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Learning Objectives

- Demonstrate purpose and approach to AJCC staging
- Examine format and expansion of Chapter 1
- Outline use of stage descriptors and guidelines
- Dissect 8th edition staging 1-page guide
Learning Assessments

- Testing effect or retrieval practice
  - Testing yourself on idea or concept to help you remember it

- Many experts have agreed for centuries
  - Act of retrieving info over and over, makes it retrievable when needed
  - Aristotle: exercise in repeatedly recalling strengthens memory

- Why retrieval/quizzing slows forgetting, helps remembering
  - Memory is dynamic (keeps changing), retrieval helps it change
  - Test often for better results

- Quizzes
  - Pretest as part of registration
  - Quiz during lecture
  - Posttest emailed weeks later to assess retention
  - Also assesses clarity of instruction and instructor

Introduction

Purpose of AJCC Stage

- Stage is for patient care
  - Defines prognosis
  - Critical for appropriate treatment

- Stage serves as basis for
  - Clinical trial inclusion, exclusion, and stratification
  - Evaluate results of treatment
  - Facilitate exchange and comparison of info between registries
  - Clinical and translational cancer research

- Cohesive approach to staging provides method for
  - Clearly conveying clinical experience to others
  - Without ambiguity
  - At national and international levels
Assigning AJCC Stage for Patient Care

• Assigning AJCC stage for patient care
  – Documenting in legal medical record

• Role of managing physician
  – Only managing physician may assign patient’s stage
  – Only person with access to all pertinent information
  – Only person who can synthesize array of physical exam & findings

• Role of pathologist and radiologist
  – Provide important T-, N-, and/or M-related information
  – May not assign stage

Assigning AJCC Stage in Registry

• Assigning AJCC stage for registry purposes
  – Recording stage in abstract database
  – MAY NOT document in legal medical record

• Role of cancer registrar
  – Documenting physician assigned stage in abstract database
  – Assigning AJCC stage in abstract database
    • When managing physician documented stage is not available
    • When only partial stage info available from physicians
  – Ensure all appropriate stage classifications in abstract
    • Clinical if cancer known prior to treatment
    • Either pathological or posttherapy based on qualifying treatment

Registry Specific AJCC Rules

• Cancer registry documentation and data
  – Specific registry guidelines throughout chapter 1
  – Document what is found
  – Do not adjust, interpret, change
  – Critical for researchers to have this unaltered data

• Rationale
  – Registry data affects future patient care
  – Altered data could negatively impact patient care

• Note to registrars on AJCC staging
  – Do not complete data items when info unclear or unavailable
  – Never prioritize completeness over accuracy
Format and Expansion – AJCC Chapter 1

- Chapter 1 “Principles of Cancer Staging”
  - New user-friendly format
  - Rules repeated so each staging classification has complete info
  - Provide examples and exceptions

- Comprehensive analysis of staging rules and nomenclature
  - AJCC-UICC Lexicon Project January 2012
  - Content Harmonization Core August 2014
  - Team of fifteen physicians
  - Line by line review over span of two years
  - Harmonization Summit September 2015
  - 60 physicians voted on rules, along with registrars
  - Resulted in expansion of chapter
  - Precise standardized definitions and rules for staging
  - Final chapter reviewed/edited by 7 physicians

AJCC Terminology

- Stage
  - Used only for aggregate information resulting from T, N, and M
  - Never individual categories (no T stage)

- Classifications – time point in patient’s care continuum
  - Time frame (staging window)
  - Criteria

- Categories
  - T, N, M
  - Prognostic factors required for stage group

- AJCC Prognostic Stage Groups
  - Stage groups or stage
  - Aggregate information

Aligning Registry Data Items with AJCC
Cohesive Approach to AJCC TNM

- Aligning registry data items with AJCC TNM system
  - Need cohesive approach to break down barriers
  - Allow registrar to document AJCC TNM without alteration
  - Plans presented to registry community

- Existing differences hinder ability to communicate, affects
  - Registrar and physician communication
  - Researchers utilizing national databases
  - Electronic exchange between systems

Registry Data Alignment with AJCC

- Facilitates communication with physicians & researchers
  - Use same language as AJCC
  - No more registry shorthand and storage codes
  - Examples from registrar questions & physicians
    - c2 c2a c0
    - T2 N2a M0
    - cT2 cN2a cM0

- All new AJCC 8th stage data items
  - Clinical
  - Pathological
  - Posttherapy

- Use format specified in AJCC manual, up to 15 characters
  - ypTis(DCIS)
  - pN0(mol+)
  - cM1b(0)
  - 3C (only exception, do not use Roman numerals for group)

Change in Registry Data Item for Descriptors

- Descriptor data item prior to 2018
  - Category suffix: (m)
  - Stage prefix: y
  - Stage group info for lymphoma: E, S

- Identified issues with descriptor data item
  - Confusing to mix disparate concepts in one data item
  - Poor compliance and inconsistent usage
  - Alter for 2018 by creating new items or merging into existing

- Transformation for 2018
  - Developed new suffix data items for T and N
  - Shifted stage prefix to new yp stage data items
  - Incorporated E into stage group, S no longer used
New Stage Data Items

- **CLINICAL STAGE**
  - Clin T
  - Clin T suffix
  - Clin N
  - Clin N suffix
  - Clin M
  - Clin Grade
  - Clin Stage Group

- **PATHOLOGICAL STAGE**
  - Path T
  - Path T suffix
  - Path N
  - Path N suffix
  - Path M
  - Path Grade
  - Path Stage Group

- **POST THERAPY STAGE**
  - Post Therapy T
  - Post Therapy T suffix
  - Post Therapy N
  - Post Therapy N suffix
  - Post Therapy M
  - Post Therapy Grade
  - Post Therapy Stage Group

Additional Staging Descriptors and Guidelines

- **N Suffix**
  - **N suffix for method of nodal assessment**
    - Applies to all stage classifications
    - Indicates limited nodal information
    - Not used if further procedures performed within stage classification
  - **Type of nodal assessment has**
    - Implications for completeness of review
    - May affect N category assignment
  - **N suffix choices**
    - FNA or core needle biopsy
    - Sentinel node procedure
  - **Applies to all disease sites**
N Suffix: (sn)

- (sn) sentinel node procedure indication
- Clinical staging use
  - Diagnostic workup & before definitive surgical treatment
  - cN1–3(sn)
- Pathological staging use
  - Part of initial surgical management
  - pN1–3(sn)
  - Note: suffix NOT used if completion lymph node dissection performed as component of initial surgical management

N Suffix: (f)

- (f) FNA or core needle biopsy of node indication
- Clinical staging use
  - Diagnostic workup before treatment
  - cN1–3(f)
- Pathological staging use
  - Part of primary site surgical resection
  - pN1–3(f)
  - Note: suffix NOT used if subsequent completion lymph node dissection as component of initial surgical management

New Registry Data Item for N Suffix

- N suffix – 3 new data items
  - cN suffix
  - pN suffix
  - ypN suffix
- N suffix coding

<table>
<thead>
<tr>
<th>code</th>
<th>label</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sn</td>
<td>(sn)</td>
<td>Sentinel node procedure without resection of nodal basin</td>
</tr>
<tr>
<td>fn</td>
<td>(f)</td>
<td>FNA or core needle biopsy without resection of nodal basin</td>
</tr>
<tr>
<td>blank</td>
<td>blank</td>
<td>No suffix needed or appropriate; not recorded</td>
</tr>
</tbody>
</table>
New Registry Data Item for T Suffix

- T suffix – 3 new data items
  - cT suffix
  - pT suffix
  - ypT suffix
- T suffix coding

<table>
<thead>
<tr>
<th>code</th>
<th>label</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>m</td>
<td>(m)</td>
<td>Multiple synchronous tumors OR For thyroid differentiated and anaplastic only, Multifocal tumor</td>
</tr>
<tr>
<td>s</td>
<td>(s)</td>
<td>For thyroid differentiated and anaplastic only, Solitary tumor</td>
</tr>
<tr>
<td>blank</td>
<td>blank</td>
<td>No information available; not recorded</td>
</tr>
</tbody>
</table>

Guidelines – Unknown Primary Site

- No primary tumor evidence, BUT anatomic site suspected
- Not used if origin cannot be determined, no site information

- cT0
  - Primary tumor not identified on
    - Physical exam
    - Imaging
    - Endoscopy
    - Other diagnostic procedures

- pT0
  - No evidence of primary tumor identified
    - After surgical resection of suspected primary tumor, and Never identified on biopsy

Grade in AJCC 8E

- Recommended grading system specified in each chapter
  - Grading system to be used by pathologist and
  - Documented in cancer registry
- Cancer registry
  - Must record grade as specified in disease site chapter
  - According to rules only in chapter 1 and disease site chapter
  - Do NOT use registry rules for new (AJCC) grade data item
Grade Issues and Solution

- **New** grade data items for each stage classification
  - Incorporates both AJCC and standard registry coding
  - Prioritizes AJCC specified grade
  - Provides standard registry grade when AJCC not applicable
  - Grade tables specific for each disease site
  - Grade system based on prognostic significance

- Grade coding rules developed with surveillance partners
  - Approved by AJCC and pathologists
  - Medically accurate
  - Follows AJCC 8th edition Chapter 1

- Rationale for new grade data items
  - Grade data unusable in many sites by AJCC experts
  - Inconsistent grading systems used
  - Data coding rules conflicted with physician guidance

Comparison of Pathology Grading Systems

<table>
<thead>
<tr>
<th>3-Grade System</th>
<th>4-Grade System</th>
</tr>
</thead>
<tbody>
<tr>
<td>GX: Cannot be assessed</td>
<td>GX: Cannot be assessed</td>
</tr>
<tr>
<td>G1: Well differentiated</td>
<td>G1: Well differentiated</td>
</tr>
<tr>
<td>G2: Moderately differentiated</td>
<td>G2: Moderately differentiated</td>
</tr>
<tr>
<td>G3: Poorly differentiated, Undifferentiated</td>
<td>G3: Poorly differentiated</td>
</tr>
<tr>
<td>G4: Undifferentiated</td>
<td></td>
</tr>
</tbody>
</table>

Pathology Criteria for Grading Systems

- **G1 criteria identical** in 3- & 4-grade systems
- **G2 criteria identical** in 3- & 4-grade systems
- **G3 and G4**
  - 4-grade system distinguishes criteria, separates
  - 3-grade system does not distinguish or too subtle, groups together
- Grading systems based on
  - Prognostic significance
  - Reproducible between pathologists
- **3-grade system coding**
  - 1
  - 2
  - 3
- **4-grade system coding**
  - 1
  - 2
  - 3
  - 4
New Cancer Registry Grade Data Item

<table>
<thead>
<tr>
<th>Grade</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>Well differentiated</td>
</tr>
<tr>
<td>G2</td>
<td>Moderately differentiated</td>
</tr>
<tr>
<td>G3</td>
<td>Poorly differentiated, undifferentiated</td>
</tr>
<tr>
<td>Gx</td>
<td>Grade cannot be assessed (GX); Unknown; Not applicable</td>
</tr>
</tbody>
</table>

Breast Grade

<table>
<thead>
<tr>
<th>Grade</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>Low combined histologic grade (favorable), SBR score of 3–5 points</td>
</tr>
<tr>
<td>G2</td>
<td>Intermediate combined histologic grade (moderately favorable), SBR score of 6–7 points</td>
</tr>
<tr>
<td>G3</td>
<td>High combined histologic grade (unfavorable), SBR score of 8–9 points</td>
</tr>
<tr>
<td>nuclear grade I (Low) (in situ only)</td>
<td></td>
</tr>
<tr>
<td>nuclear grade II (intermediate) (in situ only)</td>
<td></td>
</tr>
<tr>
<td>nuclear grade III (High) (in situ only)</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Well differentiated</td>
</tr>
<tr>
<td>B</td>
<td>Moderately differentiated</td>
</tr>
<tr>
<td>C</td>
<td>Poorly differentiated</td>
</tr>
<tr>
<td>D</td>
<td>Undifferentiated, anaplastic</td>
</tr>
<tr>
<td>Gx</td>
<td>Grade cannot be assessed (GX); Unknown; Not applicable</td>
</tr>
</tbody>
</table>

Grade for Each Stage Classification

- Grade needed for each stage classification
  - Document, even if grade not needed for stage group
  - Critical to provide information for each, not always the same
  - Follows same timeframe and criteria rules as stage

- Grade data items
  - Grade clinical – all patients if cancer known prior to treatment
  - Grade pathological – primary treatment is surgical resection
  - Grade posttherapy – neoadjuvant followed by surgical resection

- Patients will have only 1 or 2 grades coded, never all 3
LVI: Lymphovascular Invasion

- LVI further refined for 8th edition
  - Critical to know each component in some disease sites
  - Chapter will specify use of LVI vs. L, V, both L & V

<table>
<thead>
<tr>
<th>Component of LVI coding</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>LVI not present (absent) not identified</td>
</tr>
<tr>
<td>1</td>
<td>LVI present/identified, NOS</td>
</tr>
<tr>
<td>2</td>
<td>Lymphatic and small vessel invasion only (L)</td>
</tr>
<tr>
<td>3</td>
<td>Venous (large vessel) invasion only (V)</td>
</tr>
<tr>
<td>4</td>
<td>BOTH lymphatic and small vessel AND venous (large vessel) invasion</td>
</tr>
<tr>
<td>9</td>
<td>Presence of LVI unknown/indeterminate</td>
</tr>
</tbody>
</table>

Timing is Everything

Stage Classifications
AJCC 8th Edition Staging

• Rules and associated rationale for Eighth Edition AJCC
• General rules described in AJCC Chapter 1
• Refer to relevant disease site chapters
  – Specific allowable disease site differences
  – Stage differences necessary for appropriate medical care of patient

KEY TERMINOLOGY
• Classifications
  – Describes points in time of care of cancer patient
  – Criteria: timeframe & specific medical assessments/practices
• Categories
  – T, N, M
    – Any non-anatomic factors needed to assign stage group
• Stage group
  – Easily communicated summary of categories
    – Groups patients with similar prognosis
• Assigning stage
  – AJCC stage assigned by managing physician
    – Based on data from all relevant sources

CLINICAL STAGING CLASSIFICATION RULES

• General: clinical classification
  – From date of diagnosis until definitive treatment, or within 4 months
• T category
  – Hx, symptoms, phy exam, labs, imaging, endoscopy, bx, surg exp
• N category
  – Phy exam, imaging, FNA/core needle bx, excisional bx, sentinel node bx
• M category
  – Clinical history, physical exam, imaging, FNA/biopsy
• Rationale
  – Diagnostic bx of primary/nodes/distant mets = clinical classification
  – Path report on biopsy is not pathological staging
  – cN even if based on lymph node bx
  – Clinical M category is
    • cM if based on history, physical exam and imaging
    • pM1 if based on biopsy proven involvement

PATHOLOGICAL STAGING CLASSIFICATION RULES

• General: pathological classification
  – Clinical stage, op findings, path report resected specimen
• T category
  – Must meet definitive surgical treatment specified in chapter
• N category
  – Microscopic assessment of 1 node required, include imaging & dx bx
• M category
  – History, physical exam, imaging, FNA/biopsy, resection
• Rationale
  – Include all findings even if not microscopically proven
  – Pathological staging based on synthesis of all info
  – Not solely on resected specimen pathology report
  – Pathologist cannot assign final stage
  – Pathological M category is
    • cM if based on physical exam and imaging
    • pM1 if based on bx proven involvement, “pM0” NOT a valid category

POST NEOADJUVANT THERAPY STAGING CLASSIFICATION RULES

• yc Clinical
  – Includes physical exam and imaging assessment
  – After neoadjuvant systemic/radiation therapy

• yp Pathological
  – Includes all information from yc staging,
    – Surgeon’s operative findings and
    – Pathology report from resected specimen
Summary

- Identify purpose and cohesive approach to AJCC staging
- Navigate new format and expansion of Chapter 1
- Comprehend use of stage descriptors and guidelines
- Identify key information of 8th edition staging 1-page guide
Eighth Edition Webinar Schedule

<table>
<thead>
<tr>
<th>Webinar Topic</th>
<th>Date</th>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>Introduction &amp; Descriptors</td>
<td>Thursday, May 31, 2018</td>
<td>1 pm – 2 pm CDT</td>
</tr>
<tr>
<td>Minor Rule Changes</td>
<td>Tuesday, May 15, 2018</td>
<td>1 pm – 2 pm CDT</td>
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<tr>
<td>Major Rule Changes</td>
<td>Tuesday, March 20, 2018</td>
<td>1 pm – 2 pm CDT</td>
</tr>
<tr>
<td>CAnswer Forum &amp; Staging Questions</td>
<td>Tuesday, April 17, 2018</td>
<td>1 pm – 2 pm CDT</td>
</tr>
<tr>
<td>Head and Neck Staging</td>
<td>Wednesday, July 25, 2018</td>
<td>1 pm – 2 pm CDT</td>
</tr>
<tr>
<td>Breast Staging</td>
<td>Tuesday, September 11, 2018</td>
<td>1 pm – 2 pm CDT</td>
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</tbody>
</table>

Thank you

Donna M. Gross, RHIT, CTR
Technical Editor AJCC Cancer Staging Manual
First Author, Chapter 1: Principles of Cancer Staging

AJCC
American Joint Committee on Cancer

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