

ABDOMINAL AND GASTROINTESTINAL DISORDERS: PRACTICE CLINICAL SCENARIOS

Scenario A

Presentation: A patient reports vomiting blood (may or may not be actively vomiting at time of presentation) and has dried blood on the lips. Heart rate is 175 beats per minute, and blood pressure is 60/30 mmHg.

Diagnosis: upper GI bleeding

Key facts: Peptic ulceration is the most common cause of upper GI bleeding, even in patients with history of varices, and combined gastric and duodenal ulcers cause 45%–50% of all upper GI bleeding. Early interventions should focus on resuscitation and maintenance of hemodynamic stability, as well as on risk assessment for reversal of anticoagulation if applicable. Patients with history of malignancy, cirrhosis, syncope, analgesic use, heart rate >100 beats per minute, or hemoglobin <8 g/dL are likely to have more severe upper GI bleeds that require intervention.

Alternative presentation: Upper GI bleeding can present as melena without a history of hematemesis and may also be suggested by a BUN:creatinine ratio >30 or significant anemia with a hematocrit <20.

Diagnostic evaluation: Laboratory tests should be performed immediately for hemoglobin, hematocrit, platelet count, PT/INR, and type and crossmatch. A risk assessment should be done regarding reversal of any anticoagulation.

Management: Initial efforts are directed at determining hemodynamic stability and need for immediate resuscitation, as well as mobilizing consultants who can more definitively treat the source of the bleed.

Unstable patients require 2 large-bore IV lines with fluid boluses of normal saline. Administer blood product transfusions as necessary. If patient is anticoagulated, immediate reversal may be needed as appropriate. Immediate endoscopy may be needed for control of esophageal or ulcer bleeding. Administer PPI by IV. Regardless of history, ulcer bleeding is more common than variceal bleeding, but if variceal bleeding is suspected, administer octreotide. Placement of a balloon tamponade device may be used as a temporary measure while awaiting endoscopy.

For stable patients, determine the source of bleeding. If actively vomiting, the source is obvious. If not vomiting, presence of melena, or nasogastric aspiration with presence of blood or “coffee grounds,” is highly predictive of upper GI source. However, absence of blood via nasogastric tube does not exclude upper GI source. Bright red blood or blood clots per rectum are more predictive of lower GI source. Determine need for immediate intervention or admission. Blatchford score helps predict need for intervention.

Scenario B

Presentation: A patient presents with a history of ingesting a foreign body and reports a sensation of something stuck in the throat. Symptoms include vomiting, gagging, choking, and dysphagia.

Diagnosis: esophageal foreign body

Key facts: Most cases (80%) of ingested esophageal foreign bodies are in children. They may not be old enough to give a history. The cricopharyngeus muscle (C6) is the most common site of obstruction in children <4 years old. Most food bolus impactions are in adults and are often associated with a history of gastroesophageal reflux disease (GERD), webs, strictures, etc. The lower esophageal sphincter (T10-11) is the most common site of obstruction in adults. Common presentations, especially in children, include vomiting, gagging, choking, neck or throat pain, and inability to handle secretions. Button batteries in the esophagus require immediate endoscopic removal.

Alternative presentation: Other presentations can include anxiety and discomfort, progressive dysphagia, and refusal to eat. Up to one-third of children with esophageal foreign bodies are asymptomatic.

Diagnostic evaluation: Patients with obstruction are usually drooling secretions (not swallowing) and tend to regurgitate swallowed liquids. Plain radiographs of neck and chest show radiodense foreign bodies. Radiographs may be indicated for suspected or known ingestions even if the child is asymptomatic. Radiolucent objects such as food, plastic, fish bones, toothpicks, etc, are unlikely to be seen; CT with water-soluble contrast may be needed for identification (more likely if object thought to be in cervical region). Esophagrams are sometimes performed.

Management: Endoscopy is the treatment of choice for removal of food boluses and foreign bodies that have become lodged in the esophagus. IV glucagon is unlikely to be effective, but it may be used to relax smooth muscle at the lower esophageal sphincter and allow the food bolus to pass if endoscopy is delayed. Low-risk objects (blunt, small, or nonmagnetic) can be watched for up to 24 hours. Sharp objects should be removed before they pass the pylorus. Multiple magnets or a magnet and metal object (eg, coin) require consultation for prompt removal. *Button batteries in the esophagus must be removed immediately!*

Scenario C

Presentation: A patient has had a gradual onset of periumbilical discomfort that subsequently localized to the right lower quadrant. Other symptoms include anorexia, nausea, and vomiting. The pain started before the vomiting.

Physical examination: Findings reveal right lower quadrant tenderness to palpation at McBurney point with positive psoas and Rovsing signs.

Diagnosis: appendicitis

Key facts: Appendicitis is the most common cause for emergency surgery in the US. The classic presentation is abdominal pain migrating to the right lower quadrant, along with fevers, anorexia, and nausea and vomiting.

Alternative presentation: Atypical presentations are much more common in young and older adult patients. Scoring systems have been developed that may assist in assessing likelihood of diagnosis. Physical examination may be atypical in many patients, depending on the location of the appendix. Pregnant patients may have flank or right upper quadrant pain secondary to the displacement of the appendix by the uterus.

Diagnostic evaluation: Laboratory studies may not be helpful. Strong consideration should be given to compression-graded ultrasonography in children as the initial imaging choice; if negative and the diagnosis is highly likely, follow with CT or close observation with serial examinations and repeat ultrasound. Adults generally require CT of the abdomen and pelvis. Oral contrast is likely not needed. Ultrasound is less useful in adults but may be helpful in women to exclude pelvic pathology. MRI appears to be a useful modality in pregnant females with inconclusive ultrasound examinations.

Management: Immediate surgical consult is suggested, although current data support delayed surgery in stable patients. Parenteral antibiotic coverage is appropriate and should cover typical abdominal pathogens. Parenteral narcotics should be administered for pain control and to facilitate diagnostic evaluation. If nonoperative treatment is considered, this should be in concert with shared decision-making with the patient, who should be specifically counseled about the risk of recurrence.

Scenario D

Presentation: An older patient with new onset atrial fibrillation (controlled or uncontrolled) presents with sudden onset of abdominal pain. The patient is not anticoagulated.

Physical examination: Abdominal examination findings are generally nonspecific despite significant pain.

Diagnosis: mesenteric ischemia, embolic occlusion of the superior mesenteric artery from a thrombus in the atria

Key points: Most commonly affects patients >50 years old with cardiovascular disease. Mortality rate is $\geq 50\%$ overall and increases as ischemia proceeds to infarction. Common causes include arterial

embolus (50%), arterial thrombosis (25%), nonocclusive mesenteric ischemia (eg, CHF, shock) (20%), and mesenteric venous thrombosis (5%). Typically, an older patient with a history of coronary artery disease presents with diffuse abdominal pain. The patient may report having had abdominal pain after eating on prior occasions. This is “intestinal ischemia” due to vascular disease. Examination early on shows few specific findings. Pain is out of proportion to findings. Feces may be positive for blood; there may be gross blood per rectum. Abdominal distention and peritoneal signs signal the presence of bowel infarction.

Alternative presentation: Mesenteric venous thrombosis and nonocclusive ischemia can have an insidious onset as opposed to the often more sudden onset of arterial occlusion.

Diagnostic evaluation: Laboratory investigation is frequently not helpful early on. Serum lactate is usually increased but not until bowel infarction has occurred. Acidosis may be present late. CT angiography of the abdomen is currently the test of choice, although some centers may still perform conventional angiography.

Management: Fluid resuscitation as required. If pressors are needed, use positive inotropes rather than vasoconstrictors. Broad-spectrum IV antibiotics as indicated. Immediate vascular surgical and interventional radiology consults for options for revascularization. For nonocclusive disease, papaverine may serve as definitive therapy. Immediate surgery is indicated for patients with peritonitis or for resection of necrotic bowel. Patients will require ICU-level care.

Scenario E

Presentation: A patient with known colonic diverticuli reports lower quadrant abdominal pain (left-sided). The pain is crampy, vague, and poorly localized.

Physical examination: The physical examination is relatively benign. Pain localizes on palpation to the left lower quadrant or suprapubic region.

Diagnosis: diverticular disease

Key facts: Classically, patients will present with left lower quadrant pain and tenderness. Signs of systemic toxicity are absent unless diverticuli have perforated or abscess formation has begun. Peritoneal signs are unlikely unless the patient has complicated diverticular disease, which involves microperforation of the bowel wall with formation of phlegmon in the immediate area. Minority of these will have frank free air in abdomen.

Alternative presentation: Another less likely presentation consists of massive lower GI hemorrhage that is painless. This is responsible for up to 40% of lower GI hemorrhage in older adults. Caution should be taken in older adults and immunocompromised patients because their abdominal examination and systemic response may be unreliable.

Diagnostic evaluation: CBC, hematocrit, and blood type and screen should be done in patients with diverticular hemorrhage. WBC count is likely to be increased, particularly in complicated disease. If complicated diverticulitis is suspected, CT of the abdomen and pelvis should be done. (Neither colonoscopy nor barium enema are done in the acute setting.) Patients in whom diverticular disease is suspected but have no known history may also benefit from CT to establish the diagnosis as well as exclude other pathology. Patients with history of diverticulosis and mild symptoms may not require imaging in the ED.

Management: Patients with uncomplicated diverticulitis can be treated on an outpatient basis with pain control and possibly antibiotic therapy. Acceptable regimens include ciprofloxacin + metronidazole, TMP-SMX + metronidazole, or amoxicillin/clavulanate for 10 days. Patients with complicated diverticulitis need resuscitation as necessary, IV antibiotic therapy similar to the above, or ticarcillin/clavulanate or ampicillin/sulbactam. Percutaneous drainage of the abscess may be required. A surgical consult should be obtained for all with free air or peritoneal signs.

Scenario F

Presentation: A 65-year-old patient presents with severe retrosternal pain after an episode of severe vomiting. The patient had mild abdominal discomfort, nausea, and diarrhea for 2 days before this episode.