Single Bronchoscope Combined Endoscopic-Endobronchial Ultrasound-Guided Fine-Needle Aspiration for Tuberculous Mediastinal Nodes

To the Editor:

We fully support the use of a single linear endobronchial ultrasound (EBUS) bronchoscope for both endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) and endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA) of mediastinal lymph nodes, as reported in the recent CHEST article by Herth et al.1 Having initially established and reported our own results with EBUS-TBNA for both malignant and benign disease,2,3 we have more recently moved to performing EUS-FNA and EBUS-TBNA with a single linear EBUS bronchoscope for benign and malignant nodes. We would like to add the particular utility of EUS-FNA in nonmalignant disease as well as the more common utility in malignant disease. In our first five combined EBUS-TBNA/EUS-FNA procedures via a single EBUS bronchoscope, three patients with suspected TB (enlarged subcarinal and hilar nodes but no parenchymal lung disease) had TB diagnosed (caseous granulomatous histologic results with positive TB culture) from the EUS-FNA only (with only one positive histologic examination and culture from EBUS-TBNA, and all negative on BAL). In addition, the antibiotic sensitivities from mediastinal lymph node culture are helpful to ongoing management of the TB. (The remaining two cases were for suspected malignancy, metastatic renal cell carcinoma and non-small cell lung cancer, which were confirmed at EBUS-TBNA and EUS-FNA of subcarinal nodes).

We have also found EUS-FNA more tolerable to some patients than EBUS-TBNA, particularly those with pronounced cough despite adequate conscious sedation and those with poor lung function and significant comorbid lung disease. This can be particularly helpful if Station 7 is a target or there is a paraseptal lymph node. Obviously, the cost savings of another EUS scope, three patients with suspected TB (enlarged subcarinal and hilar nodes but no parenchymal lung disease) had TB diagnosed (caseous granulomatous histologic results with positive TB culture) from the EUS-FNA only (with only one positive histologic examination and culture from EBUS-TBNA, and all negative on BAL). In addition, the antibiotic sensitivities from mediastinal lymph node culture are helpful to ongoing management of the TB. (The remaining two cases were for suspected malignancy, metastatic renal cell carcinoma and non-small cell lung cancer, which were confirmed at EBUS-TBNA and EUS-FNA of subcarinal nodes).

In regard to the recently published article in CHEST by Afessa et al (May 2010),1 the association between silver-coated tracheal tubes and reduced mortality in patients who developed ventilator-associated pneumonia (VAP) was interesting. However, more intriguing and much more concerning was the observation that silver-coated tubes were associated with increased mortality in patients without VAP. This is particularly relevant given that in most institutions, the number of patients who do not develop VAP vastly outnumber those who do, implying that silver-coated tubes may result in an overall excess in deaths. This concern is borne out in the original North American Silver-Coated Endotracheal Tube (NASCENT) trial,2 in which mortality was higher in the group randomized to receive silver-coated endotracheal tubes (30.9% vs 27.3%, *P* = .08). Although this difference did not reach statistical significance, the strong trend raises significant concerns about the safety and overall benefits of the silver-coated endotracheal tube. Extrapolating the mortality figures published by Afessa et al3 to Harborview Medical Center in Seattle, Washington, it is estimated that routine use of the silver-coated endotracheal tube in our institution would result in an excess of 54 deaths per year. It would be helpful if the authors could comment on this concern and on the potential mechanism for increased mortality related to the silver-coated endotracheal tube.

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Increased Mortality in Patients Without Ventilator-Associated Pneumonia

To the Editor:

In summary, combined EUS-FNA/EBUS-TBNA is likely to become more commonplace for all the above reasons but should not be overlooked in the diagnosis of benign disease accessible by this technique.
Response

To the Editor:

We thank Dr Deen for the opportunity to elaborate on the mortality imbalance in our retrospective cohort analysis of the North American Silver-Coated Endotracheal Tube (NASCENT) study.

The increased mortality among patients without ventilator-associated pneumonia who received the silver-coated endotracheal tube was unexpected in view of the lack of toxicity in NASCENT and previous studies comparing silver-coated with uncoated tubes. In a randomized, double-blind study of 11 healthy adult dogs, no evidence of toxicity was found on histologic examination after 96 h of mechanical ventilation. In a randomized phase 2 study of adults on mechanical ventilation, adverse events, including those unrelated to device or procedure, occurred in 47 (63%) of 75 patients in the silver group and in 46 (62%) of 74 patients in the control group. In the NASCENT study, adverse events possibly related to device or procedure, occurred in 47 (63%) of 75 patients in the silver group and in 46 (62%) of 74 patients in the control group. In the NASCENT study, adverse events possibly related to device or procedure, occurred in 47 (63%) of 75 patients in the silver group and in 46 (62%) of 74 patients in the control group.

To further evaluate the mortality imbalance in the NASCENT study, we examined all patients and found no between-group differences in hepatic failure, multiorgan failure, or other causes of death suggestive of silver toxicity. The only between-group difference in leading causes of death was respiratory failure, which occurred in 45 (19%) of 233 patients in the silver group and in 22 (11%) of 198 patients in the control group ($P = .02$). Collectively, these findings suggest that the mortality imbalance in the NASCENT study was more likely to be attributable to risk factors not captured in the case report form than to the silver-coated endotracheal tube.

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References


Exhaled Nitric Oxide Measurements From Different Analyzers

To the Editor:

Adult studies report differences in the fraction of exhaled nitric oxide (FeNO) measured by different analyzers, but pediatric data are lacking. FeNO in children and adults measured by a single-breath online technique using NIOX (Aerocrine; Solna, Sweden) and EcoMedics CLD88 (EcoMedics; Duernten, Switzerland) analyzers is reported. Institutional review board approval, patient consent, and parental consent, when appropriate, were obtained.

The analyzers were in adjacent rooms with similar ambient conditions. FeNO was measured in subjects who had the ability to maintain an expiratory flow of approximately 50 mL/s, using the two analyzers within 30 min of each other, in random order. Subjects inhaled NO-free air from a built-in NO filter in the NIOX analyzer and an NO-free air supply (DENOX-88) connected to the EcoMedics analyzer. Pressing a button on the DENOX-88 when inhalation began delivered continuous zero-NO air, which stopped on release of the button when exhalation began. Subjects did not wear nose clips and exhaled within 10% of 50 mL/s for 5 s. Mean FeNO from three measurements within 10% of each other and with valid plateaus was recorded from both analyzers.

Primary analysis included FeNO from 60 subjects: 30 children, median age (range) 6.6 (4.3-13.6) years, and 30 adults, mean age 34.7 (22.7-51) years. Subanalysis included FeNO from 11 adults while exhaling at approximately 50 mL/s for 5 s from both analyzers and for 5 s with and without pressing the DENOX-88 button.

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