

GYNECOLOGIC PATHOLOGY

DISSECTION MANUAL

Wenxin Zheng, MD
Professor of Pathology and Gynecology
University of Arizona

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Gynecologic Specimens:

Large Surgical Specimens

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RULE OF THUMB: PRESENT ALL RELATED

INFORMATION TO CLINICAL SERVICE

Large Surgical Specimens

CERVICAL CONE BIOPSY

1. Verify the specimen and patient's name.
2. Measure the diameters from 12-6 and 3-9 o'clock and depth of the cone. Ink the surgical margins if it is a cold knife cone. Note any mucosal abnormality. It is not necessary to ink LEEP specimens.
3. The specimen is usually marked with a suture at 12 o'clock; open it at 12
4. If specimen is not oriented, open at an arbitrary point.
5. Section and submit in 4 cassettes, according to the o'clock position.
An ECC, if present, submit entirely in cassette 5.

LEIOMYOMA(S) – MYOMECTIONY

1. Verify the specimen and patient's name.
2. Describe the number received, size, texture, color and cut surface (**whorled**). Any areas of discoloration and softening should be noted. Weigh any large single leiomyoma.
3. Submit a section of each leiomyoma if less than 3 cm in diameter, with additional sections of large leiomyomas or areas of discoloration or softening. Sub label cassettes. For any leiomyoma larger than 3 cm, use the rule of 1 cm/section and put multiple sections in one or more cassettes.

UTERUS FOR BENIGN DISEASE

1. Verify the specimen and patient's name.
2. Inspect the uterus and orient as to anterior and posterior aspects; score the posterior surface (longer peritoneal reflection) for future reference.
3. If desired, remove the adnexa and set aside. See the protocol for examination of ovary and tube.
4. Weigh the uterus and take three main measurements; length, width between cornua and thickness.
5. Examine the serosal surface and note color, texture, presence of adhesions, cysts or nodules.
6. Measure the diameter of the cervix and examine the cervical os for patency, noting its greatest diameter. Note any ectocervical lesions.
7. The uterus is opened by means of a fish-mouth incision, dividing into anterior and posterior halves. For this, a sharp blade is used, and accuracy in locating the endometrial cavity is achieved by cutting along a probe passed through the cervical canal to the fundus.
8. The length of the endocervical canal and condition of the endocervical mucosa is noted (?polyps, cysts). The size of the endometrial cavity is measured. The endometrium is described with regard to color, thickness, texture and presence of polyps.

9. The cut surface of the myometrium is examined and the color and maximum thickness are noted. Trabeculation and irregular nodularity (adenomyosis) and discrete tan-white firm rubbery nodules with a whorled appearance (leiomyomata) are noted. The location (subserosal, intramural, submucosal) and any variation in cut surface (softening or discoloration) are noted. All myomas should be transected at the time of dictation.
10. Submit the following sections after fixation:
 1. – anterior cervix or lateral at 3 o'clock (including transformation zone)
 2. - posterior cervix or lateral at 9 o'clock
 3. - anterior endomyometrium, including serosa
 4. - posterior endomyometrium, including serosa
 5. - sections of any additional lesions – polyps, leiomyomata, etc.
11. The gross description should include a record of all sections taken and their sub labels

Modification for Dysplasia or Carcinoma-in-situ of Cervix

Submit the entire cervical mucosa as a cone biopsy, including the squamocolumnar junction. Include the vaginal cuff margin in the sections if any.

MODIFICATION FOR INVASIVE CERVICAL CARCINOMA

Describe the gross location and three dimensional size of the tumor – how deep does it penetrate into the cervical stroma? Does the tumor extend to the lower uterine segment or endometrial cavity? Does it involve parametrial soft tissue? Ink the specimen prior to sectioning.

Submit the entire ectocervical mucosa and vaginal cuff margin as a cone biopsy if the tumor is less than 4 CM in greatest dimension. Select representative sections if the tumor is greater than 4 cm. The representative sections still should demonstrate the depth of invasion and the relationship to adjacent anatomic structures.

If the majority of the tumor is higher in the endocervical canal, additional sections should be taken in order to evaluate the depth of stromal invasion and extension to the lower uterine segment/endometrium.

Separate sections of left and right parametrial soft tissue (adjacent to the cervix) are submitted.

Vaginal cuff margins are usually attached to the cervical sections. Therefore, no additional vaginal cuff margins are necessary if the whole cervix with attached short portion of vagina is completely submitted.

Modification for Endometrial Hyperplasia/Carcinoma

Describe the location (fundus, entire cavity or lower uterine segment) and thickness of the endometrial lesion, as well as the gross extent of myometrial invasion (one third, one half, etc.), if any, and presence or absence of gross tumor extension to the lower uterine segment and/or endocervix.

Submit at least 4 (prefer 6) full thickness sections to show the maximum depth of myometrial penetration. If the uterine wall is too thick to fit in one cassette, a cross section should be bisected and submitted in 2 adjacent cassettes and so noted in the gross description. **Try your best to select sections**

containing transitional areas (cancer and non-cancerous areas).

*Sections of anterior lower uterine segment and posterior lower uterine segment continuous with the anterior and posterior cervical sections are taken.

Separate sections of left and right parametrial soft tissue are also submitted, if present.

If there is no grossly identifiable tumor or pre-surgical EMC shows atypical complex hyperplasia, or endometrial glandular dysplasia, or endometrial intraepithelial carcinoma, the entire endometrium should be submitted after 6 whole thickness endomyometrium sections are taken.

Ovary and Tube Submitted with Uterus

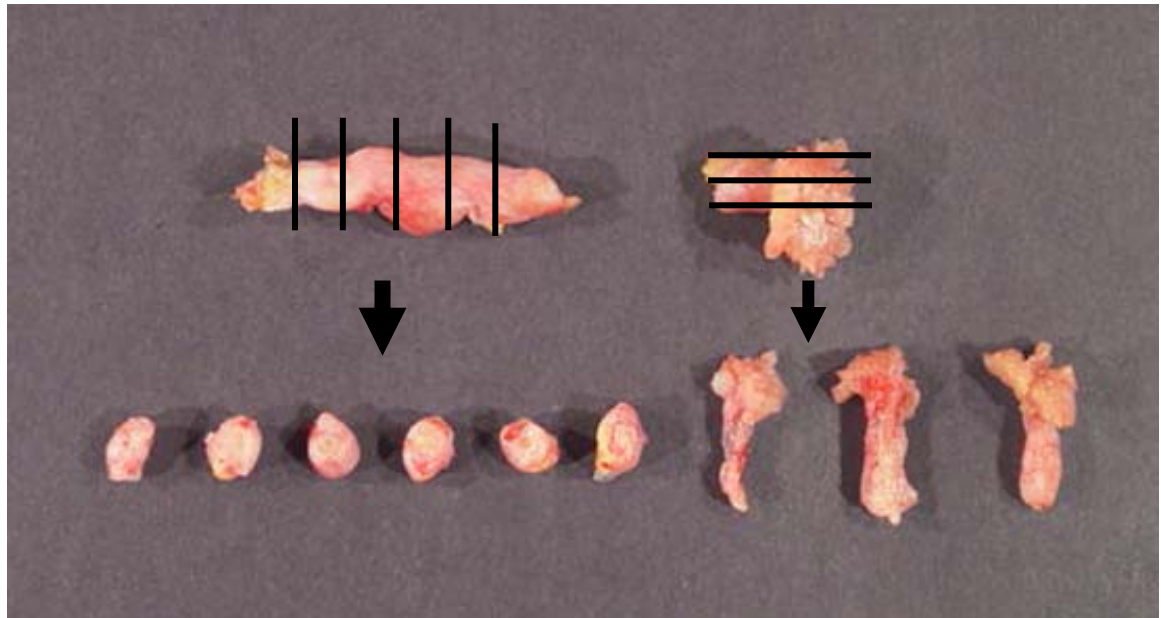
1. After examination of the uterus, the adnexa are examined, first left, then right.
2. The oviduct is measured (length and diameter) and examined for adhesions and piratical (hydatid) cysts. Is there tubal fimbria present? If the tube has been divided, measure the proximal and distal portions and note the opposing margins of resection.
3. Examine the ovary and record the dimensions. Examine the serosal surface for color, texture, tears, cysts ad adhesions.

4. Section the ovary from cortex to hilum and note size of any cysts (content, interior lining), presence of corpora lutea (corpus luteum) and corpora albicantia (corpus albicans).
5. Submit the following sections:
 - a. 2 well-spaced cross sections of each oviduct and 1 section of the fimbria in one cassette.
 - b. 2 sections of each ovary
6. The gross description should include a record of all sections taken, including their sub label.

OVARIES AND TUBES SHOULD BE SUBMITTED ENTIRELY IN THE FOLLOWING CONDITIONS:

1. History of breast cancer
2. Family history of ovarian and/or breast cancer
3. Known BRCA mutations
4. Clinically looking for endometriosis, but grossly lesions are not visible.
5. Uterine cancer and contralateral ovarian cancer including borderline tumors.

Note: The entire specimen is blocked in 2-3 mm slices. 2 to 5 cassettes will be needed to fully embed an ovary, and two to three cassettes will accommodate a fallopian tube with a focus on tubal fimbrial end by longitudinal sectioning of the fimbria to maximize exposure of the tubal mucosa in addition to cross sectioning of the proximal tube (SEE-FIM protocol, see the following picture). Cassettes can be completely filled. Prior formalin fixation facilitates thin-sectioning. Occult disease identification can be significantly improved with this kind of meticulous method.



OVARIAN CYSTS AND TUMORS

1. Verify the specimen and patient's name.
2. Inspect the ovarian mass, record the external dimensions, and weigh, if solid.
3. Examine the external surface for adhesions, hemorrhage, exophytic tumor nodules or penetration by tumor. Is the tube present?
4. Section the ovary, and if solid, section at 1 – 2 cm intervals. Examine the tumor. If cystic, note whether unilocular or multilocular, character of fluid, appearance of cyst lining (smooth, irregular, papillations – if so, how extensive). Describe the size, color and consistency of any solid areas. Is any normal ovarian tissue apparent?
5. Submit the following sections after fixation:
 - a. A useful rule of thumb is to take at least one section for every centimeter of the tumor's greatest dimension. This is

- b. For simple cysts, multiple sections in 1 or 2 cassettes is sufficient.
 - c. For dermoid cysts, multiple sections in 3 or 4 cassettes, including any solid areas, are sufficient.
 - d. For routine ovarian carcinomas, 8-10 sections are sufficient.
6. The gross description should include a record of all sections taken and their sub label.

PELVIC EXENTERATION

1. Verify the specimen and patient's name. Take a digital photo for sectioning description, which will be part of the permanent patient record.
2. Describe the organs present: bladder, uterus, ovaries and tubes, rectum, vagina, lymph nodes. How much bowel is present? Is there gross tumor, ulceration, stricture, fistula, etc? Measure all organs present.
3. If possible, inflate the bladder and bowel with formalin and fix overnight. Make a sagittal central section. You should always ask your attending for further guidelines since you will rarely see this kind of specimen.
4. Submit the following representative sections:

- a. gross tumor or other lesions
 - b. recto-vaginal septum
 - c. urethra
 - d. cervix, endometrium, myometrium
 - e. bladder and peri-vesical soft tissue
 - f. All margins including skin, vagina, ureters, rectum, anus, and proximal bowel resection margin
 - g. ovaries and tubes
 - h. tumor with relationship to adjacent organs.
5. The gross description should include a record of all sections taken and their sub labels.

COLON/SMALL BOWEL

1. Verify the specimen and patient's name
2. Measure the length of bowel and amount of attached mesentery. Are there any serosal lesions (tumor nodules, adhesions, fistulas)?
3. Open the bowel and examine the mucosal surface for lesions. If any, note their relation to the margins of resection.
4. Submit the following cross-sections after fixation:
 - a. Both margins of resection
 - b. Any serosal lesions
 - c. Any mucosal lesions – if there appears to be a primary bowel carcinoma, submit 3 sections of the tumor and dissect the mesenteric lymph nodes.

OMENTUM

1. Verify the specimen and patient's name.
2. Measure the size of the tissue and examine for abnormalities; adhesions, fat necrosis, tumor nodules.
3. Submit 3 blocks of omentum in cases of ovarian tumors, sub labeling cassettes.

Submit one block of grossly normal omentum in non-tumor cases.

But you need to submit multiple sections using 1 cm/section rule for ovarian or uterine cancer omentum without gross lesions.

VULVAR EXCISIONS AND VULVECTOMY (+ / - LYMPH NODES)

1. Verify the specimen and patient's name, take photo graph and mark the sections accordingly on the digital photo(s).
2. Measure the size of the specimen, including the inguinal portion, if present. Are the lymph nodes attached or submitted separately? Ink the surgical margins of resection (Lateral half black, medial half blue). The specimen should be kept flat and fixed overnight.
3. Measure the size of the lesion and note its location. Describe its appearance (ulcerating, fungating, rolled borders, color, texture). Examine the gross depth of invasion. Describe the rest of the skin surface – are any other lesions present?
4. Each group of lymph nodes should be kept separate and dissected while fresh.
5. Submit the following sections:

Digital photographs or a drawing of the specimen should be made to indicate where sections were taken.

- a. 3 blocks of tumor: to include deep margin
 - b. sections of any other lesions
 - c. shave sections of entire margin of resection: in clockwise fashion and submitted in its entirety .
 - d. dissection right and left inguinal nodes
6. If the sections are fatty and/ or slightly thick, put the blocks in 70% alcohol for an extra day before processing.

SMALL SURGICAL SPECIMENS

APPENDIX

1. Verify the specimen and patient's name.
2. Description should include:
 - a. length and diameter
 - b. width of attached mesentery
 - c. description of serosa (?exudate, perforation)
 - d. luminal diameter and contents on cut section
 - e. wall thickness
 - f. any abnormalities
3. Submit a longitudinal section of the tip, random cross section and resection margin (scored) in one cassette.
4. If the specimen appears grossly normal, but there is a clinical diagnosis of inflammation, submit more than the usual number of sections. Sub label additional cassettes.

5. **If the patient has an ovarian mucinous tumor, particularly associated with psuedomyxoma peritonii, the appendix should be sectioned every 2 mm per slice and embedded completely.**

BIOPSIES (CERVIX, VAGINA, VULVA, SKIN)

1. Verify the specimen and patient's name.
2. If multiple specimens are received, the preferred order of examination is from superior to inferior, left to right.
3. For each specimen, describe the number of tissue pieces received, color, size and texture. Note any unusual appearance.
4. Each specimen is submitted entirely in a separate cassette with sub labels.

Excisional Skin biopsies

1. Ink the surgical margins of a skin ellipse with a visible lesion.
2. Bread-loaf the specimen and submit it entirely. If sutures are used to orient the specimen, additional cassettes may be used to facilitate easy identification of specific margins of resection.

CURRETTINGS (ENDOCERVICAL AND ENDOMETRIAL)

1. Verify the specimen and patient's name. Preferred order is endocervical before endometrial.
2. Describe the 3 dimensional size or volume, number of pieces, color texture and shape (?polyps) of the tissue received.

3. Each specimen is submitted entirely, covered by tissue paper. Do not overstuff cassettes with bloody curettings. Sub label additional cassettes.

ENDOCERVICAL AND ENDOMETRIAL POLYPS

1. Verify the specimen and patient's name.
2. Describe the size, shape, color and number of pieces received. If the polyp has a stalk, the length and width should also be noted.
3. Note any unusual appearances (inflammation, erosion, hemorrhage)
4. Section in a longitudinal fashion to include the stalk and submit entirely. Sub label additional cassettes.
5. Any endometrial polyp from a woman, who is older than 60 years or who has a history of tamoxifen treatment, should be submitted in its entirety with 2 mm slices.

ENTEROCELE SACS

1. Verify the specimen and patient's name.
2. Describe the number of pieces, general shape, texture, size and contents. Note any abnormalities.
3. Submit representative sections in one cassette.

SKIN SCAR

1. Verify the specimen and patient's name.
2. Describe the number of pieces, shape, surface and measurements. Note any abnormalities.
3. Submit a representative cross section in one cassette.

TUBAL LIGATION SEGMENTS

1. Verify the specimen and patient's name.
2. If bilateral, describe the left tube before the right.
3. Description should include length, diameter, color and notation of whether gross appearance is consistent with oviduct/vas.
4. Section and submit one **cross** section of each tube/vas in a separate cassette with sub labels.

VAGINAL MUCOSA (REPAIR/PROLAPSE)

1. Verify the specimen and patient's name.
2. Describe the number of pieces, general shape, color and measurements in aggregate. Note any abnormalities.
3. Submit representative section(s) in **one** cassette.