Internal Medicine Clerkship
Case Discussions

GI Bleed
Student Guide

Objectives:

1. Identify characteristics and relevant review of systems that differentiate between suspected upper and lower sources of bleeding including hematemesis, coffee-ground emesis, melena, hematochezia, previous vomiting, and retching.
2. Assess past medical history for risk factors and predisposing conditions including peptic or duodenal ulcer disease, cirrhosis, coagulopathy, and causative medications.
3. Identify key physical exam findings that:
    a. Differentiate between overt, occult, and obscure gastrointestinal bleeding including stool examination and nasogastric aspirate.
    b. Determine hemodynamic stability including orthostatic vitals to assess intravascular volume.
    c. Assess for additional signs and symptoms associated with gastrointestinal bleeding including pallor, abdominal pain, signs of chronic liver disease including jaundice, ascites, and telangiectasias.
4. Identify and interpret key laboratory and imaging tests and list indications, benefits, test characteristics, risks, and costs of testing:
    a. Evaluate degree of blood loss and bleeding susceptibility including complete blood count, INR, PTT, and comprehensive metabolic panel.
    b. Describe how to prepare for potential transfusion including type and crossmatching.
    c. Evaluate underlying etiology including Helicobacter pylori testing.
5. Develop and prioritize a differential diagnosis including common diagnoses and non-to-miss diagnoses:
    a. Consider not-to-miss diagnoses including esophageal variceal hemorrhage.
    b. Use a categorical approach to diagnosis including vascular, inflammatory, neoplastic, traumatic, and iatrogenic causes.
    c. Use an anatomic approach to further refine the diagnosis including upper etiologies (e.g., peptic ulcer disease, variceal hemorrhage, and Mallory-Weiss tear) and lower etiologies (e.g., diverticular disease, angiodysplasia or angiectasia, and neoplasms).
6. Describe a rational and evidence-based approach to treating a patient with gastrointestinal bleed:
    a. Describe when urgent treatment modalities are needed including immediate intravenous access, IV fluids, proton pump inhibitors, octreotide, antibiotics, transfusions, and gastroenterology consultation.
    b. List indications for imaging and or potential procedural interventions including esophagogastroduodenoscopy, colonoscopy, and CT angiography.
    c. Describe an appropriate transfusion threshold for patients with blood loss.

Clinical Case 1:

A 45yo comes to the emergency room complaining of fatigue and lightheadedness. Upon questioning, the patient states that his stools have become black and sticky over the past several days and are particularly

malodorous. He states that he has chronic epigastric pain, but it has worsened over the past few weeks. He usually drinks two martinis during his daily business luncheons and frequently has another before dinner at night. He uses NSAIDS as needed for joint aches and pains, and he takes a diuretic for his hypertension. He has smoked two packs of cigarettes daily for the past ten years.

His only past medical history is hypertension, and his family history is unremarkable.

Physical Examination:

Vitals:	Supine BP 118/80 and HR 110. Standing BP 98/60 and HR 140. He complains of dizziness upon standing
Gen:	Overweight, anxious man, appears pale
Skin:	Cool and moist; no bruises or petechiae
HEENT:	Notable conjunctival pallor, no evidence of epistaxis
Resp:	Clear to auscultation bilaterally
CV:	Tachy, regular, no murmurs
Abd:	12cm liver span in the mid-clavicular line with a smooth, non-tender edge
Ext:	No peripheral edema
Rectal:	Melena noted

Laboratory Data:

Hgb	7.1 gm/dL
WBC	13,500 (normal differential)
Platelets	450,000
PT/INR/PTT	Normal
BUN	45
Creatinine	1.7 mg/dl.
AST	120
ALT	76
Total bili	1.0

Questions:

1. Describe the difference between occult and overt GI bleeding, and differentiate between hematemesis, melena, and hematochezia.

2. Where is the likely source of this patient's gastrointestinal bleeding and why? What are common sources of this type of gastrointestinal bleeding and which does this patient most likely have?

3. What is the significance of his blood pressure findings?

4. What would be your initial management of this patient at this point? Would you transfuse him and if so, to what threshold?

5. Should a nasogastric tube be placed, and how would the results of an NG lavage guide your management if done?

6. What diagnostic tests would you perform on this patient?

The patient is admitted to the hospital. His hemoglobin remains stable after a one unit packed red blood cell transfusion. GI is consulted, and an upper endoscopy is scheduled for the following morning. The endoscopy (EGD) is performed and reveals a 1.5 cm duodenal ulcer on the bulb with fresh clot adherent to the ulcer base and some oozing of blood from the edges of the clot.

Questions:

7. How would you interpret the endoscopic findings?

8. Should this patient be tested for H. pylori, and if so, how would you treat him if he were positive?

9. What additional aspects of this patient's health must be addressed before discharge? What is the AUDIT/AUDIT-C questionnaire, and how would it be useful in this patient?

Clinical Case 2:

A 70 year old was admitted to the hospital because of hematochezia. She had been relatively well until that morning when after feeling the urge to defecate, she passed a large amount of fresh blood. She denied any abdominal pain but did complain of lightheadedness. Her family brought her to the emergency room.

She reports a history of osteoarthritis and a remote history of gastric ulcer. She takes NSAIDs only when her arthritis flares. She denies weight loss, anorexia, and history of alcohol ingestion. A brother died of colon cancer. She does not recall when her last colonoscopy was performed.

Physical Examination:

Vitals:	Supine BP 150/70 and HR 110. Sitting BP 110/60 and HR 140. She complained of dizziness when she sat up.
Gen:	Thin older woman. Appears pale. Alert and talkative.
HEENT:	+ conjunctival pallor
Resp:	Clear to auscultation bilaterally
CV:	2/6 systolic murmur heard best at the left upper sternal border with radiation into the

	carotids, + S4
Abd:	Soft, NTND, hyperactive bowel sounds
Ext:	No peripheral edema
Rectal:	Large hemorrhoids and the stool was grossly bloody

Laboratory Data:

Hgb	8.1 gm/dl
Hct	24%
WBC	10, 500 (normal differential)
Platelets	347, 000
PT/INR/PTT	Normal
BUN	12
Creatinine	0.6 mg/dl.

Questions:

1. Where is the likely source of this patient's gastrointestinal bleeding and why? What are common sources of this type of gastrointestinal bleeding and which does this patient most likely have?

2. What would be your initial management of this patient? What diagnostic test would you perform?

The patient is admitted, and her hgb is monitored every six hours. She ultimately requires three units of packed red blood cells to maintain her hgb >8. The nurse reports one large maroon bowel movement overnight. The vital signs are stable, and there is no orthostasis. The patient undergoes an upper and lower endoscopy in the GI lab. The colonoscopy reveals normal mucosa, no blood in the colon, and multiple sigmoid diverticula were noted but without evidence of active bleeding. The upper GI endoscopy (EGD) is normal. There is no further bleeding over the next two days, and she is able to eat. On the fourth hospital day, she experiences another episode of hematochezia. She does not require additional transfusions, and her vital signs remain stable.

Questions:

3. What is the most likely diagnosis that can account for the GI bleeds?

4. What further diagnostic modalities can be employed at this point and what are the advantages and disadvantages of each?

5. How would you manage the patient at this point in time?

References:

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