Endobronchial Ultrasoundography vs Conventional Transbronchial Needle Aspiration in the Diagnosis of Sarcoidosis

To the Editor:

We read with interest the recent article in CHEST (August 2009) by Dr Alain Tremblay and colleagues titled “A Randomized Controlled Trial of Standard vs Endobronchial Ultrasonography-Guided Transbronchial Needle Aspiration in Patients With Suspected Sarcoidosis.”1 It was a well-designed study in terms of the pathologic analysis; however, in the “Methods” section, the authors did not describe the bronchoscopic techniques for conventional transbronchial needle aspiration (TBNA) and endobronchial ultrasonography-guided transbronchial needle aspiration (EBUS-TBNA). There were more lymph node stations sampled with EBUS-TBNA than with the conventional TBNA. This we believe did not describe the bronchoscopic techniques for conventional transbronchial needle aspiration for moderate sedation during colonoscopy. Aliment Pharmacol Ther. 2008;27(7):597-608.

Endobronchial Ultrasoundography-Guided Transbronchial Needle Aspiration in Patients With Suspected Sarcoidosis

To the Editor:

Although the objective of the authors in a recent CHEST article (August 2009)1 was to ascertain which method most efficiently provided tissue confirmation of sarcoidosis in persons with bilateral hilar adenopathy, the investigation tacitly assumed its necessity, or at least its desirability. Following the seminal analysis of Winterbauer et al,2 we estimated a positive predictive value of ≥99.95% for a clinical-radiographic presentation of stage I sarcoidosis (S1S).3 A back-of-the-envelope computation shows this estimate to be conservative: assuming a sarcoidosis incidence of 3×10−5, half with S1S, and a combined 1.3-billion population of regions—Europe, United States, Canada, Japan, and the United Kingdom—likely to report its simulation by alternative diagnoses (ADs), the annual number of S1S cases in these regions would be 20,000, or 720,000 in the 36 years since publication of Winterbauer’s dictum. If five cases in 10,000 were due to an AD, there would have been an opportunity to report on 360; none has appeared. Thus, AD simulating S1S is, quite literally, unheard of. The (British) National Health Service adopted a clinical diagnosis guideline; the combined American Thoracic Society, European Respiratory Society, and World Association of Sarcoidosis and Other Granulomatous Disorders Statement on Sarcoidosis4 cites a clinical reliability of 99%. The section authors in current editions of standard references—Baum, Fishman, Fraser and Pâte, Murray and Nadel—found a clinical diagnosis acceptable. Hillerdal et al found a clinical diagnosis of stage II sarcoidosis acceptable as well. Tremblay et al reported that, following confirmatory CT scanning, the optimal outcome in persons undergoing conscious sedation, esophageal or endobronchial ultrasound-guided transbronchial

Affiliations: From George Washington University, National VA Hospital.

Financial/nonfinancial disclosures: The authors have reported to CHEST that no potential conflicts of interest exist with any companies/organizations whose products or services may be discussed in this article.

Correspondence to: Gustavo Ferrer, MD, 2950 Cleveland Clinic Blvd, Weston, FL 33333; e-mail: gustavo@ferrermd@yahoo.com or ferrergr@ccf.org

© 2010 American College of Chest Physicians. Reproduction of this article is prohibited without written permission from the American College of Chest Physicians (www.chestjournal.org/site/misc/reprints.xhtml).

DOI: 10.1378/chest.09-0895

REFERENCES


Endobronchial Ultrasoundography vs Conventional Transbronchial Needle Aspiration in the Diagnosis of Sarcoidosis

With the advent of Endobronchial Ultrasound-Guided Transbronchial Needle Aspiration (EBUS-TBNA), the number of lymph nodes sampled with EBUS-TBNA is significantly higher than with the conventional TBNA. However, the bronchoscopy techniques for conventional transbronchial needle aspiration (TBNA) and endobronchial ultrasonography-guided transbronchial needle aspiration (EBUS-TBNA) are not described in detail. This article highlights the importance of understanding these techniques, as it is essential for achieving accurate results. Moreover, the bronchoscopic analysis is crucial in confirming the diagnosis of sarcoidosis. Clinical diagnosis of sarcoidosis is generally considered reliable, with a positive predictive value of ≥99.95%. Although the aim of the recent CHEST article was to compare the efficacy of standard TBNA vs EBUS-TBNA, the bronchoscopic techniques are not adequately described. This highlights the need for further research and standardization in bronchoscopic techniques, especially in the context of sarcoidosis diagnosis.
lymph node biopsy, and endobronchial and transbronchial lung biopsy, in nearly half (with moderate bleeding in a small number), was achieved by endobronchial ultrasound-guided transbronchial lymph node biopsy, which produced tissue confirmation in 83%. 17% short of the positive predictive value of the plain radiograph. The validity of the 100% specificity is open to question. Specificity = true negative/(true negative + false positive). The investigators excluded true negatives on clinical grounds, and the design precluded false positives. The authors relied on a clinical assessment a minimum of 6 months after the procedures to assign a diagnosis of sarcoidosis as confirmed, excluded, or uncertain. None was judged to have an AD.

Justification of tissue confirmation of S1S requires (1) documentation of a reasonable percentage with AD and (2) evidence that earlier diagnosis of an AD confers substantial benefit. Absent this justification, Kassirer's dictum applies a fortiori: "Absolute certainty in diagnosis is unattainable, no matter how much information we gather, how many observations we make, or how many tests we perform. Our task is not to attain certainty, but rather to reduce the level of diagnostic uncertainty enough to make optimal therapeutic decisions." There is justifiable concern about healthcare costs generated by unnecessary medical procedures and the potential harm of high-radiation-level imaging. Would it not be more judicious, cost-effective, and beneficial to adopt a policy of observation?

Jerome M. Reich, MD, FCCP
Portland, OR

Affiliations: From the Earl A. Chiles Research Institute. Financial/nonfinancial disclosures: The author has reported to CHEST that no potential conflicts of interest exist with any companies/organizations whose products or services may be discussed in this article.

Correspondence to: Jerome Reich, Earl A. Chiles Research Institute, EACRI 5251 NE Glisan, Bldg A, Portland, OR 97213-2967; e-mail: Reichje@dnainc.com

© 2010 American College of Chest Physicians. Reproduction of this article is prohibited without written permission from the American College of Chest Physicians (www.chestjournal.org/site/misc/reprints.xhtml).

DOI: 10.1378/chest.09-2098

REFERENCES


Response

To the Editor:

We sincerely thank Drs Ferrer and Khosla and Dr Reich for their comments and interest in our recent article in CHEST (August 2009).1 Drs Ferrer and Khosla inquired about our technique for both standard transbronchial needle aspiration (TBNA) and endobronchial ultrasound-guided (EBUS)-TBNA and criticized the study design, which left decisions regarding the site and numbers of samples to the discretion of the bronchoscopist. The fact that the number of nodes sampled was higher in the EBUS group is not surprising. This is a different technique from standard TBNA, and access to multiple nodal stations is a true advantage of the technique, not a bias in study design. Although we agree that stations 4R and 7 are the easiest stations to sample with standard TBNA, we disagree that these are more easily accessible with standard vs EBUS-TBNA, and we have not encountered any expert opinion to support this claim. In our opinion, all nodal stations are more easily sampled with EBUS guidance. In order to assess the adequacy of our standard TBNA procedures, it would be best to compare the number of stations and passes performed and results with published studies on this technique in sarcoidosis. As described in our discussion, we were at least as aggressive in sampling as many nodes and performing as many passes as were performed in all prior studies where this was reported.2-5 Moreover, our results were well within the range of the published diagnostic yield with this technique. As stated in our discussion, we disagree with the claim that the diagnostic yield of standard TBNA in sarcoidosis ranges from 72% to 90%, as the pooled results of all relevant studies is 66%,1 in keeping with our results of 53%, increasing to 73% following review by a cytopathologist with expertise in this condition. In addition, although a sensitivity for sarcoidosis of 90% was suggested in one trial, the diagnostic yield as defined in our study was only 60%.3 We agree with the importance of experienced pathologists, in particular those with expertise in cytology, in the interpretation of these samples. Nevertheless, significant improvements in diagnostic yields were noted after expert review in both groups, suggesting that both 19-gauge and 22-gauge sampling yields benefited from this expertise. In addition, we disagree that in comparison with cytology “the histological analysis is well standardized and easier to make,” given that the percentages of both adequate and diagnostic cytologic TBNA samples exceeded the percentages of histologic ones (87.5% and 70%, respectively, vs 36% and 22.5%, respectively) in a recent study of sarcoidosis.6

We should also clarify that we would still strongly encourage bronchoscopists to perform standard TBNA in patients with suspected sarcoidosis and enlarged lymph nodes when EBUS is not available. If EBUS is available, our study confirms the findings of previous case series and the superior diagnostic yield obtained with this technique over standard TBNA.

The issue raised by Dr Reich regards the rationale for performing an additional invasive test in a patient population wherein the pretest probability of the disease being present is already very high. Of course, our study did not specifically address this issue, and in the majority of cases enrolled, the clinical decision to proceed to bronchoscopy was not made by the investigators. It should be pointed out that much of the literature cited on this issue regards the clinical presentation of asymptomatic and symmetric bilateral hilar adenopathy in patients with a normal physical examination.4,7 We agree that in many such cases, a need for pathologic sampling is not required for clinical management and decision making. Nevertheless, the American Thoracic Society-European Respiratory Society-World Association of Sarcoidosis and Other Granulomatous Disorders statement on