Peptic ulcer

Peptic → Refers to the lower end of esophagus, stomach, duodenum, or jejunum, or Meckel's diverticulum.

Ulcer → Break in the mucosa with appreciable depth (involvement of submucosa).
Erosion is break in mucosa without depth.

Acute Peptic ulceration: Ingestion of corticosteroid, NSAIDs, corrosive agents, severe mental stress, burns, shock.

Chronic Peptic ulceration: When the equilibrium between the acid, pepsin and mucosa is affected.

Gastric ulcer & duodenal ulcer:

	Gastric	Duodenal
Ratio of male : female	2 : 1	5 : 1
No. of ulcer	Single	Multiple
Location	Lesser curvature	First part of duodenum

Etiopathogenesis

1) H. Pylori Bacteria
- Gram negative with flagella
- Low income countries
- Colonize in Gastric mucosa by releasing
  Adhesions → Attach to foveolar cells (Mucus producing)
  Proteases → Damages mucosal cells
→ Starts in Antrum and duodenum
→ From the epithelium deep into submucosa
↳ Ulcer

2) NSAIDS
→ Inhibit the synthesis of Prostaglandin
↓
leaves the Gastric mucosa susceptible to damage.

3) Zollinger Ellison Syndrome
- Neuroendocrine tumor in duodenal wall or pancreas. (Gastrinoma)
- Secrets abnormal Gastrin
↓
Parietal cells → ↑HCl → Ulcer in duodenum

4) Other Causes: Smoking, Alcohol.

Ulcer Appearance - Small punched out in mucosa with clear Base.

Other types of ulcer
1) Curling ulcer → Severe Burn Injury → Hypovolemic ← Ischemia Ulcer.

2) Cushing ulcer → ↑ Intracranial pressure → ↑ vagus nerve ← ↑HCl Ulcer.

Clinical features-
1) Epigastric pain → Aching or Burning
2) Bloating 3) Belching 4) Nausea, vomiting
5) Haematemesis 6) Melena.

Gastric
↑ while eating
↳ ↑HCl
↓ Weight loss.

Duodenal
↓ while eating
Weight gain

Differential Diagnosis

CA Stomach, Pancreas, Biliary tract disease, Pancreatitis, Lower oesophageal disease.

Investigation

1) Barium Radiography:
   - ↳ Peptic ulcer looks oval and round.
   - → Malignant ulcer is irregular.
2) Upper Endoscopy:
   - → Diagnosing and Biopsy
3) Biopsy → Giemsa stain → H. pylori.
4) Biopsy Urease test → Biopsy specimen is placed in a medium containing Urea + pH reagent
   - ↓
   - Urease from H. Pylori ← Breaks down Urea into Ammonia & carbonic acid.
5) Urea Breath test
   - Patient swallow tablet of Urea.
   - If the isotope is detected in CO_2 in breath then Urea was broken down by Urease made by H. pylori.
6) Stool Antigen Test:
   - → H pylori Antigen (IgG) in stool.
7) Serum IgG → Antibodies against H. pylori
   - Cannot differentiate from past infection.

Complication

1) Bleeding: When the ulceration occurs when the artery is nearby especially
   - Left Gastric artery → Gastroduodenal artery
   - ↓
   - Haemorrhage into GI tract → Shock

2) Perforation

Deep eroding ulcer usually occur in Duodenal ulcer → Gastric contents into peritoneal space → Peritonitis.

→ Air under diaphragm → Irritants phrenic nerve → Referred pain in shoulder.

→ Absence of Bowel sound, Board like rigidity

3) Gastric outlet obstruction:

→ ulcer near the pyloric sphincter,

↓

odema and scarring → obstruction → ↓

Nausea, vomiting

4) Gastric Cancer

5) Metabolic Bone Disease.

6) Anemia.

Treatment

- Avoid NSAIDS, Alcohol, Caffeine, Tobacco.
- Proton Pump Inhibitors.
- Partial Gastrectomy