Rectal Bleeding

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Lower GI bleeding

**Definition:** bleeding occurring distal to the ligament of Treitz

- Accounts for approximately 20% of all major GI bleeds
  - The incidence of LGIB requiring hospital admission is approximately 21 cases per 100,000 adults

- 80-90% of cases will stop bleeding spontaneously

- 25% will re-bleed during or after hospital admission

- Mortality ranges from 2-4%
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Common Etiologies:

• **Children & Adolescents:**
  - Meckel’s diverticulum
  - Polyps
  - IBD

• **Adults:**
  - Diverticula
  - Angiodysplasia
  - Neoplasm
  - IBD
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Other Causes:

• Ischemic colitis
• Infectious colitis
• Post-polypectomy hemorrhage (0.2% - 3%)
• Anorectal disease
• Upper GI source (10% - 15%)
• Small bowel source (3% - 5%)
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**Diverticular Bleeding:**

- The prevalence of diverticula increases with age.
- Bleeding is generally result from rupture of vasa recta.
- Up to 20% bleed during their lifetime.
  - 5% have massive bleeding.
  - recurs in 25%.
- While the majority of diverticula are located in the sigmoid colon, diverticular bleeding is distributed fairly equally between the right & left colon.
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**Angiodyplasia (Vascular ectasia):**

- Can be identified as distinct red mucosal patches consisting of capillaries
- Most common in the cecum and ascending colon
- Only about 15% of patients with vascular ectasia will develop gastrointestinal hemorrhage
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Inflammatory Bowel Disease:

• Bleeding from inflammatory bowel disease usually presents as bloody diarrhea

• Up to 6% of patients with either Crohn's colitis or ulcerative colitis may have severe gastrointestinal hemorrhage
Ischemic Colitis:

- Results from a sudden and often temporary reduction in mesenteric blood flow
- Typically caused by hypoperfusion, vasospasm, or occlusion
- Patients tend to be elderly, often with significant atherosclerosis or cardiac disease
- Clinically, patients present with abdominal pain, usually accompanied with bloody diarrhea
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Management Overview:

- Characterize
  - Character (hematochezia; melena)
  - Severity
- Resuscitation
- Localization
- Treatment
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Characterize:

- Character of blood and severity
- Chronicity
- History
- Risk factors
- PMH, PSH, FH
- Meds
- Exam/Vital Signs
- Laboratory tests
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Resuscitation “ABCs”

• Large-bore IVs
• Aggressive volume replacement
• Cross-match & transfuse as needed
• Coagulation studies
• Arrange admission to a unit with close monitoring
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Localization

• Upper GI source
  - NGT lavage—helpful initial procedure to help to rule out upper GI bleed (EGD if positive)

• Lower GI source
  - Anoscopy/Proctoscopy—rule out anal outlet bleeding, proctitis, or cancer
  - Colonoscopy
  - Tagged RBC scan
  - Angiography
  - Capsule endoscopy
  - Enteroscopy
Lower GI bleeding

**Anorectal Sources:**

- Hemorrhoids:
- Fissures:
- Proctitis:
- Rectal Prolapse
- Cancer (rectal CA, anal CA)
Colonoscopy

• **Advantages:**
  - High diagnostic yield
    • 85% of lesions identified
  - Assesses colon & ileum
  - Low complication rate
  - Therapeutic
    • Coagulation
    • Hemoclips
    • Injection (epinephrine)

• **Disadvantages:**
  - Diminished visualization with profuse bleeding
  - Requires bowel prep
Tagged RBC scan

• **Advantages:**
  - Sensitivity (0.1 ml/min)
  - Can be repeated (48hrs)
  - Low complication rate

• **Disadvantages:**
  - Not a good localizing study
  - Precursor to angiogram
Tagged RBC scan

2-3 min

5 min

10 min

25 min
Mesenteric Angiography

**Advantages:**
- Sensitivity (0.5 ml/min)
- Diagnostic & therapeutic
  - Selective embolization
  - Vasopressors
  - Methylene blue marking

**Disadvantages:**
- Invasive study
- Complications:
  - Pseudoaneurysm
  - Bowel infarction
  - MI (vasopressin)
Mesenteric Angiography
CT Angiography

**Advantages:**
- Accessible
- Quick
- Sensitive
- Provides anatomic detail
- No bowel prep needed

**Disadvantages:**
- NOT therapeutic
CT Angiography
Lower GI Bleeding

Other Modalities to Assess Small Bowel Sources:

• Capsule Endoscopy

• Enteroscopy
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**Surgery:**

- The majority of bleeding will stop spontaneously
- 10-25% of patients will require operative intervention

**Indications:**
- Continued or recurrent hemorrhage despite non-operative attempts
- Ongoing hemodynamic instability
- Large transfusion requirement in 24 hours
Lower GI Bleeding

Surgery:

• If the site of bleeding is identified:
  - Segmental resection +/- anastomosis (depending on hemodynamic stability, comorbidities)

• If the site of bleeding is NOT identified or unstable patient
  - Total abdominal colectomy & end ileostomy
Lower GI Bleeding

**Surgery:**

- If patient stability allows, *every effort should be made to localize the bleeding source pre-operatively*

- Emergency colectomies for non-localized bleeding can have high morbidity and mortality

- Blind segmental colectomy have a high the risk of re-bleeding (35-75%)
Management—Occult Bleeding

- Acute colonic bleeding
  - Volume resuscitation plus blood transfusion
    - NG aspirate negative
      - Proctoscopy
        - Rule out anorectal bleeding
          - Bleeding stopped or slowed down
            - Elective colonoscopy
              - Positive
                - Endoscopic treatment
                  - Rebleeding
                  - Segmental resection
              - Negative
                - Observe
                  - Rebleeding
                  - See moderate bleeding or massive bleeding
  - NG aspirate positive
    - Gastroduodenoscopy + endoscopic treatment
Management—Massive Bleeding

- Acute colonic bleeding
  - Volume resuscitation plus blood transfusion
    - NG aspirate negative
      - Proctoscopy: Rule out anorectal bleeding
    - NG aspirate positive
      - Gastroduodenoscopy + endoscopic treatment
- Massive life-threatening bleeding
  - Mesenteric arteriography
    - Positive
      - Vasopressin or Emboli
        - Fail
          - Segmental resection
    - Negative
      - Explore, intraoperative endoscopy
        - Positive
          - Segmental resection
        - Negative
          - Total colectomy
Management—Moderate Bleeding

- Moderate bleeding
  - or
  - $^{99m}$Tc RBC scintigraphy
    - Positive: Mesenteric arteriography
      - Positive: Vasopressin or Emboli
        - Fail: Segmental resection
      - Negative: Explore, intraoperative endoscopy
    - Negative: Observe
  - Negative: Urgent colonoscopy
    - Positive: Colonoscopic treatment or explore, segmental resection
    - Negative: Observe
      - Rebleeding: $^{99m}$Tc RBC scintigraphy
Management—Special Situations

Post Polypectomy Bleeding:

- Occurs in up to 6% of cases
  - can either present immediately or can be delayed
- Treated with standard endoscopic techniques
  - injection therapy, electrocoagulation, or endoscopic clipping
- If these methods fail, angiographic embolization and/or surgery may be required (rare)
- When surgery is required, the histology of the polyp is can guide management
Management—Special Situations

Small Intestine Bleeding:

• Account for 3-5% of all cases of LGIB
• Most common cause is angiodysplasia (70-80%), followed by small bowel diverticula, Meckel’s diverticula, neoplasia, Crohn’s disease, and aorto-enteric fistulas
• Diagnosis is difficult because of the long length and relative inaccessibility
  - Capsule endoscopy and double balloon enteroscopy
Management—Special Situations

Anastomotic Bleeding:

• More common after stapled anastomoses

**Prevention:**
- Inspect staple line
- Use antimesenteric border of bowel

• **Most cases are mild and self-limited**
  - Stabilize, correct coagulopathy, hold meds that may exacerbate bleeding

• **More serious bleeding**
  - Retention enemas (saline and epinephrine)
  - Endoscopy
  - Return to OR
Ms. C

Ms. C is a 38-year-old female who presents to her primary care physician complaining of bloody bowel movements and left lower quadrant pain for the past 4 weeks.
History

What other points of the history do you want to know?
History, Ms. C

Consider the following:

- Characterization of Symptoms
- Sequence of events
- Alleviating / Exacerbating factors
- Associated Signs & Symptoms
- Pertinent PMH
- ROS
- MEDS
- Relevant Family Hx.
- Relevant Social Hx.
History, Ms. C

Characterization of Symptoms and Sequence of Events

- Patient noticed bright red blood in her stool beginning 4 weeks ago, sometimes mixed with mucous. Her bowel movements have been loose but formed.
- She has approximately 3 bowel movements daily and often feels an urgent need to defecate. No anal pain
- She has also noticed intermittent LLQ crampy abdominal pain and a decrease in appetite over the past month.
History, Ms. C

Alleviating/Precipitating Factors
• Abdominal pain often worsens with eating
• Nothing alleviates symptoms

Associated Symptoms
• No Nausea or Vomiting
• Decreased Appetite
• Weight loss of about 10 lbs over past month
History, Ms. C

Has this happened before?
• She has experienced abdominal pain and bloody diarrhea twice in the past year but never lasting more than 2-3 days

Sick Contacts and Travel History
• No known sick contacts
• No recent travel out of the country
Additional History, Ms. C

PMH
• None

PSH
• Appendectomy at age 9

Meds
• None
Additional History, Ms. C

Family History
• Several family members have had “intestinal problems”

Social History
• Smoked 1/2 pack per day for 10 years until 2 years ago, social ETOH consumption, no other drug use
• Sexually active in monogamous relationship
What is your Differential Diagnosis?

Based on History and Presentation

- Infectious Colitis
- Diverticulitis
- Inflammatory Bowel Disease
  - Crohn’s Disease
  - Ulcerative Colitis
- Colorectal Cancer
- Gastroenteritis
- Hemorrhoids
Physical Examination

What specifically would you look for?
Physical Examination, Ms. C

Vital Signs: T = 99, P = 86, BP = 110/76, RR = 14

Appearance: thin, pale, but in no acute distress

HEENT: Sclera anicteric, mucous membranes pink and moist

Heart: RRR

Lungs: mild rales at bases

Abdomen: normoactive BS, non-distended, mildly tender throughout but L>R, no guarding or rebound tenderness

Rectal: stool in vault mixed with bright red blood, no masses, no external anal lesions
Laboratory Tests

What would you obtain?
LFTs WNL
PT/PTT WNL
Stool O&P negative
C. difficile toxin negative
What are the Next Steps in Diagnosis and Management?

- Interventions?
- Imaging?
- Endoscopy?
Abdominal X-Ray
X-ray interpretation

Normal Abdominal film
No colonic dilatation
No signs of small bowel obstruction or ileus
Colonoscopy

What would you expect to see?
Colonoscopy Findings

Continuous inflammation of colonic mucous involving rectum and extending to the splenic flexure and into the early transverse colon

Mucosa is erythematous, edematous, and friable

Pseudopolyps – inflammatory, non-neoplastic mucosal projection

Mucosal Biopsy demonstrates distortion of architecture with crypt branching, crypt abscess containing inflammatory cells, ulceration; no granulomas
Final Diagnosis

Ulcerative Colitis
What’s next with respect to management?
Medical Management for Mild-to-Moderate Ulcerative Colitis

5-ASA agents
- oral and rectal preparations

Oral Corticosteroids

6-MP/Azathioprine
Medical Management, Ms. C

Ms. C is started on Sulfasalazine 1g TID and also given a course of steroids.

Her symptoms improve dramatically over the next few days.

She maintains Sulfasalazine therapy for disease control despite minimal symptoms.
Ms. C returns

Ms. C now presents to the emergency department 3 weeks after completing the steroid taper. She began having crampy abdominal pain and bloody diarrhea 2 weeks ago increasing in severity over the past 5 days.
History, Ms. C

Characterization of Symptoms and Sequence of Events

• Abdominal pain began gradually 2 weeks ago, was intermittent and crampy, but now worsening in severity and is constant

• Diarrhea also began 2 weeks ago. It was watery and mixed with bright red blood. Over the past 5 days patient has noted more blood in the toilet bowl.

• She has been having >10 Bowel movements daily

• Today diarrhea is less than it has been the day before
History, Ms. C

Alleviating/Precipitating Factors

- She attempted to take over-the-counter anti-diarrheal agents without relief
- Patient feels worse with eating; she has avoided oral intake for the past week

Associated Symptoms
- Subjective fevers and chills
- Dizziness, particularly on standing
- Nausea, but no vomiting
Physical Examination, Ms. C

V.S. T=38.7°C, BP=104/60 (seated), 90/50 (standing), HR=102 (seated), 116 (standing)

General: thin, uncomfortable
HEENT: sclera anicteric, mucous membranes dry, no oral lesions
Cardiovascular: tachycardic, normal S1, S2, grade II/VI systolic flow murmur
Physical Exam

Lungs: Clear to Auscultation Bilaterally

Abdominal Exam: Hypoactive BS, mildly distended, soft, diffusely tender but without rebound or guarding

Rectal: no external anal lesions, heme + stools

Extremities: trace pedal edema
Lab Results

PMN’s = 80%
MCV = 80.1
LFTs WNL
PT/PTT normal
Lactate: 1.1
Cultures and Stool Studies pending
Interventions at this point?
Consider the following Immediate Interventions

• Admit to Hospital
• NPO
• Fluid resuscitation with isotonic crystalloid
  - normal saline; lactated ringers
• Correct electrolyte abnormalities
• Stop any narcotic, antidiarrheal, or anticholinergic agents
• Begin IV Corticosteroids—if infection ruled out
Studies

Do you want any further studies?
Abdominal X-Ray
Abdominal X-ray Findings

Dilation of Transverse and Ascending Colon
Small bowel unremarkable
Abdominal CT
Abdominal CT – Interpretation

Severe Colitis

- Diffuse colonic wall thickening with submucosal edema
- Pericolic stranding
- Some free fluid
Flexible Sigmoidoscopy

Findings
**Severe Colitis** – friable, ulcerated mucosa; mucosal edema and erythema; hemorrhagic
Medical Management of Severe Ulcerative Colitis

- Bowel Rest
- IV corticosteroids
- (IV antibiotics)
- Cyclosporine
- Anti-TNFα agents
Hospital Course

Symptoms do not improve on steroids and cyclosporine

She continues to experience bloody diarrhea and worsening abdominal pain.
Final Diagnosis

Fulminant Ulcerative Colitis
What next?

Indications for Surgery

Perforation
Uncontrolled Bleeding
**Fulminant Colitis**
Disease refractory to medical management

* Delay in surgical intervention leading to emergent surgery is associated with increased morbidity and mortality.
Surgical Option:

Subtotal Colectomy and End Ileostomy

- Leaving rectal stump
- Avoid the pelvic dissection
- Proctectomy +/- Ileal Pouch–Anal Anastomosis (IPAA) can be performed at a later date
Summary:

• 10% of IBD patients will present initially with fulminant colitis

• History usually includes cramping abdominal pain, bloody diarrhea that worsens despite medications and bowel rest

• May be accompanied by fever, anemia, and leukocytosis

• Colonoscopy should be used with care
Summary:

- Surgery is indicated when signs and symptoms fail to improve with medical management or worsen.
- Surgery consists of a subtotal colectomy with end-ileostomy and must be pursued aggressively.
Penn Colorectal Surgery

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