Hematochezia

University of Pennsylvania

Department of Surgery
HPI

- Julie K. is a 32-year-old lady who presents to her primary care physician with a four week history of passing bloody bowel movements.
History

What other points of the history do you want to know?
History
Consider the following:

- Characterization of Symptoms
- Temporal sequence
- Alleviating / Exacerbating factors:

- Associated Signs & Symptoms
- Pertinent PMH
- ROS
- MEDS
- Relevant Family Hx.
- Relevant Social Hx.
History, Julie K.

- Characterization of Symptoms and Temporal 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.
  - She has also noticed intermittent crampy abdominal pain and a decrease in appetite over the past month.
History, Julie K.

- **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, Julie K.

- **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, Julie K.

- **PMH**
  - None

- **PSH**
  - Appendectomy at age 9

- **Meds:**
  - None
Additional History, Julie K.

- **Family History**
  - Several family members have had “intestinal problems”

- **Social History**
  - Smoked ½ 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?
Differential Diagnosis
Based on History and Presentation

- Inflammatory Bowel Disease
  - Crohn’s Disease
  - Ulcerative Colitis
- Infectious Colitis
- Parasites: Strongyloidiasis, Amebiasis
- Rectal or Colon Cancer or Lymphoma
- Diverticulitis
- Radiation Enteritis
- Gastroenteritis
Physical Examination

What specifically would you look for?
Physical Examination, J.K.

- **Vital Signs:** T = 37.3, 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, no guarding or rebound tenderness
- **Rectal:** stool in vault mixed with bright red blood, no masses, no external anal lesions
Differential Diagnosis

Would you like to update your differential?
Laboratory

What would you obtain?
Lab Results

- **MCV = 82%**
- **LFTs WNL**
- **PT/PTT WNL**
- **Stool O&P negative**
- **C. difficile toxin negative**
Laboratory Results - Discussion

- Normal WBC – infection less likely
- Mild Anemia – likely from GI bleeding with chronic blood loss given low MCV
- Electrolytes - Normal
- C. difficile toxin negative - sensitivity is 80-99% based on assay with specificity of 99% making infection with C. difficile highly unlikely
What are the Next Steps in Diagnosis and Management?
Further 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

- Colitis
  - Friable, Ulcerated Mucosa
  - Mucosal Edema and Erythema
  - Hemorrhagic
Colonoscopy

- 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
Diagnosis

Ulcerative Colitis
What next?
Medical Management for Mild-to-Moderate Ulcerative Colitis

- 5-ASA agents
  - oral and rectal preparations
- Oral Corticosteroids
- 6-MP/Azathioprine
Medical Management Julie K.

- Julie K. 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.
Julie K. returns

- **Julie K.** 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, Julie K.

- Characterization of Symptoms and Temporal Sequence of Events
  - Abdominal pain began gradually 2 weeks ago, was intermittent and crampy, but now worsening in severity and 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, Julie K.

- **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
  - No joint pain, no visual changes or eye pain
Physical Examination, Julie K.

- 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
Differential Diagnosis
Would you like to update your differential?
Laboratory

What would you obtain?
Lab Results

- PMN’s = 80%
- MCV = 80.1
- LFTs WNL
- PT/PTT normal

- VBG: 7.35/35/40
- AG = 10
- Lactate: 1.1
- Cultures and Stool Studies pending
Laboratory Results - Discussion

- **Leukocytosis** – consistent with inflammation, could indicate infection
- **Anemia** – indicative of blood loss, likely acute on chronic blood loss given low MCV
- **Mild Non-anion gap Metabolic Acidosis** with appropriate respiratory compensation – seen in the context of diarrhea
- **Hypokalemia** – GI losses and volume depletion
Interventions at this point?
Consider the following Immediate Interventions

- Admit to Hospital
- NPO
- Fluid Resuscitation with Isotonic Crystalloid
  - (NS, LR, or Plasmalyte)
- Correct Electrolyte Abnormalities
- Stop any narcotic, antidiarrheal, or anticholinergic agents
- Begin IV Corticosteroids
Studies

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

- Dilated Colon
- Toxic Megacolon
  - Dilation of Transverse or Ascending Colon >6cm
  - No small bowel pathology
Colonoscopy - Discussion

- Generally avoided during fulminant presentations of colitis
- May be used cautiously to determine presence of ischemic or pseudomembranous colitis
- Minimize insufflation used
- Should **not** be performed when there is colonic dilation and is **contraindicated** for cases of toxic megacolon
Abdominal CT (not necessary)
Abdominal CT - Interpretation

- **Severe Colitis**
  - Diffuse Colonic Wall Thickening with Submucosal Edema
  - Pericolic Stranding
  - Ascites
Medical Management of Severe Ulcerative Colitis

- **Cyclosporine**
  - Calcineurin inhibitor
  - Administer 2-4mg/kg/day as continuous IV infusion if patient not responding to IV corticosteroids

- **Infliximab**
  - Monoclonal antibody to TNFα
  - Administered as IV infusion
Hospital Course

- Symptoms do not improve on steroids and cyclosporine
- She continues to experience bloody diarrhea and worsening abdominal pain.
Final Diagnosis

Ulcerative Colitis complicated by Fulminant Colitis with Toxic Megacolon
What next?
Management

- Continue Supportive Therapy
- Medical Management
  - Broad spectrum antibiotics – will treat any infectious component and also offer coverage should perforation occur
  - Continue IV corticosteroids
- Bowel Decompression: NG tube
- Prepare for Surgery
Indications for Surgery

- Perforation
- Uncontrolled Bleeding
- Progressive Dilation
- Worsening Symptoms
- Failure to Improve with Medical Management within 24 hours

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

- **Subtotal Colectomy and End Ileostomy** (leaving rectal stump)

- **Total Proctocolectomy with Ileal Pouch–Anal Anastomosis (IPAA)**
Subtotal Colectomy

- Remove diseased colon
- Create ileostomy
- Allow toxic state to resolve
- Restorative proctocolectomy with ileal pouch–anal anastomosis (IPAA) at a later date
Discussion

- Serious Complications of fulminant presentations of Ulcerative Colitis include:
  - Massive Hemorrhage
  - Perforation
  - Toxic Megacolon

- **Toxic Megacolon** is defined as colonic distension >6cm in the presence of an active inflammatory process.

- Though most commonly associated with IBD, toxic megacolon may also complicate infectious colitis including Pseudomembranous colitis.
Discussion

Diagnosis

– There may be a history of Ulcerative Colitis, but approximately 10% of patients will present initially with fulminant colitis.

– History usually includes cramping abdominal pain, increased bowel movements, and stool mixed with blood and mucous.

– There is often leukocytosis, anemia, and electrolyte disturbances.
Discussion

Diagnosis

– If toxic megacolon occurs, dilated colon will be visible on abdominal x-ray and CT. CT is a good non-invasive modality for identifying subclinical complications of fulminant colitis such as perforations and abscesses.

– Colonoscopy should be used with care when disease is active and is contraindicated if colon is dilated or patient has fulminant colitis.
Discussion

Management

– Non-surgical management includes aggressive fluid resuscitation, correction of electrolyte abnormalities, administration of broad spectrum antibiotics, and in the case of IBD (ulcerative colitis or Crohn’s disease), administration of corticosteroids

– Additional medical management may include immune modulator therapy with cyclosporine or infliximab
Discussion

Management

– Surgery is indicated when signs and symptoms fail to improve with medical management or worsen.

– Emergent Surgery is also warranted in the setting of perforation, hemorrhage, progressive dilation or toxic megacolon.

– Surgical Management: subtotal colectomy with end-ileostomy for emergency situations.
QUESTIONS ????????
References

- Cima, RR and Pemberton JH. “Surgical Indications and Procedures in Ulcerative Colitis.” *Current Treatment Options in Gastroenterology*. 2004;7:181-190