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Minor/Stable GI Bleed

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** Drug doses are a guide only, always check second source and follow local practice guidelines*

Take Home Points

- A-B-C, if unstable follow Major/Unstable GI Bleed steps
- Consider non-GI sources of bleeding
- Focus on risks for more serious upper GI bleeding:
    - Liver disease
    - Alcohol abuse
    - NSAID/steroid use
- Abdominal pain is not typical in GI bleeding - consider a surgical cause and advanced imaging (such as CT)
- Initial and repeat hemoglobin measurements play a critical role in establishing stability
- Blood transfusion thresholds have become less liberal over the past decade, with most guidelines discouraging transfusion for stable patients with Hgb > 7
- A higher transfusion threshold may apply in patients suffering ischemic complications (e.g. acute myocardial infarction)

- Various scoring systems to predict safe discharge (as opposed to to admission with emergent endoscopy) exist. Most point toward admission with any alteration in vital signs, severely low Hgb, signs of liver disease and older age.

INTRODUCTION

In last month's episode we dealt with patients who were obviously bleeding to death - massive amounts of blood coming out the mouth or the rectum in a patient with hemorrhagic shock. Many of these crashing patients have brisk, sudden bleeding from gastroesophageal varices related to underlying liver disease.

Most patients with GI bleeding present with far less drama. The bleeding may be much slower - ongoing oozing from a cancer in the colon, for example. These patients are actually much more challenging to identify. The stakes here are high because the mortality of patients with GI bleeding are substantial. Even with the most lethal type of bleeding (e.g., variceal) removed, mortality ranges from at least 2% to as high as 27% in elderly patients.

IS THIS REALLY A GI BLEED?

- Consider the possibility of non-gastrointestinal sources of blood loss. Hemoptysis and epistaxis can cause a positive fecal occult blood test (because of swallowed blood) as can vaginal/urinary blood.

- Several foods and other substances can mimic blood in the stool. These include:
  - Beets
  - Food coloring
  - Bismuth

- To confirm that blood is indeed present, a point-of-care guaiac test should be performed.

- In the case of vomitus, subacute bleeding often presents as "coffee ground" emesis - this is basically blood from an upper source (e.g., duodenal ulcer) that

has been digested by stomach acid. It looks like coffee grounds (but it sure doesn't smell like it!)

- In order to confirm that "coffee grounds" or other dark fluids in vomitus are in fact blood, a special point-of-care test called a Gastroccult card is used - this is reliable at low (stomach) pH whereas the cards used for stool testing are not.

DDx

The actual DDx of GI bleeding would have over 100 causes but major causes include:

- ***Upper Source (mouth to duodenum)***
  - **Variceal bleeding (they don't just gush, they can leak more slowly as well)**
  - **Peptic ulcer disease**
  - Esophagitis / gastritis
  - Mallory-Weiss tear (esophageal tears from vomiting)
  - Tumors

- ***Lower (jejunum to anus)***
  - Inflammatory bowel disease
  - Tumors
  - Diverticular disease
  - Angiodysplasia
  - Infectious diseases

APPROACH TO STABLE PATIENT WITH SUSPECTED GI BLEEDING

- 80% of acute GI bleeds stop spontaneously - **Your job is to find the ones that need to stay**
- The 2 most serious are varices and PUD - so a lot of the history and physical exam is centered around looking for those
- This affects disposition, for example - if varices are suspected, one is much more likely to admit patient for endoscopic and specialist care

TYPES OF PRESENTATIONS

- **Upper GI Bleed:** Hematemesis, coffee ground emesis, melena (black tarry stools)
    - Note: in brisk rapid upper GI bleeding, one may actually see bright red blood by rectum

- **Lower GI Bleed:** Bright red rectal blood, sometimes maroon colored if from right colon

- **OCCULT GI bleed:** This is an important category. The source may be either upper or lower but the patient may just present with relative anemia (a lower Hgb than their baseline) and guaiac positive stool. Symptoms of anemia are vague and easy to miss (e.g., weakness, fatigue and shortness of breath).

IT'S ALL ABOUT THE COMORBIDITIES

- Although mortality from acute GI bleeding is high, especially among the elderly, the actual direct cause of death may be something else - often a cardiac event, such as a myocardial infarction or worsening CHF.

- Because GI bleeding results in a loss of hemoglobin, it really impacts many common diseases where the O2 carrying capacity is critical (like sepsis, COPD, myocardial infarction (MI), mesenteric ischemia, etc). GI bleed may precipitate worsening of underlying disease and ultimately result in multisystem organ failure if not identified and treated in a timely fashion.

- In patients who suffer MI as a result of GI bleeding, the pattern is usually ST-segment depression or subendocardial. Troponins can elevate. These are not the type that typically require coronary intervention. Treatment consists mainly of blood replacement and stopping the bleeding. Cardiac monitoring is warranted because patients are at risk for arrhythmias.

- Altered mental status is key. It is often subtle and only noticeable by close relatives. In the setting of an upper GI bleed, this be the most important clue that this bleeding is from esophageal varices.

KEY HISTORY

- **EGD Hx** - do they already have a diagnosis from a previous episode or endoscopy?
- **EtOH Hx** - of critical importance, it increases the risk of many causes of upper GI bleeding, especially the serious ones like varices from liver disease and ulcers
- **Antiplatelet/anticoag** - this is critical information which will definitely affect have safe a patient is to go home
- **NSAIDs and steroids** - these are both huge causes of bleeding peptic ulcers

KEY EXAM

- **General** - Stigmata of chronic liver disease increase suspicion for varices
    - These include: altered mental status, jaundice, ascites, clubbing, palmar erythema, spider nevi (angiomata), gynaecomastia, testicular atrophy, small (cirrhotic) liver and large spleen, caput medusae

- **Abdominal exam** - Any signs of peritonitis on abdominal examination increase risk of surgical disease

- **Rectal exam**: The rectal exam is important not only to examine the stool and perform stool guaiac testing, it also may reveal the source of lower GI bleeding. These include:
    - **Anal fissures** - very painful tiny tears around anus - anoscopy is too painful to perform
    - **Hemorrhoids** - It is the internal hemorrhoids that bleed the most. These are readily identifiable using anoscopy.

Point-of-care Ultrasound

- Ultrasound can be very helpful. It can identify signs of liver disease like cirrhosis and ascites and alert the clinician to the possibility of variceal bleeding.

LAB TESTS

- **Hemoglobin/hematocrit** - This should be obtained immediately (point-of-care) and repeated at least once (often several times in an acute GI Bleed) to ensure that it is not trending down. The timing is variable - a repeat at 1 or 2 hours or after a bolus of fluid if given is typical.

- **Coagulation studies** - A PT/INR is indicated if liver disease is suspected or if the patient takes coumadin, PTT is not generally indicated unless patient is on heparin

- **CBC** - The CBC gives a more accurate hemoglobin/hematocrit (sometimes the point-of-care reading is off). It also gives a platelet count. A low platelet count suggests liver disease or a platelet disorder. Occasionally, an extremely high count (>1M) comes back. This may represent essential thrombocytosis, which also result in bleeding.

- **Type and screen** - This is important if you think that the patient needs a transfusion.

- **Chemistry panel** - Though not foolproof, a high BUN is predictive of an upper GI bleed. This is a result of the lengthy trip that the blood takes and the huge amount of digestion that takes place. This is what elevates the urea in the blood - it can go really high in severe upper GI bleeds.

THE NG TUBE

- Once considered routine in the emergency department management of GI bleeding, nasogastric tube (NGT) placement is now considered a painful procedure that is seldom necessary.

- One of the primary reasons we used to place NGTs in patients with GI bleeding was to confirm that there was an upper (usually more serious) source of bleeding. It turns out that it is just not that accurate - the BUN measurement (see above) is actually more effective at distinguishing UGIB vs LGIB.

IMAGING

- Imaging is not generally necessary - it won't show much.

- *One major exception is if there is significant abdominal pain*. Pain suggests a inflammatory bleeding source such as ischemic or infectious colitis or a perforation. The possibility of a surgical emergency must be considered. CT imaging would generally be considered first line in the emergency setting.

REVERSAL OF ANTICOAGULATION

- The decision to reverse anticoagulation in acute GI bleeding is complex and is made on a case by case basis

- In general, the more severe the bleeding and the more severe the coagulopathy, the more likely and quickly it will be to reverse whatever is causing the blood not to clot.

- In general, if GI bleeding is not severe and the patient is stable, an INR of up to 1.5 may be left alone. It should be safe to perform the scope with an INR of 1.5. However, one should consult with the GI consultant about what action should be taken to reverse any anticoagulant and/or antiplatelet medications that the patient is taking. In many cases, a specific reversal agent is not readily available.

SPECIFIC THERAPIES

- Proton pump inhibitors (PPIs) are now generally used in acute bleeding when peptic ulcer disease is suspected or confirmed. In severe bleeding, this is often via intravenous (bolus followed by infusion) but can also take the form of oral therapy in minor bleeds for patients that are discharged home and after the initial resuscitation and endoscopy in hospital. A typical IV dose for pantoprazole is 80 mg as an initial bolus followed by an infusion at 8mg/hour. A typical oral regimen is 40-80mg PO once or twice daily.

    - High dose intravenous infusion of a PPI significantly reduces the rate of rebleeding compared with standard treatment in patients with bleeding

ulcers. Oral and intravenous PPI therapy also decrease the length of hospital stay, rebleeding rate, and need for blood transfusion in patients with high-risk ulcers treated with endoscopic therapy.

- Somatostatin and its analogs (e.g., octreotide) are indicated when variceal bleeding is suspected or in massive undifferentiated GI bleeding (it may help as well in patients with briskly bleeding ulcers). It is given by IV bolus and infusion. A typical dose is an intravenous bolus of 50 mcg, then by a continuous drip @ 50 mcg per hour.

DISPOSITION

- This is the most difficult decision in the management of the patient with a GI bleed

- Several scoring systems (see below) have been devised to aid the front line providers in recognizing who needs to stay in hospital for emergent endoscopy and who can go home

- These scoring systems underscore the following red flags for admission:
    - Instability - any vital sign instability
    - Varices - any risk factors for varices (e.g., liver disease)
    - An upper source - high BUN and melena are both of concern
    - Older age - general the higher the greater risk
    - Bad comorbidities - especially heart disease
    - Severely low hemoglobin level - relative to their baseline

SCORING SCALES

- These are validated scoring systems that can help predict those pts that are higher risk for rebleeding or bad outcomes.

Glasgow Blatchford Score

		Score Value
BUN(mg/dl)	<18 18-22 23-27 28-70 >70	0 2 3 4 6
Hb (men, gm/dL)	>13.0 12.0-12.9 10.0-11.9 <10.0	0 1 3 6
Hb (Women, gm/dL)	>12.0 10.0-11.9 <10.0	0 1 6
SBP (mmHg)	>110 110-109 90-99 <90	0 1 2 3
Other Markers	Pulse > 100 beats/min Presentation of melena Presentation of syncope Hepatic disease Cardiac failure	1 1 2 2 2

Rockall Score

Variable	Score 0	Score 1	Score 2	Score 3
Age	<60	60-79	>80	
Shock	No Shock	Pules>100 BP>100 Systolic	SBP<100	
Co-morbidity	Nil major		CHF, IHD, major morbidity	Renal failure, Liver failure, metastatic cancer
Diagnosis	Mallory-Weiss	All other diagnoses	Gi malignancy	
Evidence of bleeding	None	Blood, adherent clot, spurting vessel		

- Whether any scoring scale is utilized and which particular cutoff score is used as a threshold for admission is highly institutionally dependant.

- The decision to admit may also depend on factors not addressed in the major scoring systems, such as psycho-social factors, availability of timely follow-up, and other patient safety related issues.

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