Small Intestine

Protocol applies to all invasive carcinomas of the small intestine, including those with focal endocrine differentiation. Excludes carcinoid tumors, lymphomas, and stromal tumors (sarcomas).

Protocol revision date: January 2004
Based on AJCC/UICC TNM, 6th edition

Procedures

- **Cytology** (No Accompanying Checklist)
- **Incisional Biopsy** (No Accompanying Checklist)
- **Polypectomy**
- **Segmental Bowel Resection**
- **Whipple Resection (Pancreaticoduodenectomy, Partial or Complete, With or Without Partial Gastrectomy)**

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Surgical Pathology Cancer Case Summary (Checklist)

Protocol revision date: January 2004
Applies to invasive carcinomas only
Based on AJCC/UICC TNM, 6th edition

SMALL INTESTINE: Polypectomy, Segmental Resection, Whipple Resection (Pancreaticoduodenectomy, Partial or Complete, With or Without Partial Gastrectomy)

Patient name:
Surgical pathology number:

Note: Check 1 response unless otherwise indicated.

MACROSCOPIC

Specimen Type
___ Polypectomy
___ Segmental resection
___ Whipple resection
___ Other (specify): _____
___ Not specified

Tumor Site
___ Duodenum
___ Jejunum
___ Ileum
___ Not specified

***Tumor Configuration**
*___ Exophytic (polypoid)
*___ Infiltrative
*___ Ulcerating
*___ Other (specify): _____

Tumor Size
Greatest dimension: ___ cm
*Additional dimensions: ___ x ___ cm
___ Cannot be determined (see Comment)

Other Organs Received
___ None
Specify: _____

* Data elements ***with asterisks*** are ***not required*** for accreditation purposes for the Commission on Cancer. These elements may be clinically important, but are not yet validated or regularly used in patient management. Alternatively, the necessary data may not be available to the pathologist at the time of pathologic assessment of this specimen.

MICROSCOPIC

Histologic Type

___ Adenocarcinoma (not otherwise characterized)
___ Mucinous adenocarcinoma (greater than 50% mucinous)
___ Signet-ring cell carcinoma (greater than 50% signet-ring cells)
___ Small cell carcinoma
___ Squamous cell carcinoma
___ Adenosquamous carcinoma
___ Medullary carcinoma
___ Undifferentiated carcinoma
___ Mixed carcinoid-adenocarcinoma
___ Other (specify): _____
___ Carcinoma, type cannot be determined

Histologic Grade

___ Not applicable
___ GX: Cannot be assessed
___ G1: Well differentiated
___ G2: Moderately differentiated
___ G3: Poorly differentiated
___ G4: Undifferentiated
___ Other (specify): _____

Pathologic Staging (pTNM)

Primary Tumor (pT)

___ pTX: Cannot be assessed
___ pT0: No evidence of primary tumor
___ pTis: Carcinoma in situ
___ pT1: Tumor invades lamina propria or submucosa
___ pT2: Tumor invades muscularis propria
___ pT3: Tumor invades through the muscularis propria into the subserosa or the nonperitonealized perimuscular tissue with extension of 2 cm or less
___ pT4: Tumor perforates the visceral peritoneum or directly invades other organs or structures

Regional Lymph Nodes (pN)

___ pNX: Cannot be assessed
___ pN0: No regional lymph node metastasis
___ pN1: Metastasis in regional lymph nodes
Specify: Number examined: ___
Number involved: ___

Distant Metastasis (pM)

___ pMX: Cannot be assessed
___ pM1: Distant metastasis

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*Specify site(s), if known: _____

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Margins (check all that apply)

Polypectomy Specimens Only

Mucosal Margin
___ Cannot be assessed
___ Uninvolved by carcinoma
___ Involved by carcinoma
___ Involved by adenoma

Deep Margin
___ Cannot be assessed
___ Uninvolved by carcinoma
Distance of carcinoma from margin: ___ mm
___ Involved by carcinoma

Segmental Resection or Pancreaticoduodenectomy (Whipple)

Proximal (Small Bowel or Stomach) Margin
___ Cannot be assessed
___ Uninvolved by invasive carcinoma
___ Involved by invasive carcinoma
___ Carcinoma in situ/adenoma absent at proximal margin
___ Carcinoma in situ/adenoma present at proximal margin
___ Carcinoma in situ/adenoma not applicable (gastric margin)

Distal (Bowel) Margin
___ Cannot be assessed
___ Uninvolved by invasive carcinoma
___ Involved by invasive carcinoma
___ Carcinoma in situ/adenoma absent at distal margin
___ Carcinoma in situ/adenoma present at distal margin

Circumferential/Radial (Mesenteric or Retroperitoneal) Margin
___ Cannot be assessed
___ Uninvolved by invasive carcinoma
___ Involved by invasive carcinoma

Bile Duct Margin
___ Not applicable
___ Cannot be assessed
___ Margin uninvolved by invasive carcinoma
___ Margin involved by invasive carcinoma

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Pancreatic Margin
___ Not applicable
___ Cannot be assessed
___ Margin uninvolved by invasive carcinoma
___ Margin involved by invasive carcinoma

If margins are uninvolved:
Distance of invasive carcinoma from closest margin: ___ mm *OR* ___ cm
*Specify margin (if possible): _____

***Venous/Lymphatic (Large/Small Vessel) Invasion (V/L)**
*___ Absent
*___ Present
*___ Indeterminate

***Perineural Invasion**
*___ Absent
*___ Present
*___ Indeterminate

***Additional Pathologic Findings (check all that apply)**
*___ None identified
*___ Adenoma(s)
*___ Crohn disease
*___ Celiac disease
*___ Epithelial dysplasia
*___ Other polyps (type[s]): _____
*___ Other (specify): _____

***Comment(s)**

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Background Documentation

Protocol revision date: January 2004

I. Cytologic Material

A. Clinical Information

1. Patient identification
    a. Name
    b. Identification number
    c. Age (birth date)
    d. Sex
2. Responsible physician(s)
3. Date of procedure
4. Other clinical information
    a. Relevant history (Note **A**)
    b. Relevant findings (eg, endoscopic/imaging studies)
    c. Clinical diagnosis
    d. Procedure (eg, fine-needle aspiration [FNA], scraping, brushing)
    e. Operative findings
    f. Anatomic sites (eg, duodenum, jejunum, ileum: endoscopic distance)

B. Macroscopic Examination

1. Specimen
    a. Description
    b. Type (cell block, slides, cytospins, fluids, other)
    c. Unfixed/fixed (specify fixative)
    d. Number of slides received
    e. Quantity and appearance of fluid specimen
    f. Other (eg, tissue received for cytologic preparation)
    g. Results of intraprocedural consultation (Note **B**)
2. Material submitted for microscopic evaluation (eg, smear, cytocentrifuge, touch or filter preparation, cell block)
3. Special studies (specify) (Note **C**)

C. Microscopic Evaluation

1. Adequacy of specimen (if unsatisfactory for evaluation, specify reason)
2. Tumor, if present
    a. Histologic type, if possible (Note **D**)
    b. Histologic grade, if possible (Note **E**)
    c. Other descriptive information (eg, hemorrhage, necrosis)
3. Additional pathologic findings, if present
4. Special studies (Note **C**)
5. Comments
    a. Correlation with intraprocedural consultation, as appropriate
    b. Correlation with other specimens, as appropriate
    c. Correlation with clinical information, as appropriate

II. Incisional Biopsy
(Endoscopic or Other)

A. Clinical Information

1. Patient identification
    a. Name
    b. Identification number
    c. Age (birth date)
    d. Sex
2. Responsible physician(s)
3. Date of procedure
4. Other clinical information
    a. Relevant history (Note **A**)
    b. Relevant findings (eg, endoscopic/imaging studies)
    c. Clinical diagnosis
    d. Procedure (eg, endoscopic biopsy)
    e. Operative findings
    f. Anatomic sites (eg, duodenum, jejunum, ileum: endoscopic distance)

B. Macroscopic Examination

1. Specimen(s)
    a. Tissues submitted
    b. Unfixed/fixed (specify fixative)
    c. Number of pieces
    d. Dimensions
    e. Descriptive features (eg, color, consistency, configuration)
    f. Layers of bowel, if discernible
    g. Results of intraoperative consultation
2. Tissues submitted for microscopic evaluation
    a. All biopsy material
    b. Frozen section tissue fragment(s)
3. Special studies (specify) (eg, histochemistry, immunohistochemistry [designate each antibody], morphometry, DNA analysis [specify type], electron microscopy, cytogenetic analysis) (Note **C**)

C. Microscopic Evaluation

1. Tumor
    a. Histologic type (Note **D**)
    b. Histologic grade (Note **E**)
    c. Extent of invasion (Note **F**)
    d. Venous/lymphatic vessel invasion
2. Additional pathologic findings, if present
    a. Benign neoplasms
    b. Dysplasia
    c. Crohn disease
    d. Celiac disease
    e. Other(s)
2. Results/status of special studies (specify)
3. Comments
    a. Correlation with intraoperative consultation, as appropriate
    b. Correlation with other specimens, as appropriate
    c. Correlation with clinical information, as appropriate

III. Excisional Biopsy
(Local Excision, Polypectomy)

A. Clinical Information
1. Patient identification
   a. Name
   b. Identification number
   c. Age (birth date)
   d. Sex
2. Responsible physician(s)
3. Date of procedure
4. Other clinical information
   a. Relevant history (Note **A**)
   b. Relevant findings (eg, endoscopic/imaging studies)
   c. Clinical diagnosis
   d. Procedure (eg, polypectomy)
   e. Operative findings
   f. Anatomic sites (eg, duodenum, jejunum, ileum: endoscopic distance)

B. Macroscopic Examination
1. Specimen
   a. Tissue(s) submitted
   b. Unfixed/fixed (specify fixative)
   c. Number of pieces
   d. Dimensions
   e. Descriptive features (eg, color, consistency, configuration)
   f. Orientation, if designated by surgeon
   g. Results of intraoperative consultation
2. Tissue submitted for microscopic evaluation
   a. Coronal section of polyp(s) through resection margin or stalk, if applicable
   b. All other tissue from polypectomy specimen(s)
   c. Frozen section tissue fragment(s)
3. Special studies (specify) (eg, histochemistry, immunohistochemistry, morphometry, DNA analysis [specify type], cytogenetic analysis) (Note **C**)

C. Microscopic Evaluation
1. Tumor
   a. Histologic type (Note **D**)
   b. Histologic grade (Note **E**)
   c. Depth of invasion, as appropriate (Note **F**)
   d. Venous/lymphatic vessel invasion
   e. Interface with adjacent normal mucosa
   f. Distance (millimeters) between tumor and closest margin(s)
2. Additional pathologic findings, if present
   a. Benign neoplasms
   b. Dysplasia
   c. Crohn disease
   d. Celiac disease
   e. Other(s)
3. Other tissue(s)/organ(s)
4. Results/status of special studies (specify) (Note **C**)

5. Comments
    a. Correlation with intraoperative consultation, as appropriate
    b. Correlation with other specimens, as appropriate
    c. Correlation with clinical information, as appropriate

IV. Segmental Resection

A. Clinical Information

1. Patient identification
    a. Name
    b. Identification number
    c. Age (birth date)
    d. Sex
2. Responsible physician(s)
3. Date of procedure
4. Other clinical information
    a. Relevant history (Note **A**)
    b. Relevant findings (eg, endoscopic/imaging studies)
    c. Clinical diagnosis
    d. Procedure (eg, distal ileal resection)
    e. Operative findings
    f. Anatomic sites (eg, duodenum, jejunum, ileum)

B. Macroscopic Examination

1. Specimen
    a. Organ(s)/tissue(s) submitted
    b. Previously opened
    c. Unfixed/fixed (specify fixative)
    d. Number of pieces
    e. Dimensions (length, circumference)
    f. Descriptive characteristics (eg, thickness of bowel wall in abnormal areas)
    g. Orientation (if designated by surgeon)
    h. Results of intraoperative consultation
2. Tumor
    a. Location
    b. Configuration (Note **G**)
    c. Size (3 dimensions)
    d. Descriptive features (eg, color, consistency, hemorrhage)
    e. Relationship to mesenteric border
    f. Ulceration
    g. Obstruction/perforation
    h. Proximal dilatation
    i. Depth of invasion (layers of bowel present at lesion site, if discernible)
    j. Status of overlying serosa
    k. Extension to other organ(s)/structure(s)
3. Margins (Note **H**)
    a. Proximal
    b. Distal
    c. Mesenteric (radial), if applicable
4. Regional lymph nodes (Note **B**)
5. Additional pathologic findings, if present

   a. Adenomatous polyps (polyposis syndrome)
   b. Hamartomatous polyps (polyposis syndrome)
   c. Crohn disease
   d. Celiac disease
   e. Other
6. Metastasis to other organ(s) or structure(s) (specify)
7. Tissues submitted for microscopic evaluation
   a. Tumor
      (1) point of deepest penetration
      (2) overlying serosa
      (3) interface with adjacent tissue
      (4) interface with uninvolved adjacent bowel
   b. Margins (as appropriate) (Note **H**)
   c. All lymph nodes
   d. Other lesions (eg, polyps, ulcers, fistulas)
   e. Section(s) of bowel uninvolved by tumor
   f. Other tissue(s)/organ(s)
   g. Frozen section tissue fragment(s)
8. Special studies (specify) (eg, histochemistry, immunohistochemistry, morphometry, DNA analysis [specify type], cytogenetic analysis) (Note **C**)

C. Microscopic Evaluation

1. Tumor
   a. Histologic type (Note **D**)
   b. Histologic grade (Note **E**)
   c. Depth of invasion (Note **F**)
   d. Venous/lymphatic vessel invasion
2. Margins (Note **H**)
   a. Proximal
   b. Distal
   c. Mesenteric (radial), as indicated
3. Additional pathologic findings, if present
   a. Adenoma(s)
   b. Other types of polyps
   c. Dysplasia
   d. Crohn disease
   e. Celiac disease
   f. Other
4. Regional lymph nodes
   a. Number
   b. Number with metastases
5. Metastasis to other organ(s) or structure(s) (specify sites)
6. Other tissue(s)/organ(s)
7. Results/status of special studies (specify) (Note **C**)
8. Comments
   a. Correlation with intraoperative consultation, as appropriate
   b. Correlation with other specimens, as appropriate
   c. Correlation with clinical information, as appropriate

V. Whipple Resection
(Pancreaticoduodenectomy, Partial or Complete, With or Without Partial Gastrectomy)

A. Clinical Information

1. Patient identification
   a. Name
   b. Identification number
   c. Age (birth date)
   d. Sex
2. Responsible physician(s)
3. Date of procedure
4. Other clinical information
   a. Relevant history (Note **A**)
   b. Relevant findings (eg, endoscopic/imaging studies)
   c. Clinical diagnosis
   d. Operative findings

B. Macroscopic Examination

1. Specimen
   a. Organ(s)/tissue(s) included (specify)
   b. Unfixed/fixed (specify fixative)
   c. Dimensions (measure attached tissues individually)
   d. Orientation
   e. Results of intraoperative consultation
2. Tumor
   a. Location
   b. Configuration (Note **G**)
   c. Size
   d. Descriptive features (eg, color, consistency, necrosis, hemorrhage)
   e. Estimated extent of invasion
3. Margins
4. Regional lymph nodes (Note **B**)
5. Additional pathologic findings, if present
6. Tissues submitted for microscopic evaluation
   a. Carcinoma, including
      (1) points of deepest penetration of surrounding structures
      (2) points of closest approach to margins
      (3) interface of tumor with adjacent tissues
   b. Ampulla of Vater
   c. Margins (Note **H**)
      (1) proximal (gastric or duodenal)
      (2) distal (duodenal)
      (3) posterior pancreatic surface (deep radial margin)
      (4) distal (duodenal) distal pancreas
      (5) common bile duct
   d. All lymph nodes
      (1) regional
      (2) non-regional
   e. Duodenum uninvolved by tumor
   f. Other tissue(s)/organ(s)

   g. Frozen section tissue fragment(s) (unless saved for special studies)
7. Special studies (specify) (eg, histochemistry, immunohistochemistry, electron microscopy) (Note **C**)

C. Microscopic Evaluation

1. Tumor
   a. Histologic type (Note **D**)
   b. Histologic grade (Note **E**)
   c. Extent of invasion (Note F)
   d. Venous/lymphatic vessel invasion
   e. Perineural invasion
2. Margins (Note **H**)
   a. Proximal (gastric or duodenal)
   b. Distal (duodenal)
   c. Posterior pancreatic surface (deep radial margin)
   d. Distal (duodenal) distal pancreas
   e. Common bile duct
3. Regional lymph nodes
   a. Number
   b. Number with metastases
4. Distant metastasis (specify site)
5. Additional pathologic findings, if present
   a. Adenoma(s)
   b. Other types of polyps
   c. Dysplasia
   d. Crohn disease
   e. Celiac disease
   f. Gastritis
   g. Other
6. Other tissue(s)/organ(s)
7. Results/status of special studies (specify) (Note **C**)
8. Comments
   a. Correlation with intraoperative consultation, as appropriate
   b. Correlation with other specimens, as appropriate
   c. Correlation with clinical information, as appropriate

Explanatory Notes

A. Relevant History

Conditions that predispose to small bowel malignancy include Crohn disease, celiac disease, inherited polyposis syndromes (including familial adenomatous polyposis, hereditary non-polyposis colon cancer and Peutz-Jeghers syndromes). Prior surgery for benign or malignant tumors, weight change, or change in body habitus are also relevant.

B. Intraoperative Consultation

Evaluation of specimens during the performance of a procedure, such as immediate evaluation of a cytologic aspirate or the intraoperative gross or microscopic examination, should be documented. The sampling of the tissue should be documented in the macroscopic evaluation, and the findings of such examination should be

documented in the final report, including correlation with the final pathologic diagnosis or impression. Discrepancies, if any, should be explained in the report.

C. Special Procedures

Special procedures may include: immunohistochemical stains, histochemical stains, electron microscopy, flow cytometry, cytogenetic studies, etc. If such studies are performed in different laboratories, either interinstitutional or intrainstitutional, the responsible laboratory should be stated.

D. Histologic Type

For tumors of the small intestine, the protocol recommends the histologic classification published by the World Health Organization (WHO).[1]

WHO Classification of Small Intestinal Carcinoma

Adenocarcinoma
Mucinous adenocarcinoma (greater than 50% mucinous)
Signet-ring cell carcinoma (greater than 50% signet-ring cells)[#]
Small cell carcinoma[##]
Squamous cell carcinoma
Adenosquamous carcinoma
Medullary carcinoma
Undifferentiated carcinoma[##]
Mixed carcinoid-adenocarcinoma
Other (specify)

[#] By convention, signet-ring cell carcinoma is always assigned grade 3 (see Note **E**).

[##] By convention, small cell carcinoma and undifferentiated carcinoma are assigned grade 4 (see Note **E**).

The term carcinoma, NOS (not otherwise specified) is not part of the WHO classification. This protocol does not apply to carcinoid tumors, lymphoma, or stromal tumors (sarcomas) of the small intestine.

E. Histologic Grade

A histologic grading system for adenocarcinomas based on the extent of glandular formation in the tumor is recommended as shown below.

Grade X	Grade cannot be assessed
Grade 1	Well differentiated (more than 95% of tumor composed of glands)
Grade 2	Moderately differentiated (50% to 95% of tumor composed of glands)
Grade 3	Poorly differentiated (less than 50% of tumor composed of glands)

The specific definitions of the histologic grades listed above are as follows.

Grade 1	Well differentiated adenocarcinomas are composed entirely of glands or have less than 5% of solid or cord-like growth patterns.
Grade 2	Carcinomas that are moderately differentiated have from 5% to 50% solid or cord-like growth patterns.

Grade 3 Poorly differentiated carcinomas have more than 50% of solid or cord-like growth patterns.

Grade 4 is reserved for small cell carcinoma and undifferentiated carcinoma (WHO classification).

F. TNM and Stage Groupings

Surgical resection is the most effective therapy for small intestinal carcinoma, and the best estimation of prognosis is related to the anatomic extent (stage) of disease at the time of resection.

The protocol recommends the TNM staging system of the American Joint Committee on Cancer (AJCC) and the International Union Against Cancer (UICC), but does not preclude the use of other staging systems.[2-4]

By AJCC/UICC convention, the designation "T" refers to a primary tumor that has not been previously treated. The symbol "p" refers to the pathologic classification of the TNM, as opposed to the clinical classification, and is based on gross and microscopic examination. pT entails a resection of the primary tumor or biopsy adequate to evaluate the highest pT category, pN entails removal of nodes adequate to validate lymph node metastasis, and pM implies microscopic examination of distant lesions. Clinical classification (cTNM) is usually carried out by the referring physician before treatment during initial evaluation of the patient or when pathologic classification is not possible.

Pathologic staging is usually performed after surgical resection of the primary tumor. Pathologic staging depends on pathologic documentation of the anatomic extent of disease, whether or not the primary tumor has been completely removed. If a biopsied tumor is not resected for any reason (eg, when technically unfeasible) and if the highest T and N categories or the M1 category of the tumor can be confirmed microscopically, the criteria for pathologic classification and staging have been satisfied without total removal of the primary cancer.

Primary Tumor (T)

TX Primary tumor cannot be assessed
T0 No evidence of primary tumor
Tis Carcinoma in situ
T1 Tumor invades lamina propria or submucosa
T2 Tumor invades the muscularis propria
T3 Tumor invades through the muscularis propria into the subserosa or into the nonperitonealized perimuscular tissue (mesentery or retroperitoneum[#]) with extension 2 cm or less
T4 Tumor perforates the visceral peritoneum or directly invades other organs or structures (includes other loops of small intestine, mesentery, or retroperitoneum more than 2 cm, and the abdominal wall by way of the serosa; for the duodenum only, includes invasion of the pancreas)

[#] The non-peritonealized perimuscular tissue is, for the jejunum and ileum, part of the mesentery and, for the duodenum, in areas where serosa is lacking, part of the retroperitoneum.

Regional Lymph Nodes (N)

NX	Regional lymph nodes cannot be assessed
N0	No regional lymph node metastasis[#]
N1	Regional lymph node metastasis

[#] Regional Lymph Nodes (pN0): Isolated Tumor Cells
Isolated tumor cells (ITCs) are single cells or small clusters of cells not more than 0.2 mm in greatest dimension. Lymph nodes or distant sites with ITCs found by either histologic examination, immunohistochemistry, or nonmorphologic techniques (eg, flow cytometry, DNA analysis, polymerase chain reaction [PCR] amplification of a specific tumor marker) should be classified as N0 or M0, respectively. Specific denotation of the assigned N category is suggested as follows for cases in which ITCs are the only evidence of possible metastatic disease.[5,6]

pN0	No regional lymph node metastasis histologically, no examination for isolated tumor cells (ITCs)
pN0(i-)	No regional lymph node metastasis histologically, negative morphologic (any morphologic technique, including hematoxylin-eosin and immunohistochemistry) findings for ITCs
pN0(i+)	No regional lymph node metastasis histologically, positive morphologic (any morphologic technique, including hematoxylin-eosin and immunohistochemistry) findings for ITCs
pN0(mol-)	No regional lymph node metastasis histologically, negative nonmorphologic (molecular) findings for ITCs
pN0(mol+)	No regional lymph node metastasis histologically, positive nonmorphologic (molecular) findings for ITCs

Distant Metastasis (M)

MX	Distant metastasis cannot be assessed
M0	No distant metastasis
M1	Distant metastasis

Stage Groupings

Stage 0	Tis	N0	M0
Stage I	T1	N0	M0
	T2	N0	M0
Stage II	T3	N0	M0
	T4	N0	M0
Stage III	Any T	N1	M0
Stage IV	Any T	Any N	M1

TNM Descriptors
For identification of special cases of TNM or pTNM classifications, the “m” suffix and “y,” “r,” and “a” prefixes are used. Although they do not affect the stage grouping, they indicate cases needing separate analysis.

The “m” suffix indicates the presence of multiple primary tumors in a single site and is recorded in parentheses: pT(m)NM.

The "y" prefix indicates those cases in which classification is performed during or following initial multimodality therapy (ie, neoadjuvant chemotherapy, radiation therapy, or both chemotherapy and radiation therapy). The cTNM or pTNM category is identified by a "y" prefix. The ycTNM or ypTNM categorizes the extent of tumor actually present at the time of that examination. The "y" categorization is not an estimate of tumor prior to multimodality therapy (ie, before initiation of neoadjuvant therapy).

The "r" prefix indicates a recurrent tumor when staged after a documented disease-free interval, and is identified by the "r" prefix: rTNM.

The "a" prefix designates the stage determined at autopsy: aTNM.

Additional Descriptors

Residual Tumor (R)
Tumor remaining in a patient after therapy with curative intent (eg, surgical resection for cure) is categorized by a system known as R classification,[7] shown below.

RX Presence of residual tumor cannot be assessed
R0 No residual tumor
R1 Microscopic residual tumor
R2 Macroscopic residual tumor

For the surgeon, the R classification may be useful to indicate the known or assumed status of the completeness of a surgical excision. For the pathologist, the R classification is relevant to the status of the margins of a surgical resection specimen. That is, tumor involving the resection margin on pathologic examination may be assumed to correspond to residual tumor in the patient and may be classified as macroscopic or microscopic according to the findings at the specimen margin(s).

Vessel Invasion
By AJCC/UICC convention, vessel invasion (lymphatic or venous) does not affect the T category indicating local extent of tumor unless specifically included in the definition of a T category. In all other cases, lymphatic and venous invasion by tumor are coded separately as follows.

Lymphatic Vessel Invasion (L)
LX Lymphatic vessel invasion cannot be assessed
L0 No lymphatic vessel invasion
L1 Lymphatic vessel invasion

Venous Invasion (V)
VX Venous invasion cannot be assessed
V0 No venous invasion
V1 Microscopic venous invasion
V2 Macroscopic venous invasion

G. Configuration

Configuration types include polypoid (exophytic), endophytic (ulcerating), or diffusely infiltrative (linitis plastica). Polypoid (exophytic type) may be pedunculated or sessile.

H. Margins

For segmental small bowel resections, margins include the proximal, distal, and mesenteric margins of resection. For all small bowel segments, except the duodenum, the mesenteric resection margin is the only pertinent radial margin. For pancreaticoduodenectomy specimens of carcinomas of the duodenum, the non-peritonealized surface constitutes a deep radial (non-peritonealized soft tissue) margin. In pancreaticoduodenectomy specimens performed for duodenal carcinomas, the proximal margin of stomach or duodenum (pylous-sparing Whipple resection) and the distal resection margin of duodenum are more biologically relevant than in pancreaticoduodenectomy specimens performed for pancreatic carcinoma and should always be sampled.

References

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4. Fielding LP, Arsenault PA, Chapuis PH, et al. Clinicopathological staging for colorectal cancer: an International Documentation System (IDS) and an International Comprehensive Terminology (ICAT). *J Gastroenterol Hepatol*. 1991;6:325-344.
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