AJCC 8th Edition Staging

Major Rule Changes

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

AJCC
American Joint Committee on Cancer
Validating science. Improving patient care.

This webinar is sponsored by

The Centers for Disease Control and Prevention

Supported by the Cooperative Agreement Number DP13-1310

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

National Center for Chronic Disease Prevention and Health Promotion
National Program of Cancer Registries

Learning Objectives

- Examine major rule changes between 7th & 8th editions
- Dissect reasons for major changes
  - Data showing inconsistency
  - Need for accurate factual information without bias
  - Keep pace with changing medicine
- Identify differences between stage needed for
  - Patient care
  - Data analysis

3

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

Major Rule Changes Between 7th and 8th Editions

Critical Exceptions: Size / Thickness

- Melanoma exception T category
  - Primary tumor thickness measured to nearest **0.1 mm**
  - Was 0.01 mm in 7th edition
  - Other sites size measured in whole mm
- CAP protocol:
  - Change due to impracticality and imprecision of measurements, particularly for tumors >1mm thick
  - If tumors ≤1mm thick measured to nearest 0.01mm, should be **reported** to nearest 0.1mm

Scenario

- Pt underwent wide excision of melanoma. Pathology reports tumor thickness as 0.73mm.
- Registry documents thickness as 0.7mm
  - AJCC 8th edition thickness measured to nearest 0.1mm
  - CAP protocol states report thickness to nearest 0.1mm
  - Registry must document **only** in tenths of mm
  - If pathologist reports in smaller units, registry must round

Critical Exceptions: Size Rounding

- Breast exception T category
  - >1.0 mm to 1.4 mm **rounded to 2 mm**
  - Avoid assigning "microinvasion" category to cancer >1.0 mm
  - Other sizes rounded for T category assignment
    - Round down between 1 and 4
    - Round up between 5 and 9
- Critical for prognosis and data analysis
  - T1mi "microinvasion" must ***only*** represent ≤1 mm

Scenario

- Pt underwent lt breast lumpectomy. Pathology reports tumor size for invasive ductal ca as 1.1mm.
- Registry documents tumor size as 2mm
  - AJCC 8th edition states: >1.0 mm to 1.4 mm **rounded to 2 mm**
  - AJCC T category table states: round >1.0–1.9 mm to 2 mm
  - Must assign T1a
  - Do not assign T1mi "microinvasion" category to cancer >1.0 mm
  - T1mi is only for ≤1 mm

In Situ and Noninvasive T Category

- *In situ* neoplasia and noninvasive papillary ca
  - Identified during diagnostic workup on core or incisional biopsy
  - Clinical staging time frame
  - Assigned **cTis** or **cTa**
  - Refer to "*In Situ* Neoplasia – AJCC Cancer Staging Manual 8th Edition" posted 11/2/2016 on AJCC website in Education-Registrars

In Situ and Noninvasive T Category

- *In situ* neoplasia and noninvasive papillary ca
  - Identified from surgical resection specified in disease site pathological criteria
  - Identified microscopically in diagnostic workup with no residual in surgical resection
  - Pathological staging time frame
  - Assigned **pTis** or **pTa**

In Situ Change Rationale

- Historically
  - pTis emphasized need for microscopic/histologic evidence of *in situ*
  - Diagnosis of *in situ* never made on imaging alone
- Changing clinical T category to cTis indicates
  - Diagnosis made on diagnostic core needle or incisional biopsy
  - Not based on complete examination of surgical resection specimen
- Pathological T category will remain pTis
  - Based on surgical resection specimen
- Consistency in clinical staging classification
  - All diagnostic biopsies are cT regardless of *in situ* or invasive ca
  - e.g., cTis, cT1a

In Situ Change Rationale

- Separate designations, cTis and pTis, indicate
  - Timeframe and
  - Type of specimen
- Importance of this differentiation
  - Especially when resection specimen shows invasive tumor
  - Mitigates potential confusion regarding T category specimen
  - In past editions
    - pTis based on diagnostic biopsy or on resection specimen
    - Depending on whether clinical stage T or pathological stage T
  - Especially confusing if
    - Diagnostic biopsy showed carcinoma *in situ*, pTis, and
    - Resection specimen showed invasive carcinoma, pT1a

In Situ Stage Group 0

- *Insitu* neoplasia, stage 0 or stage 0is
  - cTis cN0 cM0 clinical stage 0 or 0is
    - Must have microscopic confirmation
  - pTis cN0 cM0 pathological stage 0 or 0is
    - Must meet primary tumor surgical resection pathological criteria
    - Exception: lymph node microscopic assessment **not** required
- Reminder: disease sites with two stage 0 groups denoted
  - 0is
  - 0a

Noninvasive Stage Group 0

- Noninvasive papillary ca stage 0a rules **now documented**
  - cTa cN0 cM0 clinical stage 0a
    - Must have microscopic confirmation
  - pTa cN0 cM0 pathological stage 0a
    - Must meet primary tumor surgical resection pathological criteria
    - Exception: lymph node microscopic assessment **not** required
- Reminder: disease sites with two stage 0 groups denoted
  - 0is
  - 0a

Scenario

- EUS-FNA of stomach showed adenoca *in situ*. Pt had distal gastrectomy with five nodes. Path: adenoca *in situ*, all nodes negative.
- Clinical stage: cTis cN0 cM0 stage 0
  - New rule assigns cTis
  - Assign cN0 for *in situ* tumors
- Pathological stage: pTis pN0 cM0 stage 0
  - Assign pTis when based on resected specimen
  - Must use pN0 when nodes resected
  - Use of cN0 is only when no nodes examined
  - Node microscopic assessment **not** required for *in situ* path staging but if performed, must use pN designation

Scenario

- CT guided bx lung showed squamous cell ca *in situ*. Segmental lung resection showed squamous cell ca *in situ*. No nodes resected.
- Clinical stage: cTis cN0 cM0 stage 0
  - New rule assigns cTis
  - Assign cN0 for *in situ* tumors
- Pathological stage: pTis cN0 cM0 stage 0
  - Assign pTis when based on resected specimen
  - Assign cN0 when no nodes resected
  - Node microscopic assessment **not** required for *in situ* pathological staging

Scenario

- Biopsy of stomach showed adenoca *in situ*. Pt not a surgical candidate.
- Clinical stage: cTis cN0 cM0 stage 0
  - New rule assigns cTis
  - Assign cN0 for *in situ* tumors
- Pathological stage: pT__ pN__ cM__ stage 99
  - Cannot assign if surgical resection criteria is not met

Scenario

- TURB showed noninvasive papillary ca. Pt underwent partial cystectomy. Path showed noninvasive papillary ca. No nodes resected.
- Clinical stage: cTa cN0 cM0 stage 0a
  - New rule assigns cTa
  - Assign cN0 for noninvasive papillary ca
- Pathological stage: pTa cN0 cM0 stage 0a
  - Assign pTa when based on resected specimen
  - Assign cN0 when no nodes resected
  - Node microscopic assessment **not** required for noninvasive papillary ca pathological staging
  - If nodes were resected, assign appropriate pN

Extranodal Extension - ENE

- Extranodal extension (ENE) defined as
  - Extension through lymph node capsule into adjacent tissue
  - Preferred terminology
  - Standardized as ENE to eliminate confusion
    - Extranodal instead of extracapsular
    - Extension instead of spread
  - Descriptions that may indicate ENE
    - Matted
    - Fixed (not moveable or mobile)
    - Terminology will vary by physician

Extranodal Extension - ENE

- Regional node extending into distant structure or organ
  - Categorized as ENE
  - **Not** considered distant metastatic disease
- Head & Neck specific ENE rules
  - Stringent criteria for both clinical and pathological staging
  - Will be addressed in Head & Neck webinar

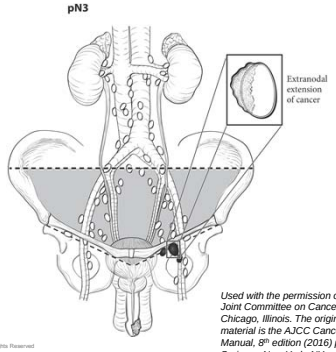
Scenario

- Physician palpated 2 left inguinal nodes in a patient with penile cancer. Node resection during surgery showed ENE.
- Clinical N assigned as cN2
  - cN2 Palpable mobile ≥ 2 unilateral inguinal nodes or bilateral inguinal lymph nodes
  - If nodes were fixed it would have been stated
- Pathological N assigned as pN3
  - pN3 ENE of lymph node metastases or pelvic lymph node mets
  - Evidence of ENE found on tissue examination

Scenario

Penis Chapter

pN3 ENE of lymph node metastases or pelvic lymph node metastases



Used with the permission of the American Joint Committee on Cancer (AJCC), Chicago, Illinois. The original source for this material is the AJCC Cancer Staging Manual, 8th edition (2016) published by Springer, New York, NY.

Scenario

- Melanoma patient with 2 clinically detected fixed nodes. Resection showed 2 nodes with cancer and ENE.
- Clinical N assigned as cN2b
  - N2b Two or three, at least one of which was clinically detected
  - Fixed nodes are not part of the criteria
- Pathological N assigned as pN2b
  - N2b Two or three, at least one of which was clinically detected
  - Nodes with ENE are not part of the criteria
- ENE is adverse prognostic parameter in melanoma patients
  - Registry data collection variable
  - ENE in any tumor-involved regional lymph node:
    - sentinel or clinically detected
    - present or absent

Assigning Stage with Incomplete Information

- Assigning stage with incomplete information
  - Presumptive stage may be used
  - Not a formal stage classification type
  - **Only for physician** use to facilitate patient care
  - **Never documented by cancer registries**
- Clinical stage
  - Preliminary clinical stage assigned during diagnostic workup
  - Continually update stage as workup progresses
  - Once final stage determined
    - Preliminary stages no longer used
    - Replaced by **clinical stage**
  - Stage(s) provisionally assigned referred to as *presumptive stage(s)*
  - Registry **only** records clinical stage

Assigning Stage with Incomplete Information

- Pathological stage
  - If only partial info available in pathological classification
  - Managing physician may combine clinical and pathological T and N categories
  - This strategy may be used to
    - Plan patient's treatment
    - Provide patient with stage group and prognosis
  - Does **NOT** represent actual TNM stage
  - Therefore **NOT** used to assign a stage group
  - Registry does **NOT** record combined clinical and pathological T and N categories
  - Registry does **NOT** record stage group

Registry Cautions with Incomplete Stage

- Incomplete staging information
  - Critical for physician to use to plan patient care
  - Essential for patient to understand their prognosis
  - Skews data analysis
- Registry use of incomplete staging information
  - Must only record complete and accurate aspects of T, N, M
  - Do **not** record T, N, or M category when it breaks staging rules
  - Do **not** record stage group since some categories are missing
- Always record accurate information
  - Use blanks and unknown stage groups when accurate
  - Do **not** skew data to lessen "unknown" data percentage
  - Future patient care could be harmed by falsified data

Scenario

- H&P – imaging of lung shows T1b N0 M0
- Bronchoscopy – lesion in RUL near main bronchus
- Cancer Conference – possibly T2a, but not likely
- Mediastinoscopy – hilar nodes, no mediastinal nodes

- Registry clinical stage assigned T1b N1 M0
  - Do not use early presumptive stage info
  - Combine all info prior to treatment
  - Cannot use just one source

Scenario

- Pt underwent prostatectomy. Path shows adenoca in rt lobe prostate. No nodes removed.
- Physician assigned stage: T2 N0 M0 PSA 12 Gr Grp 1 stage group IIA
- Registry assigned pathological stage:
  - pT2
  - pNX
  - cM0
  - PSA 12
  - Grade Group 1
  - Stage group 99
- Registry must follow rules, cannot use cN0

Uncertainty: Physician Use

- Uncertainty in assigning staging information
  - Choose lower of two possible when info uncertain or unclear
  - Unknown or missing info is **NEVER** assigned the lower

- Physician clinical decision making
  - May assign lower of **two possible** categories or stage groups
  - Use as needed when clear information not available
  - Necessary to plan patient care
  - Necessary to provide patient with prognosis

Uncertainty: Cancer Registry Data

- Cancer registry data – uncertainty rules do **NOT** apply
  - Subcategory info not available to registrar
    - Assign main category (available in all AJCC tables)
    - Do **NOT** assign lower subcategory
  - Stage group info not available to registrar
    - e.g., missing subcategory or prognostic factor category
    - Do **NOT** assign stage group
    - Document stage group as unknown

Scenario

- Physician palpated tumor on left side of prostate. Stated it may involve more than one-half of the left side, but it is difficult to assess. Discussed at Ca Conf, and due to uncertainty, physician assigned lesser subcategory T2a.
  - T2a involves one-half of one side or less
  - T2b involves more than one-half of one side but not both sides
- Registry clinical stage – cT2 cN0 cM0 PSA 9 Gr Grp 1 stage group 99
  - Registry does not use uncertainty rule for cT
  - Registry cannot assign stage group as could be I or IIA

cT1a-c, cT2a	N0	M0	< 10	1	I
pT2	N0	M0	< 10	1	I
cT1a-c, cT2a, pT2	N0	M0	≥ 10 < 20	1	IIA
cT2b-c	N0	M0	<20	1	IIA

Scenario

- Imaging showed gastric tumor invades serosa, and it may extend into the abdominal wall. Discussion at Ca Conf centered around unclear evidence of abdominal wall involvement. Physician assigned lesser category of T4a.
  - T4a Tumor invades the serosa (visceral peritoneum)
  - T4b Tumor invades adjacent structures/organs
- Registry clinical stage – cT4 cN0 cM0 stage group 99
  - Registry does not use uncertainty rule for cT
  - Registry cannot assign stage group as could be IIB or IVA

T4a	N0	M0	IIB
T3	N1, N2, or N3	M0	III
T4a	N1, N2, or N3	M0	III
T4b	Any N	M0	IVA

Required Prognostic Factor Unavailable

- Prognostic factor required for staging is unavailable
  - X category provided for use by managing physician
- If factor is absent and X not provided as option
  - Physician's determination or lowest category used to assign stage
- Cancer registry data collection
  - Registry **must record X or unknown** if factor not available
  - Registry must **NOT** use lowest category
  - Registry may **NOT** assign stage group if factor needed
  - Allows for accurate data analysis

Scenario

- Pt underwent prostatectomy. Path showed adenoca in left lobe, all nodes negative. Gleason 4+3=7, Grade Group 3. Physician stated pT2 pN0 cM0.
- Registry pathological stage pT2 pN0 cM0 PSA __ Gr Grp 3 stage group 99
  - Registry does not have access to PSA
  - Registry cannot assign lower category for prognostic factor
  - Stage group could be IIC or IIIA
  - Choosing lower stage group would skew data

T1-2	N0	M0	<20	3	IIC
T1-2	N0	M0	<20	4	IIC
T1-2	N0	M0	≥20	1–4	IIIA

Registry Documents Facts

- Tis N1-3
  - Pathology shows Tis only with nodal involvement
  - Stage group assigned by managing physician based on N category
- Examples of rare situations of Tis N1-3
  - Melanoma: may be associated with a regressed tumor
  - Breast: may be unidentified occult invasive cancer
- Cancer registry
  - Assign factual Tis, appropriate N category
  - Do **NOT** adjust according to registry rules, don't change to T1
  - Do **NOT** assign stage group in registry database
  - Allows study of these patients in future

Scenario

- RUL lung resection showed multiple foci of adenoca *in situ*. One interlobar node was involved. Physician assigned stage IIB.
- Registry pathological stage assigned pTis pN1 cM0 stage group 99
  - Registry records facts of pTis pN1 cM0
  - Registry does **NOT** change to pT1
  - Registry must record stage 99 and not physician assigned stage
  - Accurate TNM data needed for analysis

Scenario

- Pt underwent wide excision of *in situ* melanoma. Pathology showed no residual primary tumor. Sentinel nodes showed ITCs in one node. Physician assigned pTis pN1a cM0 stage IIIA.
- Registry pathological stage assigned pTis pN1a cM0 stage group 99
  - Registry records facts of pTis pN1a cM0
  - Registry does **NOT** change to pT1
  - Registry does NOT assign T0
    - Clinical stage was cTis cN0 cM0
    - No residual at surgery is not same as no tumor ever identified
  - Registry must record stage 99 and not physician assigned stage
  - Accurate TNM data needed for analysis

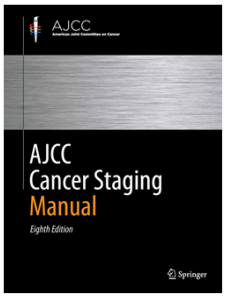
Scenario

- Pt has enlarged axillary node, bx showed adenoca. Mammogram & US had suspicious area. US guided core needle bx left breast showed DCIS. Grade 1, ER+, PR+, HER2 negative. Physician assigned clinical stage IB.
- Registry clinical stage assigned cTis(DCIS) cN1 cM0 Grade 1 HER2 neg ER+ PR+ stage group 99
  - Registry records facts of cTis(DCIS) cN1 cM0
  - Registry does **NOT** change to cT1
  - Registry must record stage 99 and not physician assigned stage
  - Accurate TNM data needed for analysis

Information and Questions on AJCC Staging

AJCC Web site

- https://cancerstaging.org
- Ordering information
  - Cancerstaging.net
- General information
  - Education
  - Articles
  - Updates



CAnswer Forum

- Submit questions to AJCC Forum
  - NEW 8th Edition Forum
  - 7th Edition Forum will remain
  - Located within CAnswer Forum
  - Provides information for all
  - Allows tracking for educational purposes
- http://cancerbulletin.facs.org/forums/

Summary

- Comprehend major rule changes between 7th & 8th editions
- Interpret reasons for major changes
  - Data showing inconsistency
  - Need for accurate factual information without bias
  - Keep pace with changing medicine
- Examine differences between stage needed for
  - Patient care
  - Data analysis

56