Peptic ulcer disease
Disorders of the esophagus
Peptic ulcer disease

- Burning epigastric pain
- Exacerbated by fasting
- Improved with meals
- Ulcer: disruption of mucosal integrity >5 mm in size, with depth to the submucosa
- Helicobacter pylori
- Duodenal ulcers
- Gastric ulcers → malignancy
Pathophysiology

- NSAID, Aspirin
- Helicobacter pylori
- Gastric acid secretion↑: duodenal ulcer
- Gastric acid secretion↓: gastric ulcer
- H. pylori→MALT (mucosal-associated lymphoid tissue) lymphoma
- H. pylori→gastric adenocarcinoma
- Cigarette smoking
- Blood group O
- Stress
- Glucocorticoids
- Clopidogrel
Clinical Features

- History: abdominal pain
- Careful history taking and physical examination
- Hunger pain
- Relived by antacids or food
- Nausea, vomiting
- Sudden severe pain → perforation
- Tarry stools or coffee-ground emesis → bleeding
Physical Examination

- Epigastric tenderness
- Severely tender, boardlike abdomen → perforation
- Tachycardia, orthostasis → dehydration → vomiting or active GI bleeding
Complications

- GI bleeding
- Perforation
- Gastric outlet obstruction in the peripyloric region → endoscopic balloon dilation or surgical intervention
- Malignant transformation
Differential Diagnosis

- Gallbladder stones
- Gastroesophageal reflux
- Acute/chronic pancreatitis
- Crohn’s disease
- Functional dyspepsia
Diagnostic Evaluation

- Barium enema double-contrast study
- Endoscopy and tissue biopsy: direct visualization of the mucosa, detection of H. pylori
- Urea breath test for detection of H. pylori
Treatment

- **Acid-suppressing drugs → Antacids:** Aluminum hydroxide, Magnesium hydroxide, Sodium bicarbonate, Maalox, Mylanta, Tums

- **H2 receptor antagonists:** Cimetidine, Ranitidine, Famotidine, Nizatidine

- **Proton pump inhibitors:** Omeprazole, Lansoprazole, Rabeprazole, Pantoprazole, Esomeprazole

- **Mucosal cytoprotective agents:** Sucralfate, Prostaglandine analogue → Misoprostol, Bismuth-containing compounds
Regimens recommended for eradication of H. pylori infection

1. Bismut subsalicylate + Metronidazole + Tetracycline
2. Ranitidine bismuth citrate + Tetracycline + Clarithromycin or Metronidazole
3. Omeprazole + Clarithromycin + Metronidazole or Amoxicillin
Quadruple Therapy

- Omeprazole + Bismuth subsalicylate + Metronidazole + Tetracycline
- Duration of treatment: 14 days
- Initial eradication rates: 80-85%
Recommendations for treatment of NSAID-related mucosal injury

- Active ulcer: NSAID discontinued + H2 receptor antagonist or PPI
- Active ulcer: NSAID continued → PPI
- Prophylactic therapy: PPI
- H. pylori infection: eradication if active ulcer present or there is a past history of peptic ulcer disease
Surgical therapy

- Urgent: for the treatment of an ulcer-related complication
- Nasogastric suction
- Endoscopic intervention with balloon dilation
- Vagotomy and drainage (gastroduodenostomy) → gastric acid secretion↓
- Highly selective vagotomoy
- Vagotomy with antrectomy
- Laparoscopic surgery
- Billroth I: gastroduodenostomy
- Billroth II: gastrojejunostomy
Zollinger-Ellison syndrome

- Gastrin↑
- Multiple peptic ulcers
- Gastric acid output↑→ hypersecretion
- Diarrhea
- Tumor: gastrinoma
- Tumor localization: Ultrasound, CT scan, MRI, Octreoscan
- Treatment: total gastrectomy
Diseases of the Esophagus

- Symptoms: dysphagia, heartburn or pyrosis, odynophagia or painful swallowing, esophageal chest pain or atypical chest pain
- Regurgitation: appearance of gastric contents in the mouth
- Chronic cough
- Laryngeal aspiration
- Aspiration pneumonia
Diagnostics tests

- Radiologic studies → barium swallow, double-contrast esophagogram
- Esophagoscopy + biopsy
Achalasia

- Motor disorder of the esophageal smooth muscle $\leftrightarrow$ loss of intramural neurons
- No peristaltic contractions
- Clinical features: dysphagia, regurgitation, weight loss
- Diagnosis: barium swallow $\rightarrow$ esophageal dilation, no peristalsis in the lower two-third of the esophagus
- Treatment: balloon dilatation, Heller’s extramucosal myotomy
Gastroesophageal Reflux Disease (GERD)

- Frequency: 15%
- Heartburn and regurgitation\(\leftarrow\) backflow of gastric acid into the esophagus and mouth
- Incompetent barriers at the gastro-esophageal junction
- Reflux esophagitis, peptic stricture
- Angina-like or atypical chest pain
- Esophagoscopy
Treatment of GERD

- H2 receptor blocking agents: Cimetidine, Ranitidine, Famotidine, Nizatidine
- PPIs: Omeprazole, Lansoprazole, Pantoprazole, Esomeprazole, Rabeprazole
- Duration: 8 weeks
- PPI: 30 min before breakfast
Barret’s Esophagus

- Metaplasia of esophageal squamous epithelium → to columnar epithelium
- Complication of severe GERD
- Risk for esophageal adenocarcinoma
Candida Esophagitis

- Odynophagia, dysphagia
- Oral thrush
- Endoscopy: small, yellow-white raised plaques
- C. albicans
- Treatment: Fluconazole orally, Itraconazole