

## **April 2015 Phoenix Pulmonary Journal Club: Endo-Bronchial Ultrasound in Diagnosing Tuberculosis**

**Lin SM, Chung FT, Huang CD, Liu WT, Kuo CH, Wang CH, Lee KY, Liu CY, Lin HC, Kuo HP. Diagnostic value of endobronchial ultrasonography for pulmonary tuberculosis. J Thorac Cardiovasc Surg. 2009;138(1):179-84. [CrossRef] [PubMed]**

The diagnosis of tuberculosis in patients with inability to produce sputum or in patients that remain acid-fast bacilli (AFB) smear negative with high index of clinical suspicion remains a challenge and often results in treatment delay. This study examined the role in using endobronchial ultrasound (EBUS) to locate parenchymal infiltrates to allow for more accurate sampling of bronchial lavage fluid and transbronchial biopsies. The study examined 121 patients divided into 2 groups, 73 patients received EBUS guided bronchoscopy and 48 pts received conventional bronchoscopy with bronchoalveolar lavage (BAL) and transbronchial biopsies. It should be noted that patients undergoing transbronchial biopsies in the non-EBUS group appeared to have biopsies done without the use of fluoroscopy. The results showed that when EBUS was used to locate the parenchymal infiltrate the BAL smear was positive 31% vs 12% in non-EBUS patients and the transbronchial biopsies were positive in 24% vs 4.2% in non-EBUS. The study had several limitations as it did not utilize fluoroscopic guided biopsies or fluid sampling which would of likely increased the diagnostic yield in the non EBUS group. The study however does point out a seldom used approach to transbronchial biopsy by using EBUS to look for air bronchograms and tissue echogenicity. Perhaps utilizing EBUS in more centrally located infiltrates or nodules may offer a benefit over performing blind biopsies or biopsies in which fluoroscopy may be of limited view.

**Geake J, Hammerschlag G, Nguyen P, Wallbridge P, Jenkin GA, Korman TM, Jennings B, Johnson DF, Irving LB, Farmer M, Daniel P. Steinfort DP. Utility of EBUS-TBNA for diagnosis of mediastinal tuberculous lymphadenitis: a multicentre Australian experience. J Thorac Dis 2015;7 (3):439-48. [CrossRef]**

This was a retrospective study that evaluated the utility of EBUS guided mediastinal lymph node biopsy and culture in patients with suspected mediastinal tuberculosis. Mediastinal tuberculosis was based on clinical suspicion with no lung parenchymal lesions seen on CT scan. 159 patients received EBUS guided biopsy and culture. A total of 39 patients were diagnosed with mediastinal tuberculosis either based on culture (23 patients) or pathology showing granulomatous inflammation with negative cultures and response to tuberculosis treatment. 120 patients were negative for tuberculosis but did receive an alternative diagnosis. Alternative diagnosis of sarcoidosis (78 patients) and reactive lymphoid tissue (20 patients) were the most common alternative diagnosis. Although no mediastinoscopy was performed to confirm truly negative specimens, the presence of alternative diagnosis is reassuring that the combination of negative culture and pathology could results in the reported 98% negative predictive value. The study was limited by its design and smaller sample size, however using EBUS as a first line diagnostic modality makes sense as it may yield either the suspected or an alternative diagnosis in a large proportion of the cases.

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