Papanicoloau Society of Cytopathology
Scientific Session 2007

Speakers and Handouts

• Changing Practice Patterns: Implications for Histopathology and Cytopathology.
  Lester J. Layfield, M.D.

• Intraoperative Cytology – Past, Present and Future.
  Steven Silverberg, M.D.

• Essentials of FNA of Lymphoma
  Ruth L. Katz, M.D.

• Intraoperative CNS Cytology
  Matthew A Zarka, M.D.

• Accuracy and Usefulness of FNA versus Core Biopsy in Breast Diagnosis
  Britt-Marie Ljung, M.D.

Special Thanks to the Scientific Committee

  Martha Pitman
  Maureen Zakowski
  Harvey Cramer
  Tarik Elsheik
Changing Practice Patterns: Implications for Histopathology and Cytopathology

Lester J. Layfield, M.D.
Professor and Head Anatomic Pathology
University of Utah School of Medicine

Presentation Bullet Points

- Practice patterns are changing with emphasis on smaller specimens
- Use of cytology is increasing for initial diagnosis and intraoperative consultations
- Cytologic investigation may be preferable for certain sites including biliary tract, pancreas, lung and liver
- Core biopsies may be the preferred technique for lesions in prostate and non-palpable breast lesions
- Histopathology and cytopathology are complimentary and not competing techniques

Over the past twenty years, the size of specimens submitted to pathology laboratories for initial diagnosis has decrease substantially in size. Despite this decrease in size, the amount of information from diagnostic biopsies required by clinicians has increased with an increasing number of prognostic features being mandated for inclusion in the pathology report. These changes have been coupled with a requirement for a shortened turn-around time to diagnosis as well as a desire to decrease patient discomfort and
morbidity from the diagnostic process. Pathologists have responded to these demands in a number of ways including the increased use of special techniques such as immunohistochemistry and molecular diagnostics. In the past, the majority of biopsies sent for diagnosis were excisional or incisional biopsies allowing evaluation of both architectural and cellular features. Present practice patterns have changes substantially.

Currently, a majority of biopsies are small tissue specimens either core biopsies, endoscopically directed grasp biopsies, or cytologic specimens obtained by either fine-needle aspiration or brushing and washing techniques. This dominance of small tissue samples has led to considerable changes in pathology practice patterns. While occasionally viewed as competing techniques, cytopathology and histopathology are complimentary technologies for tissue diagnosis. These two approaches frequently supplement each other to improve overall diagnostic accuracy. Hence, an increasing utilization of cytology has accompanied the decrease in biopsy size. Initially, cytology was restricted to specimens exfoliated into body fluids or from epithelial surfaces. Hence cervical cytology, sputum samples and analysis of pleural, peritoneal and cerebral spinal fluid samples dominated the specimens sent to the cytology laboratory.
Table 1 illustrates changes in diagnostic samples seen over the last thirty years.

<table>
<thead>
<tr>
<th>SITE</th>
<th>1970</th>
<th>2000</th>
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<tbody>
<tr>
<td>Brain</td>
<td>Frozen Section</td>
<td>Frozen section and touch preparation</td>
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<td>Intraoperative evaluation</td>
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These changes in diagnostic techniques have affected a variety of body sites ranging from the central nervous system to the pancreatoco-biliary system. Not only is cytology used for preoperative diagnosis, it has found a place in intraoperative interpretation of lesions submitted for immediate evaluation by anatomic pathology laboratories. The relationship between cytology and histopathology has changed and matured over the past three decades. While cytology has in some instances replaced histopathology as the initial diagnostic technique, the reverse has occurred at other body sites. Examples of the former are the increasing usage of FNA and brushing and washing specimens for the
evaluation of pancreatic and biliary tract lesions. In other cases, histopathologic
evaluation of small core samples has largely replaced fine-needle aspiration. An example
of this is the replacement of FNA by core biopsy in evaluation of prostatic disease.

The interactions between cytology and histopathology continue to develop, and the best
technique has not invariably been established for a number of body sites. The areas
where utilization of cytology remains controversial for diagnosis include; salivary gland
lesions, musculoskeletal lesions, primary liver neoplasms, ovarian masses, renal masses
and lymphoma. Our understanding of the complimentary nature of cytologic and
histopathologic techniques continues to evolve. Cytology, in the form of touch
preparations, is being increasingly utilized as an adjunct or even replacement for frozen
section evaluation in the intraoperative period. Touch preparations have gained wide
acceptance for aiding frozen section evaluation in the diagnosis of lesions of the central
nervous system and may become the preferential technique for the evaluation of sentinel
lymph nodes.

The speakers taking part in the Papanicoloau Society of Cytopathology Scientific Session
for 2007 will address the advances made in the evaluation of small tissue specimens and
the interactions between cytopathology and histopathology. The speakers will stress
areas where cytopathology can substantially improve pathologic diagnosis by increasing
accuracy, decreasing turn-around time or increasing patient acceptance of the biopsy
procedure. Areas of controversy will also be addressed, including the relative advantages
and disadvantages of fine-needle aspiration versus core biopsy in the diagnosis of breast
lesions.
Papanicoloau Society of Cytopathology
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Changing Practice Patterns: Implications for Histopathology and Cytopathology

Lester J. Layfield, M.D.
Professor and Head Anatomic Pathology
University of Utah School of Medicine
Cytopathology and Histopathology are Complimentary Technologies for Tissue Diagnosis
Biopsy size has constantly decreased over the past 20 years
Increasing utilization of cytology has accompanied the decrease in biopsy size
Initially, cytology was restricted to specimens exfoliated into body fluids or from epithelial surfaces

- Cervical cytology
- Sputum samples
- Pleural and peritoneal fluids
- CSF
# Primary Tissue Diagnostic Techniques

## Table 1

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Intra-operative cytologic evaluation of neural lesions by touch preps has become standard
Cytology and Histopathology are not competitors in our diagnostic evaluations but are complimentary techniques.
Areas where cytology is still controversial for diagnosis:

• Salivary Gland Lesions
• Soft Tissue and Bone Lesions
• Diagnosis of Primary Liver Neoplasms
• Ovarian Masses
• Renal Masses
• Breast (non-palpable)
• Lymphoma
Cytology (Touch Preps) are being increasingly utilized as an adjunct to frozen section for intra-operative diagnoses.
Touch Preps have been used for evaluation of sentinel lymph nodes