Asian Pacific Seminar

Endobronchial Ultrasound Guided Transbronchial Needle Aspiration: Korean Experience

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Endobronchial ultrasound guided transbronchial needle aspiration (EBUS-TBNA), which enables real-time aspiration of paratracheal and peribronchial lesions, has broadened the field of bronchoscopy. Our institute started EBUS-TBNA first in Korea in Oct 2005. EBUS-TBNA is currently available in 11 hospitals in Korea. We performed approximately 1300 cases of EBUS-TBNA from Jan 2006 to Mar 2010. The most common indication of EBUS-TBNA was the mediastinal staging of lung cancer which was followed by the diagnosis of lung cancer.

We conducted several studies to evaluate the role of EBUS-TBNA in lung cancer staging and diagnosis. Regarding details of methodology of EBUS-TBNA, we had an interest in the number of needle passes per nodal station needed during EBUS-TBNA for lung cancer staging. We performed 4 aspirations per each nodal station in 102 potentially operable non–small cell lung cancer (NSCLC) patients. Rapid on-site cytopathologic examination was not available. Maximum diagnostic yield was obtained in 3 aspirations and no additional gain was not achieved by the fourth aspiration.

We also investigated the role of EBUS-TBNA following integrated PET/CT in the mediastinal staging of lung cancer. We evaluated 117 potentially operable NSCLC patients. The sensitivity, positive predictive value and negative predictive value of EBUS-TBNA in the detection of mediastinal metastasis were 90.0%, 100% and 96.7%, respectively. For PET/CT scans, the values were 70.0%, 37.5%, and 85.2%, respectively. EBUS-TBNA confirmed all cases with true–positive PET/CT scan findings. Moreover, EBUS-TBNA diagnosed six of nine cases with false–negative PET/CT scan findings and most of them were adenocarcinoma cases. We concluded that EBUS-TBNA was an effective invasive method following PET/CT scanning in the mediastinal staging of potentially operable NSCLC. Even in mediastinal PET/CT scan–negative cases, EBUS-TBNA can be useful for confirming mediastinal metastases, especially in adenocarcinoma.

The role of EBUS-TBNA in the diagnosis of lung cancer was studied. We evaluated 126 patients who underwent EBUS-TBNA to diagnose radiologically suspected lung cancer. The patients had masses or lymph nodes that were highly suspicious for malignancy and accessible by EBUS-TBNA. In 61 cases, other diagnostic methods had failed previous to EBUS-TBNA. The sensitivity and accuracy of EBUS-TBNA in the diagnosis of lung cancer were 97.2% and 97.6% respectively. EBUS-TBNA targeting lymph nodes or masses highly suspicious for malignancy demonstrated high diagnostic value in the diagnosis of lung cancer. EBUS-TBNA would be recommended for these cases, especially when other diagnostic methods have failed or are difficult.

Another interesting topic that we have studied on was transesophageal needle aspiration using a convex probe ultrasonic bronchoscope (EUS-B-FNA). Although endoscopic ultrasound–guided fine needle aspiration (EUS-FNA) can be helpful when combined with bronchoscopic procedures, EUS-FNA is not available as a conjunctive procedure with bronchoscopy at many institutions. We found that EUS-B-FNA was a technically feasible and safe procedure. In a recent study, we evaluated the combined approach of EBUS-TBNA and EUS-B-FNA in 150 potentially operable lung cancer patients. By adding EUS-B-FNA to EBUS-TBNA, the sensitivity in detecting mediastinal metastasis increased from 84.4% to 91.1% and mediastinal accessibility also increased. EUS-B-FNA would be a helpful procedure when EUS-FNA is needed following EBUS-TBNA.

In conclusion, EBUS-TBNA is an excellent method in the lung cancer staging and diagnosis. Transesophageal needle aspiration using a convex probe ultrasonic bronchoscope can be a new field for bronchoscopists.