MECHANISMS OF HUMAN DISEASE
AND
PHARMACOLOGY & THERAPEUTICS

SMALL GROUP DISCUSSION

MHD II
Session 1
Gastrointestinal

January 7, 2019

STUDENT COPY
CASE 1

CHIEF CONCERN: "I'm passing black stool and have felt dizzy for 3 days."

HISTORY OF PRESENT ILLNESS: Mr. Murphy is a 45 year-old advertising executive who presents to the emergency department complaining of the passage of black stools x 3 days and associated lightheadedness. He also relates that he cannot keep up with his usual schedule because of fatigability. Upon further questioning he states that his stools are not only black, but are sticky and malodorous. He denies passing red, bloody stool. He has had normal bowel habits and has not had prior black stools. He denies nausea or emesis. He further notes recent worsening of a chronic epigastric burning which had been a problem off and on for years. He had doubled his usual dose of antacids without significant relief of the burning. He often drinks 2-3 martinis during "business lunches" and drinks "a shot" and 2-3 glasses of wine with dinner. He smokes two packs of cigarettes per day and an occasional cigar. He takes ibuprofen as needed for back pain and recently started on one aspirin per day for cardiac prophylaxis. He denies bleeding tendencies or prior transfusion. His weight is stable to increased and he has an excellent appetite.

Mr. Murphy has been treated for hypertension for eight years but denies any known coronary artery disease. He has had no previous surgery.

Medications:
Lisinopril 20mg daily
Ibuprofen 600mg three times daily as needed
Aspirin 81mg daily
Over the counter antacids

PHYSICAL EXAMINATION: Examination reveals an alert, oriented, overweight male. He appears anxious and somewhat restless. Vital signs are as follows. Blood Pressure 120/80 mmHg, Heart Rate 100/min - Supine; BP 90/60 mmHg, HR 130 - Standing (Patient complains of dizziness); Respiratory Rate 20 /minute; Temperature 98°F.

HEENT/SKIN: Facial pallor and cool, moist skin are noted. No telangiectasia of the lips or oral cavity are noted. No spider angioma are seen.

CHEST: Lungs are clear to auscultation and percussion. The cardiac exam reveals regular rhythm with an S4. No murmur is appreciated. Peripheral pulses are present but are rapid and weak.

ABDOMEN/RECTUM: The abdomen is rounded but not distended. Bowel sounds are hyperactive. There is moderate tenderness in the epigastrium. The liver is percussed to 15 cm in the right mid-clavicular line; the edge feels firm. The spleen is not felt and no abdominal masses are appreciated. Rectal examination reveals black, tarry stool.
EDUCATIONAL OBJECTIVES

1. Define all unknown terms.

2. Cite the major clinical problem (not the diagnosis).

3. Develop a differential diagnosis by listing diseases which may cause this problem.

4. What is the most likely diagnosis? Cite the data which support your diagnosis.

5. Correlate the patient's vital signs with his clinical presentation.

6. List and prioritize the steps taken in the emergency department management of this patient.
7. What is the rationale for placing a nasogastric tube in this patient?

8. The Emergency medicine physician consults the on-call gastroenterologist. Why?

LABORATORY DATA

06/06/18 4:46 pm  Heme Final  X42588

CBC
WBC   13.0   H    [4.0-10.0] k/ul
RBC   2.87   L    [3.60-5.50] m/ul
Hgb   9.7    L    [12.0-16.0] gm/dl
Hct   29.0   L    [34.0-51.0] %
MCV   90     [85-95] ft
MCH   29.9   [28.0-32.0] pg
MCHC  33.5   [32.0-36.0] gm/dl
RDW   13.0   [11.0-15.0] %
Plt Count 277   [150-400] k/ul

06/06/18 4:49 pm  ChemFinal  X1234

COMPLETE METABOLIC PANEL
Sodium   140   [136-146] mm/l
Potassium 3.9   [3.3-5.1] mm/l
Chloride  102   [98-108] mm/l
CO2      27    [20-32] mm/l
Bun      45     H    [7-22] mg/dl
Creatinine 1.0   [0.7-1.4] mg/dl
Glucose  108   [70-100] mg/dl
INR Ratio 1.1

SUGGESTED THERAPEUTIC RANGE FOR CONTROL OF ORAL ANTICOAGULANT THERAPY
INR 2.0-3.0 FOR DVT/PE, TISSUE VALVE, ATRIAL FIB, MI-STROKE PREVENT
INR 2.5-3.5 FOR MECHANICAL VALVE

APTT 22.0 [21.6-33.2] sec

Hgb And Hct
Hgb 8.8 L [12.0-16.0] gm/dl
Hct 26.4 L [34.0-51.0] %
RBC 2.51 L [3.60-5.50] m/ul
MCV 89.6 [85-95] fl
MCH 29.7 [28.0-32.0] pg
MCHC 33.7 [32.0-36.0] gm/dl
RDW 13.2 [11.0-15.0] %

Hgb And Hct
Hgb 8.2 L [12.0-16.0] gm/dl
Hct 24.6 L [34.0-51.0] %
RBC 2.31 L [3.60-5.50] m/ul
MCV 89.6 [85-95] fl
MCH 29.7 [28.0-32.0] pg
MCHC 33.7 [32.0-36.0] gm/dl
RDW 13.2 [11.0-15.0] %

Hgb And Hct
Hgb 8.4 L [12.0-16.0] gm/dl
Hct 24.9 L [34.0-51.0] %
RBC 2.51 L [3.60-5.50] m/ul
MCV 89.6 [85-95] fl
MCH 29.7 [28.0-32.0] pg
MCHC 33.7 [32.0-36.0] gm/dl
RDW 13.2 [11.0-15.0] %
9. Interpret the laboratory data.

10. As part of initial management, the Emergency Medicine physician orders a “type and crossmatch”. What is it and how does it differ from a “type and screen”?

<table>
<thead>
<tr>
<th>Test Requested</th>
<th>What is Included, Resulted and Done</th>
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</thead>
<tbody>
<tr>
<td>Type and Screen</td>
<td></td>
</tr>
<tr>
<td>Type and Crossmatch</td>
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11. Correlate the findings noted on liver and skin exams with the patient's presentation.
12. Review Case Images.

Endoscopy reveals a benign-appearing 1.5cm gastric ulcer. Three days after hospital discharge, the patient's physician receives the following pathology report:

Specimen #: S18 -19962
Source: Antrum bx

FINAL DIAGNOSIS
ANTRUM; BIOPSY:
-ANTRAL MUCOSA WITH CHRONIC GASTRITIS
-GIEMSA STAIN REVEALS NUMEROUS CURVED BACILLI ALONG THE SURFACE OF THE MUCOSA

***Electronically Signed Out***
Anna Bardwell, M.D.

Operation EGD

Clinical History: GI bleed

Gross Description The specimen, received in formalin labeled with patient identification only, consists of multiple irregular fragments of tan soft tissue measuring in aggregate 0.5 x 0.4 x 0.2 cm. The entire specimen is wrapped in lens paper and submitted in one green cassette.

Anna Bardwell, MD
Microscopic Description The attending pathologist whose signature appears on this report has reviewed the diagnostic slides and has edited the gross and/or microscopic portion of the report in rendering the final microscopic diagnosis.
Questions 13-17 are unknowns. Students will be provided data/questions during the small group session. Be prepared to answer questions regarding the endoscopic and pathologic findings.

CASE 2

**Chief Complaint** “My bowel movements are bloody”

**History of Present Illness** The patient is a 70 year-old woman who presents with a chief concern of having a large, bloody bowel movement. Earlier in the day, the patient experienced the urge to defecate and then passed a large quantity of blood. She had no nausea, vomiting, abdominal pain, tarry stool or lightheadedness. She has no previous history of passing blood per the rectum. Her bowel movements had been previously “normal”.

Her past medical history is significant for hypertension treated with hydrochlorothiaizde 25mg daily and mild arthritis of her left knee for which she takes acetaminophen 1000mg twice daily.

**Physical Examination** In the Emergency Department, she was alert and talkative. Her pulse was 110/min and regular. Her blood pressure, in a supine position was 150/70 mm Hg which fell to 130/60 when she sat up. Her heart and lung exams were normal aside from tachycardia. The examination of the abdomen revealed normal active bowel sounds and no tenderness, masses or organomegaly. Rectal exam revealed large external hemorrhoids but no masses. Stool was grossly bloody.

**Laboratory Data**

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During the first day of hospitalization the patient had no further bleeding episodes. Serial hemoglobin and hematocrit values were stable.

1. What is the clinical problem? Develop a differential diagnosis by listing diseases which may present with this problem, especially in an older adult.

2. Compare and contrast melena, hematochezia and occult blood in the stool.
The patient was prepped (by drinking 2 liters of polyethylene glycol solution) for colonoscopy which was performed on hospital day 2. Colonoscopy revealed multiple outpouchings of the mucosa through hypertrophied muscular layers. There was no evidence of active bleeding.

3. What is the most likely diagnosis? What is the pathogenesis?

Case 3,4, 5 - UNKNOWNs
STUDENTS WILL NOT HAVE CASE DATA UNTIL THE SESSION MEETS