Lower GI bleeds: diagnosis and therapeutic pitfalls

Scott G. Sagraves, MD, FACS

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Definition of LGIB

Bleeding that arises distal to the ligament of Trietz

- Minor – stable; anorectal; outpatient
- Major – unstable; 2+ units of blood
- Massive – unstable; 10+ units of blood

General Considerations

- **LGIB comprises 20% of all major GI bleeds**
  - **Colon accounts for 95% of LGIB**
- **Disease of the elderly, mean age 63-77 years at presentation**
- **LGIB Hospital Admission: 21-40 per 100,000**

General Considerations

- Spontaneous cessation of bleeding: 80-90%
- Re-bleeding rates approach 25%
- LGIB mortality: 2-4%

Etiology

Colonic Bleeding Causes	Percentage (%)
Diverticular disease	30-40
Ischemic Colitis	5-10
Anorectal disease	5-15
Neoplasia	5-10
Infectious Colitis	3-8
Postpolypectomy	3-7
Inflammatory bowel disease	3-4
Angiodysplasia	3

Diverticular Disease

- Massive hematochezia
- Perforated vas recta; neck of diverticulum
- Right side accounts for > 50% of bleeds
- 5% rate of hemorrhage overall
- ~ 75% stop spontaneously
- ~ 35% rebleed

Ischemic Colitis

- Common cause of LGIB in elderly
- Typically not massive LGIB
- Impaired local microvascular perfusion
- Associated with co-morbidities:
  - Renal failure
  - HTN
  - CVD
- Life-threatening hemorrhage is uncommon

Colonic Angiodysplasia

- Aka AVM
- Cecum and ascending colon
- Prevalence ~ 1% general population
- Less severe bleeding episodes, but more likely to rebleed

Anorectal disease

- Common Causes:
  - Internal hemorrhoids
  - Anal fissures
  - Rectal neoplasia
- Typically not massive
- Bright-red blood per rectum
- Rule out other causes of bleeding

Neoplasia

- Uncommon cause of LGIB
- 150,000 new cases of colorectal cancer
- Presentation:
  - Painless bleeding
  - Intermittent bleeding
  - Slow
  - Iron deficiency anemia

Presentation

- Melena
  - Black, tarry stool
  - Bacterial degradation of blood
  - Right-sided colon bleeding
- Hematochezia
  - Bright red blood per rectum vs. old clots
  - Shock & signs of hypovolemia
- LGIB tends to be:
  - Less severe
  - Intermittent
  - Ceases spontaneously

Resuscitation

- Spontaneously stops
  - Crystalloid resuscitation
  - Laboratory evaluation
- Shock
  - Goals
    - Hemodynamic stability
    - Restore tissue perfusion
    - Rapid oxygen delivery restoration
  - Blood transfusions based upon stability not targeted hemoglobin

Resuscitation

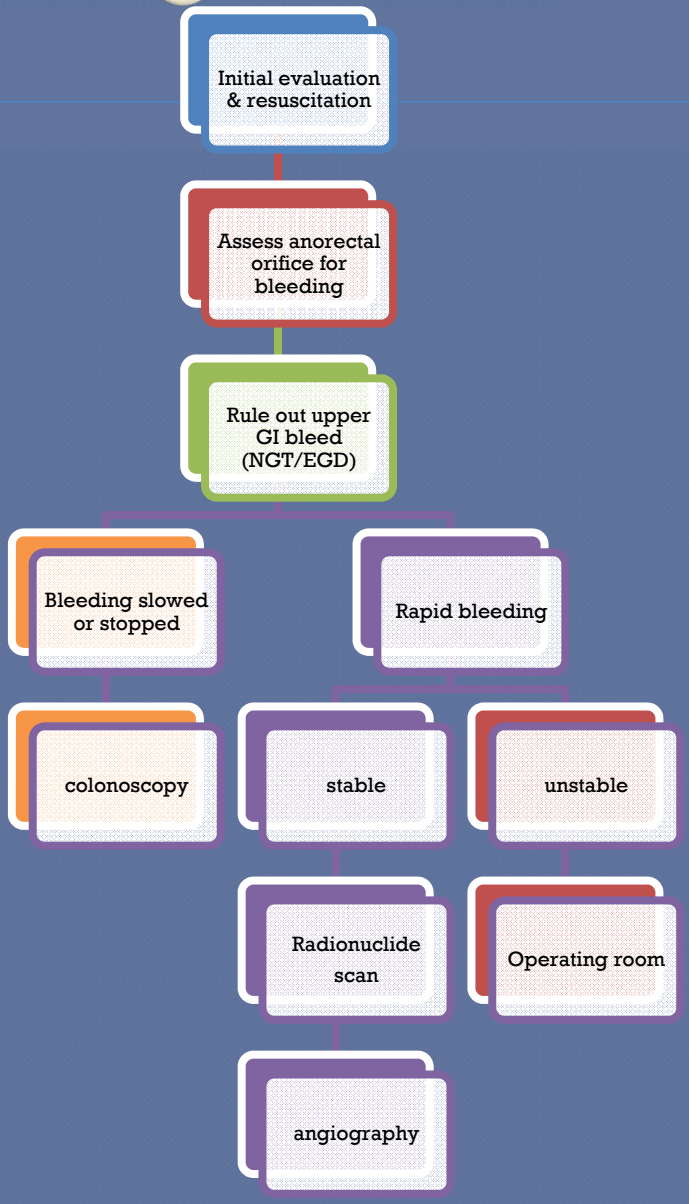
- Balanced transfusion strategy:
  - Packed RBC
  - Fresh frozen plasma
  - Platelets
- Correct:
  - Coagulopathy
  - Thrombocytopenia
- Adjuncts:
  - Bladder catheter
  - Invasive monitoring

Diagnostic approach

"Where is the bleeding?"

- Colonic bleeding mucosal, not palpable, nor identifiable in OR
- Must localize prior to OR

Diagnostic Algorithm



Colonoscopy

- Appropriate in:
  - Minimal to moderate bleeding
  - Preferred prepped bowel to increase dx yield
- Dx if bleeding during study
- Active bleeding may obscure site
- Limited in massive bleeding
- 95% success rate in identifying lesion

Radionuclide Scanning

- Scintigraphy with ^{99m}technetium
- Most sensitive, least accurate at localization
- Bleeding rate detection: 0.1 mL/min

Angiography

- Diagnosis 0.5-1 mL/min
- Technical success 90%
- Clinical success 50-65%
- Treatment
  - Micro coils
  - Gelfoam
  - Vasopressin
  - Colon > small bowel
- Complications
  - Ischemia (< 5%)
  - Rebleeding

Treatment Options

- Dependent upon bleeding lesion
- Colonoscopy
- Embolization
- Surgery

Colonoscopy

- Diverticular disease
  - Hemoclips
  - Submucosal epinephrine injection
  - "bipolar cautery"
  - Argon beam plasma cautery
- Polyps
  - Resection
  - cautery

Surgery

- 10-25% of LGIB require surgery
- Tendency to delay surgery until site ID'd
- Reserved for life-threatening bleeds
- Criteria (controversial):
  - Shock
  - > 4-6 units of pRBCs in 24 hours (50% require OR)
  - Source of hemorrhage
  - Patient co-morbidities
  - Ultimately clinical decision

Surgical Options

- Segmental Resection (site ID'd)
  - Preferred procedure if site localized
  - Mortality < 10%
  - Rebleed < 15%
- "blind resection"
  - Not recommended
  - High rebleed rate (35-75%)
  - Mortality rate 20-50%

Surgery

- Subtotal Colectomy (site not ID'd)
  - May be option to avoid re-exploration for re-bleed
  - Mortality 10-30%
  - Re-bleeding 1%
  - Complications
    - Diarrhea
    - Fluid/electrolyte losses
    - Quality of life

Anastomosis?

- Criteria for primary anastomosis
  - Definitive diagnosis of bleeding source
  - Patient stability
  - Patient co-morbidities
- "damage control"
  - Site not identified
  - Requires second look
  - Ostomy after resection

Obscure Bleeding

- Capsule Endoscopy
  - Evaluates small bowel
  - Time consuming
  - Success rate 90%
- Intra-operative endoscopy
  - Failed site localization
  - Enterotomy, pediatric scope
  - Surgeon assists endoscopist
  - Site marked for resection

Conclusions

Acute GI hemorrhage remains a major clinical problem.

Prompt resuscitation is the first priority while evaluation of the magnitude and source of the bleeding is simultaneously commenced.