Venue: ANUKIS
23rd August 2007
1515-1630 hr

Symposium 6D: Current issues in fine needle aspiration cytology

S6D-1. FNA of liver: diagnosis of hepatocellular carcinoma

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The role of fine needle aspiration (FNA) biopsy in the diagnosis of hepatocellular carcinoma (HCC) has evolved due to improved imaging modalities and newer ancillary tests. Current issues are:
1. ***Necessity for tissue confirmation of clinically and radiologically obvious HCC:*** It is suggested that cytohistologic confirmation would not be necessary for cirrhotic patients with a focal liver lesion >2 cm diameter, clinically compatible with HCC, and identified by at least two imaging techniques. Punctures should be limited to nodules <2 cm diameter for differentiation of HCC from regenerative nodules.
2. ***Necessity for tissue characterization of all small focal liver lesions (<1 cm diameter):*** Surveillance of high-risk patients for early HCC has resulted in increasing detection of "suspicious" nodules that are often <2 cm diameter in cirrhotic livers. About half are not HCC.
3. ***Needle tract seeding:*** Risk of false positive diagnosis based on clinico-radiological grounds with subsequent aggressive therapy by far outweighs risk of seeding.
4. ***FNA versus core needle biopsy:*** Diagnostic accuracies are almost similar. Accuracy rate is operator-dependent and increases with both techniques combined (using suction needles with cutting capability), thus, providing material for cytology and histology.
5. ***Diagnostic accuracy of distinguishing well-differentiated HCC from benign hepatocellular nodular lesions, namely, macroregenerative nodule, dysplastic nodule, focal nodular hyperplasia and liver cell adenoma:*** Small/early HCC tend to be highly well-differentiated. In high-risk patients, some "non-malignant" nodules exhibiting large cell (low-grade) or small cell change (high-grade dysplastic nodule) may represent precursor lesions. Reappraisal of the biological behavior of such nodules is warranted as it impacts on morphologic interpretation, nomenclature and management strategies. Critical refinement of histopathologic criteria for diagnosis of early HCC is necessary.
6. ***Diagnostic utility of immunohistochemistry:*** Antibody panels are recommended for ascertainment of malignancy in hepatocellular nodules and for differentiation of HCC from cholangiocarcinoma and metastases.

S6D-2. FNA of lymph node: Is it good enough for diagnosis of lymphomas?

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The use of fine needle aspiration (FNA) for primary diagnosis of malignant lymphoma on which definitive treatment is based has been controversial. The success rate ranges from 80% to 90% in diagnosis of Non-Hodgkin's Lymphoma (NHL) and from 67.5% to 86% in its subtyping. The cytodiagnosis of Hodgkin's disease (HD) depends upon the demonstration of Reed-Sternberg cells or Hodgkin's cells amongst appropriate reactive cell components. The diagnostic accuracy of FNA cytology of HD has also been invariably high (>85%). Studies show a wide spectrum in the ability of cytopathologists to recognize NHL and to correctly classify it. Certain limitations and pitfalls have been appreciated.

The area where most difficulty arises is in distinguishing between reactive hyperplasia and low grade malignant lymphoma (ML). Varying degrees of difficulty also exist among the subtypes of ML. Marginal zone ML constitutes one of the most difficult types to recognize cytologically. Others include lymphocyte-rich Hodgkin's lymphoma, peripheral T-cell ML, T-cell rich B-cell ML, immunoglobulin negative ML, and composite ML. Recognising focal large cell transformation in a small cell form of ML can be extremely problematic as is grading of follicular centre lymphoma. Because of the limitations of pure morphology, subclassification of NHL by FNA often requires ancillary studies which impose a challenge not typically required of other FNAC diagnosis. A major transforming development in the FNA diagnosis of ML is the emergence of a new WHO classification of neoplasms of lymphoid tissue. The relevance of this classification to cytopathology is that it markedly reduces the importance of histologic architecture and places most of the emphasis on individual cell morphology coupled with immunophenotypic, genotypic, and clinical characteristics to precisely classify these lymphomas. Evidence have shown that a high level of diagnostic accuracy can be achieved if sufficient cells, sufficient and judicious use of ancillary tests, and sufficient enthusiasm for this approach exists. Success also depends on other factors which include skill of the aspirator, proper triaging of the specimen, knowledge of lymphoma nomenclature and biology, and most importantly collegial interaction between pathologist and clinician.

S6D-3. FNA of the breast: Do we still need core needle biopsies for diagnosis of breast cancers?

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Fine needle aspiration cytology (FNAC) is an established tool for the preoperative diagnosis of palpable as well as impalpable tumours of the breast. Its specificity has been reported to range from 56% to over 80%; and false negative rates from 0% to 19.5%; depending on factors like lesional size, symptomatic versus screen detected cases, palpable versus impalpable masses. FNAC is a simple, rapid and inexpensive method of evaluating breast lesions. It decreases the number of open surgical procedures for benign breast disease, allays patient anxiety, and when used in conjunction with the triple assessment, is highly accurate in the diagnosis of breast conditions. For malignant lesions, it allows appropriate counseling and planning of the therapeutic operation. With the advent of core biopsies however, the role of breast FNAC in some institutions has been relegated mostly to the preoperative investigation of symptomatic palpable lumps; while radiologically detected lesions are subjected to image guided core biopsies. Traditionally quoted advantages of breast core biopsies over FNAC include the familiarity of most pathologists in evaluating tissue cores, the ability to confirm invasive disease, and the relative ease of performing immunohistochemistry on tissue sections. Though several workers have reported cytologic findings that can distinguish invasive from in situ malignant breast lesions, these features are not unanimously agreed upon, and a diagnosis of stromal invasion still requires histologic confirmation. FNAC interpretation of the breast requires experienced and trained cytopathologists, who are cognizant of potential pitfalls such as benign mimics of cancer, and malignant lesions masquerading as innocuous benign conditions. In summary, the real question is whether FNA of the breast is being superseded by the core biopsy, and if it can maintain an significant role in preoperative evaluation of breast lesions when there is an alternative core biopsy option.