

Gastrointestinal pathology esophagus and stomach lecture 4

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FRCPath

Topics to be covered

- Peptic ulcer disease
- Hiatal hernia
- Gastric neoplasms

Peptic ulcer disease (PUD)

Causes

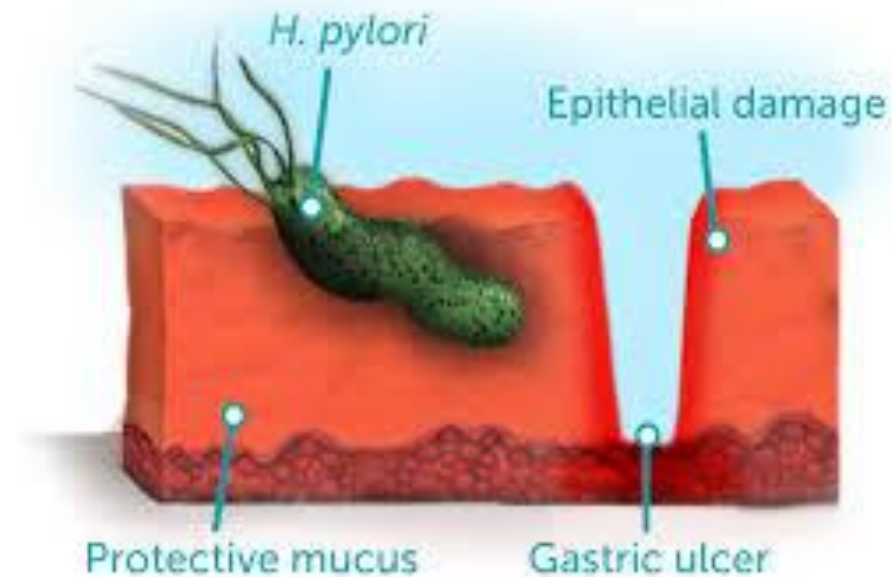
- H pylori
- NSAIDS
- In USA ulcer due to NSAIDS is commoner nowadays than those due to H pylori due to 1. decreased pylori infection and 2. increased aspirin use in the aging population (as a protection of thrombosis)

epidemiology

- 10% of males and 4% of females develop peptic ulcer in their lifetime
- Sites: PUD can occur in any site exposed to gastric acids ; **antrum and first part of duodenum are the most common sites.**
- It can also occur in the esophagus as a complication of reflux
- Ectopic gastric mucosa can also be affected.

H pylori and PUD

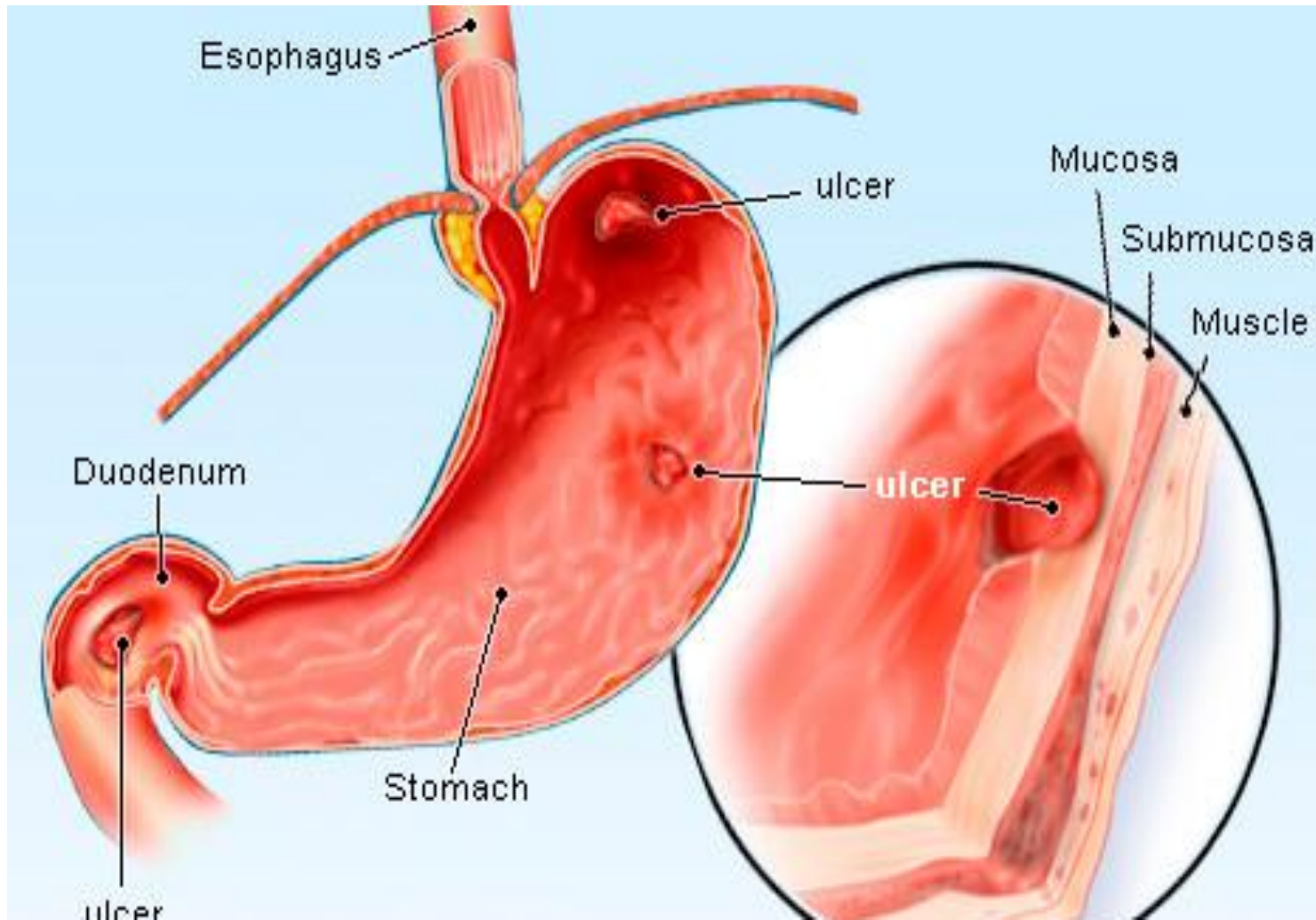
- 70% of PUD occurs in people with H pylori
- 5-10% of those with H pylori develop ulcer/ due to host factors and variability in pylori strains



pathogenesis

- **Hyperacidity: essential..** Caused by: H pylori, parietal cell hyperplasia, or increased gastrin like in Zollinger Ellison syndrome (see next slide)
- NSAIDS
- Smoking
- Hypercalcemia: increases gastrin
- Psychologic stress can increase acid secretion

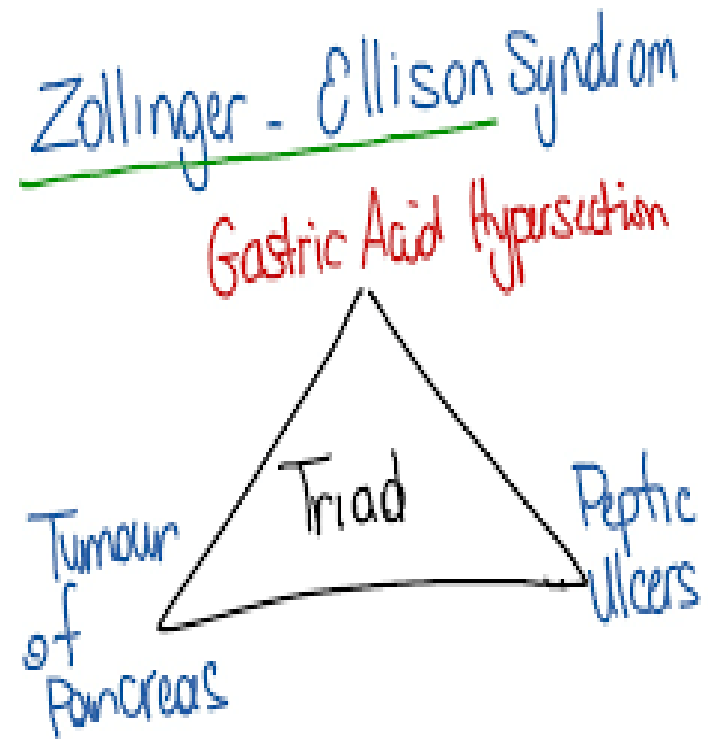
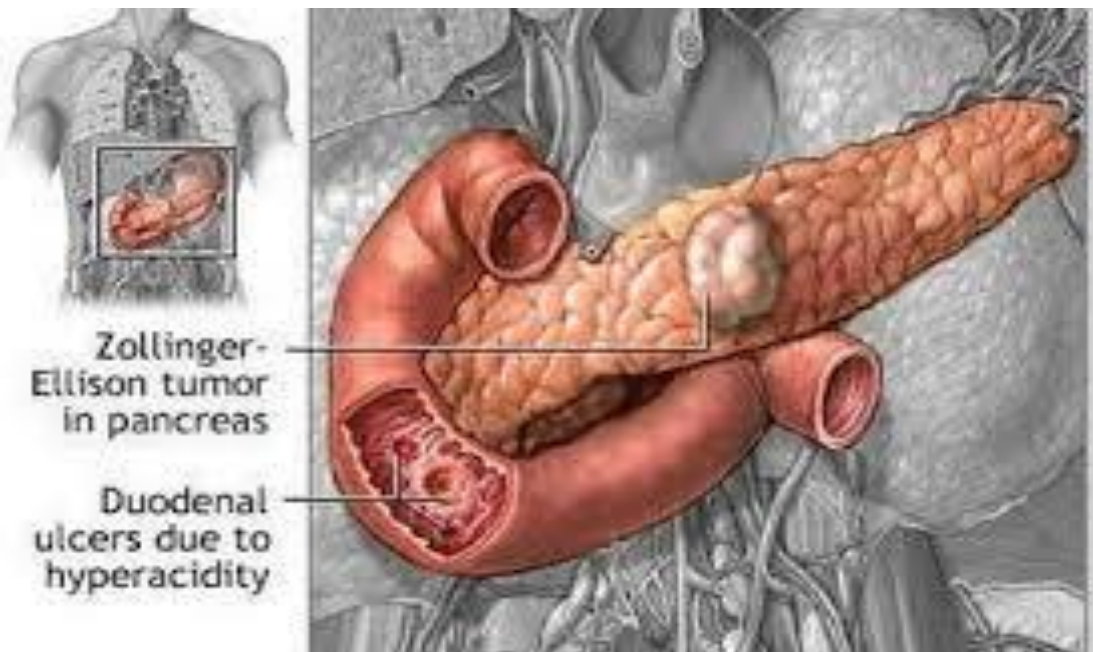
Sites of PUD .. Duodenal ulcers four times more than gastric ulcers



Zollinger Ellison syndrome

- Multiple gastric ulcers in the stomach, duodenum and even jejunum ..
Due to uncontrolled gastrin secretion from a tumor ... this results in massive acid secretion.

Z-E syndrome



morphology

- Duodenum: stomach 4:1
- 80% of cases solitary
- Base of ulcer is clean and smooth
- Complication: perforation.. This is a surgical emergency

Clinical features

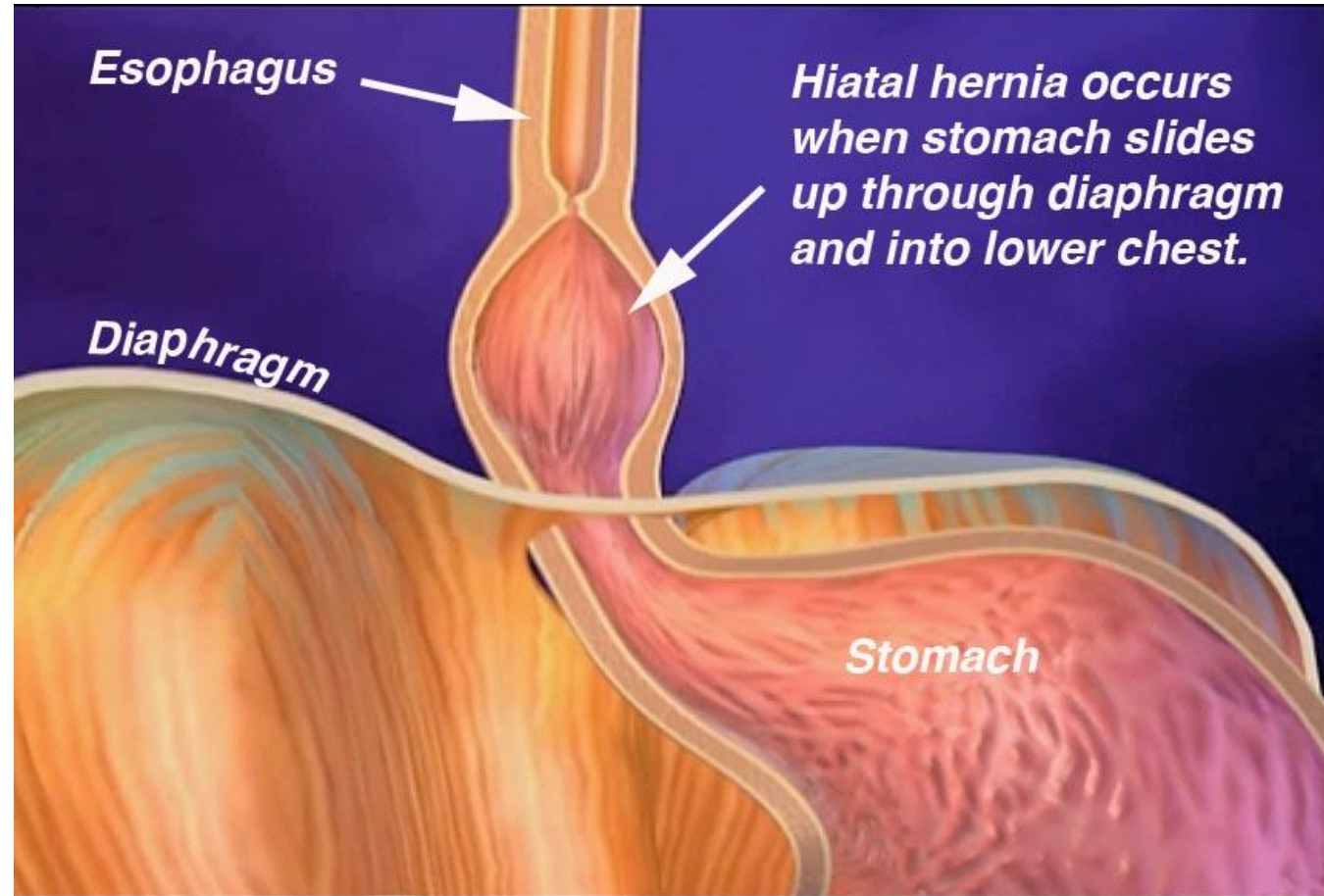
- Epigastric pain occurring 1-3 hours after meals , is worse at night and relieved by food or alkali.
- Nausea and vomiting
- Hemorrhage and anemia may occur

Treatment of gastric ulcer

- In the past surgical treatment was common
- Nowadays, treating H pylori and decreasing gastric acidity made surgery unnecessary except in complicated cases (hemorrhage and perforation)

Hiatal hernia

- = separation of the diaphragmatic crura and protrusion of the stomach into the thorax through the resulting gap
- Can be congenital or acquired.
- Asymptomatic in 90% of adult cases
- Symptoms similar to GERD can occur



Gastric neoplasms

- Gastric polyps
- Gastric adenocarcinoma
- Lymphoma
- Carcinoid tumor
- Gastrointestinal stromal tumors

Polyps: protrusions with smooth surface



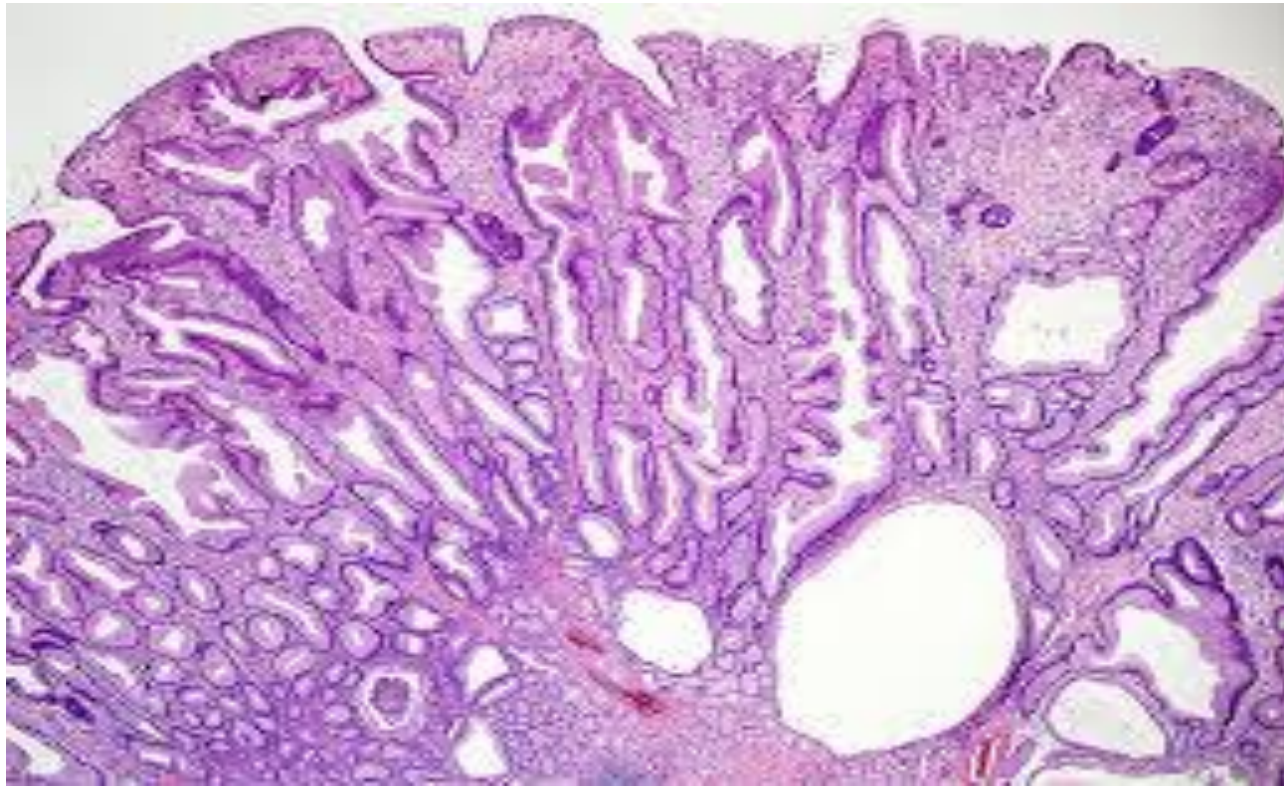
Gastric polyps

- Inflammatory and hyperplastic polyps
- Gastric adenoma

Hyperplastic and inflammatory polyps

- 75% of gastric polyps are inflammatory or hyperplastic
- Occur in people 50-60 years
- Arise in the background of chronic gastritis that initiates the injury and reactive hyperplasia
- If associated with h pylori gastritis, polyps may regress after bacterial eradication
- Dysplasia can occur within hyperplastic polyps and risk increases with larger polyps : usually larger than 1.5 cm

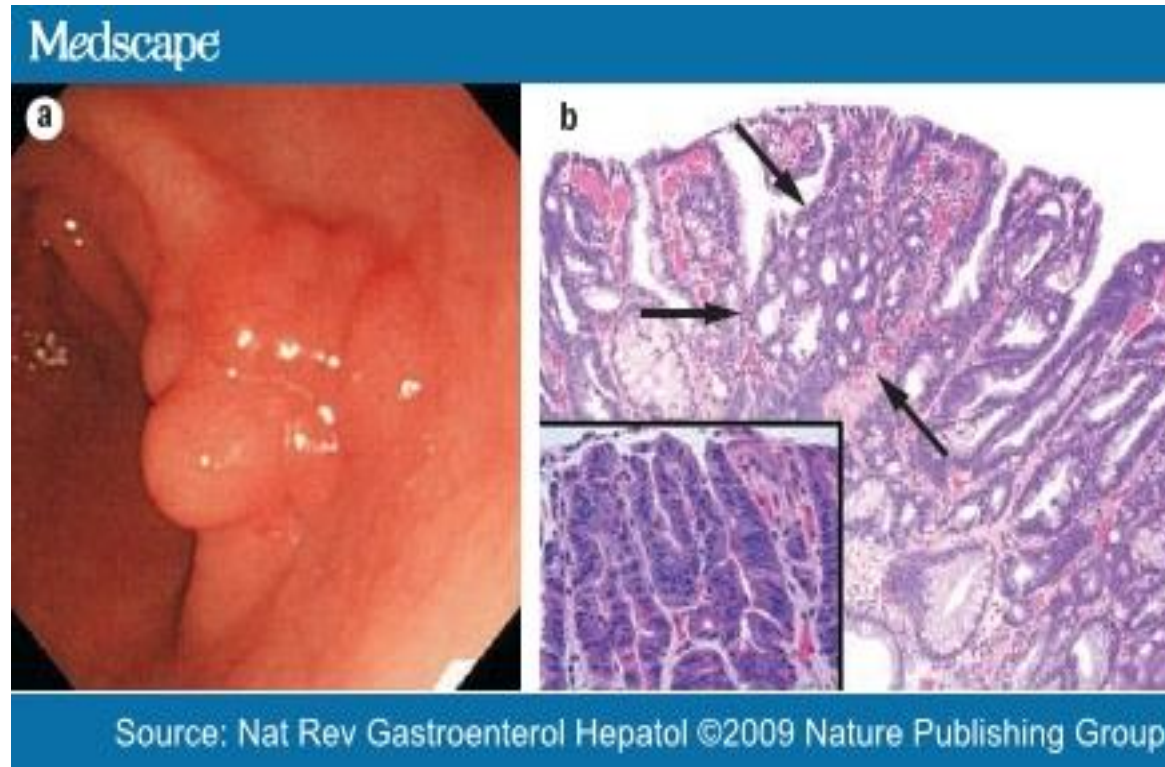
Hyperplastic polyp



Gastric adenoma

- 50-60 years of age
- Male: female 3:1
- Almost always occur in the background of chronic gastritis with atrophy and intestinal metaplasia
- Risk of developing carcinoma is related to the size and is elevated in lesions more than 2 cm

Gastric adenoma.. Dysplasia is essential to diagnose adenoma



Gastric adenocarcinoma

- 90% of gastric tumors are adenocarcinomas
- More common in Japan Costa Rica and Eastern Europe
- Symptoms: nausea, vomiting and epigastric pain.. All are non specific which delays diagnosis

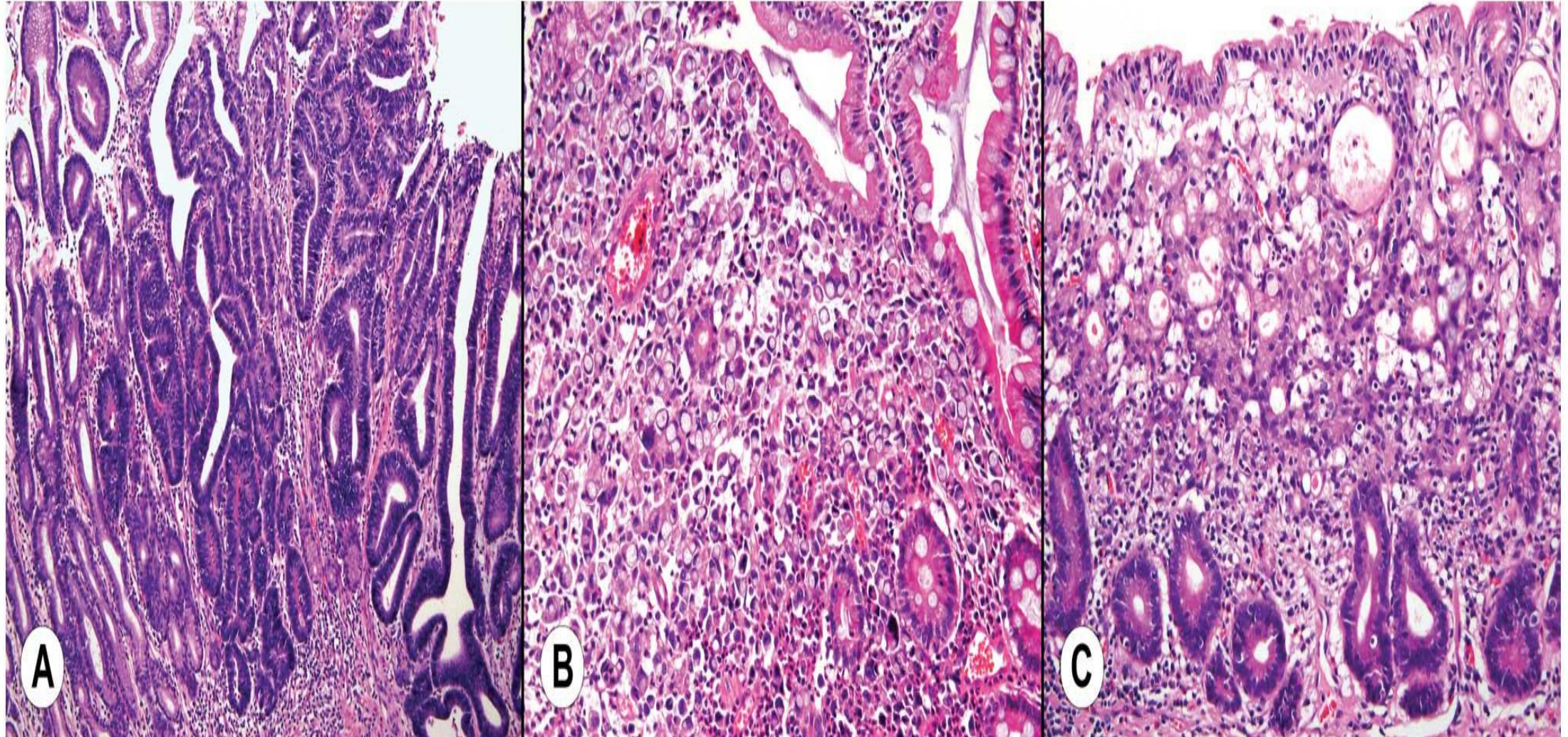
- Gastric carcinoma is decreasing in the developed countries due to better control of H pylori and improved living conditions

pathogenesis

Most important mutations:

- Loss of E cadherin
- B catenin mutation
- H pylori and EBV infection predisposes to gastric carcinoma

Lauren classification of gastric adenocarcinoma: intestinal type and diffuse (signet ring type)



Clinical features

Intestinal type:

- occurs mainly in high risk areas
- Develops from dysplasia or adenoma
- Mean age 55
- Male : female= 2:1

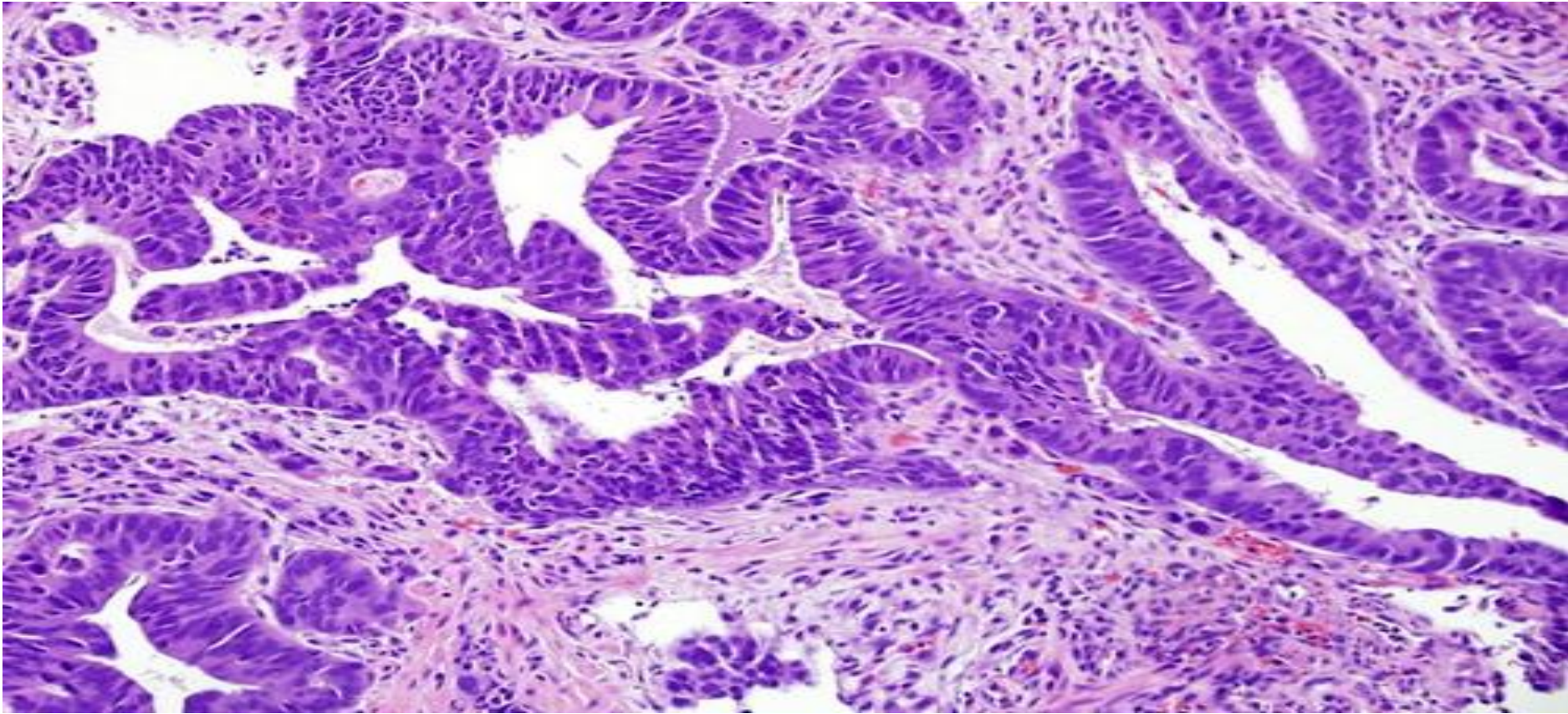
Diffuse type

- Incidence is uniform across countries
- No known pre-cancer lesion
- Male: female 1:1

Gastric carcinoma/ mass.. Most likely intestinal type



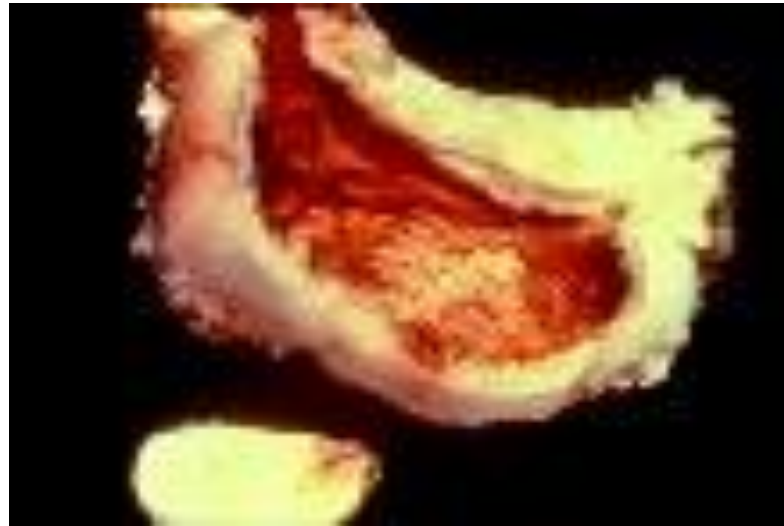
Intestinal type: gland formation



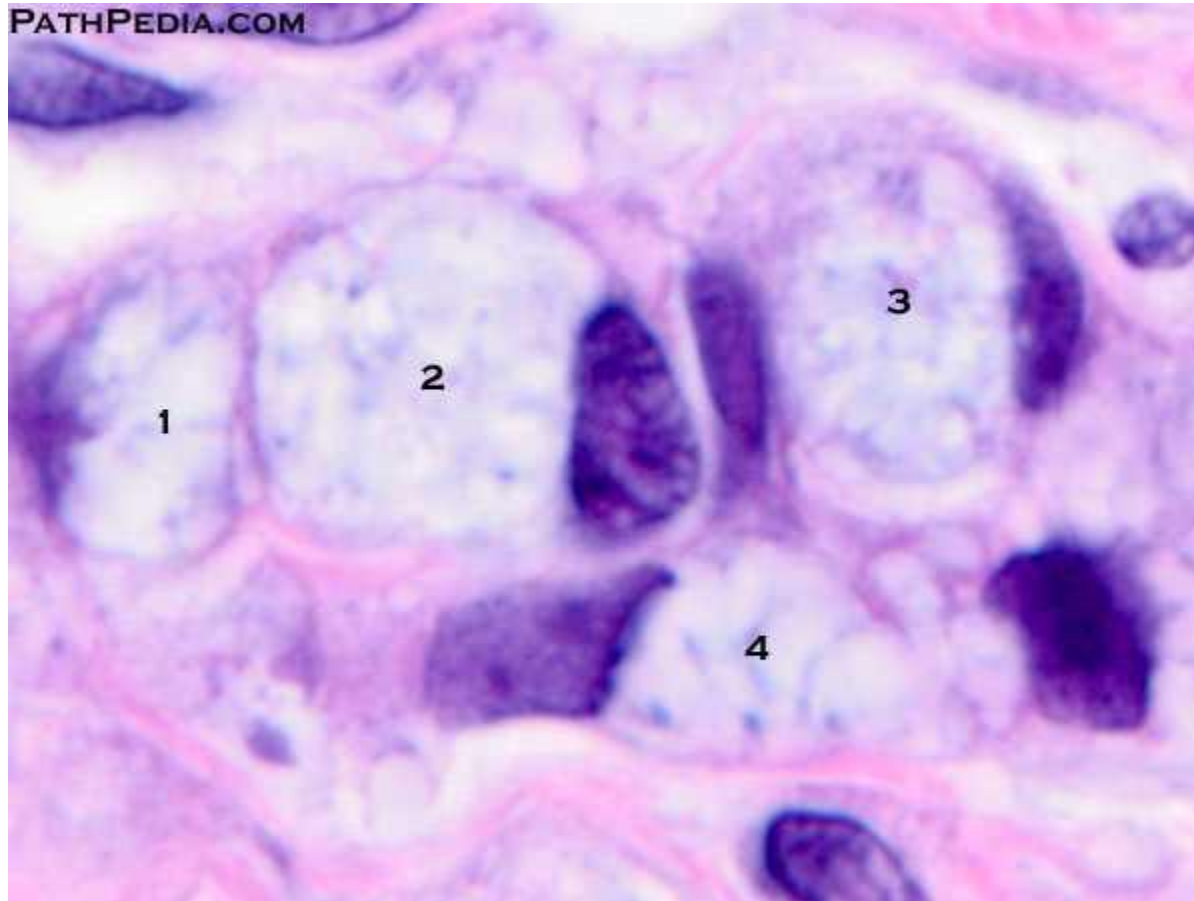
Diffuse type.. Lenitis plastic/ note that the wall is thickened with no mass



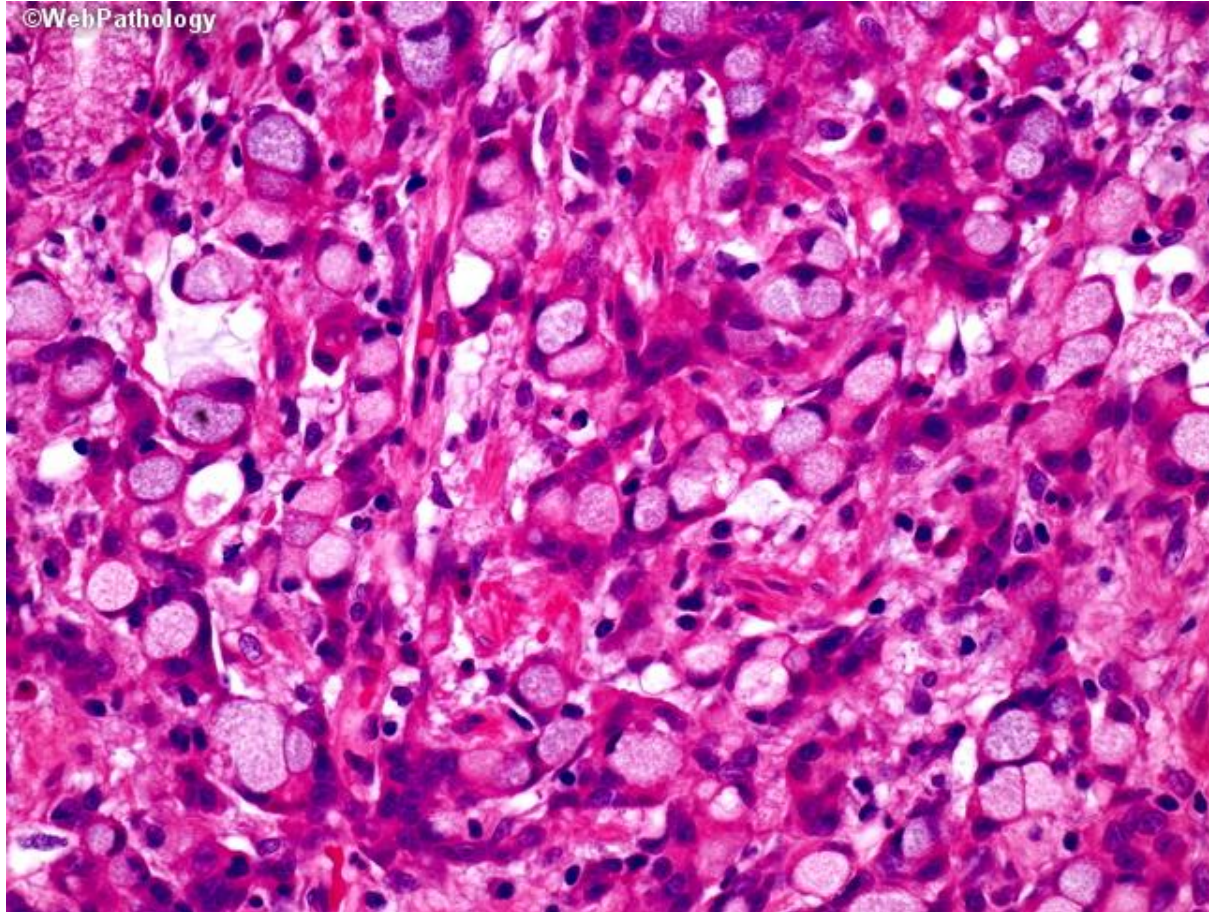
Diffuse carcinoma



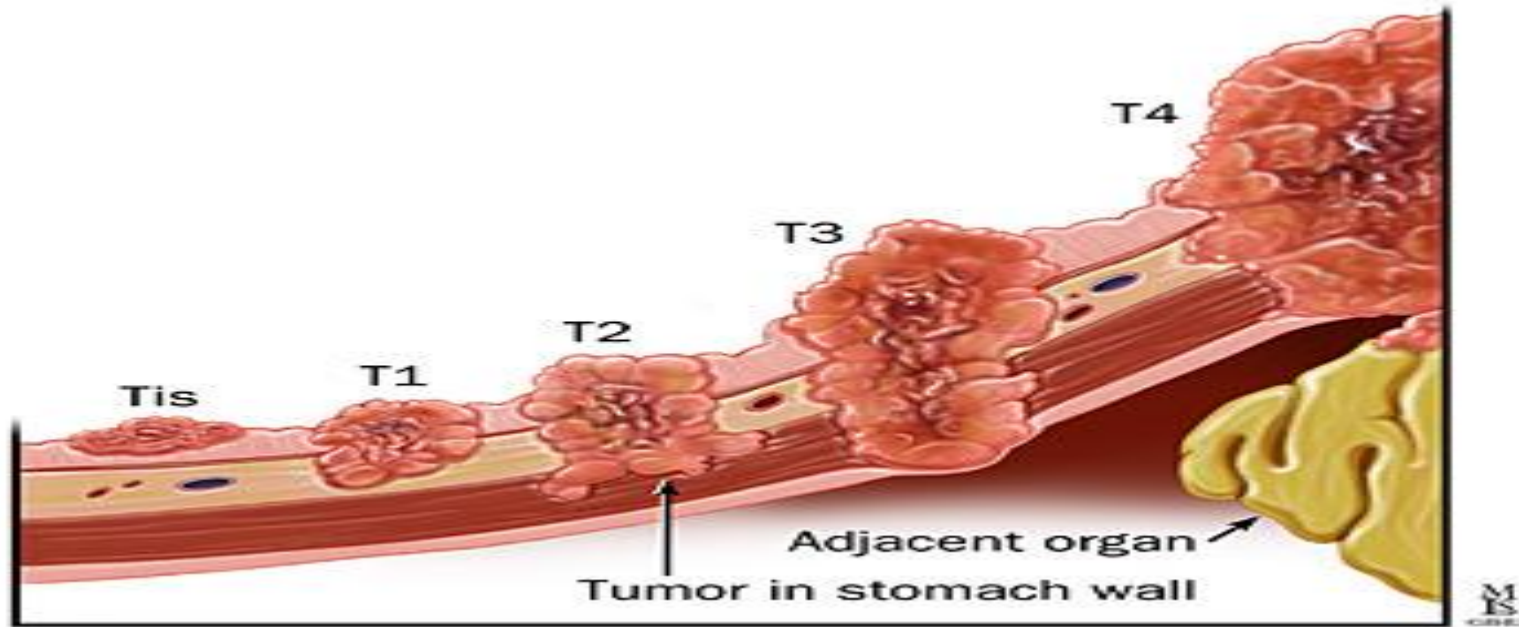
Signet ring cells in diffuse gastric carcinoma..
Nucleus pushed to one side (to the periphery)
by the mucin



Diffuse, signet ring carcinoma



Prognosis: depends on TNM stage



outcome

- 5 year survival for early lesions: 90% even if there is lymph node metastasis
- 5 year survival for advanced disease: 20%
- Overall 5 year survival 30% .. Because of late detection

lymphoma

- MALTOMA = mucosa associated lymphoid tissue lymphoma
- It's an **indolent (low grade)** lymphoma arising from the lymphocytes within the gastric mucosa
- Other types of lymphoma can arise in the stomach

Carcinoid tumor

- **Neuroendocrine** tumors arising from neuroendocrine cells like the G cells
- Can be associated with endocrine cell hyperplasia, chronic atrophic gastritis and Zollinger Ellison syndrome
- Symptoms depend on the hormone produced by the tumor cells
- Gastric and esophageal carcinoids have better prognosis than those in the jejunum

Gastrointestinal stromal tumor (GIST)

- Mesenchymal tumor of the stomach and other parts of the GI tract
- Peak at 60 years of age
- Males more than females
- Cell of origin/; interstitial cell of Cajal
- Majority have c-kit mutation
- C-kit is a tyrosine kinase... people with this mutation benefit from targeted therapy= imatinab



**THANK
YOU
SO MUCH
YOU ARE
FABULOUS**