

Podcast: Ultrasound for Endotracheal Tube Placement

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- I. What we discuss in this podcast: We will be discussing the use of ultrasound in confirming endotracheal tube placement. This topic has been touched upon as early as 1994 when it was mentioned by American College of Emergency Physicians as one of the modalities to confirming ETT placement, and it has been reviewed numerous times by ACEP.
- II. Why is this important? There are already a number of well-established methods for confirming ET tube placement. These include the classics like condensation in the tube, bilateral breath sounds, lack of epigastric gurgling, colorimetric CO₂ confirmation as well as end-tidal CO₂ and, of course, the gold standard: visualizing the tube passing through the cords. However, these all have limitations. The use of US for ETT placement confirmation is a great method to confirm tube placement, with sound evidence supporting its use. With some US practice, you can begin to implement this into your own armamentarium and use it for quick placement confirmation.
- III. Who to use it on and who not to use it on is discussed.
- IV. How to use it US for ETT placement is explained; however, we recommend using the cited sources below to view images of the different techniques. And as always, you can visit our Midwestern University EM page for more ultrasound technique videos!

<http://emergencymed.wixsite.com/mwuem>

Thank you so much for listening and be on the look out for more podcasts! If you have any questions or comments you can email either one of us at jalterie66@midwestern.edu or Dallas.Holladay@gmail.com or on Twitter @JonathanDominck @Dallas_Holladay

Articles Mentioned:

1. Pilot Study to Evaluate the Accuracy of Ultrasonography in Confirming Endotracheal Tube Placement. Werner, S; Smith, C; Goldstein, J; Jones, R; Cydulka, R. J Ann Emerg Med 2006.
2. Accuracy of a Novel Ultrasound Technique for Confirmation of Endotracheal Intubation by Expert and Novice Emergency Physicians. Gottlieb, M; Bailitza, J; Christian, E; Russell, F; Eherman, R; Khishfe, B; Kogan, A; Ross, C. West J Emerg Med, 2014.
3. Direct ultrasound methods: a confirmatory technique for proper endotracheal intubation in the emergency department Saeed Abbasi, Davood Farsi, Mohammad A. Zare, Majid Hajimohammadi, Mahdi Rezai, Peyman Hafezimoghadam. Euro J Emerg Med, 2015.
4. ACEP Approved US for confirming ETT Placement, first approval 1994, reviewed: 2001, 2016 <https://www.acep.org/Clinical---Practice-Management/Verification-of-Endotracheal-Tube-Placement/>
5. Transtracheal 2D ultrasound for identification of esophageal intubation. Milling TJ, Jones M, Khan T, Taddy D, Melniker LA, Bove J, Yarmush J, SchianodiCola J. J Emerg Med. 2007 May;32(4):409-14. Epub 2007 Apr 16. Erratum in: J Emerg Med. 2007 Aug;33(2):231.
6. Tracheal rapid ultrasound exam (T.R.U.E.) for confirming endotracheal tube placement during emergency intubation. Chou HC, Tseng WP, Wang CH, Ma MH, Wang HP, Huang PC, Sim SS, Liao YC, Chen SY, Hsu CY, Yen ZS, Chang WT, Huang CH, Lien WC, Chen SC. Resuscitation. 2011 Oct;82(10):1279-84.
7. Pilot Study to Evaluate the Accuracy of US in Confirming Endotracheal Tube Placement, Annals of EM Gottlieb M, Bailitz JM, Christian E, Russell FM, Ehrman RR, Khishfe B, Kogan A, Ross C. J Emerg Med. 2014 Nov;15(7):834-9.
8. Gottlieb M, Bailitz JM, Christian E, et al. Accuracy of a Novel Ultrasound Technique for Confirmation of Endotracheal Intubation by Expert and Novice Emergency Physicians. Western Journal of Emergency Medicine. 2014;15(7):834-839. doi:10.5811/westjem.22550.9.22550.
9. Confirmation of Endotracheal Tube Placement after Intubation using US sliding lung scan. Weaver B, Lyon M, Blaivas M. Acad Emerg Med. 2006 Mar;13(3):239-44. Epub 2006 Feb 22.