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

Version: 4.2.1.0
Protocol Posting Date: June 2024

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:

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lymphadenectomy</td>
<td>Includes specimens designated retroperitoneal lymphadenectomy</td>
</tr>
<tr>
<td>Tumor Type</td>
<td>Description</td>
</tr>
<tr>
<td>Germ cell tumors</td>
<td>Includes seminoma and variants, all non-seminomatous germ cell tumors, mixed germ cell tumors, Leydig cell tumors</td>
</tr>
<tr>
<td>Malignant sex cord-stromal tumors</td>
<td>Includes Leydig cell tumors, Sertoli cell tumors, granulosa cell tumors, and mixed sex cord tumors</td>
</tr>
</tbody>
</table>

The following should NOT be reported using this protocol:

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radical orchiectomy (consider Testis Radical Orchiectomy protocol)</td>
<td></td>
</tr>
<tr>
<td>Tumor Type</td>
<td>Description</td>
</tr>
<tr>
<td>Paratesticular malignancies</td>
<td>includes appendageal, mesothelial, and soft tissue tumors (consider Soft Tissue protocol)</td>
</tr>
<tr>
<td>Non-testis germ cell tumors</td>
<td>(consider Extragonadal Germ Cell protocol)</td>
</tr>
<tr>
<td>Lymphoma</td>
<td>(consider the Precursor and Mature Lymphoid Malignancies protocol)</td>
</tr>
<tr>
<td>Sarcoma</td>
<td>(consider the Soft Tissue protocol)</td>
</tr>
</tbody>
</table>

Authors
Paari Murugan, MD, FCAP*; Gladell P. Paner, MD, FCAP*; Lara R. Harik, MD, FCAP*; Mahul B. Amin, MD; Daniel Berney, MB; Scott E. Eggener, MD; Muhammad T. Idress, MD; Frank Ingram, MD; Rafael E. Jimenez, MD; Chia Sui Kao, MD; S. Joseph Sirintrapun, MD; Satish K. Tickoo, 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 4.2.1.0

- Addition of “Precaval” answer to “Site of Largest Nodal Metastatic Deposit” question
Reporting Template

Protocol Posting Date: June 2024
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) (select all that apply)
___ Seminoma (specify percent): _________________ %
___ Seminoma with syncytiotrophoblastic cells (specify percent): _________________ %
___ Embryonal carcinoma (specify percent): _________________ %
___ Yolk sac tumor, postpubertal-type (specify percent): _________________ %
___ Choriocarcinoma (specify percent): _________________ %
___ Placental site trophoblastic tumor (specify percent): _________________ %
___ Epithelioid trophoblastic tumor (specify percent): _________________ %
___ Cystic trophoblastic tumor (specify percent): _________________ %
___ Teratoma, postpubertal-type (specify percent): _________________ %
___ Teratoma with somatic-type malignancy

Select all that apply
___ Adenocarcinoma
___ Embryonic-type neuroectodermal tumor
___ Rhabdomyosarcoma
___ Other (specify): ____________________
___ Spermatocytic tumor
___ Spermatocytic tumor with a sarcomatous component
___ Yolk sac tumor, prepubertal-type
___ Leydig cell tumor
___ Sertoli cell tumor
___ Sertoli cell tumor, large cell calcifying
___ Granulosa cell tumor, adult type
___ Sex cord-stromal tumor type, mixed
___ Sex cord-stromal tumor type, unclassified
___ 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 (Note B)
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 (specify): _________________ 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: _________________
___ Precaval: _________________
___ Retroaortic: _________________
___ Retrocaval: _________________
___ Other (specify): _________________
___ Cannot be determined: _________________

Size of Largest Lymph Node or Nodal Mass
Specify in Centimeters (cm)
___ Exact size: _________________ cm
___ At least (specify): _________________ cm
___ Greater than: _________________ cm
___ Less than: _________________ cm
___ Other (specify): _________________
___ Cannot be determined (explain): _________________

Histologic Subtype of 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 (specify): _________________
___ 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

pNM CLASSIFICATION (AJCC 8th Edition)
Reporting of pN and (when applicable) pM 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.

Modified Classification (required only if applicable) (select all that apply)
  ___ Not applicable
  ___ y (post-neoadjuvant therapy)
  ___ r (recurrence)

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

pM Category (required only if confirmed pathologically)
  ___ Not applicable - pM cannot be determined from the submitted specimen(s)
  pM1: Distant metastasis
  ___ pM1a: Non-retroperitoneal nodal or pulmonary metastases
  ___ pM1b: Non-pulmonary visceral metastases
  ___ pM1 (subcategory cannot be determined)

COMMENTS

Comment(s): _________________
Explanatory Notes

A. Histologic Type

The protocol mainly applies to metastatic tumors of the testis, the vast majority of which are of germ cell origin.\textsuperscript{1,2,3,4} It may also be applied to metastatic sex cord stromal tumors of the testis included in the classification shown below.

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, unless accompanied by somatic-type malignancy, is generally treated by surgical excision alone, whereas patients who have other residual germ cell tumor components are usually treated with additional chemotherapy.

2022 WHO Classification of Testicular Tumors

Germ cell tumors derived from germ cell neoplasia in situ

*Non-invasive germ cell neoplasia*
- Germ cell neoplasia in situ
- Specific forms of intratubular germ cell neoplasia
- Gonadoblastoma

*The germinoma family of tumors*
- Seminoma

*Non-seminomatous germ cell tumors*
- Embryonal carcinoma
- Yolk sac tumor, postpubertal-type
- Choriocarcinoma
- Placental site trophoblastic tumor
- Epithelioid trophoblastic tumor
- Cystic trophoblastic tumor
- Teratoma, postpubertal-type
- Teratoma with somatic-type malignancy

*Mixed germ cell tumors of the testis*
- Mixed germ cell tumors

*Germ cell tumors of unknown type*
- Regressed germ cell tumors

Germ cell tumors unrelated to germ cell neoplasia in situ
- Spermatocytic tumor
- Yolk sac tumor, prepubertal-type
- Testicular neuroendocrine tumor, prepubertal-type
- Mixed teratoma and yolk sac tumor, prepubertal-type

Sex cord-stromal tumors of the testis

*Leydig cell tumor*
- Leydig cell tumor
Sertoli cell tumors
- Sertoli cell tumor
- Large cell calcifying Sertoli cell tumor
Granulosa cell tumors
- Adult granulosa cell tumor
Mixed and other sex cord-stromal tumors
- Mixed sex cord-stromal tumor
- Sex cord stromal tumor NOS

References

B. Lymph Nodes
The testicular lymphatic drainage follows the testicular veins in the spermatic cord and drains into the retroperitoneal lumbar nodes (Figures 1 and 2). These lymph nodes, i.e., interaortocaval, paraaortic, periaortic, paracaval, preaortic, precaval, retroaortic, and retrocaval are considered regional lymph nodes, usually termed “landing zones” of testicular tumors. The intrapelvic, external iliac, and inguinal lymph nodes can be considered regional if there is bulky lumbar lymphadenopathy, if the tumor extends to the scrotum, or if there is prior scrotal or inguinal surgery. Nodes along the spermatic vein are also considered regional. All nodes outside the regional nodes, including the nodes above the diaphragm, are considered non-regional and their involvement should be labeled as M1a.


The N categories are distinguished by the size of lymph node mass and/or number of positive lymph nodes. The size cut-offs in the N category refer to the size of the involved lymph node on imaging or by histological examination and not the size of the metastatic deposit.

References