Digestive System

University of Jordan

Faculty of Medicine

Batch of 2013-2019

Medical Committee
The University of Jordan

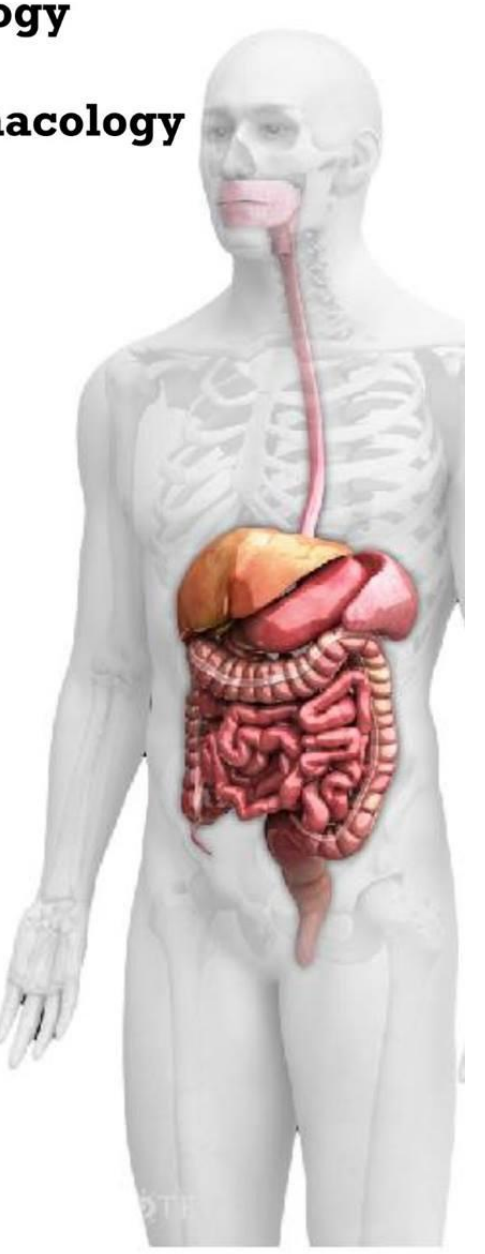
● Slide ○ Sheet ○ Handout ○ Other

☐ Anatomy ☐ Embryology

☐ Physiology ☐ Histology

■ Pathology ☐ Pharmacology

☐ Microbiology ☐ PBL



Slide #: 2

Doctor's name: Dr Mazen

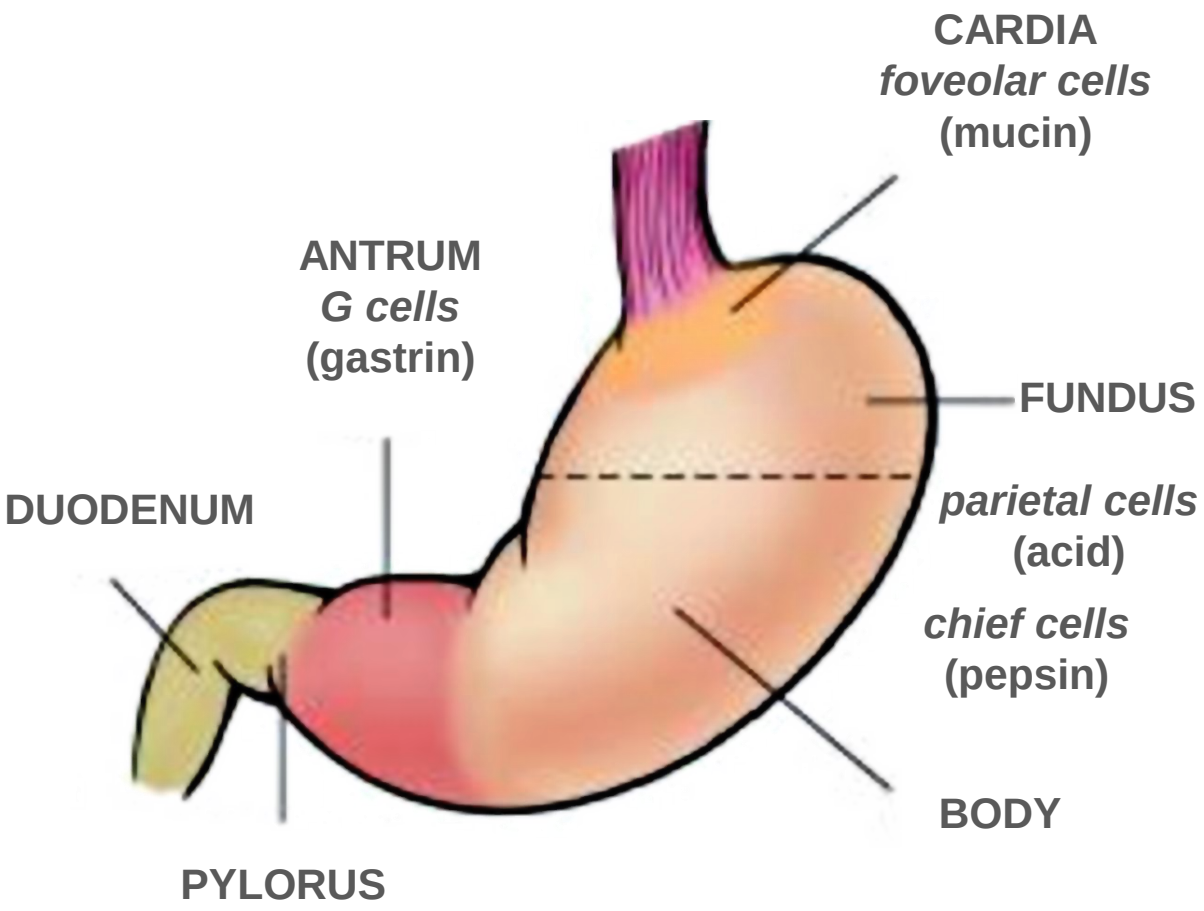
Date: 31/3/2015

Price:

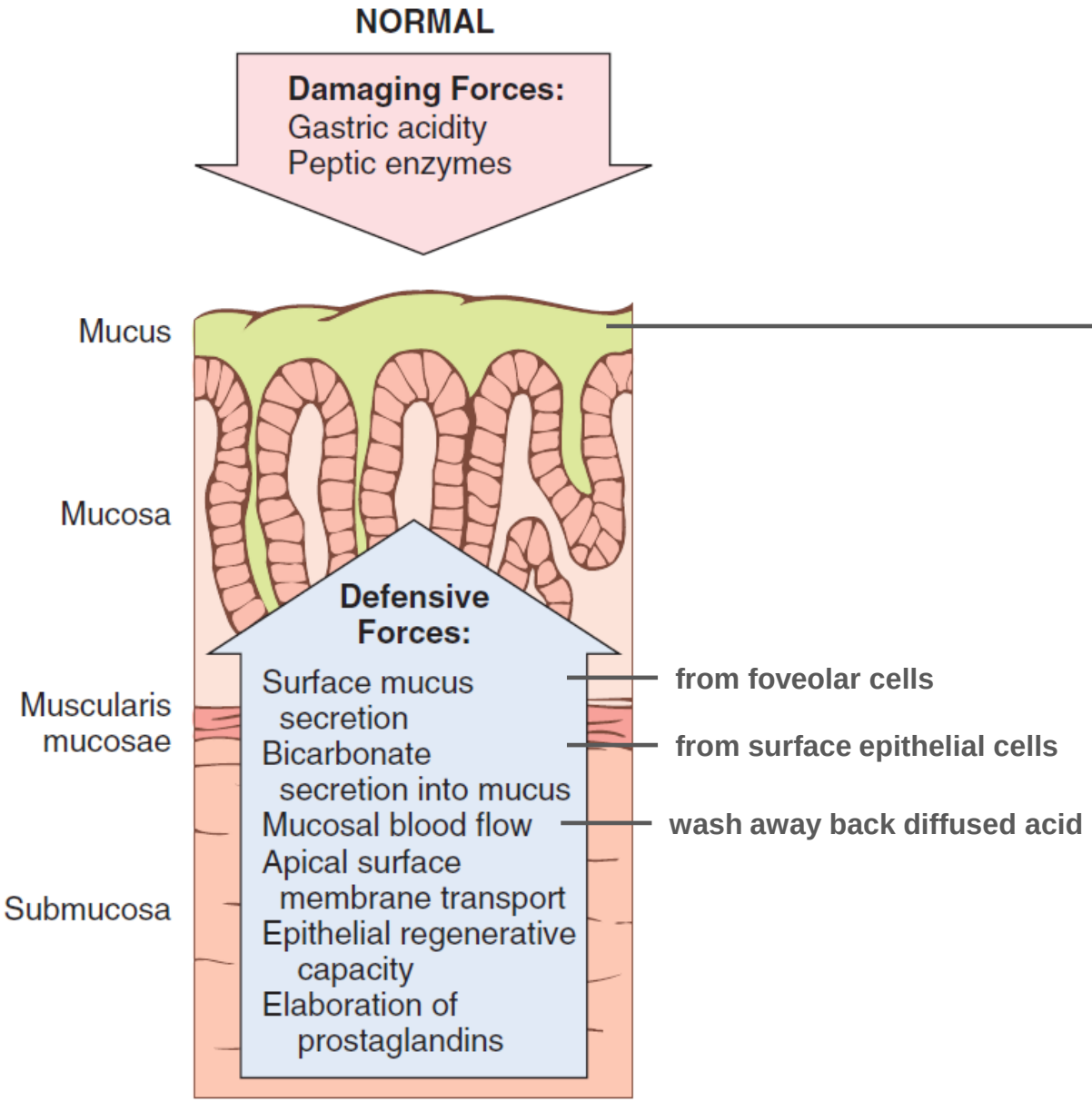
DESIGNED BY: TAMER ALTAMIMI "SMILE"

Stomach

The Stomach



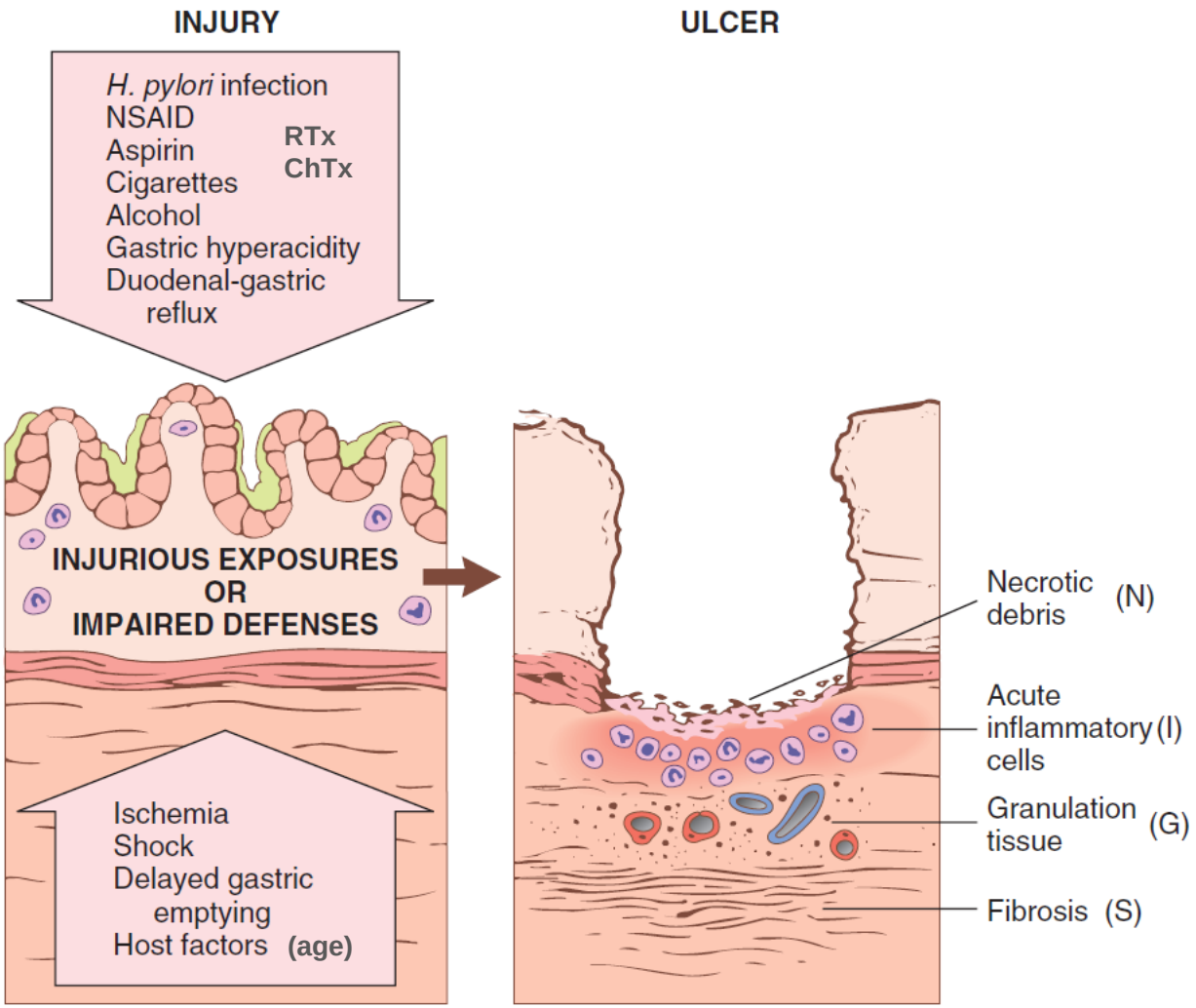
Gastrin stimulates luminal acid secretion by parietal cells within the gastric fundus and body



Protective forces of the stomach

pH ~1

"unstirred" layer to prevent cell damage



Acute Gastritis

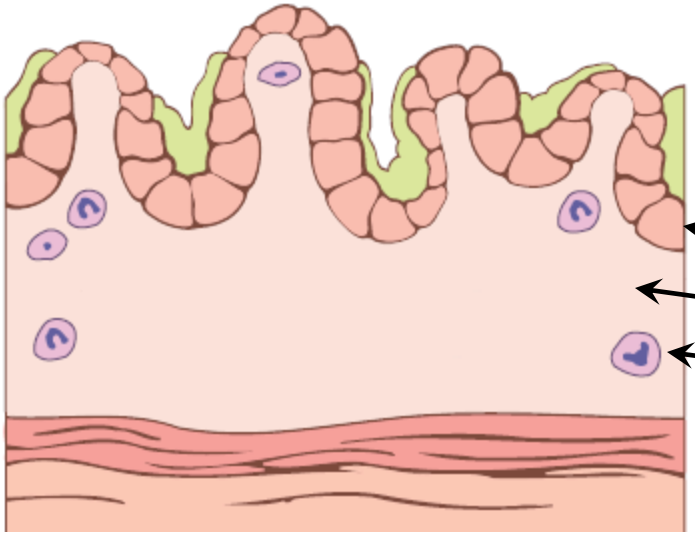
Disruption of protective barrier → transient mucosal inflammatory process:

- Asymptomatic or
- Epigastric pain + N/V
- Erosion/ulceration
- Bleeding

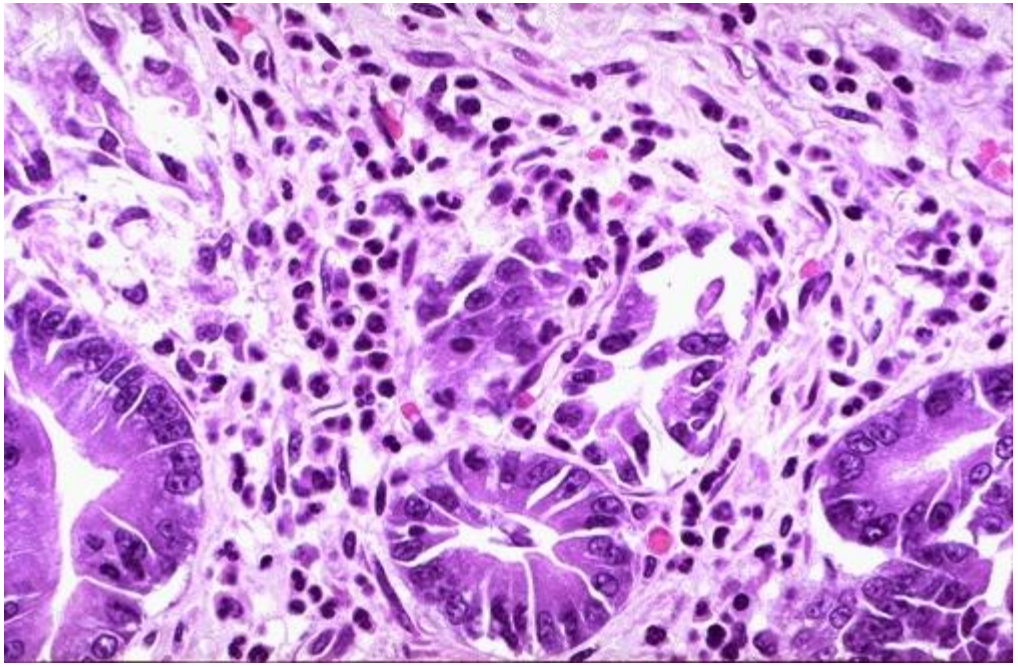
Morphology:

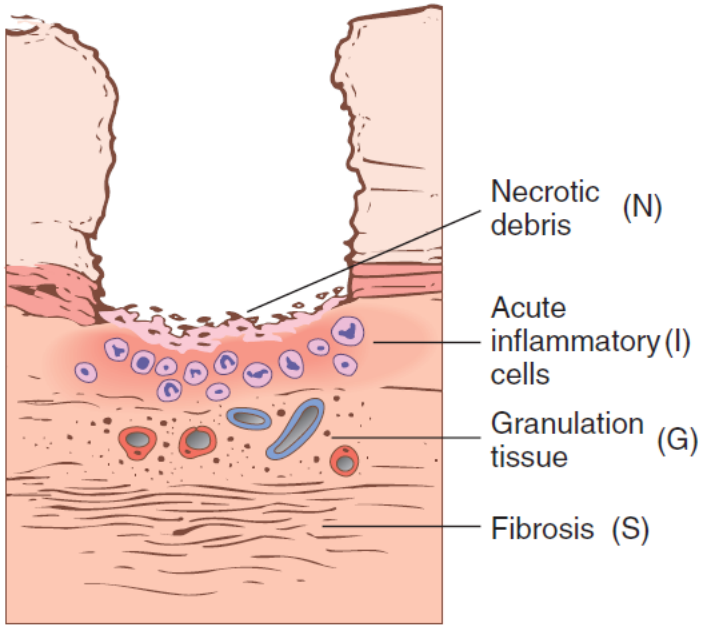
- Edema/congestion
- Erosion
- Heamorrhage

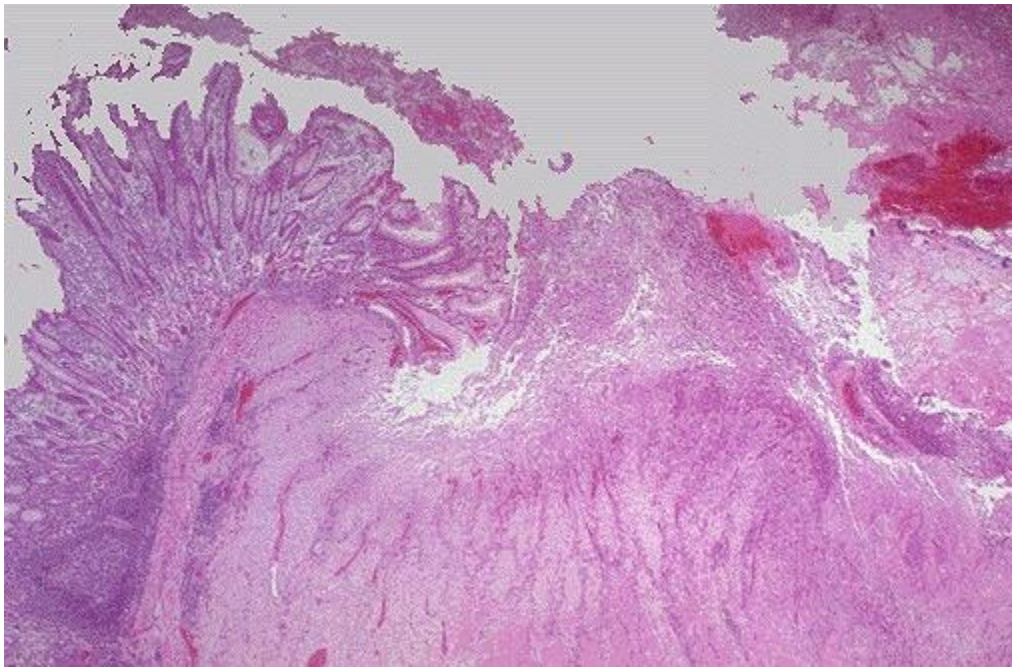
Acute Gastritis



Mild acute gastritis
- Intact epithelium
- Edema/congestion
- Scattered neutrophils







Acute Peptic Ulceration

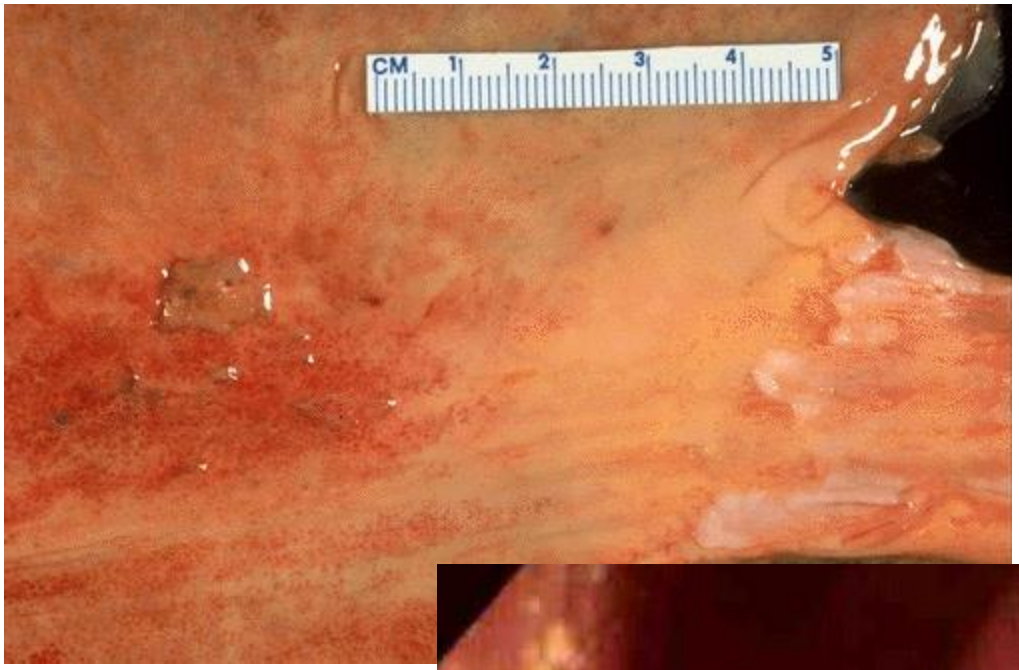
NSAIDs (direct + ↓COX)
Severe physiologic stress

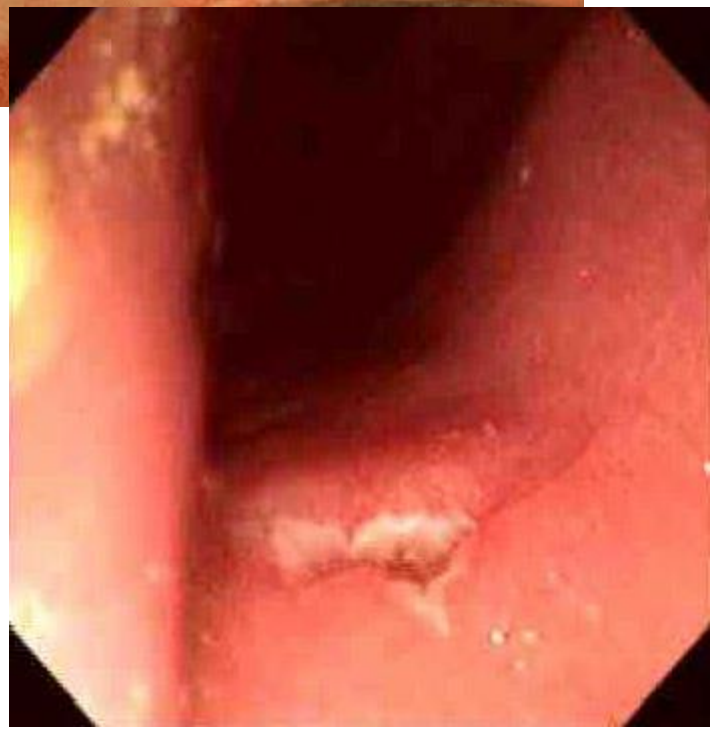
Stress ulcers: critically ill patients (shock, sepsis, severe trauma ~ acidosis)

Curling ulcers: with severe burns or trauma

Cushing ulcers: vagal stimulation with intracranial injury

Shallow erosions to mucosal penetration





Acute Peptic Ulceration

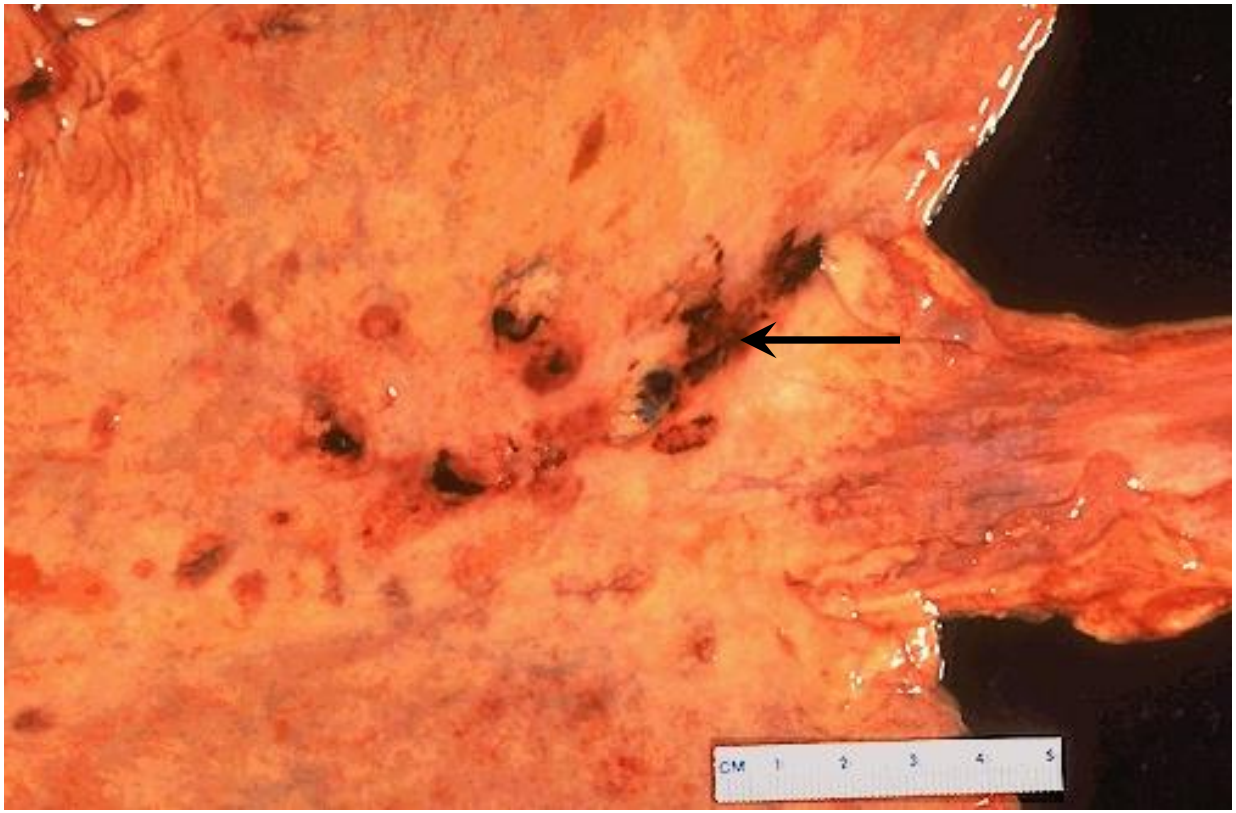
Range from erosions to mucosal penetration

Rounded <1cm

Sharply demarcated

Normal adjacent mucosa

Singly or more commonly multiple ulcers



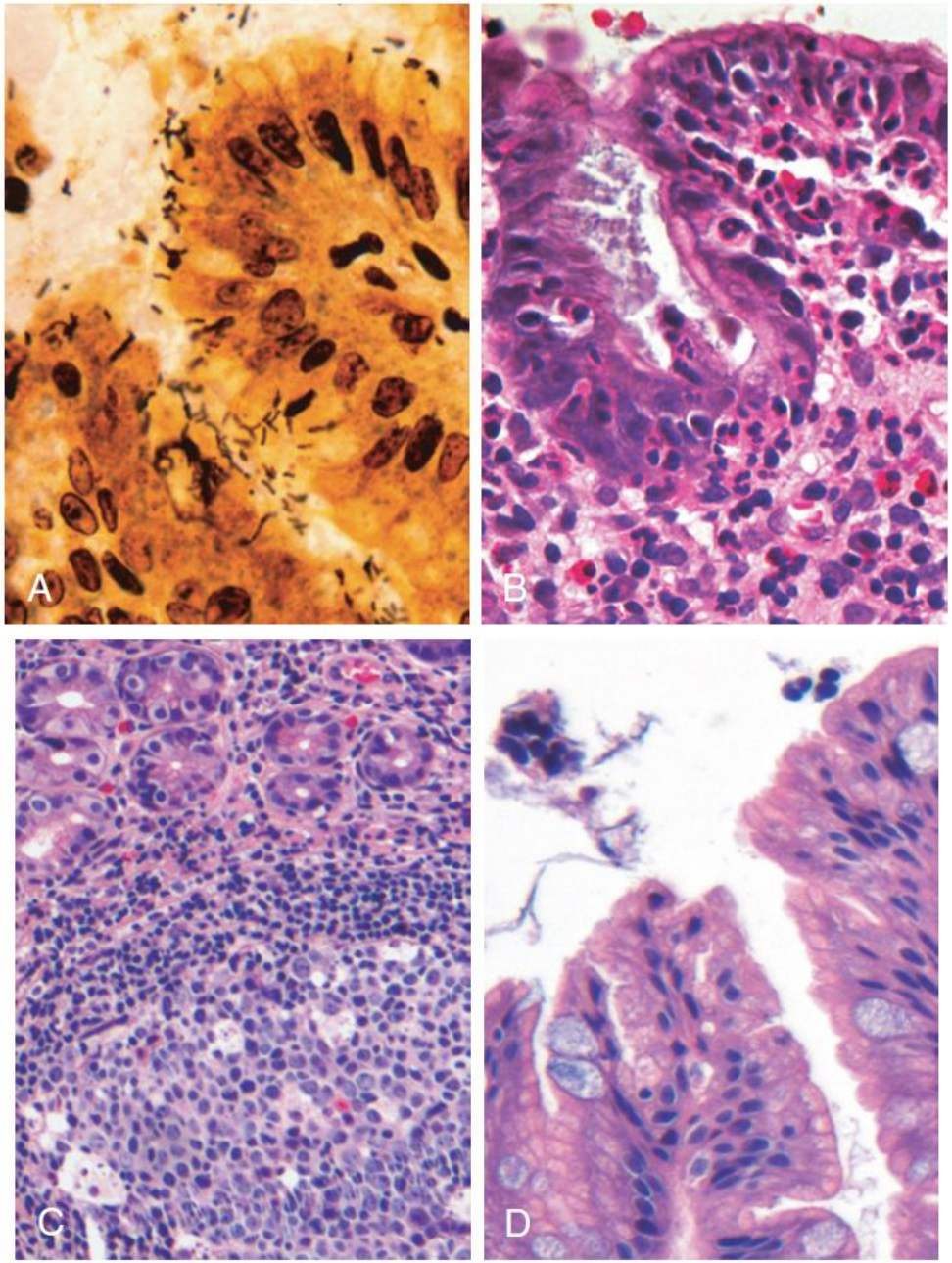
Acute Peptic Ulceration

The ulcer base frequently is stained brown to black by acid digested RBCs

Symptoms
- N/V
- Hematemesis (coffee ground)

Complications
- Excessive bleeding
- Perforation

Tx
- PPI
- H2 receptor antagonist

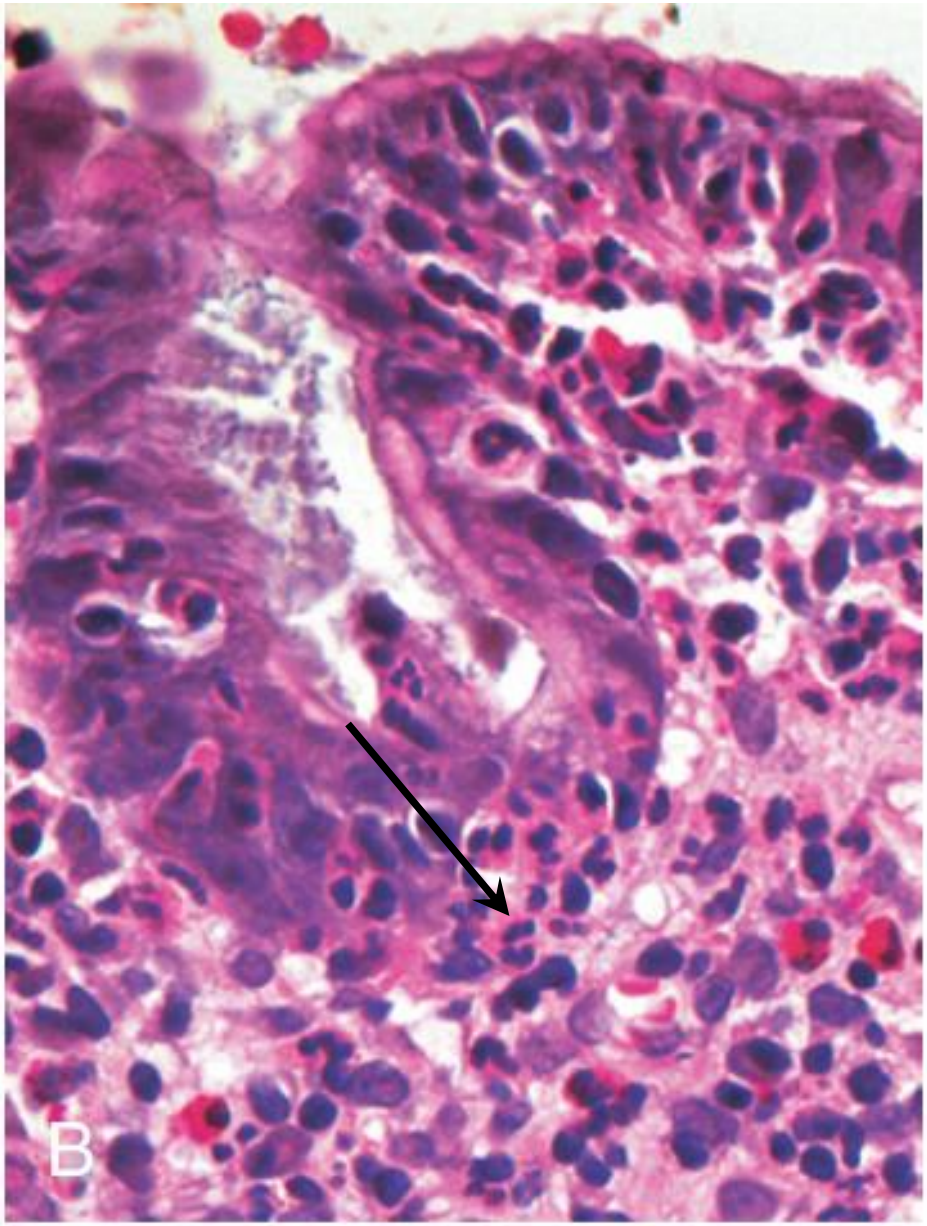


Chronic Gastritis

Signs & symptoms less severe but more persistent

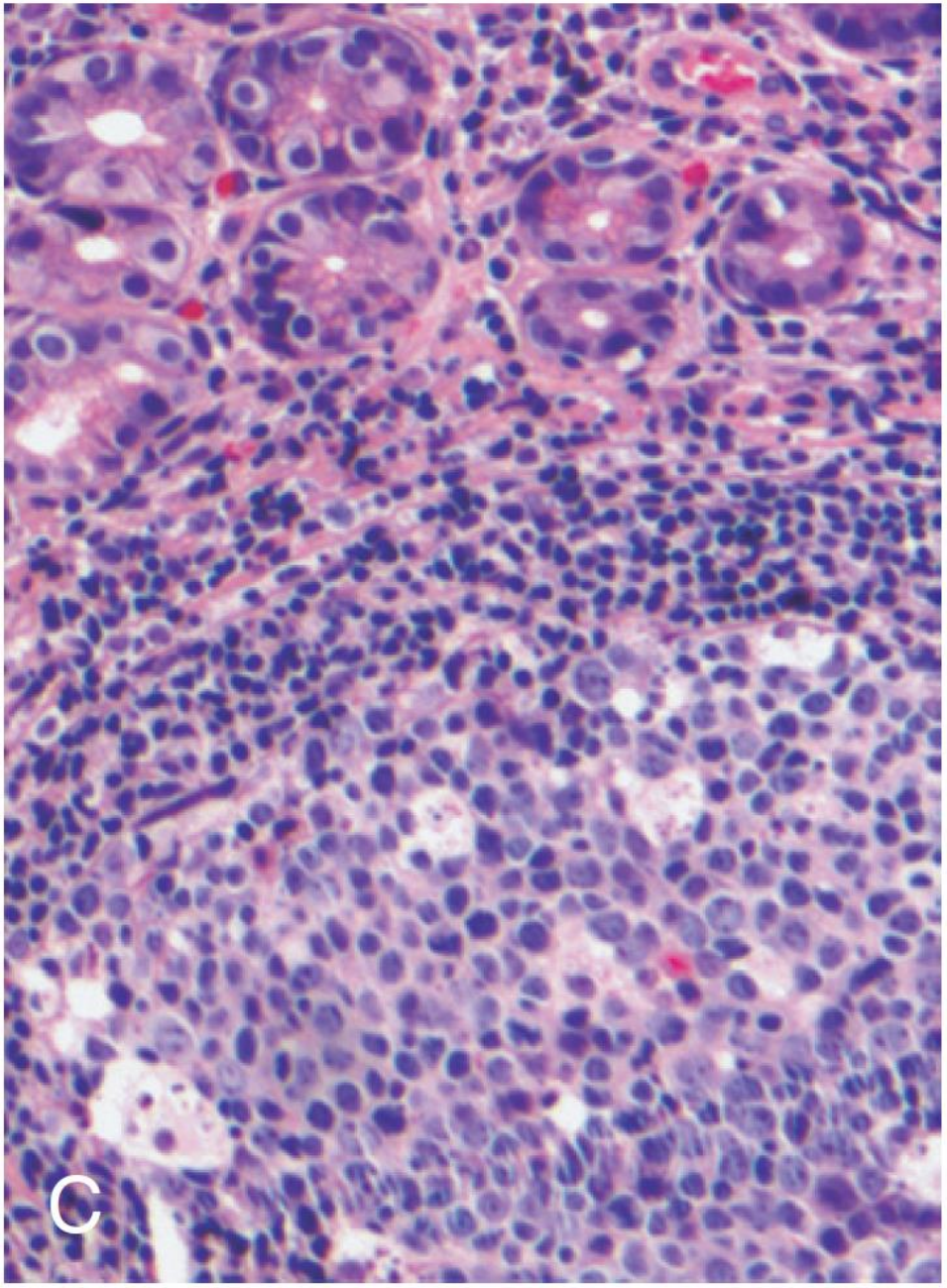
Hematemesis rare

- H. pylori
- Autoimmune (atrophic)
- Radiation
- Chronic bile reflux



Chronic Gastritis

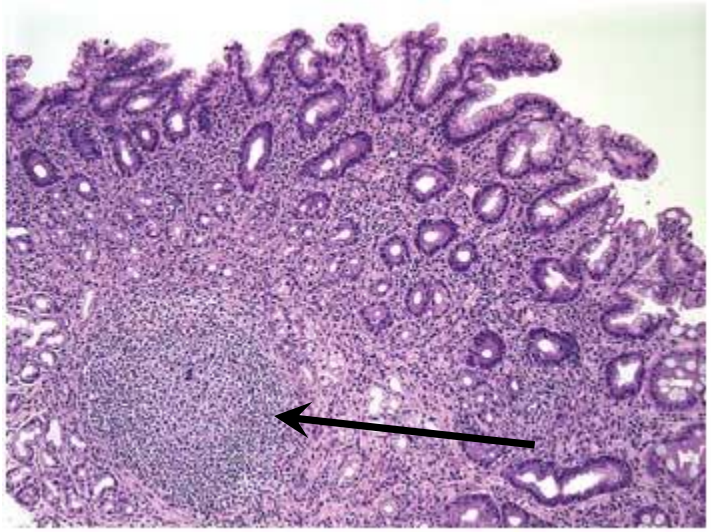
Intraepithelial and lamina propria neutrophils are prominent



Chronic Gastritis

Lymphoid aggregates with germinal centers

Subepithelial plasma cells



Chronic Gastritis

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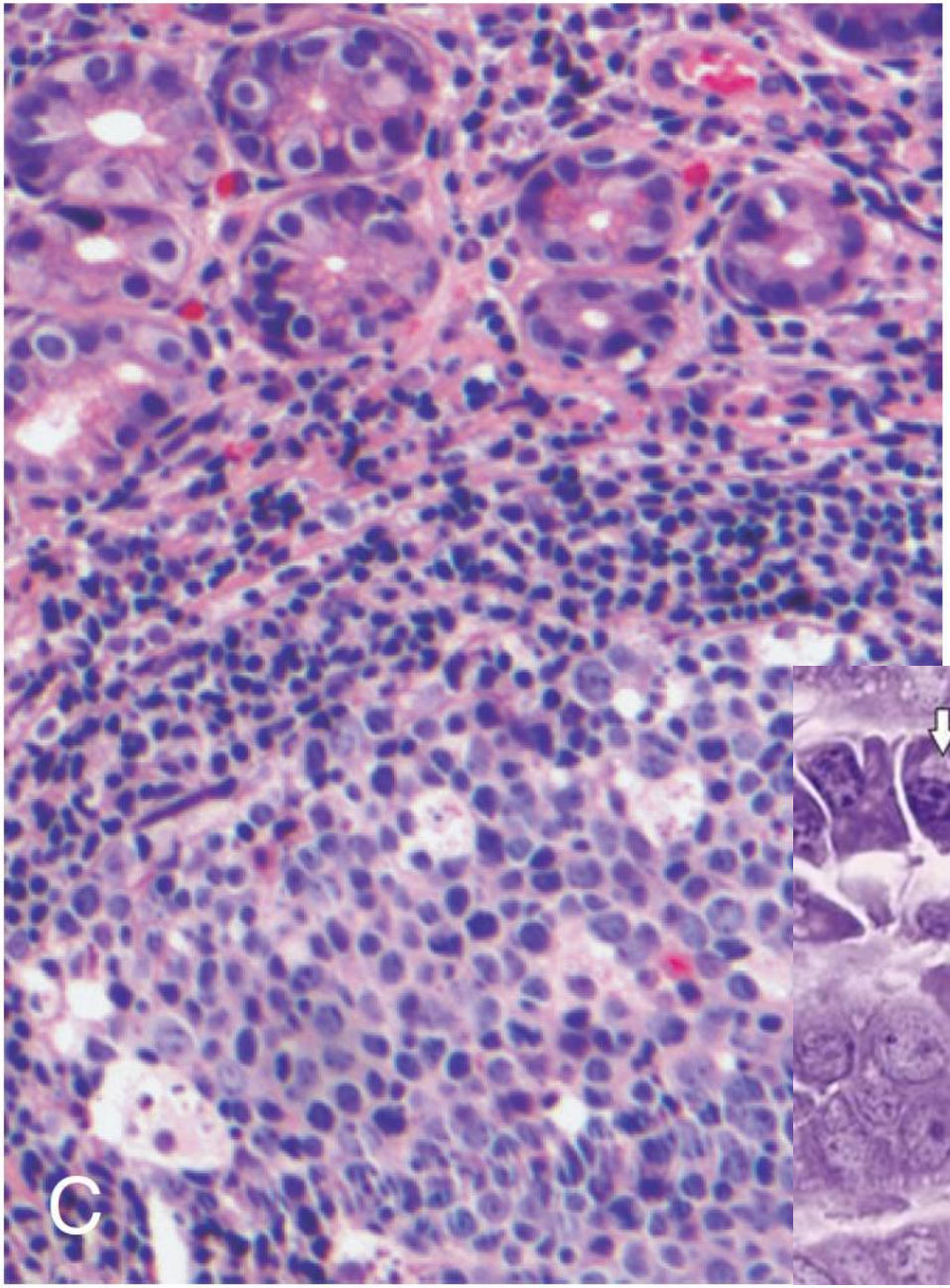
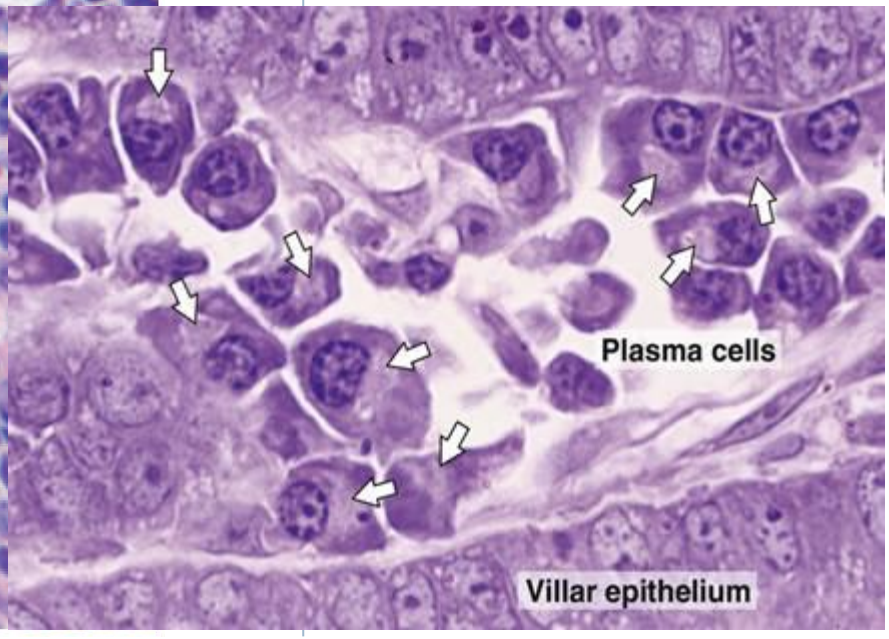
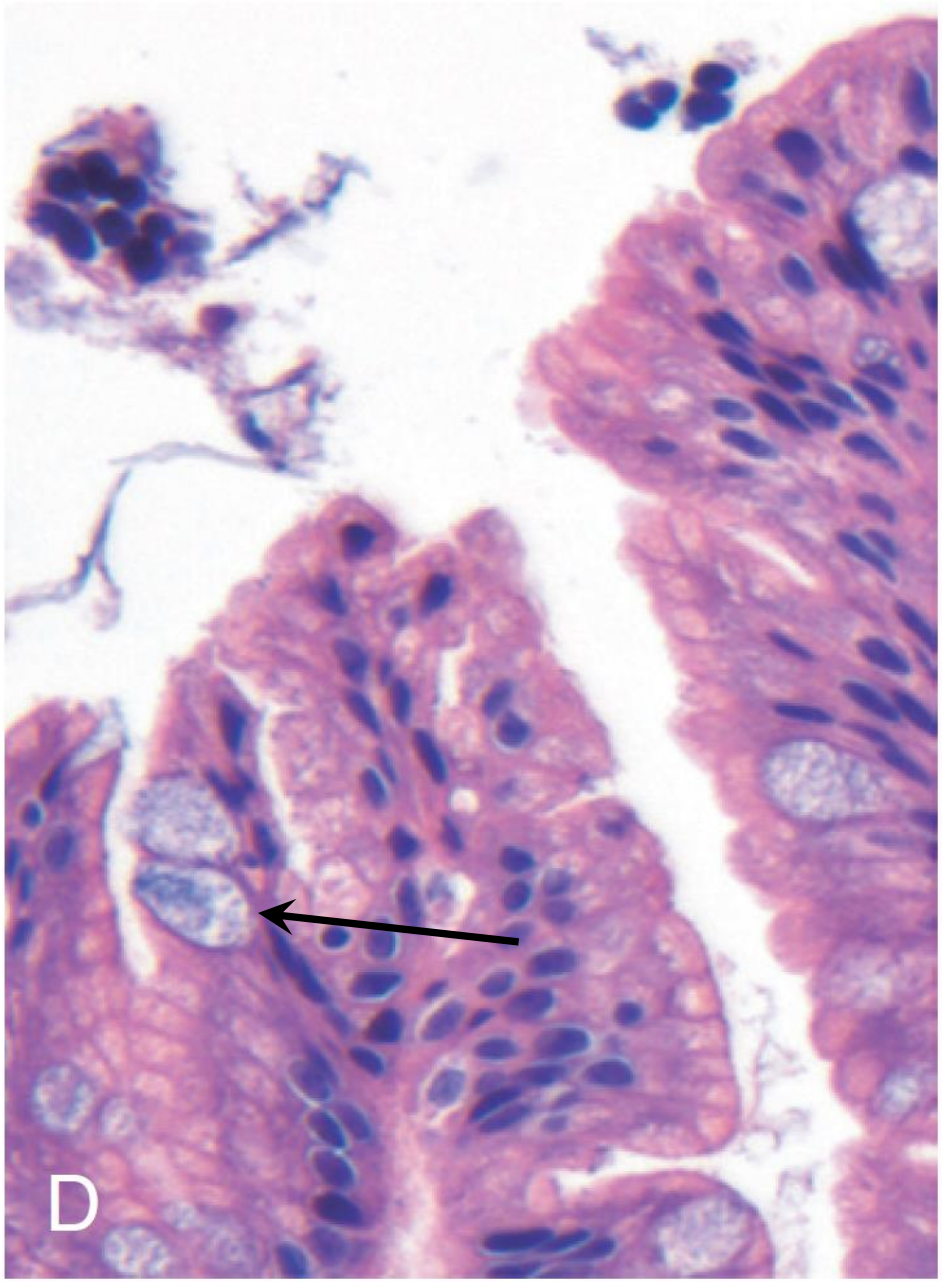




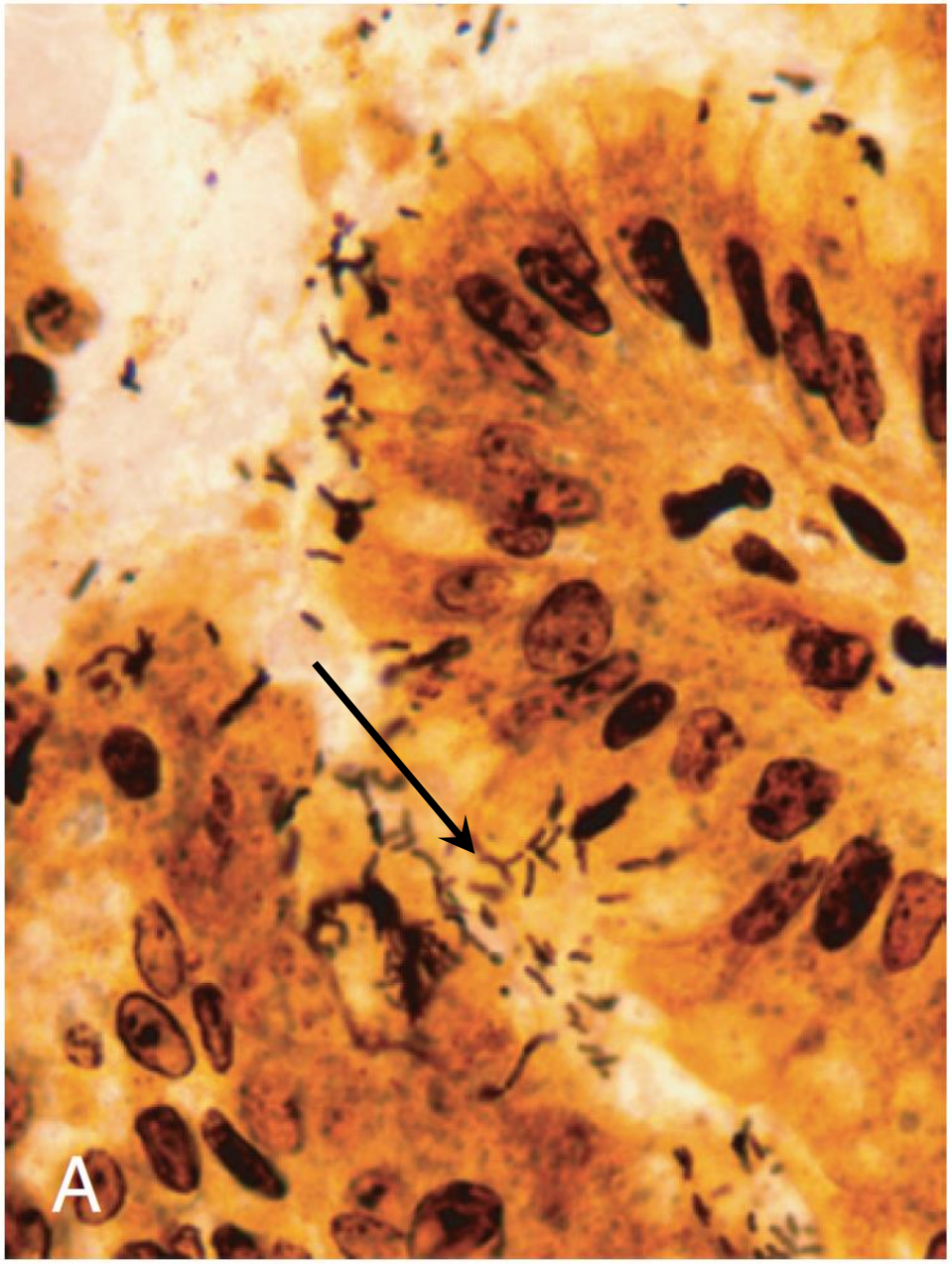


Chronic Gastritis

Intestinal metaplasia

Goblet cells

Increased risk for adenocarcinoma

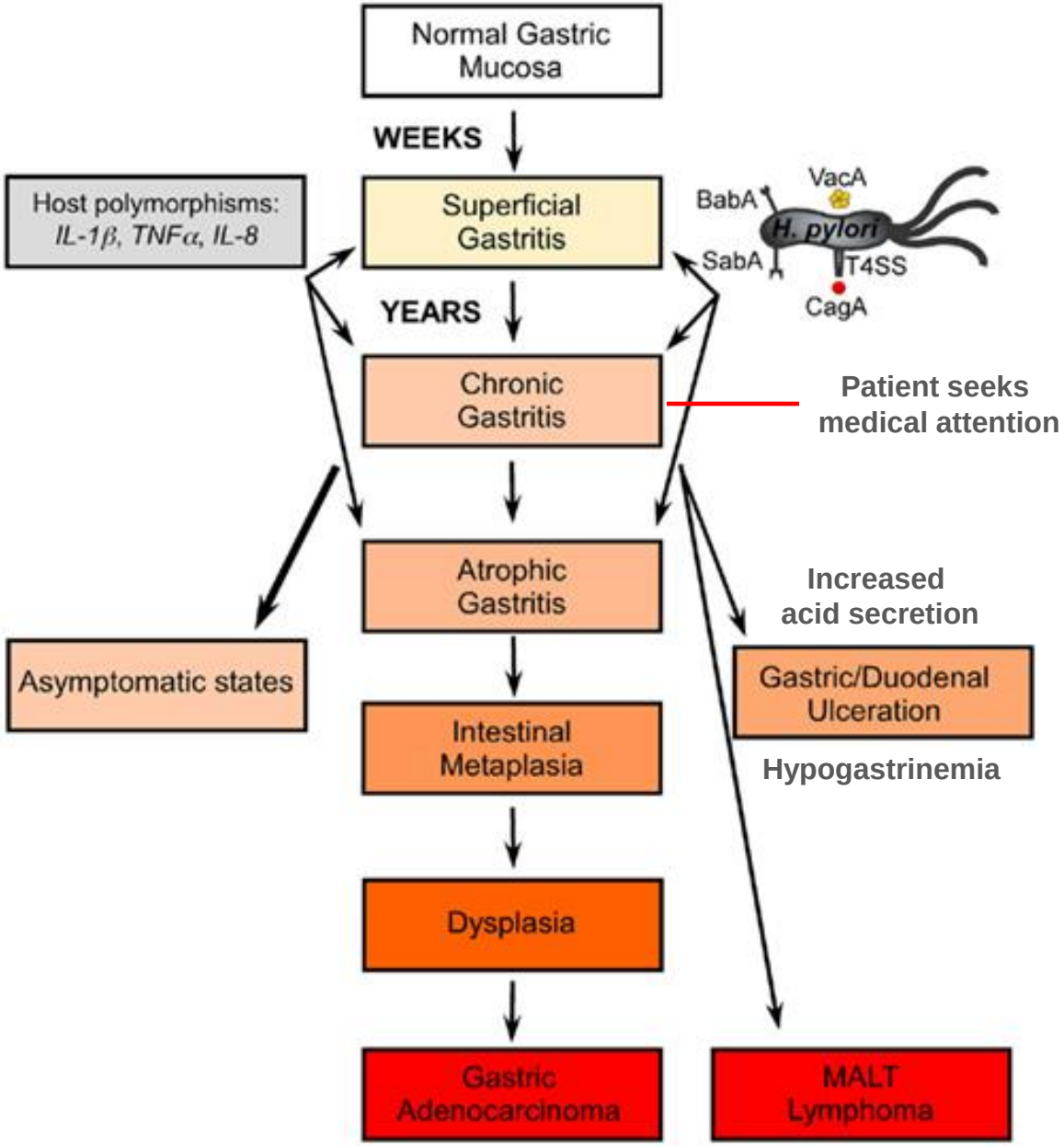


H. pylori Gastritis

Warthin-Starry silver stain

Spiral-shaped or curved bacilli abundant within surface mucus

Tropism for foveolar epithelium

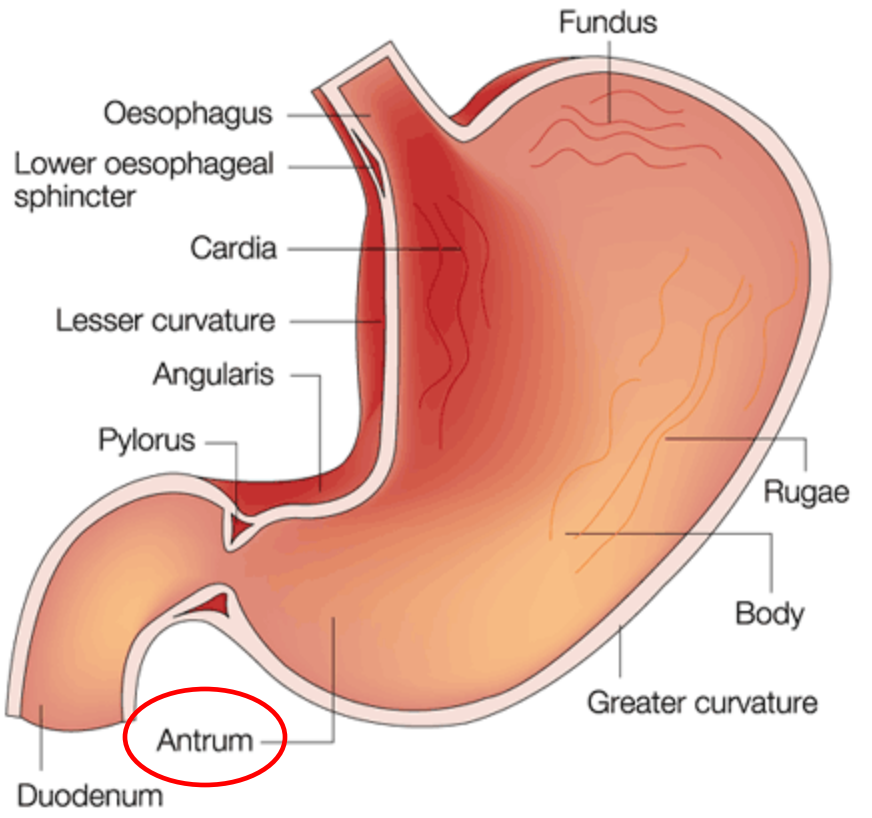


H. pylori Gastritis

Acute: insufficient symptoms to require medical attention

Associated with poor hygiene (poverty, overcrowding…etc.)

Pathogenicity:
- Flagella
- Urease (ammonia pH)
- Adhesins
- Toxins (CagA)



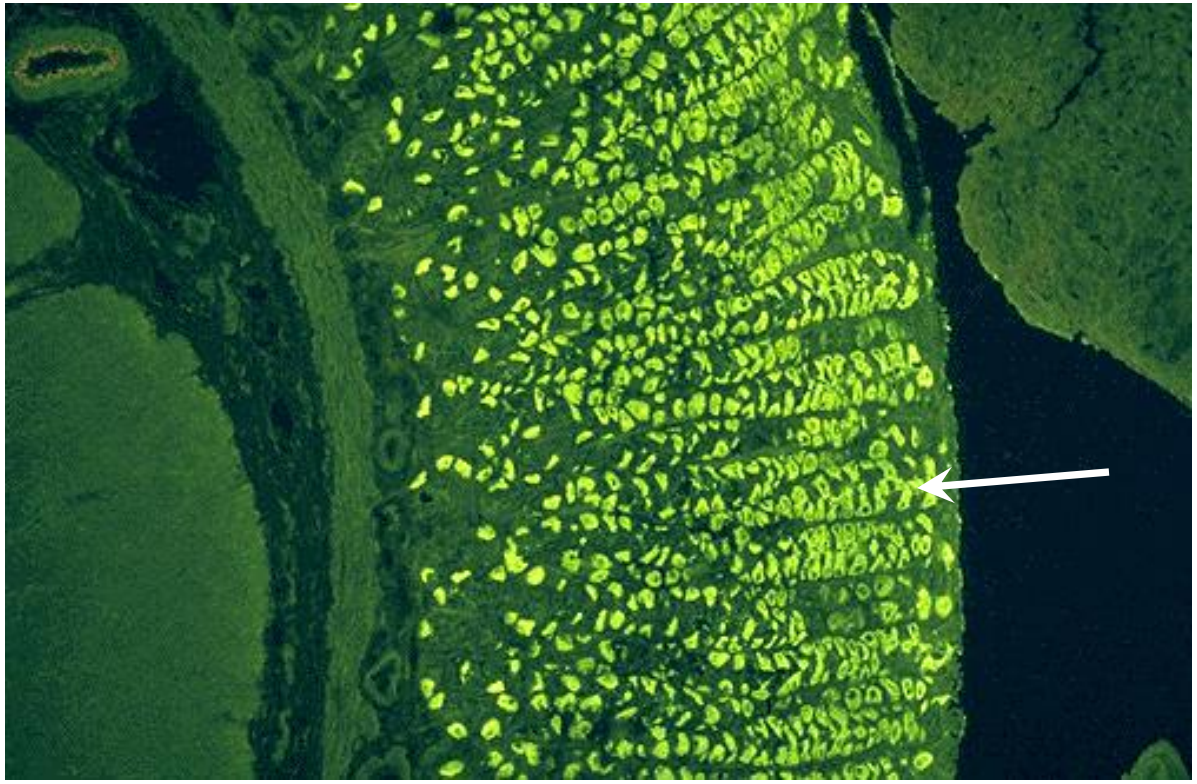
H. pylori Gastritis

Not present in acid producing mucosa of gastric body, duodenum, or areas of intestinal metaplasia

Dx:
- Biopsy antrum
- Serological (Ab)
- Fecal detection
- Urea breath test

Tx:
Antibiotics+PPI

Relapse/reinfection



Autoimmune Gastritis

Antrum spared but with G cell hyperplasia → Hypergastrinemia

Antibodies to parietal cells and intrinsic factor → Achlorhydria & pernicious anemia

Reduced serum pepsinogen I levels (chief cell loss)

Atrophy seen as loss of rugal folds

Autoimmune vs H.pylori Gastritis

Feature	*H. pylori*–Associated	Autoimmune
Location	Antrum	Body
Inflammatory infiltrate	Neutrophils, plasma cells	Lymphocytes, macrophages
Acid production	Increased to slightly decreased	Decreased (achlorhydria*)
Gastrin	Normal to decreased	Increased (hypergastrinemia)
Other lesions	Hyperplastic/inflammatory polyps	Neuroendocrine hyperplasia (antrum)
Serology	Antibodies to *H. pylori*	Antibodies to parietal cells (H^+,K^+-ATPase, intrinsic factor)
Sequelae	Peptic ulcer, adenocarcinoma, lymphoma	Atrophy*, pernicious anemia (B_{12}-IF), adenocarcinoma, carcinoid tumor
Associations	Low socioeconomic status, poverty, residence in rural areas	Autoimmune disease; thyroiditis, diabetes mellitus, Graves disease

*diffuse damage of the oxyntic (acid-producing) mucosa within the body and fundus