GASTROINTESTINAL EMERGENCIES

John K. DiBaise, M.D.
Section of Gastroenterology and Hepatology
University of Nebraska Medical Center

GI Emergencies

- Bleeding
- Perforation
- Obstruction
- Abdominal pain
- Acute abdomen
- Foreign body
- Caustic ingestion
- Acute liver failure
- Decompensated chronic liver disease
- Trauma
- Infectious
- Iatrogenic complications
- Immunocompromised
- Pregnancy

Acute GI Bleeding: Overview

- Epidemiology
- Etiologies
- Clinical evaluation
- Management

Acute UGI Bleeding: Epidemiology

- Incidence - 100-200/100,000
- 300,000 hospital admissions annually
- Increase incidence with age
- More common in males (2:1)

Acute UGI Bleeding: Outcome

- Bleeding stops spontaneously in 80%
- Mortality - 8%
  - Unchanged since 1950s
  - Aging population
  - Increasing comorbidities

Acute UGI Bleeding: Etiologies

- Peptic ulcer disease
- Erosive gastritis > duodenitis > esophagitis
- Varices
- Mallory-Weiss tear
- Tumors
- No cause found
- Rare causes - 10-12%
  - AVMs
  - Dieulafoy’s lesion
  - Watermelon stomach
  - Hemobilia
  - Aorto-enteric fistula
  - Kaposi’s sarcoma
  - Infectious ulcers
  - CTD
Large Gastric Ulcer

Esophageal Varices

Huge Gastric Varix

Mallory-Weiss Tear

Gastric Angiectasia

Dieulafoy’s Lesion
“Watermelon Stomach”
Gastric Antral Vascular Ectasia (GAVE)

Gastric Leiomyoma (GIST)

Jejunal GIST

Acute UGI Bleed: Clinical Presentation
- Hematemesis
- Melena
  - Requires at least 50 mL of blood > 14 hrs
- Hematochezia
  - Requires > 1 L blood
  - Rare; usually associated with shock
- Occult
  - Requires 3-5 mL of blood
- Abdominal pain, dysphagia, etc.
- Orthostasis, syncope, shock

Acute UGI Bleed: Assessment
- Vitals including orthostatic measurements
- Resuscitation - IVFs, PRBCs, correct coags, protect airway, etc.
- History
- Physical exam
- Labs including T & C (or T & S)
  - Hct - initial value may not reflect degree of blood loss
  - BUN - Increase related to volume depletion and absorp. of proteins; Normal value doesn’t r/o UGI cause
- Assess risk and assign level of care (ICU vs ward vs home)
- GI consultation for endoscopy

Acute UGI Bleed: Adverse Clinical Prognostic Factors
- Shock, red blood, failure of NG to clear
- Transfusion requirements
- Cause of bleeding (varices or cancer)
- Comorbid disease (10% increase mortality/comorbidity)
- Older age (> 60 yrs)
- Onset in hospital (33% vs 7% mortality)
- Recurrent bleeding (30% vs 8% mortality)
Acute UGI Bleed: Adverse Endoscopic Prognostic Factors

- Active bleeding (varices > ulcer)
- Nonbleeding visible vessel
- Large ulcer (> 1-2 cm)
- Location of ulcer (posterior bulb, lesser curve)

Acute UGI Bleed: Rockall Risk Score

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>&lt; 60</td>
<td>60-79</td>
<td>&gt;80</td>
<td></td>
</tr>
<tr>
<td>Shock</td>
<td>&lt; 100</td>
<td>&gt; 100</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Pulse</td>
<td>&lt; 100</td>
<td>&gt; 100</td>
<td>&lt; 100</td>
<td></td>
</tr>
<tr>
<td>SBP</td>
<td>None</td>
<td>CAD, CHF</td>
<td>Renal/liver failure, met. cancer</td>
<td></td>
</tr>
</tbody>
</table>

Diagnosis
- MW tear, no lesion seen, no SRH
- None or flat pigmented spot
- Adherent clot, NBVV or active bleed

Acute UGI Bleed: Role of NG Aspirate

- Prognosis:
  - Mortality increased if failure to clear red blood
  - 10% active bleed (6% mortality) when clear
- Location of bleed:
  - Clear (or bilious) aspirate is not predictive of site
    - beyond pylorus
    - not currently bleeding
  - Gastrocull test of no use
- Use controversial
  - May help to determine level of care and urgency of EGD

Acute UGI Bleed: Role of Endoscopy

- Why?
  - Obtain diagnosis
  - Obtain prognostic information
  - Perform therapy
- When?
  - Determined by clinical status of the patient
  - Emergent - immediately after resuscitation
  - Urgent - within 12-24 hrs of admit

Acute UGI Bleed: Endoscopy Ulcer Stigmata of Rebleeding Risk

- Clean base - most common; about 5% rebleed
- Flat spot - about 10% rebleed
- Adherent clot - about 15-20% rebleed
- Nonbleeding visible vessel (NBVV) - about 40%
- Active bleeding - about 80% continue to bleed

Greatest risk of rebleed - within 72 hrs of admit

Clean-based Ulcer
Acute UGI Bleed: Endoscopic Treatments

- Injection
  - Dilute epinephrine
  - Hypertonic saline
  - Sclerosants (varices)
  - Glues (varices)
- Thermal
  - Heater probe
  - Bipolar electrocoagulation
- Mechanical
  - Hemoclips
  - Banding (varices)
Nonbleeding Visible Vessel After Endoscopic Therapy

Acute UGI Bleed: Effect of Endoscopic Therapy on Rebleeding Rates
- About 20% rebleed following initial control
  - Routine second look not necessary in everyone
- Further endoscopic therapy successful in 50% of these
  - Increased risk of perforation
- Remainder require angiographic or surgical therapy
  - TIPS for variceal endoscopic failure times 2

Acute UGI Bleed: Medical Therapy
- Nasogastric lavage (ice water) - not useful
- Antacid (milk) infusion - not useful
- IV H2 RAs
  - Not useful to stop acute bleed
- PPIs
  - Not useful to stop acute bleed
  - May be useful to prevent rebleed in high-risk lesions (omep 40 mg po BID or IV pantop 80 mg bolus then 8 mg/hr)
- Vasopressin
  - Useful for variceal bleeds; lots of side effects
- Octreotide
  - Useful for variceal and nonvariceal bleeds (50 mg bolus then 50 mg/hr for 72 hrs)
  - Well tolerated

UGI Bleed: Prevention of Recurrence
Depends upon the underlying cause
- Eradicate H. pylori (27% vs 0% rebleed rate)
- Avoid NSAIDS
  - Cox-2 selective agents, continue PPI (or H2RA for DU) or misoprostol
- Maintain antisecretory therapy
- Surgery

UGI Bleed: Stress Bleeding Prophylaxis
- Risk Factors
  - Ventilator > 48 hrs
  - Coagulopathy
  - Extensive burns (> 30%)
  - Head trauma
- Treatment
  - Sucralfate slurry per NG
  - IV H2RA
  - ? PPI - po vs IV (? Dose)

Acute UGI Bleed: Variceal Bleeding
- 40 - 50% of acute UGI bleeds in those with known varices will be d/t PUD
- Identical initial management as PUD
  - More often in ICU
  - More attention needed to airway protection
  - More often emergent EGD
  - NG tube is OK
  - Begin Octreotide while awaiting endoscopy
Acute UGI Bleed: Variceal Bleeding

Endoscopic therapy - banding vs sclerotherapy

- Both control bleeding in > 85%
- Rebleed rate reduced to 30%
  - Repeat banding if rebleeds
  - TIPS +/- balloon tamponade if still bleeds
- Overall better outcome with banding
  - Less rebleeding
  - Lower mortality
  - Fewer complications
  - Fewer treatment sessions needed to eradicate varices

Acute UGI Bleed: Outpatient Management

Requires both clinical and endoscopic criteria

- No high risk endoscopic findings
- No debilitation or serious comorbidity
- No orthostasis
- No hematemesis or melena on presentation
- No severe anemia (< 8 g/dl)
- No anticoagulation or coagulopathy
- Adequate support at home

Longstreth Lancet 1995

Acute UGI Bleed: Management Summary

- Resuscitate, determine risk and triage
  - High risk - ICU
  - Low risk - ward
- Urgent EGD for ICU patients
  - within 24 hrs for others
- If no SRH
  - Possible discharge on same day
- If flat spot or adherent clot
  - Ward for 3 days; immediate feeding; PO treatment
- If active bleed or NBVV
  - ICU for at least 1 day; IV PPI for 72 hrs; feed after 1 day

Acute LGI Bleed: Epidemiology

- Annual incidence - 20 to 27/100,00
- Increases with age
- More common in men
Acute LGI Bleed: Outcome of Massive Bleeds

- 60-70% continue to bleed after colonoscopy
  - No lesion or failed therapy
- Most stop spontaneously
- Some require surgery or angiographic therapy
  - Accurate presurgical localization improves outcome

Acute LGI Bleed: Clinical Presentation

- Spectrum of severity
  - Most are mild requiring elective evaluation
  - Massive bleeding - relatively uncommon
- LGI bleed less likely than UGI bleed to present with shock or orthostasis
  - Less likely to require blood transfusion
- Most stop bleeding spontaneously (80-85%)

Acute LGI Bleed: Etiologies

- Diverticulosis - most common overall
- AVMs - rare but most common cause of massive bleeding
- Malignancy
- Ischemic colitis
- Infectious colitis
- Inflammatory bowel disease
- Hemorrhoids
- Post-polypectomy

Diverticular Bleed

Bleeding Diverticulum

Cecal AVM
**Colonic Vasculitis (PAN)**

**CMV Colitis**

**Hemorrhagic E. Coli Colitis (O157:H7)**

**Acute LGI Bleed: Assessment**
- Vitals including orthostatic measurements
- Resuscitation - IVFs, PRBCs, correct coags, protect airway, etc.
- History
- Physical exam
- Labs including T & C (or T & S)
  - Hct - initial value may not reflect degree of blood loss
- Assess risk and assign level of care (ICU vs ward vs home)
- GI consultation

**Acute LGI Bleed: Diagnostic and Treatment Options**
- **Diagnosis**
  - Anoscopy
  - Sigmoidoscopy
  - Colonoscopy
  - Enteroscopy
  - Intraop endoscopy
  - SBS/enteroclysis
  - Scintigraphy
    - RBC scan - 0.1ml/min
  - Angiography-0.5 ml/min
- **Treatment**
  - Endoscopic
    - Injection
    - Thermal
    - Mechanical
  - Angiographic
    - Vasopressin
    - Embolization
  - Surgical

**Acute LGI Bleed: Approach to Massive Bleeding**
- Resuscitation
- NG aspirate - more useful with massive bleeds
- Upper endoscopy
- Oral purge
- Urgent colonoscopy
  - Endoscopic therapy if lesion found
  - Surgery (or angio) if bleeding continues
- Scintigraphy, angiography, enteroscopy or intraoperative endoscopy if no lesion found