Gastrointestinal Bleeding

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• Bleeding that occurs proximal to the ligament of Treitz

• Significant source of mortality for both emergency admissions (11%) and inpatients (33%)

• Most common causes – esophageal (varices, MW tears), gastric (gastritis, varices, ulcers, CA) and duodenal (ulcers)
• Bleeding that occurs distal to the ligament of Treitz

• Usually derives from the colon

• Small bowel is identified in as many as one third of cases

• UGIB in 11%
LGIB

• Causes
  - Colonic
  - Diverticular disease (30 – 40%)
  - AVMs
  - IBD
  - Neoplasms
  - Ischemia
  - Colitis
Presentation

- Severe bleeding
- Hematemesis
- Hematochezia
- Hypotension
- Gradual bleeding with melena
- Occult bleeding
Evaluation

• Based on the perceived rate of bleeding and degree of hemodynamic stability
• ABCs
• CBC, chemistries, PT, PTT
• Type and cross
• Every effort should be made to resuscitate and stabilize the patient
Clinical Evaluation
History

- Focus on known causes of GIB
- Meds that interfere with coagulation or alter hemodynamics
- Nature and duration of the bleeding
Physical

• Seldom useful in determining bleeding site
• Postural VS can estimate IV volume status
• bp drop > 10 mmHg or HR increase > 10 beats/min = >15% of total circulating blood volume has been lost
• Marked tachycardia with tachypnea in association with hypotension and depressed mental status = >30%
Gastric Lavage

- 3 results
- Gross blood or coffee grounds
- Bile
- Clear
UGIB Investigative Tests
• Almost always reveals the source of UGIB
• Both diagnostic and therapeutic
• Therapeutic maneuvers
  – Injection
  – Thermal coagulation
  – Mechanical occlusion (clips, banding)
Tagged RBC scan
- May confirm the presence of active bleeding
- Fairly non-specific with respect to determining the anatomic location

Angiography
- May demonstrate that a lesion is present
- Cannot reliably identify a bleeding site unless the bleeding is brisk (> 1ml/min)
- May reveal cause even if bleeding has stopped
LGIB Investigative Tests
Options

- Colonoscopy
- Radionuclide scanning
- CT
- Angiography
- Enteroscopy
- Capsule endoscopy
Colonoscopy

- Should be considered the procedure of choice for the structural evaluation of LGIB

- If the entire colon has been adequately visualized and no bleeding source identified, ileum should be intubated
Colonscopy

• Therapeutic options
  - Thermal contact probes
  - Laser photocoagulation
  - Electrocauterization
  - Injection
  - Clips
Radionuclide Scanning

- Highly sensitive for LGIB
- Can detect bleeding at rates as slow as 0.1 to 0.4 ml/min
- Best use is in pts with non-life-threatening LGIB as a prelude and a guide to angio
Angiography

- Less sensitive for LGIB
- Bleeding must be occurring at a rate of at least 1 to 1.5 ml/min
- Positive test is defined as extravasation of contrast into the bowel lumen
Once the bleeding vessel has been localized, the area must be marked so as to be identified intraoperatively.

Complication rate from 2 to 4%.

Treatment options:
- Intra-arterial injection of vasopressin
- Transcatheter embolization
Vasopressin

- Arteriolar vasoconstriction and bowel wall contraction
- Position catheter in main trunk of vessel and begin infusion
- Repeat angio 20 – 30 minutes later
- Bleeding controlled – continue infusion for 6 to 12 hours
• If bleeding continues to be controlled, infusion continued for additional 6 to 12 hours at 50% previous rate

• Infusion replaced by saline infusion

• If bleeding does not recur, catheter is removed
Potential Complications

- MI
- Peripheral ischemia
- HTN
- Dysrhythmias
- Mesenteric thrombosis
- Intestinal infarction
Vasopressin

- Success rate = 60 to 100%
- Major complications = 10 to 20%
- Rebleeding = up to 50%
Obscure Bleeding

- Bleeding persists despite negative endoscopy, angio and RBC scan
- Diagnostic challenge
- Provocative angio
CT

- Spontaneous hyperdensity of peribowel fat
- Contrast enhancement of bowel wall
- Extravasation
- Thickening of bowel wall
- Polyps or tumors
- Vascular dilatation
Enteroscopy

- Push endoscopy
- Proximal 150 cm of small bowel
- Double balloon enteroscopy
Specific Sources of UGIB
Duodenal Ulcer

- Decision making
  - Active bleeding?
  - Attempt endoscopic control
  - Hemodynamic stability
  - Ongoing transfusion requirements
Duodenal Ulcer

• Surgical intervention
  - Substantial bleeding
  - Not controlled endoscopically
  - Hemodynamically unstable
  - Visible vessel
  - Active bleeding
  - Adherent clot
  - Giant ulcer
Outcomes

• Bleeding controlled endoscopically
  - PPI
  - H. pylori treatment

• Bleeding recurs
  - Repeat attempt at endoscopic control
Gastric Ulcer

• Classified by location and role (if any) that gastric acid hypersecretion plays

• Type I = lesser curve, not associated with acid secretion

• Type II = lesser curve, occurring in synchrony with duodenal ulcers, associated with high acid secretion
Gastric Ulcer

• Type III = prepyloric, associated with high acid secretion

• Type IV = cardia, near GE jnc, not associated with acid secretion

• Type V = diffuse, associated with use of medications
Gastric Ulcer

- Bleeding less common than with duodenal ulcers
- Initial management is similar
- Those that require operative intervention should be treated with resection
Gastric Ulcer

- Type I = wedge resection
- Type II and III = V & A
- Type IV = Csendes procedure
Esophageal Varices

- Value of endoscopy in Dx and management cannot be overemphasized
- Bleeding can be nonvariceal in pts with known varices
- Banding or intravariceal sclerotherapy
- Balloon tamponade
- Somatostatin ± vasopressin
Esophageal Varices

• Operative intervention
  – Uncontrolled hemorrhage
  – Persistent re-bleeding despite endoscopic and medical therapy
• Determine if transplant candidate
• Avoid operation
• Decompress portal venous system
  – TIPS
Esophageal Varices

- Not a transplant candidate

- Options
  - Distal splenorenal shunt
  - Portacaval or mesocaval shunt
  - Esophageal transection
  - Sugiura procedure

- Splenic vein thrombosis
  - Splenectomy
Mallory-Weiss Tears

- Linear tears at GE jnc secondary to emesis
- Usually self-limited
- Injection
- Clips
- Banding
- Coagulation
- Oversewn
Gastritis

- Virtually always managed medically
- PPIs, H2 blockers
- H. pylori treatment if present
- Somatostatin
- Total or near total gastrectomy may be required
GISTs

• Submucosal mass that may cause bleeding secondary to mucosal ulceration

• Treated with wedge resection
Hiatal Hernia

- Potential source of chronic blood loss
- Major bleeding rare
- Linear erosion at level of diaphragm – Cameron lesion
- Gastritis within the hernia
- Torsion of a paraesophageal hernia
Dieulafoy Lesion

- Rupture of a 1 to 3 mm bleeding vessel through the gastric mucosa without surrounding ulceration
- Most commonly found high on lesser curve
- Can occur anywhere throughout GI tract
- Endoscopic therapy – 95% success
Hemobilia

- Epigastric and RUQ pain
- GIB
- Jaundice
- Angio – diagnostic and therapeutic
Hemosuccus Pancreaticus

- Bleeding into pancreatic duct
- Erosion of a pancreatic pseudocyst into splenic artery
- Significant GIB coupled with abdominal pain, h/o EtOH abuse or pancreatitis should suggest Dx
- Angio – diagnostic and therapeutic
Aortoenteric Fistula

- May occur spontaneously
- Rupture of AA or perforation of duodenal lesion
- More often – arise after aortic surgery
- Herald bleed
- CT
Specific Sources of LGIB
Diverticulosis

• Occur at weak points where vasa recta penetrate the muscularis to supply the mucosa

• 17% of pts with diverticuli experience bleeding

• Mixed results with endoscopic management
AVMs

- Ectatic blood vessels seen in the mucosa and submucosa of the GI tract
- Colonic AVMs are believed to derive from chronic colon wall muscle contraction
- Most commonly found in cecum
AVMs

- Chronic, slow, intermittent bleeding

- Bleeding stops spontaneously in majority of cases

- Usually amenable to endoscopic treatment
Anorectal Disease

- Hemorrhoids, ulcer or fissure disease and fistula in ano
- DRE
- Anoscopy
Colitis

• IBD, infectious colitis, radiation colitis and idiopathic ulcers

• IBD usually presents with non-life-threatening bloody diarrhea

• 6 to 10% of pts with UC and <1.5% Crohn’s
For Your Own Good

- Resuscitate patient
- Correct coagulopathy
- Localize bleeding source
- Cannot operate on bleeding alone