Using Sublingual Ultrasound to Predict Difficult Intubation

Cheryl Lynn Horton, MD, R. Eleanor Anderson, MD

A pilot study suggests inability to view the hyoid bone on sublingual ultrasound is associated with less adequate glottic views.

Despite the availability of many methods for airway assessment, unexpectedly difficult intubations occur at a frequency of up to 8%. To determine if sublingual ultrasound could improve prediction of a difficult airway, researchers evaluated the correlation between inability to visualize the hyoid bone on ultrasound and glottic view at the time of intubation. One hundred ten elective surgery patients performed sublingual ultrasound on themselves under an anesthesiologist’s instruction. Anesthesiologists assessed thyromental and mouth opening distances, neck mobility, modified Mallampati score, and Cormack-Lehane classification.

Failure to visualize the hyoid bone on sublingual ultrasound had a sensitivity of 70% and specificity of 97% for predicting Cormack-Lehane grade view ≥2. Each of the other predictors of difficult laryngoscopy had high specificities (≥89%) but lower sensitivities for predicting difficult laryngoscopy.

Comment: Caudal displacement of the larynx, which prevents visualization of the hyoid bone on sublingual ultrasound, is an anatomic characteristic that can help predict a difficult airway. In patients with agitation, obtundation, or respiratory distress, however, sublingual ultrasound evaluation is likely not practical. There is no one test for a difficult airway, and clinicians should continue to perform a battery of difficult-airway assessments prior to intubation. Sublingual ultrasound has not yet earned a place among these assessments.

Citation(s):

(http://dx.doi.org/10.1111/anae.12598)

Copyright © 2014. Massachusetts Medical Society. All rights reserved.