

# GIT Pathology OSPE

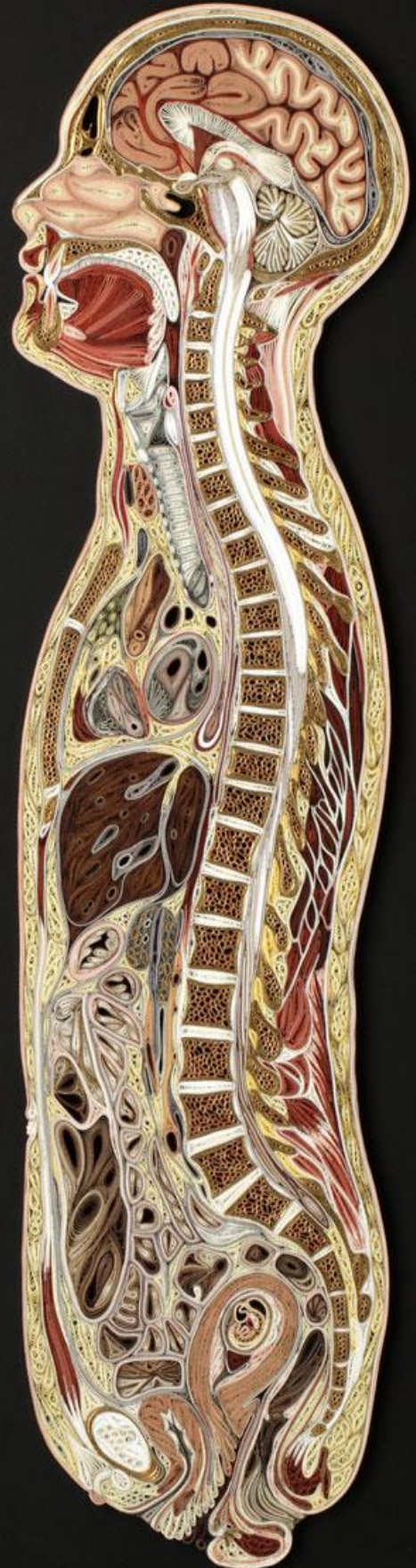
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3. Barrett's esophagus
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5. Acute gastritis
6. Chronic gastritis
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8. Acute gastric ulcer
9. Chronic gastric ulcer
10. Carcinoma of the stomach
11. Small intestinal infarction & ischemic enteritis
12. Chronic duodenal ulcer & difference from gastric ulcer.
13. Celiac disease
14. Carcinoid tumor of small intestine
15. Crohn's disease
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20. Hepatic cirrhosis
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24. Acute pancreatitis
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26. Pancreatic adenocarcinoma

Blue = Doctor's notes "important"

RED = IMPORTANT

GREY = EXTRA



# 1. PLEOMORPHIC ADENOMA

**Definition:** Common benign salivary gland neoplasm.

**Clinical features:** Painless, slow-growing, mobile, discrete masses within the parotid or submandibular areas or in the buccal cavity.

**Recurrence rate:** (perhaps months to years later) with parotidectomy is about 4% but, with simple enucleation approaches 25%.

1-Prognosis is good “benign tumor”

2-Rare malignant transformation

3-Recurrence is high

## Gross

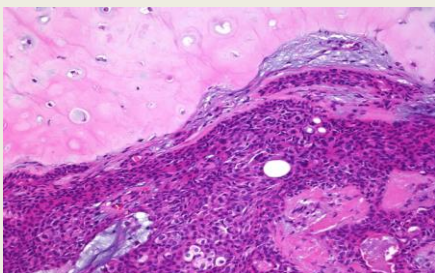
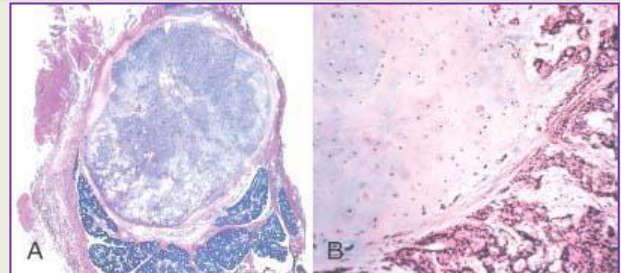
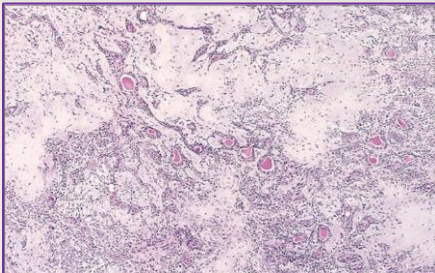


- 1.Parotid gland enlargement



- 1.Circumscribed capsulated lesion
- 2.Pale blue area
- 3.Hemorrhagic area

## Microscopic



- 1.Fibromegsoid stroma “pale blue”
- 2.Epithelium and myepithelium cells proliferation
- 3.Capsule



## 2. GASTROESOPHAGEAL REFLUX DISEASE (GERD)

**Definition:** Occurs when the amount of **gastric juices** that refluxes into the esophagus **exceeds** the normal limit.

**Clinical features:** **Heartburn, regurgitation and dysphagia.**

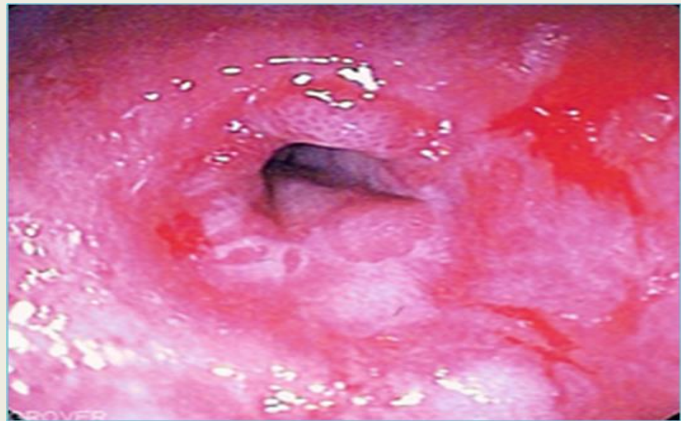
**Causes:** Increase of **abdominal pressure** and decrease of **lower esophageal sphincter tone.**

**Complications:** Erosive esophagitis, stricture and **Barrett's esophagus.**

**Treatment:** - H2 receptor Blockers. - **Proton pump inhibitors.** - Antireflux surgery.

### Gross

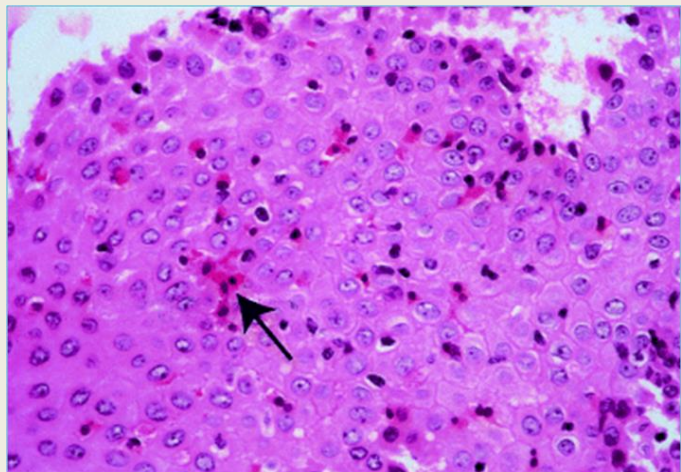
Endoscopy view for the junction of stomach and esophagus showing esophagitis.



1. **Necrosis** of esophageal epithelium.
2. **Ulcers.**

### Microscopic

1. Intraepithelial eosinophils
2. Basal cells hyperplasia



# 3. BARRETT'S ESOPHAGUS

**Definition:** **Intestinal metaplasia** of the esophageal **mucosa** from stratified squamous epithelium into non ciliated columnar epithelium with goblet cells. **Most of adenocarcinomas** arising in the esophagus arise from **previously existing BARRETT's**.  
**Clinical features:** **No specific symptoms** and patient may have symptoms like GERD.  
**Pathogenesis:** **Acid damages** lining of esophagus and causes **chronic esophagitis** → Damaged area tries to **heal** in a **metaplastic process** → **Damaged squamous cells are replaced by metaplastic columnar cells** defined by the presence of **goblet cells** (intestinal metaplasia).  
**Risk factors:** **Male, smoker, age and obese.**

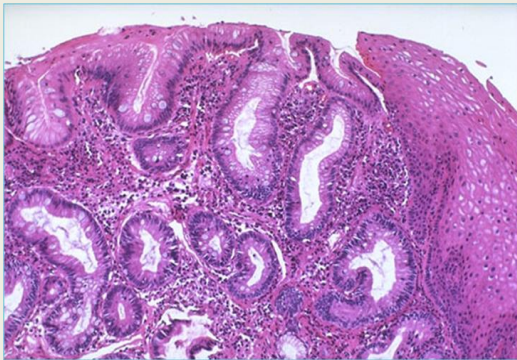
## Gross



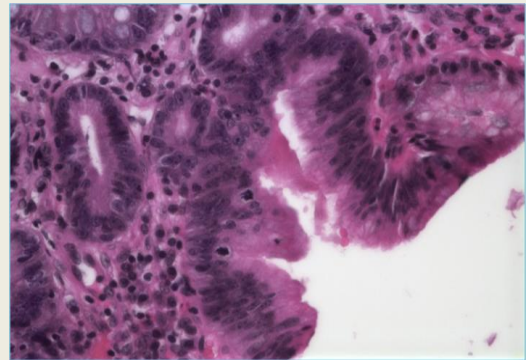
1-Hyperemic and irregular esophageal mucosa

2-red spots

## Microscopic



1. Intestinal metaplasia “present of goblet cells”  
2-Negative dysplasia



1. **Dysplasia** “hyperchromasia, irregular crowded glands and mitosis  
2-Goblet cells

Risk factor “adenocarcinoma”



# 4. CARCINOMA OF THE ESOPHAGUS “important”

**Definition:** Cancer arising from the esophagus, either squamous cell carcinoma or adenocarcinoma.

**Clinical features:** Dysphagia, weight loss, hoarse voice, enlarged lymph nodes, dry cough, hematemesis.

**Complications:** Metastasis to other organs.

**Gene associated:** RHBDF2 (Palmoplantar keratoderma)

**Squamous cell carcinoma risk factor:** 1-Smoking 2-Injury 3-Drinking alcohol 4-Fungal infection

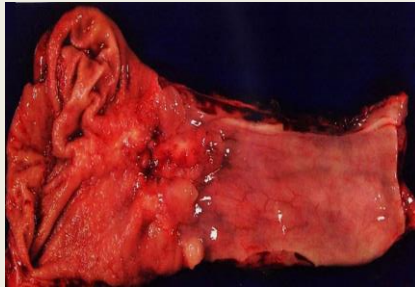
**Treatment:** Surgical removal, radiotherapy.

**Bad prognosis**

## Gross



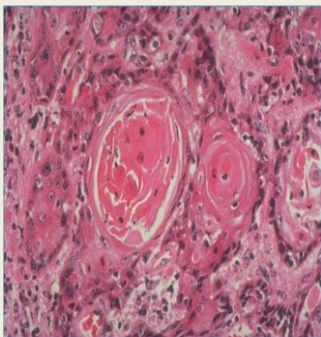
- 1-Fungating large tumor in the cavity of esophagus
- 2-Paraesophageal lymph nodes show metastasis



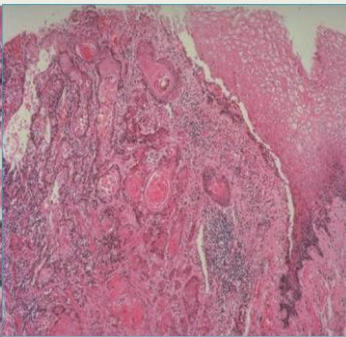
- 1-Midesophageal ulcerated mass



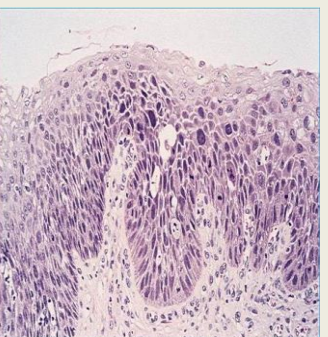
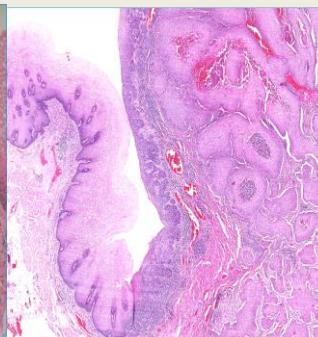
## Microscopic



- 1-Malignant nests of squamous cells invade lamina propria
- 2-Keratinization



- 1-Dysplasia with invasive carcinoma



- 1-Dysplastic squamous epithelium with no basement membrane invasion “carcinoma in situ”

# 5. ACUTE GASTRITIS

**Definition:** Inflammation of the lining of the stomach.

**Clinical features:** Epigastric pain, Nausea Vomiting, melena, Loss of appetite  
Unexplained weight loss, hematemesis.

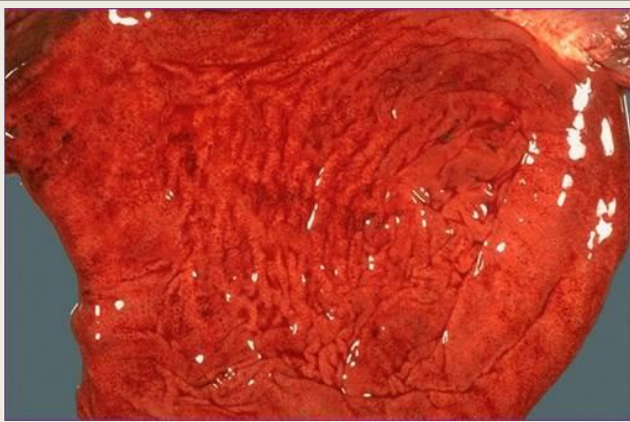
**Causes:** NSAIDs, corticosteroids, alcohol, major surgery, kidney failure, liver failure, respiratory failure

**Risk factors:** Alcoholism, extreme stress, bile reflux, autoimmune diseases.

**Complications:** stomach ulcers and stomach bleeding. And rarely increase the risk of stomach cancer.

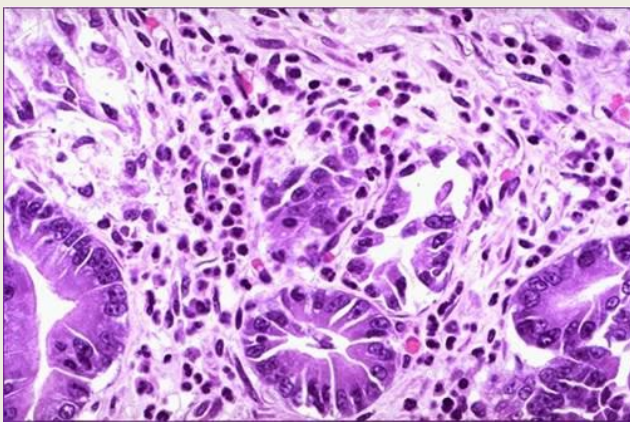
**Treatment:** Treatment of the 1ry cause, antacids, and PPIs.

## Gross



1-Hyperemic and many red spots in the mucosa of stomach

## Microscopic



1-Neutrophils “active gastritis”

# 6. CHRONIC GASTRITIS

The symptoms and signs associated with chronic gastritis typically are less severe but more persistent than those of acute gastritis

**Symptoms:** Nausea and upper abdominal discomfort may occur, sometimes with vomiting.

**Causes:**

- Autoimmune gastritis
- Atrophic gastritis
- H. pylori infection**
- Radiation injury
- Chronic bile reflux.

## Microscopic





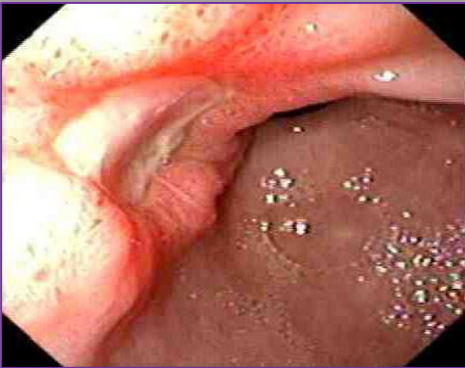
# 7. GASTRITIS: HELICOBACTER-INDUCED

**Causes:** Infection with *Helicobacter pylori*

**Complications:** lymphoma and carcinoma

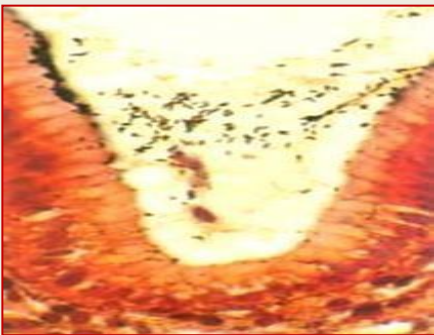
**Stain used:** Giemsa stain, Silver stain and methylene blue stain.

## Gross



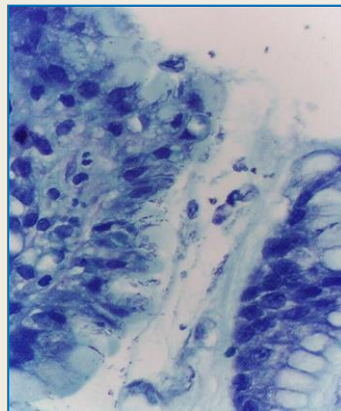
Peptic ulcer

## Microscopic



1. Silver stain

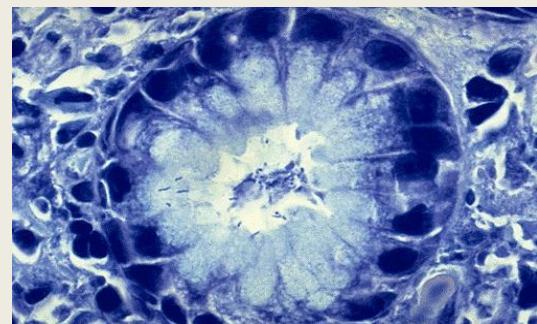
2. A lot of *H. pylori*



1. Giemsa stain

2. A lot of *H. pylori*

3. Small curved structure





# 8. ACUTE GASTRIC ULCER “not important”

**Definition:** it's an ulcer in the lining of the stomach or first part of duodenum. In contrast of erosion, muscularis mucosa is intact in ulcer.

**Clinical features:** Epigastric pain, Burning sensation,

**Causes:**

-Extreme hyperacidity.

**-H.Pylori infection (80%)**

-As a complication of severe stress response e.g.: Curling's ulcer, Stress ulcer or Cushing's ulcer.

-As part of an acute gastritis e.g.: Chemical injury **NSAIDs-induced** ulcer

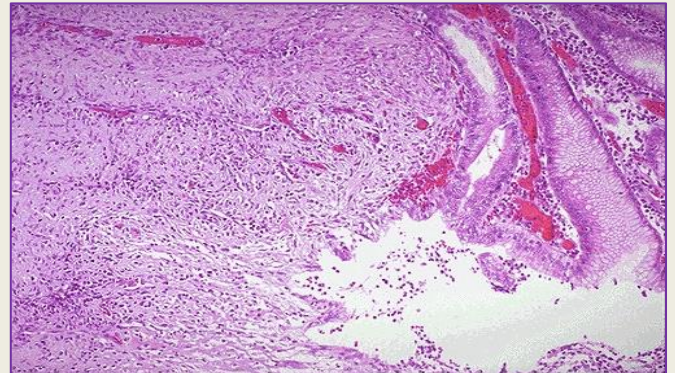
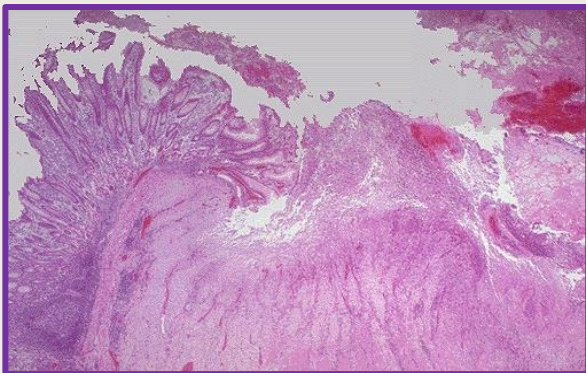
**Complications:** Hemorrhage, Penetration, Perforation> Peritonitis, Fibrous stricture or iron deficiency anemia.

## Gross



Gastric Ulcer

## Microscopic



1. Ulcer and loss of epithelium lining.
2. Exudate
3. Granulation tissue
4. Fibrosis
5. Scar formation

# 9. CHRONIC GASTRIC ULCER “not important”

**Peptic ulcer disease:** Most often associated with **H.Pylori infection** or **NSAIDs use**. Usually **solitary**. Affects adults.

**Types:** Gastric, Duodenal or Esophageal (GERD)

**Causes:** Imbalance between mucosal defense and aggressive factors

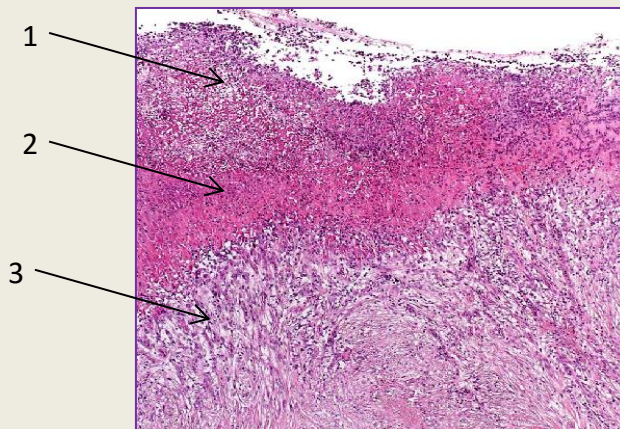
**Complications:**

- Rupture lead to bleeding from **gastroduodenal artery**
- Acute pancreatitis
- Iron deficiency anemia
- Frank hemorrhage
- Perforation

## Gross



## Microscopic



1. Ulcer and loss of epithelium lining.
2. Exudate
3. Granulation tissue
4. Fibrosis
5. Scar formation

# 10. GASTRIC ADENOCARCINOMA

- **Adenocarcinoma: is mucin producing tumor**

- Adenocarcinoma is the most common malignancy of the stomach.

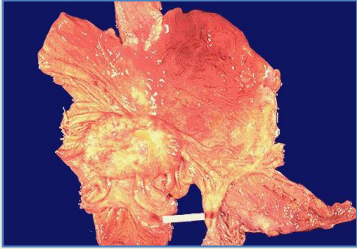
- **Causes:**

- ✓ Mutations e.g.: CDH1

- ✓ H.Pylori: chronic gastritis.

- ✓ EBV: 10% of the cases.

## Gross



### Intestinal type

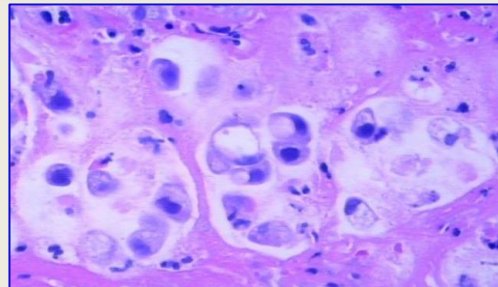
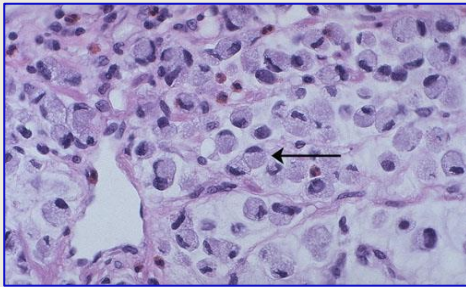
- 1-Invasive localized tumor
- 2-Malignant ulcer



### Diffuse type

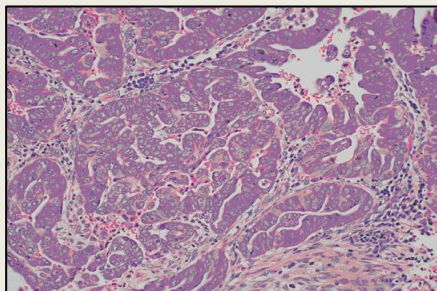
- 1-Tumor involve the whole wall of the stomach “Linitis Plastica”

## Microscopic



### Diffuse type

- 1.Malignant signet ring tumor cell
- 2-Mucin



### Intestinal type

- 1.Crowded irregular malignant glands invade the wall of stomach



# 11. SMALL INTESTINAL INFARCTION & ISCHEMIC ENTERITIS

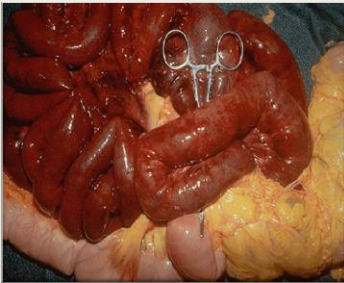
In small intestine there is **extensive anastomosing arterial blood supply** and **extensive venous drainage** making it more difficult to infarct.

Main cause is: **Adhesion between the loops typically following abdominal surgery** See image A.  
More diffuse adhesions may also form following **peritonitis**.



Image A

## Gross

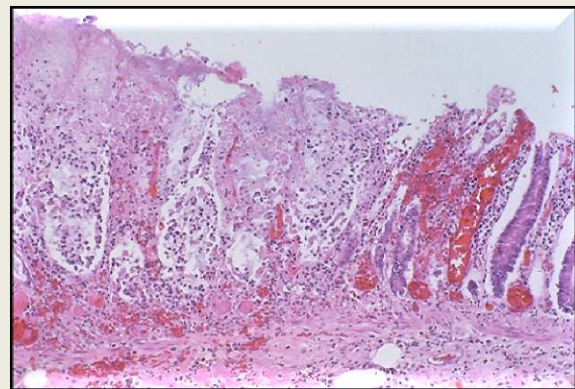
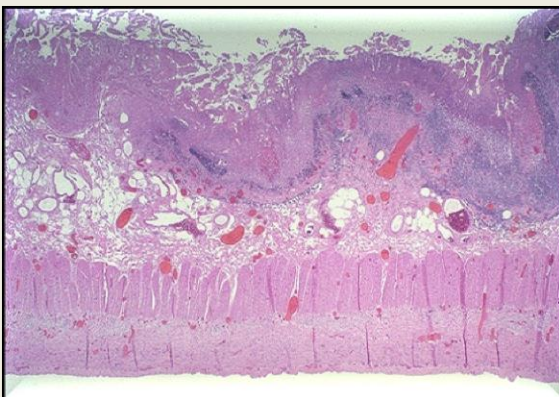


Gangrenous



1. Ischemic necrosis
2. hyperemia

## Microscopic



1. Coagulative **necrosis** of the villi replaced by inflammatory cells and **fibrin**

# 12. CHRONIC DUODENAL ULCER & DIFFERENCE FROM GASTRIC ULCER. "Not important"

Gastric ulcer	Duodenal ulcer
Breakdown of mucosal defense	Increased production of Acid "Increase aggressive factors"
Causes: H.Pylori 75% (major cause) NSAIDs (2 <sup>nd</sup> major cause)	Causes: H.Pylori 95%. Zollinger-Ellison syndrome (rarely).
Worsens with meals	Relives with meals
Treatment: H.Pylori eradication (antibodies) PPI & H2 Blockers	

## Gross

Duodenal Ulcer (DU)



Gastric Ulcer (GU)



Ulcer

# 13. Celiac disease “Important”

**Definition:** An immune reaction to **gliadin** fraction of the wheat protein gluten in genetically predisposed people.

**Clinical features:** Celiac disease most often becomes apparent either in infancy, or in young to middle age adults.

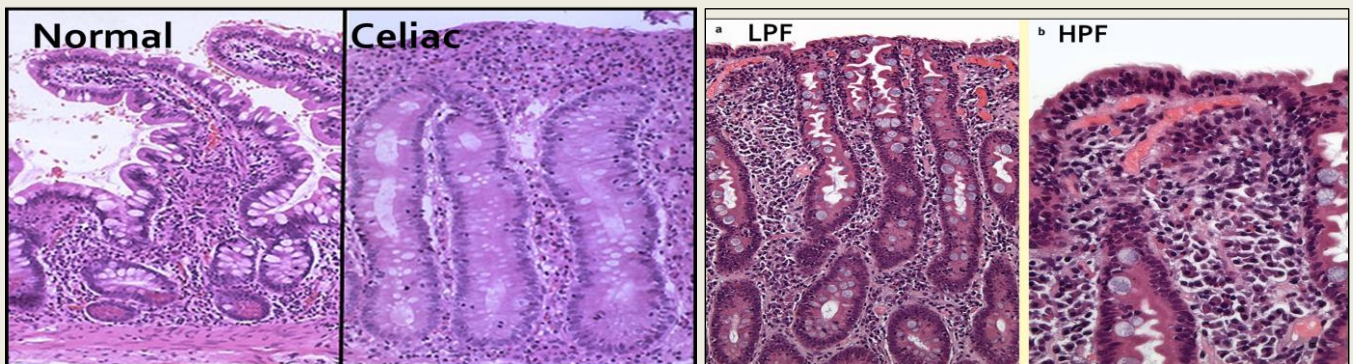
**Complications:** Anemia, osteoporosis, infertility in women, delayed puberty.

**Treatment:** Lifelong gluten-free diet.

**Diagnosis:**

- Serology: **anti-endomysial antibodies.**
- **Biopsy is taken from small intestine**

## Microscopic



1. Atrophy
2. Intraepithelial lymphocytosis
3. Hyperplasia
4. Blunting & flattening of villi



# 14. CARCINOID TUMOR OF SMALL INTESTINE

**Definition:** Neoplasms of the small intestine are uncommon. Benign tumors can include leiomyomas, fibromas, neurofibromas, and lipomas.

**Clinical features:** Benign tumors and can be malignant prognosis depends on the behavior of tumor.

**Stain used:** *Synaptophysin immunohistochemical stain (IHC stain)*, positive result confirms the neuroendocrine nature of this neoplasm. Electron microscope (EM) will show neurosecretory granules in the cytoplasm.

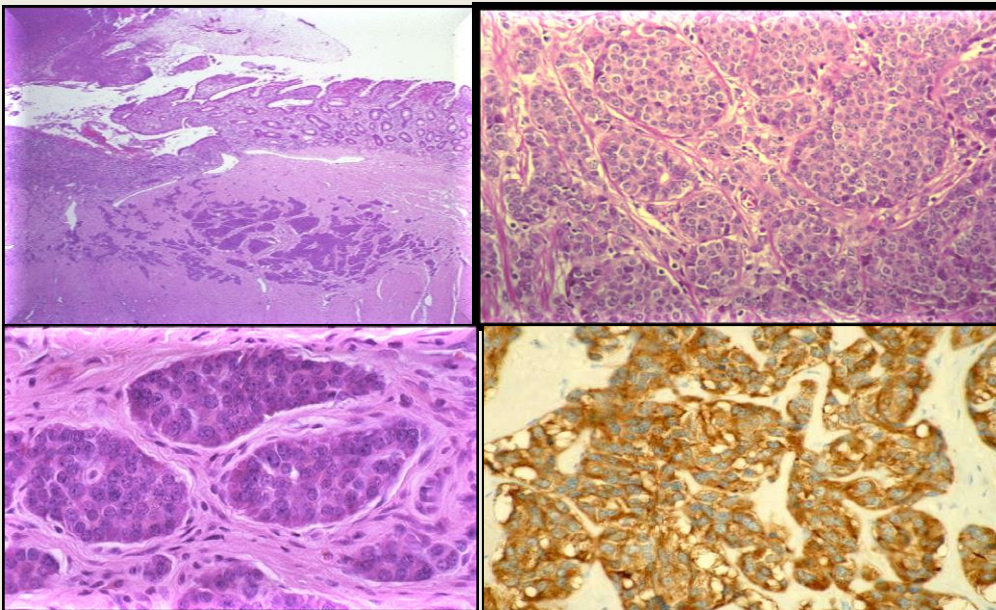
**Uncommon in small intestine and common and appendix**

## Gross



1. Well circumscribed tumor

## Microscopic



1. Nests of neuroendocrine cells
2. Uniform round cell
3. Salt and paper chromatin

# 15. CROHN'S DISEASE

**Definition:** A chronic inflammatory disorder that most commonly affects the **ileum** and **colon** but has the potential to involve any part of the gastrointestinal tract from the **mouth to the anus**.

**Clinical features:**

Acute phase	Chronic disease
Fever diarrhea right lower quadrant pain	Remissions and relapses over a long period of time.

**Causes:** Still not clear, but they probably have an **immunologic hypersensitivity basis**.

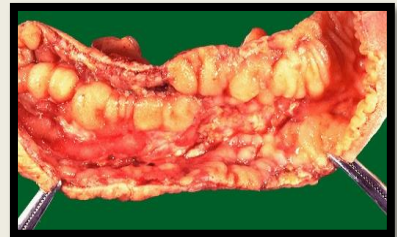
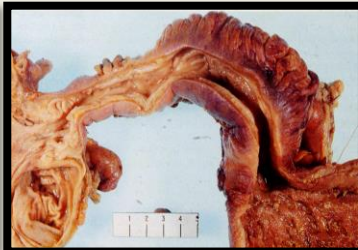
**Complications:** 1. Intestinal obstruction 2. **Fistula** formation 3. Extraintestinal manifestations (arthritis and uveitis).

**Gene associated:** (**HLA-5 6 B27 association**)

**Stain used:** H&E

**Treatment:** immunosuppression

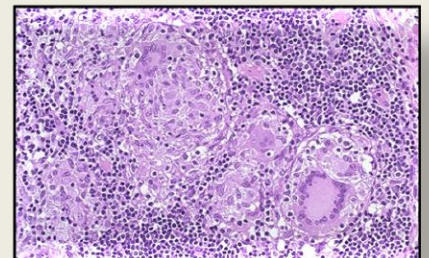
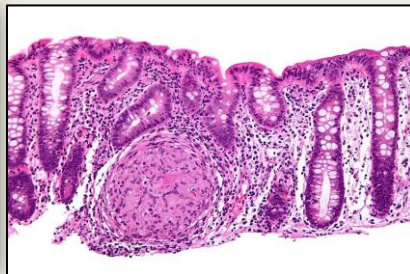
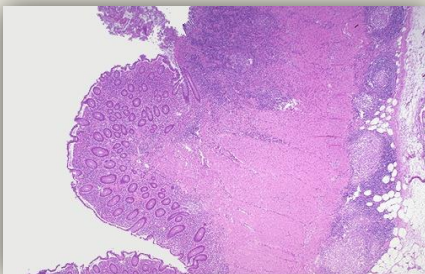
## Gross



1. **Skip** lesions

1. Creeping fat
2. Cobble stones

## Microscopic



1. Transmural inflammation
2. Granuloma
3. Distortion of crypts



# 16. ULCERATIVE COLITIS

**Definition:** Chronic relapsing ulcero-inflammatory disease of undetermined etiology  
- Ulcerative colitis is a disease of the rectum, and the colon.

**Clinical features:** Fever, leukocytosis, lower abdominal pain, bloody diarrhea and mucus in the stool and weight loss .

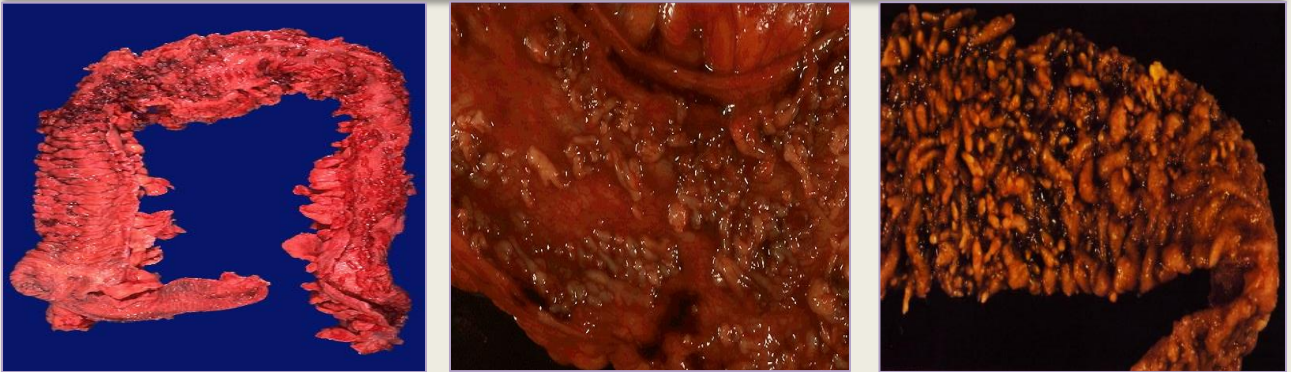
**Risk factors:** More common in females and in young adults.

**Complications:** Severe bleeding ,Toxic megacolon, high-grade dysplasia increase risk of cancer.

## Extraintestinal manifestations

- 1- Arthritis
- 2- Uveitis
- 3- Skin lesions (pyoderma gangrenosum),
- 4- Sclerosing cholangitis (fibrosis around bile ducts), leading to obstructive jaundice.

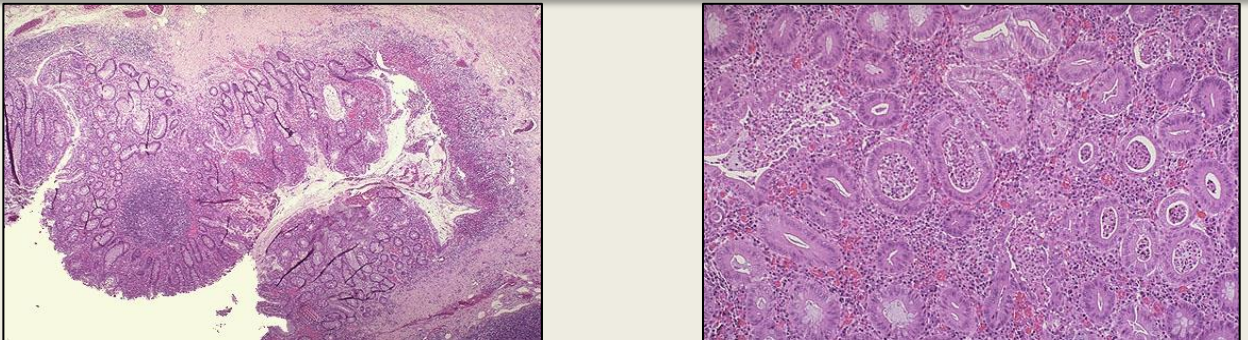
## Gross



- 1.Contenous lesion
- 2.Thin wall

## Pseudopolyps

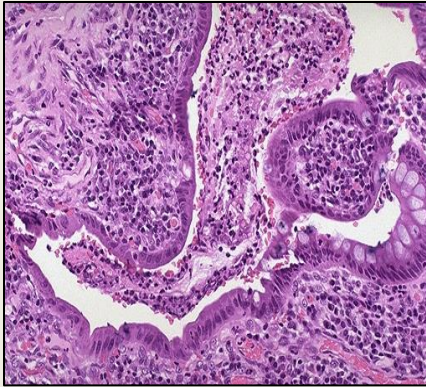
## Microscopic



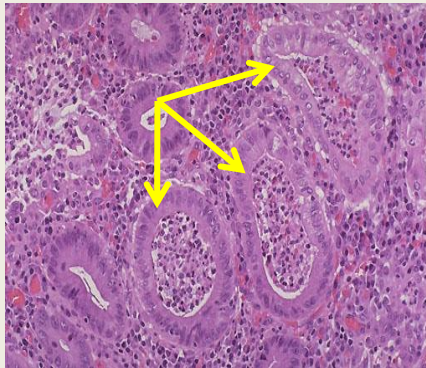
- 1.Inflammatory lesion
- 2.Cryptitis
- 3.Distortion
- 4.Crypts abscess



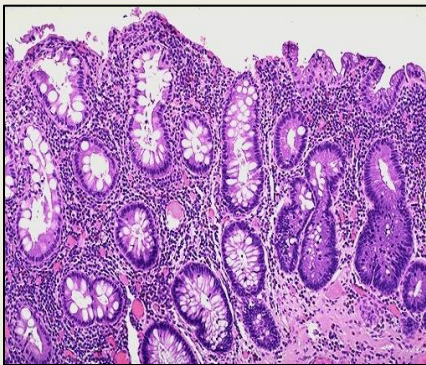
## Microscopic



1. Inflammatory lesion
2. Cryptitis
3. Distortion
4. Crypts abscess



1. Inflammatory lesion
2. Cryptitis
3. Distortion
4. Crypts abscess



1. Inflammatory lesion
2. Cryptitis
3. Distortion
4. Crypts abscess

# 17. ADENOMATOUS POLYP & FAMILIAL POLYPOSIS

**Definition:** A genetic syndrome in which an abnormal genetic mutation leads to development of multiple neoplasms in the colon

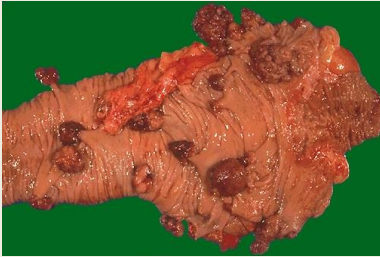
**Clinical features:** Asymptomatic.

**Complications:** Development of adenocarcinoma of the colon.

**Gene associated:** Familial polyposis is associated with autosomal dominant mutations of APC gene.

**Treatment:** Immunosuppression

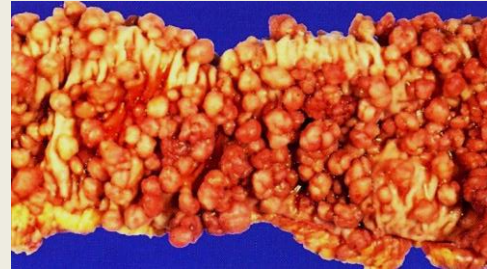
## Gross



1. Multiple mucosal polyps

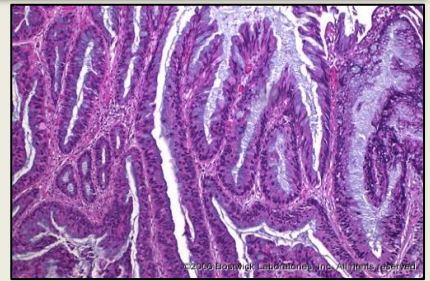
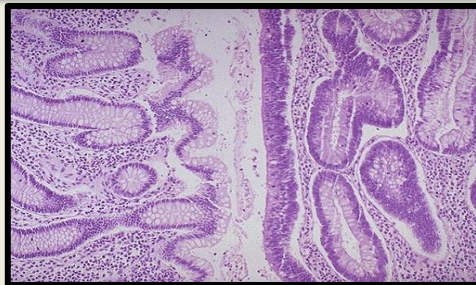
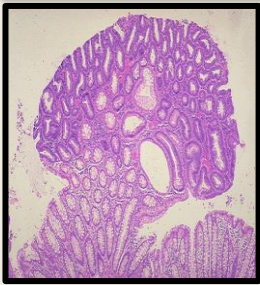


1. Mucosal adenomatous polyp

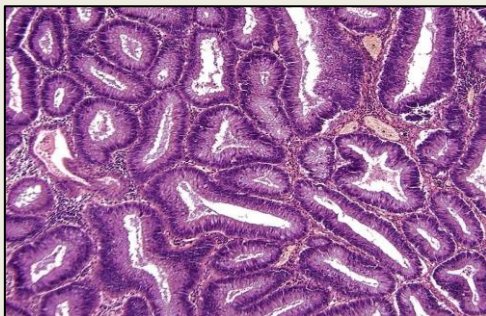


1. Familial polyposis of the colon

## Microscopic



Villous adenoma



Tubular Adenoma

1. Crowded dysplastic glands
2. Inflammatory cells
3. Decrease goblet cells
4. No invasion



# 18. COLON ADENOCARCINOMA

**Definition:** Most common malignancy of GIT tract.

**Location:** Sigmoid colon.

**Epidemiology:** 60 - 70 years old.

**Risk factors:** IBD, adenomas, polyposis, High fat content, reduced intake of Vit. A, C, E

**Gene associated:**

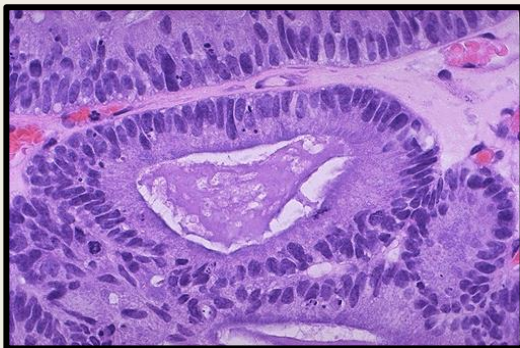
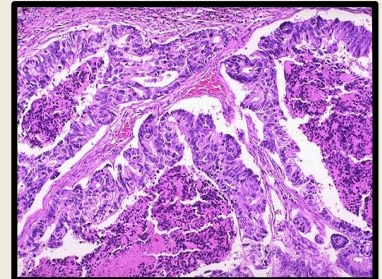
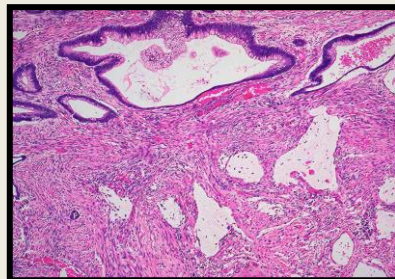
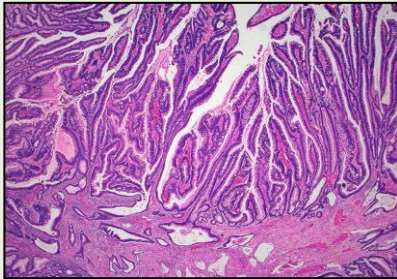
- 1- APC/Beta-Catenin pathway.
- 2- DNA mismatch repair repair genes pathway.

## Gross



*Adenocarcinoma of the Colon*

## Microscopic



1. Crowded malignant glands
2. Invasion
3. Central necrosis



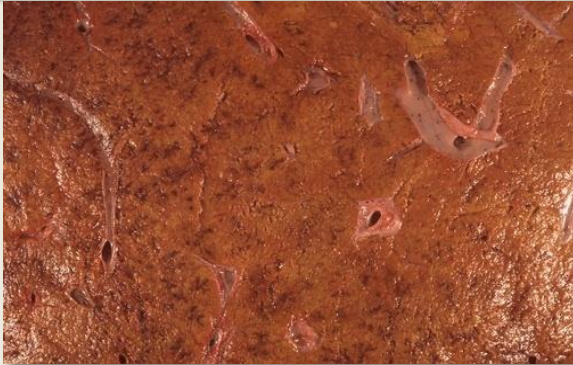
# 19. CHRONIC VIRAL HEPATITIS “important”

HBV and HCV are blood born, risk for carcinoma and cirrhosis

HAV is fecal-oral rout

Diagnosis by serology, and histology for staging

## Gross



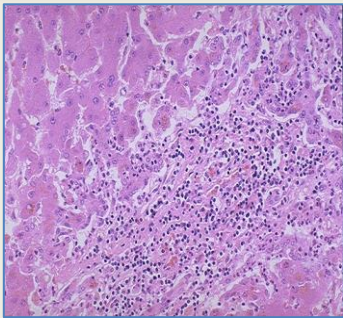
1.Hyperemic



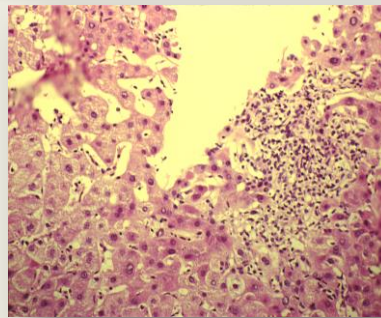
Normal

1.Normal

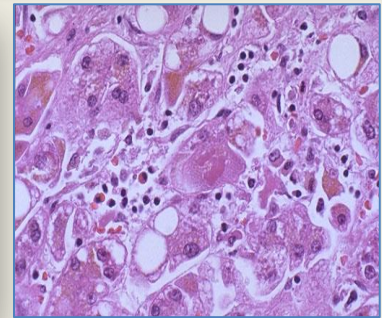
## Microscopic



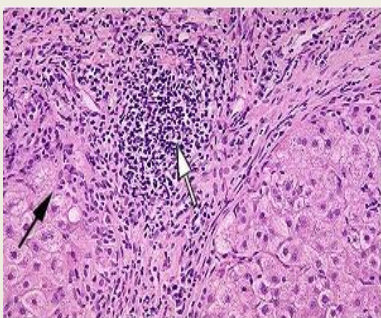
1. Mononuclear inflammatory cells.
2. Piecmeal necrosis
3. Hepatocyte swelling and necrosis



1. Mononuclear inflammatory cells.
2. Piecmeal necrosis
3. Hepatocyte swelling and necrosis



1. Mononuclear inflammatory cells.
2. Piecmeal necrosis
3. Hepatocyte swelling and necrosis



### Portal area

1. Mononuclear inflammatory cells.
2. Piecmeal necrosis
3. Hepatocyte swelling and necrosis



# 20. HEPATIC CIRRHOSIS

**Definition:** Progressing disease in which healthy liver tissue is replaced with scar tissue, eventually preventing the liver from functioning properly

**Clinical features:** -Jaundice and even hepatic failure.

- When symptomatic they lead to nonspecific clinical manifestations: anorexia, weight loss, weakness, osteoporosis, and, in advanced disease, frank debilitation.

**Causes:** Chronic alcoholism , hepatitis B & C.

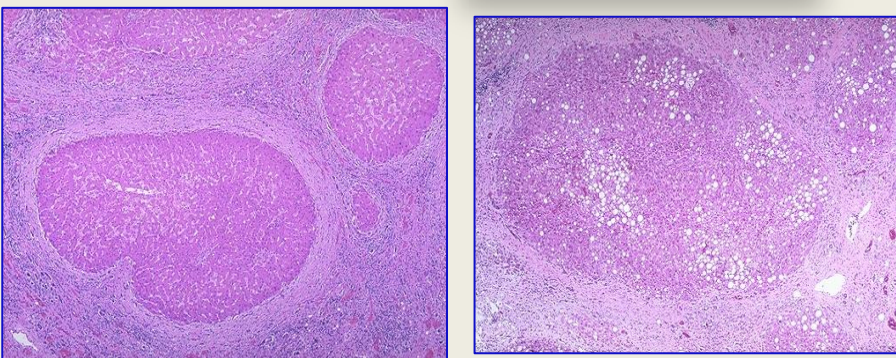
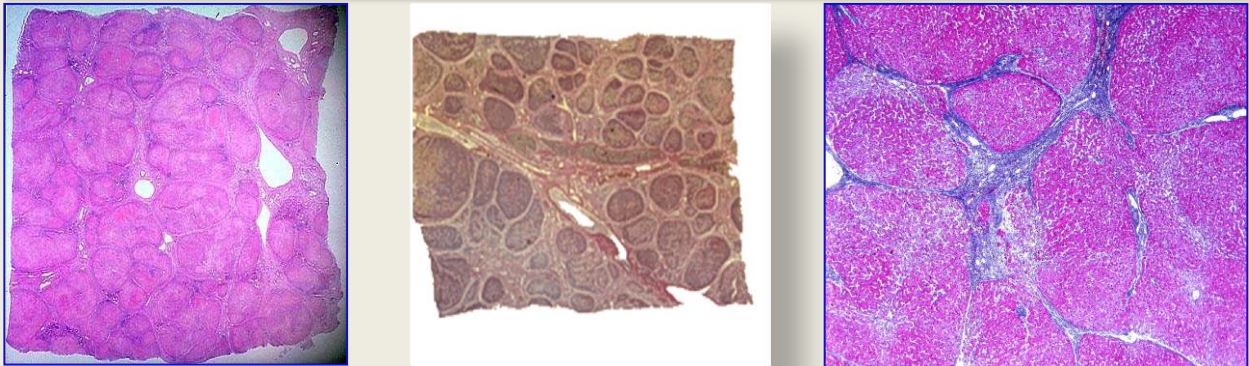
**Complications:** Portal HPT, Liver failure ,HCC , Hematemesis ,hepatic encephalopathy.

## Gross



1. Multiple variable size nodules Separated by fibrosis

## Microscopic



1. Regenerative nodules
2. Fibrosis "blue"
3. Thin plate

# 21. HEPATIC ADENOMA “important”

**Definition:** Benign tumor of hepatocyte.

**Causes:** **Oral Contraceptive**

**Gene:** **beta catenin mutation**

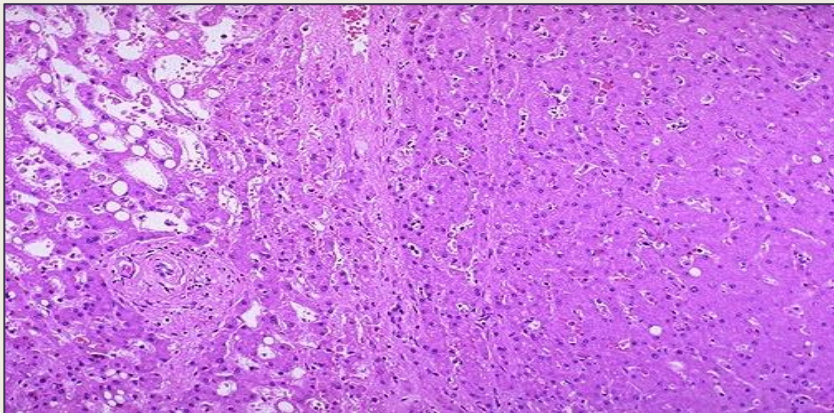
**Complications:** **bleeding** (especially during pregnancy) into the peritoneal cavity, **hypovolemic shock**. (emergency)

## Gross



1. Well circumscribed tumor in the liver

## Microscopic



1. Capsule

2. Well differentiated hepatocyte



# 22. HEPATOCELLULAR CARCINOMA

**Definition:** Malignant tumors of hepatocytes

**Clinical features:** Ill-defined upper abdominal pain, malaise, fatigue, weight loss, and feeling of abdominal fullness, enlarged liver can be felt on palpation.

**Causes:** Viral infection (HBV, HCV), Cirrhosis, Chronic alcoholism, Food contaminants ((aflatoxins) are found in "moldy" grains and peanuts). *Alphatoxin exposure, hemochromatosis, tyrosinemia*

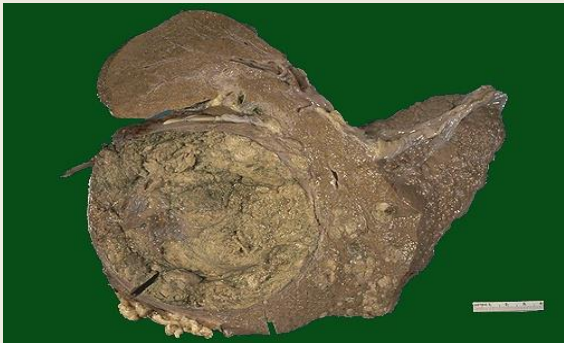
**Risk factors:** Male, chronic alcoholism, from Asian countries, viral hepatitis, cirrhosis and chronic liver diseases

**Complications:** death usually occurs from: Cachexia, Esophageal variceal bleeding, Rupture of the tumor

**Laboratory studies:** Elevated serum alpha-fetoprotein.

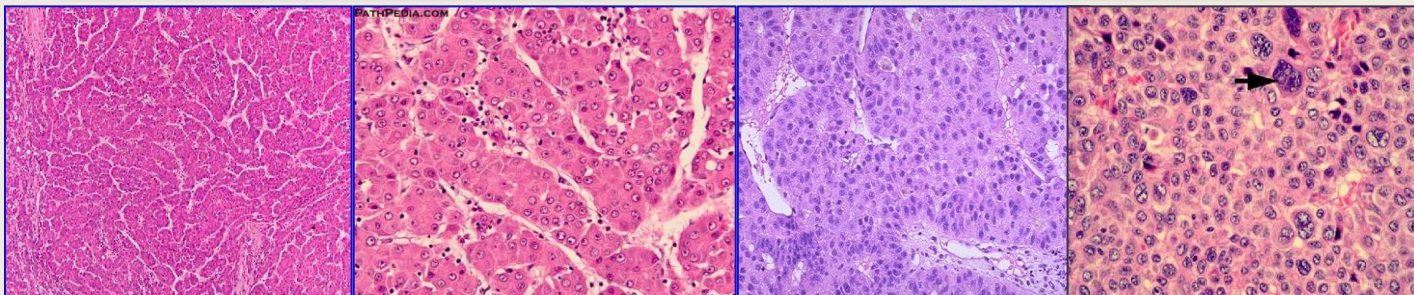
## Bad prognosis

### Gross



1. Large diffuse tumor

### Microscopic



1. Well differentiated hepatocyte

1. Moderate differentiated hepatocyte

1. Poor differentiated hepatocyte

# 23. CHRONIC CHOLECYSTITIS WITH STONES

## “Important”

**Definition:** Inflammation of the gallbladder and its association almost with Gallstones. (chronic= repeated bouts of acute)

**Clinical features:** right upper quadrant or epigastric pain “colicky pain” , Patients often have **intolerance to fatty food**

**Causes:** obstruction of the neck or cystic duct.

### Risk factors:

1. Fat (overweight),
2. Forty (age near or above 40),
3. female
4. Fertile fair

**Complications:** Perforation, obstruction, pancreatitis

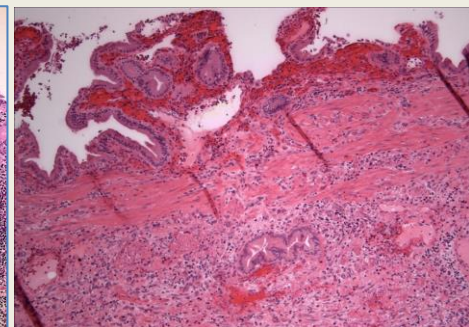
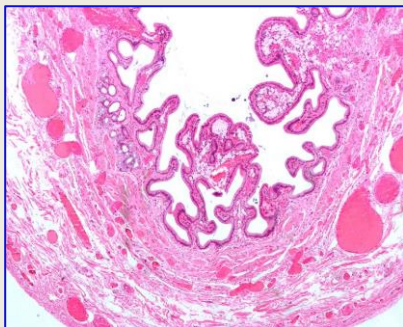
**Treatment:** Cholecystectomy

### Gross



1. Gall bladder with pigmented stone

### Microscopic



1. Rokitansky-Aschoff sinuses
2. Inflammatory cells
3. Fibrosis



# 24. ACUTE PANCREATITIS

**Definition:** Group of reversible lesions characterized by inflammation of pancreas

**Clinical features:** Abdominal pain , diffuse fat necrosis , leukocytosis

**Causes:** Alcoholism , gallstones , biliary tract disease

**Complications:** Pancreatic pseudocyst , sterile pancreatic abscess , shock

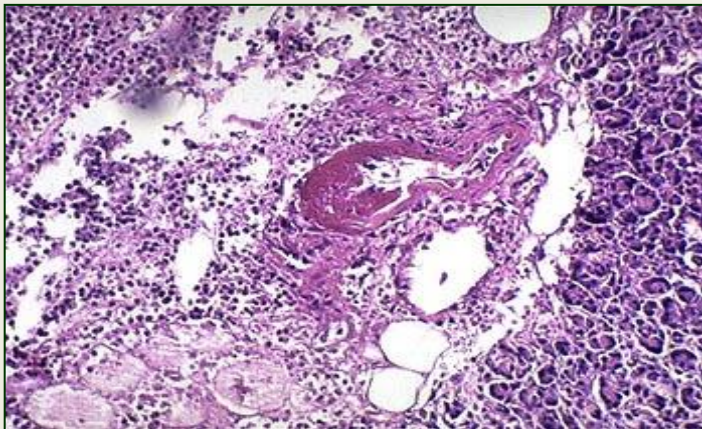
**Laboratory findings:** Marked elevation of serum amylase during first 24 hours ,followed by rising serum lipase level within 72

## Gross



- 1.Chalky white deposit
- 2.Hemorrhage
- 3.Fat necrosis

## Microscopic



- 1.Fibroid necrosis
- 2.Inflammatory cells
- 3.Fat necrosis



# 25. CHRONIC PANCREATITIS

**Definition:** Irreversible inflammation of pancreas with destruction of exocrine parenchyma , fibrosis , in late stage destruction of endocrine parenchyma

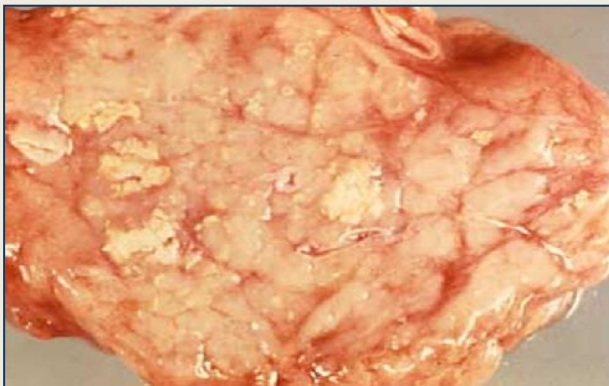
**Clinical features:** Recurrent abdominal pain

**Causes:** Long term alcoholism , long term biliary tract disease , hyperlipidemia

**Complications:** Chronic malabsorption , diabetes mellitus, pancreatic pseudocyst

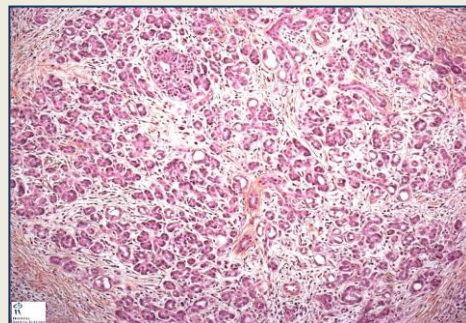
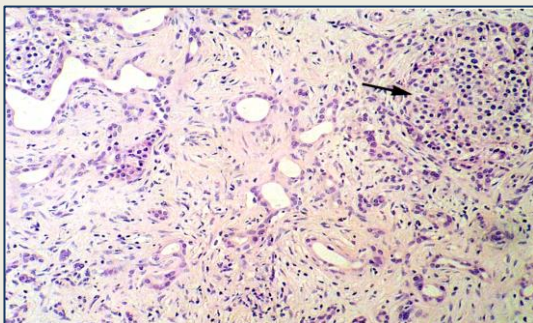
**Laboratory findings:** Mild to moderate elevation of serum amylase , calcification by abdominal x-ray

## Gross



1. Calcium deposit secondary to fat necrosis

## Microscopic



1. Acinar atrophy
2. Fibrosis
3. Chronic inflammatory cells

# 26. PANCREATIC ADENOCARCINOMA

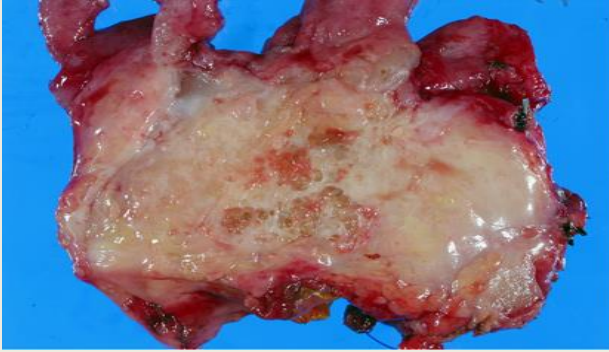
**Definition:** Carcinoma of exocrine pancreas that arises from ductal epithelial cells

**Clinical features:** Jaundice , weight loss , migratory thrombophlebitis , pain

**Characteristic:** Highly invasive , elicits an intense host reaction called “ desmoplastic response “ , distant metastases

**Epidemiology:** The highest mortality rates, 6<sup>th</sup> to 8<sup>th</sup> decade , males more than female.

## Gross



1. Circumscribed lesion

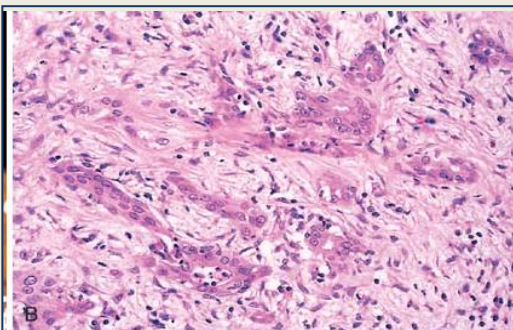


1. Well circumscribed tumor in the head of pancreas  
2. Large duct



1. Infiltrative mass

## Microscopic



1. Malignant glands surrounding desmoplastic fibrotic stroma  
2. Crowded enlarged gland

For any suggestions or questions please don't hesitate to contact us on: **Pathology434@gmail.com**

- **Twitter:**@Pathology434
  - **Ask us:**[www.ask.fm/Pathology434](http://www.ask.fm/Pathology434)
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