PathMD™: Board Review Letter

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1. Which of the following is the most specific marker for a gastrointestinal stromal tumor?
   a. CD34
   b. CD117
   c. CD10
   d. S100
   e. Desmin

Answer: B. CD117 (c-kit) is both the most sensitive and specific marker when considering a GIST and the associated differential diagnosis. CD34 is also often positive in a GIST, but is not as sensitive or specific. The main differential diagnosis for a GIST includes a leiomyoma and schwannoma. CD117 (GIST), CD34 (GIST), Desmin (Leiomyoma), and S-100 (Schwannoma) is a recommended panel to use when considering this diagnosis.

2. A 67 y/o female presents with dysphagia and undergoes an EGD. Biopsies were performed and histologic images and appropriate immunohistochemical (IHC) stains are performed. Based on the findings, what is the IHC diagnostic of?
   a. HSV
   b. CMV
   c. EBV
   d. HIV

Answer: A. This is an example of herpes esophagitis, which usually is found as an opportunistic infection in immnocompromised patients, but can also occur in healthy individuals. The histologic characteristics include an ulcer bed with necrotic debris and diagnostic inclusions within dyscohesive and/or multinucleated squamous cells at the margin of the ulcer with dense eosinophilic (ground glass) intranuclear inclusions. (Sternberg, p. 1405-06)

3. A 64 y/o male presents with chronic weight loss that is significant and unwanted. Chest X-ray and CT scans show infiltrates and a possible mass. The patient has no known history of immune suppression or steroid use. An EGD was performed due to difficulty swallowing and showed a 5cm stricture. This area was biopsied, and representative images are shown. Based on the findings, what is the best diagnosis?
   a. Poorly differentiated adenocarcinoma
   b. Squamous cell carcinoma
   c. MAI infection
   d. Invasive fungal infection
   e. TB infection

Answer: E. This is an unusual case of TB presenting as an esophageal stricture/mass. Note the necrotizing granulomatous inflammation on the H&E sections with palisading histiocytes at the periphery. This is not a common diagnosis that should be at the forefront of your brain, but the inflammatory patter is classic, and should bring the differential diagnosis into consideration. This question also tests one's ability to recognize a typical AFB stain without it being labeled in the question. This is sometimes done on the board exam with common stains.

TB involvement is more common in AIDS patients, and is most commonly found in the ileocecal and jejunoileal regions. They often present as strictures and ulcers (this case presented as a stricture), and may be extremely difficult to separate from inflammatory bowel disease.

4. Fundic gland polyps are associated with all of the following EXCEPT:
   a. Familial adenomatous polyposis (FAP)
   b. Proton pump inhibitor therapy
   c. Adenomatous polyposis coli (APC) gene mutations
   d. Female gender
   e. H. pylori infection

Answer: E. Fundic gland polyps are not known to be associated with H. pylori infections (in contrast to hyperplastic polyps). They usually occur in the body, and are more common in women (5:1 ratio to men). In addition to being common in patients with FAP, they are associated with proton pump inhibitor therapy. (Odze, p. 272-277)

5. A 60 y/o male presents with a history of chronic diarrhea. Colonoscopy was performed with no significant findings. Random biopsies were obtained, which are shown for this case. Based on these findings, what is the best diagnosis?
   a. Lymphocytic colitis
   b. Collagenous colitis
   c. Brainerd diarrhea
   d. Ulcerative colitis
   e. Crohn's disease

Answer: A. This is a case of lymphocytic colitis, which is characterized by chronic diarrhea, a normal colonoscopy, and well described microscopic features. These features are an increased lymhpoplasmacytic lamina propria infiltrate, surface epithelial damage with increased intraepithelial lymphocytes, and no increased thickening of the basement membrane (collagenous colitis). (Odze, pages 237-238)

6. A patient undergoes an EGD for non-specific abdominal pain. A nodule is found in the duodenum. Based on the histologic images, what is the most important diagnosis to consider?
   a. Underlying carcinoma
   b. Familial adenomatous polyposis
   c. Gardner syndrome
   d. Neurofibromatosis, type 1

Answer: A. This is an adenoma of the ampullary region. Carcinomas are often missed even on repeated biopsies when evaluating these types of lesions. Familial adenomatous polyposis and Gardner syndrome are associated with this type of adenoma. (Sternberg, p. 1814)

7. All of the following are true about collagenous colitis, EXCEPT:
   a. Women outnumber men, 2:1
   b. The collagen often entraps small capillaries
   c. Distal colon biopsies may appear normal
   d. Increased intraepithelial lymphocytes should always be present
   e. Paneth cell metaplasia may indicate treatment resistance

Answer: A. Women outnumber men 8:1 in the diagnosis of collagenous colitis. There is a more even sex distribution for lymphocytic colitis. Interestingly, distal colon biopsies may not have as prominent thickened collagen component, which may be in the normal range. (Odze, pages 236-237)

8. Which of the following are true about gastric foveolar polyps?
   a. Typically occur in the antrum
   b. Are associated with an increased risk of carcinoma
   c. Do not have intestinal metaplasia
   d. Often have chronic inflammation
   e. Prominent cystic change

Answer: A. Gastric foveolar polyp may represent a type of hyperplasia. These lesions contain densely packed glands in an arborizing network with mucinous foveolar epithelium. Approximately 1/3rd have a component of intestinal metaplasia. They are not usually associated with an increased risk of malignancy. In contrast to hyperplastic polyps, there is not a component of inflammation of cystically dilated glands. (Odze, p. 272-273) *Test Taking Strategy* Gastric foveolar polyps are not particularly common. In fact there is not even a picture in Odze. It is important to be aware of this entity as it could easily come up as an option in a difficult multiple choice question where they are tempting to trick you into selecting the unfamiliar answer to go with the difficult question.

9. What is the best diagnosis, based on images for this case?
   a. MAI infection
   b. Whipple disease
   c. Diarrheogenic bacterial colitis
   d. Metastatic carcinoma
   e. Cryptosporidiosis

Answer: A. MAI is usually part of a disseminated infection and manifests as a histocytic infiltrate within the lamina propria. Whipple disease can easily be confused with MAI infection. MAI is both PAS and AFB positive (Whipple disease is AFB negative). Occasionally a metastatic carcinoma involving the lymphatics may be confused with MAI and Whipple disease (even PAS+). A pancytokeratin stain is also recommended so not to miss this diagnosis. (Sternberg, p. 1498)

10. All of the following are true with respect to "intramucosal carcinoma" of the colon EXCEPT:
    a. Is also referred to as high grade dysplasia
    b. Is equivalent to the term intramucosal neoplasia
    c. Usually encountered in adenomas
    d. Has biologic potential for metastasis
    e. There is no EXCEPT, all of the above are true

Answer: D. As long as there is no invasion below the level of the muscularis mucosa, there is no biologic risk of metastasis. High grade dysplasia, intramucosal carcinoma, and intramucosal neoplasia are terms that are often used to mean the same thing. It is important to know the consequences of the terminology one uses on diagnostic reports, and how clinicians will respond. One does not want to cause unnecessary treatment for a patient. (Sternberg, p. 1562-63)

References:

Sternberg's Diagnostic Surgical Pathology. Mills, SE, *et al*. Fourth Edition. 2004.

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)

