Qing Kay Li, J Cytol Histol 2015, 6:5
http://dx.doi.org/10.4172/2157-7099.C1.002

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International Conference on
Cytopathology

August 31-September 02, 2015 Toronto, Canada

Improvement of cellular yield in the cell block preparation by using so-called 'Blood Clot' technique in Trans Bronchial Needle Aspiration (TBNA) biopsy of lung cancers

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Currently, the targeted therapy of cancers has changed the diagnostic and therapeutic paradigm of lung cancers from primarily morphological assessment of tumors to molecular analysis of genetic alterations in tumor cells. The molecular analysis requests certain quantity of tumor cells However, the cellularity of the conventional cell block (CB) preparation particularly in TBNA specimens is often low and inadequate for molecular study. We routinely apply a novel 'blood clot' technique (CB-BC) to improve the cellular yield in the CB preparation during TBNA procedures. By this technique, the cellular material within the aspirate needle is allowed to form a blood clot (CB-BC) and then the cellular material is fixed in the formalin and processed in the histological laboratory. This technique enables us to improve the cellularity in the CB. We have compared this novel technique with conventional method (CB-NR) in the CB preparation. We have found that 84.6% of lung and 88.8% of lymph node samples have yielded sufficient material for diagnosis, immunohistochemistry studies and molecular analyses. In contrast, the conventional CB-NR method has yielded approximately 50% to 70% of the diagnostic rate. This novel technique improves the cellular yield and provides material for molecular study without compromising the cytomorphological features of tumor cells.

Biography

Qing Kay Li is an internationally recognized expert in the field of cytopathology and Co-PI in Johns Hopkins Biomarker Discovery Center. She provides diagnostic service at Johns Hopkins and Conducts Research in the field of novel biomarkers in lung and prostate cancers. Her research has been presented at many national/international meetings. She also serves as Editorial Board Members for several journals, committee member of the American Society of Cytopathology and study sections of government agents and private organizations. She has more than 70 publications and book chapters. She is also the Editor of "Diagnostic Cytopathology Board Review and Self-Assessment".

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