Linear Endobronchial Ultrasound Learning Curve
Hard to Predict

To the Editor:

In their recent article in CHEST (March 2014), Wahidi et al reported on the impressively short learning curve for endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) among pulmonary trainees who needed only 13 procedures to achieve independent competence. This study clearly demonstrates the usefulness of a standardized EBUS-TBNA lecture from trainers with expertise and also the value of an endobronchial ultrasound simulator/plastic model. It would be interesting to know if the authors have evaluated the specific value of the didactic lecture and the simulator model separately to see the relative value of each component, which may inform curriculum planners.

The situation is more complex regarding the number of procedures required before competency as an independent EBUS-TBNA bronchoscopist. First, an acceptable standard has yet to be clarified or standardized universally among studies, but it is clear from many systematic reviews where the expected sensitivity should be for EBUS-TBNA. The ability to independently intubate, locate, and sample the lymph node/target with adequate samples is obviously a key part of it but does not necessarily equate to the longer-term achievement of adequate diagnostic sensitivity and accuracy after a sustained period of time. Other studies have noted that performance is idiosyncratic and unpredictable even among experienced bronchoscopists and that the diagnostic accuracy appears to improve well beyond 100 procedures. The more debatable point is whether the latter is of clinical significance in defining “competence.” The actual number of procedures for each trainee are not given in the study by Wahidi et al but are reported as percentages from a 2-year period; it would be interesting to see the actual numbers.

Second, other variables may impact the learning curve. The mean lymph node size was 1.99 cm in the study by Wahidi et al and only 3% of procedures were for staging, implying that the vast majority were for the diagnosis of presumably larger nodes because the mean was just below 2 cm. The learning curve for staging EBUS-TBNA is likely to be a lot longer because the requirement to systematically sample adequately normal-sized lymph nodes, which may be as small as 5 mm, is a different challenge than sampling 2-cm nodes. Rapid on-site evaluation for cytology (ROSE) may have had a positive impact on shortening the learning time by providing immediate feedback, so studies comparing with/without ROSE would be welcome.

In summary, Wahidi et al provide interesting data, but further studies on the EBUS-TBNA learning curve are needed to evaluate specifically the learning curve for EBUS-TBNA to an agreed standard over a prolonged period, also taking into account setup variables such as operator competence (preexisting conventional bronchoscopic ability and experience), indication for EBUS-TBNA (lung cancer staging vs diagnosis, size of nodes), pathology (presence/absence of ROSE, processing as cytopathology or histopathology samples), and education (presence/absence of simulator and didactic lecture).

Andrew R. L. Medford, MBChB, MD, FCCP
Bristol, England

References