Diseases of the Stomach and Small bowel

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PEPTIC ULCER DISEASES

1. DUODENAL ULCER DIATHESIS
   a. DUODENAL ULCER (DU)
   b. PREPYLORIC ULCER & PYLORIC CANAL ULCER
   c. COMBINED GASTRIC AND DUODENAL ULCER

2. GASTRIC ULCER
D.U.

Indications for surgery

- Perforation
- Obstruction
- Massive bleeding
- Intractable pain
**Peptic Perforation**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
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<tbody>
<tr>
<td>Primary stage</td>
<td>chemical irritation</td>
</tr>
<tr>
<td>Secondary stage</td>
<td>stage of reaction</td>
</tr>
<tr>
<td>Tertiary stage</td>
<td>bacterial peritonitis</td>
</tr>
</tbody>
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PERFORATION

- BOARDLIKE RIGIDITY
- LOSS OF LIVER DULINESS
- FREE AIR UNDER DIAPHRAGM
- CORRECT FLUID - ELECTROLYTE
- N-G TUBE SUCTION
- ANTIBIOTIC
- SIMPLE CLOSURE OF DEFINITE SURGERY
Criteria for acid-reducing procedure.

- Long standing ulcer symptoms.
- A perforation of less than 6 hrs.
- Degree of contamination.
Fig. 26-12. Perforated duodenal ulcer. Note the presence of air under both sides of the diaphragm on this chest film.
PYLORIC OBSTRUCTION

SHORT HISTORY - DUODENITIS, ANTRAL GASTRITIS

LONG HISTORY - SEVERE DEFORMITY

HYPOCHLOREMIC HYPOKALEMIC ALKALOSIS
Fig. 2-13. The arterial supply to the stomach and duodenum. C = celiac; HEP = hepatic; RG = right gastric; GD = gastroduodenal; SD = supraduodenal; SPPD = superior posterior pancreaticoduodenal (retroduodenal); SAPD = superior anterior pancreaticoduodenal; RGE = right gastroepiploic; IAPD = inferior anterior pancreaticoduodenal; IPPD = inferior posterior pancreaticoduodenal; LG = left gastric; AE = ascending esophageal branch; DG = descending gastric branch; SPL = splenic; VB = vasa brevia; LGE = left gastroepiploic; X = bifurcation of left gastric; XX = anastomosis of right gastroepiploic and left gastroepiploic; SM = superior mesenteric.
SURGICAL TREATMENT OF DU.

1. SUBTOTAL GASTRECTOMY (75%)

2. TRUNCAL VAGOTOMY
   OR + DRAINAGE

   SELECTIVE VAGOTOMY

3. HIGHLY SELECTIVE VAGOTOMY
Fig. 26-2. Parasympathetic innervation of the stomach.

A. Anterior

B. Posterior
The three main procedures developed for the treatment of peptic ulcer disease: total abdominal (truncal) vagotomy, total gastric (selective) vagotomy, and proximal gastric vagotomy. These procedures allow progressive sparing of vagal innervation to the gastrointestinal tract following open vagotomy procedures.
Billroth No. 1 (Schoemaker)
# Results of Operations for Duodenal Ulcer

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Mortality</th>
<th>Morbidity</th>
<th>Recurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partial gastrectomy</td>
<td>3%</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td>Vagotomy and antrectomy</td>
<td>2%</td>
<td>12%</td>
<td>1%</td>
</tr>
<tr>
<td>Vagotomy and drainage</td>
<td>1%</td>
<td>15%</td>
<td>10%</td>
</tr>
<tr>
<td>Proximal gastric vagotomy</td>
<td>0.5%</td>
<td>5%</td>
<td>15%</td>
</tr>
</tbody>
</table>
G.U.

Indications for surgery

- Perforation
- Bleeding
- Obstruction
- failure to heal
- recurrence
- Suspicion of malignancy
SURGICAL MANAGEMENT

- GASTRECTOMY

- BILLROTH I

- BILLROTH II - ANTICOLIC

- RETROCOLOIC
a. Billroth No. II

(Pólya)  (Hofmeister)

b. (Antecolic)  (Retrocolic)
Gastric resections

- Antrectomy (one-third)
- Hemigastrectomy (one-half)
- Partial gastrectomy (two-thirds)
- Subtotal gastrectomy (three-fourths)
- Total gastrectomy
Postgastrectomy Syndromes

Small - capacity Syndromes

Dumping Syndrome

Bile gastritis

Afferent loop syndrome

Efferent loop syndrome

Postvagotomy diarrhea

Anemia
GASTRIC CANCER

ETIOLOGY

- ENVIRONMENT
- DIET - FISH
- HEREDITARY - BLOOD GROUP A
- SEX - MALE
- ATROPHIC GASTRITIS & ACHLORHYDRIA
- PRENICIOUS ANEMIA
- POLYP
MANIFESTATION

- WEIGHT LOSS
- ANOREXIA
- INDIGESTION
- IRON DEFICIENCY ANEMIA
- ABDOMINAL MASS
PATHOLOGY

1. POLYPOID - WELL DIFFERENTIATED ADENO CA

2. ULCERATIVE - MODERATELY WELL DIFFERENTIATED ADENO CA

3. INFILTRATING - LINITIS PLASTICA - POORLY DIFFERENTIATED ADENO CA
METASTASIS

1. LYMPHATIC

2. INTRAMURAL

3. DIRECT INVASION

4. TRANSCELOOMIC - BLUMER’S SHELF

KRUKENBERG’S TUMOR
TREATMENT

- SURGERY
- CURATIVE
- PALLIATIVE
D1 RESECTION

- PERIGASTRIC NODES WITHIN 3 CM OF THE STOMACH SEROSA
D2 RESECTION

- LYMPH NODES ALONG LEFT GASTRIC A
- CELIAC AXIS
- COMMON HEPATIC A
- SPLENIC A AND HILUM
D3 RESECTION

- LYMPH NODE ALONG HEPATO DUODENAL LIGAMENT PANCREATIC HEAD
- ROOT OF SMALL BOWEL MESENTERY
**PROGNOSIS**

**OVER ALL**  5 YEARS SURVIVAL  ~  15%

**NODE - VE**  5 YEARS SURVIVAL  ~  35 - 45%

**NOED + VE**  5 YEARS SURVIVAL  ~  7%
SMALL BOWEL DISEASES

1. INFLAMMATORY DISEASE - CROHN’S DISEASE
   - TB
   - TYPHOID

2. TUMOR
   - BENIGN
   - MALIGNANT

3. DIVERTICULAR DISEASE
   - CONGENITAL
   - ACQUIRED
4. OTHERS

- ENTEROCUTANEOUS FISTULA
- GUT OBSTRUCTION
- BLIND LOOP SYNDROME
- SHORT BOWEL SYNDROME
- ULCER OF THE SMALL BOWEL
- VASCULAR COMPRESSION OF DUODENUM
TYPHOID ENTERITIS

- SALMONELLA TYPHOSA
COMPLICATION - 3rd WEEK

1. HEMORRHAGE  10-20%
2. PERFORATION  2%
TUBERCULOUS ENTERITIS

PRIMARY - BOVINE STRAIN
SECONDARY - HUMAN STRAIN
ILEOCECAL REGION 85%

- ULCERATIVE
- HYPERTROPHIC
- FIBROSIS
DRY TYPE - GUT OBSTRUCTION

WET TYPE - PERITONITIS
TREATMENT
- ANTI TB DRUG
- SURGERY
BENIGN NEOPLASM

15% - DUODENUM

25% - UPPER 1/3 JEJUNUM

60% - LOWER 1/3 ILEUM
2% OF GI MALIGNANT NEOPLASMS

- ADENOCARCINOMA
- CARCINOID TUMOR
- LYMPHOMA
- LEIOMYOSARCOMA
CARCINOIDS

- GREAT VARIABILITY IN MALIGNANT POTENTIAL
- ORIGIN FROM GI TRACT KULTSCHITZSKY CELLS
- ARGENTAFFIN TUMORS - SILVER STAIN
MALIGNANT POTENTIAL AND ABILITY TO METASTASIS

1. SITE OF ORIGIN

2. SIZE OF THE PRIMARY
APPENDIX 46%
ILEUM 28%
RECTUM 17%
APPENDICICEAL CARCINOID METASTASIS 3%

IEAL CARCINOID METASTASIS 35%
CARCINOID

75% มีขนาด < 1 CM. - 2% METAS

20% -”- 1-2 CM. - 50% METAS

5% -”- > 2 CM. - 80-90% METAS
MECKEL’S DIVERTICULUM (DISEASE OF TWO)

- ห่าง ILEOCECAL VALVE 2 FT.
- 2 ECTOPIC MUCOSA, GASTRIC AND PANCREATIC
- 2 COMMON COMPLICATIONS
- ANTIMESENTERIC BORDER
DUODENAL, JEJUNAL, ILEAL DIVERTICULUM

- MESENTERIC BORDER

- 2 LAYER
ENTEROCUTANEOUS FISTULA

- 98% OPERATION
- <2% PRIMARY FROM BOWEL DISEASE
- HIGH OUTPUT FISTULA
- LOW OUTPUT FISTULA
INVESTIGATION

- FISTULOGRAM

- UGI STUDY WITH SMALL BOWEL FOLLOW THROUGH

- BARIUM ENEMA
TREATMENT

- FLUID AND ELECTROLYTE REPLACEMENT
- FISTULA CARE
- CONTROL OF SEPSIS
- NUTRITION
- TIMING FOR SURGICAL INTERVENTION
SIMPLE MECHANICAL OBSTRUCTION

STRANGULATED OBSTRUCTION

CLOSED-LOOP OBSTRUCTION
INTESTINAL OBSTRUCTION

1. MECHANICAL OBSTRUCTION

2. PARALYTIC ILEUS
ILEUS

1. ADYNAMIC ILEUS
2. SPASTIC ILEUS
3. ILEUS FROM VASCULAR OCCLUSION
ADYNAMIC ILEUS

SMALL BOWEL INERTIA  24  HRS.

GASTRIC INERTIA  48  HRS.

COLONIC INERTIA  72  HRS.
SMALL BOWEL OBSTRUCTION

1. ADHESIVE BAND

2. HERNIA

3. OTHERS:  - INTUSSUSCESSION
              - MECKEL’S DIVERTICULUM
              - NEOPLASM
              - STRICTURE
LARGE BOWEL OBSTRUCTION

1. CARCINOMA
2. DIVERTICULITIS
3. IMPACTION - FECAL, BARIUM, BEZOARS
4. RADIATION STRICTURE
5. VOLVULUS
PATHOPHYSIOLOGY

1. FLUID AND ELECTROLYTE LOSSES
   - A NEGATIVE NET FLUX
   - EDEMATOUS BOWEL WALL
   - FREE PERITONEAL FLUID
   - VOMITING

2. SWALLOWED AIR
1. ABDOMINAL PAIN

QUIESCENT PERIOD 4-5 MIN.-HIGH

15-20 MIN.-LOW

2. VOMITING

3. OBSTIPATION

4. ABDOMINAL DISTENSION
SUGGESTIVE SIGNS OF STRANGULATION

1. CONTINUOUS PAIN

2. WBC 15,000-25,000. PMN ↑↑

3. HIGH FEVER

4. HEMATOCHOEZIA
MANAGEMENT

1. FLUID ELECTROLYTE THERAPY
2. NG TUBE DECOMPRESSION
3. TIMED SURGICAL INTERVENTION
EMERGENCY OPERATION

1. STRANGULATION
2. CLOSED LOOP OBSTRUCTION
3. EARLY SIMPLE MECHANICAL OBSTRUCTION
4. COLONIC OBSTRUCTION (COMPLETE)