GIT PATHOLOGY LAB

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Cirrhosis

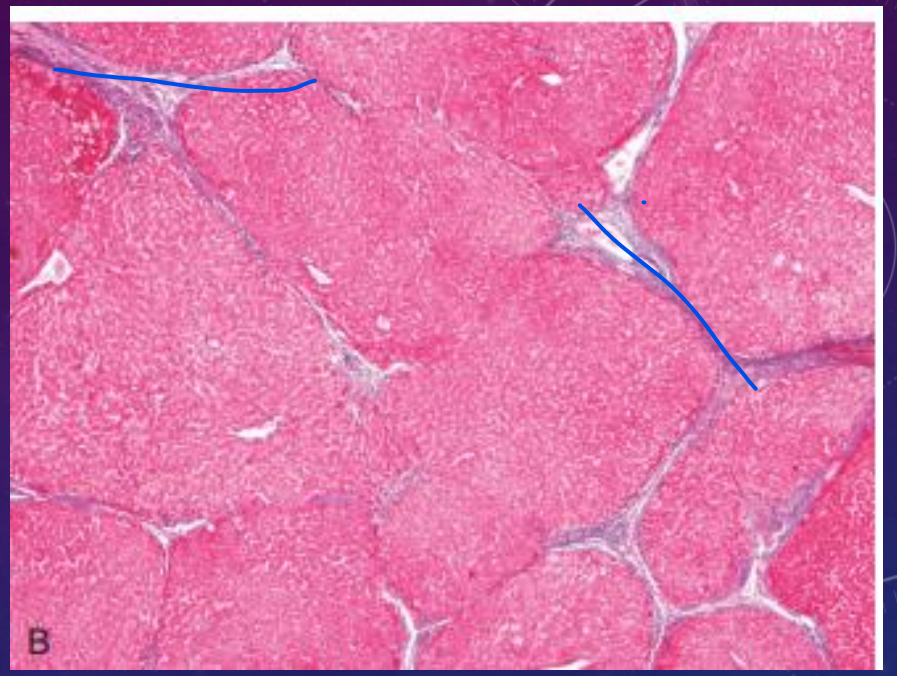
diffuse transformation of the liver into regenerative parenchymal nodules surrounded by fibrous bands

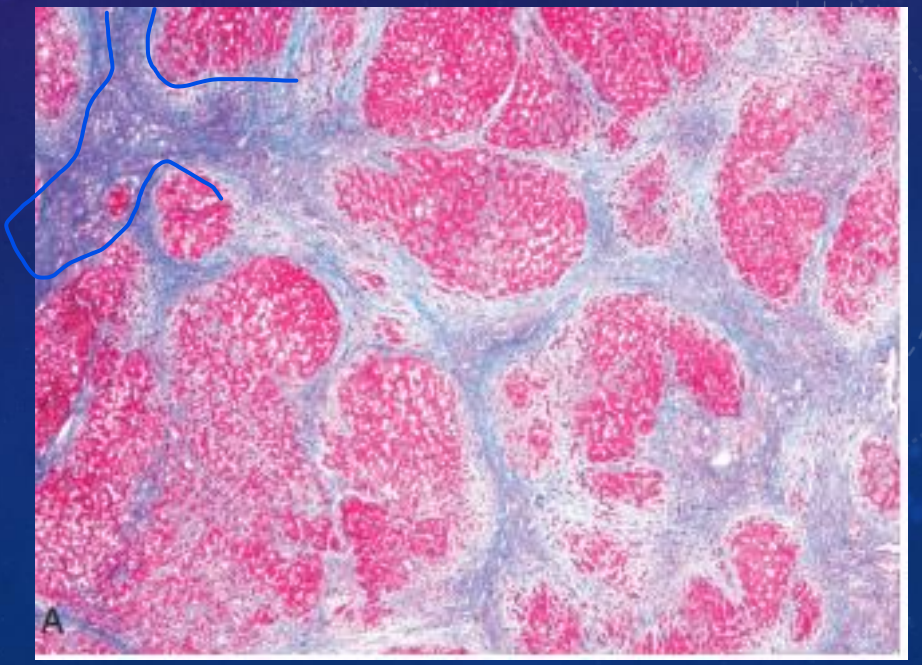
HISTOPATHOLOGY

*diffuse transformation of the entire liver into regenerative parenchymal nodules surrounded by fibrous bands.

* ductular reactions.

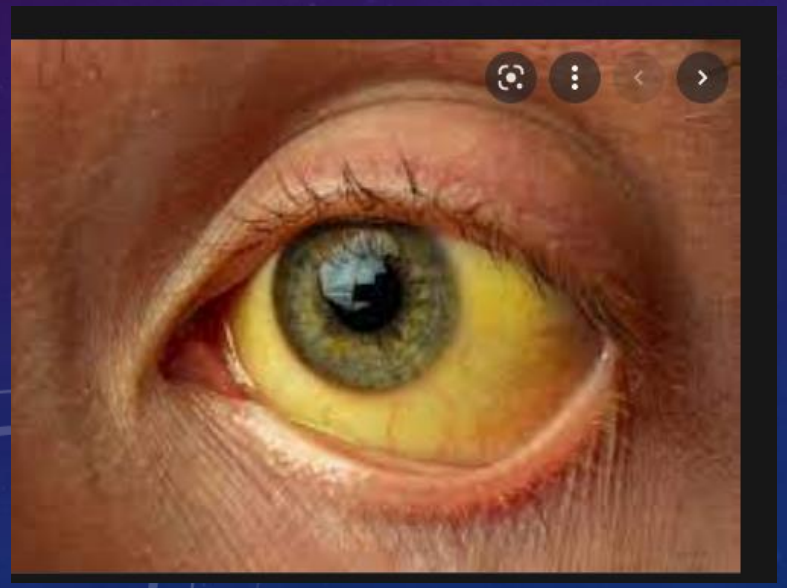
* (Masson trichrome stain) highlights these fibrous septa.





CLINICAL FEATURES

- 1. 40% of individuals with cirrhosis are asymptomatic until the most advanced stages of the disease.
- 2. Non specific symptoms such as anorexia, weight loss, weakness.
- 3. signs and symptoms of liver failure e.g Jaundice, encephalopathy, and coagulopathy.
- 4. Pruritus, portal hypertention (intrahepatic vascular resistance).



the most significant finding is prolonged pt

one of the consequences of coagulation: DIC

- 5. Hyperestrogenemia:
- due to impaired estrogen metabolism in male patients with chronic liver failure can give rise to palmar erythema (a reflection of local vasodilatation) and spider angiomas of the skin.
- Such male hyperestrogenemia also leads to hypogonadism and gynecomastia.
- 6. hepatocellular carcinoma (HCC).

palmar erythema

spider angioma

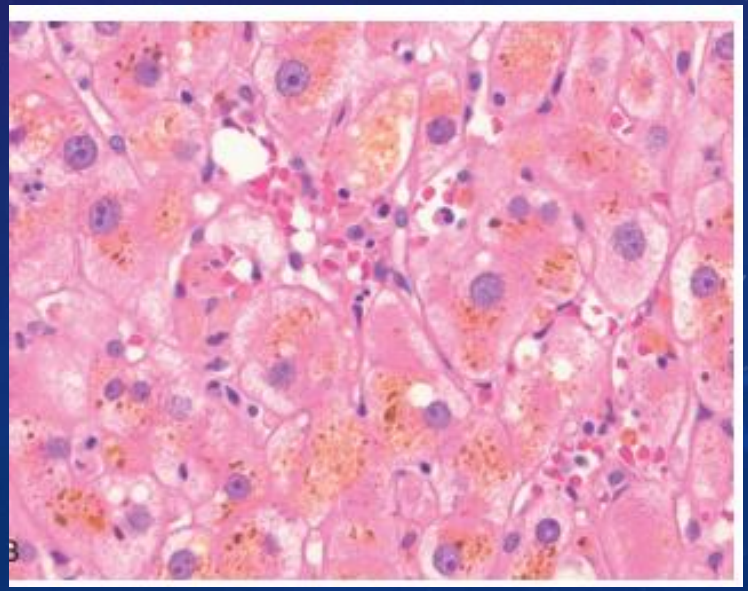
skin xanthomas (focal accumulation of cholesterol).

a manifestation caused by gallbladder

excess cholesterol

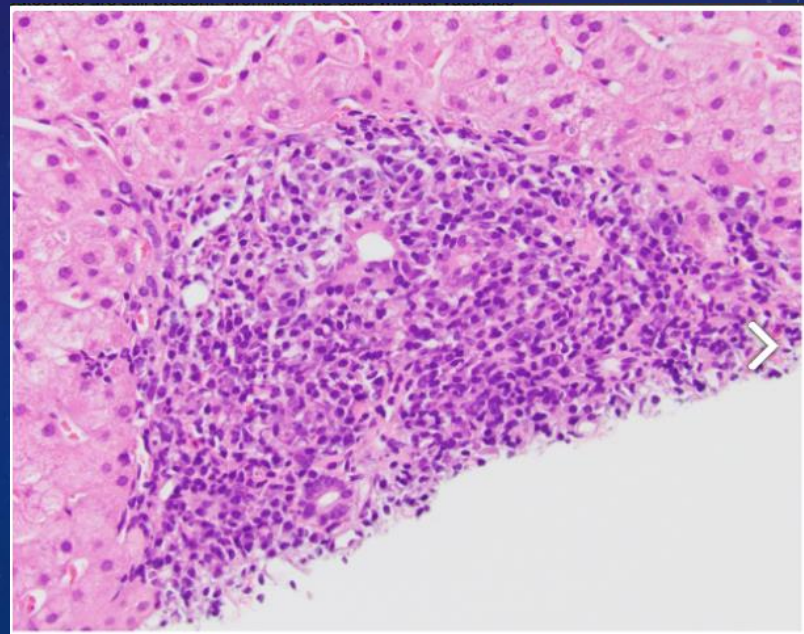
HISTOPATHOLOGY OF CHOLESTASIS

- accumulation of bile pigment within the hepatic parenchyma.
- Rupture of canaliculi leads to extravasation of bile, which is quickly phagocytosed by Kupffer cells.
- feathery degeneration:
- Droplets of bile pigment accumulate within hepatocytes, give them foamy appearance



C. PRIMARY BILIARY CHOLANGITIS. inflammation in biliray bile duct

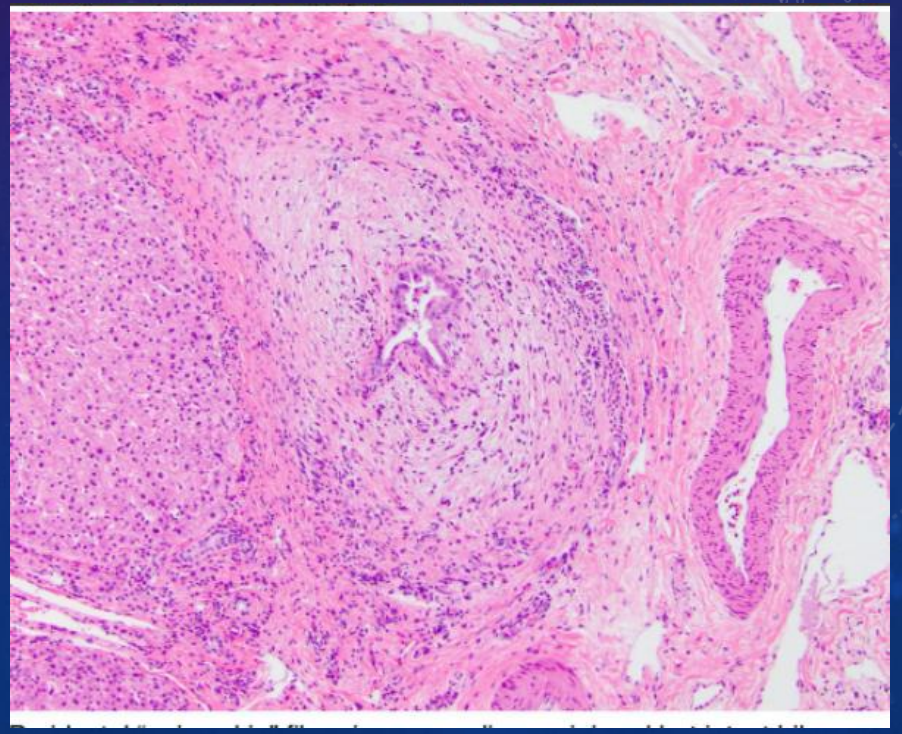
- Dense lymphocytic infiltrate in portal tracts with granulomatous destruction and loss of medium sized interlobular bile ducts, focal and variable within the liver no sclerosis/fibrosis



D. PRIMARY SCLEROSING CHOLANGITIS

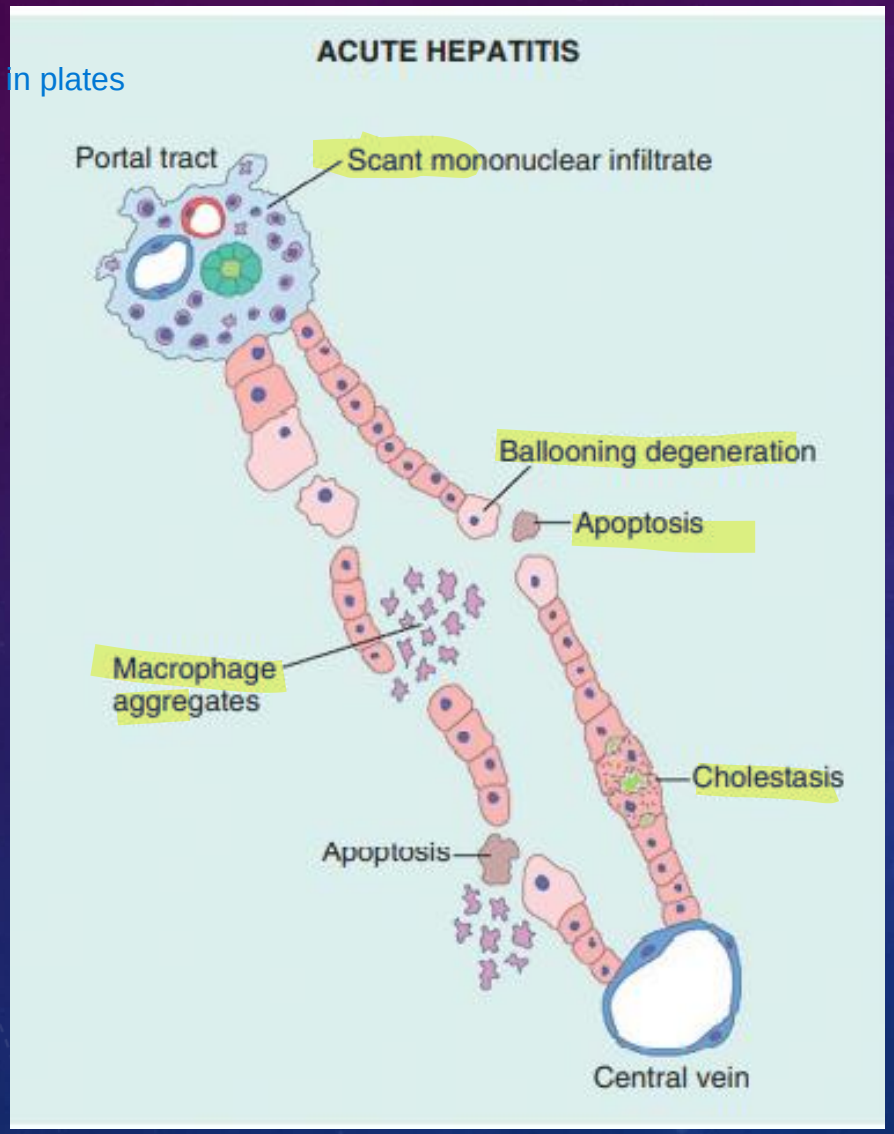
- inflammation and obliterative fibrosis of intrahepatic and extrahepatic bile ducts, leading to dilation of preserved segments.

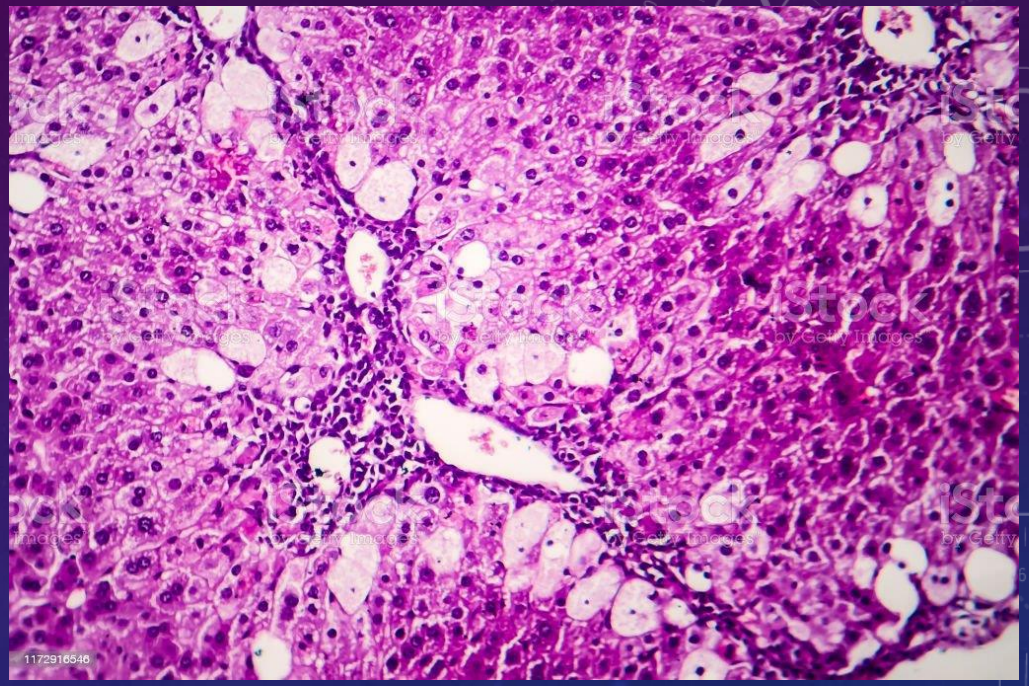
- Classic finding is "onion skin" fibrosis around affected bile ducts

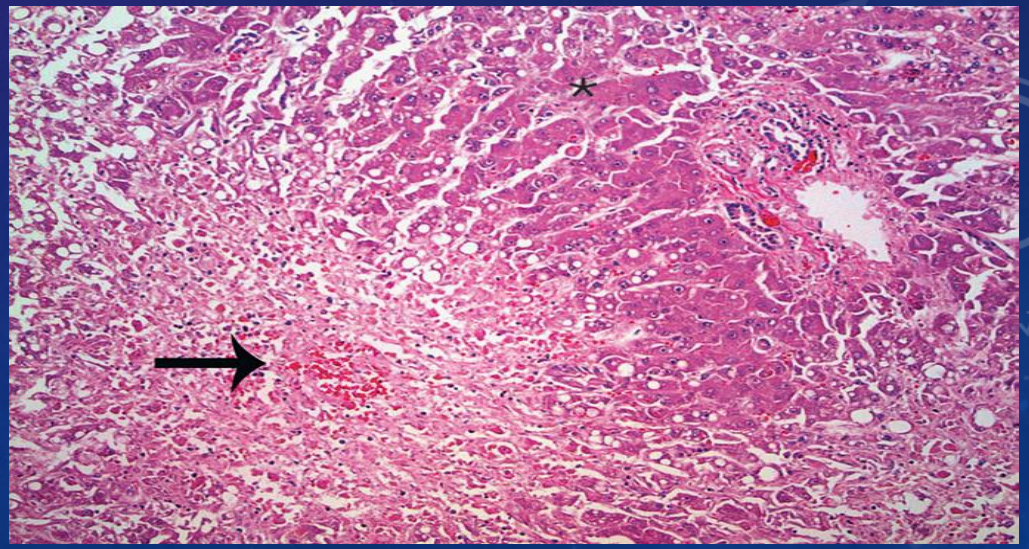


ACUTE HEPATITIS

most changes are in plates

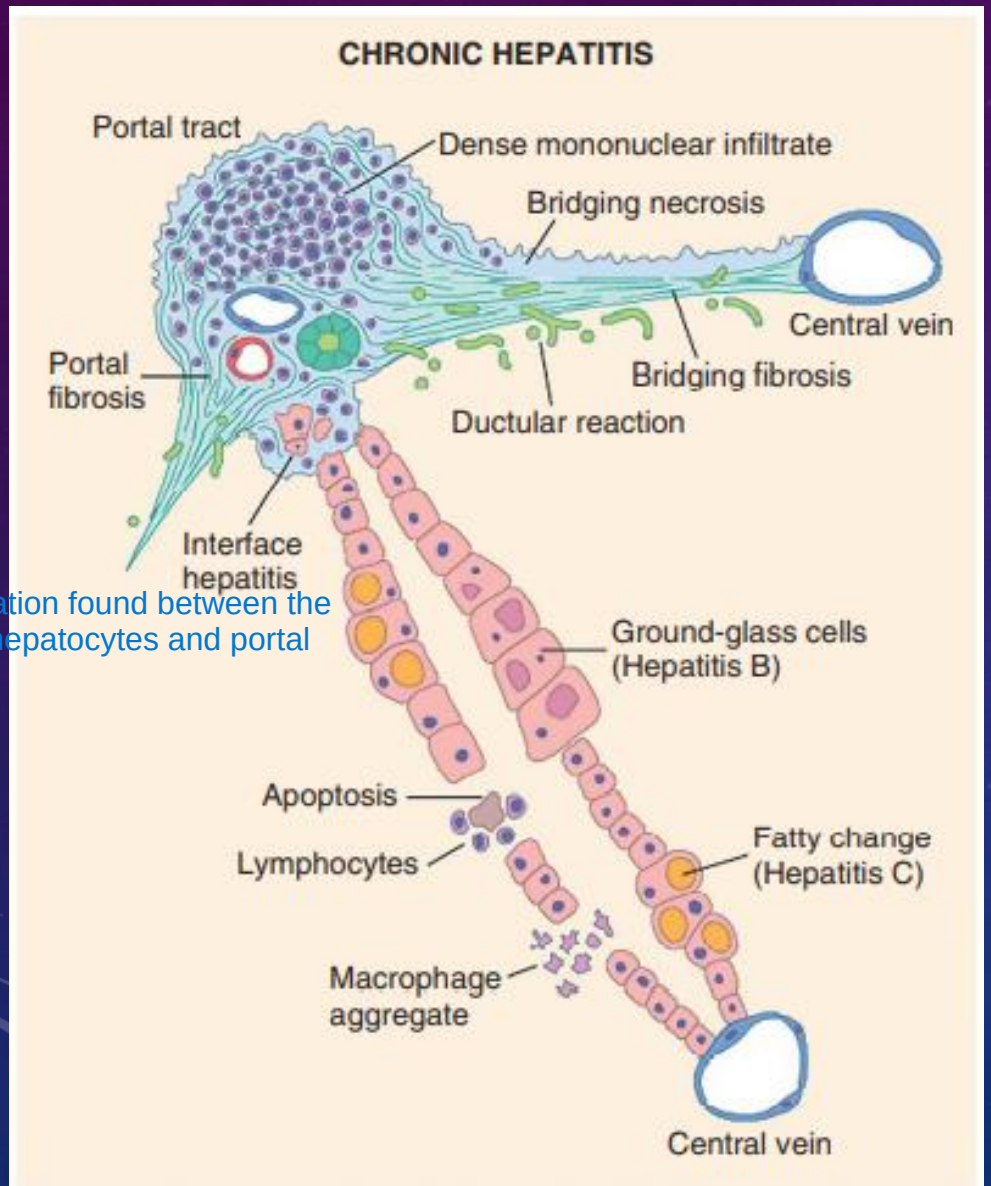




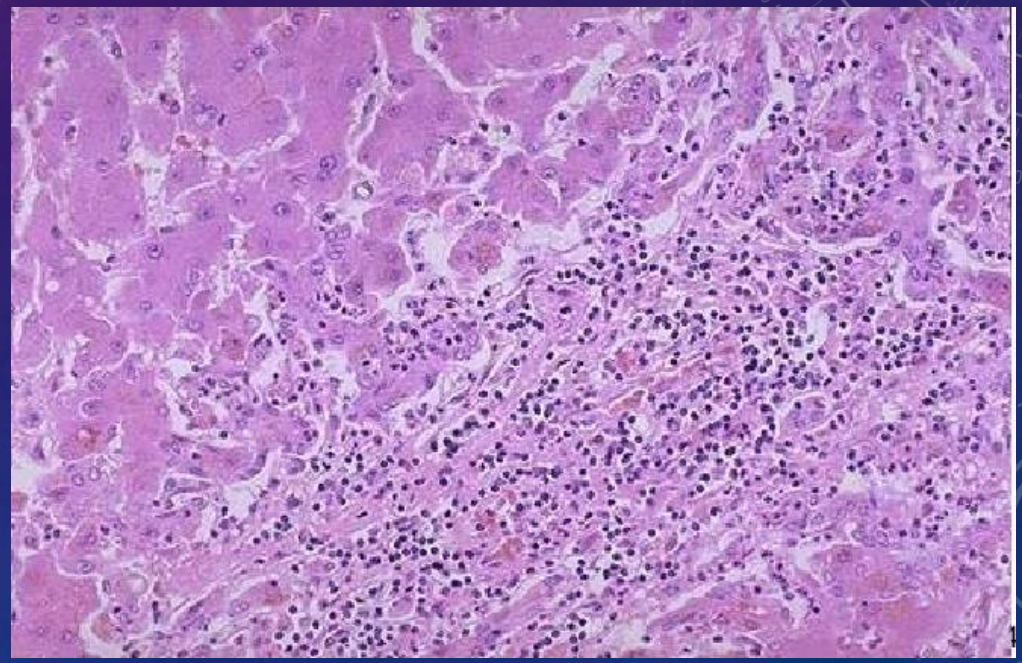


Chronic hepatitis

changes are in the portal tract



inflammation found between the area of hepatocytes and portal tract



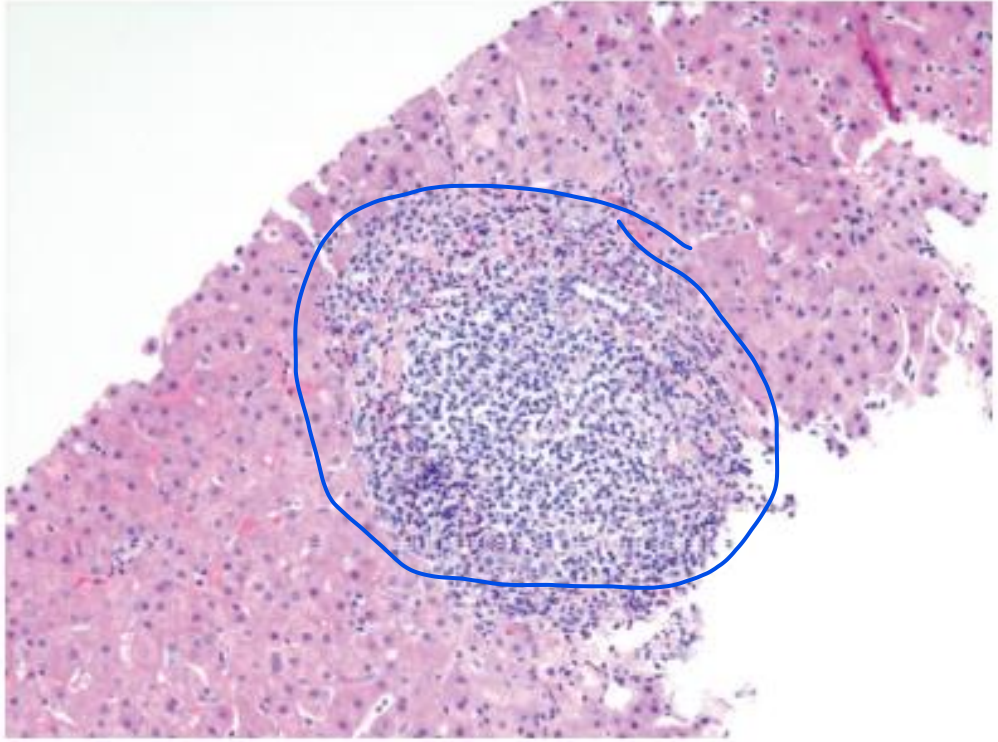


Fig. 16.15 Chronic viral hepatitis due to HCV, showing characteristic portal tract expansion by a dense lymphoid infiltrate.

looks like granuloma (circular agreegation of lymphocytes and macrophages) but HCV contains lymphocytes only

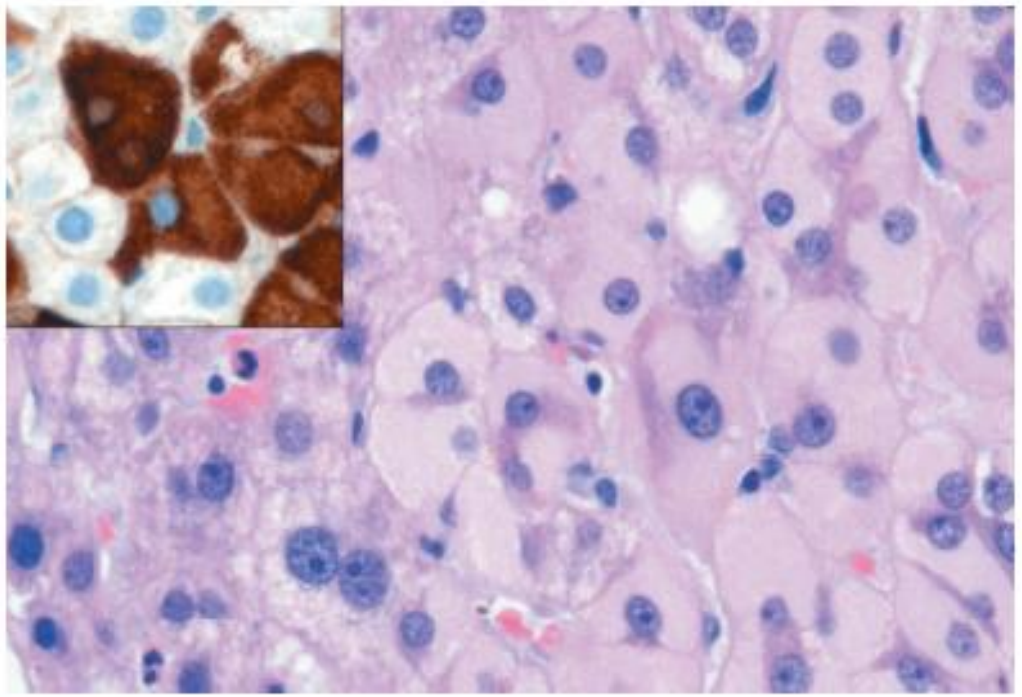
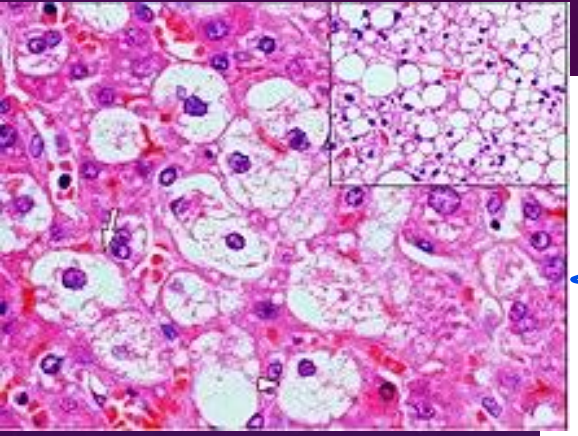
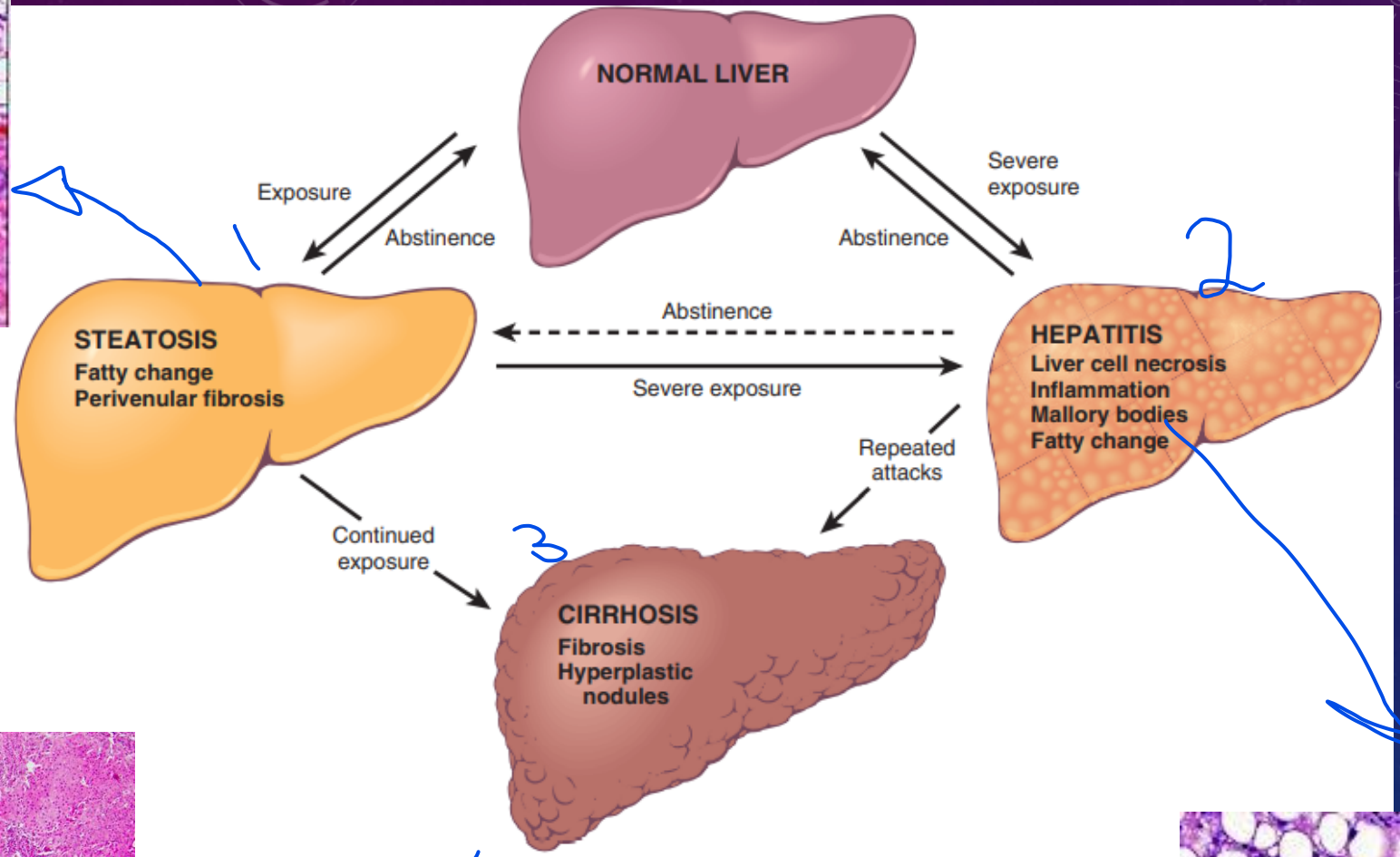


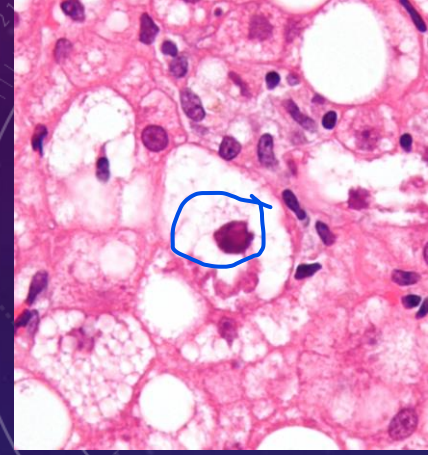
Fig. 16.14 Ground-glass hepatocytes in chronic hepatitis B, caused by accumulation of hepatitis B surface antigen. Hematoxylin-eosin staining shows the presence of abundant, finely granular pink cytoplasmic inclusions; immunostaining *(inset)* with a specific antibody confirms the presence of surface antigen *(brown)*.

the antigen backs the cytoplasm which gives an hour glass surface

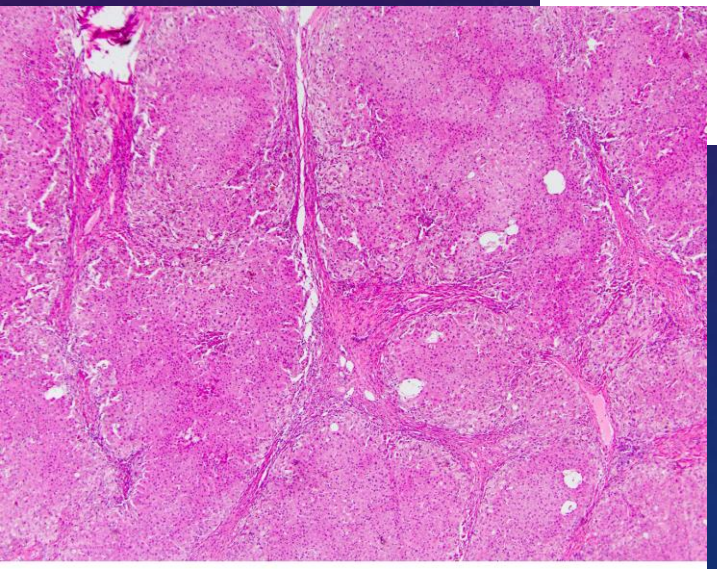


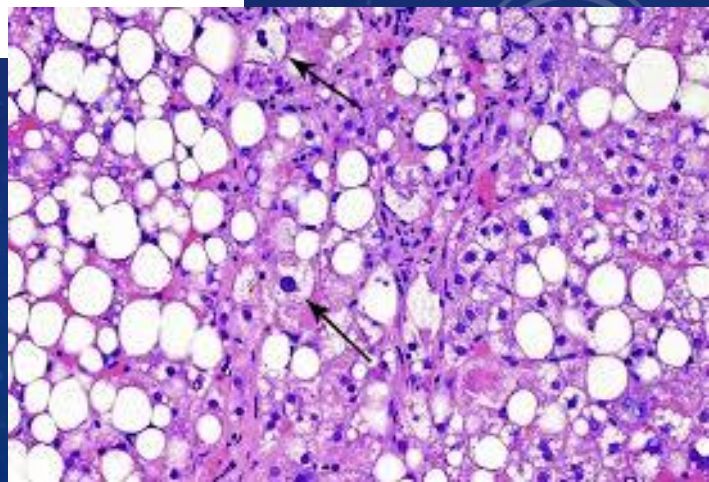
pale white cytoplasm (due to the presence of fat)





mallory bodies found in stage 2





FNH

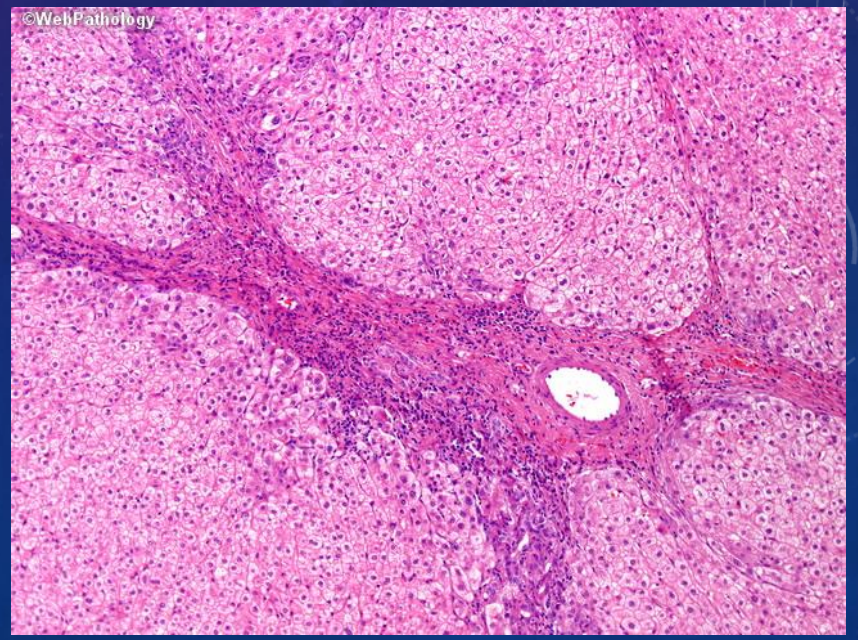
FOCAL NODULAR HYPERPLASIA: GROSS.

- well-demarcated, poorly encapsulated nodule in an otherwise normal liver.
- there is a central gray-white, depressed stellate scar from which fibrous septa radiate to the periphery.

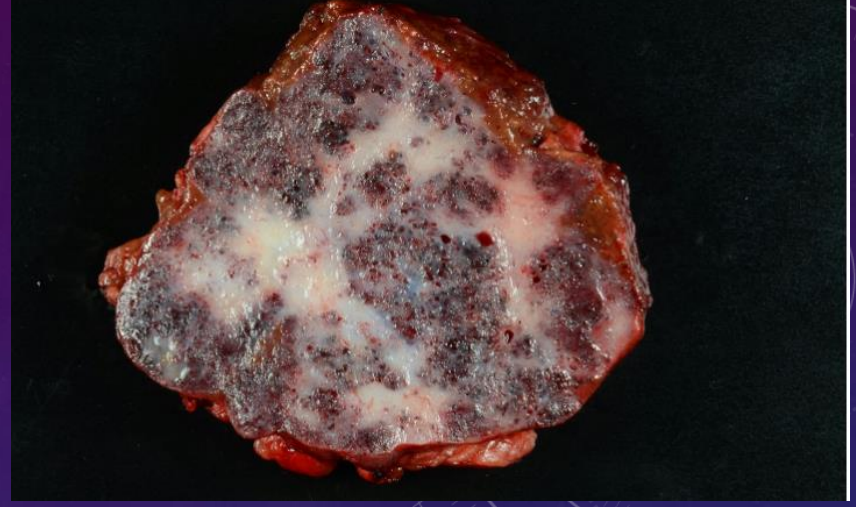
Contains normal hepatic background

FOCAL NODULAR HYPERPLASIA: MICROSCOPICALLY.

- the central scar contains large abnormal vessels and ductular reactions along the spokes of scar.
- The hyperplastic regions are composed of normal hepatocytes separated by thickened sinusoidal plates



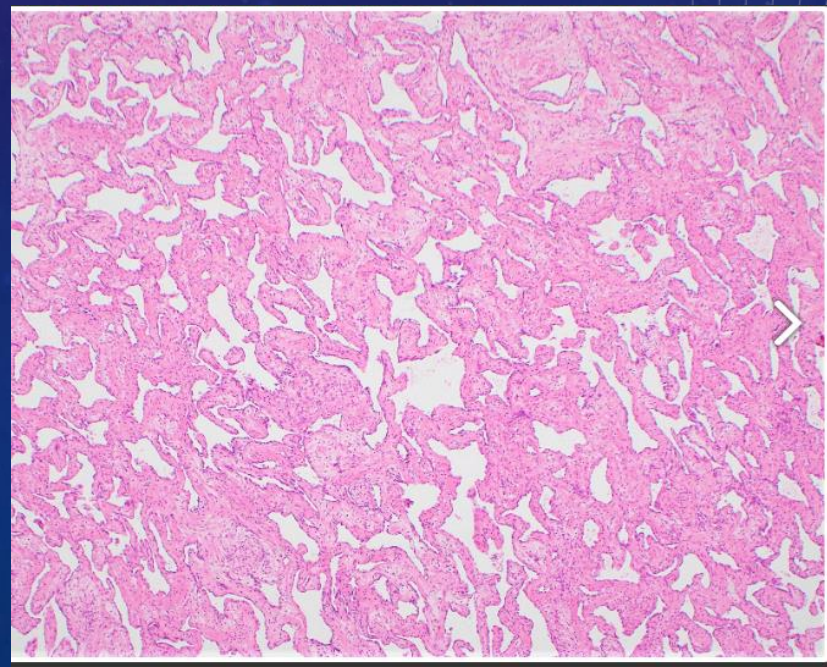
BENIGN NEOPLASMS



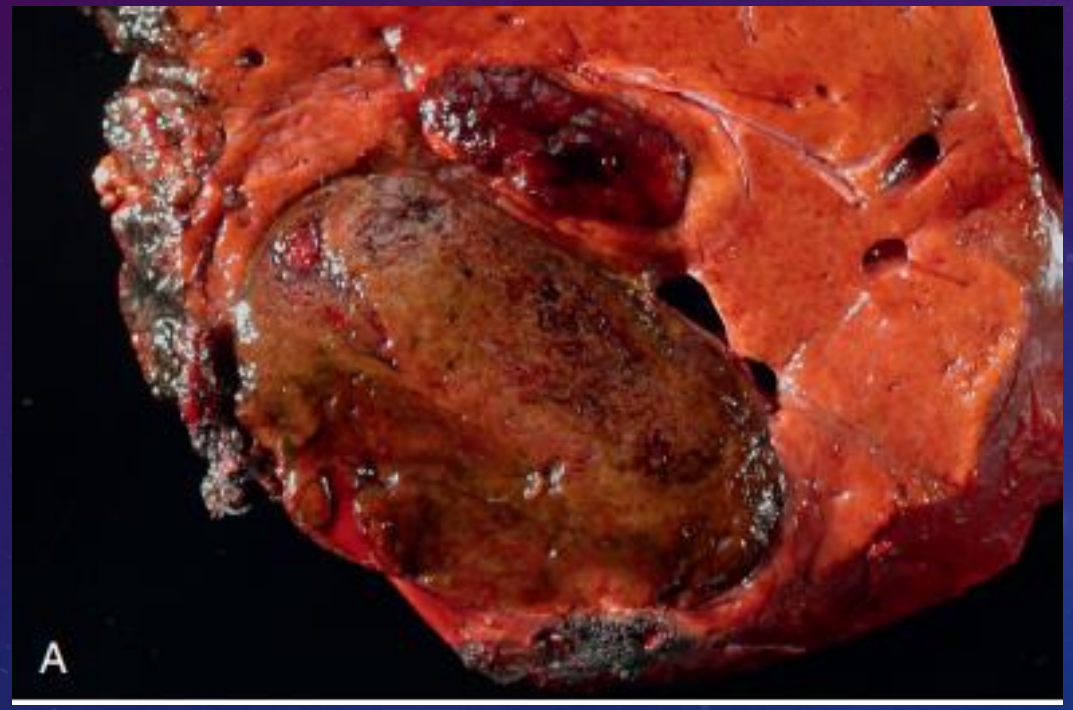
❖ **1. Cavernous hemangiomas:** it's a vascular region under the microscope we can see brown or red blood depending if its fresh or old blood

- the most common benign tumor of the liver.
- Vast majority of hemangiomas are asymptomatic and require no intervention.
- **Gross description:**
- Well circumscribed with red-brown, spongy / honeycombed cut surface
- **Microscopic:**
- Circumscribed proliferation of variably sized, dilated and thin walled vessels

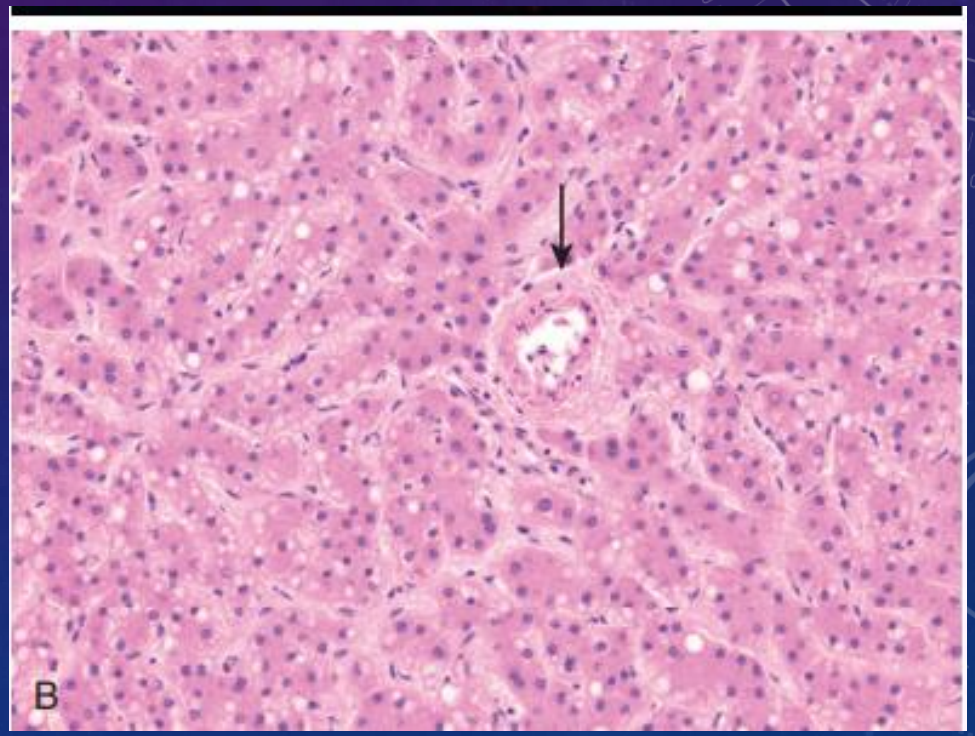
these vessels are lined by endothelium



. Hepatocellular Adenomas



well circumscribed single mass resting on normal non cirrohotic liver



it lacks portal triad under the microscope

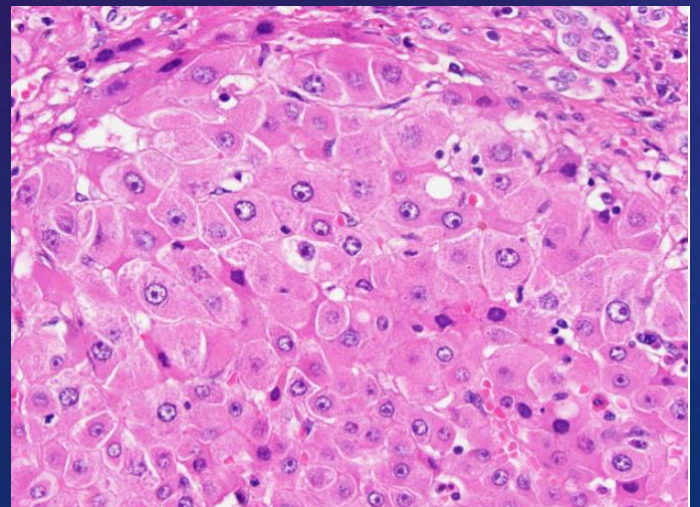
- premalignant precursors lesions of HCC:

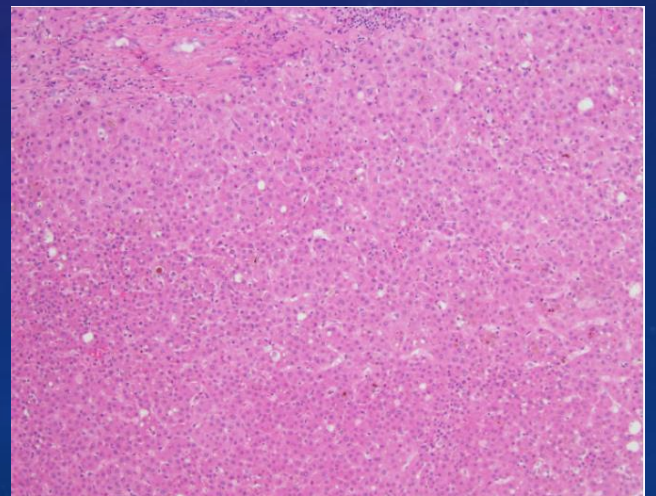
➢ large-cell change.:

❖ increase in both nuclear and cytoplasmic size, preserving nuclear to cytoplasmic ratio; nuclei are hyperchromatic, pleomorphic and frequently multinucleated.

➢ small-cell change:

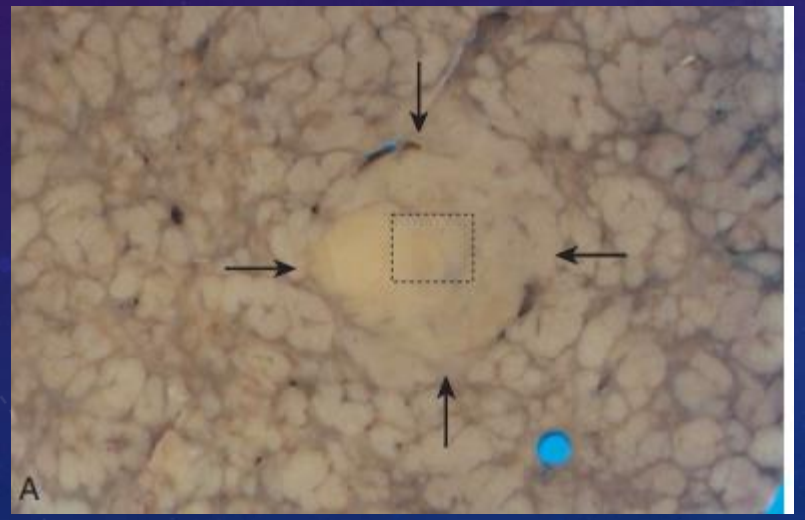
❖ decreased cell volume, increased nuclear to cytoplasmic ratio, mild nuclear pleomorphism, hyperchromasia and cytoplasmic basophilia, giving the impression of nuclear crowding





GROSS FEATURES OF HCC

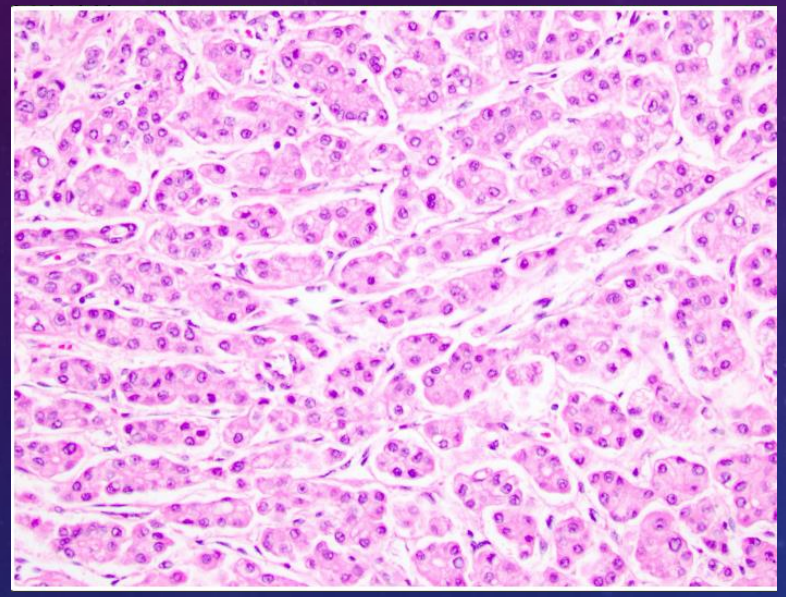
- HCC may appear grossly as:
- (1) a unifocal (usually large) mass.
- (2) multifocal, widely distributed nodules of variable size.
- (3) a diffusely infiltrative cancer,

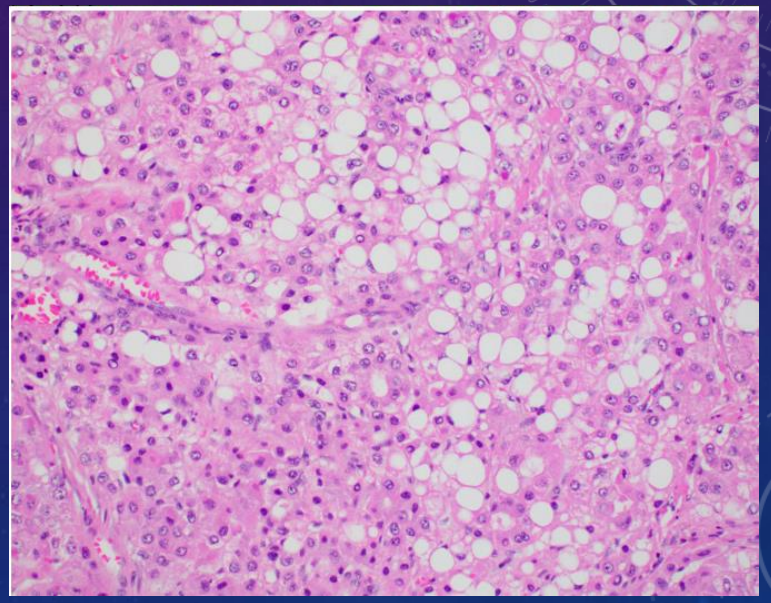


MICROSCOPIC FEATURES OF HCC:

HCCs range from :
well differentiated to highly anaplastic lesions.

well differentiated (looks like normal hepatocytes)



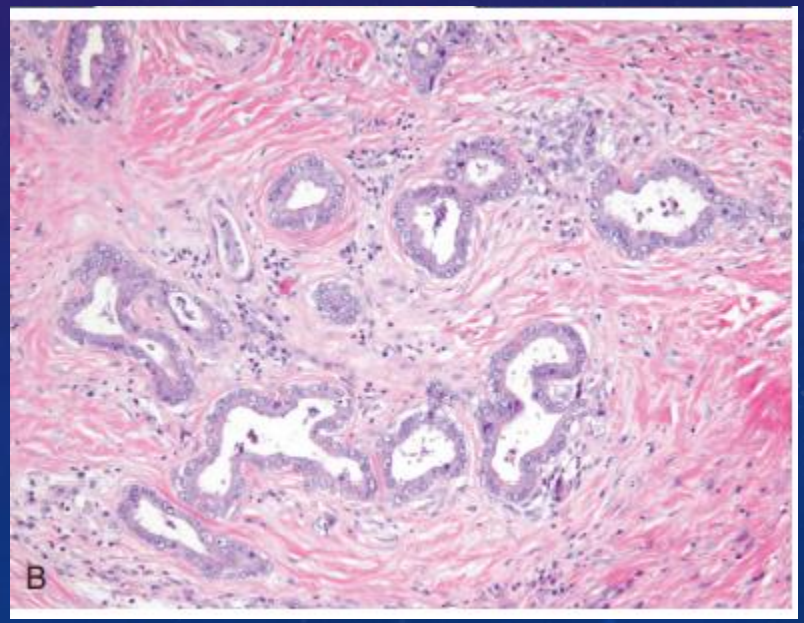


Well-differentiated HCCs are composed of cells that look like normal hepatocytes and grow as thick trabeculae

***tumor cells appear malignant on H&E and often cannot be distinguished from other poorly differentiated neoplasms;**

CHOLANGIOCARCINOMA MORPHOLOGY

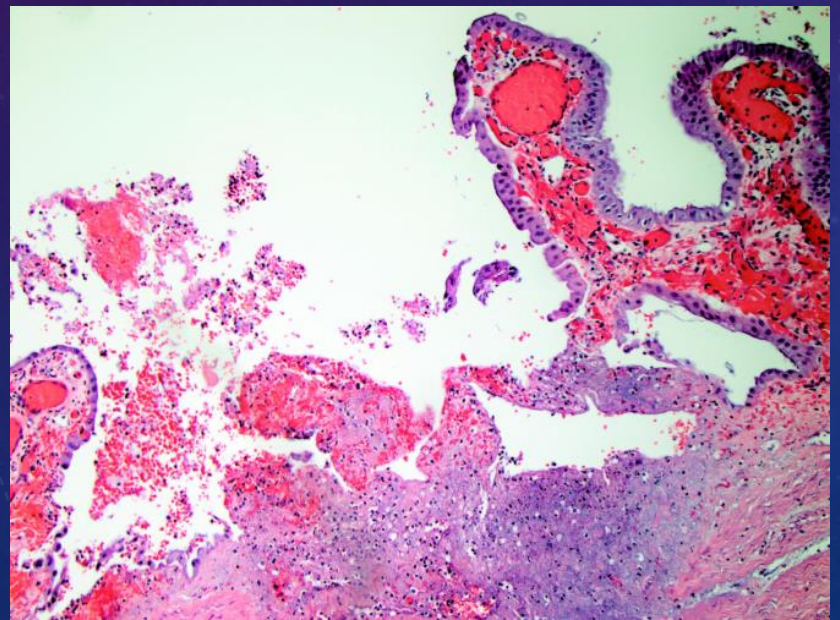
- Most tumors appear as firm, gray nodules within the bile duct wall.
- Cholangiocarcinomas are typical mucin-producing adenocarcinomas. Most are well to moderately differentiated, growing as glandular/tubular structures lined by malignant epithelial cells.



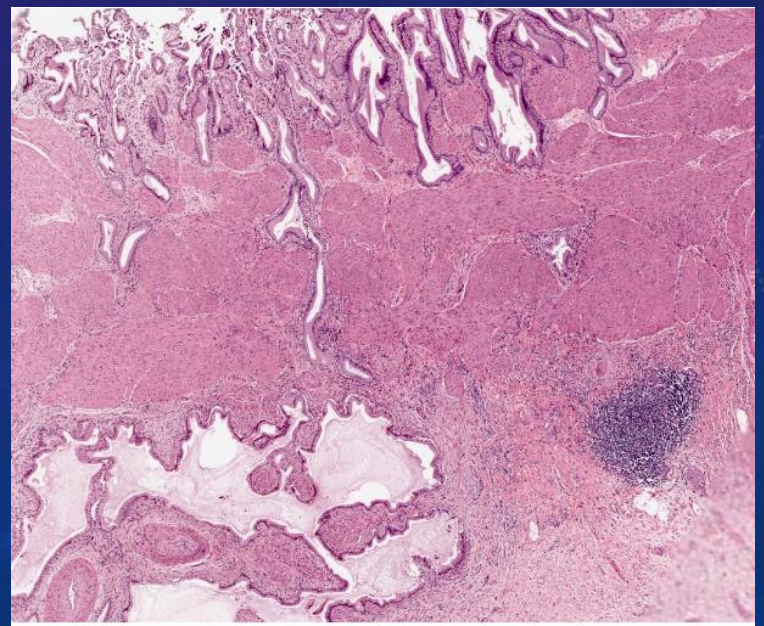
GALLBLADDER

- <u>CHOLECYSTITIS:</u>
  - Acute Calculous Cholecystitis: Acute inflammation of a gallbladder that contains stones.
  - Chronic Cholecystitis: occur due to repeated bouts of acute cholecystitis or de novo.

pnm/edema/fibrin/erythema

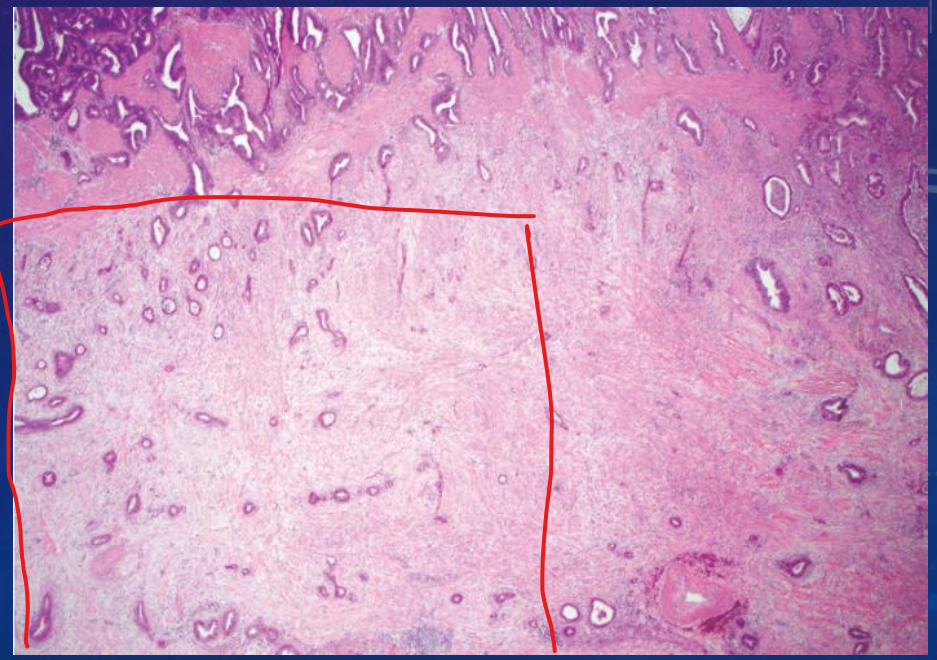


fibrosis/ lymphocytes



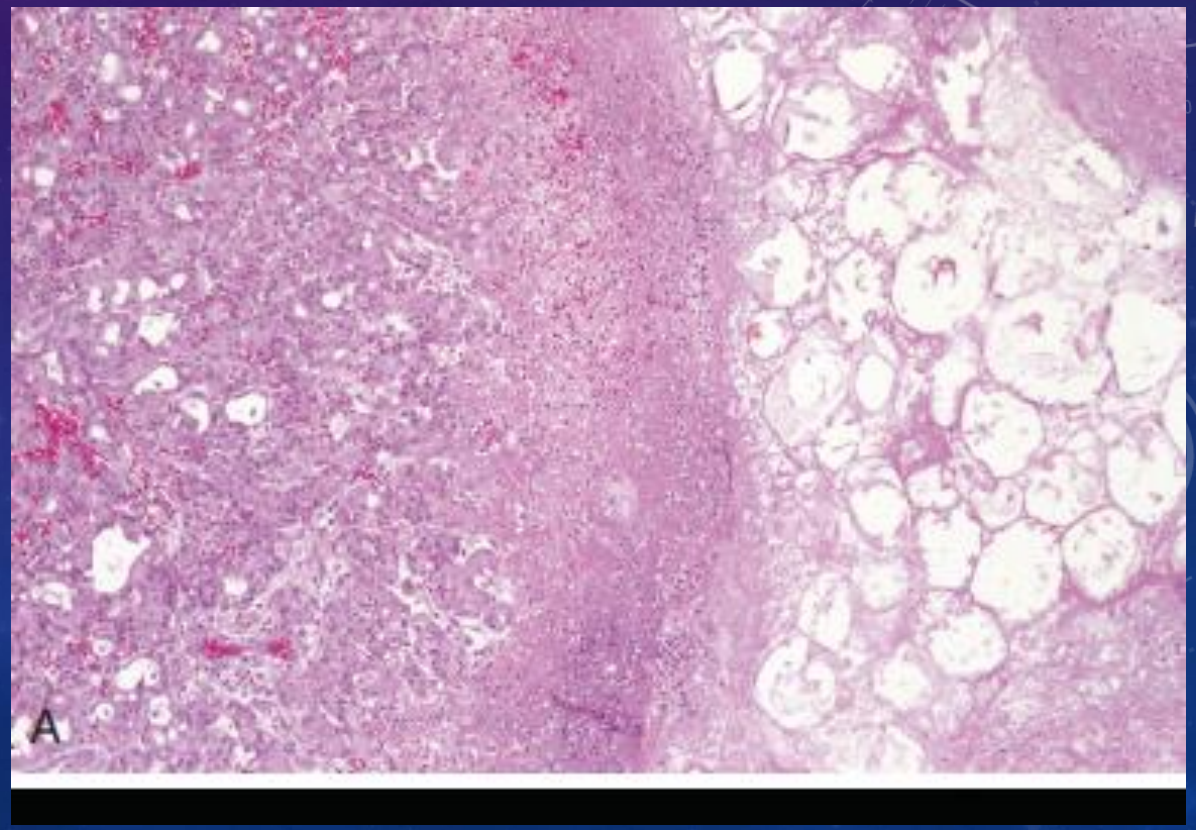
CARCINOMA OF THE GALLBLADDER:

- more common in women and occurs most frequently in the seventh decade of life.
- Presenting symptoms : abdominal pain, jaundice, anorexia, nausea and vomiting.
- Most carcinomas of the gallbladder are adenocarcinomas.



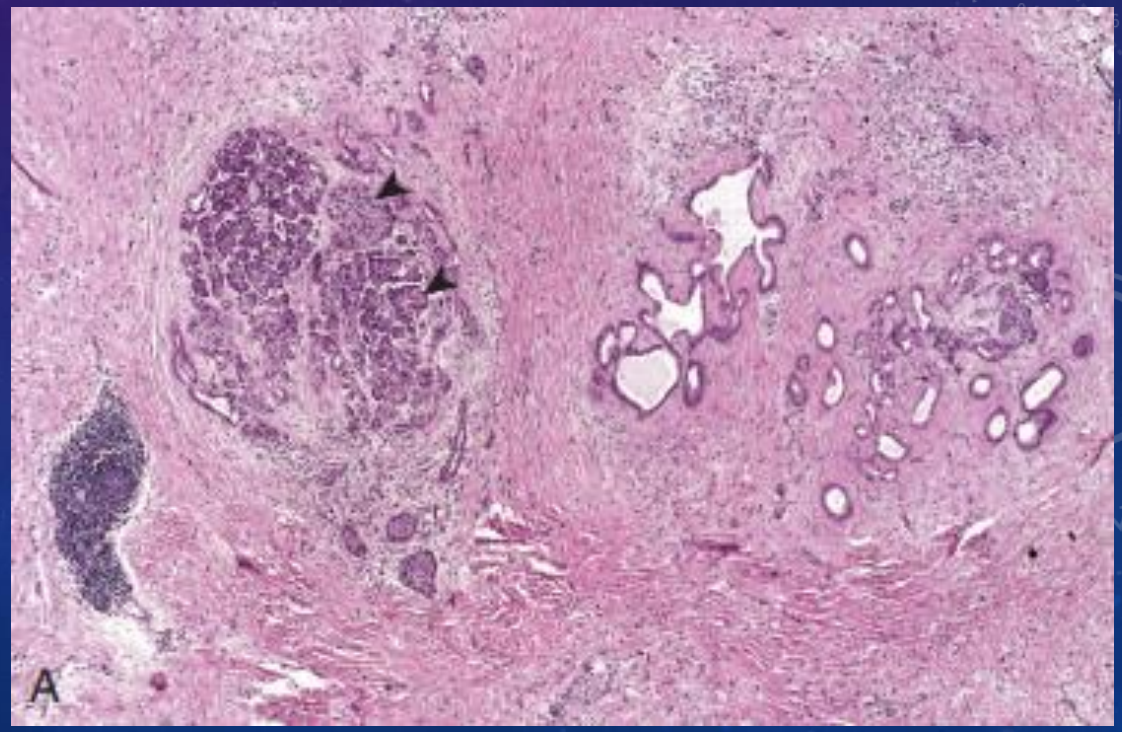
ACUTE PANCREATITIS MORPHOLOGY

- acute inflammatory cell infiltrate admixed with edema and fibrinous exudate.
- patchy necrosis.



CHRONIC PANCREATITIS MORPHOLOGY

- Chronic pancreatitis is characterized by parenchymal fibrosis, reduced number and size of acini, and variable dilation of the pancreatic ducts

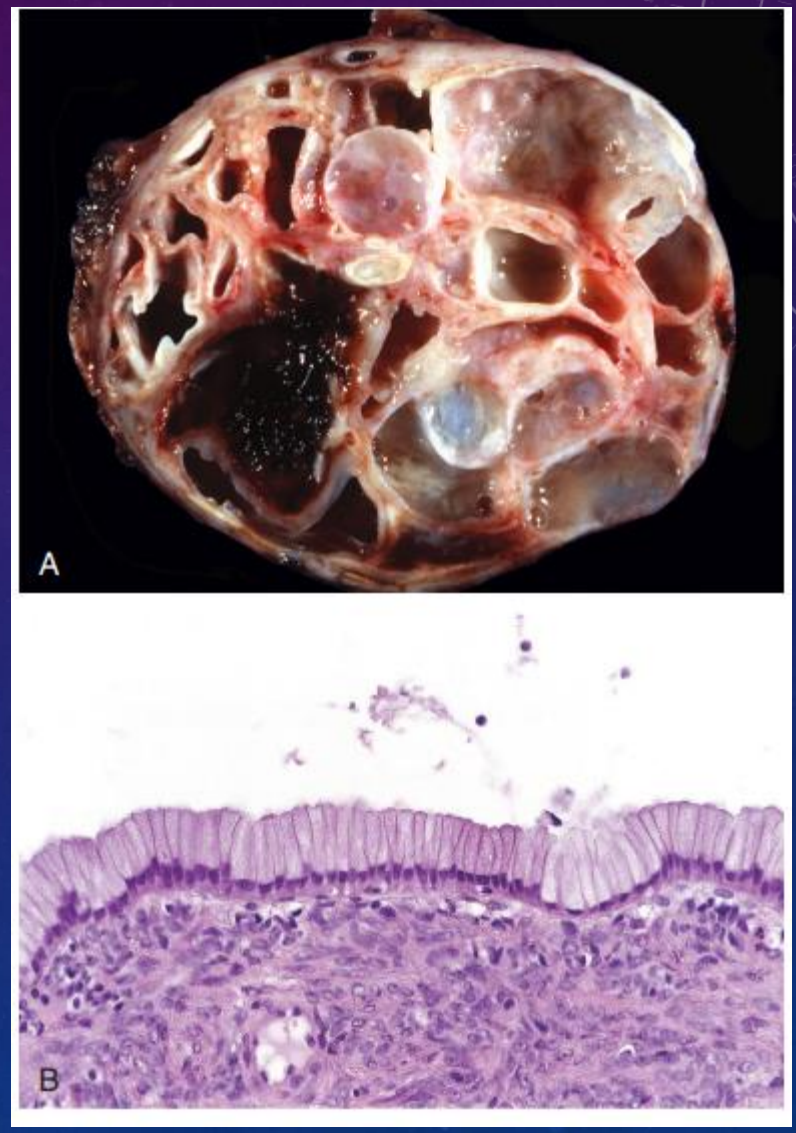


PANCREATIC NEOPLASMS: CYSTIC NEOPLASMS

- 1. Serous cystadenomas :
- composed of glycogen-rich cuboidal cells surrounding small cysts containing clear, straw colored fluid.

2. mucinous cystic neoplasm:

the cysts are lined by a columnar mucinous epithelium with an associated densely cellular stroma resembling that of the ovary.



PANCREATIC CARCINOMA MORPHOLOGY

- Carcinomas of the pancreas usually are hard, gray-white, stellate, poorly defined masses.

- On microscopic examination,:
- Moderately to poorly differentiated adenocarcinoma

forming abortive glands with mucin secretion

or cell clusters and exhibiting an aggressive,

deeply infiltrative growth pattern