

Gastrointestinal Emergencies: Review Questions

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QUESTIONS

Choose the single best answer to each question.

1. A 50-year-old man undergoes a screening colonoscopy. He has no family history of colorectal cancer. During the colonoscopy, a 2-cm cecal polyp is removed using an endoscopic snare and electrocautery. In the recovery room, the patient develops severe acute periumbilical pain and has a distended abdomen. He becomes tachycardic but is otherwise hemodynamically stable. He does not have peritoneal signs. What is the next best course of action?

- (A) Abdominal computed tomography (CT) scan
- (B) Abdominal radiographs
- (C) Abdominal ultrasound
- (D) Emergent surgical consultation
- (E) Observation

2. A 68-year-old woman undergoes a laparoscopic appendectomy for acute appendicitis. The patient has a history of congestive heart failure and diabetes. The surgery is difficult; the surgeon converts to an open procedure that lasts 4 hours and is complicated by several episodes of hypotension. On postoperative day 1, the patient has a single episode of coffee-ground emesis, and a gastroenterology consultation is obtained. Upper endoscopy demonstrates complete esophageal mucosal necrosis with dark, friable mucosa (Figure). The stomach and duodenum are normal. The patient is hemodynamically stable and clinically not in distress. What is the next step in this patient's management?

- (A) Barium swallow to rule out perforation
- (B) Emergency surgery

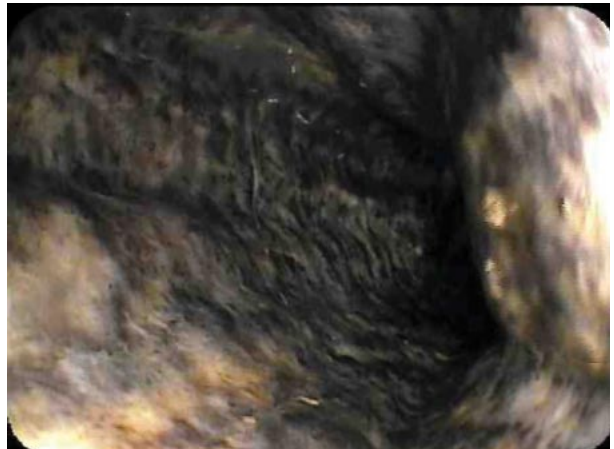


Figure. Upper endoscopy of the patient described in question 2 demonstrating complete esophageal mucosal necrosis with dark, friable mucosa.

- (C) Obtain multiple esophageal biopsy specimens to rule out a superimposed infection
- (D) Place a nasogastric tube to aspirate blood and decompress the stomach
- (E) Strict NPO (nothing by mouth) status, aggressive acid suppression, and observation

3. A 20-year-old woman is found somnolent and confused by her roommate in their college dormitory. The roommate states that the patient was very distraught over a poor grade on an important examination and shows an empty bottle of acetaminophen that she found in the room. When full, the bottle contained thirty 500 mg tablets. An acetaminophen overdose is suspected, and the patient is found to have an extremely high acetaminophen level. Other toxicology screening tests are negative. The exact timing of her ingestion is unknown. The patient also has evidence of severe hepatitis. What is the best first-line therapy in this setting?

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- (A) Gastric lavage
 - (B) Activated charcoal
 - (C) Liver transplantation
 - (D) *N*-acetylcysteine
 - (E) Serum of ipecac
4. A 43-year-old man with known ulcerative colitis is admitted to the hospital for a severe disease flare with copious bloody stools and dehydration. After stool studies show no evidence of infection, the patient is administered high-dose intravenous steroids. On hospital day 2, the patient develops fevers and a rigid, painful, and distended abdomen, and laboratory tests reveal an elevated white blood cell count. An abdominal CT scan demonstrates massive distension of the entire colon with associated pneumatosis in the cecum and right colon. What is the next best step in this patient's management?
- (A) Emergency colonoscopy with placement of a decompression tube
 - (B) Insertion of a nasogastric tube for decompression
 - (C) Insertion of a rectal tube for decompression
 - (D) Neostigmine administration to pharmacologically induce decompression
 - (E) Urgent surgical evaluation
5. A 62-year-old man presents to the emergency department for a food bolus impaction. The patient states that approximately 8 hours ago he was eating a piece of pork without his dentures and swallowed a large bolus that he feels has not "gone down." He presented for evaluation when he realized he would not be able to sleep in his current condition. The patient has a history of a prior food bolus impaction under similar circumstances, and previous examination also disclosed a Schatzki's ring in his distal esophagus. The patient is unable to clear his secretions and is spitting saliva into a cup. He is otherwise stable with normal vital signs and a normal abdominal examination. What is the next best therapeutic option for this patient?
- (A) Gastrografin swallow to confirm the food bolus and identify the level of obstruction
 - (B) Glucagon administration
 - (C) Observation
 - (D) Surgical evaluation
 - (E) Upper endoscopy to remove the food bolus from the esophagus
6. A 70-year-old man presents to his physician with a 7-day history of right upper quadrant pain and fevers. He has been unable to eat and believes he has

lost several pounds. On examination, the patient is febrile, tachycardic, and borderline hypotensive. He has hepatomegaly and right upper quadrant tenderness. Laboratory testing reveals marked leukocytosis. A right upper quadrant ultrasound, performed to evaluate for cholecystitis, demonstrates a normal gallbladder but identifies a 6-cm fluid collection in the right hepatic lobe. CT scan demonstrates a low-density lesion with peripheral enhancement. The patient is diagnosed with a pyogenic abscess. Fluids and broad-spectrum antibiotics are administered. What is the next best step in this patient's management?

- (A) Aspiration of a small amount of fluid from the abscess to obtain culture and antibiotic sensitivity data
- (B) Endoscopic retrograde cholangiopancreatography to internally drain the abscess if it communicates with the biliary tree
- (C) Observation
- (D) Percutaneous drainage of the abscess via interventional radiology
- (E) Surgical drainage of the abscess for definitive therapy

ANSWERS AND EXPLANATIONS

1. **(B) Abdominal radiographs.** Although most patients with abdominal pain do not have complications during colonoscopy, this patient may have sustained a colonic perforation during the procedure. Many patients have some pain and abdominal distension as a result of retained air that was used for insufflation during the examination, but this often improves with observation. The presence of a perforation should be excluded given this patient's severe pain. If a perforation is present, the lack of peritoneal signs may be due to the fact that it may be too soon for them to develop. Abdominal radiographs will quickly determine whether or not the patient has free intraperitoneal air, a sign of perforation. A CT scan would provide similar information but would likely take longer to obtain at greater expense. Abdominal ultrasound would not be helpful in this setting, as any free air could easily go undetected. Surgical consultation may be warranted but should wait until the results of the radiographs are available.
2. **(E) Strict NPO status, aggressive acid suppression, and observation.** The patient has likely sustained an ischemic injury to the esophagus as a result of a prolonged surgery with associated hypotension in the setting of baseline cardiovascular disease. The endoscopic findings are known as "black esophagus"

(Figure). This entity is relatively rare because of the dual segmental and intramural blood supply of the esophagus. In patients who do not have evidence of perforation, treatment is supportive with cessation of oral intake and acid suppression. A nasogastric tube is contraindicated in this setting, as it could perforate the esophagus during placement, and the patient only had 1 episode of coffee-ground emesis. No surgery is required at present because the patient is stable and would be a high-risk candidate for another surgical intervention. A barium swallow would not add to data obtained at endoscopy, especially since the patient has no signs of perforation. While some infections can cause black esophagus, aggressive esophageal biopsies should be avoided given the increased risk of iatrogenic perforation.

3. **(D) N-acetylcysteine.** Acetaminophen overdose can produce acute drug-induced hepatitis, which can lead to fulminant hepatic failure and death. In overdose, mental status changes develop over time, typically 24 to 72 hours, which suggests that some time has elapsed since this patient ingested the acetaminophen. Acetaminophen is metabolically activated by the cytochrome P450 system to a reactive metabolite that subsequently depletes glutathione (which is required to clear drug metabolites). *N*-acetylcysteine can be used to replete glutathione, allowing clearance of these agents and, in many cases, allowing patients to survive acetaminophen overdose. Although there may be some role for activated charcoal early in ingestion, the patient has likely absorbed the drug completely. Likewise, serum of ipecac (to induce vomiting) and gastric lavage are unlikely to be effective at this point. Liver transplantation would be considered if the patient failed to respond to *N*-acetylcysteine.
4. **(E) Urgent surgical evaluation.** The patient has developed a toxic megacolon with pneumatosis coli, fevers, leukocytosis, and signs of an acute abdomen. This represents an acute surgical emergency be-

cause the pneumatosis may herald impending perforation. Thus, surgical exploration is warranted. If the patient were more stable and did not have peritoneal signs or signs of infection, the other options could be considered.

5. **(E) Upper endoscopy to remove the food bolus from the esophagus.** The patient has a symptomatic food bolus impaction. If the food bolus is not removed, the patient is at risk for aspiration and esophageal injury, including perforation. Observation alone would be inadequate given this patient's overall clinical situation. A contrast study is not required given this patient's history and examination finding and would only increase the risk of aspiration. Glucagon use could be considered as a smooth muscle relaxant but is less likely to be helpful in patients with meat impaction and a known anatomic abnormality (Schatzki's ring). Upper endoscopy is the procedure of choice in this situation to either remove the food bolus or gently advance the bolus into the stomach. Also, the Schatzki's ring could be assessed at the time of endoscopy. Surgery would be considered only if endoscopy failed to remove the bolus or if the patient developed a complication.
6. **(D) Percutaneous drainage of the abscess via interventional radiology.** The patient has a large pyogenic abscess of unknown cause. Observation is insufficient given the patient's risk for systemic sepsis and the need for drainage. Similarly, while aspiration of a small amount of fluid might yield helpful data, the lesion still needs to be drained. Endoscopic retrograde cholangiopancreatography would not be appropriate given the size of the lesion and the lack of known biliary disease. Percutaneous drainage, by either ultrasound or CT guidance, would be the fastest and least invasive option and would also allow placement of a drainage catheter. Surgical drainage would be reserved for patients who failed percutaneous drainage.

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GASTROENTEROLOGY

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