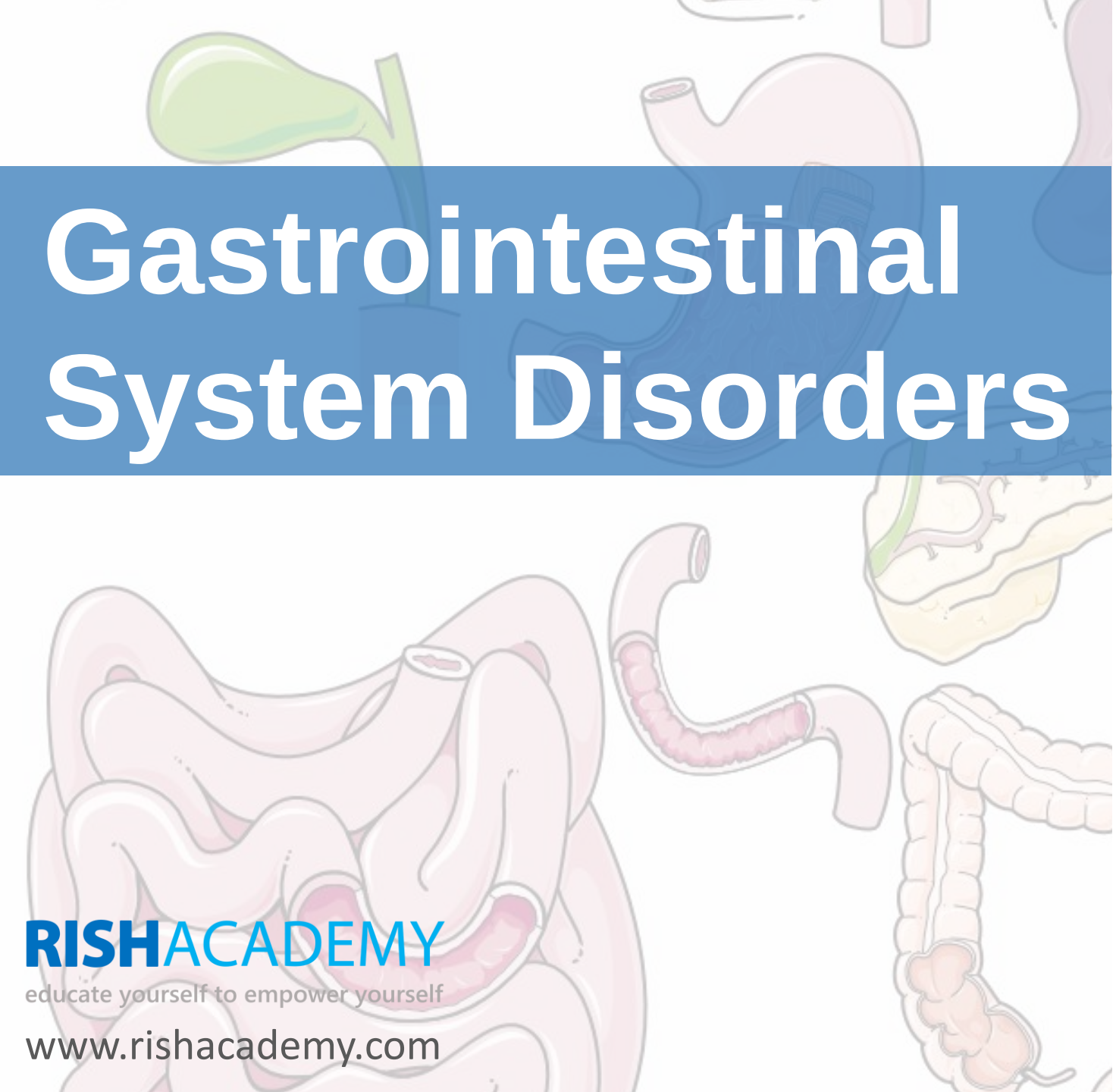
Gastrointestinal System Disorders



Clinical Medicine Flashcards

- Clinical Clues to Diagnosis
- Pathophysiology

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- Abdominal Hernias
- Appendicitis
- Bowel Obstruction
- Celiac Disease
- Cholecystitis
- Colon Cancer
- Crohn’s Disease
- Diverticulosis
- Esophageal Varices
- Gastric Cancer
- Gastritis
- Gastroesophageal Reflux Disease
- Hemorrhoids
- Hepatitis
- Histal Hernia
- Laënnec’s Cirrhosis
- Liver Cancer
- Pancreatic Cancer
- Pancreatitis
- Peptic Ulcer Disease
- Peritonitis
- Ulcerative Colitis

1 Abdominal Hernias

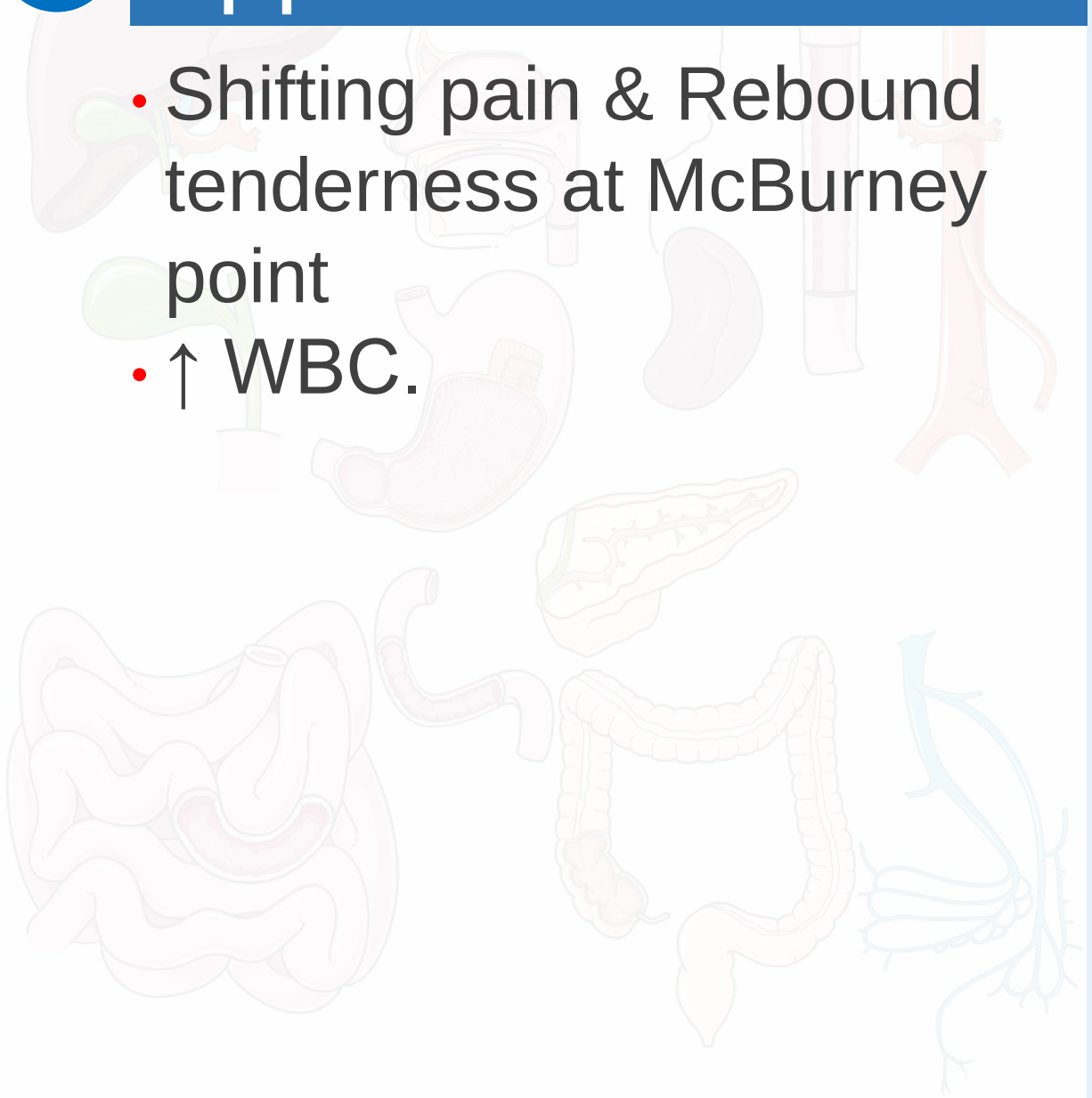
- Abdominal area that bulges out, especially when intra-abdominal pressure is ↑.
- Gentle pressure can cause reduction or popping back of the abdominal contents.

Pathophysiology

- A weakness in the abdominal wall allows the bowel or omentum, along with peritoneal tissue, to herniate outward. Weakened areas include the umbilical area, along the linea alba, incisional areas, and areas that have not completely closed after birth (the inguinal rings).
- Umbilical hernias are caused by incomplete closure of the umbilical orifice and commonly occur in children and obese clients.
- Ventral hernias are caused by weakness in the linea alba and are aggravated by obesity.
- Inguinal hernias are caused in both males and females by incomplete closure of the inguinal rings.
- Incisional hernias occur after underlying muscle is cut and scar tissue forms, weakening the area.

2 Appendicitis

- Shifting pain & Rebound tenderness at McBurney point
- ↑ WBC.

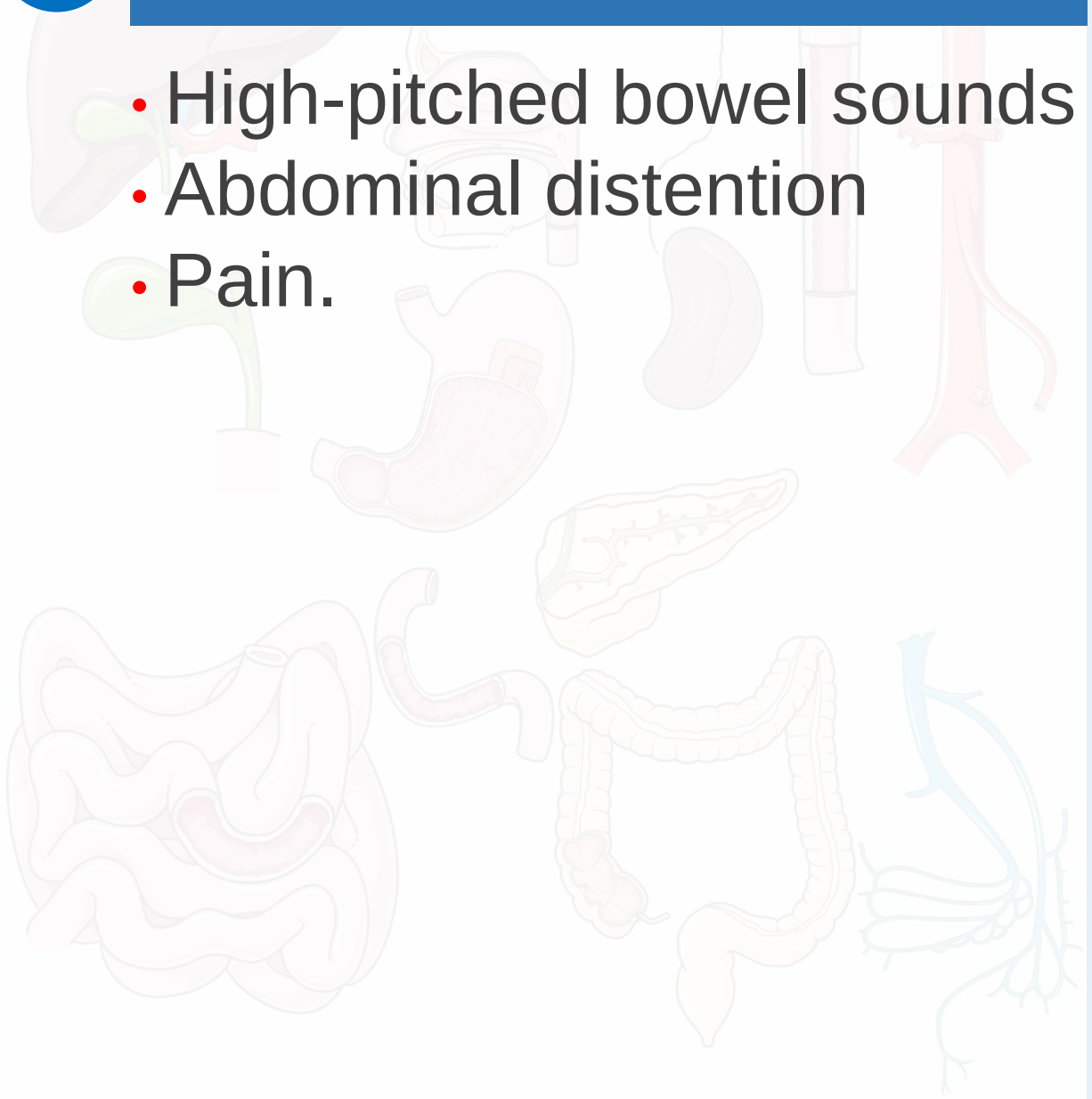


Pathophysiology

- Inflammation of the appendix by obstruction, usually by fecalith. The small stones may enter, causing more inflammation by exerting pressure and abrasiveness on the walls of the appendix.

3 Bowel Obstruction

- High-pitched bowel sounds
- Abdominal distention
- Pain.



Pathophysiology

- Mechanical obstruction occurs when a tumor or hard stool lodges in the intestine or when the bowel twists (volvulus) or telescopes within itself (intussusception). Pressure builds on the walls of the intestine, decreasing perfusion, which can lead to necrosis of the bowel.
- Adhesions from prior abdominal surgeries cause scar tissue causing mechanical obstruction.
- Paralytic obstruction results from a temporary cessation in nerve conduction.

4 Celiac Disease

- Bloating
- Diarrhea
- Rashes
- Anemia
- + Hydrogen breath test
- Malnutrition
- Failure to thrive

Pathophysiology

- Malabsorption disorder caused by antibody response to gluten or gliadin proteins in barley, rye, oats (some), and wheat (BROW) affecting up to 1% of U.S. population.
- Damages small intestinal villi; prevents fat, iron, calcium, and B-vitamin absorption.
- Genetic link that is not well understood, but human leukocyte antigen (HLA), of which the cell surface receptor type protein human leukocyte antigen (HLA-DQ) is one, is found in family members with a high incidence of celiac disease; pediatric and adult clients affected.

5 Cholecystitis

- Right upper quadrant pain that radiates to the right scapula.
- Murphy's sign is present.
- ↑ Amylase and bilirubin.

Pathophysiology

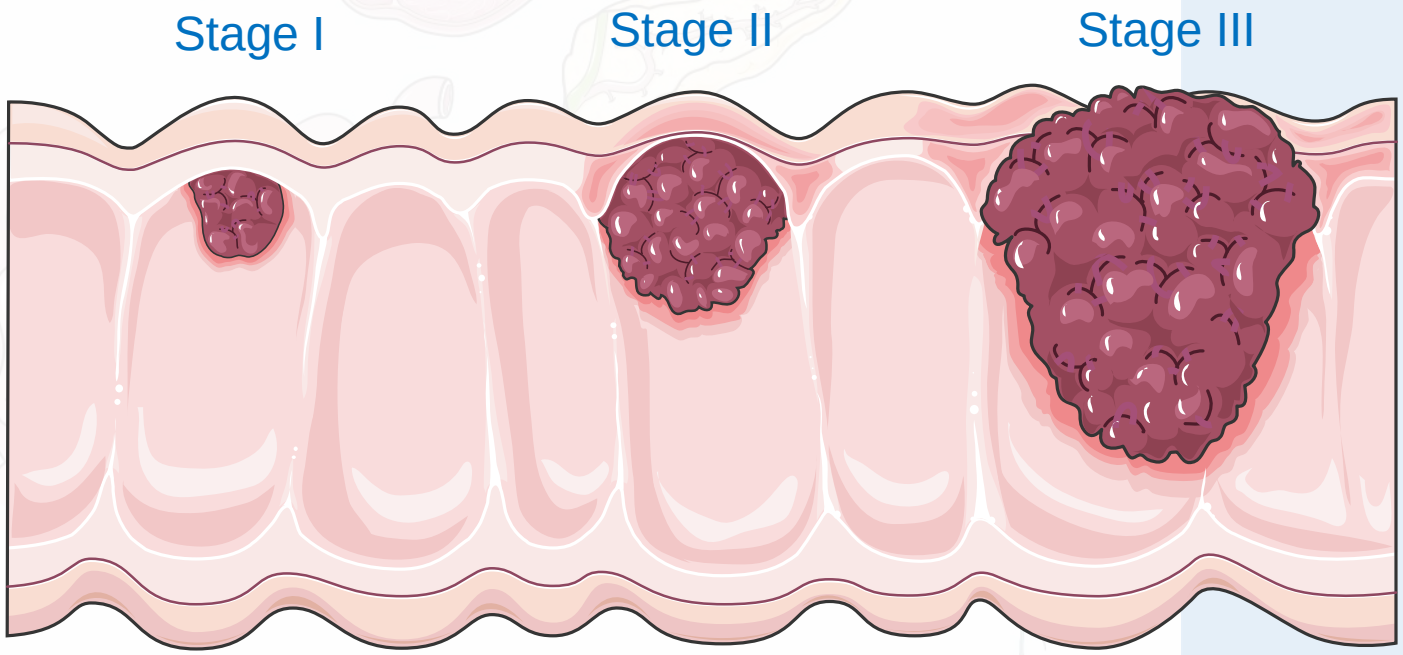
- Presence of gallstones causes mechanical obstruction of bile from the gallbladder. Stasis of bile attracts bacteria, which adds to the inflammation.
- Small gallstones enter the cystic duct and cause severe colicky pain as the duct's peristaltic waves press on the stone.
- The gallbladder becomes fibrotic and does not release bile effectively into the duodenum.
- Pressure of gallstones on the gallbladder walls can cause necrosis.

6 Colon Cancer

- Stool is positive for blood
- Change in bowel habits

Pathophysiology

- Mutation of epithelial cells of the colon from the chronic irritation of inflammatory bowel disease, familial adenomatous polyposis (FAP; early onset of polyps in the colon that become malignant), removal of the gallbladder, increased fat in the diet, and ingestion of carcinogens.



7 Crohn's Disease

- Diarrhea
- Weight loss
- Cobblestone appearance in the small bowel.

Pathophysiology

- Inflammatory bowel disease affecting mostly women from adolescence to the third decade of life.
- Cobblestone appearance of the bowel wall related to interspersed areas of inflammation and healthy tissue; also called regional enteritis.
- Inflammation occurs mainly in the small intestine above the cecum and spreads proximally.
- Affects the submucosa, causing strictures, scarring, fissures, and fistulas.
- Disease involves both genetic and autoimmune factors.
- Crohn's disease affects the entire bowel wall.

8 Diverticulosis

- History of constipation
- Poor bowel habits.

Pathophysiology

- Small herniations of the sigmoid and descending colon that occur when pressure within the bowel and abdomen is high.
- Related to poor bowel habits, constipation, and straining at stool.
- When diverticula become inflamed by seeds or other residue entering them, diverticulitis results.

9 Esophageal Varices

- Oral hemorrhage in the presence of portal hypertension.

Pathophysiology

- Dilation of the veins of the esophagus occurs related to portal hypertension from chronic liver disease.
- The walls of the veins become thin and can spontaneously rupture and cause massive bleeding.
- Ingestion of fibrous or fried foods can scratch and rupture the varices.

10 Gastric Cancer

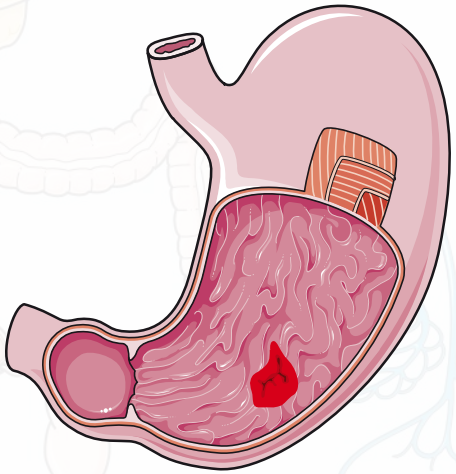
- Indigestion
- Anorexia
- Weight loss
- Nausea &Vomiting
- Pain relieved by antacids
- Anemia
- Melena

Pathophysiology

- Epithelial cells undergo mutation related to chronic irritation or exposure to carcinogens. Cells that are damaged must be replaced. The chance of a mutation occurring is proportional to the rate of new cell growth.
- Implicated causes are chronic or autoimmune gastritis; exposure to lead dust, grain dust, glycol ethers, or leaded gasoline; or a diet high in smoked fish or meats.

11 Gastritis

- Epigastric burning or discomfort associated with
  - Tobacco use
  - Alcohol ingestion
  - Stress
  - NSAID use.

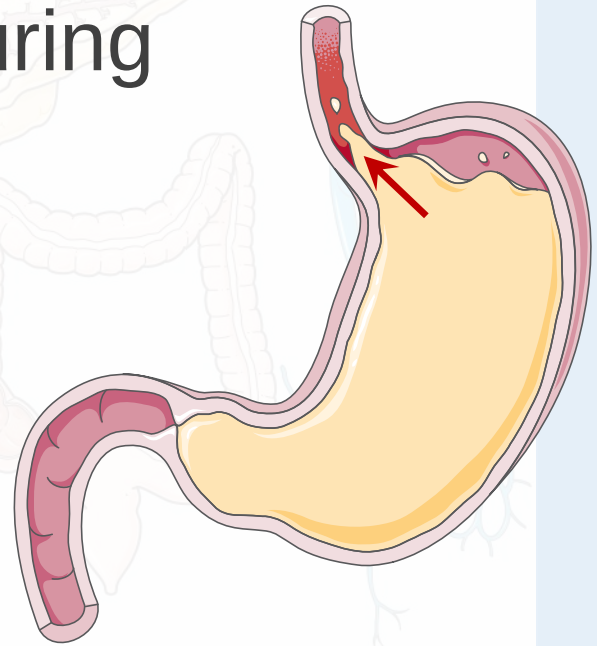


Pathophysiology

- Gastric mucus forms a physical and chemical barrier, protecting the epithelial cells lining the stomach and trapping bicarbonate between the mucus and the cells.
- Hydrogen production outpaces bicarbonate production during physiologic or psychological stress.
- Common gastric irritants include alcohol, stress, tobacco, caffeine, NSAIDs, Helicobacter pylori (H. pylori) bacteria, and shock.

12 Gastroesophageal Reflux Disease (GERD)

- Chest pain or severe burning occurring within an hour of eating.
- Discomfort is worse when lying down after meals and may occur during the night.



Pathophysiology

- Meals that are large, high-fat, spicy, or consumed concurrently with alcohol cause relaxation of the lower esophageal sphincter, allowing hydrochloric acid and pepsin present in gastric contents to reflux, or pass back, into the esophagus.
- The esophagus is easily damaged by acidic gastric contents, resulting in inflammation, edema, and scarring over time.

13 Hemorrhoids

- History of constipation
  Frank blood on the stool
- Painful anal lesions

Pathophysiology

- Varicosities of the veins of the anus related to increased intra-abdominal pressure.
- Occur during pregnancy as the weight of the fetus compresses the inferior vena cava, causing congestion of the veins in the anus (as well as the legs).
- Poor bowel habits and constipation contribute to the etiology.
- Internal hemorrhoids occur above the internal sphincter; external hemorrhoids occur below the external sphincter.

14 Hepatitis

- Lethargy & Malaise
- Low-grade fever
- Right upper quadrant pain
- Jaundice
- Elevated ALT & AST levels
- Headache
- Anorexia

Pathophysiology

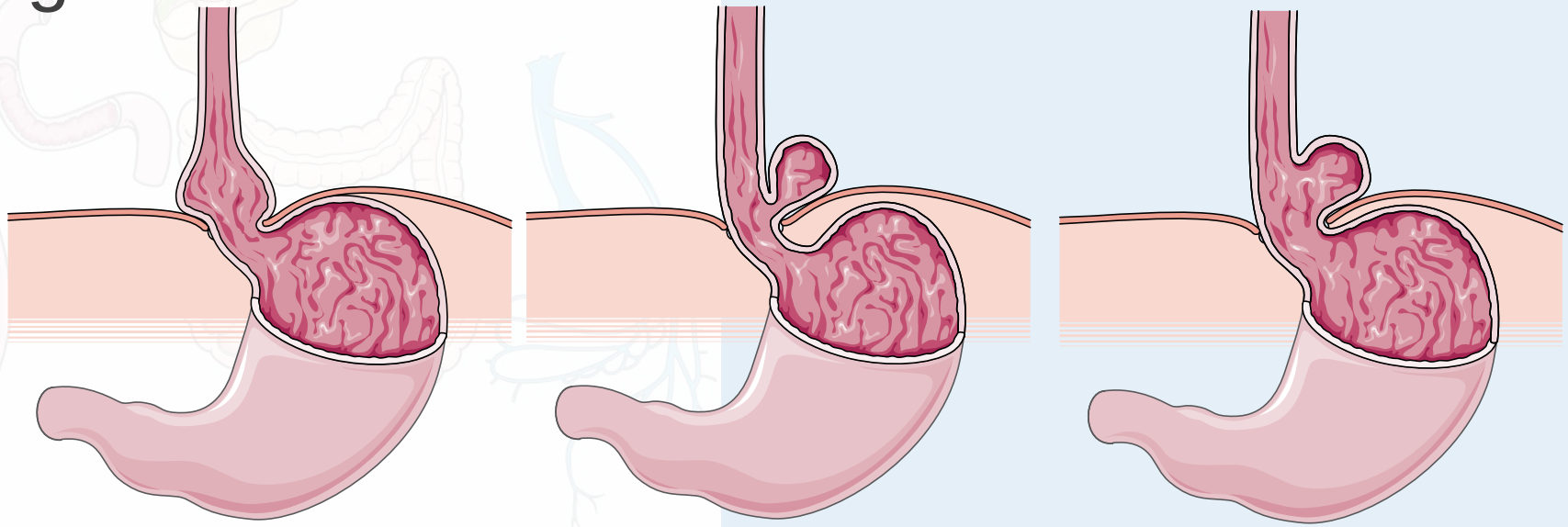
- Inflammation of the liver caused by direct cellular injury and secondary injury by the immune response; those with a lesser immune response may become carriers rather than infected.
- Hepatitis A (HAV): Spread by the oral-fecal route.
- Hepatitis B (HBV; often coexistent with hepatitis D [HDV]): Spread by blood and body fluids.
- Hepatitis C (HCV): Spread by contact with contaminated blood, IV drug use, unprotected sex.
- Hepatitis E (HEV): Spread by contaminated water.

15 Hiatal Hernia

- Burning
- Chest pain
- Heartburn,
- Dysphagia
- GERD
- A feeling of fullness.

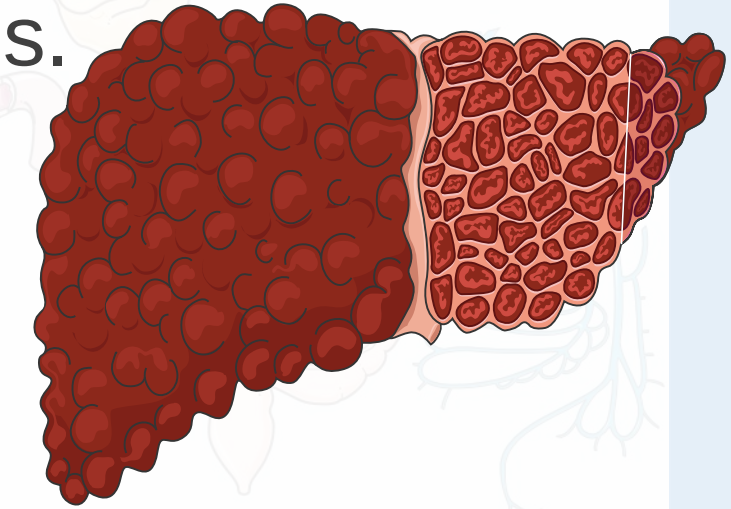
Pathophysiology

- A weakness in the hiatus of the diaphragm coupled with intra-abdominal pressure forcing protrusion of the stomach and esophagus upward through the hiatus.
- Hiatal hernias include the “sliding” type and the “rolling” type.



16 Laënnec's Cirrhosis

- Chronic condition associated with alcohol consumption.
- Elevated ALT & AST
- Ascites
- Edema in the lower extremities.



Pathophysiology

- Chronic heavy consumption of alcohol causes inflammation of the cells of the liver.
- Fatty infiltration of the liver occurs related to decrease in fatty acid oxidation and increase in gluconeogenesis. The liver enlarges first.
- The stellate cells to produce fibrous connective tissue and becomes resistant to blood flow from the portal vein; portal hypertension and ascites result.

17 Liver Cancer

- Elevated ALT & AST
- Ascites
- Edema in the lower extremities
- High bilirubin levels

Pathophysiology

- Chronic irritation of hepatocytes or surrounding parenchyma causes mutation of cells.
- The liver is a common site of mastastasis.

18 Pancreatic Cancer

- Weight loss
- Anorexia
- ↑ amylase, lipase, and bilirubin.
- ↑ vitamin D intake may be preventative.

Pathophysiology

- Mutation of cells in the pancreas occurs from genetic factors or chronic irritation.
- Tumors are most commonly found in the head of the pancreas and are large.
- Metastasis by direct extension to the stomach, gallbladder, liver, and duodenum occurs rapidly.
- Tumors in the body of the pancreas metastasize rapidly via blood and lymph.

19 Pancreatitis

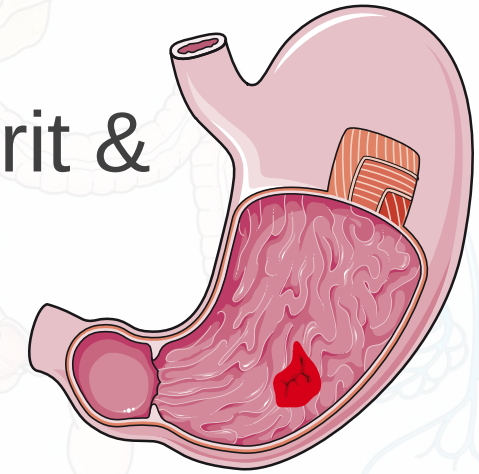
- Severe midline abdominal pain that radiates to the flank, spine & back
- Pain worsening with extension of the legs or ingestion of food.
- Elevated ALT & AST, amylase, lipase & glucose

Pathophysiology

- The outlet of the pancreas may become blocked due to inflammation, mechanically (gallstones), or by the digestive enzymes being prematurely activated while they are still in the pancreas.
- Protease causes dilation and permeability of the capillaries, allowing fluid to move from the pancreas to the retroperitoneal space. If fluid loss is severe, shock may occur.
- Protease initiates a chain reaction of inflammation that results in conversion of prothrombin to thrombin, causing DIC.

20 Peptic Ulcer Disease

- Gnawing, burning pain in either the midepigastric area 2–4 hours after meals or the left epigastric area with meals.
- Weight loss and presence of melena.
- Low hematocrit & hemoglobin



Pathophysiology

- Eighty percent of all peptic ulcer disease is caused by Helicobacter pylori (H.pylori) infection that causes inflammation and erosion of the mucosal barrier in the stomach.
- Gastric mucus provides a physical and chemical barrier, protecting the epithelial cells lining the stomach and trapping bicarbonate between the mucus and the cells.
- Hydrogen production outpaces bicarbonate production during physiologic or psychological stress.
- Common gastric irritants or contributors to gastritis include alcohol, stress, tobacco, NSAIDs, H. pylori bacteria, and shock.

21 Peritonitis

- Rebound tenderness & rigidity over the abdominal wall.
- Decreased bowel sounds.

Pathophysiology

- Inflammation of the sterile peritoneal cavity by introduction of bacteria via invasive procedures, open bowel surgeries, or perforation of intraabdominal organs whose normal flora contain bacteria.

22 Ulcerative Colitis

- Daily passage of six or more bloody mucus stools associated with abdominal pain.

Pathophysiology

- Inflammation and hemorrhage in small areas of the mucosal layer of the colon cause abscesses to form (crypt abscesses). The necrotic areas slough off, causing ulcer formation that extends to the submucosal layer of the bowel.
- Blood in the colon causes hypertonicity of the bowel contents and acts as a laxative.
- Pseudopolyps (ragged edges of the mucosal layer).
- Incidence is greatest in the second, third, and sixth decades of life, a genetic link exists; probable autoimmune disease.
- Lesions begin in the rectum and spread proximally.