Confirmation

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### Editorial

Intubation and keeping airway open is critical procedure in the treatment of acutely unwell patients in the emergency department [1]. Intubating patients needing support of airway is performed by Rapid Sequence Intubation (RSI); after performing RSI, doctor should be make sure from proper location of tracheal tube otherwise the esophageal intubation may develop severe complications and death due to hypoxia [2].

Confirmation of proper tracheal intubation could be performed primarily by direct laryngoscopy, auscultation of Gurgling sounds in the epigastric region, lung auscultation, observation of water vapor on endotracheal tube wall, using esophageal detector device, CXR and ET<sub>CO</sub><sub>2</sub> (end-tidal CO<sub>2</sub> pressure) that each of the above mentioned methods have its own limitations [1-6].

A new technique to confirm proper endotracheal intubation is trachea and chest ultrasound immediately after or during intubation. Chest ultrasound is an indirect method to show the movement of the lungs during ventilation through an endotracheal tube. This procedure can be performed instantly or within a few seconds.

A surface probe is used in this method; probe is placed between 2 and 3 intercostal space symmetrically on midclavicular line. The lungs are observed as lung sliding which considered like comet sign In case of tracheal intubation. Asymmetric vibration movements of the lungs indicate right main bronchus intubation and so tracheal tube should be pulled back [7,8].

Tracheal ultrasound during Endotracheal Intubation (ETI) also is called Tracheal Rapid Ultrasound Exam (TRUE). Ultrasound probe is set on the outside of larynx and glottis during intubation and tube passage through trachea is checked; two signs have been introduced in this method; bullet sign which is seen by passage of tracheal tube between the vocal cords and snow storm that is observed during intubation when tracheal tube passes trachea [8,9].

Chou HC and Osman Ad studies reported 98.2% and 98.1% overall accuracy by order for ultrasound in approving tube in trachea [10,11]. According to evaluations and mentioned topics, capnography is the standard test for confirming endotracheal intubation.

However, due to the limitations and time-consuming nature of this method and the fact that it does not show the ET<sub>CO</sub><sub>2</sub> values and is only used in patients with spontaneous pulse with no place

in the cardiac arrest patients, introducing rapid and simple methods is essential.

Sonography, with high sensitivity for confirming intubation in cardiac arrest and Return of Spontaneous Circulation (ROSC) patients, can be used as a reliable and alternative modality in verifying intubation with wide applications compared to Capnography. However, further studies should be performed to confirm its accuracy.

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