Management of Lower Gastrointestinal Bleeding

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Lower Gastrointestinal bleeding

The challenge

• Account for 20% of gastrointestinal bleeding

• 80% stopped spontaneously
• Difficulty in identifying the site of bleeding only 6-42%

• Difficulty in identifying the cause
• Recurrent bleeding

• Majority of causes benign and self limiting, be aware of sinister causes
## Bleeding

<table>
<thead>
<tr>
<th>Revealed / Occult</th>
<th>Acute / Chronic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revealed</td>
<td>Acute</td>
</tr>
<tr>
<td>Bright red - dark maroon</td>
<td>Amount – massive / minute</td>
</tr>
<tr>
<td>Anaemia</td>
<td>Episodic / recurrent</td>
</tr>
</tbody>
</table>
Practical Approach

• Is it gastrointestinal bleeding?
• Is this lower gastrointestinal bleeding?
• Is this severe bleeding?

• Where is the source of bleeding?
• What is the cause (pathology)?
• How to manage?
Definition

Bleeding site distal to the ligament of Treitz

Superior Mesenteric Artery SMA

Ligament of Treitz

Inferior Mesenteric Artery SMA
Is it gastrointestinal bleeding?

- Bleeding from the urinary system
- Bleeding from the vagina / uterus
- Intake of iron supplement
- Intake of charcoal
- Intake of animal blood (豬紅), liver in large amount
History

• Nature of bleeding
  – No of episode / day (severity)
  – Relationship with normal stool (site of bleeding/ severity)
  – Liquid blood / paste / clot ( severity)
  – Amount
  – Mucus (inflammatory)
History

• Associated symptoms
  – Haemodynamical disturbances
  – Systemic upset
  – Abdominal pain (small bowel/ colon)
  – Perianal symptoms (anorectal)

• Drug history
Drug history

• Anti-inflammatory
  – NSAIDs

• Anti-platelets
  – Aspirin
  – Clopidogrel (Plavix)

• Anti-coagulants
  – Warfarin
  – Non-Vit K oral anticoagulant NOAC
    • Dabigatran / Rivaroxaban / Apixaban / Edoxaban
Medications

- Warfarin overdose
- Aggravate minor bleeding
  - Post polypectomy
  - Underlying pathology
- Induced mucosal ulceration
  - NSAIDS
  - 50% of patients on NSAIDs or low-dose aspirin may have mucosal lesions or mucosal breaks in the small bowel
NSAID induced small bowel ulcers
Co morbidity

• Postprandial mesenteric angina
• Atrial fibrillation
• Chronic liver disease with portal hypertension
• Diverticulitis
Is this lower gastrointestinal bleeding?

- Upper gastrointestinal bleeding is more common
- History of peptic ulcer disease
- Epigastric pain
- Hematemesis
Stool color

GI Color Confirmation Card

Zuckerman et al. (Dig Dis Sci 1995;40:1614-21)
# Source of bleeding

<table>
<thead>
<tr>
<th>Source</th>
<th>Incident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diverticular</td>
<td>17-40%</td>
</tr>
<tr>
<td>Vascular malformation</td>
<td>2-30%</td>
</tr>
<tr>
<td>Colitis</td>
<td>9-21%</td>
</tr>
<tr>
<td>Neoplasia, post polypectomy</td>
<td>11-14%</td>
</tr>
<tr>
<td>Anorectal</td>
<td>4-28%</td>
</tr>
<tr>
<td>Small bowel</td>
<td>2-9%</td>
</tr>
</tbody>
</table>

*J. Barnert Best Practice & Research Clinical Gastroenterology Vol. 22, No. 2, pp. 295–312, 2008*
Is this severe lower gastrointestinal bleeding?

- Syncope
- Tachycardia > 100/min
- Hypotension systolic < 100mmHg
- Continue passage of blood

- Urgent in hospital treatment
Where is the source?

• Small bowel
  • Diverticula (simple, Meckel’s)
  • Ulcer (Inflammatory, infective, neoplastic)
  • Malignancy (lymphoma)

• Colorectal
  • Diverticula
  • Colitis (Inflammatory, Infective, post-irradiation, ischemic)
  • Neoplasm (lymphoma, post polypectomy)
  • Vascular malformation

• Anorectal
  • Haemorrhoids
  • Rectal ulcers
  • Fissure
Causes

Diverticula
- Small bowel
- Meckel diverticulum
- Colon

Drug

Vascular
- Angiodysplasia
- Mesenteric ischemia
- Vasculitis: Polyarteritis nodosa, Wegener’s granulomatosis, rheumatoid vasculitis
- Aortocolic fistula, aortoiliac fistula
- Rectal varices (portal hypertension)

Haemorrhoids

Rectal ulcer
- Stercoral ulcer, solitary rectal ulcer

Neoplasia
- Adenocarcinoma, Gastrointestinal stromal tumor (GIST), Lymphoma

Infective / Inflammatory
- Bacterial enterocolitis / Inflammatory bowel disease

AIDS
- HIV associated thrombocytopenia, CMV colitis, idiopathic colonic ulcers, colonic histoplasmosis, Kaposi’s sarcoma
## Stool color

<table>
<thead>
<tr>
<th>Anorectal</th>
<th>Rectal</th>
<th>Colon</th>
<th>Gastric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distal colon</td>
<td>Severe UGI</td>
<td></td>
<td>Small bowel</td>
</tr>
<tr>
<td>Haemorrhoids</td>
<td>Rectal ulcer</td>
<td>Colon diverticula</td>
<td>Small bowel diverticula</td>
</tr>
<tr>
<td>Fissure</td>
<td>Diverticular disease</td>
<td>Colon angiodysplasia</td>
<td></td>
</tr>
<tr>
<td>Radiation proctitis</td>
<td></td>
<td>Small bowel diverticula</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Small bowel ulcer</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mesenteric ischemia</td>
</tr>
</tbody>
</table>
Management

• Keep nil by mouth
• Intravenous access
• Oxygen
• Cross match blood
• Intravenous fluid replacement – crystalloids / blood
• Correction of coagulopathy
  – Endoscopy / interventional radiology / surgery – INR <2
  – Platelet > 100
Physical Examination

Important physical signs

• Hypotension: rapid small volume pulse, sweating
• Anaemia: pallor
• Abdominal signs: tenderness, guarding
• On going bleeding
Anorectal examination

- Proctoscopy
- Suction
- Irrigation
- Good lighting

- Color of blood
- Mixed with stool
- Haemorrhoids
- Rectal mass, ulcer
Investigation

Colonoscopy
Capsule endoscopy
Urgent Colonoscopy

Aim:
- Identify the site of bleeding
- Attempt endoscopic haemostasis

Procedure
- In haemodynamically stable patient
- Within 24 hours of admission
- Bowel preparation
- Irrigation during procedure
Stigmata of bleeding

1. Active colonic bleeding site
2. Nonbleeding visible vessel
3. Adherent clot
4. Fresh blood localized to a colonic segment
5. Ulceration of a diverticulum with fresh blood in the immediate area
6. Absence of fresh blood in the terminal ileum with fresh blood in the colon
Stigmata of bleeding

- Active colonic bleeding
- Nonbleeding visible vessel
- Diverticulum
Colonoscopic haemostasis

Method
• Injection – adrenaline (only temporary)
• Heat probe
• Clip
• Band ligation
• Argon plasma coagulation
Rebleeding rate

Early <30 days: 0-50%
Rebleeding natural course: 38%
1st yr: 15%
2nd yr: 30%
# Investigations

<table>
<thead>
<tr>
<th>Investigation</th>
<th>Rate of bleeding</th>
<th>Sensitivity</th>
<th>Specificity</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT Angiogram</td>
<td>0.5ml/min</td>
<td>90-99%</td>
<td>90-99%</td>
</tr>
<tr>
<td>Catheter Angiography</td>
<td>1ml/min</td>
<td>46-82%</td>
<td>100%</td>
</tr>
<tr>
<td>Radionuclide imaging (RNI) uses technetium (99mTc) sulphur colloid</td>
<td>0.1ml/min</td>
<td>94%</td>
<td>95%</td>
</tr>
</tbody>
</table>
Angiographic investigation & treatment

Specialist centre
• Angiographic localisation 23.7% - 34%
• Successful embolisation 8.6% - 96.3%
• Ischemic rate 4.6% - 10%
• 50% rebleeding

Washington university 2013
Diverticular disease

• Protrusion of mucosa through the muscle wall, usually at site of vessel (vasa recta) traversing the muscle layer
• Ulceration of the vessel, atherosclerosis or inflammation from mucosa (fecalith) initiates bleeding
# Diverticular disease

<table>
<thead>
<tr>
<th>Small bowel</th>
<th>Colon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duodenal</td>
<td>Right colon (congenital)</td>
</tr>
<tr>
<td>Jejunal</td>
<td>Left colon (acquired)</td>
</tr>
</tbody>
</table>
Jejunal diverticulum
Meckel’s diverticulum

- Vestigial vitelline duct
- 2% of population
- 2 inches in length
- 2 feet from ileocaecal valve
- Ectopic gastric/pancreatic gland
Angiodysplasia

- Thin walled, Arteriovenous communications in submucosa
- More commonly over the right colon

Acquired: chronic renal failure
Angiodysplasia - Argon Plasma Coagulation
Small bowel Gastrointestinal Tumor (GIST)
Mesenteric ischemia

- History of postprandial abdominal pain
- Embolic risk
- Severe pain disproportionate to physical signs
- Haemodynamic disturbance

Beware
Post polypectomy bleeding

• Usually delayed
• On antiplatelet agent
Rectal varices
Occult bleeding

Capsule endoscopy
Small bowel endoscopy - double balloon
Capsule Endoscopy – small bowel ulcer
Colitis/ Proctitis

• Infective - enterocolitis
  – Acute
  – Chronic
  – Specific CMV

• Inflammatory
  – inflammatory bowel disease
  – NSAID induced

• Radiation
Rectal ulcer

• Decubitus rectal ulcer
• Solitary rectal ulcer syndrome
• Trauma

• Multifactorial
• Ischemia
• Chronic trauma
• Infection
Surgery

Pre operative bleeding site confirmed
  – Selective excision

Pre operative bleeding site un-identified
  – Intra operative endoscopy
  – Excision of most probable site
  – Stoma
Conclusion

• Lower GIB usually self-limiting but recurrent
• To locate the site of bleeding: small bowel / colon, anorectal
• Identify patient who has severe bleeding that require resuscitation and inpatient treatment
• Colonoscopy is the most useful diagnostic and therapeutic tool