Protocol for the Examination of Specimens From Patients With Tumors of the Peritoneum

Protocol applies to all primary borderline and malignant epithelial tumors and malignant mesothelial neoplasms of the peritoneum.

No AJCC/UICC TNM Staging System
Protocol web posting date: August 2015

Procedure
• Resection

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Other • Peritoneum

CAP Peritoneum Protocol Revision History

Version Code
The definition of the version code can be found at www.cap.org/cancerprotocols.

Version: Peritoneum 3.2.0.1

Summary of Changes
The only change to the October 2013 version is the addition of the following:

Important Note
Recent observations including molecular findings have indicated that high-grade serous carcinoma of the fallopian tube/ovary/and peritoneum is very often of fallopian tube origin. Serous intraepithelial carcinoma of the fallopian tube has been observed in patients undergoing prophylactic and routine salpingectomy/salpingooophorectomy for nonneoplastic disease, providing supportive evidence for this change in the understanding of high-grade serous carcinoma carcinogenesis occurring in the adnexa and peritoneum. FIGO 2014 has acknowledged high-grade serous carcinoma as a unified entity based on clinical behavior but recommends assigning a primary site if possible. In a recent publication, Singh et al describe 10 scenarios to illustrate assigning high-grade serous carcinoma to fallopian tube, ovary, or peritoneum.

Bibliography
Surgical Pathology Cancer Case Summary

Protocol web posting date: August 2015

PERITONEUM: Resection

Select a single response unless otherwise indicated.

Specimen (select all that apply)
___ Peritoneum
___ Omentum
___ Ovary
   ___ Right
   ___ Left
___ Fallopian Tube
   ___ Right
   ___ Left
___ Uterus
___ Other (specify): _______________________
___ Not specified

Procedure (select all that apply)
___ Peritoneal resection
___ Omentectomy
___ Hysterectomy with bilateral salpingo-oophorectomy
___ Other (specify): _______________________
___ Not specified

Lymph Node Sampling
___ No lymph node sampling
___ Obturator lymph nodes
___ Common iliac lymph nodes
___ Periaortic lymph nodes
___ Inguinal lymph nodes
___ Pelvic lymph nodes not otherwise specified (NOS)
___ Retroperitoneal lymph nodes NOS
___ Other lymph nodes (specify): _______________________

Tumor Site
Specify: ______________________________
___ Cannot be determined

Tumor Size (Peritoneum / Omentum)
Greatest dimension: ___cm
+ Additional dimensions: ___ x ___cm
___ Cannot be determined (see Comment)

Tumor Focality
___ Unifocal
___ Multifocal
___ Diffuse
___ Cannot be determined

+ Data elements preceded by this symbol are not required. However, these elements may be clinically important but are not yet validated or regularly used in patient management.
Involvement of Other Locations (Note A)

Left Ovary
___ No tumor
___ Confined to surface epithelium
___ Surface and cortical stroma involvement
___ Only ovarian substance involvement
___ Greatest dimensions of tumor: ___ x ___ mm
   + Additional dimension: ___ mm
___ Cannot be determined (see Comment)

Right Ovary
___ No tumor
___ Confined to surface epithelium
___ Surface and cortical stroma involvement
___ Only ovarian substance involvement
___ Greatest dimensions of tumor: ___ x ___ mm
   + Additional dimension: ___ mm
___ Cannot be determined (see Comment)

Other (specify): _______________________
Greatest dimension of tumor: ___ mm
+ Additional dimensions: ___ x ___ mm
___ Cannot be determined (see Comment)

Histologic Type (Note A, Note B)
___ Malignant mesothelioma, epithelioid
___ Malignant mesothelioma, sarcomatoid (spindle cell)
___ Malignant mesothelioma, biphasic
___ Malignant mesothelioma, other (specify): _______________________
___ Serous borderline tumor (of low malignant potential)
___ Serous carcinoma
___ Other malignant tumor of Mullerian type (specify): _______________________
___ Other (specify): _______________________
___ Malignant tumor, type cannot be determined

Histologic Grade (Note C)
___ Not applicable (borderline neoplasms and mesotheliomas)
___ GX: Cannot be assessed
___ G1: Well differentiated
___ G2: Moderately differentiated
___ G3: Poorly differentiated
___ Other (specify): _______________________

Lymph-Vascular Invasion
+ ___ Not identified
+ ___ Present
+ ___ Indeterminate

Effusions
+ ___ Positive ascites/peritoneal washings
+ ___ Positive pleural effusions
+ ___ Indeterminate
+ Metastasis
  + ___ None identified
  + ___ Microscopic peritoneal metastasis beyond pelvis (no macroscopic tumor)
  + ___ Macroscopic peritoneal metastasis beyond pelvis 2 cm or less in greatest dimension
  + ___ Peritoneal metastasis beyond pelvis more than 2 cm in greatest dimension and/or regional lymph node metastasis
  + ___ Liver capsule metastasis
  + ___ Liver parenchymal metastasis
  + ___ Other (specify): __________________________
  + ___ Cannot be determined

+ Additional Pathologic Findings (select all that apply)
  + ___ None identified
  + ___ Ferruginous bodies
  + ___ Endosalpingiosis
  + ___ Endometriosis
  + ___ Mesothelial inclusion cysts
  + ___ Other (specify): __________________________

+ Ancillary Studies
  + Specify: __________________________

+ Clinical History
  + Specify: __________________________
  + ___ Not specified

+ Comment(s)
Explanatory Notes

A. Histologic Type
This protocol refers only to primary borderline and malignant epithelial tumors of the peritoneum. Secondary tumors, for example, those causing pseudomyxoma peritonei (almost always of appendiceal origin), are not addressed. However, in some cases "peritoneal spread" of a serous borderline tumor may actually reflect a primary peritoneal tumor rather than a metastasis from the ovary.

Classification of Peritoneal Tumors

Benign
- Adenomatoid tumor
- Benign multicystic mesothelioma (multilocular peritoneal inclusion cyst)
- Mesothelial cyst(s) (unilocular) (free or attached)
- Well-differentiated papillary mesothelioma
- Solitary fibrous tumor (fibrous mesothelioma) (usually benign)

Malignant
- Diffuse malignant mesothelioma
  - Epithelioid type
  - Sarcomatoid type
  - Biphasic type
  - Rare types
- Serous tumor of borderline malignancy (of low malignant potential)^1-3 ###
- Serous carcinoma^4-8 ###
- Malignant tumors of other Mullerian types
- Sarcomas

^ Rare types include desmoplastic, small cell, lymphohistiocytoid, deciduoid, and undifferentiated types.

### When this tumor involves the extraovarian peritoneum significantly and the ovarian surface minimally or not at all, it is generally considered to be of peritoneal origin.

### The Gynecological Oncology Group has adopted the following criteria for the diagnosis of primary peritoneal serous carcinoma:
1. Both ovaries are either normal in size or enlarged by a benign process. In the judgment of the surgeon and the pathologist, the bulk of the tumor involves the peritoneum, and the extent of tumor involvement at 1 or more extraovarian sites is greater than that on the surface of or within either ovary.
2. Microscopic examination of the ovaries reveals: (a) no tumor; (b) tumor confined to the surface epithelium, with no evidence of cortical invasion; (c) tumor involving the ovarian surface and the underlying cortical stroma, but less than 5 x 5 mm in diameter; or (d) tumor less than 5 x 5 mm within the ovarian substance, with or without surface involvement.
3. The histologic and cytologic characteristics of the tumor are predominantly serous and similar or identical to those of ovarian serous papillary carcinoma of any grade.
4. If an oophorectomy has been performed in the past, a confident diagnosis of primary peritoneal serous carcinoma requires 1 of the following: (a) a pathology report to document the absence of carcinoma in the ovarian specimen, with review of all the slides if the oophorectomy has been performed within 5 years of the current procedure; (b) if the oophorectomy has been performed more than 5 years before the current procedure, the pathology report of the specimen should be obtained, and the slides should be reviewed if still available. The peritoneal tumor should be interpreted in light of the ovarian findings.

B. Special Studies
Histochmical, immunohistochemical, and electron microscopic studies are helpful to routine microscopic evaluation in the diagnosis of mesothelioma. These tumors are usually mucicarmine and Pas-D negative. They may be positive for Alcian blue or colloidal iron stains. Mesotheliomas usually are positive for different keratins, including cytokeratins 5/6, EMA, thrombomodulin, WT1, D2-40 (podoplanin), and calretinin. They are usually
negative for CEA, B72.3, BER-EP4, and CD15 (Leu-M1), although they may be positive for single antibodies. In all these cases, a panel of antibodies is recommended. (For further detail, see Thoracic Mesothelium protocol.)

C. Histologic Grade
There is no established grading system for malignant mesotheliomas. Serous and other Mullerian-type tumors can be graded according to the criteria used for similar tumors in the female genital tract, as shown below. (For further detail, see Ovary protocol.)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Cannot be assessed</td>
</tr>
<tr>
<td>1</td>
<td>Well differentiated</td>
</tr>
<tr>
<td>2</td>
<td>Moderately differentiated</td>
</tr>
<tr>
<td>3</td>
<td>Poorly differentiated (tumors with minimal differentiation seen in very small foci)</td>
</tr>
</tbody>
</table>

D. Staging of Peritoneal Tumors
There is no widely accepted staging system for peritoneal tumors, but their extent may have prognostic significance. Thus, it is important to determine whether a mesothelioma is unifocal, multifocal, or diffuse; and whether there are lymph node or distant metastases. Peritoneal serous carcinomas are generally staged as though they were stage II to stage IV ovarian cancers. (For further detail, see ovary protocol.)

References