

PEPTIC ULCER

Abnormalities of the GIT

- Peptic ulcers

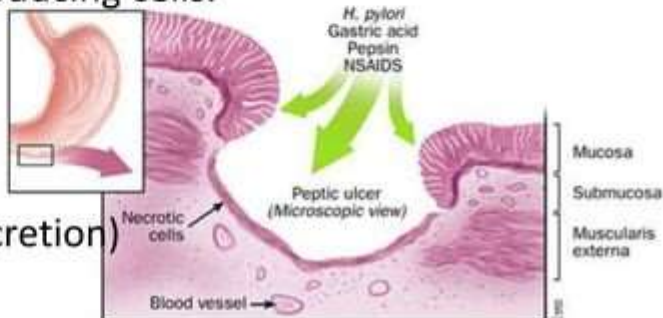
A peptic ulcer is an abnormal area of mucosa that has been damaged by the **pepsin** and **hydrochloric acid** of gastric juice, with consequent **inflammation** of the underlying and surrounding tissue. Erosion may subsequently occur into the lamina propria and submucosa to cause bleeding.

- Most of peptic ulcer occur either in the duodenum, or in the stomach
- Ulcer may also occur in the lower oesophagus due to reflexing of gastric content
- Rarely in certain areas of the small intestine

Aetiology

Aetiology of peptic ulcer disease is multifactorial.

- Infection with the bacteria *Helicobacter pylori* occurs in 80 to 95% of patients with peptic ulcer disease.
- *H. pylori* infection impairs the protective mechanisms of the G.I. tract against low pH and digestive enzymes and leads to ulceration of the mucosa.
- Stress — Emotional, trauma, surgical.
- Injury or death of mucus-producing cells.
- Chronic use of NSAIDs
- Smoking
- Alcohol and diet
- Hypercalcemia (\uparrow gastric secretion)



Aetiology

- Excess acid production in the stomach. The old hypothesis that ulceration is caused simply by hyperacidity is not tenable. About 70% of gastric ulcers and 50% of duodenal ulcers are not associated with abnormally high acid production.
- Genetic factor: The lifetime prevalence of developing ulcer disease in first-degree relatives of ulcer patients is about three times greater than the general population. 20-50% of duodenal ulcer reported a positive family history.
- Ulcers are also more common in blood group O subjects and in those who do not secrete blood group antibodies into gastric secretions.

Classification of peptic ulcer

- Peptic ulcers classified based on region or location of illness
 - Stomach (called gastric ulcer)
 - Duodenum (called duodenal ulcer)
 - Esophagus (called Esophageal ulcer)
 - Meckel's Diverticulum (called Meckel's Diverticulum ulcer)

Modified Johnson Classification of peptic ulcers

Type I: Ulcer along the lesser curve of stomach

Type II: Two ulcers present - one gastric, one duodenal/prepyloric

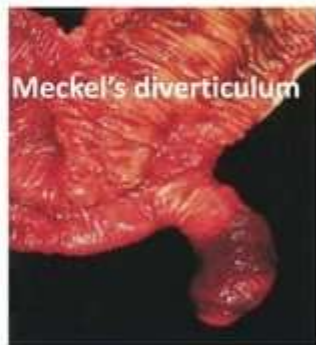
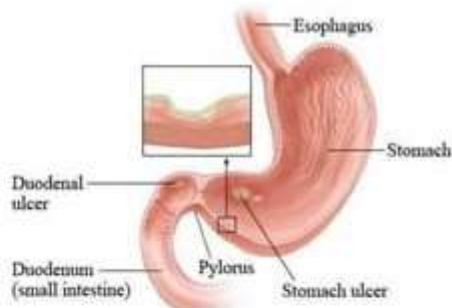
Type III: Prepyloric ulcer

Type IV: Proximal gastroesophageal ulcer

Type V: Anywhere (associated with chronic NSAID use)

Sites of peptic ulcer

- **Duodenum:** First portion, Anterior wall
- **Stomach:** usually antrum, lesser curvature (common), anterior and posterior wall, greater curvature (less common)
- In the margins of a gastroenterostomy (stomal ulcer)
- In the duodenum, stomach or jejunum of patients with Zollinger- Ellison syndrome.
- Within or adjacent to a Meckel's diverticulum.



Symptoms of peptic ulcer

Symptoms of peptic ulcer vary with location of the ulcer and the patient age.

- Abdominal discomfort
- Pain or nausea (pain is located in the epogastrium; not radiate)
- Waterbrash
- Loss of appetite and weight loss
- Hematemesis (vomiting of blood) Rarely, ulcer lead to a gastric or duodenal perforation.



Waterbrash

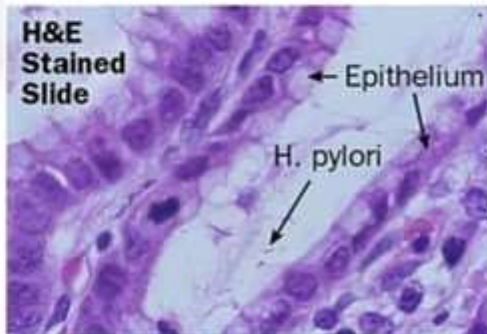
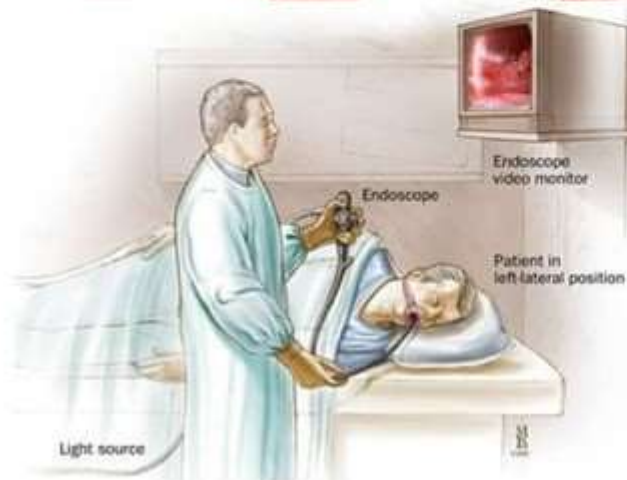
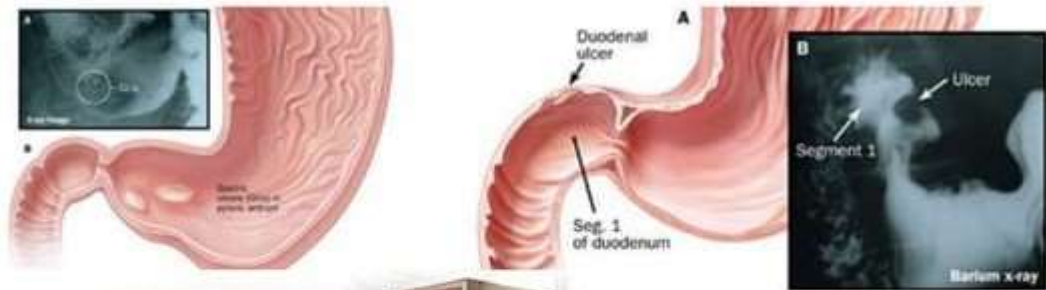


Hematemesis

Complications of peptic ulcer

- Gastrointestinal bleeding. (Sudden large bleeding can be life threatening)
- Cancer (*Helicobacter pylori* as the etiological factor making it 3-6 times likely to develop stomach cancer)
- Perforation (hole in the wall)
- Penetration.

Diagnosis of peptic ulcer



Diagnosis of peptic ulcer

- Radiological Diagnosis: Barium x-ray or upper GI series is a widely used for diagnosis. Barium x-ray is difficult to analysis and less sensitive and accurate.
- Laboratory test:
 - Noninvasive urea breath test.
 - Patient with refractory or recurrent peptic ulcer may have underlying H. pylori infection, histopathology investigation may req.
 - Serologic test for detecting H. pylori (levels of IgG and IgA ELISA test)
 - Stool antigen test for non-invasive detecting the presence of H. pylori.
- Endoscopic diagnosis