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The expanded role of cytopathology in breast cancer research and management

During the last several years, the discipline of cytopathology has played a major role in responding to the changing trends in breast health care. Pathologists have been engaged not only in interpreting but also in performing minimally invasive procedures. These procedures have proved efficient in the diagnoses of benign and malignant breast disease and are reliable in providing prognostic/predictive information. Fine needle aspiration biopsy is a time challenged, convenient, cost effective and rapid procedure, which is designed to remove the anxiety of a patient with a benign breast disease. With the availability of the bedside interpretation, the diagnosis of malignancy can accelerate plans for an optimal therapy. Core needle biopsy is more time consuming, more invasive and more expensive. It also shares similar limitations with FNAB. Sampling errors associated with inherent heterogeneity of breast lesions are serious concerns. In CNB, the rate of discovering carcinoma *in situ* in the follow up surgical excision of a lesion previously diagnosed as atypical ductal hyperplasia is significant. In addition, it is not unusual to discover invasive lesions in lumpectomy or mastectomy specimens diagnosed as *in situ* lesions by CNB. Despite the credibility of breast FNAB and CNB, the choice of the procedure will ultimately depend on local practice considerations and the availability of an experienced pathologist interested in breast cytopathology. The National Cancer Institute guidelines recommending appropriate FNAB sampling technique, training requirements, uniform criteria for specimen adequacy and radiologic pathologic correlation may assist in further acceptance of FNAB as a preferred diagnostic procedure particularly in palpable breast lesions. Aside from FNAB, breast cytomorphology has become an integral part of practice of breast pathology. The use of imprint cytology for assessment of metastatic disease in sentinel lymph node biopsy is now a common practice. Lymphatic mapping with sentinel lymph node biopsy allows a detailed pathologic examination of the nodes most likely to contain metastatic tumor. Intraoperative detection of metastasis will lead to complete axillary lymph node detection in one surgical setting. Imprint cytology has shown superiority to frozen section and is the recommended procedure by the College of American Pathologists and the panelist of the "Philadelphia Consensus Meeting for Sentinel Node Biopsy." Imprint cytology has also been effectively utilized for assessment of breast lumpectomy margins as a complement to frozen section. In addition, recent focus on early breast cancer detection and prevention has opened a new way to use minimally invasive procedures, such as FNAB, nipple fluid aspiration and ductal lavage for identification of high risk individuals. Chemopreventive studies have already confirmed the value of cytomorphology as a risk predictor. Recognition of cytomorphology of high risk proliferative breast disease and premalignant lesions is an intriguing concept to identify patients who may benefit from various risks reduction modalities. Coupled with molecular biologic testing and the new innovative imaging and surgical procedure such as ductoscopy, soon there will be an exciting opportunity for breast cytopathology to become an integral part of breast cancer research and preventions.

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. 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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