COLLEGE of AMERICAN PATHOLOGISTS

Protocol for the Examination of Specimens From Patients With Carcinoma of the Vagina

Protocol applies to all invasive carcinomas of the vagina.

Based on AJCC/UICC TNM, 7th edition, and FIGO 2009 Annual Report
Protocol web posting date: January 2016

Procedures
- Biopsy
- Excisional biopsy
- Vaginectomy
- Radical Vaginectomy

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The College of American Pathologists offers these protocols to assist pathologists in providing clinically useful and relevant information when reporting results of surgical specimen examinations of surgical specimens. The College regards the reporting elements in the “Surgical Pathology Cancer Case Summary” portion of the protocols as essential elements of the pathology report. However, the manner in which these elements are reported is at the discretion of each specific pathologist, taking into account clinician preferences, institutional policies, and individual practice.

The College developed these protocols as an educational tool to assist pathologists in the useful reporting of relevant information. It did not issue the protocols for use in litigation, reimbursement, or other contexts. Nevertheless, the College recognizes that the protocols might be used by hospitals, attorneys, payers, and others. Indeed, effective January 1, 2004, the Commission on Cancer of the American College of Surgeons mandated the use of the required data elements of the protocols as part of its Cancer Program Standards for Approved Cancer Programs. Therefore, it becomes even more important for pathologists to familiarize themselves with these documents. At the same time, the College cautions that use of the protocols other than for their intended educational purpose may involve additional considerations that are beyond the scope of this document.

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CAP Vagina Protocol Revision History

Version Code
The definition of version control and an explanation of version codes can be found at www.cap.org (search: cancer protocol terms).

Version: Vagina 3.2.0.0

Summary of Changes
The following changes have been made since the December 2013 release.

Biopsy

The following data elements were modified:
- Histologic Type
- Additional Pathologic Findings

The following data element was deleted:
- Tumor Type

Excisional Biopsy, Resection

The following data elements were modified:
- Histologic Type
- Margins
- Lymph-Vascular Invasion
- Regional Lymph Nodes
- Distant Metastasis (changed to required only if confirmed pathologically)
- Additional Pathologic Findings

The following data element was added:
- FIGO Stage (not required)

The following data element was deleted:
- Tumor Type

Surgical Pathology Cancer Case Summary

Protocol web posting date: January 2016

VAGINA: Biopsy

Note: Use of case summary for biopsy specimens is optional.

Select a single response unless otherwise indicated.

+ Procedure (Notes A through C)
+ ___ Incisional biopsy
+ ___ Other (specify): _____
+ ___ Not specified

+ Tumor Site
+ ___ Upper third
+ ___ Middle third
+ ___ Lower third
+ ___ Not specified

+ Histologic Type (select all that apply) (Note D)
+ ___ Superficial invasive squamous cell carcinoma (SISCCA)
+ ___ Squamous cell carcinoma
    + ___ Keratinizing
    + ___ Nonkeratinizing
    + ___ Basaloid
    + ___ Verrucous
    + ___ Warty
+ ___ Adenocarcinoma
    + ___ Clear cell
    + ___ Mucinous
    + ___ Endometrioid
    + ___ Mesonephric
    + ___ Intestinal type
+ ___ Adenosquamous carcinoma
+ ___ Undifferentiated carcinoma
+ ___ Other (specify): _____

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

+ Microscopic Tumor Extension
+ ___ Cannot be assessed
+ ___ Stromal invasion
+ ___ Muscle invasion

+ Margins
+ ___ Not applicable
+ ___ Cannot be assessed
+ ___ Uninvolved by tumor
+ ___ Involved by tumor
    + Specify site: _____

+ Additional Pathologic Findings (select all that apply) (Note F)
+ ___ None identified
+ ___ High grade squamous intraepithelial neoplasia
+ ___ Low grade squamous intraepithelial neoplasia
+ ___ Vaginal intraepithelial neoplasia, differentiated type
+ ___ Condyloma accuminatum
+ ___ Adenocarcinoma in situ
+ ___ Atypical adenosis
+ ___ Other (specify): _____

+ Comment(s)

Surgical Pathology Cancer Case Summary

Protocol web posting date: January 2016

VAGINA: Excisional Biopsy, Resection (Vaginectomy, Radical Vaginectomy)

Select a single response unless otherwise indicated.

Procedure
___ Excisional biopsy
___ Partial vaginectomy
___ Radical vaginectomy
___ Other (specify): _____
___ Not specified

Tumor Site (select all that apply)
___ Upper third
+ ___ Circumferential
+ ___ Anterior
+ ___ Posterior
+ ___ Left lateral
+ ___ Right lateral
___ Middle third
+ ___ Circumferential
+ ___ Anterior
+ ___ Posterior
+ ___ Left lateral
+ ___ Right lateral
___ Lower third
+ ___ Circumferential
+ ___ Anterior
+ ___ Posterior
+ ___ Left lateral
+ ___ Right lateral
___ Not specified

Tumor Size
Greatest dimension: ___ cm
+ Additional dimensions: ___ x ___ cm
___ Cannot be determined (explain): _____

Histologic Type (select all that apply) (Note D)
___ Superficial invasive squamous cell carcinoma (SISSCA)
___ Squamous cell carcinoma
___ Keratinizing
___ Non-keratinizing
___ Basaloid
___ Verrucous
___ Warty

___ Adenocarcinoma
- ___ Clear cell
- ___ Endometrioid
- ___ Mucinous
- ___ Mesonephric
- ___ Intestinal type

___ Adenosquamous carcinoma
___ Undifferentiated carcinoma
___ Small cell neuroendocrine carcinoma
___ Large cell neuroendocrine carcinoma
___ Other (specify): _____

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

Margins (select all that apply)
___ Cannot be assessed
___ Uninvolved by invasive carcinoma
- Distance of invasive carcinoma from closest margin: ___ mm
- Specify margin, if possible: _____

___ Involved by invasive carcinoma
- Specify margin(s), if possible: _____

___ Uninvolved by high grade squamous intraepithelial lesion (VAIN 2-3)
___ Involved by high grade squamous intraepithelial lesion (VAIN 2-3)
___ Uninvolved by vaginal intraepithelial neoplasia, differentiated type
___ Involved by vaginal intraepithelial neoplasia, differentiated type
- Specify margin(s): _____

Lymph-Vascular Invasion
___ Not identified
___ Present
___ Cannot be determined

Pathologic Staging (pTNM) (Note H)

<u>TNM Descriptors (required only if applicable) (select all that apply)</u>
___ m (multiple primary tumors)
___ r (recurrent)
___ y (posttreatment)

<u>Primary Tumor (pT)</u>
___ pTX: Cannot be assessed
___ pT0: No evidence of primary tumor
___ pTis: Carcinoma in situ
___ pT1: Tumor confined to vaginal wall
___ pT2: Tumor invades paravaginal tissues but not the pelvic wall
___ pT3: Tumor extends to pelvic wall
___ pT4: Tumor invades mucosa of bladder or rectum and/or extends beyond true pelvis

Regional Lymph Nodes (pN) (select all that apply)

+ *Modifier*

+ ___ (sn)
+ ___ (sn)(i-)
+ ___ (sn)(i+)

Category (pN)

___ pNX: Cannot be assessed
___ pN0: No regional lymph node metastasis
___ pN1: Pelvic or inguinal lymph node metastasis

___ No nodes submitted or found

Inguinal lymph nodes:

___ No inguinal nodes submitted or found

Number of Inguinal Lymph Nodes Examined
Specify: ____
___ Number cannot be determined (explain): _____

Number of Inguinal Lymph Nodes Involved
Specify: ____
___ Number cannot be determined (explain): _____

Other lymph nodes:

Specify site: _____

Number of Other Lymph Nodes Examined
Specify: ____
___ Number cannot be determined (explain): _____

Number of Other Lymph Nodes Involved
Specify: ____
___ Number cannot be determined (explain): _____

+ Number of lymph nodes with isolated tumor cells (<0.2 mm): _____
+ Number of lymph nodes with micrometastasis (>0.2 mm to 2 mm): _____

Distant Metastasis (pM) (required only if confirmed pathologically in this case)
___ pM1: Distant metastasis
Specify site(s), if known: _____

+ FIGO Stage
+ ___ I: Carcinoma is limited to the vaginal wall
+ ___ II: Carcinoma has involved the sub-vaginal tissue but has not extended to the pelvic wall
+ ___ III: Carcinoma has extended to the pelvic wall
+ IV: Carcinoma has extended beyond the true pelvis or has involved the mucosa of the bladder or rectum
(bullous edema as such does not permit a case to be allotted to stage IV)
+ ___ IVA: Tumor invades bladder and/or rectal mucosa and/or direct extension beyond the true pelvis
+ ___ IVB: Spread to distant organs

+ Additional Pathologic Findings (select all that apply) (Note F)
+ ___ None identified
+ ___ Low-grade squamous intraepithelial lesion (VAIN 1)
+ ___ High-grade squamous intraepithelial lesion (VAIN 2-3)
+ ___ Vaginal intraepithelial neoplasia, differentiated type
+ ___ Condyloma acuminatum
+ ___ Adenocarcinoma in situ
+ ___ Atypical adenosis
+ ___ Other (specify): _____

+ Comment(s)

Explanatory Notes

A. Prenatal DES Exposure

Prenatal exposure to diethylstilbestrol (DES) or related synthetic drugs was relatively common in the United States and other countries until 1971, when its relation to clear cell adenocarcinomas of the vagina and cervix led to proscription of these drugs by the Food and Drug Administration. From the 1970s to the turn of the 21st century, most patients with clear cell adenocarcinoma of the vagina had a history of DES exposure.[1] As this cohort ages, the diagnosis has been less common, and most women with this diagnosis currently have no DES exposure history. Furthermore, it has been reported that these patients have significantly worse outcomes than do patients with history of DES exposure and patients with squamous cell carcinoma.[2] A bimodal age peak for DES-related carcinoma has, however, been recently reported, and therefore a history of this type of prenatal drug exposure should alert the pathologist to the possible presence of those tumors and associated lesions.[3,4]

B. Prior Tumors and Operations

A history of dysplasia, carcinoma in situ, or invasive carcinoma of the cervix as well as knowledge of the tumor's microscopic features may be essential in the determination whether a subsequent vaginal tumor is a recurrent or new tumor. Also, a history of a carcinoma higher in the female genital tract may influence the interpretation of a neoplasm that is detected in a specimen from the vagina. Prior pathology slides and reports should be obtained and reviewed if a review is deemed essential by the clinician or pathologist for optimal pathologic evaluation of the present specimen.

C. Clinical Findings and DES Exposure

Naked-eye examination, colposcopy, and iodine staining of the cervix and vagina may disclose a variety of changes highly suspicious of prenatal DES exposure, such as cervical hypoplasia, pseudopolyp, or coxcomb deformity, and vaginal adenosis or ridge, any of which should alert the pathologist to look carefully for DES changes.[4]

D. Histologic Type

The World Health Organization (WHO) classification and nomenclature of vaginal tumors is recommended because of its wide acceptance.[5] The most common subtype is squamous cell carcinoma. However, when such tumor simultaneously involves the cervix or the vulva and the vagina, the tumor is considered to originate from the cervix or vulva, with secondary extension to the vagina. Also, when an adenocarcinoma is present in the vagina, it is important to keep in mind that many of those tumors represent secondary involvement either by direct extension or metastases, more commonly from the endometrium, colorectal, ovary, vulva, urethra, and urinary bladder. Although not included in the current WHO classification, primary intestinal type adenocarcinoma has recently been described in the vagina.[6] These tumors usually arise in a background of benign adenomatous lesion. Awareness of this new subtype is necessary to avoid misdiagnosis of a metastatic colorectal adenocarcinoma.[6-8]

WHO Classification[5]
Precancerous Lesions and Carcinomas of the Vagina (Modified)

<u>Epithelial Tumors</u>		
Squamous tumors and precursors		
Squamous intraepithelial lesions (SIL)	Vaginal intraepithelial neoplasia (VAIN)	
Mild dysplasia	VAIN 1	Low-grade SIL (LSIL)
Moderate dysplasia	VAIN 2	High-grade SIL (HSIL)
Severe dysplasia	VAIN 3	HSIL
Carcinoma in situ	VAIN 3	HSIL
Vaginal intraepithelial neoplasia, differentiated type		
Squamous cell carcinoma, not otherwise specified		
Keratinizing		
Nonkeratinizing		
Basaloid		
Verrucous		

Warty
Glandular tumors
Clear cell carcinoma
Endometrioid adenocarcinoma
Mucinous adenocarcinoma
Mesonephric adenocarcinoma
High-grade neuroendocrine carcinoma
Small cell neuroendocrine carcinoma
Large cell neuroendocrine carcinoma
Other epithelial tumors
Adenosquamous carcinoma
Adenoid cystic carcinoma
Adenoid basal carcinoma
Undifferentiated carcinoma

E. Histologic Grade
No specific grading system for vaginal cancers is recommended. For the sake of uniformity, however, it is suggested that 3 grades be used, as shown below, with grades 1 to 3 assigned to carcinomas showing squamous or glandular differentiation.

Grade X	Cannot be assessed
Grade 1	Well differentiated
Grade 2	Moderately differentiated
Grade 3	Poorly differentiated
Grade 4	Undifferentiated

F. Other Lesions
Squamous dysplasia or carcinoma in situ, adenocarcinoma in situ, or atypical adenosis, particularly if such changes are at the resection margin, may increase the frequency of recurrent tumor. Also, few cases of primary invasive carcinoma of vagina have been reported to occur in association with severe vaginal prolapse.[9-11]

G. Staining of Mucosal Surface
Schiller's or Lugol's solutions stain glycogenated epithelium brown. Therefore, they stain glycogenated squamous epithelium and well-glycogenated tumors. The stains are useful in identifying sites of nonstaining vaginal adenosis or immature squamous metaplasia of adenosis in patients exposed to DES, which may not be detectable before staining.

H. TNM and FIGO Stage Groupings
The TNM staging system for vaginal cancer endorsed by the American Joint Committee on Cancer (AJCC) and the International Union against Cancer (UICC),[12,13] and the parallel system formulated by the International Federation of Gynecology and Obstetrics (FIGO)[14] are recommended.

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.

TNM and FIGO Staging Systems for Vaginal Carcinoma

Primary Tumor (T)

TNM Category	FIGO Stage	Definition
TX	(--)	Primary tumor cannot be assessed
T0	(--)	No evidence of primary tumor
Tis	0	Carcinoma in situ
T1	I	Tumor confined to vaginal wall
T2	II	Tumor invades paravaginal tissues but not the pelvic wall[#]
T3	III	Tumor extends to pelvic wall
T4	IVA	Tumor invades mucosa of bladder or rectum and/or extends beyond the true pelvis (bullous edema is not sufficient to classify a tumor as T4)
(M1)	IVB	Distant metastasis (excludes peritoneal metastasis)

[#] Pelvic wall is defined as muscle, fascia, neurovascular structures, or skeletal portions of the bony pelvis.

Microinvasive/early carcinoma is not, currently, a recognized entity in the vagina, in contradistinction to the cervix, and the term is therefore not used. Superficially invasive tumors which invade 3 mm or less without lymphovascular invasion (LVI) have a low incidence of lymph node metastasis.[15]

Regional Lymph Nodes (N): TNM

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

Although N0(sn)(i-) and N0(sn)(i+) are not explicitly mentioned in the vagina chapter of the AJCC 7th edition, AJCC acknowledges use of (sn) and (i) modifiers for cancers other than breast cancer. This nomenclature is currently being adopted and used by pathologists for vaginal cancer.

Distant Metastasis (M): TNM

M0	No distant metastasis
M1	Distant metastasis

Stage Groupings

AJCC/UICC TNM				FIGO
Stage 0	Tis	N0	M0	Stage 0
Stage I	T1	N0	M0	Stage I
Stage II	T2	N0	M0	Stage II
Stage III	T1	N1	M0	Stage III
	T2	N1	M0	
	T3	N0, N1	M0	
Stage IVA	T4	Any N	M0	Stage IVA
Stage IVB	Any T	Any N	M1	Stage IVB

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.

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).

Lymph-Vascular Invasion (LVI)
LVI indicates whether microscopic lymph-vascular invasion is identified. LVI includes lymphatic invasion, vascular invasion, or lymph-vascular invasion. By AJCC/UICC convention, LVI does not affect the T category indicating local extent of tumor unless specifically included in the definition of a T category.

Regional Lymph Nodes: Isolated Tumor Cells
Isolated tumor cells (ITC) are single cells or small clusters of cells not more than 0.2 mm in greatest dimension. Lymph nodes or distant sites with ITC found by either standard histologic examination, immunohistochemical stains (eg, cytokeratin), or nonmorphological techniques (eg, flow cytometry, DNA analysis, polymerase chain reaction [PCR] amplification of a specific tumor marker) should be so identified. There is currently no guidance in the literature as to how these patients should be coded; until further studies are available, they should be coded as "N0(i+)" with a comment noting how the cells were identified.

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.

I. Cervical Abnormalities
Ectropion (erosion, eversion) of the cervix, which is characterized by the appearance of glandular (columnar) epithelium outside the external os of the cervix, is seen in approximately 90% of women exposed to DES in utero (but is often seen in nonexposed women as well). Approximately one-third of patients exposed to DES have 1 or more gross structural abnormalities of the cervix.[1,4]

J. Fallopian Tubes
The fallopian tubes are abnormal in some women exposed to DES in the form of hypoplasia or defects demonstrated on hysterosalpingographic examination.[4]

References

1. Herbst AL, Ulfelder H, Poskanzer DC. Adenocarcinoma of the vagina: association of maternal stilbestrol therapy with tumor appearance in young women. *N Engl J Med.* 1971;284:878-881.
2. Frank SJ, Deavers MT, Jhingran A, et al. Primary adenocarcinoma of the vagina not associated with diethylstilbestrol (DES) exposure. *Gynecol Oncol*. 2007;105:470-474.
3. Hanselaar A, van Loosbroek M, Schuurbiers O, et al. Clear cell adenocarcinoma of the vagina and cervix: an update of the central Netherlands registry showing twin age incidence peaks. *Cancer*. 1997;79:2229-2236.
4. Kaufman RH, Noller K, Adam E, et al. Upper genital tract abnormalities and pregnancy outcome in diethylstilbestrol-exposed progeny. *Am J Obstet Gynecol*. 1984;148:973-984.
5. Kurman RJ, Carcangiu ML, Harrington CS, Young RH, eds. *WHO Classification of Tumors of the Female Reproductive Organs.* Geneva, Switzerland: WHO Press; 2014. *World Health Organization Classification of Tumors.* 4th edition
6. Tjalma WA, Colpaert CG. Primary vaginal adenocarcinoma of intestinal type arising from a tubulovillous adenoma. *Int J Gynecol Cancer*. 2006;16:1461-1465.
7. Mudhar HS, Smith JH, Tidy J. Primary vaginal adenocarcinoma of intestinal type arising from an adenoma: case report and review of the literature*. Int J Gynecol Pathol.* 2001;20:204-209.
8. Ditto A, Martinelli F, Carcangiu ML, et al. Incidental diagnosis of primary vaginal adenocarcinoma of intestinal type: a case report and review of the literature. *Int J Gynecol Pathol.* 2007;26:490-493.
9. Iavazzo C, Vorgias G, Vecchini G, et al. Vaginal carcinoma in a completely prolapsed uterus: a case report. *Arch Gynecol Obstet*. 2007;275:503-505.
10. Batista TP, Morais JA, Reis TJ, et aI. A rare case of invasive vaginal carcinoma associated with vaginal prolapse. *Arch Gynecol Obstet.* 2009;280(5):845-848..
11. Gupta N, Mittal S, Dalmia S, et al. A rare case of primary invasive carcinoma of vagina associated with irreducible third degree uterovaginal prolapse. *Arch Gynecol Obstet.* 2007; 276:563-4.
12. Edge SB, Byrd DR, Carducci MA, Compton CC, eds. *AJCC Cancer Staging Manual.* 7th ed. New York, NY: Springer; 2009.
13. Sobin LH, Gospodarowicz M, Wittekind Ch, eds. *UICC TNM Classification of Malignant Tumours.* 7th ed. New York, NY: Wiley-Liss; 2009.
14. Oncology FCoG. Current FIGO staging for cancer of the vagina, fallopian tube, ovary, and gestational trophoblastic neoplasia. *Int J Gynaecol Obstet.* 2009;105(1):3-4.
15. Peters WA, Kumar NB, Morley GW. Microinvasive carcinoma of the vagina: a distinct entity? *Obstet Gynecol.* 1985;153:105-107.