AJCC 7th Edition Staging
Disease Site Webinar
Prostate

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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

Pathologic – p

Clinical - c

Date of Diagnosis

Diagnostic Workup – phy exam, imaging, bx

Clinical - c

Surgical Treatment

Pathology Report

Systemic or Radiation Therapy

Evaluation by imaging & physical exam

Surgical Treatment

Pathology Report

Posttherapy - yc

Posttherapy - yp
Anatomy Affecting Stage
Regional Lymph Nodes

- Regional nodes are those of the true pelvis
  - Sacral
  - Obturator
  - Hypogastric
  - External iliac
  - Pelvis NOS

- Note location
  - Not surrounding prostate
Classification Issues
Clinical and Pathologic Staging

• **Clinical staging**
  – Physical exam and DRE
  – Imaging only in T3, T4, or potential/probability of N1
  – cN0 based on physician judgment and nomograms
  – PSA and Gleason are required categories for assigning stage group

• **Pathologic staging**
  – Total/radical prostatectomy required
  – General rules apply
    • Microscopic highest T & N may be used
    • Microscopic T3 and highest N under certain circumstances
  – PSA and Gleason are required categories for assigning stage group

• **No ypathologic staging**
  – *No* neoadjuvant therapy for prostate outside of clinical trials
Assigning T, N, M, Stage Group
T Category – Clinical Classification

• Inapparent and apparent
  – DRE is gold standard
  – Imaging may be used based on physician judgment
  – Registrar cannot interpret imaging

• Do not assign T2 in absence of a clear statement
  – Inapparent is T1
  – Apparent is T2-T4
T Category – Clinical Classification

- T category and clinical stage may not be assigned
  - Without physical exam information including DRE
  - From biopsy pathology report alone
    - Unless report contains statements from physical exam

- If physician did not examine prostate, assign TX
T Category

- Incidental finding during prostatectomy
  - *No* clinical stage assigned
  - *Not* cT0

- T2 category – confined to prostate includes
  - Invasion into prostatic apex
  - Invasion into prostatic capsule, but not beyond
T Category

• Not a true capsule, usually termed extraprostatic extension
  – So called capsule only laterally and posteriorly
  – No capsule for anterior, bladder area, or apex
    • Bladder area is base, top of prostate
    • Apex is at bottom of prostate

• Margin positivity and extraprostatic/extracapsular extension
  – Observations are separate, cannot correlate
  – Cannot infer one from the other
  – No rules can exist to automatically assign T category
## Primary Tumor (T)

### Clinical

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TX</td>
<td>Primary tumor cannot be assessed</td>
</tr>
<tr>
<td>T0</td>
<td>No evidence of primary tumor</td>
</tr>
<tr>
<td>T1</td>
<td>Clinically inapparent tumor neither palpable nor visible by imaging</td>
</tr>
<tr>
<td>T1a</td>
<td>Tumor incidental histologic finding in 5% or less of tissue resected</td>
</tr>
<tr>
<td>T1b</td>
<td>Tumor incidental histologic finding in more than 5% of tissue resected</td>
</tr>
<tr>
<td>T1c</td>
<td>Tumor identified by needle biopsy (e.g., because of elevated PSA)</td>
</tr>
<tr>
<td>T2</td>
<td>Tumor confined within prostate*</td>
</tr>
<tr>
<td>T2a</td>
<td>Tumor involves one-half of one lobe or less</td>
</tr>
<tr>
<td>T2b</td>
<td>Tumor involves more than one-half of one lobe but not both lobes</td>
</tr>
<tr>
<td>T2c</td>
<td>Tumor involves both lobes</td>
</tr>
<tr>
<td>T3</td>
<td>Tumor extends through the prostate capsule**</td>
</tr>
<tr>
<td>T3a</td>
<td>Extracapsular extension (unilateral or bilateral)</td>
</tr>
<tr>
<td>T3b</td>
<td>Tumor invades seminal vesicle(s)</td>
</tr>
<tr>
<td>T4</td>
<td>Tumor is fixed or invades adjacent structures other than seminal vesicles such as external sphincter, rectum, bladder, levator muscles, and/or pelvic wall (Figure 41.1)</td>
</tr>
</tbody>
</table>

*Note: Tumor found in one or both lobes by needle biopsy, but not palpable or reliably visible by imaging, is classified as T1c.

**Note: Invasion into the prostatic apex or into (but not beyond) the prostatic capsule is classified not as T3 but as T2.
### Pathologic (pT)*

- **pT2**: Organ confined
- **pT2a**: Unilateral, one-half of one side or less
- **pT2b**: Unilateral, involving more than one-half of side but not both sides
- **pT2c**: Bilateral disease
- **pT3**: Extraprostatic extension
- **pT3a**: Extraprostatic extension or microscopic invasion of bladder neck**
- **pT3b**: Seminal vesicle invasion
- **pT4**: Invasion of rectum, levator muscles, and/or pelvic wall

*Note: There is no pathologic T1 classification.

**Note: Positive surgical margin should be indicated by an R1 descriptor (residual microscopic disease).
N Category

• Physician judgment may be used to assign cN0
  – Takes into account T category, PSA, Gleason
  – Nomograms indicate probability of nodal involvement
  – Pelvic CT or MRI only if certain criteria are met
  – NCCN guidelines on staging workup

• If no nodes removed with prostatectomy
  – Must assign pNX
  – If not T4 or M1, stage group cannot be assigned
N Category

**Regional Lymph Nodes (N)**

**Clinical**
- NX: Regional lymph nodes were not assessed
- N0: No regional lymph node metastasis
- N1: Metastasis in regional lymph node(s)

**Pathologic**
- pNX: Regional nodes not sampled
- pN0: No positive regional nodes
- pN1: Metastases in regional node(s)
M Category

• Important to assign subcategories
  – Even though stage group not affected
  – Critical to have M1a, M1b, M1c data
  – Data may lead to different stage groups in future

• M1c: other sites with/without bone disease
  – If only one site proven microscopically, still assign pM1c
  – Important to indicate there is microscopic evidence
**Distant Metastasis (M)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M0</td>
<td>No distant metastasis</td>
</tr>
<tr>
<td>M1</td>
<td>Distant metastasis</td>
</tr>
<tr>
<td>M1a</td>
<td>Nonregional lymph node(s)</td>
</tr>
<tr>
<td>M1b</td>
<td>Bone(s)</td>
</tr>
<tr>
<td>M1c</td>
<td>Other site(s) with or without bone disease</td>
</tr>
</tbody>
</table>

*Note:* When more than one site of metastasis is present, the most advanced category is used. pM1c is most advanced.
PSA and Gleason

• PSA measured pre-diagnosis
  – Any manipulation of prostate can raise PSA levels
  – Including digital rectal exam and biopsy

• Gleason histologic grade table in 7th edition
  – Gleason grading system not changed between 6th & 7th editions
  – Shows prognostic significance, and prognosis changed
  – Criteria for pathologist to assign Gleason grade did not change
  – Corresponds to cutpoints in stage group
  – [http://cancerbulletin.facs.org/forums/node/1150](http://cancerbulletin.facs.org/forums/node/1150)
Gleason

• Gleason score is recommended grading system
  – Accounts for inherent morphologic heterogeneity of prostate cancer
  – Primary and secondary patterns assigned
  – Patterns summed for Gleason score
  – Highest Gleason is used

• May be different for clinical and pathologic staging
  – Based on timeframes used for staging
  – Clinical: use biopsy or TURP, only information known at that time
  – Pathologic: all information used, highest of bx/TURP/prostatectomy
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
Case #1 – Diagnostic Workup

• History/Chief Complaint
  – 67-year-old male, elevated PSA of 6.1, six months prior was 5.2

• Physical Exam
  – Rectal: firm area involving prostate apex, predominantly on right

• Imaging
  – CT abdomen/pelvis: prostate moderately enlarged, indents bladder base, mild asymmetric soft tissue thickening along left posterolateral margin, several small nodes visualized in pelvis all non-pathologic by radiographic criteria
  – Bone scan: degenerative changes in thoracic spine

• Procedure
  – Transrectal ultrasound with biopsy: large hypoechoic lesion involving peripheral gland from mid portion extending to apex

• Pathology Report
  – Gleason Grade 3+3 prostatic adenocarcinoma in needle biopsy
Case #1 – Clinical Staging

• History
  – PSA 6.1

• Physical exam
  – Firm area on right

• Imaging
  – Prostate description doesn’t play a role in staging
  – No involvement of pelvic nodes

• Procedure
  – TRUS shows lesion in periphery of gland from mid portion to apex

• Pathology report
  – Gleason patterns 3+3, score 6
Case #1 – Clinical Staging Answer

• cT2a
  – Firm area right prostatic apex
  – Lesion in periphery, mid portion to apex
  – Describes less than half of right lobe

• cN0
  – Nodes not involved on imaging

• cM0
  – No signs or symptoms of mets

• PSA <10
  – 6.1

• Gleason 6

• Stage I
Case #1 – Treatment

• History/Chief Complaint
  – Admitted for surgery

• Operative Report
  – Radical Prostatectomy with bilateral pelvic lymph node dissection: right side prostate somewhat adherent because tumor was present on biopsies on this side, left side appeared to be no tumor involvement

• Pathology Report
  – Extensive Gleason Grade 3+4 prostatic adenocarcinoma. No evidence of capsular invasion by tumor. Seminal vesicle free of tumor. Margins negative. 0/8 right pelvic nodes, 0/4 left pelvic nodes. Benign right seminal vesicle.
Case #1 – Pathologic Staging

• Surgery
  – Patient had surgical resection qualifying for pathologic staging

• Clinical staging information
  – cT2a cN0 cM0 PSA <10 Gleason 6

• Operative report
  – Tumor on right side
  – No tumor on left side

• Pathology report
  – Gleason grade patterns 3+4, score 7
  – No capsular invasion
  – Margins negative does not play a role in staging
  – Seminal vesicles not involved
  – No pelvic nodes involved
Case #1 – Pathologic Staging Answer

- **pT2a**
  - Prostate did not show further involvement than clinical stage info
  - No invasion of capsule or seminal vesicles

- **pN0**
  - Pelvic nodes negative

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

- **PSA <20**
  - 6.1

- **Gleason 7**

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

• History/Chief Complaint
  – 69-year-old male with inability to void
  – Patient is s/p renal transplant as treatment of end-stage nephroarteriosclerosis

• Physical Exam
  – Rectal: normal, urinary retention secondary to BPH

• Procedure
  – Transurethral resection of prostate

• Pathology Report
  – Solitary small focus of well-differentiated, Gleason histologic pattern of 1 and 2, adenocarcinoma of prostate, involving only 1 of 25 fragments of prostate gland
Case #2 – Clinical Staging

• Physical exam
  – Normal DRE
  – Urinary retention due to BPH does not play a role in staging

• Procedure
  – TURP performed to relieve urinary retention
  – No description to play a role in staging

• Pathology report
  – Small focus of tumor
  – Gleason pattern 1+2, score 3
  – Involving 1 of 25 fragments, ~4%
Case #2 – Clinical Staging Answer

- **cT1a**
  - DRE normal, no cancer suspected
  - Incidental finding in 4% of TURP tissue fragments

- **cN0**
  - No reason to suspect nodal involvement

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

- **PSA X**
  - Not performed, cancer not suspected

- **Gleason 3**

- **Stage I**
Case #2 – Treatment

- Patient will not have surgical treatment
- Multiple health problems
- Low or very low risk group according to guidelines
- Treatment guidelines according to life expectancy
  - Observation
  - Active surveillance
Case #2 – Pathologic Staging

• No surgical treatment

• Patient does not qualify for pathologic staging
Case #2 – Pathologic Staging Answer

• No T, N, M, or stage group may be assigned

• All categories left blank – does not qualify for staging

• Stage group may be coded as 99 for cancer registries
Information and Questions on AJCC Staging
AJCC Web site

- https://cancerstaging.org

- Cancer Staging Education Registrar menu includes
  - Timing is Everything – stage classification timeframe graphic
  - Presentations
    - Self-study or group lecture materials
      - Registrar’s Guide to Chapter 1, AJCC Seventh Edition
      - Explaining Blanks and X, Ambiguous Terminology and Support for Staging
      - AJCC T, N, and M Category Options for Registry Data Items in 2016
  - AJCC Curriculum for Registrars
    - 4 free self-study modules of increasing difficulty on staging rules
      - Each modules consists of 7 lessons, including recorded webinar with quizzes
AJCC Web site

• https://cancerstaging.org

• Cancer Staging Education **Physician menu** includes
  – Articles
    • 18 articles on AJCC staging in various medical journals
  – Webinars
    • 14 free webinars on staging rules and some disease sites

• Cancer Staging Education **General menu** includes
  – Staging Moments
    • 15 case-based presentations in cancer conference format to promote accurate staging with answers and rationales
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 foraums/
Summary
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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