

Location: Emergency Room

Vitals: BP: 100/60 mm Hg (supine), 80/50 mm Hg (sitting); HR: 124/min; RR: 24/min; Temp: 98.4F

C.C: Black colored stools

HPI:

A 55-year-old white male is brought to the ER with a history of black colored, sticky, foul smelling stools for 48 hours. He decided to seek medical help after he vomited out bright red blood about an hour ago and felt weak and light headed. He has had six episodes of black stools in the last 24 hours. The patient has had history of epigastric pain for the last 1 month that occurs mostly on an empty stomach and is relieved with food and antacids. He denies history of fissures, hemorrhoids, jaundice or weight loss. He also has chronic low backache for six months. He has no allergies and has been taking over the counter ibuprofen on regular bases. The patient has been smoking one pack of cigarettes per day for the last 30 years. He also drinks beer regularly on weekends and parties. Family history is non-contributory. Rest of the review of systems is unremarkable.

How would you approach this patient?

This is a patient with melena and hematemesis, who is hemodynamically unstable as is obvious from the hypotension, orthostasis and tachycardia. The initial approach should be to take the general resuscitative measures, a delay in which might be life threatening. Simultaneously, think of a differential diagnosis and order the relevant tests to rule in and rule out the disease process and its etiology. Remember you always need a thorough focused physical examination before establishing a diagnosis.

Order No. 1:

IV access, stat- 2 large (18 G) IV bore needles
Start IV fluids: Normal saline, continuous
Make NPO
Cardiac monitor, continuous
Continuous BP monitoring
Pulse Oximetry, stat

Results for Order No. 1:

BP- 100/70 mm Hg; HR- 116/min
Oxygen Saturation is 95% on room air

Order focused physical exam:

General appearance
HEENT/Neck
Examination of CVS
Examination of lungs
Examination of Abdomen
Examination of Rectum
Extremities

Results of Physical Examination:

General appearance: Well built, pale looking, anxious male. HEENT: Pale conjunctiva, anicteric sclera, dry mucous membranes; no JVD. Lungs are clear to auscultation and percussion bilaterally. Cardiovascular: Tachycardia, S1 S2 normal, no murmurs, rub or gallop. Abdomen is soft, mild tenderness in the epigastric area but there is no rigidity, rebound or guarding; bowel sounds are normal, no organomegaly or free fluid. Rectal: Normal sphincter tone, no hemorrhoids or fissures, stool is black colored and heme positive. Extremities: no edema, clubbing or cyanosis, no calf tenderness, peripheral pulses feeble.

Order No.2

CBC with differential, stat
BMP, stat
LFTs, stat
PT/INR, stat
aPTT, stat
EKG, 12 lead, stat
IV Ranitidine or Pantoprazole (Protonix), continuous (Protonix IV is not available in CCS software)
NG tube, gastric lavage
Type and crossmatch, stat
Discontinue his ibuprofen

Results for Order No. 2:

CBC: Hgb -7.0 g/dl, Hct- 21% WBC - 11,000/uL, Platelet - 250,000/mm³, normal differential count
BMP: BUN - 32, Creatinine-1.1, Sodium -138 meq/L, Potassium - 3.8 meq/L, Chloride -103 meq/L, Bicarbonate - 26 meq/L, Calcium -10.1 mg %
LFT: Total bilirubin - 1.0 mg %, Direct bilirubin - 0.3 mg %, ALT - 30 IU/L, AST - 28 IU/L, Alkaline phosphatase - 100 IU/L
PT=18 sec, INR=1.63
aPTT=38 sec; control=35 sec
EKG shows sinus tachycardia without evidence of ischemia or infarction

**Admit in ICU*

Order No. 3:

Continue NPO
Bed rest
Urine output
Pneumatic compression stockings
Stop IV NS
Start packed RBC transfusion (type PRBC), stat - 3 Units
4 Units fresh frozen plasma (FFP), stat
Hb and Hematocrit every 6 hours (Type H&H)
PT after FFP transfusion
Continue Protonix/Ranitidine infusion

**Call me when the lab results available*

Results for Order No. 3:

BP - 110/70 mm; HR- 100/min
After 3 Units of PRBC and 4 Units FFP
Hgb- 10 g/dl; Hct-30%
PT=14.5 sec, INR=1.45

Patient feels better**Order No. 3:**

Gastroenterology consult, routine for EGD (Also order H. Pylor biopsy)
Continue NPO
Restart IV NS, continuous
H and H every 6 hours
Continue Protonix/Ranitidine infusion
Continuous BP monitoring
Call me when the lab results available

Results for Order No. 3:

EGD- clean based ulcer in the first part of duodenum. Biopsy taken
Hgb- 10.2 g/dl; Hct- 30.6 %
BP- 120/80; HR- 90/min

Order No. 4

Discontinue NPO
Stop IV NS
Starts clears and advance to regular diet as tolerated
H and H every 12 hours
Stop IV Protonix/Ranitidine
Start Protonix, oral

Results of order No. 4:

Patient is tolerating regular diet
Hgb-10.0 g/dl; Hct- 30.0 %
BP- 128/80; HR- 74/min
Biopsy is positive for inflammation, ulceration, no malignant cells
Tissue is negative for Helicobacter pylori

Order No.5

Discharge the patient home after overnight watch
Send home on Protonix for 4-8 weeks, make follow-up appointment in 2 weeks
Patient counseling
Medication compliance
Recheck Hb and Hematocrit with return visit
Start Ferrous sulfate, continuous (Optional)
Avoid NSAIDs (Type - No aspirin)
Stop smoking
Stop alcohol

Discussion:

Differential Diagnosis: Hematemesis and melena suggest upper gastrointestinal (UGI) hemorrhage. UGI bleed by definition is bleeding proximal to the ligament of Treitz. Remember that while presence of hematemesis always suggests UGI bleed, not all patients with UGI bleed have hematemesis. Melena most often is seen with an UGI bleed but may also be seen sometimes with proximal lower GI bleeding. It is in this situation (i.e. melena with no hematemesis) that a nasogastric tube placement and aspiration will be useful. Presence of fresh blood or coffee ground aspirate will suggest fresh or old UGI bleed respectively. The nasogastric tube can then also be used for lavage with tap water to clear the stomach before esophagogastroduodenoscopy (EGD). A negative finding on nasogastric lavage does not rule out an upper GI bleed as bleeding might have stopped or may have been distal to the gastric pylorus. However, a bilious lavage rules out with certainty an upper GI bleed. A nasogastric tube is not needed for diagnostic purposes in this patient, as there was a definite history of hematemesis. However, gastric lavage can be performed for cleaning the stomach.

Hematochezia (bright red bleed per rectum) is seen more commonly with a lower GI bleed but may sometimes be seen with an UGI bleed if it is severe and rapid. The elevated BUN with normal creatinine is another pointer towards UGI bleed.

The most common causes are peptic ulcer disease (stomach or duodenum), gastric erosions and esophageal varices. The less common ones include Mallory Weiss tear (suspect in an alcoholic, with severe retching and vomiting), neoplasm, esophagitis, and arterio-venous malformations. This patient with his history of pain that is relieved with food and use of ibuprofen is certainly a candidate for duodenal ulcer. Other risk factors include smoking and alcohol use.

Final Diagnosis:

Upper gastrointestinal hemorrhage, secondary to duodenal ulcer

Management:

1. Hemodynamic stabilization is more important before an EGD. All patients with UGI bleeding should have two large bore (18 G or larger) peripheral IV lines.
2. Patient should be resuscitated with blood transfusions to keep a hematocrit greater

than 30%. If coagulopathy is present, transfusion with FFP and administration of Vitamin K is needed to keep the INR below 1.5. Platelet transfusions may be needed for platelet counts of less than 50,000/ mm³. Calcium levels should be monitored as multiple transfusions may lead to hypocalcemia requiring specific therapy.

3. Once the patient is stabilized the investigation of choice is an EGD that offers diagnostic and therapeutic options. This patient had a duodenal ulcer, which is the most common cause of UGI bleed. The endoscopic appearance of the ulcer predicts the risk of rebleeding and mortality. Since this patient had a clean-based ulcer that carries a very little risk of rebleeding, he could resume a normal diet and be discharged within 24 hrs, as his hemoglobin was stable. Flat spots or adherent clots on EGD need observation on a general floor for 2 to 3 days. Patients with visible vessels or actively bleeding ulcers can be treated with local epinephrine injections. These lesions are associated with the highest risk for rebleeding and such patients need to be monitored in the ICU after the EGD. They should be discharged only after 3 days of stabilization. If during this period of observation rebleeding occurs then a repeat urgent EGD is needed. Such patients might need surgery if recurrent bleeding continues to occur after two endoscopic treatment attempts.
4. IV proton pump inhibitors (PPI) have been shown to reduce recurrent bleeding after endoscopic management of bleeding ulcers and may be continued for 72 hrs after EGD. At the time of discharge the patient should be put on an oral PPI for 4-8 weeks. Repeat EGD on an outpatient basis should be performed in patients with gastric ulcer to ensure healing and exclude underline malignancy. However, repeat EGD is unnecessary in patients with duodenal ulcers.
5. If the biopsy is positive for H. pylori, the patient should receive triple drug therapy for eradication of the organism. NSAIDs, smoking and alcohol need to be stopped to promote healing and prevent recurrence.
6. In patients with known cirrhosis and portal hypertension the most likely source of bleeding is esophagogastric varices. Once these patients are hemodynamically stabilized, octreotide should be started. Besides EGD is performed and sclerotherapy and band ligation of the varices can be done to stop bleeding. If octreotide and EGD intervention do not stop bleeding then a balloon tamponade (for e.g. with a Sengstaken-Blakemore or Minnesota tube) should be instituted and transjugular intrahepatic portosystemic shunt (TIPS) should be attempted to decrease portal pressure. The TIPS procedure has replaced surgery because of the significantly lower mortality rate. Once the patient has stopped active bleeding he can be discharged on a nonselective beta-blocker (for e.g. nadolol or propranolol).