3rd International Conference on

Cytopathology & Histopathology

June 21-22, 2017
Philadelphia, USA

Keynote Forum

DAY 1

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Shahla Masood, J Cytol Histol 2017, 8:2 (Suppl)
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Shahla Masood

University of Florida College of Medicine, USA

Breast cancer prediction and early detection: The potential of cytomorphology and hTERT gene DNA methylation

As a major public health problem, breast cancer remains as the second leading cause of cancer death among women across the globe. Breast cancer is not only a physical illness with significant mortality and morbidity; it is also associated with remarkable psychosocial impairments. The significance of the impact of breast cancer on women's lives has resulted in worldwide effort to fight against this disease. During the last several years, substantial progress has been made in the diagnosis and management of breast cancer. In addition, discovery of new knowledge about the fundamental biology and genetic makeup of breast cancer has opened up exciting opportunities for early breast cancer detection and prevention. Access to accurate diagnosis is the fundamental step in receiving effective breast cancer treatment and influencing reduction in breast cancer mortality. However, the major barriers to access to diagnostic tools are cost, as well as the invasive nature of the surgical procedures that discourage patients from taking advantage of the diagnostic capabilities. An alternative option is to use minimally invasive sampling procedures such as fine needle aspiration biopsy (FNAB) and core needle biopsy (CNB) to obtain cellular/tissue samples for the evaluation of morphologic and biologic features of a breast lesion. FNAB involves the insertion of a small needle, similar to the one used to draw blood, and, in contrast to CNB, is considered to be the most cost-effective and atraumatic procedure that is easily tolerated by patients and that can provide a rapid, bedside diagnosis. In addition, FNAB does not need anesthesia and there is minimal hemorrhage and discomfort to the patient. FNAB and CNB share similar diagnostic limitations, as there are cases with features of entities such as atypical ductal hyperplasia, low grade ductal carcinoma in situ, papillary, fibroepithelial and mucinous lesions that require follow-up surgical excision for the establishment of an accurate diagnosis. To overcome this problem, we have developed a cytologic grading system and evaluated a malignancy-associated biomarker, (DNA methylation for *hTERT*) that has the potential to increase the diagnostic accuracy of breast FNAB. This study is designed to use this cytologic grading system known as the "Masood Cytology Index" and DNA methylation for hTERT in 600 cases of breast FNAB archived at the University of Florida College of Medicine-Jacksonville, Department of Pathology and Laboratory Medicine. The results of these tests will be compared with the available clinical follow-up of these patients and a diagnostic/predictive index will be established. This index will be used as a reliable diagnostic tool for everyday practice of breast pathology and a predictive risk factor for high-risk individuals to become aware of their risk for subsequent development of breast cancer and to benefit from available breast cancer risk reduction modalities and prevention therapy. In the era of patient protection and the Affordable Care Act, the results of this study will reinforce the diagnostic accuracy of FNAB and establish its role as the most cost-effective sampling procedure. This access to diagnosis and therapy is the key to timely treatment and mortality reduction.

Biography

Shahla Masood is currently a Professor and Chair of the Department of Pathology at University of Florida College of Medicine-Jacksonville and Chief of Pathology and Laboratory Medicine at Shands Jacksonville. She is also the Director of the Pathology Residency Training Program as well as Cytopathology and Breast Pathology Fellowship Training Program. In addition, she is the Medical Director of Shands Jacksonville Breast Health Center. As an internationally recognized expert in breast cancer diagnosis and prognosis, she has fostered the concept of an integrated multidisciplinary approach in breast cancer care, research and education. She has recently been appointed to Chair a Committee of the National Accreditation Program for Breast Centers (NAPBC) with a new initiative to explore the possibility of expansion of this program to an international level.

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Yun Gong, J Cytol Histol 2017, 8:2 (Suppl)
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Yun Gong

MD Anderson Cancer Center, USA

The role of cytology in the era of molecular medicine

Genomic alterations are known to play an important role in cancer initiation and progression. Molecular tests have been increasingly incorporated into pathology practice. Common applications include assisting pathology diagnosis, predicting prognosis and therapeutic response and identifying patient's eligibility for targeted therapy. The lecture will outline the role of molecular tests in the diagnosis of HPV-related cancer, thyroid cancer, hematopoietic malignancies, detection of tumor of unknown origin and management of lung cancer, breast cancer and other solid tumors. To successfully conduct molecular tests, a high quality tumor sample is imperative. The lecture covers practical experience of MD Anderson and covers the strategies regarding how to use small and limited FNA samples for making the most informative diagnosis and yet preserve tumor tissues for cytogenetic and genomic tests that, in turn, facilitate diagnosis and targeted therapies.

Biography

Yun Gong has received MD degree in 1984 and then completed her Post-graduate Pathology training in 1989 at Zhejiang Medical University in China. She has then worked as a Post-Doctor and Research Associate in the Shanghai Institute of Cell Biology, Chinese Academy of Sciences; Catholic University of Nijmegen, Netherlands and The Scripps Research Institute, California. She has received her Residency training in Anatomic and Clinical Pathology at Northwestern University Medical School in Chicago followed by one-year Cytopathology Fellowship training at MD Anderson Cancer Center. She became a Faculty Member at the Department of Pathology, MD Anderson Cancer Center in 2003 and currently is a Full Professor. She has numerous publications in the fields of cytopathology and breast cancer biomarker research (120 peer-review articles, 18 invited articles, 6 book chapters, 1 book and 118 abstracts). She is a Member of 9 Editorial Boards of professional journals and is a Member of the Scientific Program Committee, American Society of Cytopathology (ASC).

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Mari Yang, J Cytol Histol 2017, 8:2 (Suppl)
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Mari Yang

Hoag Hospital Newport Beach, USA

Transforming burnout to engagement by optimizing today's dynamic medical laboratories

Laboratory services may be considered the life source of health care and yet goes primarily unnoticed until an adverse event arises. Laboratory services are vital in 65% to 70% of patient diagnoses by providing critical and timely medical test results. Aside from professional obligations, laboratory personnel face an unprecedented time in healthcare resulting in significant restructuring of the laboratory. The expectations for faster, more precise and technological advanced testing continue to grow leading to extreme demands on medical laboratory services. Some of these expectations may translate to negative job related effects such as burnout, increased staff turnover, absenteeism, job dissatisfaction and poor health. To mitigate these challenges, personnel may benefit from access to development tools to alleviate employment pressures. Areas of focus will include a comparative analysis of leadership styles. In addition, an optimization proposal will be offered through exploring enhanced communication, team development and workplace culture. Despite the eminent rapid changes in healthcare coupled with stringent workplace expectations, the medical laboratory team has the opportunity to transform and lead change with a carefully developed plan.

Biography

Mari Yang is currently the Director of Anatomic Pathology and Cytology at Hoag Memorial Presbyterian Hospital in Newport Beach, CA. She has graduated with a Doctorate in Management and Organizational Leadership from the University of Phoenix in 2016. She is certified in Cytotechnology and Histotechnology with the American Society for Clinical Pathology. She also did Masters in Health Administration and has been working in Laboratory Medicine for over 10 years. Her goal is to elevate Laboratorians across the nation through education and modeling practices.

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James P Basilion

Case Western Reserve University, USA

Defining the cutting edge: The use of molecular imaging to define tumor margins

A challenge for surgical removal of cancer is to maximize the removal of the cancerous tissue while minimizing removal of normal tissues. This is critical for a number of prevalent cancers. Several investigators have shown the utility of systemically delivered optical imaging probes to image tumors and guide surgical removal in small animal models of cancer and recently first-in-man studies have demonstrated feasibility in Europe. However, to date there are no FDA approved cancer-selective optical imaging probes that can be used to guide surgery. The future direction of this field is to develop and translate into clinical use effective optical imaging probes for real-time assessment of surgical margins during tumor resection. Here we demonstrate a method for imaging tumors margins during surgery that may impact patients in the next few years. Specifically, we show that optical imaging probes topically applied ex vivo to resected tumor and surrounding normal tissue can rapidly differentiate between tissues. In contrast to systemic delivery of optical imaging probes which label tumors uniformly over a long period of time (i.e., hours), topical probe application results in rapid and robust probe activation that is detectable as early as 5 minutes following application. Importantly, labeling is primarily associated with peri-tumor spaces, defining tumor margins. This methodology provides a means for rapid visualization of tumor and potentially infiltrating tumor cells and has potential applications for directed surgical excision of tumor tissues. This technology could find use in surgical resections for any tumors having differential regulation of cysteine cathepsin activity.

Biography

James P Basilion has obtained his PhD in Molecular Pharmacology from the University of Texas, USA, Postdoctoral studies at the NIH (NICHD) with Dr. R. Klausner. He had a short stent in industry and then became an Assistant Professor of Radiology at Harvard Medical School and Massachusetts General Hospital. Currently, he is a full tenured Professor at Case Western Reserve University, Vice-Chair for Basic Research at the Department of Radiology, Director of the Case Center of Imaging Research, Director of the NFCR Center for Molecular Imaging at Case and Co-Director of the Cancer Imaging Program for the Case Comprehensive Cancer Center. He is also the President elect for the World Molecular Imaging Society.

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