Approach to Bright Red Blood Per Rectum

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Consultant: Salix & Ironwood, Clinical Area- IBS-D, IBS-C, CIC
Speakers Bureau: Salix, Clinical Area – CIC, IBS-C, IBS-D; Takeda, Clinical Area - CIC
Rectal Bleeding – Definitions

- **Hematochezia**: passage of fresh blood usually in or with stool. Mostly with lower GI bleeds, but can also occur with a brisk upper GI bleed. Bright red or maroon in color.

- **Acute Lower GI bleed (LGIB)**: recent onset of hematochezia from colon, rectum or anus with risk for hemodynamic instability, anemia or the need for a blood transfusion.

- **Minor Bright Red Blood Per Rectum (BRBPR)**: passage of scant fresh blood which may appear as drops in the toilet bowel, a streak on toilet paper or coating the stool.
## Taking a History

### Onset?
- Acute or Chronic?

### Color?
- Black, maroon, bright red?

### With or without BMs?
- Blood mixed in the stool, coating stool, after defecation

### Perianal pain?
- Burning, throbbing, glass cutting, itchy

### Quantify blood?
- Streak on toilet paper, drops in toilet bowl, filling toilet bowl, soiling underwear

### Associated symptoms:
- fevers/chills, weight loss, N/V, abdominal pain, constipation diarrhea, tenesmus?

### Red flags:
- IDA, unexplained weight loss, onset after 50 yrs of age, severe or progressively worsening symptoms, family hx of CRC or IBD

### Medications:
- **NSAIDs COX 1 and 2 inhibitors**
- **Anti-platelets, anticoagulation**
- **Constipating or diarrhea inducing medications**
- **Immunosuppressants**

### PSH:
- **hx of colorectal surgery, hemorrhoidectomy, banding, fissurectomy**

### Soc Hx:
- **anal intercourse, tobacco, alcohol**

### PMH:
- **CRC, premalignant polyps, hereditary syndrome (familial polyposis, Lynch)**
- **IBD or Celiac**
- **Hx of pelvic radiation**
- **Connective tissue dz**
- **Cardiac surgery**
- **Hx of STDs (rectal HPV, HIV)**
- **Severe endometriosis**
**Vitals:** Hemodynamic instability: elevated HR, low BP, low O₂ sats → send to ER

**PE:**
- GEN: acute distress? Pale/weak?
- Cardiac: systolic murmur, tachycardia
- Abd exam: point or diffuse TTP, guarding, rebound TTP
- **Perianal exam:** Active bleeding, excoriations, abscess, anal fissure, fistula, malignancy, external hemorrhoids,
- **Digital Rectal Exam:** palpate for IHs, mass, fecal impaction, blood
- **Anoscopy exam:** can have higher sensitivity for detection of hemorrhoids than a flex sig

**The presence of hemorrhoids does not exclude a more proximal etiology**

**Labs:**
- CBC
- If anemic order iron studies +/- B12/folate

**Acute LGIB:**
- Cr, BUN, electrolytes
- PT/PTT
- Type and crossmatch

**Bloody diarrhea**
- Infectious work-up
- CRP, fecal calprotectin
## Indications for Scoping

<table>
<thead>
<tr>
<th>No Scope</th>
<th>Sigmoidoscopy</th>
<th>Colonoscopy</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 35-40 yrs with no other alarm symptoms or RFs and DRE/anoscopy reveals a source (large hemorrhoids, anal fissure)</td>
<td>&lt;35-40 yrs with no other alarm symptoms or RFs with equivocal findings on DRE/anoscopy</td>
<td>Red flags at any age</td>
</tr>
<tr>
<td></td>
<td>&lt;35-40 with persistent symptoms despite treatment</td>
<td>Age 45-50 yrs with an absence of red flags and who are due for CRC screening</td>
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<tr>
<td></td>
<td>&gt;35-40 yr with a normal colonoscopy in the past 2-3 yrs and low risk for CRC with equivocal findings on DRE/anoscopy</td>
<td>Age 35-40 with equivocal findings on DRE/anoscopy</td>
</tr>
<tr>
<td></td>
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<td>For patients who proceed with a flex sig and a source is not found</td>
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</table>
Causes of Hematochezia and BRBPR

- Angiodysplasia (occult)
- Diverticula
- Carcinoma of caecum (often occult)
- Meckel’s diverticulum
- Solitary ulcer of rectum
- Anal fissure (common)
- Crohn’s ulcerative infective
- Ischaemic colitis (less common)
- Colitis
- Polyps (small bleeds but frequent)
- Diverticula
- Carcinoma
- Haemorrhoids (common with smaller recurrent bleeds)
- Usually associated with diarrhoea
## Causes of Acute LGIB

<table>
<thead>
<tr>
<th>Colon (80%)</th>
<th>Diverticular disease</th>
<th>17-40%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angiodysplasia</td>
<td>0-3%</td>
<td></td>
</tr>
<tr>
<td>Neoplasm (polyps and CRC)</td>
<td>3-11%</td>
<td></td>
</tr>
<tr>
<td>Colitis (ischemic, infectious, IBD, radiation)</td>
<td>9-21%</td>
<td></td>
</tr>
<tr>
<td>Post-polypectomy/post anastomotic bleeding</td>
<td>0-13%</td>
<td></td>
</tr>
</tbody>
</table>

| Anorectal | Hemorrhoids, anal fissure, rectal varices, rectal ulcers | 4-10% |

| SB | AVMs, Meckel diverticulum, IBD, Neoplasia | 2-9% |

| UGI | Vasculitis, peptic ulcer, neoplasia, Dieulafoy lesion | 4-10% |

- Stops spontaneously in 80-85% of patients
- Acute bleeding = normocytic +/- anemia
- Chronic bleeding = microcytic + IDA
- Timing of colonoscopy determined on hemodynamic stability, resuscitation and ongoing bleeding
- Unstable hematochezia: exclude UGI source with nasogastric lavage and/or EGD
- If no source found, consider CT angiogram/CT with bleeding protocol, Meckel’s Scan or video capsule endoscopy

Diverticular Bleeds

- **Etiology:** Diverticula develop at sites of weakness in the colonic wall where vasa recta penetrate the circular muscle layer. As a diverticulum herniates, the vasa recta drape over the dome of the diverticulum and become susceptible to trauma and disruption.
- **CP:** acute painless BRBPR in the **ABSENCE** of stool
- **MOST COMMON** cause of acute LGIB
- **Amount of Bleeding:** moderate to severe
- **Facts:** 90% of diverticula in sigmoid colon, but 60% of diverticular bleeds from the thinner-walled right colon
- Not associated with diverticulitis
- **RF:** advanced age, low fiber diet, obesity, inherited connective tissue disorders (Marfan’s syndrome, Ehlers-Danlos)
- **Rx:** supportive care, IVFs, resolved spontaneous in approx. 80% of patients, 20% require endoscopic hemostasis

# Nomenclature of Vascular Lesions in the GI tract

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
<th>Facts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angiodysplasia, angiectasia, vascular ectasia</td>
<td>Small vascular lesion of arterioles, capillaries, venules that has a supplying artery and a draining vein</td>
<td>Most common source of vascular bleeding from SB and Colon in elderly patients</td>
</tr>
<tr>
<td>Telangiectasia</td>
<td>Tiny vascular lesion from dilation of the terminal end of a vessel. Similar to angiodysplasia</td>
<td>Lesions of hereditary hemorrhagic telangiectasia – HHT, scleroderma, CREST, cutaneous and mucosal (GI tract, nose, mouth, lip, skin). Lesions are widespread in GI tract</td>
</tr>
<tr>
<td>Haemangiomas</td>
<td>A tumor produced by enlargement or new formation of blood vessels</td>
<td>Benign vascular tumor</td>
</tr>
<tr>
<td>Arteriovenous malformation (AVM)</td>
<td>A congenital disorder of blood vessels consisting of abnormal connection between arteries and veins without intervening capillaries</td>
<td>Use only for a congenital vascular lesion that has direct connection between arteries and veins. Should not be used when referring to vascular ectasias</td>
</tr>
<tr>
<td>Dieulafoy lesion</td>
<td>Arterial in origin. Abnormally large submucosal end arteries</td>
<td>Can cause massive bleeding, located in upper stomach</td>
</tr>
<tr>
<td>GAVE (gastric antral vascular ectasia)</td>
<td>Capillary type vascular lesion Dilated tortuous mucosal capillaries in the antrum of the stomach</td>
<td>Scleroderma/portal HTN. Melena or IDA</td>
</tr>
</tbody>
</table>

Brandt LJ. Gastrointest Endosc. 2018;87(6):1595-1596.
Vascular Ectasia  
(Aka Angiodysplasia, Angiectasia)

• **Terminology:**
  – Angiodysplasia typically describes colonic lesions
  – Angiectasia or vascular ectasia: typically used as a generic term

• **Etiology:** venous in origin. focal submucosal areas of thin, weak and dilated vessels. 2/3 are R-sided (cecum or ascending colon)

• **Facts:** Most common vascular abnormality in the GI tract. Typically more than one

• **CP:** painless, IDA, bleeding is small in quantity because origin in venous. Recurrent and chronic

• **Endoscopy findings:** 5-10 mm, flat, cherry-red lesions with a fern-like pattern radiation from a central vessel, typically more than one

• **RF:** advanced age, von Willebrand’s disease, CKD, aortic stenosis (Heyde Syndrome), LVAD (acquired VWD)

• **Rx:** APC, electrocoagulation, mechanical hemostasis. Incidentally found, without occult or acute bleeding, should NOT be treated
Colitis

Infectious colitis

- **RF:** international travel, immunocompromised, eating suspected contaminated food, cirrhosis (Vibrio)
- **Inflammatory diarrhea pathogens:** Salmonella, Campylobacter, Shigella, enterohemorrhagic *E. coli*, Yersinia, *Vibrio parahemolyticus*, *Entamoeba histolytica*

Inflammatory Bowel Disease

- **CP:** Hematochezia, abdominal pain, tenesmus
- **Labs:** Elevated CRP and fecal calprotectin
- Refer to GHAPP IBD presentations

NSAIDs

- **CP:** mostly subclinical. IDA, hematochezia, BRB, stricture
- Can cause microscopic colitis which presents with secretory diarrhea (w/o bleeding)
- Intestinal diaphragms (circumferential small bowel strictures) are pathognomonic
- Erosions, ulcers, colitis are non-specific, and should improve with stopping the NSAID
- PPIs provide no protection
- COX-2 inhibitors provide minimal prevention

Ischemic Colitis

Radiation proctitis


**Ischemic Colitis**

**Pathophysiology:** low-flow state, “watershed” areas with poor perfusion. Between areas of colonic blood supply (R colon supplied by SMA, L colon by IMA, splenic flexure poorly supplied by both). Mucosal $\rightarrow$ transmural

**RF:** dehydration, HF, shock, aortoiliac procedures, hypercoagulable states, extreme exercise/long distance running, HD, certain vasoconstricting drugs (digitalis, vasopressors, cocaine)

**CP:** acute abdominal pain (not always), bloody diarrhea, chronic ischemia can result in stricture formation

**Endoscopy:** L sided. Mucosal friability and findings that resemble UC, rectal sparing, single longitudinal ulcer

**Rx:** self limited, 85-90% resolve with correction of underlying cause and volume repletion

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**Acute Mesenteric Ischemia**

AMI is arterial embolus or thrombosis leading to bowel necrosis. high mortality. affects the SB and is often transmural. Severe pain
Anorectal Causes of BRBPR

- Neoplasia (malignancy and polyps)
- Hemorrhoids
- Anal fissure
- Radiation and ulcerative proctitis
- Stercoral ulcer and solitary ulcer syndrome
- Rectal Varices
- Trauma
- Rectal hemangioma
- Intestinal endometriosis: less likely to present with BRBPR and more likely pelvic pain/rectal pain, constipation/diarrhea, pain with intercourse. Can mimic IBS
Colon and Rectal Cancer in Young Adults

From 1992-2016:

- **Rectal cancer increased by >90%**
- **Colon cancer increased by 40%**
- Across all racial/ethnic groups and similar rates in Asia, Europe and Australia
- 1 in 10 new diagnosis of CRC are 50 yrs or younger
- 3 of 4 patients with early-onset CRC have no family hx
- Most are rectum or distal colon compared to proximal colon in older patients
- Etiology: ? Diet, environmental exposures, lifestyle factors
- Double the prevalence of pathogenic germline variants (MSH6, PMS2, MMR – Lynch; APC – FAP)
- Recommend genetic testing with early-onset CRC
- American Cancer Society 2019: start screening for average risk at age 45

Radiation Proctitis

**CP:** bloody diarrhea, tenesmus, mucus, recurrent, risk for stricture

**RF:** pelvic radiation (prostate, rectal, cervical cancer).

External beam radiation = greater exposure

Brachytherapy = less exposure

**Acute:**
- Onset: 6 weeks of radiation
- direct mucosal damage from radiation exposure

**Chronic**
- Onset: 9-14 mo after exposure
- progressive epithelial atrophy and fibrosis, endarteritis and chronic mucosal ischemia

**Rx:** Supportive treatment: hydration, antidiarrheals

**Endoscopic therapy:** APC (argon plasma radiation), RFA (radiofrequency ablation). May require more than 1 session. Stricture dilation

At risk for secondary malignancies, the majority are CRC

Internal Hemorrhoids

**Etiology:** cushion (plexus) of dilated AV channels and connective tissues.

IH = superior hemorrhoid plexus
EH = inferior hemorrhoid plexus

**Location:** proximal to the dentate line

**CP:** Painless BRBPR w/BMs, blood coats stools at end of defecation. Blood may drip into the toilet or stain toilet paper, or appear in underwear following defecation

**Rx:** treat constipation, avoid straining, banding, hemorrhoidectomy
External Hemorrhoids

**CP:** Scant BRB with wiping, burning pain

**Thrombosed:**
- Acute pain
- Can spontaneously release
- <48-72 hrs - can excise
- >48-72 hrs - conservative treatment

**Non-thrombosed:**
- Conservative Rx: treat constipation, Sitz baths, non alcohol based rectal wipes, hydrocortisone cream (up to 10-14 days)

**RF:** pregnancy, obesity, chronic diarrhea/constipation, heavy lifting
Stercoral Ulcer

- **Etiology**: stagnate impacted feces, eventually eroding and ulcerating rectosigmoid mucosa
- Mortality rate may exceed 50% if ulceration leads to perforation
- **RF**: elderly or bedridden patient, hx of constipation and HTN, possibly dialysis.
- **Clinical features**: acute GI bleeding
- **Gross description**: sharply demarcated ulcer(s), perforation may be present
- **Treatment**: possibly surgery, laxatives/disimpaction

Solitary Rectal syndrome

- **Etiology**: rectal mucosal prolapse or intussusception resulting in localized ulceration
- **Clinical features**: constipation, blood and mucus in rectum, rectal pain
- Uncommon, 3rd and 4th decade, more common in women
- **Gross description**: well demarcated irregular ulcer(s) on rectal wall 4-10 cm from anal margin. Also polypoid, rough, erythematous lesions. Mucosal thickening.
- **Treatment**: laxatives, possible resection, pelvic floor therapy or surgical correction or prolapse

Thank You!

Whoa, Cindy, did you get highlights?