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Title: Negative predictive value of EBUS in lung cancer staging

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Body: INTRODUCTION: EBUS (endobronchial ultrasound) is a technique developed for mediastinum diagnosis and staging. A negative puncture in lung cancer staging remains uncertain in current guidelines. OBJECTIVE: To evaluate the negative predictive value of EBUS in the lung cancer algorithm when adequate lymph node sampling is achieved. METHOD: Patients with a definitive pathological diagnosis of lung cancer nodal staging after EBUS were analyzed. Clinical characteristics, final diagnosis and treatment of patients with negative EBUS were investigated. RESULTS: A total of 100 definitive diagnostic EBUS were analyzed. A definitive pathologic diagnosis of malignant disease was obtained in 56 (56%), whereas 44 procedures were representative of lymph node with no evidence of malignant disease. 20 patients with negative diagnosis underwent surgery, 8 were treated with quimio and/or radiotheraphy, and 16 were not treated or had a final diagnosis of benign disease. Two out of the 20 patients that underwent surgery showed a final diagnosis of malignant disease in a N2 lymph node station (adenocarcinoma and non-small undifferentiated cell lung cancer), which gives a predictive negative value of 90% for EBUS (that reaches 95,45% considering the final outcomes in all the patients with negative samples). Positron emission tomography scan was positive for N2 in one of the two false negative cases. The diagnostic accuracy of EBUS if an adequate sample is achieved is 98%. CONCLUSION: EBUS is a reliable and accurate diagnostic tool for the staging of lung cancer. Considering that an appropriate lymph node sample is obtained, a negative result has a negative predict value of at least 90%, which can reassure a change in the lung cancer algorithm.