

Verification of tracheal intubation with ultrasound compared with Capnography is the standard method

Abstract

Background and objective: The main method for establishing a cross-sectional and safe airway intubation is intubation. It has recently been suggested that ultrasound can indirectly evaluate intubation by observing the aperture movement. The purpose of this study was to confirm the accuracy of tracheal intubation with ultrasound and compare it with capnography in candidates for intubation.

Methods: This is a descriptive cross-sectional study. The statistical population of this study included all patients over the age of 18 years who were candidates for intubation of the tracheal tube, in the year 96-95 in Imam Ardebil Hospital. In this study, 50 patients (16 women and 34 men) were selected through available sampling method. Tracheal intubation was performed in these patients by direct laryngoscopy. And using ultrasound and capnographic Surface Probes to determine the correctness of intubation.

Results: Patients with an average age of 13.36 ± 37 were examined. The ultrasound sensitivity and specificity were 100% and 83% respectively in determining the correct location of the intubation, respectively. The positive predictive value and negative predictive value were 95% and 100%, respectively. In those cases where intubation was in the esophagus, an immediate intubation was performed right by the anesthetist. The Kappa agreement coefficient between ultrasonography and capnography in determining the correct location of the endotracheal tract was 96%. This agreement was statistically significant ($P < 0.05$).

Conclusion: Ultrasonography is a fast, accurate, and safe method for diagnosing the correct location of the tracheal tube, and with ultrasound, we can indirectly measure intubation in the esophagus by observing the expanding of the esophagus.

Key words: Intubation, Tracheal tube, Ultrasonography, Capnography