DEPARTMENT OF PATHOLOGY AND LABORATORY MEDICINE

GOALS AND OBJECTIVES
CYTOPATHOLOGY
UCDMC RESIDENT TRAINING PROGRAM

Alaa Afify, M.D.
Associate Professor of Pathology
Director, Cytopathology Fellowship
University of California, Davis, Medical Center Sacramento, California

The supervising physician is available to provide review of procedures/encounters with feedback provided after care is delivered for all second year residents and above. This is accomplished by either direct attending-resident discussion or via pager/phone. Residents have an on-call schedule posted in their on-call log book/computer and available at the department website.

Competency Area 1: Cytopreparatory Techniques

Goal: The program graduate will demonstrate competence in the use of all cytopreparatory techniques.

Objectives:

The Resident will:

1. Describe the principles involved with, and the steps of, the Papanicoloau staining procedure.
2. Describe the preferred and alternate methods of Fixation and limitations of storing without fixation of the following types of specimens:
    a. Smear
    b. Urine
    c. CSF
    d. Effusion
    e. Bronchial brush/wash from Sputum
    g. Gastric/esophageal brush/wash
3. List thee primary artifacts associated with cytologic preparation and staining and describe the methods used to eliminate them.
4. Prepare independently at least two smears from a sputum or bronchial specimen.

5. Prepare independently at least one nuclepore filter, including filtering, staining and coverslipping.
6. Prepare independently at least one cell block.
7. Prepare independently buccal smear for Barr body determination staining and coverslippling.
8. Prepare independently at least one thin needle aspiration (may be of surgical or autopsy material).
9. Prepare independently at least three touch preparations (may be of surgical or autopsy material).
10. Set up staining sequence "from scratch" and perform stain or at least 10 gynecologic slides. Read and report these cases.

Competency Area 2: Morphologic Identification

Goal: The program graduate will demonstrate competence in the correct morphologic identification process for the female genital tract, respiratory system, genitourinary system, serous cavity fluids, gastroesophageal tract, breast and miscellaneous specimens.

Objectives:

The Resident will:

1. Identify from specimens and describe the hormonal patterns of the following in gynecological specimens:
    a. Normal menstrual cycle
    b. Post-menopausal, pre-pubertal, pregnancy and abortion
    c. Menstrual and endocrine disorders
    d. Effects of hormonal therapy:
        1) Estrogen
        2) Progesterone
        3) Corticosteroids
2. Identify from specimens the following cell types and list the characteristics of each in gynecological specimens:

a. Parabasal, intermediate, superficial cells
b. Endocervical cells
c. Endometrial glandular cells
d. Endometrial stromal cells (deep, superficial)
e. Histiocytes
f. Leukocytes
g. Bacteria
h. Yeast
i. Trichomonads
j. Spermatozoa

3. Identify from specimens and describe the cellular patterns of the following in gynecological specimens:

a. Trichomoniasis
b. Candida infection
c. Herpes infection
d. Follicular cervicitis
e. Reactive/repair change
f. Atypical squamous cells of undetermined origin
g. Radiation changes
h. HPV changes
i. LSIL, HSIL
j. Invasive squamous cell carcinoma
k. Metastatic carcinoma
l. Endocervical adenocarcinoma
m. Endometrial adenocarcinoma

4. Determine adequacy of a cervical/vaginal smear and define:

1. Satisfactory for evaluation
2. Satisfactory but limited
3. Unsatisfactory

5. Provide recommendations for follow-up according to current NCI Guidelines for:

a. ASCUS, favor inflammation
b. ASCUS, favor SIL
c. LSIL
d. HSIL

6. Identify from a specimen the following elements which may be found in respiratory specimens and describe the major characteristics of each:

    a. Squamous cell
    b. Alveolar macrophage
    c. Bronchial columnar epithelial cell
    d. Fungus (aspergillus, histoplasmosis)
    e. Curschmann's spirals
    f. Asbestos/ferruginous bodies

7. Identify from a respiratory specimen and describe th.e cellular patterns of t._e following:

    a. Viral changes (herpes, CMV)
    b. Nonspecific viral changes - reactive epiLl1elium c. Bronchial hyperplasia
    c. "Normal" squamous metaplasia
    d. Atypical squamous metaplasia
    e. Squamous cell carcinoma
    f. Adenocarcinoma
    g. Large cell undifferentiated carcinoma
    h. Small cell undifferentiated carcinoma
    i. Metastatic malignancies

8. Identify from a specimen the following elements which may be found in genitourinary samples and describe the major characteristics of each:

    a. Transitional cells
    b. Fungus
    c. Casts, crystals, bacteria

9. Identify from a urinary specimen and describe the cellular patterns of the following:

    a. Viral changes
    b. Radiation changes
    c. Repair
    d. Chemotherapy changes
    e. Carcinoma in-situ
    f. Transitional cell carcinoma
    g. Adenocarcinoma
    h. Squamous cell carcinoma

10. Describe pitfalls in diagnosis of transitional cell carcinoma and importance of collection source in urinary specimen.

11. Identify from a specimen the following elements which may be found in serous effusions and describe the characteristics of each:

    a. Mesothelial cells
    b. Histiocytes
    c. Asbestos/ferruginous bodies

12. Identify from an effusion specimen and describe the cellular patterns of the following:

    a. Reactive mesothelial cells
    b. Malignant mesothelioma
    c. Metastatic carcinoma
    d. Lymphoma/Leukemias

13. Identify from a specimen and describe the following cell types that may be found in gastric or esophageal samples and describe the characteristics of each:

    a. Squamous cell
    b. Gastric or columnar epithelial cell

14. Identify from a GI specimen and describe the cellular patterns of the following:

    a. Viral changes
    b. Barrett's esophagus
    c. Squamous cell carcinoma
    d. Adenocarcinoma

15. Identify from a specimen the following elements which may be found in breast secretions/aspirations and describe the characteristics of each:

    a. Ductal lining cells
    b. Apocrine metaplastic cells
    c. "Foam" cells (histiocytes)

d. Ductal hyperplasia

16. Identify from a breast specimen and describe the following in terms of clinical manifestations, patient's history, gross appearance of fluid obtained and cellular features:

    a. Fibroadenoma
    b. Intraductal papilloma
    c. Fibrocystic disease
    d. Carcinoma, ductal, lobular and carcinomas of special type

17. List the cells which would be seen from common benign and malignant lesion from the following FNAs of:

    a. Thyroid
    b. Lymph nodes
    c. Lung
    d. Liver
    e. Kidney
    f. Adrenal
    g. Retroperitoneal masses
    h. Breast

18. Describe diagnostic pitfalls for lesions in each of the organs in #17.

Competency Area 3: Consultation

Goal: The program graduate will demonstrate competence in the role of the consultant to primary physicians.

Objectives:

The Resident will:

1. Prepare concise written cytology reports which communicate accurately essential diagnostic information in accordance with Departmental standards.
2. Discuss diagnostic problems with clinicians and suggest appropriate

follow-up procedure, in an appropriate and timely fashion.

3. Provide recommendations for appropriate follow-up or additional diagnostic procedures.
4. Perform FNAs on patient referred by clinicians and communicate results.
5. Function as consultant to other pathologists in an appropriate way.

Competency Area 4: Management

Goal: The program graduate will demonstrate competence in all aspects laboratory management relative to cytopathology including CDC/CAP accreditation standards, CLIA regulations, and quality control systems.

Objectives:

The Resident will:

1. Perform a CDC/CAP accreditation analysis of the Cytology Laboratory; report specific deficiencies and suggest improvements in writing.
2. Describe in detail the quality control system used in the Cytology Laboratorj in terms of:
   a. CAP/HCFA/CDC requirements
   b. CLIA regulations on workload limitations, required correlation reports for gynecological and non-gynecological cytology and cytotechnologist performance

Educational Experiences in Cytopathology: See attached "Performance Criteria and Responsibilities." **"**

Recommended References for Cytopathology:

1. Bibbo M. Comprehensive Cytopathology. Phil. WB Saunders, 1991.
2. Kurman RJ, Solomon D. The Bethesda System. New York. Springer-Verlag, 1994

CORE COMPETENCIES, Cytopathology Service:

1- PATIENT CARE*:*

Resident will show proficiency in area 2 of the Goals and Objectives.

2 – MEDICAL KNOWLEDGE

Residents will show proficiency in area 3 of Goals and Objectives.

3 – PRACTICE-BASED LEARNING

Residents will be expected to present interesting cases at extra departmental conferences and read appropriate literature.

4 - INTERPERSONAL COMMUNICATION SKILLS

Residents will show proficiency in area 3 of Goals and Objectives

5 - PROFESSIONALISM

At all times exhibit professional, ethical behavior.

6 - SYSTEM- BASED PRACTICE

Residents will show proficiency in area 5 of Goals and Objectives.

GOALS AND OBJECTIVES (GRADED RESPONSIBILITY) 1-4 YR RESIDENTS, Cytopathology Service:

FIRST ROTATION

1. Understand general concepts of cytology practice and procedure.
2. Observe FNA's , Cell prep and cytology procedures.
3. Dual sign-out with fellow/faculty.
4. Learn basics of an appropriate cytology report.

SECOND ROTATION:

1. Take appropriate H&P.
2. Perform FNA with guidance and supervision.
3. Preview cases and order appropriate ancillary studies.
4. Generate reports alone.

THIRD AND FOURTH ROTATIONS:

1. Perform FNA/H&P with minimal supervision.

2. Generate reports that are “ready to sign-out” and essentially function independently.

Revised and RAC reviewed 04/20/2010