

Pure Science or Purely Biased

To the Editor:

The carefully crafted study “Auscultation *versus* Point-of-care Ultrasound to Determine Endotracheal *versus* Bronchial Intubation”¹ was performed with great care to blind the observers. The ultrasound technique is described in detail, but the auscultation technique is unmentioned. Because the authors report that the “screens of the anesthesia machine and general monitor were partially covered to conceal the peak and mean airway pressure readings, capnography waveform, and the pulse oximetry (SpO₂) values,” we may deduce that auscultation was performed during mechanical ventilation, presumably using current recommendations of tidal volumes of 5 to 7 ml/kg and positive end-expiratory pressure. The proper technique for auscultating for endotracheal tube placement requires placement of the stethoscope in the axilla and rapidly inflating the lungs with a larger than normal tidal volume to maximize breath sounds. Failure to utilize such a technique places auscultation at a distinct disadvantage in the comparison. An appropriate comparison for an ultrasound examination might be performing it with the gain minimized or the display turned to minimal intensity. Is it scientifically rigorous to compare two devices when the technique applied to one seriously hinders its application?

In the accompanying editorial, Isono *et al.*² have supported their argument that the stethoscope is obsolete with a table claiming that there is “no” “cost per use” for point-of-care ultrasonography. A quick check of the internet for the LOGIQ E device utilized in this study suggests retail prices of \$25 to \$30,000 with replacement probes costing a few thousand dollars each. Amortizing this cost over some reasonable number of anesthetic uses is clearly going to result in a real cost per use, perhaps half the \$50 they quote for fiberoptic. Just as the editorial suggests that sensitivity and specificity can be improved by a variety of enhancements in technique, so can auscultation be augmented by other physical diagnostic maneuvers, including the assessment of the cuff position by ballottement of the suprasternal notch to improve its performance.

In our enthusiasm to embrace new technology, it is easy to accept unfair comparisons as demonstration of superiority. In response to the editorial’s titular question, the well-trained clinician needs to use all of his senses, including common sense, to provide optimal care for his patients.

Competing Interests

The author declares no competing interests.

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2. Isono S, Sandberg WS, Jiang Y: Do you believe what you see or what you hear?: Ultrasound *versus* stethoscope for perioperative clinicians. *ANESTHESIOLOGY* 2016; 124:989–91

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High *versus* Low Technology in Assessment of Endotracheal Tube Position

To the Editor:

I read with great interest the publication by Ramsingh *et al.*,¹ which elegantly shows that point-of-care ultrasound examination is considerably more accurate than chest auscultation in discriminating between endotracheal and endobronchial intubation. However, several factors limit the practicality of this technique in routine clinical practice. It requires unrestricted access to neck and thorax and considerable operator experience. All ultrasound examinations were performed by anesthesiologists with at least 4-yr postresidency experience who had previously completed at least 50 whole-body point-of-care ultrasound examinations and at least an additional 25 pulmonary tree and lung expansion ultrasound examinations. Even under the optimal study conditions, it took close to 4 min to complete the ultrasound examination in individual cases. The authors appropriately acknowledge these limitations. However, acknowledgment will not eliminate them.

Somewhat surprisingly, the authors did not make any reference to the 21/23-cm method as a means of assessing endotracheal tube (ETT) position. When using this method, the ETT is positioned at the 21-cm mark in women and at the 23-cm mark in men, measured at the upper incisor teeth or the corner of the mouth. Although this technique is effective in predicting ETT position,^{2–4} the authors state that using standardized ETT insertion depth is prone to error.¹ However, the referenced publication² does not necessarily support this view. The study population consisted of endotracheally intubated patients admitted to the intensive care unit.² In the control group (n = 263), position of the ETT was left unchanged. In the study group (n = 304), ETTs were (re) positioned at the 23-cm mark in men and at the 21-cm mark in women, measured at the upper incisor teeth or the upper anterior gums in edentulous patients. The distance between the tip of the ETT and the carina was radiographically determined. In the study group, there were no endobronchial