

Stomach

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Gastrointestinal Bleeding

UGIB

- Bleeding that occurs proximal to the ligament of Treitz
- Significant source of mortality for both emergency admissions (11%) and inpatients (33%)

Sources

- Esophagus
 - Varices
 - MW tears
- Stomach
 - Gastritis
 - Varices
 - Ulcers
 - CA
- Duodenum
 - Ulcers

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

EGD

- Almost always reveals the source of UGIB
- Both diagnostic and therapeutic
- Therapeutic maneuvers
 - Injection
 - Thermal coagulation
 - Mechanical occlusion (clips, banding)

Imaging

- 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 ($> 1\text{ml/min}$)
 - May reveal cause even if bleeding has stopped

Alternatives

- CT
- Enteroscopy
- Capsule endoscopy

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
 - OR

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

Operative Management

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

Post-gastrectomy Syndromes

Overview

- A number of syndromes have been described that are associated with distressing symptoms after gastric operations performed for peptic ulcer or gastric neoplasm
- The occurrence of severe postoperative symptoms is fortunately low, perhaps 1% to 3% of cases, but the disturbances can be disabling

Dumping

- Denotes a clinical syndrome with both gastrointestinal and vasomotor symptoms
- The precise cause is not known but is believed to relate to the unmetered entry of ingested food into the proximal small bowel after vagotomy and either resection or division of the pyloric sphincter

Types

- Early – symptoms occur immediately after a meal and include nausea, epigastric discomfort, borborygmi, palpitations, and, in extreme cases, dizziness or syncope
- Late – symptoms follow a meal by 1 to 3 hours and can include reactive hypoglycemia in addition to the above symptoms

Octreotide

- Although a relatively large number of patients experience mild dumping symptoms in the early post-op period, minor dietary alterations and the passage of time bring improvement in all but approximately 1%
- Octreotide has been reported to improve dumping symptoms when administered subcutaneously before a meal

Octreotide

- The beneficial effects on the vasomotor symptoms of dumping are postulated to be due to pressor effects on splanchnic vessels
- Inhibits the release of vasoactive peptides from the gut, decrease peak plasma insulin levels, and slow intestinal transit

Alkaline Reflux Gastritis

- Should be reserved for patients who demonstrate the clinical triad of postprandial epigastric pain often associated with nausea and vomiting, evidence of reflux of bile into the stomach, and histologic evidence of gastritis
- One or more of these findings occur transiently in 10-20% of patients after gastric resection, but persist in only 1-2%

Post-op Epigastric Pain

- Recurrent ulceration, biliary and pancreatic disease, afferent loop obstruction, and esophagitis
- Gastric acid analysis shows basal hypochlorhydria with little increase with pentagastrin stimulation
- Serum gastrin levels should be determined to r/o ZE syndrome and retained antrum
- Endoscopic examination is essential to exclude recurrent ulcer

Management

- The only proven treatment is operative diversion of intestinal contents from contact with the gastric mucosa
- The most common procedure = Roux-en-Y gastrojejunostomy with an intestinal limb of 50 to 60 cm constructed to prevent reflux of intestinal contents

Management

- This procedure is effective in eliminating bilious vomiting (nearly 100%), but recurrent or persistent pain is reported in up to 30% of patients, and up to 20% of patients are troubled with postoperative delayed gastric emptying

Gastroparesis

- Postsurgical gastroparesis is a syndrome characterized by gastric hypomotility in the absence of mechanical obstruction
- Incidence has been estimated at 2-3% after partial gastrectomy and vagotomy
- Appears to occur more commonly after operations for GOO and in diabetics

Gastroparesis

- Symptoms include abdominal pain, postprandial nausea, vomiting, and weight loss months after gastric resection
- The diagnosis is one of exclusion, and careful evaluation with endoscopy and barium studies is required to exclude mechanical GOO

Gastroparesis

- The pathogenic mechanism is related to loss of vagal innervation of the stomach, coupled with loss of antral pump function after antrectomy
- Treatment consists of prokinetic agents or revisional gastric surgery
- Most recommend a 6-12-month trial of medical therapy prior to revisional surgery

Gastroparesis

- Success rates of medical therapy have been disappointing, with response rates in the 20-30% range
- Surgical therapy is directed at eliminating the gastric reservoir with a near-completion gastrectomy and Roux-en-Y gastrojejunostomy
- In selected patient series, symptomatic success rates of 70-80% have been reported

Other Sources of UGIB

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

Stress Gastritis

- Major trauma with shock, sepsis, respiratory failure, hemorrhage, or multiorgan injury
- Virtually always managed medically
 - PPIs, H₂ blockers
 - H. pylori treatment if present
 - Somatostatin
- Total or near total gastrectomy may be required

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

For Your Own Good

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