

Case #1 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 lymphoplasmacytic lamina propria infiltrate, surface epithelial damage with increased intraepithelial lymphocytes, and no increased thickening of the basement membrane (collagenous colitis). (Odze, pages 237-238)

Question #1 All of the following are characteristic of lymphocytic colitis, EXCEPT:

- A. Surface epithelial damage
- B. Association with use of ranitidine
- C. Thickened basement membrane
- D. Lamina propria plasmacytosis
- E. Association with celiac disease

Answer: C. A thickened basement membrane is what characterizes the difference between lymphocytic and collagenous colitis. Lymphocytic colitis has been associated with the use of different medications, including ranitidine and Cyclo 3 Fort. There is also an association with celiac disease. (Odze, page 237)

Question #2 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)

Case #2 A 40 y/o female undergoes an EGD. Multiple nodules are noted in the stomach. Based on the images shown, what is the best diagnosis?

- A. Menetrier's disease
- B. Juvenile polyp
- C. Hyperplastic polyp
- D. Fundic gland polyp
- E. Adenoma

Answer: D. This is an example of a fundic gland polyp. They show distorted glands with both chief and parietal cells. Hyperplastic polyps can have similar appearances, but the glands are lined by foveolar epithelium. In fundic gland polyps, the foveolar epithelium is atrophic. (Odze, p. 271-279)

Question #3 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.

Question #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)

Case #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 pattern 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.

Case #4 A 36 y/o Mongolian woman presents with disseminated nodule on the peritoneum during an exploratory laparotomy. She has a past history of "stomach cancer" 10 years earlier. Representative images of the histology, including special stains, are shown. What is the best diagnosis?

- A. Poorly differentiated adenocarcinoma
- B. Gastrointestinal Stromal Tumor (GIST)
- C. Melanoma
- D. Epithelioid hemangioendothelioma
- E. Leiomyosarcoma

Answer: B. This case is an example of an epithelioid GIST. These lesions usually have either a spindle cell or epithelioid appearance (some with both). The primary differential diagnosis includes leiomyoma/leiomyosarcoma and schwannoma. Leiomyoma/sarcoma will express desmin, and schwannomas express S-100. GISTs are CD117 and usually CD34 positive. The simplest way to evaluate these tumors is to use an immunohistochemistry panel consisting of S-100, desmin, CD117, and CD34. GISTs are also stratified into risk for malignancy, which consists of using a combination of size and mitotic index (mitosis/50 hpf). In general, the larger and more mitoses, the more likely the lesion will behave in a malignant fashion. It should be noted that a subset of GISTs will respond to Gleevec (the CML drug). (Odze, p. 506-514)

Case #5 A 60 y/o man undergoes colonoscopy, and is noted to have a “nodular” mucosal surface. Multiple biopsies are performed, and representative images and stains are shown. Based on the findings, what is the best diagnosis?

- A. CLL/SLL
- B. Mantle cell lymphoma
- C. Marginal zone lymphoma
- D. Diffuse large B-cell lymphoma
- E. Atypical reactive lymphoid hyperplasia

Answer: B. This case is an example of mantle cell lymphoma involving the colon. Mantle cell lymphoma commonly involves the GI tract, and is almost always widespread at the time of diagnosis. The characteristic immunophenotype is CD20, CD5, CD43, and bcl-1/cyclin D1 positive and CD10/CD23 negative. (Odze, p. 531-533)

Question #4 In the images for the previous case, which of the following FISH studies would most likely be positive?

- A. t(11;14)
- B. t(14;18)
- C. t(8;14)
- D. t(2;5)

Answer: A. Mantle cell lymphoma is associated with t(11;14), which joins the cyclin D1/bcl-1 gene on chromosome 11 with the IgH chain on chromosome 14. Follicular lymphoma is associated with t(14;18) BCL-2/IgH. Burkitt lymphoma is associated with t(8;14) c-myc/IgH, and anaplastic large cell lymphoma is associated with t(2;5). Sometime c-myc may be translocated with the λ gene on chromosome 22 – t(8;22) or the κ gene on chromosome 2 – t(2;8) in Burkitt lymphoma. *Test taking strategy* The lymphoma translocations should be easy points on the board exam.

Notes for question set:¹

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