

Carcinoma of the Skin

**Protocol applies to invasive carcinomas
of the skin, excluding eyelid, vulva, and penis.
Excludes melanoma, sarcoma, and
hematopoietic malignancy.**

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

Procedures

- Biopsy
- Excision

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Surgical Pathology Cancer Case Summary (Checklist)*Protocol revision date: January 2004**Applies to invasive carcinomas only**Use for basal cell and squamous cell carcinoma is optional**Based on AJCC/UICC TNM, 6th edition***CARCINOMA OF THE SKIN (Excludes Eyelid, Vulva,
and Penis; Excludes Melanoma): Resection**

Patient name:

Surgical pathology number:

Note: Check 1 response unless otherwise indicated.**MACROSCOPIC****Specimen Type** Ellipse Shavings Curettings Other (specify): _____ Not specified**Tumor Site**

Specify, if known: _____

 Not specified**Tumor Size**

Greatest dimension: ___ cm

*Additional dimensions: ___x___ cm

 Cannot be determined (see Comment)***Tumor Features (check all that apply)*** Raised* Flat* Ulcerated* Unpigmented* Pigmented* Necrosis* Hemorrhage* Indeterminate

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* 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 (check all that apply)**

- * ___ Basal cell carcinoma (BCC) (Note: not routinely staged or reported to cancer registries)
- * ___ Superficial BCC
 - * ___ Nodular BCC (solid, adenoid cystic)
 - * ___ Infiltrating BCC
 - * ___ Sclerosing BCC (desmoplastic, morpheic)
 - * ___ Fibroepithelial BCC
 - * ___ BCC with adnexal differentiation
 - * ___ Follicular BCC
 - * ___ Eccrine BCC
 - * ___ Basosquamous carcinoma
 - * ___ Keratotic BCC
 - * ___ Pigmented BCC
 - * ___ BCC in basal cell nevus syndrome
 - * ___ Other (specify): _____
- * ___ Squamous cell carcinoma (SCC) (Note: not routinely staged or reported to cancer registries)
- * ___ Spindle cell (sarcomatoid) SCC
 - * ___ Acantholytic SCC
 - * ___ Verrucous SCC
 - * ___ SCC with horn formation
 - * ___ Lymphoepithelial SCC
 - * ___ Papillary SCC
 - * ___ Clear cell SCC
 - * ___ Small cell SCC
 - * ___ Post-traumatic (eg, "Marjolin ulcer")
 - * ___ Metaplastic ("carcinosarcomatous") SCC
 - * ___ Keratoacanthoma
 - * ___ Other (specify): _____
- ___ Paget disease
- * ___ Mammary Paget disease
 - * ___ Extramammary Paget disease
(specify site): _____

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- ___ Adnexal carcinoma
 - * ___ Eccrine carcinoma
 - * ___ Sclerosing sweat duct carcinoma (syringomatous carcinoma, microcystic adnexal carcinoma)
 - * ___ Malignant mixed tumor of the skin (malignant chondroid syringoma)
 - * ___ Porocarcinoma
 - * ___ Malignant nodular hidradenoma
 - * ___ Malignant eccrine spiradenoma
 - * ___ Mucinous eccrine carcinoma
 - * ___ Adenoid cystic eccrine carcinoma
 - * ___ Aggressive digital papillary adenoma/adenocarcinoma
 - * ___ Apocrine carcinoma
 - * ___ Sebaceous carcinoma
 - * ___ Tricholemmocarcinoma
 - * ___ Malignant pilomatricoma (matrical carcinoma)
 - * ___ Other (specify): _____
- ___ Merkel cell carcinoma
 - * ___ Mitotic activity: fewer than 10 mitotic figures per 10 high power fields
 - * ___ Mitotic activity: 10 or more mitotic figures per 10 high power fields
- ___ 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

4 * 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.

Pathologic Staging (pTNM)Primary Tumor (pT)

- ___ pTX: Primary tumor cannot be assessed
 ___ pT0: No evidence of primary tumor
 ___ pTis: Carcinoma in situ
 ___ pT1: Tumor 2 cm or less in greatest dimension
 * ___ pT1a: Limited to dermis or 2 mm or less in thickness
 * ___ pT1b: Limited to dermis and more than 2 mm in thickness, but not more than 6 mm in thickness
 * ___ pT1c: Invading the subcutis and/or more than 6 mm in thickness
 ___ pT2: Tumor more than 2 cm but not more than 5 cm in greatest dimension
 * ___ pT2a: Limited to dermis or 2 mm or less in thickness
 * ___ pT2b: Limited to dermis and more than 2 mm in thickness but not more than 6 mm in thickness
 * ___ pT2c: Invading the subcutis and/or more than 6 mm in thickness
 ___ pT3: Tumor more than 5 cm in greatest dimension
 * ___ pT3a: Limited to dermis or 2 mm or less in thickness
 * ___ pT3b: Limited to dermis and more than 2 mm in thickness, but not more than 6 mm in thickness
 * ___ pT3c: Invading the subcutis and/or more than 6 mm in thickness
 ___ pT4: Tumor invades the deep extradermal tissue (eg, cartilage, skeletal muscle, bone)
 * ___ pT4a: 6 mm or less in thickness
 * ___ pT4b: More than 6 mm in thickness

Regional Lymph Nodes (pN)

- ___ pNX: Regional lymph nodes cannot be assessed
 ___ pN0: No regional lymph node metastasis
 ___ pN1: Regional lymph node metastasis
 Specify: Number examined: ___
 Number involved: ___

Distant Metastasis (pM)

- ___ pMX: Presence of distant metastasis cannot be assessed
 ___ pM1: Distant metastasis
 *Specify site(s), if known: _____

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Margins (check all that apply)

Lateral Margins

- Cannot be assessed
- Uninvolved by invasive carcinoma
 - *Distance of invasive carcinoma from closest lateral margin: ____ mm
 - *Specify location(s), if possible: _____
- Involved by invasive carcinoma
 - Specify location(s), if possible: _____
- Uninvolved by carcinoma in situ
 - *Distance of carcinoma in situ from closest margin: ____ mm
 - *Specify location(s), if possible: _____
- Involved by carcinoma in situ
 - Specify location(s), if possible: _____

Deep Margin

- Cannot be assessed
- Uninvolved by invasive carcinoma
 - *Distance of invasive carcinoma from margin: ____ mm
 - *Specify location(s), if possible: _____
- Involved by invasive carcinoma
 - Specify location(s), if possible: _____

***Lymphatic (Small Vessel) Invasion (L)**

- * Absent
- * Present
- * Indeterminate

***Venous (Large Vessel) Invasion (V)**

- * Absent
- * Present
- * Indeterminate

***Perineural Invasion**

- * Absent
- * Present
- * Indeterminate

***Additional Pathologic Findings**

*Specify: _____

***Comment(s)**

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Background Documentation

Protocol revision date: January 2004

I. Biopsy

A. Clinical Information

1. Patient identification
 - a. Name
 - b. Identification number
 - c. Age (birth date)
 - d. Sex
 - e. Skin type (eg, Fitzpatrick type, other)
2. Responsible physician(s)
3. Date of procedure
4. Other clinical information
 - a. Relevant history
 - (1) duration of lesion
 - (2) previous excision of present lesion
 - (3) previous similar lesions
 - (4) family history of similar lesions
 - (5) immunosuppression
 - (6) radiation exposure
 - b. Relevant findings
 - (1) number of lesions and their distribution
 - (2) nature of advancing borders of lesion
 - (3) nature of pigmentation, if any
 - (4) ulceration
 - (5) palpable qualities of lesion (eg, hard, tender, nontender)
 - (6) fixation to deeper tissues on palpation
5. Clinical diagnosis
6. Procedure (eg, punch biopsy, incisional biopsy)
7. Anatomic site of specimen(s)

B. Macroscopic Examination

1. Specimen
 - a. Tissues received (specify nature and site)
 - b. Unfixed/fixed (specify fixative)
 - c. Number of pieces of tissue
 - d. Shape/type of specimen (eg, ellipse, punch core, shave fragments)
 - e. Dimensions
 - f. Results of intraoperative consultation, if performed
2. Tumor, if discernible
 - a. Location
 - b. Descriptive features (eg, pigmentation/color, consistency, ulceration, hemorrhage)
 - c. Dimensions
 - d. Configuration
3. Tissue submitted for microscopic examination
 - a. Submit all
 - b. Frozen section tissue fragment(s)

4. Special studies (specify) (eg, histochemical stains, immunohistochemistry, electron microscopy, flow cytometry, cytogenetics)

C. Microscopic Evaluation

1. Tumor
 - a. Histological type (Note **A**)
 - b. Histologic grade, if applicable (Note **B**)
 - c. Depth of invasion, if appropriate (Note **C**)
 - (1) measurement in millimeters for squamous carcinoma (Note **C**)
 - d. Perineural invasion (Note **D**)
 - e. Venous/lymphatic vessel invasion (Note **D**)
 - f. Nature of advancing margin of tumor, if able to be evaluated (eg, pushing, infiltrative)[#] (Note **D**)
Applies principally to basal cell carcinomas
2. Associated skin lesions
 - a. Actinic keratosis
 - b. Bowen's disease
3. Additional pathologic findings, if present
4. Results of special studies (specify)
5. Comments
 - a. Correlation with intraoperative consultations, if any
 - b. Correlation with prior specimens, if any
 - c. Correlation with clinical findings, as appropriate

II. Excision**A. Clinical Information**

1. Patient identification
 - a. Name
 - b. Identification number
 - c. Age
 - d. Sex
 - e. Skin type (eg, Fitzpatrick type, other)
2. Responsible physician(s)
3. Date of procedure
4. Other clinical information
 - a. Relevant history
 - (1) duration of lesion
 - (2) previous excision of present lesion
 - (3) previous similar lesions
 - (4) family history of similar lesions
 - (5) immunosuppression
 - (6) radiation exposure
 - b. Relevant findings
 - (1) number of lesions and their distribution
 - (2) nature of advancing borders of lesion
 - (3) nature of pigmentation, if any
 - (4) ulceration
 - (5) palpable qualities of lesion (eg, hard, tender, nontender)
 - (6) fixation to deeper tissues on palpation
 - c. Clinical diagnosis
 - d. Procedure (eg, punch biopsy, incisional biopsy)
 - e. Anatomic site of specimen(s)

B. Macroscopic Examination

1. Specimen
 - a. Tissues received (specify type and site)
 - b. Unfixed/fixed (specify fixative)
 - c. Orientation of specimen, if indicated by surgeon
 - d. Number of pieces of tissue
 - e. Shape/type of specimen (eg, ellipse, punch core, shave fragments, curettings)
 - f. Dimensions
 - g. Results of intraoperative consultation, if any
2. Tumor
 - a. Location
 - b. Configuration
 - c. Pigmentation (color and extent)
 - d. Dimensions (3)
 - e. Descriptive characteristics (eg, consistency, ulceration, fixation to other tissues, necrosis, hemorrhage)
 - f. Estimated depth of invasion from skin surface (specify compartment: eg, deep dermis, subcutis)
3. Margins (specify if involved or uninvolved by tumor, if appropriate to specimen)
4. Regional lymph nodes, if any
 - a. Location (as specific as possible)
 - b. Number
 - c. Gross appearance (with measurement of macroscopically obvious tumor deposits within the nodes)
5. Additional pathologic findings, if present
 - a. Actinic keratoses
 - b. Melanocytic nevi
 - c. Other
6. Tissue submitted for microscopic examination (specify location in specimen of each)
7. Special studies (specify) (eg, histochemical stains, immunohistochemistry, electron microscopy, flow cytometry, cytogenetics)

C. Microscopic Evaluation

1. Tumor
 - a. Histological type (Note **A**)
 - b. Histologic grade, if applicable (Note **B**)
 - c. Depth of invasion (Note **C**)
 - (1) measurement in millimeters for squamous carcinoma (Note **C**)
 - d. Perineural invasion (with extent) (Note **D**)
 - e. Venous/lymphatic vessel invasion (with extent) (Note **D**)
 - f. Nature of advancing margin of tumor (eg, pushing, infiltrative) (Note **D**)
 - g. Presence and approximate percentage of extent of regression, if present[#] (Note **D**)
 - h. Mitotic count per 10 high-powered fields (HPF)^{##} (Note **D**)
 - [#] *Applies principally to basal cell carcinomas*
 - ^{##} *Applies only to Merkel cell carcinomas*
2. Margins (Note **E**)

3. Additional pathologic findings, if present
 - a. Actinic keratosis
 - b. Bowen's disease
4. Regional lymph nodes (pN) (Note **F**)
 - a. Number
 - b. Number containing metastases
 - (1) measurement of metastatic focus
 - (2) extranodal extension, if present
5. Metastases to other organs (pM)
6. Results of special studies (specify)
7. Comments
 - a. Correlation with intraoperative consultations, if any
 - b. Correlation with prior specimens, if any
 - c. Correlation with clinical findings, as appropriate
 - d. Comments on prognostic findings

Explanatory Notes

A. Histologic Subtypes

The World Health Organization (WHO) classification of carcinomas of the skin is shown below.

Epidermal carcinomas

Basal cell carcinoma (BCC) and variants listed below:

- Superficial BCC
- Nodular BCC (solid, adenoid cystic)
- Infiltrating BCC
- Sclerosing BCC (desmoplastic, morpheic)
- Fibroepithelial BCC¹
- BCC with adnexal differentiation
 - Follicular BCC
 - Eccrine BCC
- Basosquamous carcinoma
- Keratotic BCC
- Pigmented BCC
- BCC in basal cell nevus syndrome
- Micronodular BCC

Squamous cell carcinoma (SCC) and variants listed below:

- Spindle-cell (sarcomatoid) SCC
- Acantholytic SCC
- Verrucous SCC
- SCC with horn formation
- Lymphoepithelial SCC

Variants not included in the WHO classification are as follows:

- Papillary SCC
- Clear cell SCC

- Small cell SCC
- Post-traumatic (eg, Marjolin ulcer)
- Metaplastic (carcinosarcomatous) SCC
- Paget disease
- Mammary Paget disease
- Extramammary Paget disease
- Adnexal carcinomas
- Keratoacanthoma

Eccrine carcinoma and variants listed below:

- Sclerosing sweat duct carcinoma (syringomatous carcinoma, microcystic adnexal carcinoma)
- Malignant mixed tumor of the skin (malignant chondroid syringoma)
- Porocarcinoma
- Malignant nodular hidradenoma
- Malignant eccrine spiradenoma
- Mucinous eccrine carcinoma
- Adenoid cystic eccrine carcinoma
- Aggressive digital papillary adenoma/adenocarcinoma

- Apocrine carcinoma
- Sebaceous carcinoma

Tricholemmocarcinoma and its variant listed below:

- Malignant pilomatricoma (matrical carcinoma)

Note: Merkel cell carcinoma is not included in the WHO classification of skin tumors.

B. Histologic Grade

Generally, histologic grading is appropriate only for squamous cell carcinomas and adnexal carcinomas. Suggested histologic grades are as follows.

Grade 1	Well differentiated
Grade 2	Moderately differentiated
Grade 3	Poorly differentiated
Grade 4	Undifferentiated

Tumors with no differentiation (undifferentiated carcinomas) are categorized as grade 4.

C. TNM and Stage Groupings

This protocol recommends the TNM staging system of the American Joint Committee on Cancer (AJCC) and the International Union Against Cancer (UICC).^{1,2}

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 2 cm or less in greatest dimension
T1a	Limited to dermis or 2 mm or less in thickness [#]
T1b	Limited to dermis and more than 2 mm in thickness, but not more than 6 mm in thickness [#]
T1c	Invading the subcutis and/or more than 6 mm in thickness [#]
T2	Tumor more than 2 cm but not more than 5 cm in greatest dimension
T2a	Limited to dermis or 2 mm or less in thickness [#]
T2b	Limited to dermis and more than 2 mm in thickness but not more than 6 mm in thickness [#]
T2c	Invading the subcutis and/or more than 6 mm in thickness [#]
T3	Tumor more than 5 cm in greatest dimension
T3a	Limited to dermis or 2 mm or less in thickness [#]
T3b	Limited to dermis and more than 2 mm in thickness, but not more than 6 mm in thickness [#]
T3c	Invading the subcutis and/or more than 6 mm in thickness [#]
T4	Tumor invades the deep extradermal tissue (eg, cartilage, skeletal muscle, bone)
T4a	6 mm or less in thickness [#]
T4b	More than 6 mm in thickness [#]

[#] Optional expansions suggested by the *TNM Supplement*.³

Regional Lymph Nodes (N)

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

Distant Metastasis (M)

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

Stage Groupings

Stage 0	Tis	N0	M0
Stage 1	T1	N0	M0
Stage 2	T2	N0	M0
	T3	N0	M0
Stage 3	T4	N0	M0
	Any T	N1	M0
Stage 4	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, shown below.⁴

- 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

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.^{3,5}

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

Sentinel Lymph Nodes

The sentinel lymph node is the first node to receive drainage from a primary tumor. There may be more than 1 sentinel node for some tumors. If a sentinel node contains metastatic tumor, it indicates that other more distant nodes may also contain metastatic disease. If sentinel nodes are negative, other regional nodes are less likely to contain metastasis. Sentinel lymph nodes that are histologically negative but have been examined for ITC by special techniques are denoted as follows.

pN0(i-)(sn)	No sentinel lymph node metastasis histologically, negative morphologic findings for ITC
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pN0(i+)(sn)	No sentinel lymph node metastasis histologically, positive morphologic findings for ITC
pN0(mol-)(sn)	No sentinel lymph node metastasis histologically, negative nonmorphologic findings for ITC
pN0(mol+)(sn)	No sentinel lymph node metastasis histologically, positive nonmorphologic findings for ITC

D. Adverse Prognostic Factors

Important adverse prognostic factors for cutaneous malignancies are as follows:

Basal cell carcinoma

- Infiltrative, morpheaform, or micronodular histological subtype
- Invasion into deep subcutaneous fat, muscle, or cartilage
- Perineural invasion
- Positivity of surgical margins
- Presence of scar within the tumor

Squamous cell carcinoma

- Adenoid, basaloid, small cell, or spindle cell histological subtypes
- Post-traumatic clinicopathological subtype
- Extensive perineural, lymphatic, or vascular invasion
- Invasion into subcutis
- Positivity of surgical margins

Acantholytic subtype

Merkel cell carcinoma

- Gross size over 2 cm
- Mitotic activity (10 division figures/10 high power [X400] microscopic fields)
- Extensive lymphatic or vascular invasion
- Presence of associated Bowen's disease
- Divergent squamous differentiation in invasive tumor
- Positivity of surgical margins

E. Margins

If the specimen is oriented, the position of lateral margins involved by tumor should be indicated. A comment on margins is necessary only for excisional biopsies or formal resections. Measurements of distance from tumor to margins are generally not considered useful or helpful and need not be routinely reported. However, distance to margins may be reported in special circumstances and/or when requested by the treating physician.

F. Lymph Node Dissections

Lymph node dissections are not routinely performed for any cutaneous malignancy. Therefore, a comment may be needed that documents the clinical nodal status (cN substage) instead of pathologic (pN substage) status in assembling the final stage grouping for the tumor.

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