Multigene Mutation Analysis on Cytologic Samples

To the Editor:

We read with great interest the article by Nakajima et al that was recently published in CHEST (November 2011). The authors demonstrated in a great number of samples that a cytologic specimen obtained by endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) could be of particular interest for a successful gene analysis of epidermal growth factor receptor (EGFR), V-Ki-ras2 Kirsten rat sarcoma viral oncogene homolog (K-ras), or tumor protein 53 (p53).

Other articles have demonstrated already the feasibility of such an approach for EGFR gene analyses on cytologic specimens, particularly using paraffin-embedded cell blocks. Moreover, in the recent publication on the classification of lung cancer through small biopsy specimen and cytology examination, Travis et al also recommended to systematically use paraffin-embedded cell blocks not only for immunocytochemistry but also for molecular analysis. In contrast, Nakajima et al emphasized a very important technical point: Artifacts leading to false gene mutation identification can be obtained from small DNA samples extracted from paraffin-embedded cell blocks. Specimens obtained by EBUS-TBNA often are of small size, and optimal processing is essential for their management; therefore, we agree with Nakajima et al that clinicians must pay attention to their treatment. Freezing and storing aliquots of the samples at −80°C in dimethyl sulfoxide according to the same procedure used for cell line preservation is easy to do. Furthermore, doing so ensures optimal cell preservation for morphology and a wide range of complementary techniques, such as molecular analyses. In our institution, as already described, we systematically freeze a part of the cytologic specimens obtained by EBUS-TBNA at −80°C. From this frozen material, DNA extraction and sequencing usually are performed with success, whatever the specimen cellularity. These techniques are routinely performed not only on samples obtained by EBUS-TBNA, but also on other cytologic samples such as those obtained by transthoracic needle aspiration or bronchial brushings and even cerebrospinal fluid. In conclusion, we agree with Nakajima et al that multigene mutation analysis can be performed in EBUS-TBNA samples, promoting freezing cells rather than the cell block and, thus, ensuring optimum technical conditions.

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Response

To the Editor:

We thank Dr Fleury-Feith and colleagues for their interest in our recent article in CHEST on the use of endobronchial ultrasound-guided transbronchial needle aspiration samples for multigene mutation analysis. Screening for oncogenic gene alteration in non-small cell lung cancers is becoming an important factor in targeted therapy for lung cancer. The ability to acquire surgically resected lung cancer tissue is limited because the majority of patients with lung cancer are inoperable at the time of presentation. Hence, molecular testing using diagnostic biopsy samples is...