

## University of Minnesota Lab Medicine and Pathology

### Breast Rotation

<b><u>Location:</u></b>	C459 Mayo
<b><u>Duration:</u></b>	One month
<b><u>Rotation Director:</u></b>	Molly Klein, M.D. phone 612-273-5848 (pager 899-2886)
<b><u>Other Faculty:</u></b>	Emil Racila, M.D. (pager 899-5052)

#### General Description:

- Breast pathology includes core biopsy material of lesions identified clinically or radiographically, excisional biopsies of clinically symptomatic benign lesions or of lesions identified as atypical by core biopsy, and cancer resections (lumpectomy or mastectomy, and lymph node sampling).
- Sign-out is performed by a team of 2 specialized breast pathologists; one pathologist is on service each week.
- The majority of the workload is related to evaluation of cancer specimens (core biopsy and resection). Benign breast lesions are frequently evaluated by core biopsy, and less frequently by excisional biopsy.
- Residents gross large specimens (e.g. other than core biopsy: excisional biopsy, lumpectomy, mastectomy, sentinel lymph node biopsy and axillary lymph node dissection)
- Residents are involved in the signing out of cases with the attending pathologist
- It is expected that the resident reviews cases, requests ancillary studies in consultation with the attending pathologist, enters diagnoses in CoPath and sits with the attending pathologist for final sign out.
- The resident will understand the pertinent clinical history and gross examination findings, and will have already performed a microscopic examination prior to sitting at the microscope with the attending pathologist
- The report entered by the resident should include:
  - o Final Diagnoses, entered in a standard format for each specimen, using provided templates
  - o Tumor synoptic, using mTuitive, which incorporate CAP checklists
  - o Estrogen receptor and progesterone receptor (and HER2, when applicable) immunohistochemistry results, using mTuitive template
  - o Other immunohistochemistry results, and special stain results
  - o Gross description, edited as necessary for clarity and completeness
  - o A concise, pertinent clinical history
- Residents are encouraged to work on research projects involving series or case reports. All support and mentoring is provided.
- A daily consensus meeting is held for discussing difficult and interesting cases

#### Goals and Objectives:

Upon completion of this rotation, the resident will gain:

- A practical understanding of benign, atypical and malignant breast lesions
  - Including the potential for excision of lesions with benign diagnoses (radial scar, intraductal papilloma, etc.), atypical diagnoses (atypical ductal hyperplasia, atypical lobular hyperplasia, atypical papilloma, etc.), lobular carcinoma in situ
  - Including clinical indications for lumpectomy versus mastectomy, sentinel lymph node biopsy versus axillary lymph node dissection
  - Recognition of the types of carcinoma in situ and invasive carcinoma
  - Grading of carcinoma in situ (nuclear grade) and invasive carcinoma (Nottingham grade)
  - Understanding of the implications of surgical pathology core biopsy diagnoses, including the potential for excision of lesions with benign diagnoses (radial scar, intraductal papilloma, etc.), atypical diagnoses (atypical ductal hyperplasia, atypical lobular hyperplasia, atypical intraductal papilloma)
- Mastery of the diagnostic criteria used in breast pathology

- Incorporation of radiographic findings for gross examination and appropriate sampling of lumpectomy and mastectomy specimens
- Appropriately evaluate resection specimens for the extent of ductal carcinoma in situ, and of invasive carcinoma (single versus multiple foci)
- Quantify the pathologic response to neoadjuvant chemotherapy (and endocrine therapy), and the residual cancer burden after neoadjuvant chemotherapy
- Interpretation and reporting of estrogen receptor and progesterone receptor immunohistochemistry results
- Interpretation and reporting of HER2 immunohistochemistry results (occasionally performed on in-house cases (when HER2 FISH is equivocal or not possible for technical reasons), but more commonly reviewed in consult cases)
- Understand HER2 FISH reporting, and ASCO-CAP guidelines for further work-up of HER2 FISH equivocal results
- Appreciation of quality assurance measures in breast pathology
  - CAP requirements for cold ischemic time and formalin fixation time, for specimens potentially requiring estrogen receptor (ER) and progesterone receptor (PgR) immunohistochemistry and HER2 testing
  - ASCO-CAP guidelines for interpretation of ER, PgR and HER2 results
- The ability to effectively communicate with radiologists and clinical colleagues (breast medical oncologists, radiation oncologists, and oncologic surgeons), including providing clear, pertinent information in surgical pathology reports to help guide their treatment

The learning objectives below reference the corresponding ACGME core competencies: Patient Care (PC), Medical Knowledge (MK), Professionalism (Prof), Communication Skills (CS), Practice Based Learning and Improvement (PBLI), and Systems-Based Practice (SBP). (8-10 objectives)

- Gross examination of complex cases (e.g. lumpectomy, mastectomy, sentinel lymph node biopsy and axillary lymph node dissection), utilizing an understanding of pathologic staging of the major gynecologic tumors. Subsequent microscopic examination of those cases, to correlate gross and microscopic findings (PC, MK, SBP)
- Participating in intraoperative consultation service (CS, Prof, SBP)
- Participation in the daily consensus meetings (CS, Prof, PBLI)
- Assuming responsibility in the signout commensurate to the level of training (PC, MK)
- Engagement in tumor boards and multidisciplinary meetings (Prof, CS, PBLI, MK)
- Involvement in translational research projects in breast pathology (MK, PBLI)
- Engagement in intradepartmental discussions with colleagues and faculty (Prof, MK)
- Understanding of the role of ancillary testing in the diagnosis of breast pathology entities, based on recent literature (MK, PBLI, SBP)

#### Assigned Reading:

- Manual of Surgical Pathology, by Susan C. Lester or Surgical Pathology Dissection, by William H. Westra, et al (residents should be acquainted with pertinent sections prior to grossing tumor resection cases)
- Biopsy Interpretation of the Breast, by Stuart Schnitt and Laura C. Collins (2nd ed. 2012; 3rd ed. will be available September 2017). This is a good starting point for breast surgical pathology diagnoses.
- Many standard breast pathology texts are useful for more in depth reading, including more unusual diagnoses. Possible resources include:
  - WHO Classification of Tumours of the Breast (2012)
  - Breast Pathology, by David J Dabbs (2nd ed. 2016)
  - Rosen's Breast Pathology, by Sayed A. Hoda and Edi Brogi (2014)
  - Diagnostic Pathology: Breast, by Susan C. Lester and David G. Hicks (2nd ed. 2014)
- Online resources:
  - CAP Cancer Protocol, Breast, DCIS
    - In addition to reporting criteria, describes methods to estimate the size/extent of DCIS

- o CAP Cancer Protocol, Breast, Invasive carcinoma
  - Details Nottingham grading, including appropriate way to count mitotic figures
  - Provides methods to determine the size of invasive carcinoma, including multiple foci of invasive carcinoma
  - Defines extensive intraductal component
  - Classification of lymph node metastases
- o MD Anderson Cancer Center Residual Cancer Burden Calculator
  - Includes multiple diagrams to assist in estimating the size of residual carcinoma, and cancer cellularity
- Senior residents are expected to do literature searches, as appropriate, for unusual tumors
- Attending pathologist will also provide articles pertinent to specific cases

**Optional Reading:**

- Additional articles pertaining to discussed pathologic entities

**Call Duties:** Resident will take call after office hours, as determined by the resident/fellow call schedule for UMMC

**During the rotation, the trainee is expected to join the following Conferences:**

- Weekly breast radiology-pathology correlation conference (Benson, Tuesdays at 8:00 AM)
- Weekly breast tumor board (Benson, Fridays at 7:00 AM)
- Daily consensus conference (Benson, 2:00 PM)
- Wednesday unknown slide conference (Bell, 7:00 AM)
- Weekly Grand Rounds (MCRB 450, Wednesdays at 8:00 AM)
- Wednesday didactic lecture (Bell, 9:15 AM)
- Thursday cytopathology conference/journal club (Bell, 12:00 PM)
- Thursday morning gross conference (Bell)

**Other Requirements:**

- Maintain a grossing log

**Assessment methods:**

Resident performance on this rotation will be assessed by:

- Performance evaluation completed by attending physician(s) at the end of the rotation