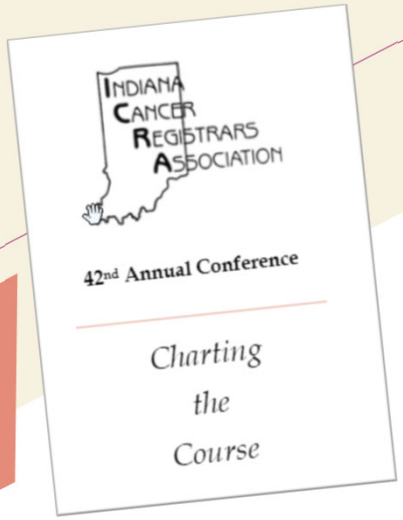

Abstracting Colon 2021

Jim Hofferkamp, CTR

NAACCR

Agenda

- Solid Tumor Rules & ICD-O Codes
- Anatomy
- Staging
- SSDIs
- Treatment

NAACCR

2

Colorectal Primaries: Solid Tumor Rules & ICD-O Codes

Important Changes for 2022

Lois Dickie, NCI SEER
Senior Editor, Solid Tumor Rules
Chair, NAACCR ICD-O Implementation Work Group

Topics

- ICD-O colorectal coding changes for 2022
- Colorectal Solid Tumor Rules- changes for 2022

ICD-O Colorectal Coding Changes for 2022

Important Changes for 2022

- Major changes apply to behavior code & reportable terminology
  - GI high grade dysplasias: WHO versus North America
    - Reportable/required sites: colorectal versus other GI
  - Change in reportability of LAMN

Low Grade Appendiceal Mucinous Neoplasm (LAMN)

- Both 5th Ed GI BB and ICD-O-3.2 list LAMN as 8480/1
- 5th Ed GI BB suggests these neoplasms be staged as Tis
- AJCC petitioned the standard setters asking LAMN be required/reportable as /2
  - **Approved by NAACCR MLTG for cases diagnosed 1/1/2022 forward**
- **Issues with this change:**
- High grade appendiceal mucinous neoplasm (HAMN) also coded 8480/2
- Both LAMN and HAMN can be malignant with widespread disease making it 8480/3
  - A diagnosis of LAMN or HAMN does not require the pathology report state the tumor is comprised of greater than 50% mucinous

Per the 2022 NAACCR Implementation Guidelines:

- Low-grade appendiceal mucinous neoplasm (LAMN) now has a behavior of /2 and /3 making it reportable. LAMNs are slow-growing neoplasms that have the potential for peritoneal spread and can result in patient death. LAMNs demonstrate an interesting biology in that they do not have hematogenous dissemination risk, but risk for appendiceal perforation, which can result in peritoneal dissemination, repeated recurrences after surgery and even death.
- /2 = Tis(LAMN) confined by muscularis propria (T1-T2 are not used for LAMN), and such lesions are designated as Tis
- /3 = T3-T4 extending into subserosa or serosa
- The ICD-O Committee and authors of the WHO Classification of Tumors of the Digestive System, 5th Edition agreed to issue a corrigenda as follows:
  - 8480/2 Low-grade appendiceal mucinous neoplasm
  - 8480/2 High-grade appendiceal mucinous neoplasm
  - 8480/3 Appendiceal mucinous neoplasm with extra-appendiceal spread

LAMN, cont'd

- The following updates have been made to Colorectal Solid Tumor Rules for 2022:
  - New section in T&D: ***Important Changes for 2022***
  - Table 1: added LAMN/HAMN with coding notes (basic)
  - Table 2 (non-reportable): added reportable dates for LAMN
  - New H rule to address LAMN/HAMN

Reportable vs. Non-reportable High-Grade Dysplasia in GI Sites

ICD-O code	Term	Required	Remarks
8144/2	Intestinal-type adenoma, high grade **C160-C166; C168-C169; C170-C173; C178-C179**	Y	Reportable for stomach & small intestines **ONLY beginning 1/1/2022**
8210/2	Adenomatous polyps, high grade dysplasia **C160-C166; C168-C169; C170-C173; C178-C179**	Y	Reportable for stomach & small intestines **ONLY beginning 1/1/2022**
8211/2	Tubular adenoma, high grade	N see remarks	Term is NOT reportable in the US. CCCR requires these cases be reported for stomach & small intestines
8213/2	Serrated dysplasia, high grade **C160-C166; C168-C169; C170-C173; C178-C179**	Y	Reportable for stomach & small intestines **ONLY beginning 1/1/2022**

10

Reportable vs. Non-reportable High-Grade Dysplasia in GI Sites

ICD-O code	Term	Required	Remarks
8261/2	Villous adenoma, high grade	N	Term is NOT reportable in the US. CCCR requires these cases be reported for stomach & small intestines
8263/2	Tubulovillous adenoma, high grade	N	Term is NOT reportable in the US. CCCR requires these cases be reported for stomach & small intestines

11

2022 ICD-O-3.2 Documents

- SEER website: https://seer.cancer.gov/icd-o-3/
- NAACCR: https://www.naaccr.org/icdo3/
- ICD-O questions can be submitted to Ask A SEER Registrar

Due to internal staffing issues, IARC/WHO ICD-O-3 committee does not have an ETA for pdf version of 3.2

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12

Colorectal Solid Tumor Rules-2022 Changes

Colorectal Solid Tumor Updates

- Timing changes to rules M7 and M8: The timing for subsequent tumors at the anastomosis has changed from 24 months to 36 months. The change is effective for cases diagnosed beginning 1/1/2022 forward. For cases diagnosed 1/1/2018 through 12/31/2021, the timing rule remains at 24 months.
- Rectal Stump added to M7 and M8
- Low grade appendiceal neoplasm (LAMN) will become reportable effective for cases diagnosed 1/1/2022 forward. LAMN may be either in situ 8480/2 or malignant 8480/3 based on physician statement of behavior. LAMN diagnosed prior to 1/1/2022 are not reportable.
  - Notes have been added to Tables 1 & 2 to support the reporting of LAMN
- Non-reportable high-grade dysplasias added to Table 2

14

Colorectal Solid Tumor Updates- New H rule

H5 Code low grade appendiceal mucinous neoplasm (LAMN) and high grade appendiceal mucinous neoplasm (HAMN) 8480/2 when:

- Diagnosis date is 1/1/2022 forward **AND**
- Behavior is stated to be in situ/non-invasive **OR**
- Behavior is not indicated
- ***Note 1***: ICD-O-3.2 lists LAMN with behavior of /1. WHO 5th Ed Digestive Systems Tumors indicates this neoplasm is considered in situ. After consulting with WHO Digestive System editors, College of American pathologists, and AJCC GI chapter experts, the standard setting organizations have agreed LAMN should be collected and assigned a behavior code of /2 beginning with cases diagnosed 1/1/2022 forward.
- ***Note 2:*** A diagnosis of LAMN or HAMN does not require the tumor be comprised of greater than 50% mucinous in order to be coded
- ***Note 3***: If the pathologist indicates LAMN or HAMN is invasive or has a malignant behavior, continue through the rules.

15

Current Solid Tumor Activities

- Meetings with College of American Pathologists (CAP) Cancer Committee members to discuss M rules for specific sites: breast, GI, and lung
- Under development: site specific histology tables to accompany Other sites rules until new rules are created:
  - Prostate
  - Esophagus
  - Stomach
  - Small Intestines
  - Anus
  - Liver/intrahepatic bile ducts
  - Gall Bladder/extrahepatic bile ducts

16

Release of 2022 Solid Tumor Rules Update

- Posted to 9/17/2021 to https://seer.cancer.gov/tools/solidtumor/
- Announcement sent via SEER Registrars list serv and NAACCR list serv:

Important changes to reportable neoplasms in colorectal sites has been added to the colon rules. In order to simplify histology coding instructions, a histology rule was added to address these neoplasms. These updates ***do not*** require review of already abstracted cases. **We strongly recommend you read the September 2021 Change Log to understand what changes were made.**

The September 2021 Update includes changes that apply to cases diagnosed January 1, 2022, and after. The editors recommend that until these changes are implemented, registrars continue using the current Solid Tumor Rules, updated December 2020, for cases diagnosed from January 1, 2018, through 12/31/2021.

17

Questions?

- Submit questions related to Solid Tumor Rules and/or ICD-O Update to:
- Ask A SEER Registrar: https://seer.cancer.gov/registrars/contact.html
  - Make sure to include dates, primary site and relevant pathology report(s)

Agenda

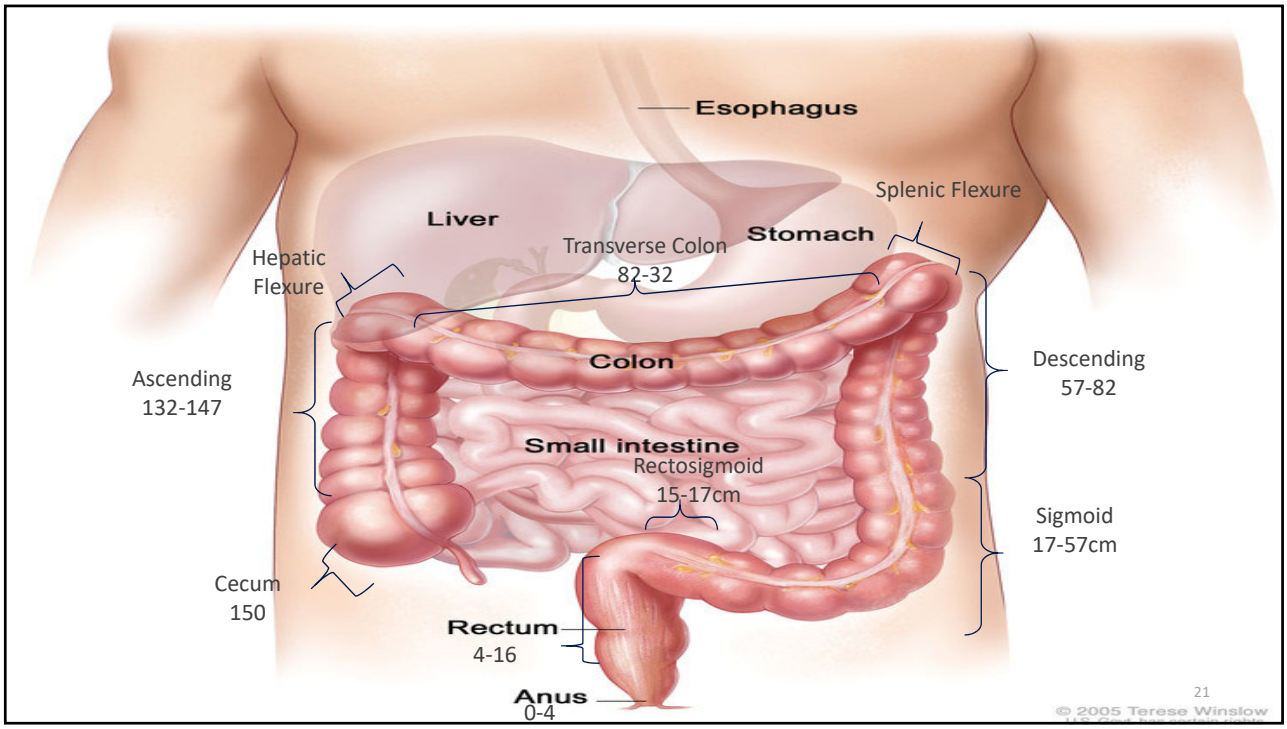
- Anatomy
- Staging AJCC vs Summary Stage 2018
- SSDI's
- Treatment

19

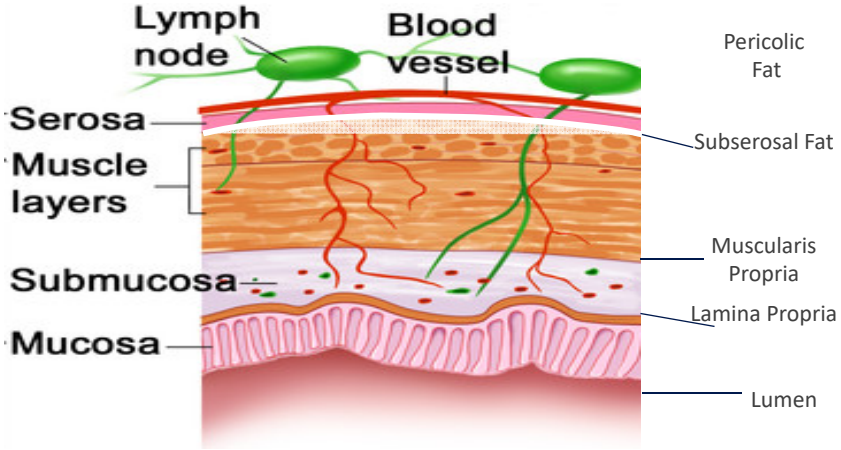
Anatomy

Colon and Rectum

20



Layers of the Colon



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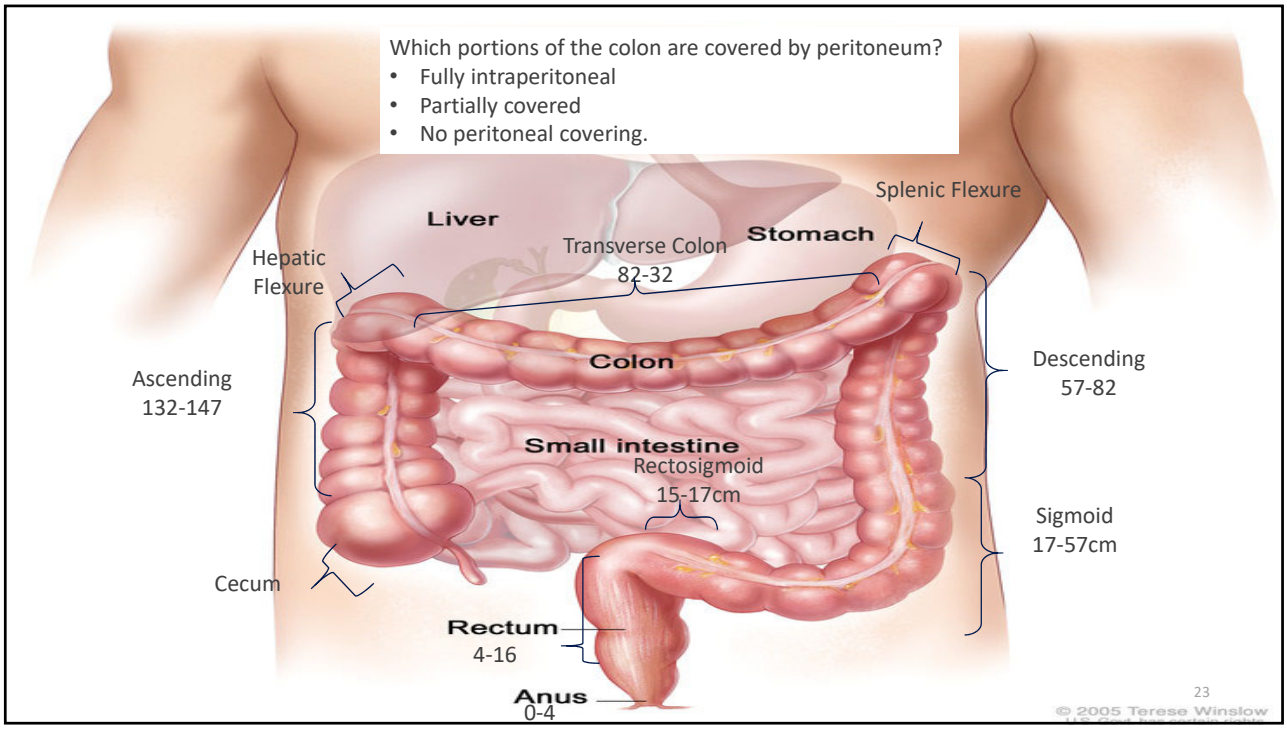
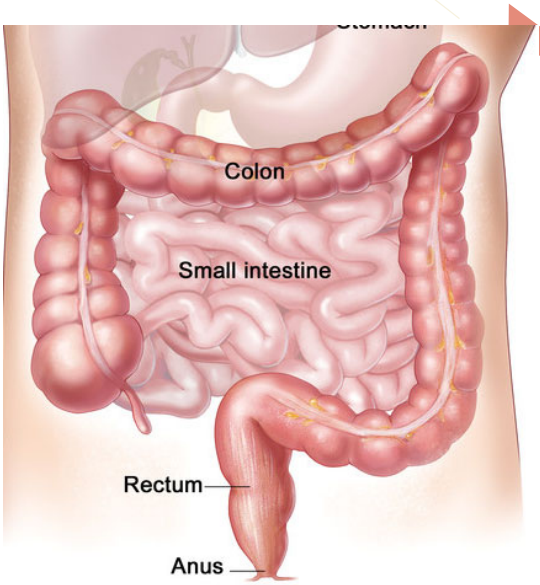
22



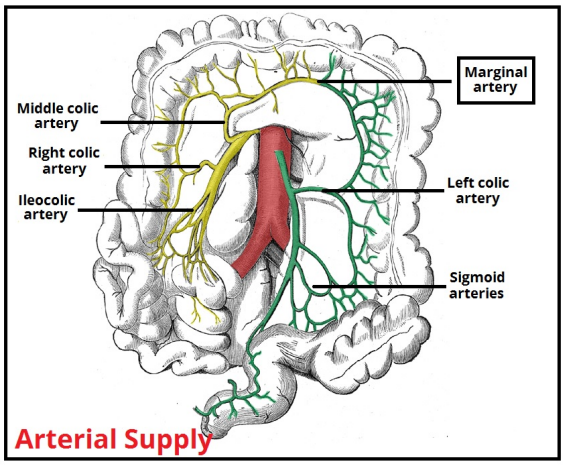
Peritoneum/Serosa

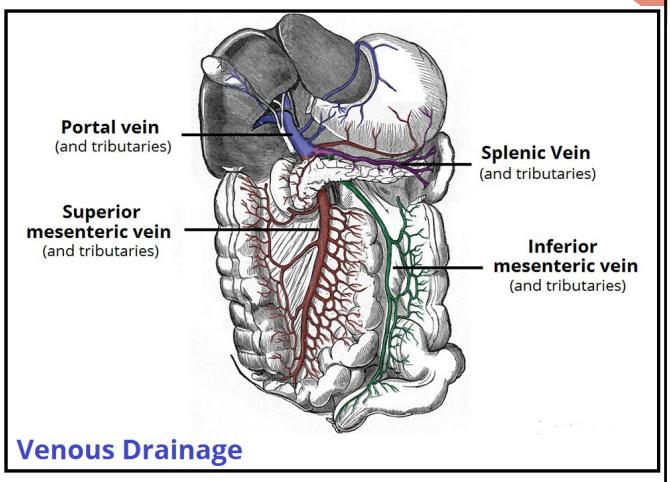
- Cecum
  - Fully covered
- Ascending Colon
  - Posterior not covered
- Transverse
  - Fully covered
- Descending
  - Posterior not covered
- Sigmoid
  - Fully covered
- Rectum
  - Upper 2/3 partial
  - lower 1/3 not covered



24

Colon Blood Supply

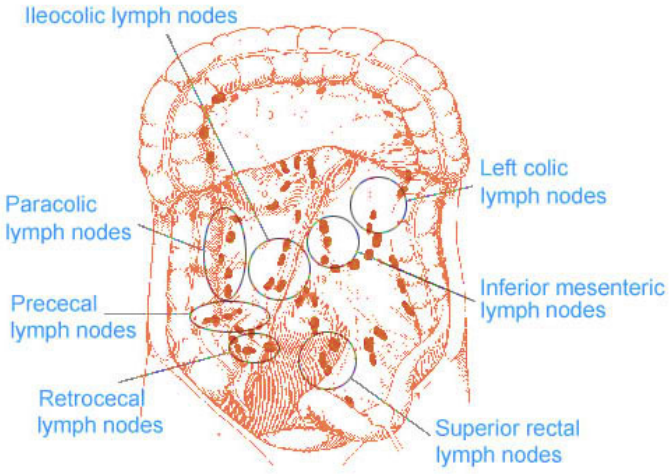




http://teachmeanatomy.info/abdomen/gi-tract/colon/

Regional Lymph Nodes

- Refer to the AJCC Staging Manual for a list of regional lymph nodes



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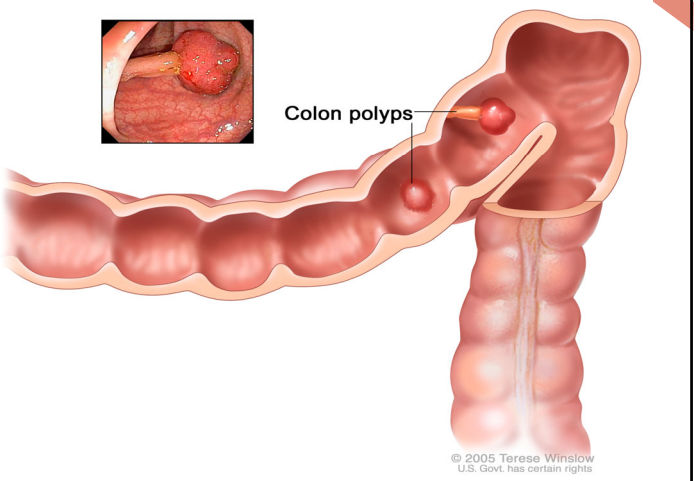
Pre-Cancerous Conditions

- Adenomatous polyps (adenomas)
- Hyperplastic polyps
- Dysplasia



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Polyps: Diagnosis vs. Treatment

Replacement Slide

- Sessile polyp
  - Colonoscopy bx is usually diagnostic, incomplete resection, cTX
  - Surgical resection is treatment, pT
- Pedunculated polyp
  - Colonoscopy snare polypectomy is treatment, pT
  - No diagnosis prior to snare, therefore no clinical stage assigned
- General guideline for polyp removal during colonoscopy
  - Incomplete resection – cTNM
  - Complete resection of polyp, treatment – pTNM
  - Not dependent on margins, but on purpose/intent of resection

https://register.gotowebinar.com/register/5907569701808644100

11

Staging

SEER Summary Stage 2018 vs

AJCC 8th Edition

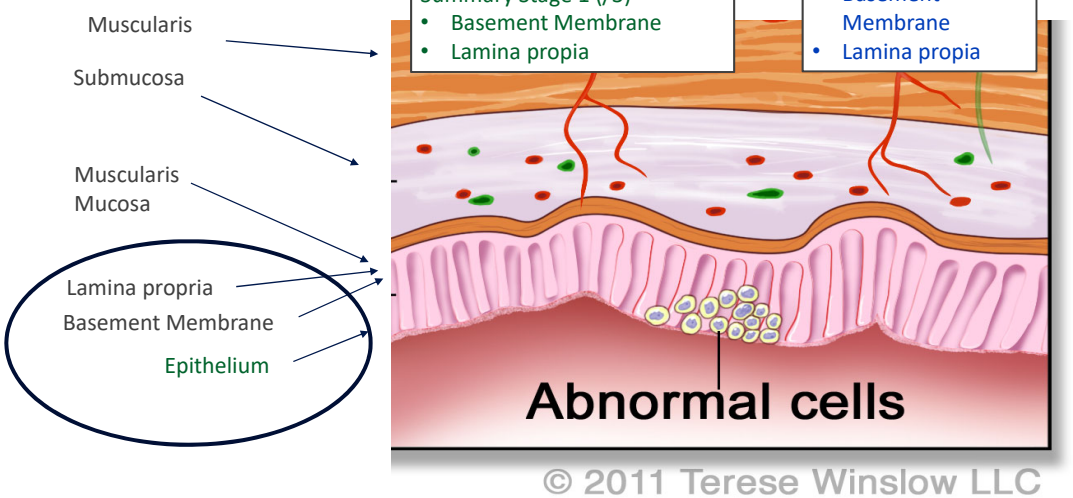
29

Summary Stage 2018 In Situ-0 AJCC Tis

Summary Stage 0 (/2)
- Epithelium

Summary Stage 1 (/3)
- Basement Membrane
- Lamina propia

Tis (/2 or /3) includes:
- Epithelium
- Basement Membrane
- Lamina propia



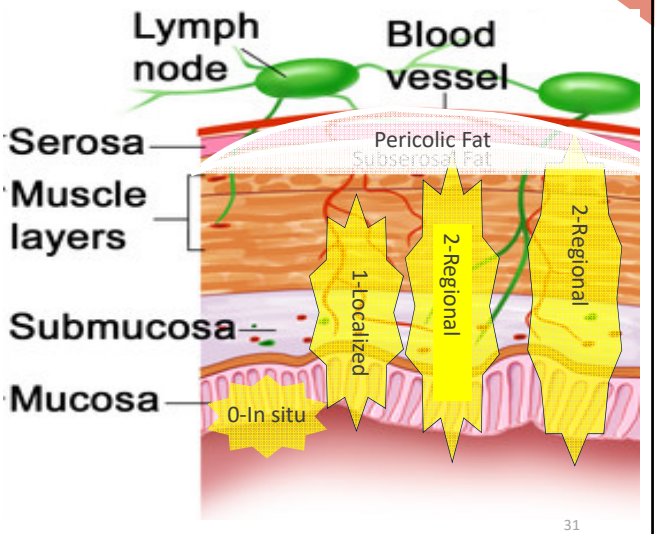
Summary Stage 2018

1- Localized

- Invasive tumor confined to:
  - Intramucosal NOS
  - Lamina propria
  - Mucosa NOS
  - Muscularis mucosae
  - Muscularis propria
  - Perimuscular tissue invaded
  - Polyp NOS
  - Submucosa
  - **Subserosal tissue/fat**
  - Transmural NOS
  - Wall NOS

2-Regional by Direct Ext

- All colon sites
  - Invasion of/through **serosa**
  - Extension into/through:
    - Abdominal wall
    - Adjacent tissue NOS
    - Small intestine
    - Pericolic fat
      - Fat outside of the serosa
      - If no sersosa, outside of the colon wall (muscle)



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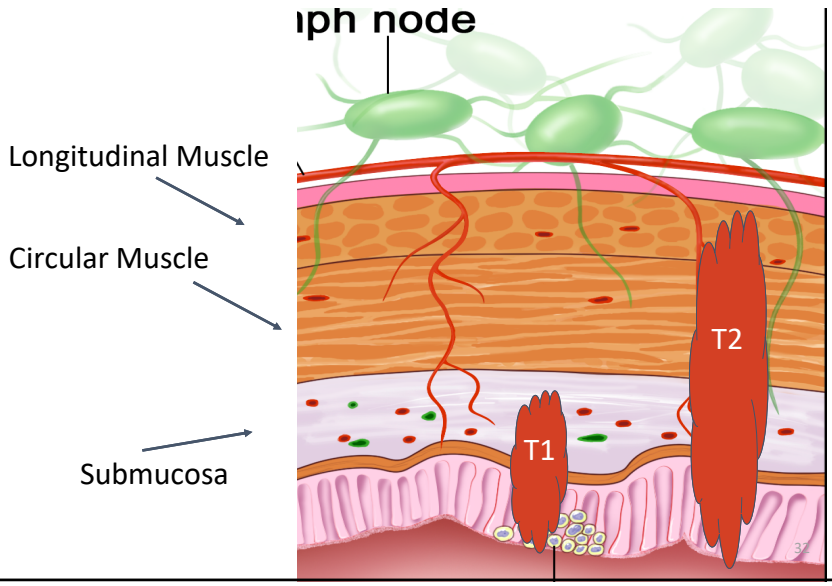
31

Confined to the Colon Wall

- Invasion into, but not through the submucosa
- Invasion into, but not through the muscularis



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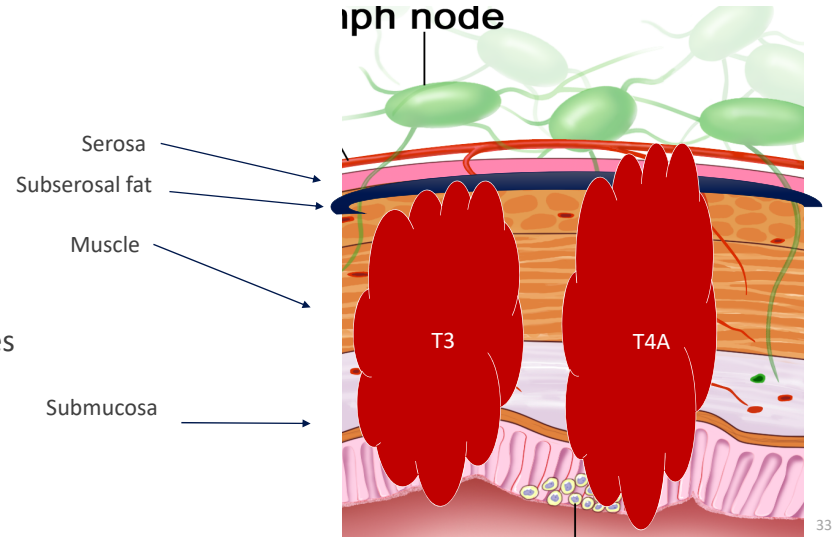
Through the Musculature

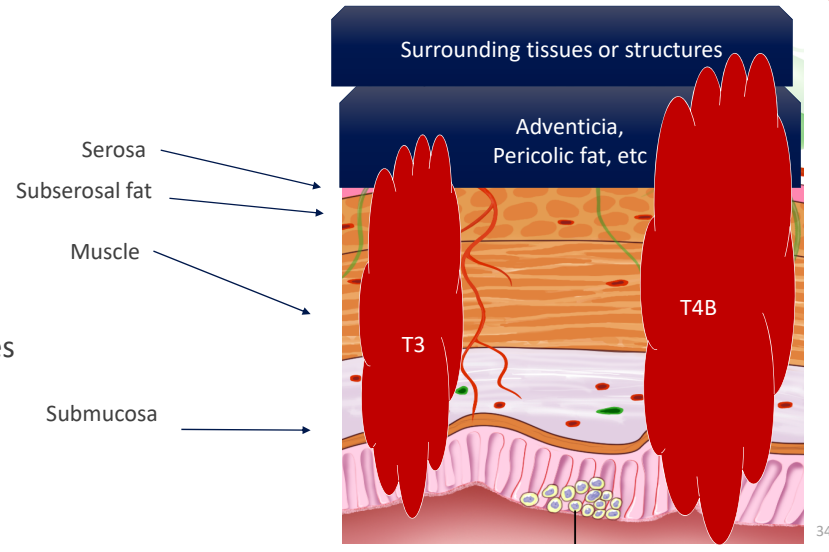
- Invasion through the muscularis
  - No involvement of the serosa
  - No involvement of adjacent organs or structures
- Invasion into the serosa with no involvement of other sites and structures



33

Through the Musculature

- Invasion through the muscularis
  - No involvement of the serosa
  - No involvement of adjacent organs or structures
- Invasion into the serosa with no involvement of other sites and structures

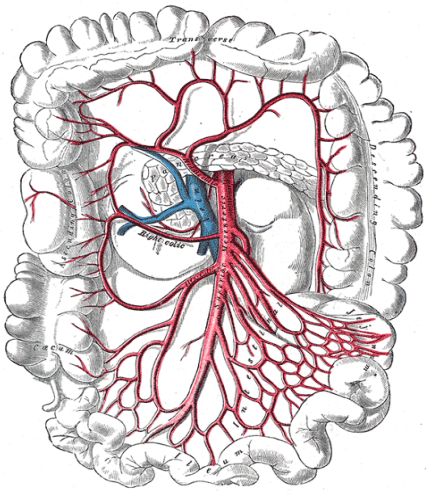


34

Regional to Lymph Nodes (3)

- All colon subsites:
  - Colic NOS,
  - Epicolic
  - Mesenteric NOS
  - Paracolic/pericolic
  - Regional lymph nodes NOS
- By colon subsite

- Distant lymph nodes
  - All colon subsites:
    - Para-aortic, retroperitoneal, superior mesenteric, other distant

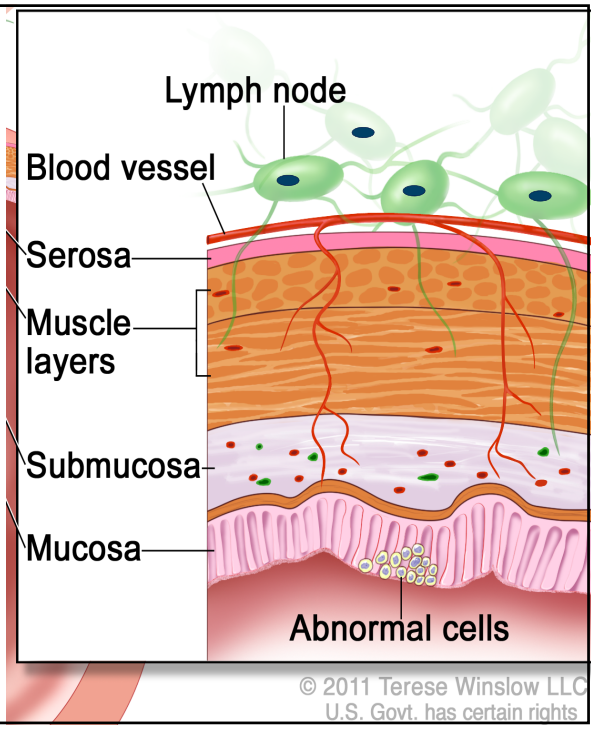


By The original uploader was Nephron at English Wikipedia - Transferred from en.wikipedia to Commons by FSII using CommonsHelper., Public Domain, https://commons.wikimedia.org/w/index.php?curid=17480420

AJCC-Number of Lymph Nodes

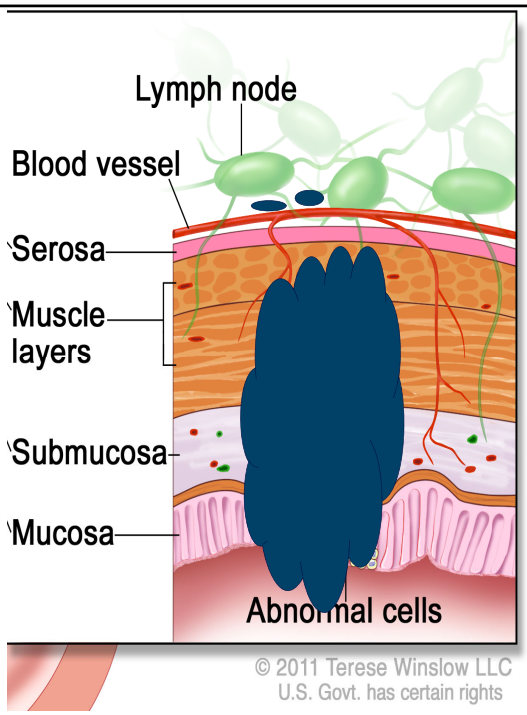
- Must be able to determine if 1-3 nodes were involved or if 4 or more nodes involved.
  - If you cannot differentiate between 1-3 or 4 or more, then blank
  - If you know 3 or fewer, assign N1 and you may be able to assign a stage group
  - If you know more than 4 lymph nodes are involved but you cannot differentiate between 4-6 and 7 or more, assign N2 and you may be able to assign a stage group

See stage table on page 155



Tumor Deposits (TD)

- Deposits of tumor away from the primary tumor, but within the regional lymphatic drainage area that do not show any evidence of lymph node tissue.
  - TD's do not change the T value.
  - If no positive lymph nodes, code TD as N1c.
  - If TD's are present and lymph nodes found to be positive, code N based on number of positive lymph nodes.



Pop Quiz

- A patient had a segmental resection. The pathology report showed 5 tumor deposits in the pericolic tissue adjacent to the to primary tumor and 1 lymph node with metastasis.
  - What is the pN data item?

pN1a

Can only assign N1c if all nodes are negative.

Pop Quiz

- A patient presents with a recent history of anemia.
  - A colonoscopy is done and shows adenocarcinoma in the transverse colon.
  - A CT shows the tumor has perforated the colon wall and extended into the surrounding tissue, but does not appear to involve any surrounding structures or organs.
  - Also, noted are numerous malignant appearing regional lymph nodes.
  - No indication of distant mets.

Data Item	Value
Clinical T	cT4a
Clinical N	Blank
Clinical M	cM0
Clinical Stage	99

Pop Quiz

- The patient went on to have a hemicolectomy.
  - The pathology showed the primary tumor invaded through the colon wall, the visceral peritoneum and into surrounding tissue.
  - 26 lymph nodes were removed and 13 were found to be malignant.

Data Item	Value
Clinical T	**cT4a**
Clinical N	**Blank**
Clinical M	**cM0**
Clinical Stage	**99**
Pathologic T	**PT4a**
Pathologic N	**pN2b**
Pathologic M	**cM0**
Pathologic Stage	**3C**
Summary Stage	**4**

SSDIs

41

CEA-Pretreatment

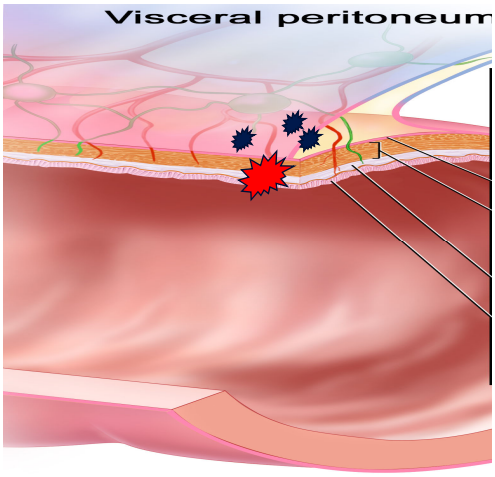
- Lab Value
  - Record to the nearest tenth in nanograms/milliliter (ng/ml) the highest CEA lab value documented in the medical record **prior to treatment or polypectomy.**
  - **Coding "greater than" or "less than"**
    - **Code to the next highest or lowest available value**
      - **CEA >10 would be coded to 10.1**
      - **CEA <10 would be coded to 9.9**

Code	Description
0.0	0.0 nanograms/milliliter (ng/ml) exactly
0.1-9999.9	0.1-9999.9 ng/ml (Exact value to nearest tenth in ng/ml)
XXXX.1	10,000 ng/ml or greater
XXXX.7	Test ordered, results not in chart
XXXX.8	Not applicable: Information not collected for this case (If this information is required by your standard setter, us
XXXX.9	Not documented in medical record CEA (Carcinoembryonic Antigen) Pretreatment Lab Valu

42

Tumor Deposits

- Tumor deposits are defined as one or more satellite peritumoral nodules in the pericolorectal adipose tissue of a primary carcinoma without histologic evidence of residual lymph node in the nodule."
- Record the number of Tumor Deposits whether or not there are positive lymph nodes.
  - Important to know if 1-4 TD vs 5 or more



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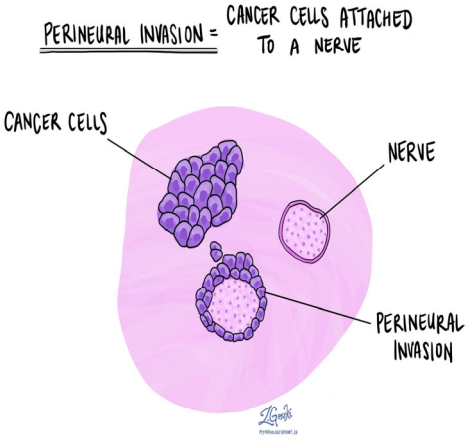
43

Perineural Invasion

- Code the presence or absence of perineural invasion by the primary tumor as documented in the pathology report.
- Information on **presence** of perineural invasion can be taken from either a biopsy or resection.
- **Absence** of perineural invasion can only be taken from a surgical resection pathology report.

Code	Description
0	Perineural invasion not identified/not present
1	Perineural invasion identified/present



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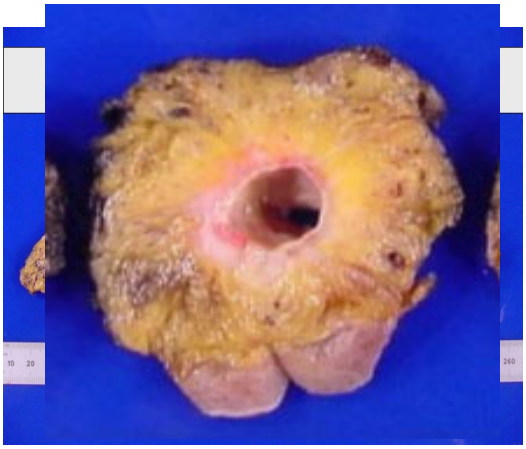
Circumferential Resection Margin (CRM)

- Distance of invasive carcinoma from the closest margin.
  - Predictor of local recurrence in rectal primaries.
  - Sometimes documented for colon primaries.
- Measured in mm's
  - CRM of 3.17cm's.
    - Code 31.7
- Rounding
  - CRM of 7.26mm's
    - Code 7.3



https://www.slideshare.net/ESOSLIDES/cervantes-colorectal-cancer-eso-course2011

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45

CRM

- May also be referred to as…
  - Radial resection margin
  - Circumferential radial margin
  - Mesenteric margin
- May be coded after neoadjuvant treatment

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46

KRAS

- Can be used to determine response to certain types of treatment
- KRAS can be based on tissue from primary tumor, nodes, or metastasis.

Code	Description
0	Normal (wild type) Negative for mutations
1	Abnormal (mutated) in codon(s) 12, 13 and/or 61
2	Abnormal (mutated) in codon 146 only
3	Abnormal (mutated), but not in codon(s) 12, 13, 61, or 146
4	Abnormal (mutated), NOS, codon(s) not specified
7	Test ordered, results not in chart
8	Not applicable: Information not collected for this case (If this information is required by your standard setter, use of code 8 may result in an edit error.)
9	Not documented in medical record KRAS not assessed or unknown if assessed

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47

NRAS (2021+)

- NRAS may be recorded for all stages; however, it is primarily performed for patients with metastatic disease. If information is not available, code 9.
- NRAS is a gene which belongs to a class of genes known as oncogenes. When mutated, oncogenes have the potential to cause normal cells to become cancerous. Studies suggest that NRAS gene mutations are often present in colorectal cancer.

Code	Description
0	Normal NRAS negative; NRAS wild type Negative for (somatic) mutations, no alterations, no (somatic) mutations identified, not present, not detected
1	Abnormal (mutated)/detected in codon(s) 12, 13, and/or 61
2	Abnormal (mutated)/detected, codon(s) specified but not in codon(s) 12, 13, or 61
4	Abnormal (mutated), NOS, codon(s) not specified
7	Test ordered, results not in chart

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48

BRAF (2021+)

- BRAF V600E is a specific mutation (change) in the BRAF gene, which makes a protein that is involved in sending signals in cells and in cell growth.
- This BRAF gene mutation is found in colorectal cancer. It may increase the growth and spread of cancer cells.

Code	Description
0	Normal BRAF negative, BRAF wild type Negative for (somatic) mutations, no alterations, no (somatic) mutations identified, not present, not detected
1	Abnormal (mutated)/detected: BRAF V600E (c.1799T>A) mutation
2	Abnormal (mutated)/detected, but not BRAF V600E (c.1799T>A) mutation
4	Abnormal (mutated), NOS
7	Test ordered, results not in chart
8	Not applicable: Information not collected for this case (If this information is required by your standard setter, use of code 8 may result in an edit error.)
9	Not documented in medical record BRAF not assessed or unknown if assessed

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49

Microsatellite Instability (MSI)

- Mismatch Repair (MMR) may also be coded in this data item.
- These are two tests that can identify patients with Lynch Syndrome (hereditary nonpolyposis colorectal cancer (HNPCC))

Code	Description
0	Microsatellite instability (MSI) stable; microsatellite stable (MSS); negative, NOS AND/OR Mismatch repair (MMR) intact, no loss of nuclear expression of MMR proteins
1	MSI unstable low (MSI-L)
2	MSI unstable high (MSI-H) AND/OR MMR-D (loss of nuclear expression of one or more MMR proteins, MMR protein deficient)
8	Not applicable: Information not collected for this case (If this information is required by your standard setter, use of code 8 may result in an edit error.)
9	Not documented in medical record MSI-indeterminate Microsatellite instability not assessed or unknown if assessed

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CAP: Colon and Rectum Biomarker Reporting

RESULTS
Mismatch Repair (Note A)
+Immunohistochemistry (IHC) Testing for Mismatch Repair (MMR) Proteins (select all that apply)
___ MLH1
+MLH1 Result
___ Intact nuclear expression
___ Loss of nuclear expression
___ Cannot be determined (explain): _____
___ MSH2
+MSH2 Result
___ Intact nuclear expression
___ Loss of nuclear expression
___ Cannot be determined (explain): _____
___ MSH6
+MSH6 Result
___ Intact nuclear expression
___ Loss of nuclear expression
___ Cannot be determined (explain):

BRAF (Note B)
+BRAF Cytoplasmic Expression (by immunohistochemistry) (Note B)
___ Positive
___ Negative
___ Cannot be determined (explain): _____

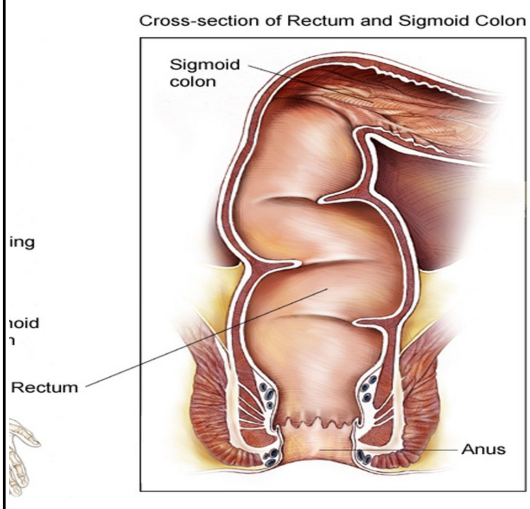
+BRAF Mutational Analysis
___ No mutations detected
___ BRAF V600E (c.1799 T>A) mutation
___ Other BRAF mutation identified (specify): _____
___ Cannot be determined (explain): _____

+BRAF Mutations Assessed (select all that apply)
___ V600E
___ Other BRAF V600 mutation (specify): _____
___ Other (specify): _____

KRAS (Note C)
+KRAS Mutational Analysis
___ No mutation detected
___ Mutation(s) identified
+Codon 12
___ Gly12Asp (GGT>GAT)
___ Gly12Val (GGT>GTT)

NAACCR https://documents.cap.org/protocols/ColoRectal.Bmk_1.3.0.0.REL_CAPCP.pdf 51

Macroscopic Evaluation of the Mesorectum (2022+)



Code	Label
00	Patient did not receive TME
10	Incomplete TME
20	Nearly Complete
30	Complete TME
40	TME performed not specified on pathology report as incomplete, nearly complete, or complete TME performed but pathology report not available Physician statement that TME performed, no mention of incomplete, nearly complete or complete status
99	UNKNOWN if TME performed
BLANK	Site not rectum (C20.9)

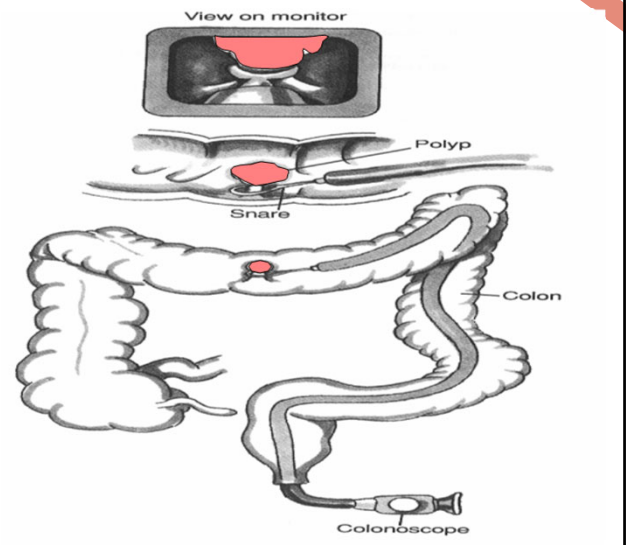
52

Treatment

53

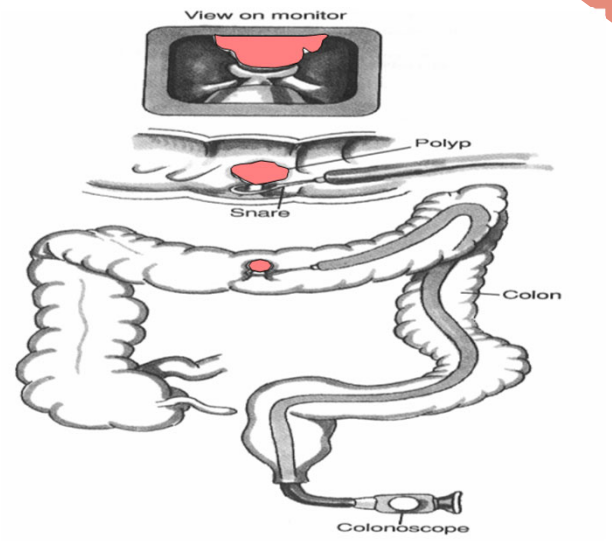
Colonoscopy

- Colonoscopy with biopsy
  - Diagnostic/Staging Procedure
- Colonoscopy with polypectomy
  - Surgical procedure
- The area that is biopsied is often tattooed for future reference



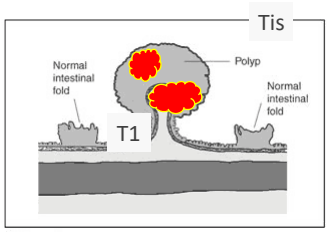
Clinical Staging

- Endoscopic ultrasound
  - Can be used to determine the depth of invasion
  - Can be used to assess the status of regional lymph nodes
- MRI
  - Can be used to assess depth of invasion
  - Can be used to assess status of regional lymph nodes.



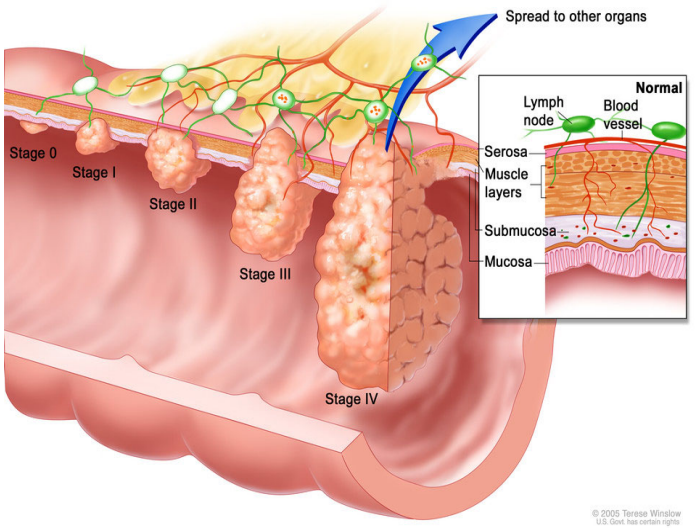
Treatment for Polyps

- Polypectomy may be only treatment necessary if…
  - Tis or T1
  - Grade 1 or 2
  - No lymph-vascular invasion
  - Negative surgical margins
- Sessile polyps may require additional surgery even with favorable histologic features



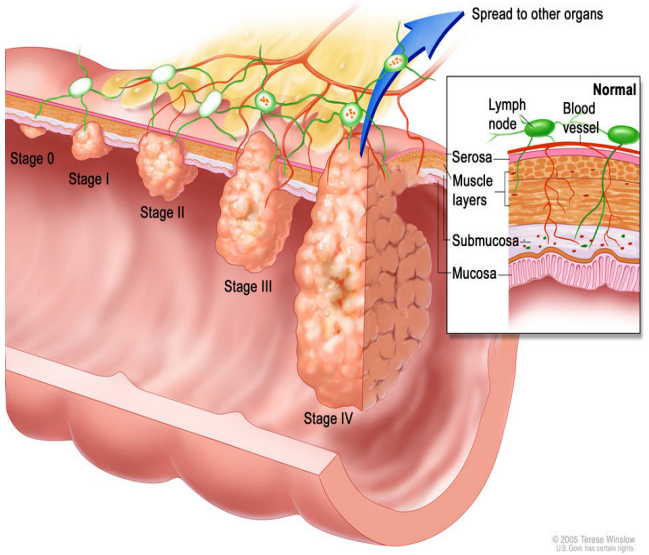
Treatment-Colon or Rectum

- Tis, T1 or T2 with no further mets (Stage 1)
  - Surgery
    - Open
    - Laparoscopic
  - Surveillance



Treatment-Colon

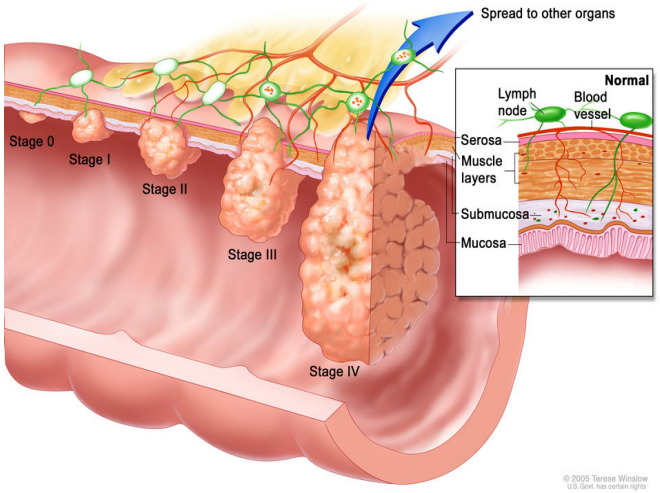
- Low-risk stage II Surgery
  - Possibly chemotherapy
  - Surveillance
- High risk stage II
  - Surgery (If resectable)
  - Chemotherapy
  - Surveillance



58

Stage II Poor Prognostic Features

- T4A or T4B
- Histologic grade 3 or 4
- Lymphvascular invasion (LVI)
- Perineural invasion
- Bowel obstruction
- Lesions with perforation
- Close or positive surgical margins
- Inadequate lymph node sampling (fewer than 12 lymph nodes)

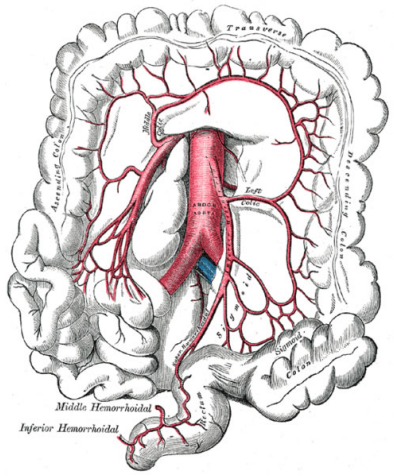


Treatment Colon

- Stage III (lymph nodes positive, but no distant mets)
  - Surgery
  - Chemotherapy
    - 5-fu/leucovorin/oxaliplatin
- Stage IV
  - Surgery of the colon primary with resection of liver or lung mets.
  - Neoadjuvant chemotherapy followed by surgery to the colon and to the liver or lung
  - If unresectable, chemotherapy.
    - Reassessment for surgical candidacy after 2 months.

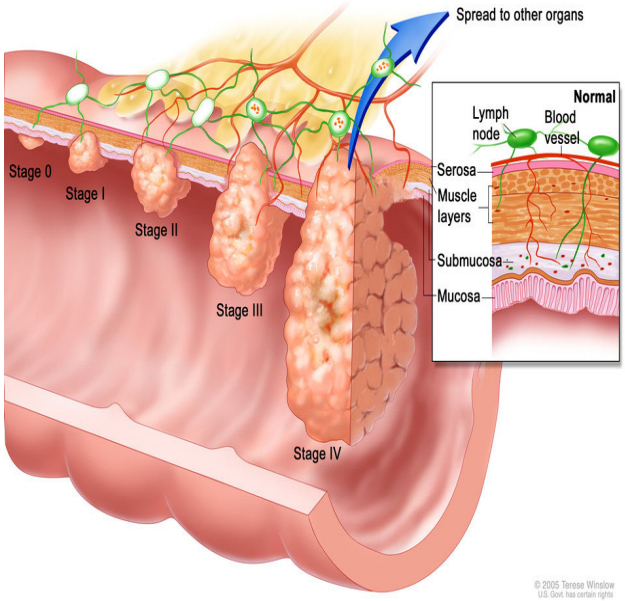
Surgical Procedures-Colon

- Polypectomy
  - Endoscopic
  - Surgical Excision
- Partial/ Segmental Resection
- Hemicolectomy
- Colectomy



Treatment-Rectum

- cT3 or cN1-2
  - Neoadjuvant radiation and /or neoadjuvant chemo
  - Resection
  - Adjuvant chemo
- cT4 or distant mets
  - Neoadjuvant radiation and /or neoadjuvant chemo
  - Resection (if resectable)
  - Adjuvant chemo



Neoadjuvant Treatment-Rectum

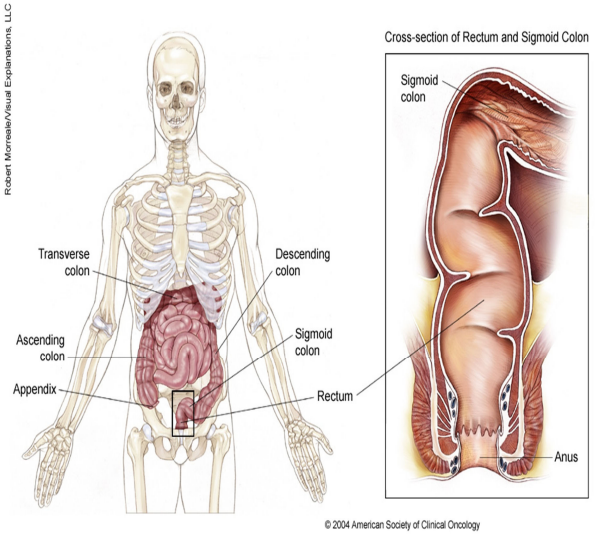
- Chemotherapy/ Radiation
  - 5-fu and radiation therapy
    - Radiation to the tumor, pre sacral nodes and internal iliac nodes.
- Surgery
  - May be 5-10 weeks after completion of chemo/radiation.

Adjuvant Chemotherapy

- 5-fu and leucovorin
- FOLFOX

Surgical Resection-Rectum

- Transanal Endoscopic Microsurgery (TEM)
- Low Anterior Resection (LAR)
  - Performed for lesions in the rectum and rectosigmoid 4-5cm from the anal verge
  - Total Mesorectal Excision (TME)
  - Coloanal anastomosis
- Abdominoperitoneal Resection (APR)



Questions?

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Thank you!

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