PathMD™: Board Review Letter

Author: Philip Ferguson, M.D. Gynecologic Pathology - Part 1 Volume 1, Number 26

Case #1 A 65-year-old female was noted to have an endometrial mass. Represent sections of the biopsy are shown in the images for this case. At hysterectomy, the lesion was noted to be noninvasive, confined to the endometrium, and had 1 mitotic figure per 10 hpf. Based on these findings, which of the following is the best diagnosis?

B. Adenofibroma

Answer: B. Adenofibromas usually occur in postmenopausal women. They typically arise in either the cervix or endometrium, but rarely can occur in the uterus. They are characterized by papillary projections with benign epithelium. The epithelial lining can be serious, nucinous, or endometroid with or without squamous metaplasia. The stroma must be bland and can have no more than 2 mitotic figures per 10 high-power fields. The most important thing to realize when making a diagnosis of an adenofibroma is to know that it cannot be diagnosed on biopsy. Adenosarcomas often very from area to area in mitotic activity and cellularity. Therefore, an adenosarcoma cannot be eliminated as a diagnostic possibility in a biopsy sample. When this diagnostic possibility arises on a biopsy sample, a hysterectomy should be recommended for complete evaluation. (Sternberg, 4th edition, pages 2491-2493)

Case #2 A female patient who is 32 years old presents with intermittent vaginal bleeding. An endometrial biopsy is performed, and representative images are shown for this case. Which of the following is the best diagnosis?

D. Choriocarcinoma

Answer: D. These images represent a choriocarcinoma. Choriocarcinoma is associated with a complete hydatiform mole in 50% of cases. Interestingly, choriocarcinoma is often associated with some type of abnormality during pregnancy. Time from pregnancy to presentation may sometime times be delayed many years. The histologic hallmark of this lesion is the biphasic appearance of the tumor with syncytiotrophoblastic cells and mononuclear trophoblastic cells. The syncytiotrophoblastic cells will stain for beta hCG. Many of these tumors will have extensive necrosis, and additional sections with multiple levels may be necessary to identify this biphasic cell population. (Sternberg, 4th edition, pages 2287-2289)

Case #3 A 55-year-old female presents with intermittent vaginal bleeding. A Pap smear was performed, and a representative image is shown. Clinically, the uterus is slightly enlarged, and the cervix is grossly unremarkable. Based on these findings, what is the most likely diagnosis?

E. Endometrial Adenocarcinoma

Answer: E. This image represents the cytology of endometrial adenocarcinoma. It would be an unfair question to show one cytology image and expect someone to make the exact classification. However, given the patient's history combined with the architectural findings, the most reasonable diagnosis in this case would be endometrial adenocarcinoma. CIN I-III are squamous lesions and the characterization is based on nuclear features which are not shown in this image. This image shows a relative low-power of a large three-dimensional structure with pleomorphic nuclei (i.e. malignant features). The most reasonable approach this question is to realize that this cytology is a malignant, and combine these factors with the clinical information to arrive at the diagnosis.

Case #4 A 65-year-old female presents with an ovarian mass. An oophorectomy is performed, and representative images are shown for this case. Based on the histologic findings, what is the best diagnosis?

E. Clear Cell Carcinoma

Answer: E. Clear cell carcinoma the ovary is often accompanied by endometriosis, and account for approximately 5% of ovarian cancers. Morphologically the two most common patterns are tubulocystic and diffuse. The clear cells have the same appearance as clear cell carcinoma of the endometrium with hobnailing, clear cytoplasm, and atypical nuclei. In some cases, there can be prominent eosinophilia, but typical clear cells can still usually be found. (Sternberg, 4th edition, pages 2565-2568)

Case #5 A 40-year-old female presents with an ovarian mass. An oophorectomy is performed, and representative images are shown. Based on the findings, what is the best diagnosis?

C. Mucinous Cystadenoma

Answer: C. Mucinous tumors are on average the largest ovarian tumor. Benign, borderline, and malignant mucinous tumors can be indistinguishable grossly. Benign mucinous cystadenomas are lined by a single layer of mucin containing cells. In contrast, intestinal-type mucinous borderline tumors have cellular stratification (two to three layers), fusiform papilla, and mild to moderate atypia. This case lacks significant stratification. In cases of pseudomyxoma peritonei, an appendiceal primary tumor is usually found. Therefore, be careful in making the diagnosis of a borderline mucinous tumor in a patient with pseudomyxoma peritonei because it most likely represents a metastatic lesion from the appendix. (Sternberg, 4th edition, pages 2553-2556)

Case #6 A 48-year-old female is found to have a 1.5 cm ovarian mass lesion that is separate from another lesion for which an oophorectomy was being performed. The images for this case show that histology for the 1.5 cm mass lesion. Based on the findings, what is the diagnosis?

A. Brenner Tumor

Answer: A. **Brenner Tumors** are characterized by epithelial cells arranged in nests surrounded by fibrous to thecomatous stroma. The epithelial cells often will have a longitudinal groove (adult granulose cell tumors will also often have this groove) and resemble urothelial cells. Approximately 1/3rd of cases are associated with a mucinous lesion (e.g. mucinous cystadenoma). Benign Brenner tumors are usually less than 2cm and sharply circumscribed.

Brenner tumors are divided into benign (above), borderline, and malignant. The borderline tumor is characterized by a pattern similar to papillary urothelial carcinomas (i.e. cysts with protruding papilla resembling urothelium). Malignant Brenner tumor has the appearance of an invasive urothelial carcinoma. A benign Brenner component is present in both borderline and malignant cases! If there is confusion with the possibility of a metastatic urothelial carcinoma, CD20 and thrombomodulin can be helpful. They are positive in urothelial carcinoma and negative in ovarian TCC. (Sternberg, 4th Ed., p. 2568-2570)

Question #1 Brenner tumors associated with what type and frequency of a lesion?

C. Mucinous lesions, 30%

Answer: C. Approximately one third of Brenner tumors are associated with a mucinous lesion in the ovary. (Sternberg, 4th Ed., p. 2568-2570)

Question #2 In a patient with choriocarcinoma, which is a fall Lab abnormalities do you expect to find elevated, which may be helpful diagnostically?

A. Beta hCG

Answer: A. Beta hCG is typically elevated choriocarcinoma. In fact, beta hCG immunohistochemistry will usually stain the syncytiotrophoblastic cells in the tumor. Alpha-fetoprotein is often elevated in yolk sac tumors and hepatocellular carcinoma. (Sternberg, 4th edition, pages 2287-2289)

Question #3 An endometrial adenocarcinoma that invades two thirds of the depth of the myometrium would be classified as which of the following according to the AJCC cancer staging manual, sixth edition?

C. T1c

Answer: C. T1c is characterized by tumor that invades at least one half or more of the myometrial thickness. T1a is limited to the endometrium, and T1b as invasion through less than one half of the myometrium. If (AJCC Cancer Staging Handbook, 6th edition, page 301)

Question #4 When staging a primary ovarian tumor, according to the AJCC staging manual, which of the following categories would represent tumor limited to the ovary but having positive peritoneal washings?

C. T1c

Answer: C. T1 represents tumor limited to the ovaries. The designation “c” is used in the categories T1 and T2 to designate positive peritoneal washings. T2 represents tumor extending beyond the ovaries into the pelvis, and T3 represents tumor outside of the pelvis. (AJCC Cancer Staging Handbook, 6th edition, page 309)

Notes for question set:[1]

[1] PathMD strives for the highest quality and accuracy. However, the *PathMD: Board Review Letter* is for review purposes and not meant for clinical decision making. It should not be used in place of review of primary reference texts and the current medical literature. If inaccuracies are identified, please notify us so that a correction may be published. (info@PathMD.com)

