# PathMD™: Board Review Letter

Author: Philip Ferguson, M.D. | GI Pathology – Part 4 | Volume 1, Number 36

Case #1 A patient is found to have a liver mass by CT scan. Representative histology is shown in the images for this case. You are asked to review the case. Which of the following is the single test stain to confirm this diagnosis?

Answer: E. This is a case of **Hepatocellular Carcinoma (HCC).** The single best stain for HCC is reticulin to identify cell plates greater than 3 cells thick. *Test taking strategy.* AFP level is helpful, but may be elevated in germ cell tumors (yolk sac component). AFP is also not site specific, so the biopsy procedure may have missed the tumor. HepPar-1 is good to differentiate a non-hepatocyte lesion from a hepatocellular lesion. It does not differentiate between "good" and "bad" hepatocytes. PAS staining in the liver is typically performed for other diseases like alpha-1 antitrypsin deficiency. CK-19 is sometimes expressed in HCC (as are many other cytokeratins), but is more often positive in cholangiocarcinoma. CD34 is sometimes used in place of reticulin, but it is the author's opinion that liver experts prefer reticulin.

Case #2 A 35-year-old female who underwent a CT scan for dysplasia was found to have a localized stomach mass. An EGD was performed, and representative histologic images from the biopsy or shown. Based on the histologic findings, what is the most likely diagnosis?

Answer: B. This case represents a marginal zone lymphoma (MALToma/**MALT lymphoma**). Clues to the diagnosis in this case include: the location, the presence of lymphoepithelial lesions, and the small cell size. MALT lymphoma is one of the few low-grade B cell lymphomas that may present as an isolated lesion. Diffuse large B cell lymphoma and anaplastic large cell lymphoma may present as localize lesions, but are composed of large cells (although there is a small cell variant of anaplastic large cell lymphoma). Mantle cell lymphoma classically involves a G.I. tract as lymphomatoid papulosis. This is a diffuse, not localized, process. It would also be unusual to have localized involvement of the G.I. tract by CLL/SLL.

Case #3 A 45-year-old female is found to have a 2.5 cm cecal mass. And excision was performed, and representative images are shown for this case. Based on the histologic findings, what is the most likely diagnosis?

Answer: A. This case represents a **neuroendocrine carcinoma**. There are probably few areas in G.I. pathology that are more confusing than neuroendocrine tumors. The WHO classification actually does not list neuroendocrine carcinoma. Instead, it lists small cell carcinoma and carcinoid tumors with varying secretory patterns for options at different anatomical sites. It is important to recognize with neuroendocrine lesions in the G.I. tract that the histological classification does not necessarily denote the level of malignant behavior. Other characteristics including location, size, histologic appearance, and mitotic activity are all helpful in predicting behavior. All types of neuroendocrine tumors (from carcinoid to small cell carcinoma) are potentially malignant. This case was classified as a neuroendocrine carcinoma because of its size, histologic appearance, and mitotic activity. This lesion has a more aggressive histologic appearance then one season a rectal tumor, but it does not meet the usual appearance for the small cell carcinoma (nuclear molding, etc.). Odze calls these tumors neuroendocrine tumors and specifies the location. Given the aggressive behavior of this lesion in the rectum, this author feels the term carcinoma is warranted. (Odze, pages 491-502)

  

Case #4 A colonic mass is found in a 45-year-old male with a history of anemia. At surgery a hemicolectomy was performed, and representative histologic images are shown for this case. Based on the findings, which of the following is the best diagnosis?

Answer: D. This case represents **signet ring adenocarcinoma**. Signet ring adenocarcinoma of the colon is defined by at least 50% of the tumor containing signet ring cells. A signet ring cell is characterized by a cell with a mucin vacuole that pushes the nucleus to the periphery. These tumors are more likely to be associated with extravascular mucin an advanced stage. Overall, signet ring adenocarcinoma tumors are uncommon (0.5-1.0% of colorectal carcinomas). 30% of signet ring adenocarcinomas occur in patients with ulcerative colitis. The five-year survival rate is low, in the range of 10%. (Odze, pages 450-452)

Case #5 A 50-year-old female is found to have a 5 cm pancreatic tumor in the tail. A partial pancreatectomy is performed, and representative histologic images are shown for this case. Based on the histologic findings and the clinical history, which of the following is the best diagnosis?

Answer: B. **Mucinous cystadenoma of the pancreas** occurs exclusively in women. Analogous to the tumor in the ovary, there is a surrounding ovarian like stroma. The epithelial lining is composed of tall columnar mucinous cells. It is important to differentiate these tumors from intraductal papillary-mucinous neoplasms. Mucinous cystadenomas are not connected with a duct structure unlike intraductal mucinous neoplasms. Intraductal mucinous neoplasms typically occur in the head of the pancreas, whereas mucinous cystadenomas are usually found in the tail of the pancreas. Intraductal mucinous neoplasms have a malignant potential. (Odze, pages 711-717)

Case #6 A 30-year-old female is found to have a 10 cm pancreatic mass. Representative histologic slides from this lesion are shown. Based on the history and histologic findings, what is the best diagnosis?

Answer: A. This case represents a **solid-pseudopapillary tumor of the pancreas**. These are relatively rare tumors that are found predominantly in women (9:1 female to male ratio). The mean age of presentation is 30 years and the lesions are often large (10 cm average). They are often found incidentally while being worked up for other problems. Histologically, lesion is comprised of solid cellular nest with numerous small vessels. These tumors often undergo cystic degeneration, and true luminal spaces are not present. In a fashion very similar to renal cell carcinoma, is one further away from the vascular structures die off leaving a pseudo-papillary formation. The cell of origin in this tumor is unknown. (Odze, pages 726-728)

Case #7 A 55-year-old man undergoes an EGD for dysphasia. While examining the duodenum, and nodularity was noted in the duodenal bulb. This area was biopsy, and representative histologic sections are shown. Based on the histologic findings which of the following is the best diagnosis?

Answer: E. This case represents **Brunner's gland adenoma/hyperplasia**. Some pathologists are very offended by the use of the term adenoma because this lesion represents either hyperplasia or a spectrum of normal. However, adenoma has been used historically and is still commonly used in reports and the literature. There is no definite consensus on an exact definition. Some institutions require lobules of Brunner's glands along at least 50% of the biopsy length. Most will agree that there should be at least an increase in number and/or size of the glands, usually with the extension from the submucosa into the lamina propria. (Odze, pages 295-297)

  

Case #8 A patient with a history of HIV and disseminated histoplasmosis undergoes screening colonoscopy for intractable G.I. bleeding. Several red to purple patches are found along the colonic mucosa, and partial resection is performed. Representative histologic sections are shown. Based on the clinical history and histologic findings, what is the best diagnosis?

Answer: E. This case represents **Kaposi's sarcoma** in an immunocompromized patient with HIV. With the history of disseminated histoplasmosis, it should be clear that the patient is significantly immunosuppressed. A vascular lesion in a patient with this history should raise significant suspicion for Kaposi's sarcoma. Representative images show the characteristic slit-like vascular spaces in a somewhat spindled lesion. Helpful stains confirm this diagnosis would include HHV8. It is important to remember that HHV8 positivity can be found in primary effusion lymphomas, Kaposi's sarcoma, and plasma cell variant of Castleman's disease. There are also some reports of positivity of HHV8 in plasmablastic lymphoma. Bacillary angiomatosis can sometimes look very similar to Kaposi's sarcoma but usually has a neutrophilic infiltrate often with areas of conspicuous organisms. Helpful stains would include a silver stain for the microorganisms and HHV8 Kaposi's sarcoma.

Question #1 All of the following are helpful in diagnosing reflux esophagitis (GERD) EXCEPT:

Answer: C. Eosinophilia within the epithelium in the range of more than 20/hpf is suggestive of the diagnosis of eosinophilic esophagitis, eosinophilic gastroenteritis, drug reaction, or pill induced esophagitis. Typically in GERD the eosinophils are <10/hpf. Intraepithelial neutrophils are specific but not sensitive (<1/3rd). Answers A and B are both helpful in the diagnosis of GERD. (Odze, p. 123)

Question #2 With respect possible answers in case #2, which of the following is the most important prognostic indicator in MALT lymphoma?

Answer: A. The presence of Helicobacter pylori organisms in a case of malt lymphoma of the stomach conveys a good prognosis. In contrast, the absence of Helicobacter pylori organisms is associated with a worse prognosis. If the answer were diffuse large B cell lymphoma, then MUM-1 positivity would indicate an activated phenotype and is associated with a shorter survival. Bcl-6 positivity with the absence of MUM-1 or CD138 positivity is indicative of a germinal center phenotype and has a longer survival compared to an activated phenotype in diffuse large B cell lymphoma. (Haarer, p. 1819-1824)

**References:**

"Immunohistochemical Classification of De Novo, Transformed, and Relapsed Diffuse Large B Cell Lymphoma into Germinal Center B Cell and Non-Germinal Center B Cell Subtypes Correlates with Gene Expression Profile and Patient Survival." Haarer, CF, et al. *Archives of Pathology and Laboratory Medicine*, Volume 130, December 2006, pages 1819-1824.

*Surgical Pathology of the GI Tract, Liver, Biliary Tract, and Pancreas*, Odze, R. *et al*. 1st Edition. 2004.

**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)

  