

Benign Gastric and Duodenal diseases

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Objectives

- Definition
- Presentation
- Diagnosis
- treatment

BOOK REFERENCE

- **CURRENT SURGICAL
DIAGNOSIS & TREATMENT**

BY LAWRENCE W. WAY
GERARD M. DOHERTY

Important notice

- **Stomach & Duodenum anatomy and physiology are included in the examination and you need to cover it, I am not going to cover it in this presentation**



Left gastric artery

Spleen

Aorta

To liver

Short gastric arteries

Right gastric artery

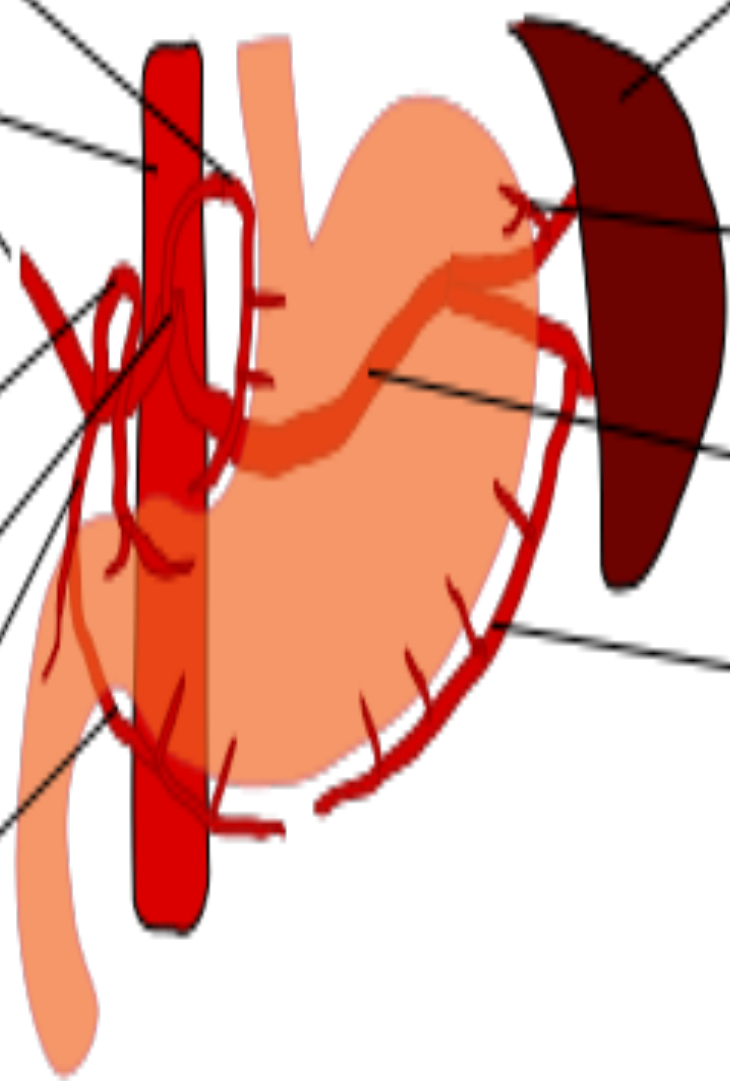
Splenic artery

Celiac trunk

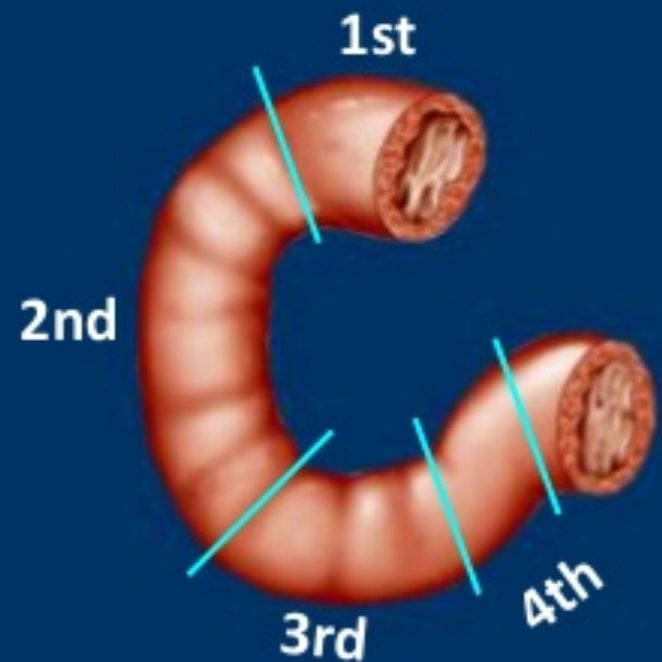
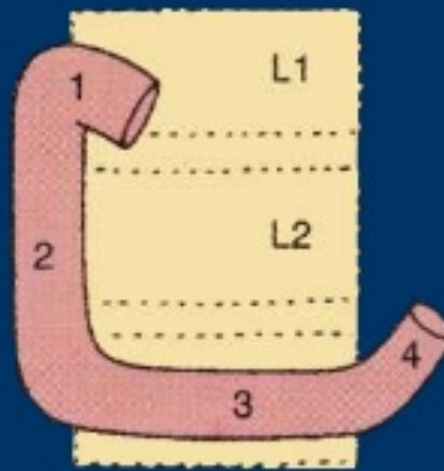
Left gastro-omental artery

Gastroduodenal artery

Right gastro-omental artery

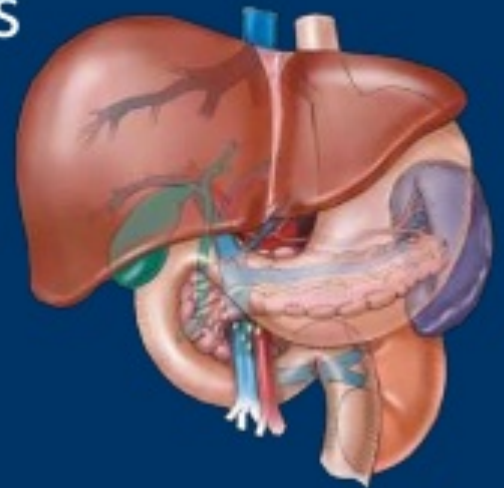


Duodenum - parts



25 cm long & Subdivided into 4 parts

- | | |
|-------------------------|----------|
| First / upper part | – 5 cm |
| Second / vertical part | – 7.5 cm |
| Third / horizontal part | – 10 cm |
| Fourth / ascending part | – 2.5 cm |



Presentation

- **Pain:**

 - 1- ULCER DISEASE

 - 2- PERFORATION

- **Bleeding:**

 - (FIVE CAUSES)

- **Vomiting:**

 - OBSTRUCTION

PEPTIC ULCER

- Esophagus
- Duodenum
- Stomach
- Jejunum after surgical construction of agastrojejunostomy
- Ileum in relation to ectopic gastric mucosa in Meckles diverticulum

Definitions (Histopathology)

- Abrasions
- **Ulcer**
- Perforation

Causal factors

Decreased mucosal resistance

- Decreased prostaglandins
- Smoking
- Aspirin and other anti-inflammatory drugs

Abnormal gastric motility

Increased pepsinogen I

Increased acid secretion (duodenal ulcer, not gastric)

- ? Vagal activity
- ? Increased gastrin
- Zollinger-Ellison syndrome

Helicobacter pylori infection (duodenal > gastric ulcers)

Clinical effects

Epigastric pain related to meals and often relieved by food

Bleeding

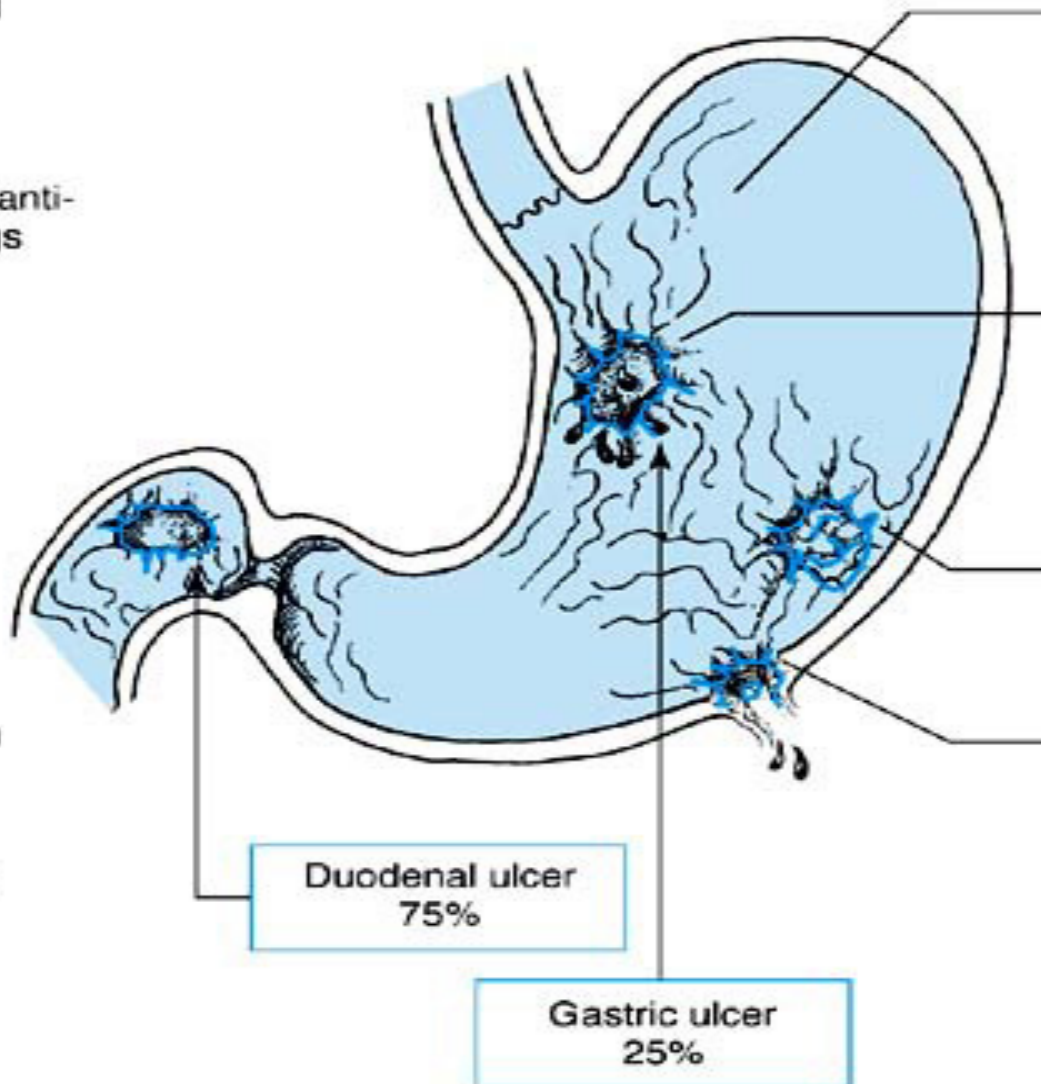
- Hematemesis
- Melena (acute)
- Iron deficiency anemia (chronic)

Penetration

- Into solid viscera such as pancreas

Perforation

- Into peritoneal cavity
- Peritonitis



Duodenal ulcer
75%

Gastric ulcer
25%

Source: Chandrasoma P, Taylor CR: *Concise Pathology*,
3rd Edition: <http://www.accessmedicine.com>

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Introduction

- Men are affected three times as often as women
- Duodenal ulcers are ten times more common than gastric ulcers in young patients
- In the older age groups the frequency is about equal

DUODENAL ULCER

- Epigastric area, mid-day, noon, night
- Relieved by food
- Normal or increased acid secretion
- Common in young – middle age male
- 95% in **duodenal bulb** (2cm)
- 90% principle cause is **H pylori** (GNCB aeroph)

GASTRIC ULCER

- Epigastric area pain
- Increase by food
- Common in 40-60 years male
- 95% along lesser curve , (where is the Incisura
- Types :
 - Type 1 : in incisura angularis & normal acid
 - Type 2: prepyloric and DU & high acid
 - Type 3: antrum duo to NSAID
 - Type 4: at GEJ

Diagnosis

- Epigastric area pain and tenderness
- EGD
- Gastric analysis (basal vs maximal)
- Gastrin serum level (severe or refractory)
- Contrast meal (show complication)

TREATMENT

- Medical Treatment (80% in 6 weeks)
 - H2 antagonists (zantac.....)
 - Proton pump inhibitors (omeprazole.....)
 - H. pylori eradication (amoxicillin , clarithro..)
- Surgical Treatment
 - I. Vagotomy
 - II. Antrectomy and vagotomy
 - III. Subtotal gastrectomy

Complications of surgery for peptic ulcer

- Early Complications (leakage, bleeding, retension)
- Late Complications
 1. Recurrent ulcer (marginal ulcer, stomal ulcer ,anastomotic ulcer)
 2. Gastrojejunocolic and gastrocolic fistula
 3. **Dumping syndrome**
 4. Alkaline gastritis
 5. **Anemia** (Iron defi and vitB12 ...)
 6. Postvagotomy diarrhea
 7. Chronic gastroparesis

ZOLLINGER-ELLISON SYNDROME (Gastrinoma)

- Peptic ulcer disease (often severe) in 95%
- Gastric hypersecretion
- Elevated serum gastrin
- Single one is malignant
- Multiple is benign (MEN 1)
- GASTRIN LEVEL IS MORE THAN 500 pg/ml
- CT Scan, somatostatin scan
- Portal vein blood sample

Diagnosis

- Epigastric tenderness
- EGD
- Contrast swallow

Treatment

- Medical Treatment
- Surgical Treatment

Ulcer complication (**Perforation**)

- Sudden, Severe, Steroid-related diffuse abdominal pain
- Presents as ACUTE ABDOMIN CLINICAL SIGNS (REGIDITY VS GUARDING)
- Mangment is ABC, then, NPO, IVF, NGT, FC, and **erect** abdominal X-ray (**NEVER DO EGD**)
- Defnitive one is surgical repair (Graham patch)

PERFORATED PEPTIC ULCER

- Locate anteriorly
- High risk : female, old age, gastric one
- Acute presentation
- X-ray: free air (85%) & fill 400 cc air by NGT
- Treatment : NGT, ABS, Surgery

Ulcer complication (**Obstruction**)

- Symptom is Vomiting, +/- weight loss, **not bilious**-color
- Clinically: no abdominal distension, **gastric splash**
- **Diagnosis : ch. History, non-cooperative pt, smoker**
- Investigation : abdominal X-ray, EGD, contrast swallow
- Treatment: R/O malignancy, possible resection vs bypass

UPPER GASTROINTESTINAL HEMORRHAGE

- Hematemesis
- Melena
- hematochezia

Causes of massive upper gastrointestinal hemorrhage

	Relative Incidence	
Common causes		
peptic ulcer		45%
Duodenal ulcer	25%	
Gastric ulcer	20%	
Esophageal varices		20%
Gastritis		20%
Mallory-Weiss syndrome		10%
Uncommon causes		5%
Gastric carcinoma		
Esophagitis		
Pancreatitis		
Hemobilia		

MALLORY-WEISS SYNDROME

- 10% of UGIB
- 1-4cm longitudinal tear in gastric mucosa at EGJ
- Forceful vomiting
- EGD
- 90% bleeding stops spontaneously by cold gastric wash, EGD- cautery, surgery

STRESS GASTRODUODENITIS, STRESS ULCER & ACUTE HEMORRHAGIC GASTRITIS

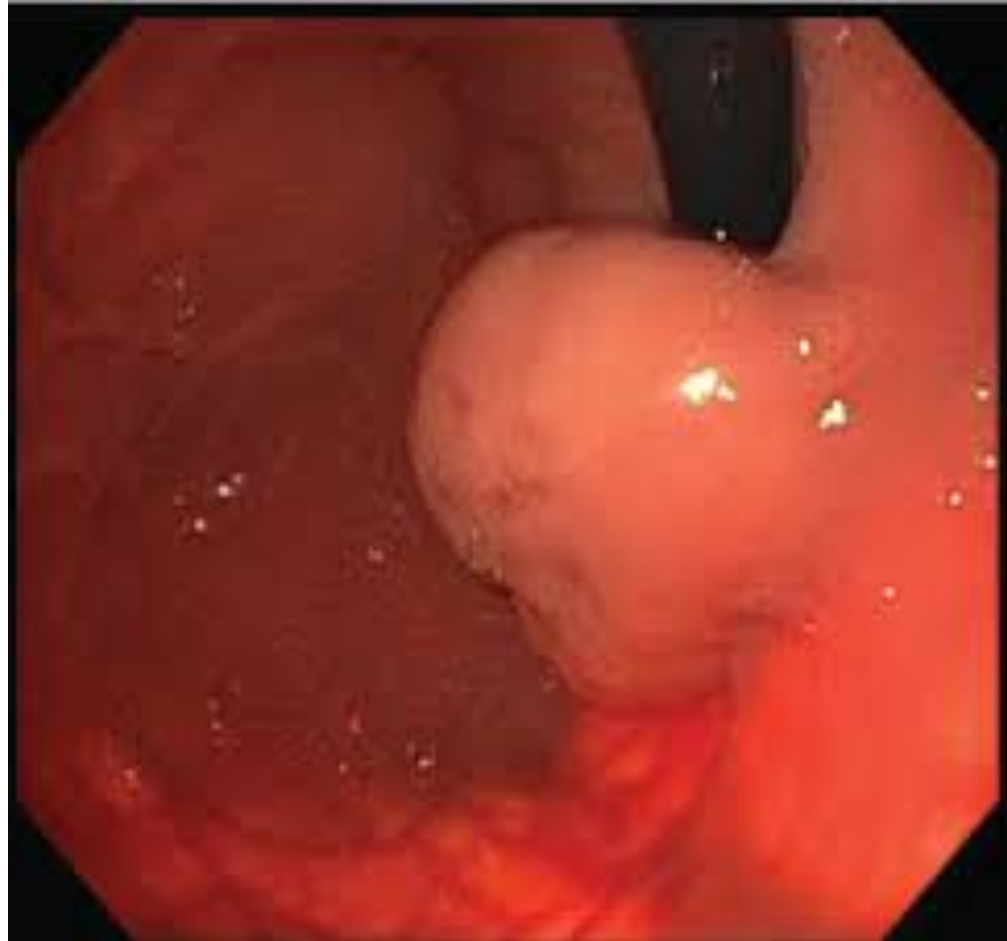
- Stress Ulcer -----shock & sepsis
- Curling' s ulcers-----burns
- Cushing' s Ulcer ----CNS tumor, injury (more to perforates, high acid production)
- Acute Hemorrhagic Gastritis

GASTRIC POLYPS

- Types : (**Histopathology**)
 - Hyper plastic
 - Adenomatous
 - Inflammatory
 - Hamartomatus
- Affecting distal stomach
- Presentation is mainly **Incidental** finding , rarely by **anemia**
- EGD
- R/O malignancy

GASTRIC LEIOMYOMAS(**GIST**)

- Common submucosal growth
- **Asymptomatic** & massive bleeding
- EGD & CT Scan
- Do not biopsy (When do we biopsy??)
- Surgical wide excision



MENETRIER' S DISEASE

- Giant hypertrophy of the gastric rugae
- Present with hypoproteinemia
- Edema, diarrhea, weight loss
- Treatment : atropine, omperazole, H,pylori eradication
.....rarely is gastrectomy

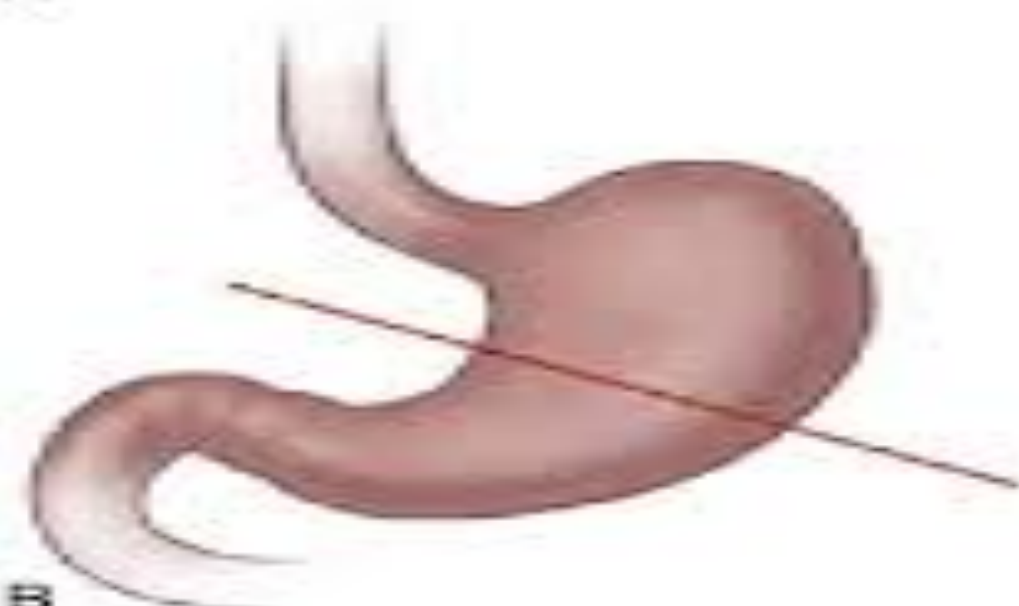
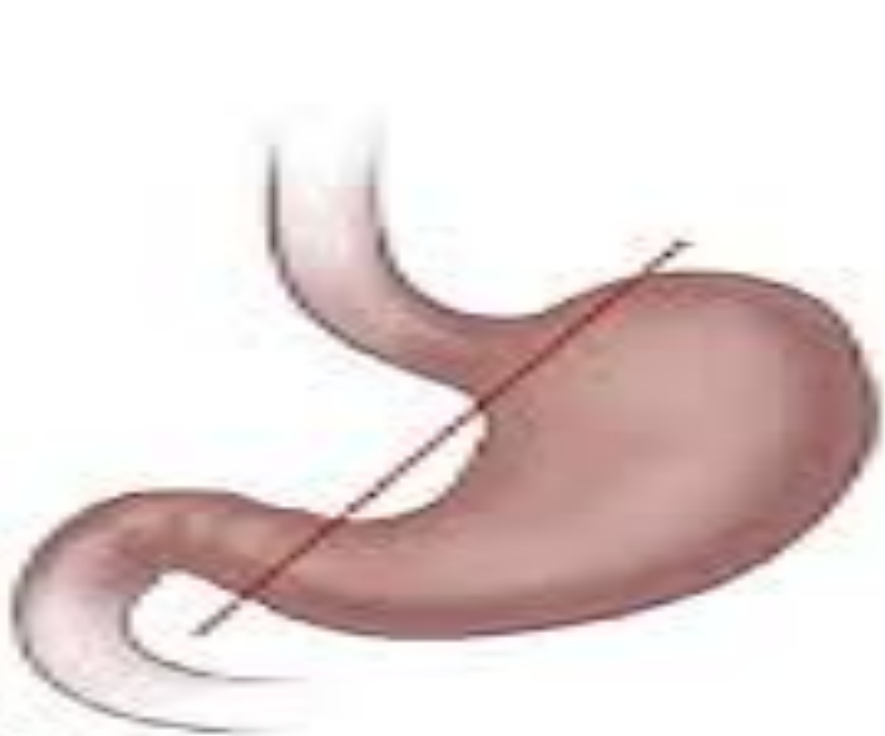


PROLAPSE OF THE GASTRIC MUCOSA

- Occasionally accompanies small gastric ulcer
- Vomiting and abdominal pain
- X-ray : antral folds into duodenum
- Antrectomy with Billroth 1

GASTRIC VOLVULUS

- Its longitudinal axis(organo-axial volvulus):
 - More common
 - Associated with HH
- Line drawn from the mid lesser to the mid greater curvature(mesenterioaxial volvulus)
- Present with :
- Severe abdominal pain and Brochardt”s triad



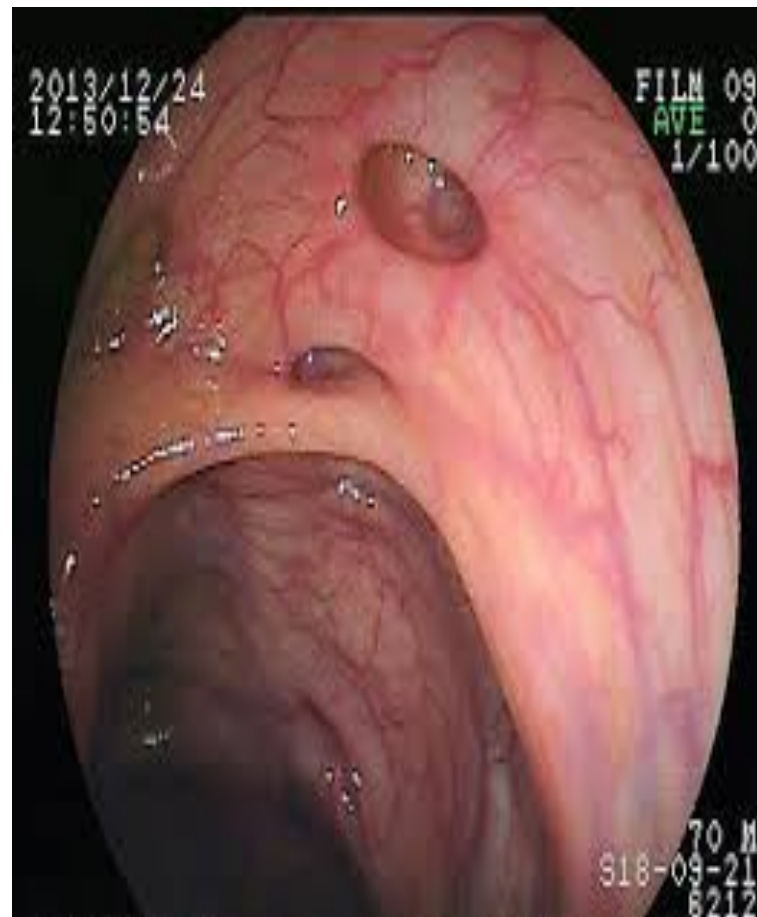
Brochardt' s triad

1. Vomiting followed by retching and then inability to vomit
2. Epigastric distention
3. Inability to pass a nasogastric tube

GASTRIC DIVERTICULA

- Uncommon
- Asymptomatic
- Weight loss, diarrhea
- EGD, X-ray
- ?? surgery

Diverticulum



BEZOAR

- Concretions formed in the stomach
- Types:
 - Trichobezoars: hair
 - Phytobezoars: vegtab
- Presentation by obstruction
- EGD, X-RAY
- SURGICAL REMOVAL

DUODENAL DIVERTICULA

- 20% OF POPULATION
- Asymptomatic
- 90% medial aspect of the duodenum
- Rare before 40 years of age
- Most are solitary and 2.5 cm peri-ampullary of Vater

Benign Duodenal Tumors

- Brunner's gland adenomas
- Carcinoid tumors
- Heterotopic gastric mucosa
- Villous adenomas

SUPERIOR MESENTERIC ARTERY OBSTRUCTION OF THE DUODENUM

- Obstruction of the third portion of the duodenum -- compression SMA and Aorta
- Appears after rapid weight loss following injury
- Distance between two vessels is 10-20 mm

- Proximal bowel obstruction symptoms and signs
- CT Scan
- bypass

REGIONAL ENTERITIS OF THE STOMACH & DUODENUM

- Food poisoning
- Pain and diarrhea
- Clinical DX
- observation