



## Protocol for the Examination of Lymphadenectomy Specimens From Patients With Malignant Germ Cell and Sex Cord-Stromal Tumors of the Testis

**Version:** 4.1.0.1

**Protocol Posting Date:** November 2021

The use of this protocol is recommended for clinical care purposes but is not required for accreditation purposes.

**This protocol should be used for the following procedures AND tumor types:**

Procedure	Description
Lymphadenectomy	Includes specimens designated retroperitoneal lymphadenectomy
Tumor Type	Description
Germ cell tumors	Includes seminoma and variants, all non-seminomatous germ cell tumors, mixed germ cell tumors, Leydig cell tumors, Sertoli cell tumors, granulosa cell tumors, and placental site trophoblastic tumors
Sex cord-stromal tumors	Includes Leydig cell tumors, Sertoli cell tumors, granulosa cell tumors, and mixed sex cord tumors

**The following should NOT be reported using this protocol:**

Procedure
Radical orchiectomy (consider Testis Radical Orchiectomy protocol)
Tumor Type
Paratesticular malignancies (consider Soft Tissue protocol)
Non-testis germ cell tumors (consider Extragonadal Germ Cell protocol)
Lymphoma (consider the Hodgkin or non-Hodgkin Lymphoma protocols)
Sarcoma (consider the Soft Tissue protocol)

### Authors

Satish K. Tickoo, MD\*; Gladell P. Paner, MD\*; Ming Zhou, MD, PhD\*; Lara R. Harik, MD; Robert Allan, MD; Mahul B. Amin, MD; Sam S. Chang, MD; Peter A. Humphrey, MD, PhD; James M. McKiernan, MD; Jason Pettus, MD; Victor E. Reuter, MD; John R. Srigley, MD; Thomas M. Ulbright, MD.

With guidance from the CAP Cancer and CAP Pathology Electronic Reporting Committees.

\* Denotes primary author.

### **Accreditation Requirements**

The use of this case summary is recommended for clinical care purposes but is not required for accreditation purposes. The core and conditional data elements are routinely reported. Non-core data elements are indicated with a plus sign (+) to allow for reporting information that may be of clinical value.

### **Summary of Changes**

#### **v 4.1.0.1**

- The CAP made no changes to Cancer Protocol content. We updated metadata only for the electronic Cancer Checklists (eCC), requiring a version number change for the Word and PDF Cancer Protocols.

## Reporting Template

---

**Protocol Posting Date: November 2021**

**Select a single response unless otherwise indicated.**

### **CASE SUMMARY: (TESTIS: Retroperitoneal Lymphadenectomy)**

**Standard(s):** AJCC-UICC 8

*This template is recommended for reporting retroperitoneal lymphadenectomy specimens, but is not required for accreditation purposes.*

### **CLINICAL**

#### **+Prelymphadenectomy Treatment (select all that apply)**

- No known preresection therapy
- Chemotherapy performed
- Radiation therapy performed
- Therapy performed, type not specified
- Not specified

### **SPECIMEN**

**+Regional Nodal Site(s) Examined (specify):** \_\_\_\_\_

#### **+Number of Regional Nodal Groups Examined**

- Specify number: \_\_\_\_\_
- Other (specify): \_\_\_\_\_
- Cannot be determined: \_\_\_\_\_

**+Nonregional Nodal Site(s) Examined (specify):** \_\_\_\_\_

#### **+Number of Nonregional Nodal Groups Examined**

- Specify number: \_\_\_\_\_
- Other (specify): \_\_\_\_\_
- Cannot be determined: \_\_\_\_\_

### **TUMOR**

#### **Histologic Type of Metastatic Tumor (Note [A](#))**

- Seminoma
- Seminoma with syncytiotrophoblastic cells
- Embryonal carcinoma
- Yolk sac tumor, postpubertal type
- Choriocarcinoma
- Mixed germ cell tumor (specify components and approximate percentages): \_\_\_\_\_
- Non-choriocarcinomatous trophoblastic tumor, NOS
- Placental site trophoblastic tumor
- Epithelioid trophoblastic tumor
- Cystic trophoblastic tumor
- Teratoma, postpubertal type

- Teratoma with somatic-type malignancy (specify type): \_\_\_\_\_
  - Spermatocytic tumor
  - Spermatocytic tumor with a sarcomatous component
  - Well-differentiated neuroendocrine tumor (monodermal teratoma)
  - Other histologic type not listed (specify): \_\_\_\_\_
  - Cannot be determined: \_\_\_\_\_
- +Histologic Type Comment:** \_\_\_\_\_

**Histologic Viability of Tumor (if applicable) (select all that apply)**

- Not applicable
- Viable teratoma present
- Viable non-teratomatous tumor present
- Viable tumor not identified
- Other (specify): \_\_\_\_\_
- Cannot be determined: \_\_\_\_\_

**LYMPH NODES**

**Regional Lymph Node Involvement**

**Number of Regional Lymph Nodes with Tumor**

- Exact number (specify): \_\_\_\_\_
- At least (specify): \_\_\_\_\_
- Other (specify): \_\_\_\_\_
- Cannot be determined (explain): \_\_\_\_\_

**Regional Nodal Site(s) with Tumor (select all that apply)**

- Interaortocaval: \_\_\_\_\_
- Paraaortic: \_\_\_\_\_
- Paracaval: \_\_\_\_\_
- Preaortic: \_\_\_\_\_
- Precaval: \_\_\_\_\_
- Retroaortic: \_\_\_\_\_
- Retrocaval: \_\_\_\_\_
- Other (specify): \_\_\_\_\_
- Cannot be determined: \_\_\_\_\_

**+Size of Largest Nodal Metastatic Deposit**

*Specify in Centimeters (cm)*

- Exact size: \_\_\_\_\_ cm
- At least: \_\_\_\_\_ cm
- Greater than: \_\_\_\_\_ cm
- Less than: \_\_\_\_\_ cm
- Other (specify): \_\_\_\_\_
- Cannot be determined (explain): \_\_\_\_\_

**Site of Largest Nodal Metastatic Deposit (select all that apply)**

- Interaortocaval
- Paraaortic: \_\_\_\_\_
- Paracaval: \_\_\_\_\_
- Preaortic: \_\_\_\_\_

- Retroaortic: \_\_\_\_\_
- Retrocaval: \_\_\_\_\_
- Other (specify): \_\_\_\_\_
- Cannot be determined: \_\_\_\_\_

**Size of Largest Lymph Node or Nodal Mass**

*Specify in Centimeters (cm)*

- Exact size: \_\_\_\_\_ cm
- At least: \_\_\_\_\_ cm
- Greater than: \_\_\_\_\_ cm
- Less than: \_\_\_\_\_ cm
- Other (specify): \_\_\_\_\_
- Cannot be determined (explain): \_\_\_\_\_

**Histologic Subtype of Germ Cell Tumor in Largest Involved Lymph Node (if applicable):**

\_\_\_\_\_

**Extranodal Extension (ENE)**

- Not identified
- Present
- Cannot be determined: \_\_\_\_\_

**Number of Regional Lymph Nodes Examined**

- Exact number: \_\_\_\_\_
- At least (specify): \_\_\_\_\_
- Other (specify): \_\_\_\_\_
- Cannot be determined (explain): \_\_\_\_\_

**Nonregional Lymph Node Status (Note B)**

- All nonregional lymph nodes negative for tumor metastasis
- Tumor metastasis present in nonregional lymph node(s) (M1a, AJCC 8th edition)

**+Number of Nonregional Lymph Nodes with Tumor**

- Exact number (specify): \_\_\_\_\_
- At least (specify): \_\_\_\_\_
- Other (specify): \_\_\_\_\_
- Cannot be determined (explain): \_\_\_\_\_

**+Nonregional Nodal Site(s) with Tumor: \_\_\_\_\_**

**+Number of Nonregional Lymph Nodes Examined**

- Exact number (specify): \_\_\_\_\_
- At least (specify): \_\_\_\_\_
- Other (specify): \_\_\_\_\_
- Cannot be determined (explain): \_\_\_\_\_
  
- Other (specify): \_\_\_\_\_
- Cannot be determined (explain): \_\_\_\_\_
- Not applicable

**PATHOLOGIC STAGE CLASSIFICATION (pN, AJCC 8th Edition)**

*Reporting of pN category is based on information available to the pathologist at the time the report is issued. As per the AJCC (Chapter 1, 8th Ed.) it is the managing physician's responsibility to establish the final pathologic stage based upon all pertinent information, including but potentially not limited to this pathology report.*

**N Descriptors (select all that apply)**

- Not applicable: \_\_\_\_\_
- r (recurrent)
- y (post-treatment)

**pN Category**

- pN not assigned (cannot be determined based on available pathological information)
- pN0: No regional lymph node metastasis
- pN1: Metastasis with a lymph node mass 2 cm or smaller in greatest dimension and less than or equal to five nodes positive, none larger than 2 cm in greatest dimension
- pN2: Metastasis with a lymph node mass larger than 2 cm but not larger than 5 cm in greatest dimension; or more than five nodes positive, none larger than 5 cm; or evidence of extranodal extension of tumor
- pN3: Metastasis with a lymph node mass larger than 5 cm in greatest dimension

**COMMENTS**

Comment(s): \_\_\_\_\_

## Explanatory Notes

---

### A. Histologic Type

The protocol mainly applies to malignant tumors of the testis, the vast majority of which are of germ cell origin. It may also be applied to other malignant or potentially malignant tumors of the testis included in the classification shown below. [1.2.3.4.5.6.7.8.9.10.11.12](#) For hematolymphoid neoplasms involving the testis, refer to the corresponding CAP protocols.

### World Health Organization (WHO) Histologic Classification of Testicular Tumors (2016)<sup>13</sup>

#### Germ Cell Tumors Derived From Germ Cell Neoplasia In Situ

##### *Noninvasive germ cell neoplasia*

Germ cell neoplasia in situ

Specific forms of intratubular germ cell neoplasia

##### *Tumors of a single histologic type (pure forms)*

Seminoma

Seminoma with syncytiotrophoblastic cells

##### *Nonseminomatous germ cell tumors*

Embryonal carcinoma

Yolk sac tumor, postpubertal type

Trophoblastic tumors

Choriocarcinoma

Nonchoriocarcinomatous trophoblastic tumors

Placental site trophoblastic tumor

Epidermoid trophoblastic tumor

Cystic trophoblastic tumor

Teratoma, postpubertal type

Teratoma with somatic-type malignancy

##### *Nonseminomatous germ cell tumors of more than one histologic type*

Mixed germ cell tumor

##### *Germ cell tumors of unknown type*

Regressed germ cell tumor

#### Germ Cell Tumors Unrelated to Germ Cell Neoplasia In Situ

Spermatocytic tumor

Teratoma, prepubertal type

Dermoid cyst

Epidermoid cyst

Well-differentiated neuroendocrine tumor (monodermal teratoma)

Yolk sac tumor, prepubertal type

Mixed teratoma and yolk sac tumor, prepubertal type

Yolk sac tumor, prepubertal type

### Sex Cord-Stromal Tumors

#### *Pure tumors*

Leydig cell tumor

Malignant Leydig cell tumor

Sertoli cell tumor

Malignant Sertoli cell tumor

Large cell calcifying Sertoli cell tumor

Intratubular large cell hyalinizing Sertoli cell neoplasia

Granulosa cell tumor

Adult granulosa cell tumor

Juvenile granulosa cell tumor

Tumors in the fibroma-thecoma group

#### *Mixed and unclassified sex cord stromal tumor*

Mixed sex cord-stromal tumor

Unclassified sex cord-stromal tumor

### Tumor Containing Both Germ Cell and Sex Cord-Stromal Elements

Gonadoblastoma

### Miscellaneous

Ovarian epithelial-type tumors

Serous cystadenoma

Serous tumor of borderline malignancy

Serous cystadenocarcinoma

Mucinous cystadenoma

Mucinous borderline tumor



CAP  
Approved

Testis.RPL\_4.1.0.1.REL\_CAPCP

Mucinous cystadenocarcinoma

Endometrioid adenocarcinoma

Clear cell adenocarcinoma

Brenner tumor

Juvenile xanthogranuloma

Hemangioma

Hematolymphoid Tumors

Diffuse large B-cell lymphoma

Follicular lymphoma

Extranodal NI/T-cell lymphoma, nasal type

Plasmacytoma

Myeloid sarcoma

Rosai-Dorfman disease

Tumors of Collecting Duct and Rete Testis

Adenoma

Adenocarcinoma

Tumors of Paratesticular Structures

Adenomatoid tumor

Mesothelioma

Well-differentiated papillary mesothelioma

Epididymal tumors

Cystadenoma of the epididymis

Papillary cystadenoma

Adenocarcinoma of the epididymis

Squamous cell carcinoma

Melanotic neuroectodermal tumor

Nephroblastoma

Paraganglioma

Mesenchymal Tumors of the Spermatic Cord and Testicular Adnexa

Apipocytic tumors

Lipoma

Well-differentiated liposarcoma

Dedifferentiated liposarcoma

Myxoid liposarcoma

Pleomorphic liposarcoma

#### References

1. Lawrence WD, Young RH, Scully RE. Sex cord-stromal tumors. In: Talerma A, Roth LM, eds. *Pathology of the Testis and Its Adnexa*. New York, NY: Churchill Livingstone; 1986:67-92.
2. Proppe KH, Scully RE. Large-cell calcifying Sertoli cell tumor of the testis. *Am J Clin Pathol*. 1980;74:607-619.
3. Young RH, Talerma A. Testicular tumors other than germ cell tumors. *Semin Diagn Pathol*. 1987;4:342-360.
4. Kim I, Young RH, Scully RE. Leydig cell tumors of the testis: a clinicopathological analysis of 40 cases and review of the literature. *Am J Surg Pathol*. 1985;9:177-192.
5. Mostofi FK, Price EBJ. Tumors of the Male Genital System: *Atlas of Tumor Pathology*. 2nd series. Fascicle 8. Washington DC: Armed Forces Institute of Pathology; 1973.
6. Eble JN, Sauter G, Epstein JI, Sesterhenn IA. *World Health Organization Classification of Tumours: Pathology and Genetics of Tumours of the Urinary System and Male Genital Organs*. Lyon, France: IARC Press; 2004.
7. Mostofi FK, Spaander P, Grigor K, Parkinson CM, Skakkebaek NE, Oliver RT. Consensus on pathological classifications of testicular tumours. *Prog Clin Biol Res*. 1990;357:267-276.
8. Young RH, Scully RE. *Testicular Tumors*. Chicago, IL: ASCP Press; 1990.
9. Ulbright TM. Testicular and paratesticular tumors. In: Mills SE, ed. *Sternberg's Diagnostic Surgical Pathology*. 4th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2004:2167-2232.
10. Ulbright TM, Amin MB, Young RH. *Tumors of the Testis, Adnexa, Spermatic Cord, and Scrotum*. Third Series. Fascicle 25. Washington, DC: Armed Forces Institute of Pathology; 1999.
11. Ro JY, Dexeus FH, El-Naggar A, Ayala AG. Testicular germ cell tumors: clinically relevant pathologic findings. *Pathol Annu*. 1991;26:59-87.
12. Ferry JA, Harris NL, Young RH, Coen J, Zietman A, Scully RE. Malignant lymphoma of the testis, epididymis, and spermatic cord: a clinicopathologic study of 69 cases with immunophenotypic analysis. *Am J Surg Pathol*. 1994;18:376-390.
13. Moch H, Humphrey PA, Ulbright TM, Reuter VE. *WHO Classification of Tumours of the Urinary System and Male Genital Organs*. Geneva, Switzerland: WHO Press; 2016.

#### **B. Metastatic Tumor**

Often the most important distinction in patients with metastatic testicular germ cell tumor following initial chemotherapy is the differentiation of metastatic residual teratoma from nonteratomatous types of germ cell tumor. Pure teratomatous metastasis is generally treated by surgical excision alone, whereas patients who have other residual germ cell tumor components are usually treated with additional chemotherapy.