Overview

- Highlights of disease site chapter
- Uniqueness, differences and exceptions based on
  - Anatomy
  - Diagnostic workup
  - Treatment
  - Outcomes
- Cautions and reminders for staging
Learning Objectives

• Recognize differences based on disease site
• Examine criteria for assigning stage
• Analyze effect of uniqueness on staging
• Employ critical thinking in using physician documentation
• Utilize appropriate guidelines to gain knowledge
• Identify resources for AJCC staging

Stage Classifications

Anatomy Affecting Stage

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Breast Staging Anatomy

- Chest wall
  - Ribs
  - Intercostal muscles
  - Serratus anterior muscles
    - NOT pectoral muscle
- Intramammary nodes
  - Within breast
  - Considered axillary for staging
- Regional nodes
  - Location
  - Alternate names

Classification Issues

Clinical and Pathologic Staging

- Clinical Staging
  - Most definitive size from imaging, physician documentation
  - Biopsy of primary site, potentially nodal or mets biopsy
- Pathologic Staging
  - Use clinical stage information together with
  - Operative findings and
  - Resection of tumor
Posttherapy Staging

- Neoadjuvant therapy eligible based on NCCN guidelines
  - Operable: criteria for breast-conserving surgery except tumor size
  - Inoperable or locally advanced

- **NOT** neoadjuvant therapy: 2-4 weeks of endocrine therapy
  - Clinical trials using imaging assessment pre & post 2-4 weeks of Rx
  - Early response may be surrogate for long-term endocrine benefit

Pathologic Staging

- First treatment must be neoadjuvant
- All information from clinical staging with
- Operative findings and
- Resection of tumor

Assigning T, N, M, Stage Group

T Category

- Most accurate size
  - Mammogram, ultrasound, physical exam
  - Physician statement

- Multiple tumors – stage by largest, use (m)

- Complex shapes
  - Macroscopically distinct tumors very close together may be 1 tumor
  - Physician judgment based on imaging and pathology report
### T Category

- **Skin dimpling & nipple retraction**
  - Do not affect T category
  - Not T4

- **Inflammatory carcinoma**
  - Diffuse erythema and edema (peau d'orange) in 1/3+ of skin
  - Primarily a clinical diagnosis
  - Histologic evidence is supportive of dx but not required
  - Rare, progresses quickly within days/weeks

### N Category

- Clinically fixed or matted denotes
  - Nodes attached to each other or other structures
  - Extracapsular extension or inflammatory process

- Consider as movable if no statement
  - Physicians document exam findings, not what is absent

- Micromets will be designated as such
  - Consider as metastasis, >2.0 mm if no statement

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### N Category

**Clinically detected**
- Identified on imaging/physical exam, characteristics of involvement
- Macromets on FNA/biopsy

**Not clinically detected**
- Not identified on imaging or physical exam

### Regional Lymph Nodes (N)

<table>
<thead>
<tr>
<th>Stage</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>N0</td>
<td>Regional lymph nodes cannot be assessed (e.g., previously excised)</td>
</tr>
<tr>
<td>N1</td>
<td>Regional lymph node metastasis</td>
</tr>
<tr>
<td>N2</td>
<td>Metastasis in isolated level II, III, or IV lymph nodes that are clinically fixed or metastases in clinically detectable (enlarged) regional lymph nodes in the absence of clinically evident metastases</td>
</tr>
<tr>
<td>N2a</td>
<td>Metastasis in isolated level I, II, or IV lymph nodes fixed in one another (multifocal) or to other structures</td>
</tr>
<tr>
<td>N2b</td>
<td>Metastasis in clinically detectable isolated lymph nodes with clinically evident level I, II, or IV lymph node involvement</td>
</tr>
<tr>
<td>N2c</td>
<td>Metastasis in isolated non-regional lymph nodes</td>
</tr>
</tbody>
</table>

*Staging of clinically detected nodal disease (e.g., regional lymph nodes in surgically resected patients) is determined by the clinical characteristics of the involved lymph nodes.

### Pathologic (pN)

| pN1   | Macrometastases or metastases in 1-3 lymph nodes and/or in internal mammary nodes with metastases detected by sentinel lymph node biopsy but not clinically detected |
| pN1a  | Micrometastases greater than 0.2 mm and/or more than 200 cells, but none greater than 2 mm |
| pN1b  | Metastasis in 1-3 lymph nodes, at least one metastasis greater than 2 mm |
| pN2   | Metastasis in internal mammary nodes with micrometastases or micrometastases detected by sentinel lymph node biopsy but not clinically detected |
| pN2a  | Metastasis in 1-3 lymph nodes and in internal mammary lymph nodes with micrometastases detected by sentinel lymph node biopsy but not clinically detected |

*Microscopic features of micrometastases and micrometastases detected by sentinel lymph node biopsy.*
### N Category

| pT3a | Metastasis in or more axillary lymph nodes (at least one tumor deposit greater than 2.0 mm) or metastasis in the infraclavicular (level III) lymph nodes or in clinically detected ipsilateral internal mammary lymph nodes in the presence of one or more positive level II axillary lymph nodes, or in more than three axillary lymph nodes and in internal mammary lymph nodes with micrometastases or macro metastases detected by sentinel lymph node biopsy but not clinically detected
| pT3b | Metastasis in or more axillary lymph nodes in the absence of clinically detected micrometastases or macro metastases detected by sentinel lymph node biopsy but not clinically detected

**Note:**
Classification is based on pathologic examination of the resected specimen. Classification is determined by microscopic examination of the resected specimen.

**CT**
- Circulating Tumor Cells (CTCs) in blood
- Disseminated Tumor Cells (DTCs) in bone marrow, nonregional tissue

**M**
- M0: absence of distant metastasis
- M1: presence of distant metastasis

**M0**
- No evidence of distant metastasis

**M1**
- Presence of distant metastasis

**M Category for postneoadjuvant therapy staging (yp)**
- Same as M category assigned for clinical stage
- If M1 before Rx, M1 for yp stage even if mets no longer detected
- Progression: distant mets identified after Rx when preRx eval neg
### AJCC Staging Rules

- Standard AJCC staging rules apply if no exceptions noted
- **AJCC Curriculum for Registrars**
  - Utilize this resource for staging rules
  - Slides available for download
  - Recordings available to watch at any time
- Refer to AJCC website for more information and education

### Case Scenarios

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Case #1 – Diagnostic Workup

- **History/Chief Complaint**
  - 57 year old female with abnormal mammogram
- **Physical Exam**
  - Breasts appear symmetric with no masses detected
- **Imaging**
  - Mammogram: small focus of micro-calculations UOQ right breast
- **Procedure**
  - Stereotactic core biopsy UOQ right breast
- **Pathology Report**
  - Ductal carcinoma in situ, comedo and cribiform types; estimated size of DCIS 1.2 cm in greatest dimension, extending close to posterior margin, ER/PR positive

Case #1 – Clinical Staging

- **Physical exam**
  - No mass detected in breast
  - No mention of lymphadenopathy is significant
- **Imaging**
  - Focus of micro-calculations does not provide staging information
- **Procedure**
  - No staging information
- **Pathology report**
  - In situ carcinoma
  - Size does not play a role in staging for in situ
  - Margin information does not play a role in staging

Case #1 – Clinical Staging Answer

- **pTis**
  - In situ carcinoma identified
  - AJCC rules state this is pTis for the clinical T category
  - Must have microscopic evidence, cannot diagnose in situ on imaging
- **cN0**
  - No axillary adenopathy
- **cM0**
  - No signs or symptoms of mets
- **Stage 0**

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Case #1 – Treatment

- **History/Chief Complaint**
  - Presents for surgical resection

- **Operative Report**
  - Right partial mastectomy

- **Pathology Report**
  - No residual carcinoma in situ, right partial mastectomy

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Case #1 – Pathologic Staging

- **Surgery**
  - Patient had surgical resection qualifying for pathologic staging

- **Clinical staging information**
  - pTis cN0 cM0

- **Operative report**
  - No additional info

- **Pathology report**
  - No residual carcinoma in situ
  - No nodes resected

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Case #1 – Pathologic Staging Answer

- **pTis**
  - Carcinoma in situ for clinical stage
  - No residual on resection

- **cN0**
  - No nodes resected
  - AJCC rule for carcinoma in situ allows cN0 for pathologic stage

- **cM0**
  - No signs or symptoms of mets

- **Stage 0**
Case #2 – Diagnostic Workup

• History/Chief Complaint
  – 55-year-old female noted lump in right breast
• Physical Exam
  – Extensive mass involving large volume right breast
  – No axillary adenopathy
• Imaging
  – Mammogram: suspicious lesion right breast
  – MRI: spiculated mass 1.2 x 1.0 x 1.3 cm involving 1/3 of breast
• Procedure
  – Core needle biopsy
• Pathology Report
  – Ductal carcinoma in situ with focal comedo necrosis, biopsy

Case #2 – Clinical Staging

• Physical exam
  – Extensive mass in right breast
  – No axillary adenopathy
• Imaging
  – Mammogram does not provide any staging information
  – MRI 1.2x1.0x1.3 cm mass involving 1/3 of breast
• Procedure
  – Biopsy has no staging information
• Pathology report
  – In situ carcinoma

Case #2 – Clinical Staging Answer

• pTis
  – In situ carcinoma identified
  – AJCC rules state this is pTis for the clinical T category
  • Must have microscopic evidence, cannot diagnose in situ on imaging
• cN0
  – No axillary adenopathy
• cM0
  – No signs or symptoms of mets
• Stage 0
Case #2 – Treatment

- History/Chief Complaint
  - Presents for surgical resection with sentinel node biopsy

- Operative Report
  - Right modified radical mastectomy with sentinel node biopsy, and subsequent axillary dissection

- Pathology Report
  - 1.1 cm Infiltrating ductal carcinoma, right breast
  - Metastatic to 5/15 axillary nodes

Case #2 – Pathologic Staging

- Surgery
  - Patient had surgical resection qualifying for pathologic staging

- Clinical staging information
  - pTis cN0 cM0

- Operative report
  - No additional information

- Pathology report
  - Invasive carcinoma
  - 1.1 cm tumor size
  - Involvement of 5 axillary nodes

Case #2 – Pathologic Staging Answer

- pT1c
  - >10 mm ≤20 mm invasive tumor size
  - Carcinoma in situ on clinical stage

- pN2a
  - 5 axillary nodes involved
  - Presume >2 mm since not stated as micromets

- cM0
  - No signs or symptoms of mets

- Stage IIIA
AJCC Cancer Staging Manual and Atlas

Order at http://cancerstaging.net

CAnswer Forum

- Submit questions to AJCC Forum
  - Located within CAnswer Forum
  - Provides information for all
  - Allows tracking for educational purposes
- http://cancerbulletin.facs.org/forums/

Summary

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Summary

• Recognize differences based on disease site
  – Examine criteria for assigning stage
  – Effect of uniqueness of anatomy, workup, treatment

• Employ critical thinking in using physician documentation
  – Understanding current standard medical practice
  – Interpretation of available information

• Utilize guidelines available to registrars to gain knowledge

• Identify resources for AJCC staging
  – Information and guidance
  – Obtain answers to questions to learn staging
    • Understand rationale to apply to future cases
    • Not just an answer for today’s case

Thank you

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This webinar is sponsored by

The Centers for Disease Control and Prevention

Supported by the Cooperative Agreement Number DP13-1310

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