intubations, and in only two patients, the tip of the ETT was between 2 and 3 cm proximal to the carina (0.65%). In the control group, there were seven endobronchial intubations (2.7%); in eight patients, the tip of the ETT was less than 2 cm proximal to the carina (3.0%); and in 20 patients, the tip of the ETT was between 2 and 3 cm proximal to the carina (7.6%).

In a prospective randomized trial, chest auscultation, observation and palpation of chest movements, and check of the ETT tube insertion depth on the centimeter scale basis were used for detecting or excluding endobronchial intubation.[4] The position of the ETT was fiberoptically controlled. A maximum of 30 s was allowed to judge the tube position. Of all three tests, checking depth of insertion by the centimeter scale on the ETT was the most accurate. This method showed a sensitivity of 88% (95% CI, 0.75 to 1) and a specificity of 98% (95% CI, 0.39 to 1) for detecting or excluding endobronchial intubation. These values are as good as those obtained by the ultrasound method.[1] Importantly, the test results were independent of the anesthesiologist's experience. Noteworthy, had the 21/23-cm rule been followed, not a single patient would have been endobronchially intubated. However, it would have resulted in a shorter than the recommended safety distance of 2.5 cm between the distal end of the ETT and the carina in 24 of 118 women (20%) and 7 of 42 men (18%). If a 20/22- instead of the 21/23-cm rule had been used, the recommended safety distance would have been achieved in 108 of 118 (92%) women and in all 42 men. The shortest correct intubation depth was 19 cm in 10 women with an average height of 157 cm and a body mass index of 28.4 kg/m^2. These findings suggest that in general, using the 20/22-cm rule (with the possible exception of using 19 cm in small women with a higher body mass index) might be safer than using the "traditional" 21/23-cm rule.

The overall evidence suggests that the 21/23-cm method (possibly to be replaced by the 20/22-cm method) allows rapid and reliable assessment of the likelihood of endobronchial intubation without the need for advanced clinical experience and for additional technical equipment and specialized training. The practicing clinician should be aware of a "low-tech" alternative method of assessing the likelihood of endobronchial intubation of equal sensitivity and specificity as the ultrasound method but without its limitations. When next investigating the effectiveness of a technique in assessing the ETT position, it might be more appropriate to choose the 21/23-cm method as the "accepted" standard for comparison rather than chest auscultation.

Competing Interests

The author declares no competing interests.

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"We Hear What You Are Saying, but…"

To the Editor:

We read with interest as Ramsingh *et al.*[1] described their study comparing the efficacy of point-of-care ultrasound *versus* auscultation by using a stethoscope in determining proper endotracheal/bronchial positioning. We have used ultrasound to answer questions about endotracheal tube placement, possible pneumothorax, and difficult airway anatomy—all of which have been well-described by Kristensen.[2] Clearly, ultrasound offers advantages in very specific situations. We applaud the authors for describing a new technique in confirming the laterality of bronchial intubation. The authors rightly recognize the limitations of their study, especially the fact that auscultation and ultrasound were compared in isolation. In the actual clinical setting of other monitors including capnography, peak airway pressures, observation of chest excursion, and endotracheal tube humidification, it is hard to imagine that the addition of ultrasonography offers any significant advancement in patient safety for the following reasons: first, the authors state that the technique is "quick," which is then defined as "less than 4 min." In terms of airway management, 4 min strikes us as a long time. Depending on habitus and other pulmonary pathologies, the safe apneic time of a given patient may preclude ultrasound examination. Second, ultrasound is expensive, and availability is a legitimate concern. Even though we are employed in a large academic center that has many portable ultrasounds, the demand frequently exceeds the supply of devices. Third, compared to a stethoscope, ultrasounds are currently more cumbersome, breakable, and energy-source dependent. Fourth, ultrasounds do not fill every role our stethoscopes play; for example, they cannot diagnose bronchospasm or flash pulmonary edema.

In summary, while we respect the application of this technology, we do not yet see how it can be a point-of-care

device in a clinical practice in the described manner. The authors suggest that the stethoscope is outdated. We believe that their technique (especially if larger studies demonstrate similar sensitivity and specificity) needs consideration for adoption, but faulting a device merely because of its age is fallacious. Lewis[3] called this "chronological snobbery," the assumption that newer must be better. We would be wise to remember that the development of a new technique does not require the elimination of an older one. The more conscientious anesthesiologist will recognize the advantage of having both tools available.

Competing Interests

The authors declare no competing interests.

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Detection of Inadvertent Endobronchial Intubation

To the Editor:

I read with interest the article by Ramsingh *et al.*[1] regarding point-of-care ultrasound verification of endotracheal tube (ETT) insertion depth. Numerous tests had been previously utilized to prevent and/or detect inadvertent endobronchial (main stem) intubation.[2] Each one of these tests has its own advantages and limitations. Undoubtedly, the use of point-of-care ultrasonography is a welcome addition, but it should not be forgotten that like any other confirmatory test, it has its own limitations. For example, deflation and reinflation of the ETT cuff to detect tracheal widening may not be safe when there is a high risk of aspiration as in trauma or obstetric patients. Applying cricoid pressure in rapid sequence induction situations may limit the area of transducer movement or distort the image. Ultrasound verification cannot be used when there is a neck collar in place unless the collar is released. Furthermore, the lung pleural sliding sign can be absent in patients with pleurisy, pneumothorax, pneumonia, or pulmonary consolidation[3] in spite of correct ETT position (false positive) and artifacts may mimic pleural sliding after pneumonectomy even with main stem intubation[4] (false negative). Since the displacement of a properly positioned ETT may occur with changes in the head, neck, and body positions,[5] it has been recommended to periodically check the ETT position both intraoperatively and in ventilated patients in the critical care setting. The use of ultrasound may be difficult or impossible for intraoperative periodic assessment during surgery on the anterior or posterior neck, as well as during esophageal, thoracic, and trauma surgery where the surgical field may extend from the neck down. In all of these situations, other tests may be needed to verify proper positioning of the ETT. For early detection and correction of inadvertent endobronchial intubation, it is prudent to understand the limitations of ultrasound verification and to combine multiple confirmatory tests.

Competing Interests

The author declares no competing interests.

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The Value of the Stethoscope in the Era of Ultrasound

To the Editor:

I read with interest the editorial by Isono *et al.*[1] I appreciate their assessment of the value of ultrasound detecting endobronchial intubation but disagree when they state that "perhaps the stethoscope is closer to a costume piece than ever before" or that "the findings of Ramsingh *et al.* further undermine the perioperative role of the stethoscope (except perhaps as a fomite)." It is unfortunate that many anesthesiologists fail to carry a stethoscope or neglect to use a stethoscope preoperatively where it provides a wealth of information about the circulatory system, the heart, and the lungs. Auscultation of