Benign Gastric and Duodenal diseases

FAHAD BAMEHRIZ, MD
Ass. Prof Collage of Medicine, King Saud University
Consultant Advanced Laparoscopic and Robotic surgery
Objectives

- Definition
- Presentation
- Diagnosis
- treatment
CURRENT

Diagnosis & Treatment

Surgery

By Gerard M. Doherty
PEPTIC ULCER

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

- Pain
- Vomiting
- Bleeding
- Perforation
- Obstruction
DUODENAL ULCER

• Epigastric pain: area, mid-day, noon, night
• **Daily cycle of the pain** is often characteristic
• **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
- 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 (above 200 pg/L) (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 (omperazol…..)
  - H.pylori eradication (amoxicillin, clarithro..)

- Surgical Treatment
  I. Vagotony
  II. Antrectomy and vagotony
  III. Subtotal gastrectomy
Complications of surgery for peptic ulcer

- Early Complications (leakage, bleeding, retention)
- 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
Treatment

- Medical Treatment
- Surgical Treatment
UPPER GASTROINTESTINAL HEMORRHAGE

- Hematemesis
- Melena
- hematochezia
## Causes of massive upper gastrointestinal hemorrhage

<table>
<thead>
<tr>
<th>Common causes</th>
<th>Relative Incidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>peptic ulcer</td>
<td>45%</td>
</tr>
<tr>
<td>Duodenal ulcer</td>
<td>25%</td>
</tr>
<tr>
<td>Gastric ulcer</td>
<td>20%</td>
</tr>
<tr>
<td>Esophageal varices</td>
<td>20%</td>
</tr>
<tr>
<td>Gastritis</td>
<td>20%</td>
</tr>
<tr>
<td><strong>Mallory-Weiss syndrome</strong></td>
<td></td>
</tr>
<tr>
<td>Uncommon causes</td>
<td></td>
</tr>
<tr>
<td>Gastric carcinoma</td>
<td>10%</td>
</tr>
<tr>
<td>Esophagitis</td>
<td>5%</td>
</tr>
<tr>
<td>Pancreatitis</td>
<td></td>
</tr>
<tr>
<td>Hemobilia</td>
<td></td>
</tr>
</tbody>
</table>

### Common causes
- Peptic ulcer
- Duodenal ulcer (25%)
- Gastric ulcer (20%)
- Esophageal varices (20%)
- Gastritis (20%)
- **Mallory-Weiss syndrome**

### Uncommon causes
- Gastric carcinoma (10%)
- Esophagitis (5%)
- 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
How do you manage GI bleeding?

- **ABC**: to stabilize the patient first
- Short History & Short Physical Examination (DIRECT)
- **COMMON DX**
- Investigations: Blood and EGD
- Therapeutic options: EGD vs Angiogram vs Surgery
PYLORIC OBSTRUCTION DUE TO PEPTIC ULCER

- Medical Treatment
- Surgical Treatment
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
Air under diaphragm - perforated DU
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:**
  - Hyperplastic
  - Adenomatous
  - Inflammatory
- **Affecting distal stomach**
- **Presentation by anemia**
- **EGD**
- **R/O malignancy**
GASTRIC LEIOMYOMAS

- Common submucosal growth
- Asymptomatic & massive bleeding
- EGD & CT Scan
- Do not 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
Types of GV

Mesenteroaxial volvulus

Organoaxial volvulus
GASTRIC DIVERTICULA

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

- Concretions formed in the stomach
- Types:
  - Trichobezoars: hair
  - Phytozoos: 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 poising
- Pain and diarrhea
- Clinical DX
- Observation
FIGURE 1. Abdominal anatomy showing aortomesenteric
Gastric Malignant Tumor

- Carcinoma
- Lymphoma
- Leiomyomas
- GIST (GastroIntestinalStromalTumor)
- Metastases (Melanoma, OTHERS)
Gastric Carcinoma

- Incidence:
  1- Old male,
  2- low dietary intake of vegetable&F, High starch

- Presentation: Pain, Vomiting, Bleeding
GC TYPES

- ADENOCARCINOMA
- SQUAMOUS CELL TUMOR
GC Adenocarcinoma Types

- Ulcerating carcinoma (25%)
- Polypoid carcinoma (25%)
- Superficial Spreading carcinoma (15%)
- Linitis plastica (10%)
- Advanced carcinoma (35%)

- Intestinal type vs Diffuse type
GC Diagnosis

- Clinical presentation
- EGD & BIOPSY
- Staging : TNM
  1- Clinical examination
  2- CT scan Chest, Abdomin, Pelvis
  3- Others (Alkalin pho, Bone scan, PET
  4- TUMOR MARKER : CEA
Figure 23-9. Staging system for gastric carcinoma. The darkly shadowed areas represent cancers with different depths of mucosal penetration.
TNM Staging Classification

<table>
<thead>
<tr>
<th>T</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Tumor size and penetration)</td>
<td>(Cancer spread to nearby lymph nodes)</td>
<td>(Spread to other parts of the body—metastasis)</td>
</tr>
</tbody>
</table>

**Tis:** Tumor "in situ:" caught very early and has not grown beyond stomach lining.

**T1:** Tumor has grown through lining and into connective tissue.

**T2:** Tumor has grown into thick inner muscle.

**T3:** Tumor has spread through outer lining but not to any nearby organs or tissues.

**T4:** Tumor has spread into nearby tissues or organs.

**N0:** Cancer has not spread to nodes.

**N1:** Cancer in 1 to 6 nodes.

**N2:** Cancer in 7 to 15 nodes.

**N3:** Cancer in >15 nodes.

**M0:** No metastasis

**M1:** Metastasis

NCCN Guidelines Gastric Cancer v.1.2009.
<table>
<thead>
<tr>
<th>Staging</th>
<th>TNM classification</th>
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<tbody>
<tr>
<td>Stage 0</td>
<td>Tis, N0, M0</td>
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<tr>
<td>Stage IA</td>
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<tr>
<td>Stage IB</td>
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<td>T2, N0, M0</td>
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<tr>
<td>Stage IIA</td>
<td>T3, N0, M1</td>
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<td>T2, N1, M0</td>
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<tr>
<td></td>
<td>T1, N2, M0</td>
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<tr>
<td>Stage IIB</td>
<td>T4a, N0, M0</td>
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<tr>
<td>Stage IIIA</td>
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<tr>
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<td></td>
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<tr>
<td>Stage IV</td>
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</table>

GC Treatment

- Chemotherapy
- Surgery (Distal, Subtotal, Total)
- Palliative