

European Respiratory Society Annual Congress 2013

Abstract Number: 2136

Publication Number: 1826

Abstract Group: 11.1. Lung Cancer

Keyword 1: Bronchoscopy **Keyword 2:** Lung cancer / Oncology **Keyword 3:** No keyword

Title: Endobronchial ultrasound for the diagnosis of peripheral pulmonary lesions. A controlled study With fluoroscopy

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Body: Introduction: Fluoroscopy-guided bronchoscopy is usually performed for the diagnosis of peripheral pulmonary lesions (PPLs), but the diagnostic yield varies widely among studies. Endobronchial ultrasound (EBUS) can increase the diagnostic yield of bronchoscopic diagnosis of PPLs. Objective: A prospective randomized controlled trial involving two diagnostic arms: fluoroscopy-guided bronchoscopy and EBUS plus fluoroscopy guidance. Methods: All patients who underwent bronchoscopy to study PPLs from January 2009 to December 2012 were prospectively included. One hundred and forty-five consecutive patients were randomly distributed in two groups: EBUS plus fluoroscopy (50 patients, 71.3 ± 8.2 years) or fluoroscopy alone (95 patients, 68 ± 10.5 years). The mean diameter of the lesion was 41.9 ± 19.2 mm. Bronchial washing, cytological brushing and transbronchial biopsies were obtained. EBUS was performed using a 20-MHz radial miniprobe into a guide-seath. Bronchoscopist, cytologist, study protocol, techniques and tools were the same ones in two arms. Results: One hundred and twenty-nine (89%) patients had malignant disease. A diagnosis with bronchoscopy was established in 104 (71.7%) patients. EBUS plus fluoroscopy obtained a diagnostic yield in 78% of patients and fluoroscopy alone in 69.5% (ns). In contrast, for lesions smaller than 30 mm, EBUS plus fluoroscopy guidance provided significantly greater diagnostic performance than fluoroscopy alone (90 vs. 52%; p=0.05). There were no significant complications related with procedures. Conclusions: Bronchoscopy under EBUS plus fluoroscopy guidance improved the diagnostic yield of PPLs in lesions smaller than 30 mm in diameter.