AJCC 7th Edition Staging Disease Site Webinar Colorectum

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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.
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

1. **Clinical - c**
   - Date of Diagnosis
   - Diagnostic Workup – phy exam, imaging, bx

2. **Pathologic – p**
   - Surgical Treatment
   - Pathology Report
     - Systemic or Radiation Therapy
     - Evaluation by imaging & physical exam

3. **Clinical - c**
   - Surgical Treatment
   - Pathology Report

4. **Posttherapy - yc**

5. **Posttherapy - yp**
Anatomy Affecting Stage
Colorectum Anatomy

Colorectum Anatomy

Rectosigmoid junction (C19.9)

Rectum (C20.9)

Colorectum Microscopic Anatomy

- Critical to understand tissue layers of colorectum

T1
Colorectum Regional Nodes

- Regional nodes for colorectum
Colorectum Regional Nodes

• Regional nodes are specific to
  – Colon segment
  – Rectosigmoid
  – Rectum

• Regional nodes named for arterial blood supply

• Reference AJCC 7th edition Colon and Rectum chapter
Classification Issues
Clinical and Pathologic Staging

• Clinical staging
  – Colonoscopy usually not sufficient to assign clinical stage
  – May be assigned with imaging information
  – Incidental findings at surgical resection not clinically staged

• Pathologic staging
  – Use clinical stage information together with
  – Operative findings and
  – Resection of tumor
Posttherapy Staging

• Neoadjuvant therapy is often used for rectal cases

• Pathologic staging – rectum
  – 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

- **TX is correctly assigned for many cases**
  - Colonoscopy does not provide tissue layer involvement

- **Potential direct involvement of other organs or structures**
  - cT4b: imaging shows adherent to other structures
  - pT4b: tumor found in adhesions on microscopic exam
  - pT1-4a: tumor not microscopically found in adhesions
    - Assign pT category based on microscopic anatomical depth of invasion
T Category

• Operative findings are part of pathologic stage
  – Surgeon sees T4b involvement but does not biopsy
  – Pathologist reports T3 since based on specimen received
  – Correct T category assignment is T4b

• Incidental finding at time of emergency surgery
  – No clinical stage may be assigned
  – All T, N, M categories are blank
  – Stage group may be coded as 99 for cancer registries
Primary Tumor (T)

<table>
<thead>
<tr>
<th>Category</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>Tis</td>
<td>Carcinoma in situ: intraepithelial or invasion of lamina propria*</td>
</tr>
<tr>
<td>T1</td>
<td>Tumor invades submucosa</td>
</tr>
<tr>
<td>T2</td>
<td>Tumor invades muscularis propria</td>
</tr>
<tr>
<td>T3</td>
<td>Tumor invades through the muscularis propria into pericolectal tissues</td>
</tr>
<tr>
<td>T4a</td>
<td>Tumor penetrates to the surface of the visceral peritoneum**</td>
</tr>
<tr>
<td>T4b</td>
<td>Tumor directly invades or is adherent to other organs or structures***</td>
</tr>
</tbody>
</table>

*Note: Tis includes cancer cells confined within the glandular basement membrane (intraepithelial) or mucosal lamina propria (intramucosal) with no extension through the muscularis mucosae into the submucosa.

**Note: Direct invasion in T4 includes invasion of other organs or other segments of the colorectum as a result of direct extension through the serosa, as confirmed on microscopic examination (for example, invasion of the sigmoid colon by a carcinoma of the cecum) or, for cancers in a retroperitoneal or subperitoneal location, direct invasion of other organs or structures by virtue of extension beyond the muscularis propria (i.e., respectively, a tumor on the posterior wall of the descending colon invading the left kidney or lateral abdominal wall; or a mid or distal rectal cancer with invasion of prostate, seminal vesicles, cervix, or vagina).

***Note: Tumor that is adherent to other organs or structures, grossly, is classified cT4b. However, if no tumor is present in the adhesion, microscopically, the classification should be pT1-4a depending on the anatomical depth of wall invasion. The V and L classifications should be used to identify the presence or absence of vascular or lymphatic invasion whereas the PN site-specific factor should be used for perineural invasion.
N Category

• Tumor deposits
  – N1c when regional nodes are not involved
  – Not part of N category if regional nodes are involved

• Clinical N
  – Must estimate number of nodes on imaging
  – Physician judgment
### Regional Lymph Nodes (N)

- **NX**: Regional lymph nodes cannot be assessed
- **N0**: No regional lymph node metastasis
- **N1**: Metastasis in 1–3 regional lymph nodes
- **N1a**: Metastasis in one regional lymph node
- **N1b**: Metastasis in 2–3 regional lymph nodes
- **N1c**: Tumor deposit(s) in the subserosa, mesentery, or nonperitonealized pericolic or perirectal tissues without regional nodal metastasis
- **N2**: Metastasis in four or more regional lymph nodes
- **N2a**: Metastasis in 4–6 regional lymph nodes
- **N2b**: Metastasis in seven or more regional lymph nodes

*Note*: A satellite peritumoral nodule in the pericolorectal adipose tissue of a primary carcinoma without histologic evidence of residual lymph node in the nodule may represent discontinuous spread, venous invasion with extravascular spread (V1/2), or a totally replaced lymph node (N1/2). Replaced nodes should be counted separately as positive nodes in the N category, whereas discontinuous spread or venous invasion should be classified and counted in the Site-Specific Factor category Tumor Deposits (TD).
M Category

• M1a – one organ or site
  – Includes paired organs such as lung and ovary

• M1b – more than one organ or site, or peritoneum
  – If only one site proven microscopically, still assign pM1b
  – Important to indicate there is microscopic evidence
**M Category**

*Distant Metastasis (M)*

- **M0**  No distant metastasis
- **M1**  Distant metastasis
- **M1a** Metastasis confined to one organ or site (e.g., liver, lung, ovary, nonregional node)
- **M1b** Metastases in more than one organ/site or the peritoneum
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
  – 54-year-old female with iron deficiency anemia

• Physical Exam
  – Abdomen: Flat, soft, and non-tender with suggestion of mass in right lower quadrant when examined in supine position

• Procedure
  – Colonoscopy: fungating non-obstructing large mass at ileocecal valve. Mass partially circumferential (involving one-third of lumen circumference). Measured 5 cm in length. No bleeding.

• Pathology Report
  – Moderately differentiated adenocarcinoma, colonoscopy biopsy.
Case #1 – Clinical Staging

• Physical exam
  – Suggestion of mass does not provide staging information

• Procedure
  – Description of tumor length and involving 1/3 of lumen circumference does not play a role in assigning stage

• Pathology report
  – Confirms cancer but does not provide staging information
Case #1 – Clinical Staging Answer

• cTX
  – No information in diagnostic workup provides info for T category

• cN0
  – Physician judgment may be used
  – Probability of nodal involvement based on primary lesion seen
  – Imaging ordered as deemed necessary

• cM0
  – No signs or symptoms of mets

• Stage unknown, cannot be assigned
Case #1 – Treatment

• History/Chief Complaint
  – 54-year-old female underwent a colonoscopy where fungating, non-obstructing large mass found at ileocecal valve and involved approximately $\frac{1}{2}$ of lumen. Biopsied and demonstrated a moderately differentiated adenocarcinoma.

• Operative Report
  – Right hemicolecotomy

• Pathology Report
  – Moderately differentiated adenocarcinoma with prominent mucin production extending through muscularis propria to extensively involve pericolic fat, right hemicolecotomy. All twenty lymph nodes are negative; metastatic tumor deposits in adjacent mesentary.
Case #1 – Pathologic Staging

• Surgery
  – Patient had right hemicolectomy

• Clinical staging information
  – cTX cN0 cM0

• Operative report
  – No significant findings

• Pathology report
  – Extends through muscularis propria
  – Extensively involves pericolic fat
  – Lymph nodes are negative
  – Tumor deposits in adjacent mesentery
Case #1 – Pathologic Staging Answer

• pT3
  – Involvement of pericolic tissue

• pN1c
  – Tumor deposits in mesentery without involvement of regional nodes

• cM0
  – No signs or symptoms of mets

• Stage III B
Case #2 – Diagnostic Workup

• History/Chief Complaint
  – Nausea, vomiting, abdominal pain, abdominal distension with history of rectal bleeding
  – CT scan a week ago shows stricture of distal descending colon and proximal sigmoid colon

• Physical Exam
  – Distended abdomen, tender in the RUQ, impression is large bowel obstruction

• Imaging
  – CT abd/pelvis: complete obstruction sigmoid colon with narrowed area and dilated colon
Case #2 – Clinical Staging

• No diagnosis of cancer

• Patient does not qualify for clinical staging
Case #2 – Clinical 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
Case #2 – Treatment

• History/Chief Complaint
  – Colon obstruction needing immediate surgery

• Operative Report
  – Sigmoid colectomy

• Pathology Report
  – Microscopic: circumferential 4.1 x 3 cm, tan-red, ulcerating lesion 3.5 cm from one margin, 11.5 cm from opposite margin, and 3.3 cm from radial resection margin
    Grossly invades into but not through muscularis propria
    16 lymph nodes identified within pericolonic fat
  – Final diagnosis: partial resection sigmoid colon – moderately differentiated adenocarcinoma, metastases to 2/16 regional nodes, and lymphovascular invasion.
Case #2 – Pathologic Staging

• Surgery
  – Patient had surgical resection qualifying for pathologic staging

• Clinical staging information
  – No clinical stage

• Operative report
  – No significant findings

• Pathology report
  – Invades into muscularis propria
  – Does not invade through muscularis propria
  – Margin status does not play a role in staging
  – Involvement of regional nodes
  – Lymphovascular invasion does not play a role in staging
Case #2 – Pathologic Staging Answer

• **pT2**
  – Invades into but not through muscularis propria

• **pN1b**
  – Involvement of two regional nodes

• **cM0**
  – No signs or symptoms of mets

• **Stage IIIA**
Information and Questions on AJCC Staging
• 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
• 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
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
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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