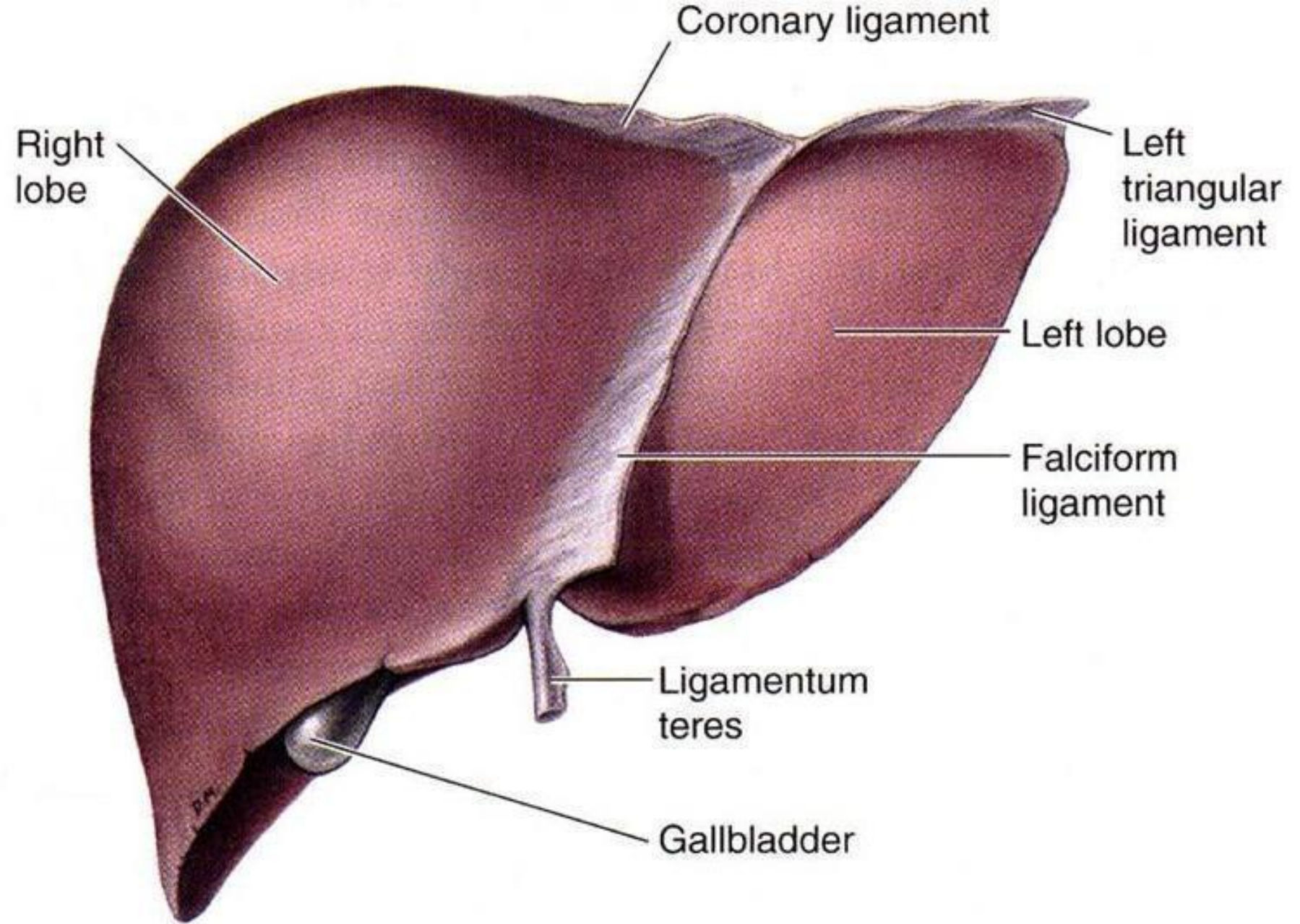


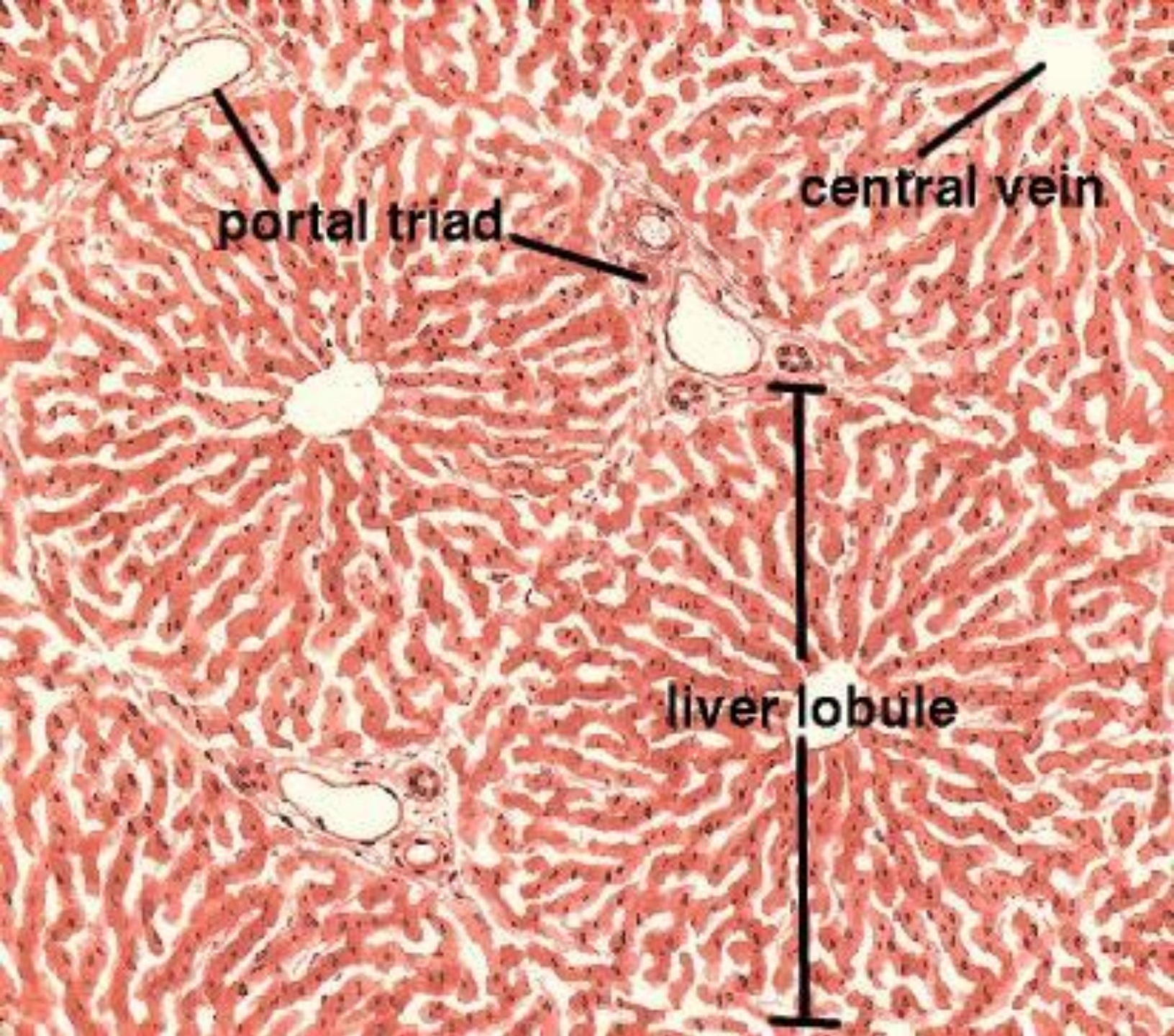
Hepatobiliary system

Integrated practical

3-1-17

Normal anatomy and histology





portal triad

central vein

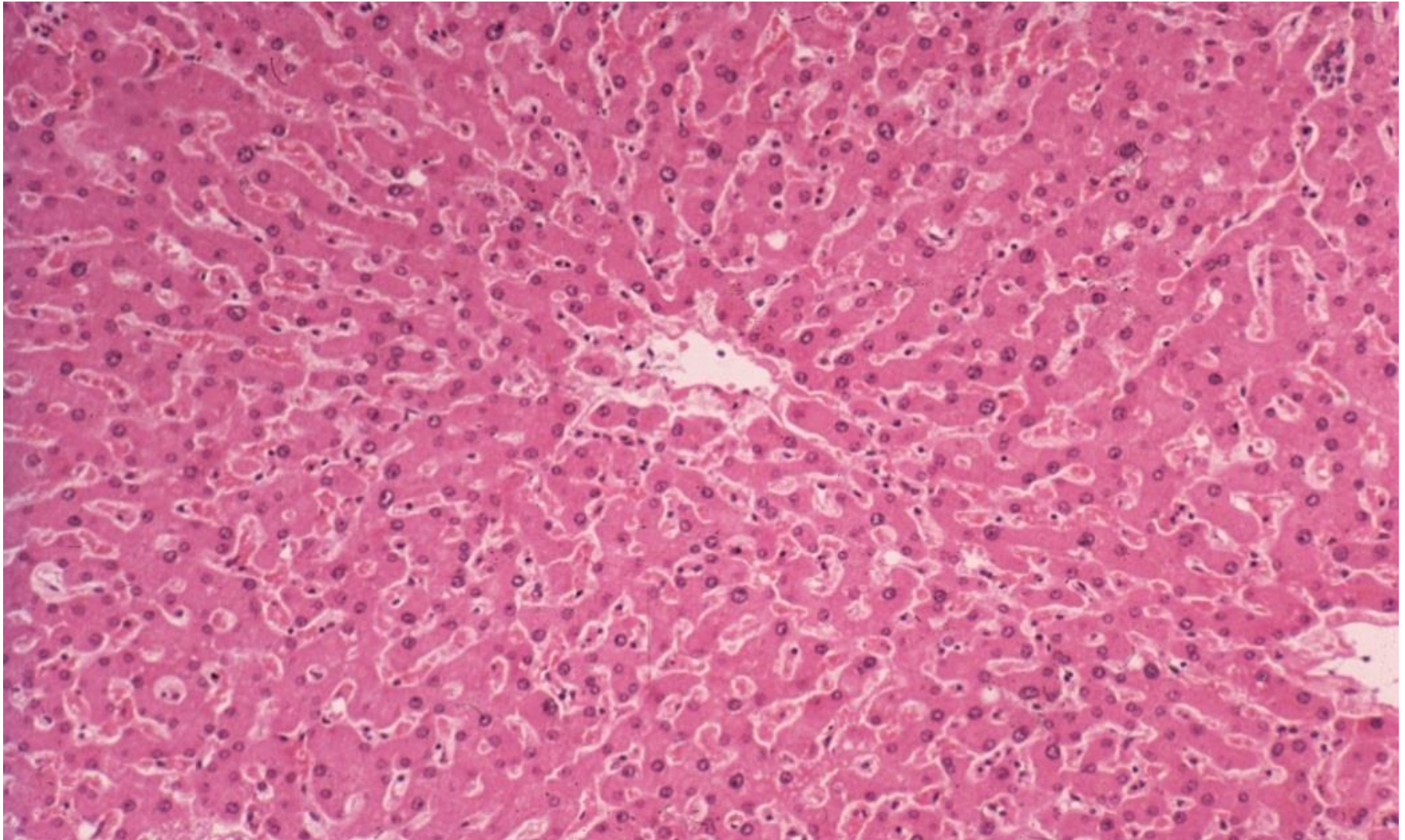
liver lobule

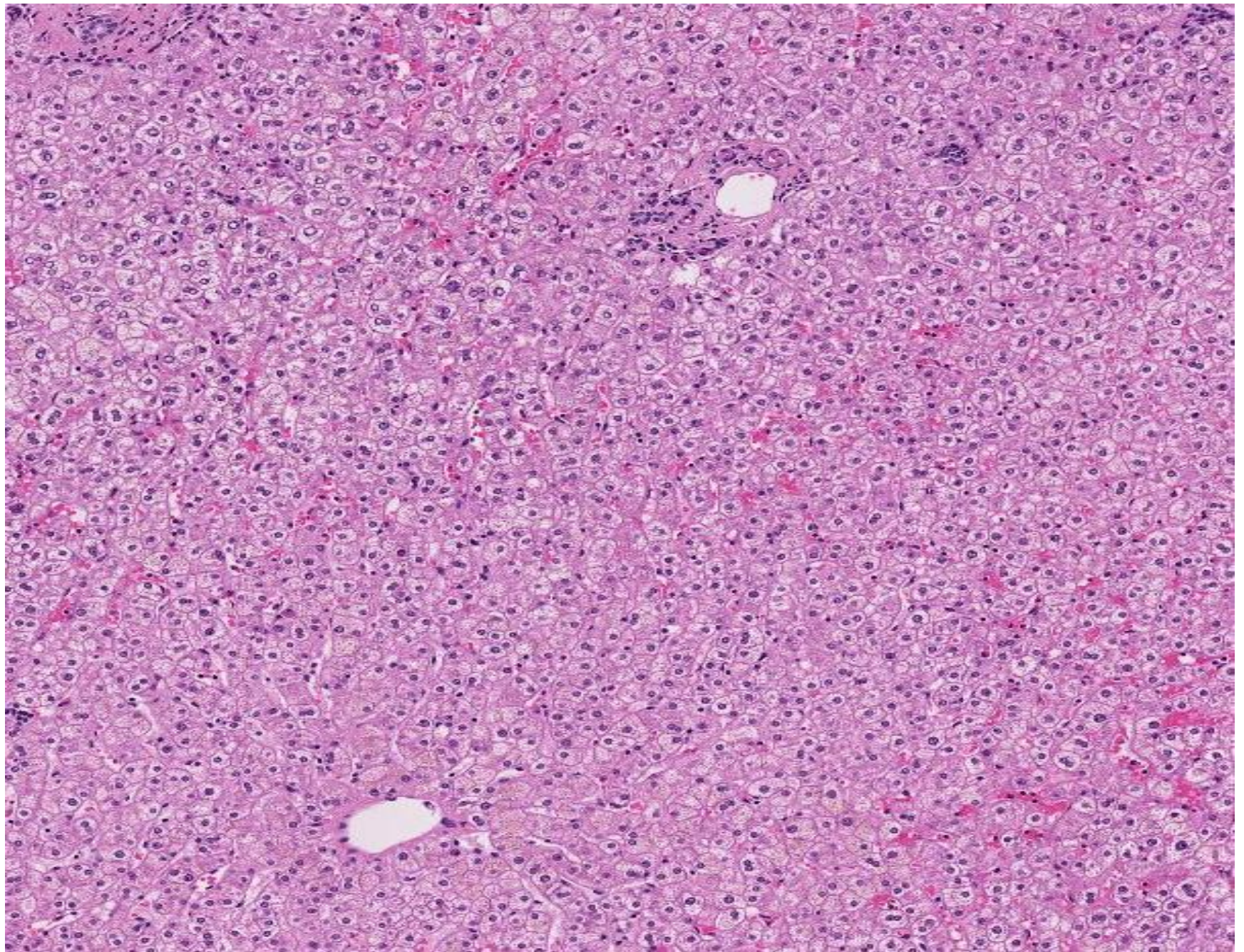
N

O

FIBROUS
TISSUE

Normal Liver





Gross and histopathology

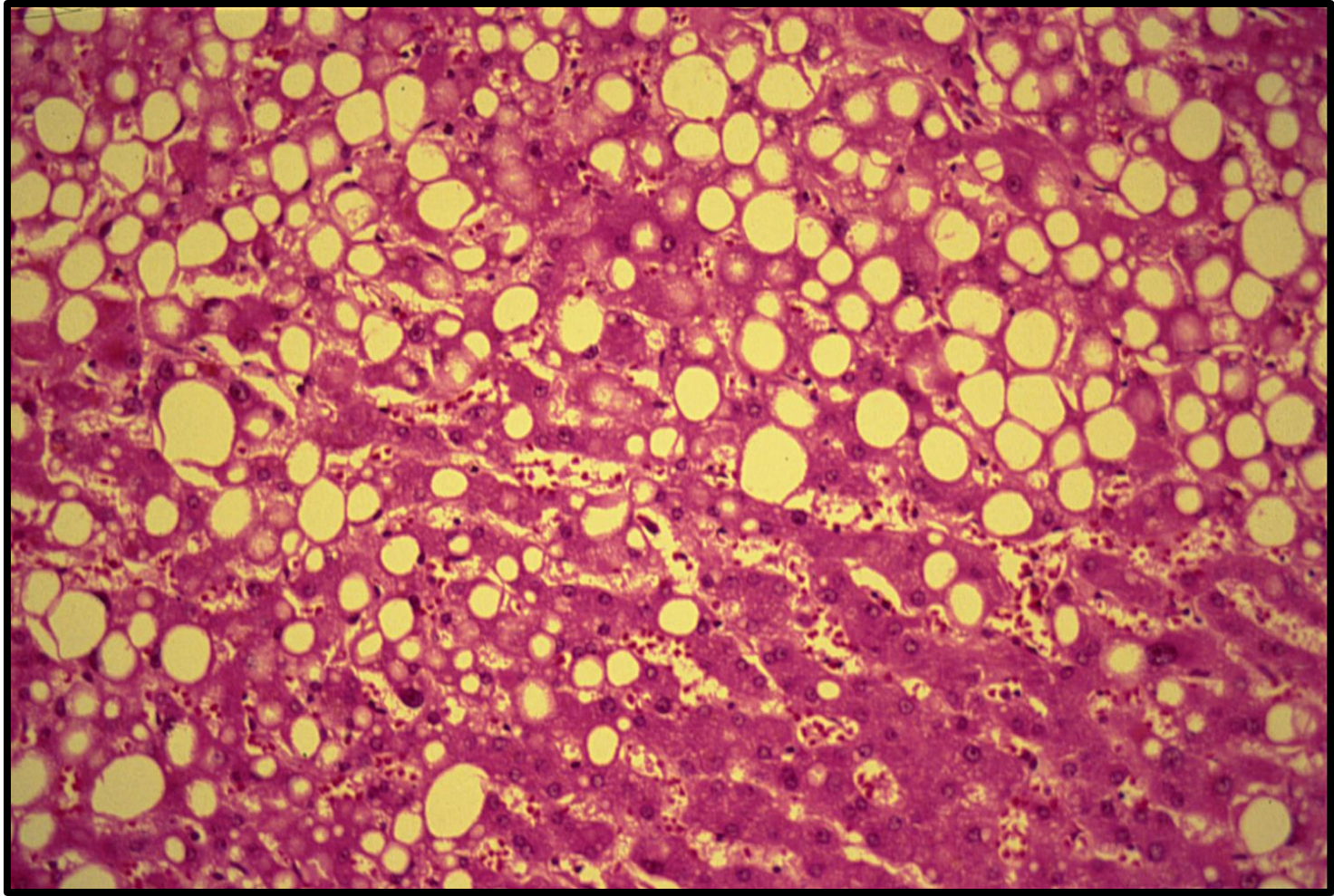
Fatty liver



Organ: Liver



Dx: Steatosis (Fatty Liver)







Organ: Liver

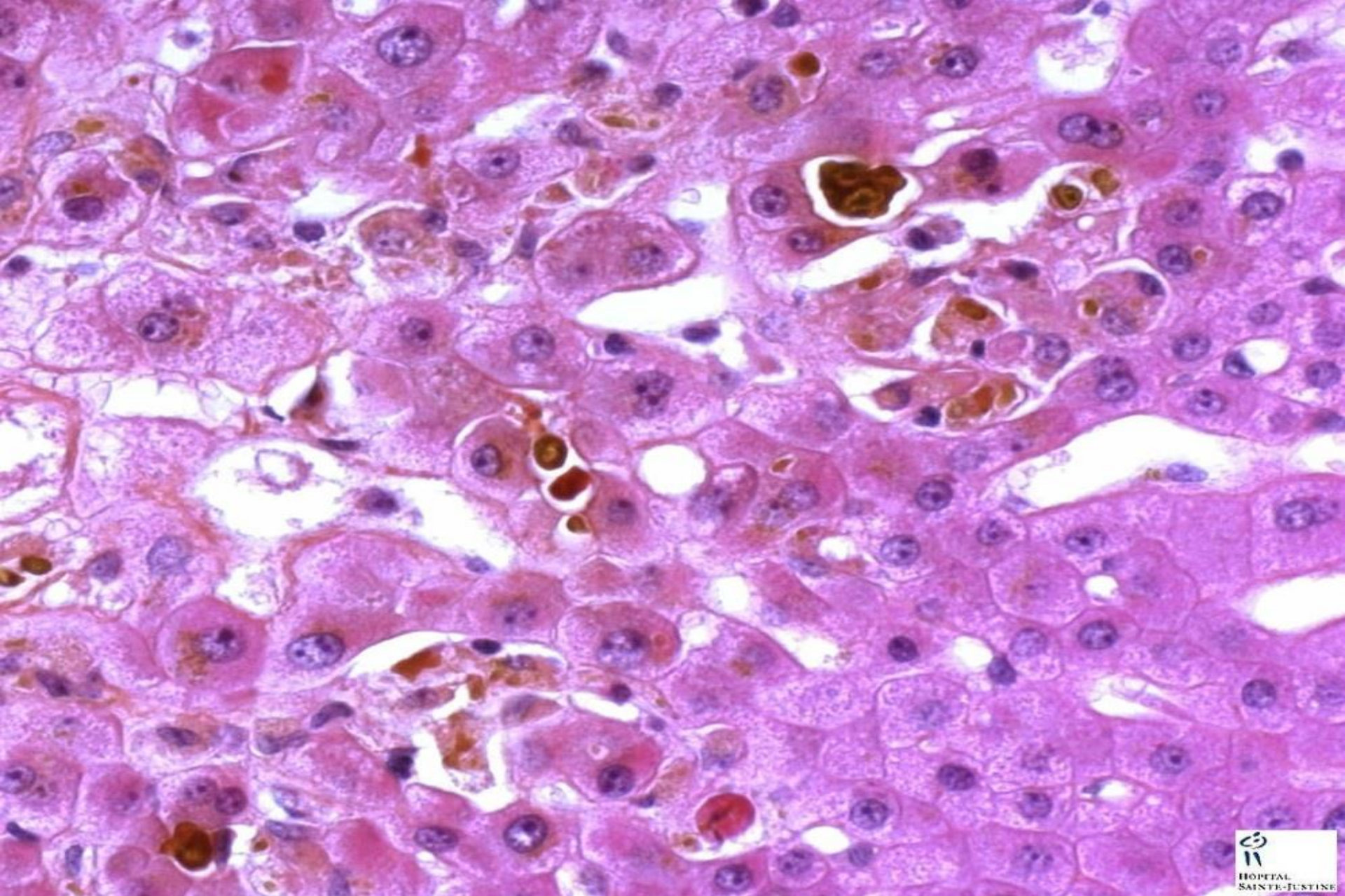
Dx: Fatty Change

Fatty change of the liver:

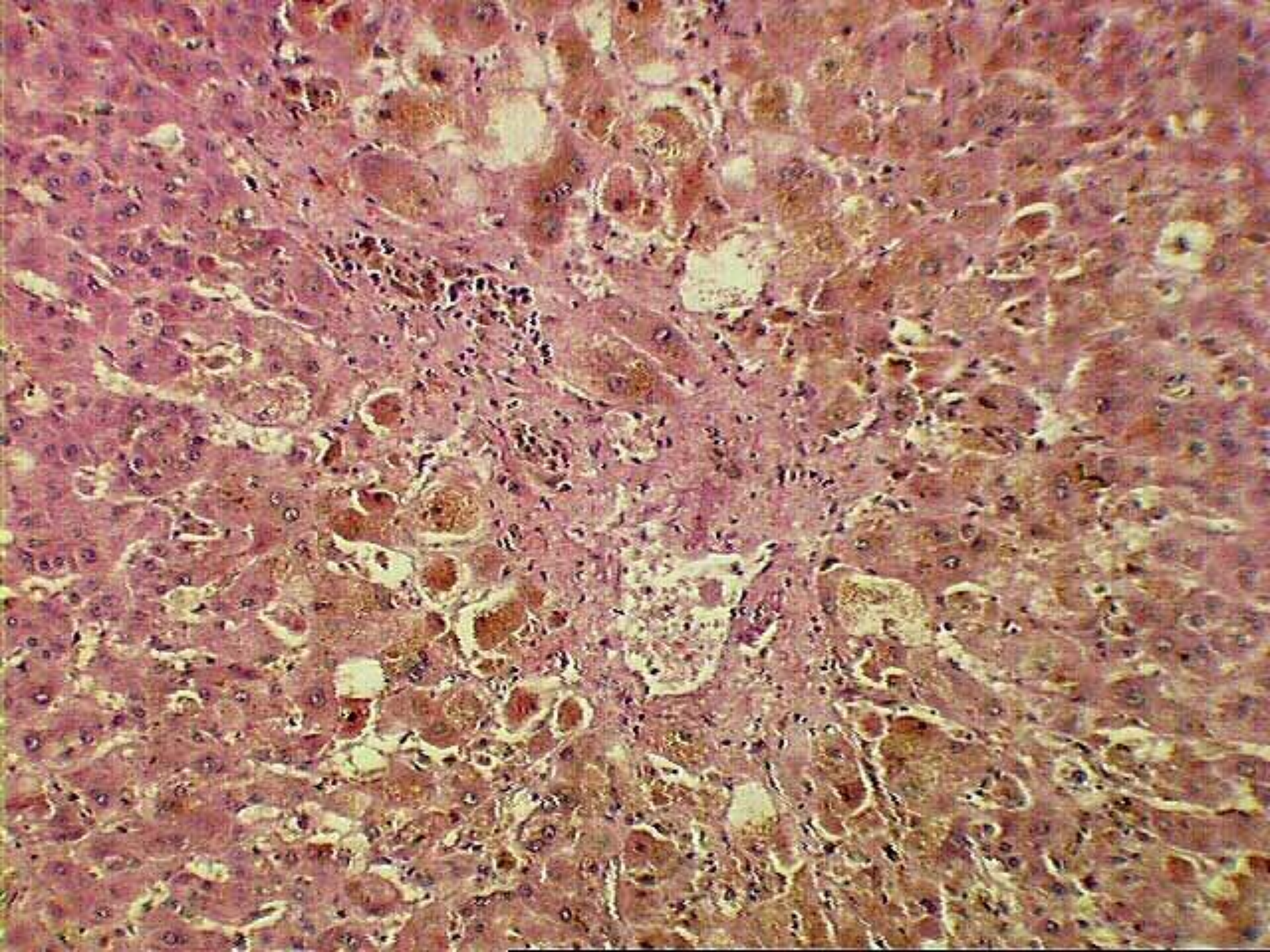
Section of liver shows:

-  **Normal lobular architecture.**
-  **The liver cells are distended by clear vacuoles of dissolved fat with displacement of the periphery.**
-  **Fatty cysts may be seen.**
-  **No inflammation and no fibrosis.**

Cholestasis



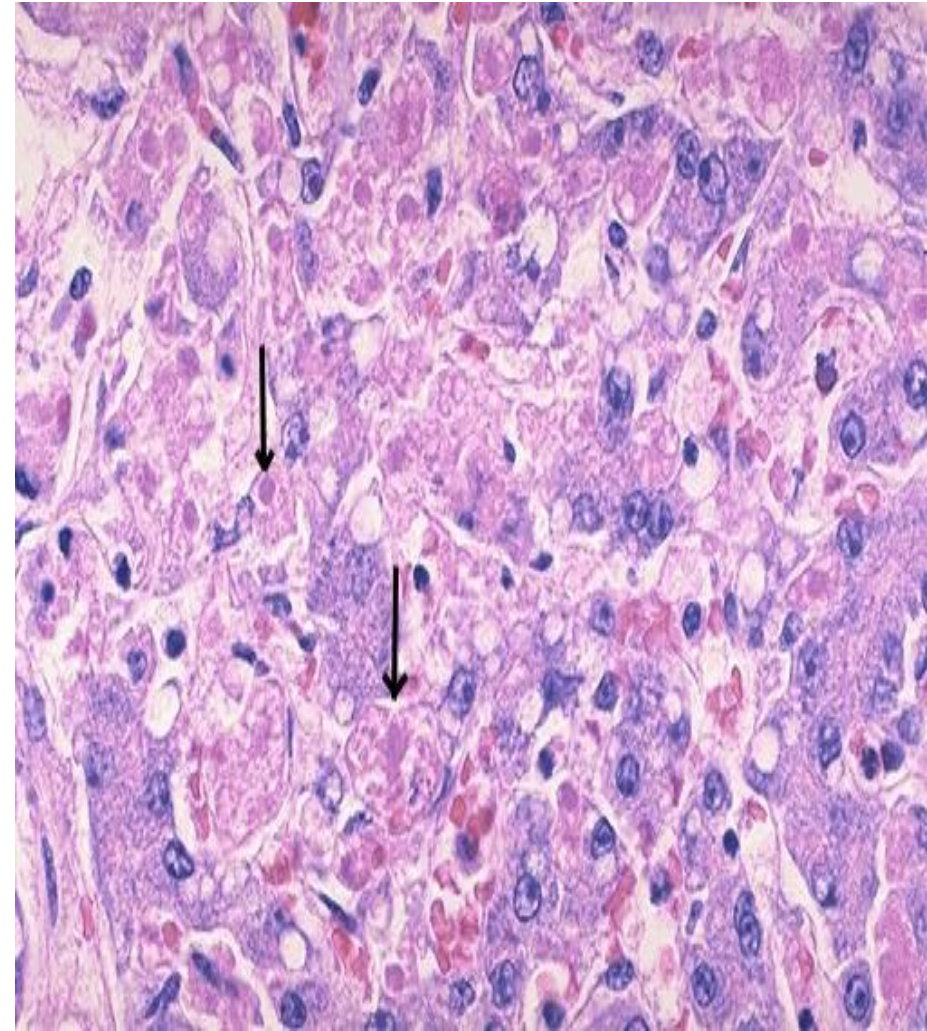
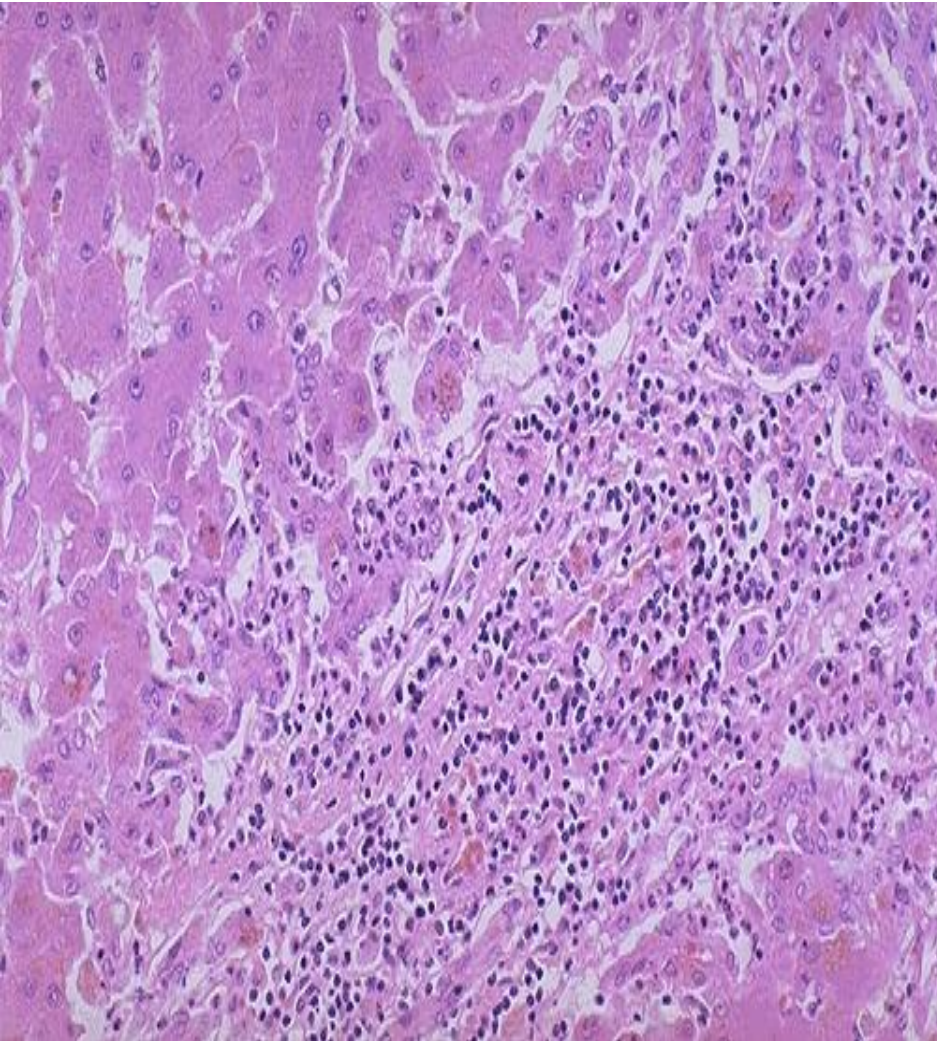
Bile “plugs”, Bile “lakes”



Cholestasis

- Bile accumulation in the liver.
- Could be mechanical or functional (obstructive and non-obstructive)
- Changes in:
 - lobular parenchyma
 - portal tracts
- Bilirubin accumulation in liver lobule
- Characteristic lab finding is **elevated Alkaline phosphatase and GGT**

Acute Viral Hepatitis

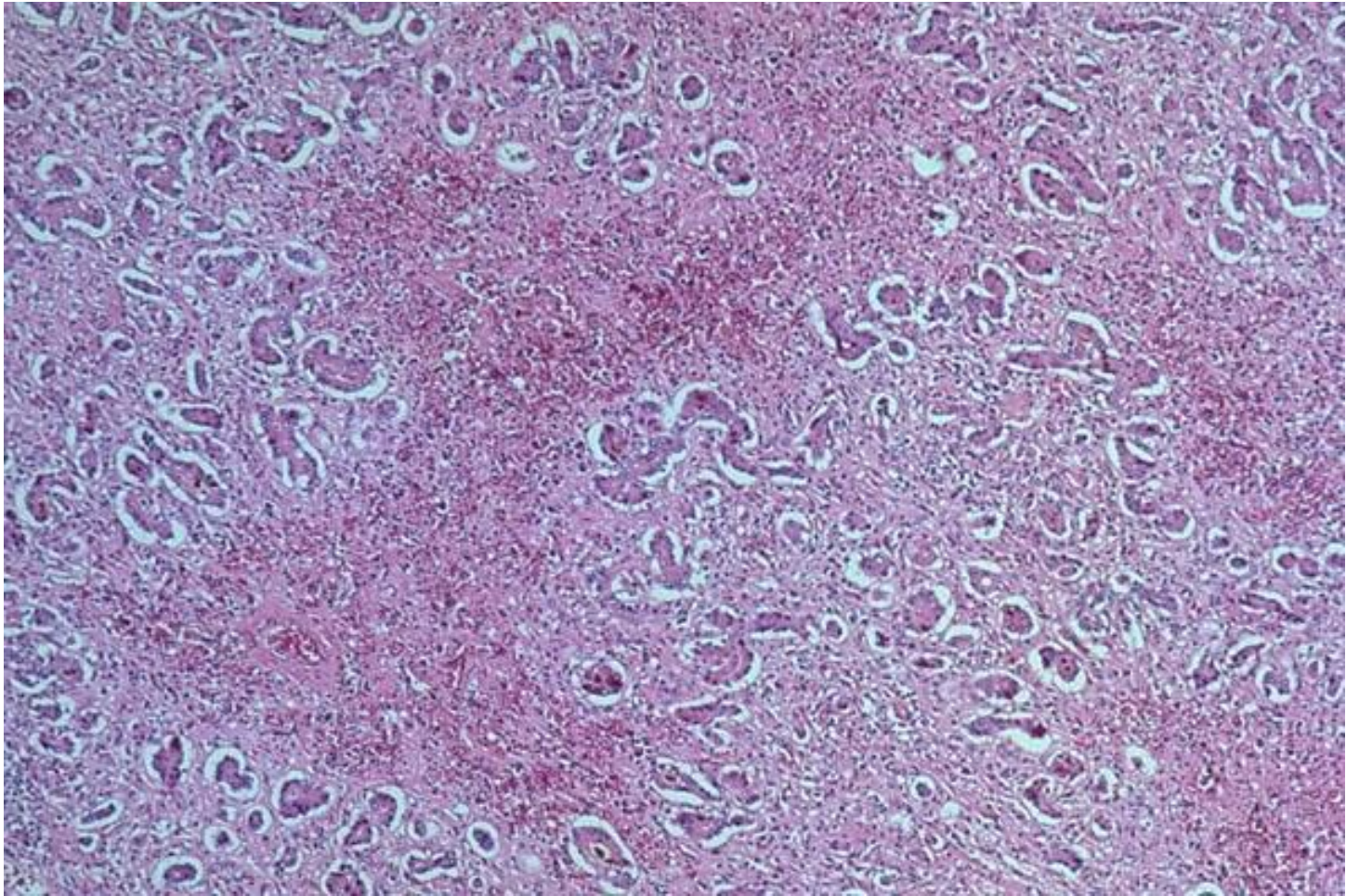


Hepatitis B can result in a fulminant hepatitis with extensive necrosis. A large pink cell undergoing "ballooning degeneration" is seen below the right arrow. At a later stage, a dying hepatocyte is seen shrinking down to form an eosinophilic "councilman body" below the arrow on the left.



FULMINANT HEPATITIS

“FULMINANT” Acute Viral Hepatitis

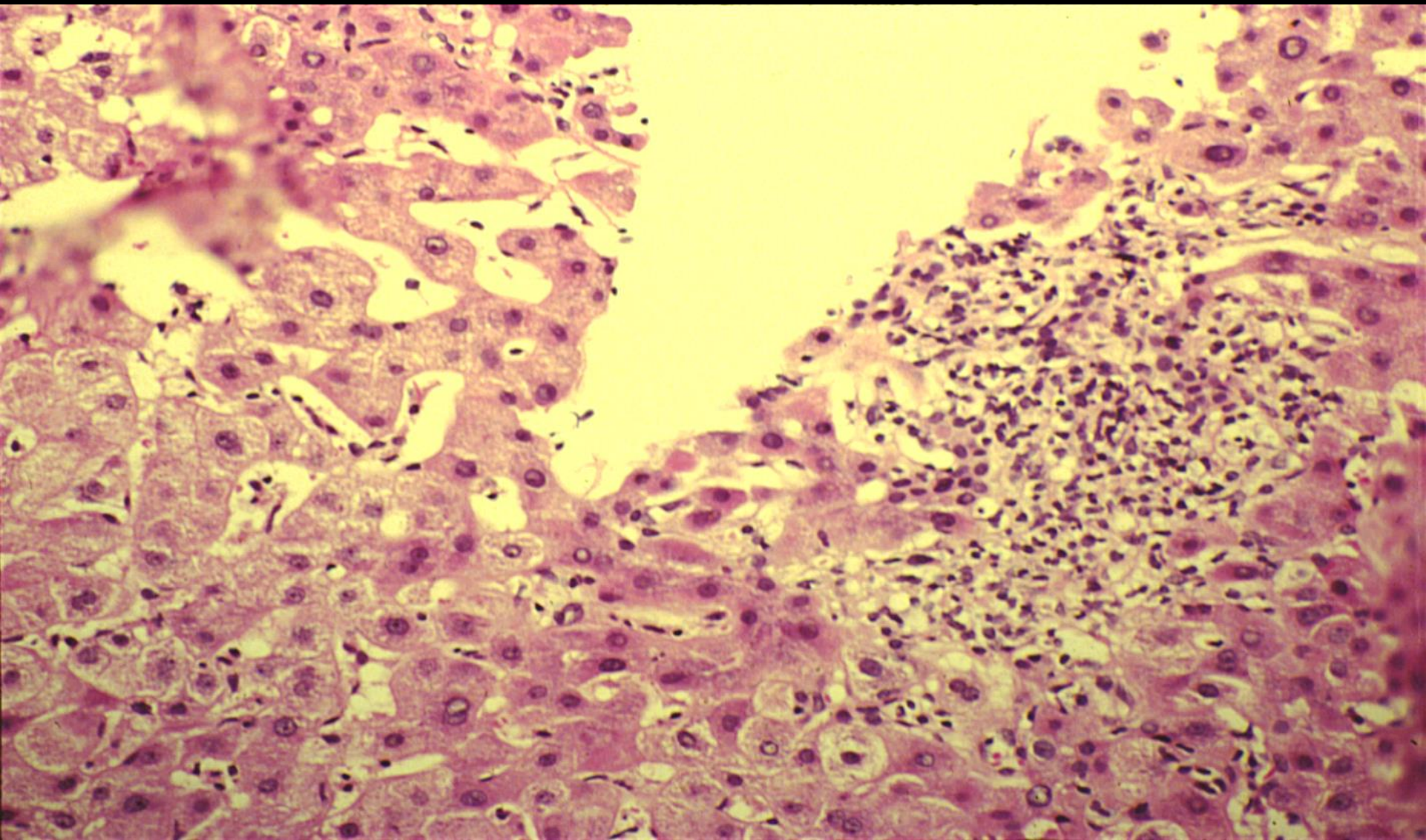


“Fulminant” hepatitis is associated with massive hepatic necrosis and often (usually) results in death.

Chronic hepatitis



CHRONIC HEPATITIS



Chronic hepatitis:

Section from this liver biopsy show:

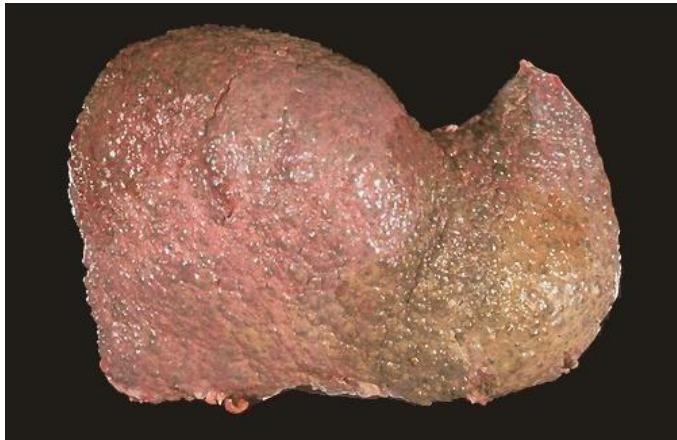
- + Moderate chronic inflammatory cells infiltration consisting of lymphocytes and histiocytes in both portal tracts and liver parenchyma.**
- + Piecemeal necrosis, hepatocytes swelling and “spotty” hepatocytes necrosis are also noticed.**
- + No evidence of cirrhosis or malignancy noted.**

Hepatic cirrhosis



- Hepatic nodules of variable sizes.

b- Fibrous bands between modules.

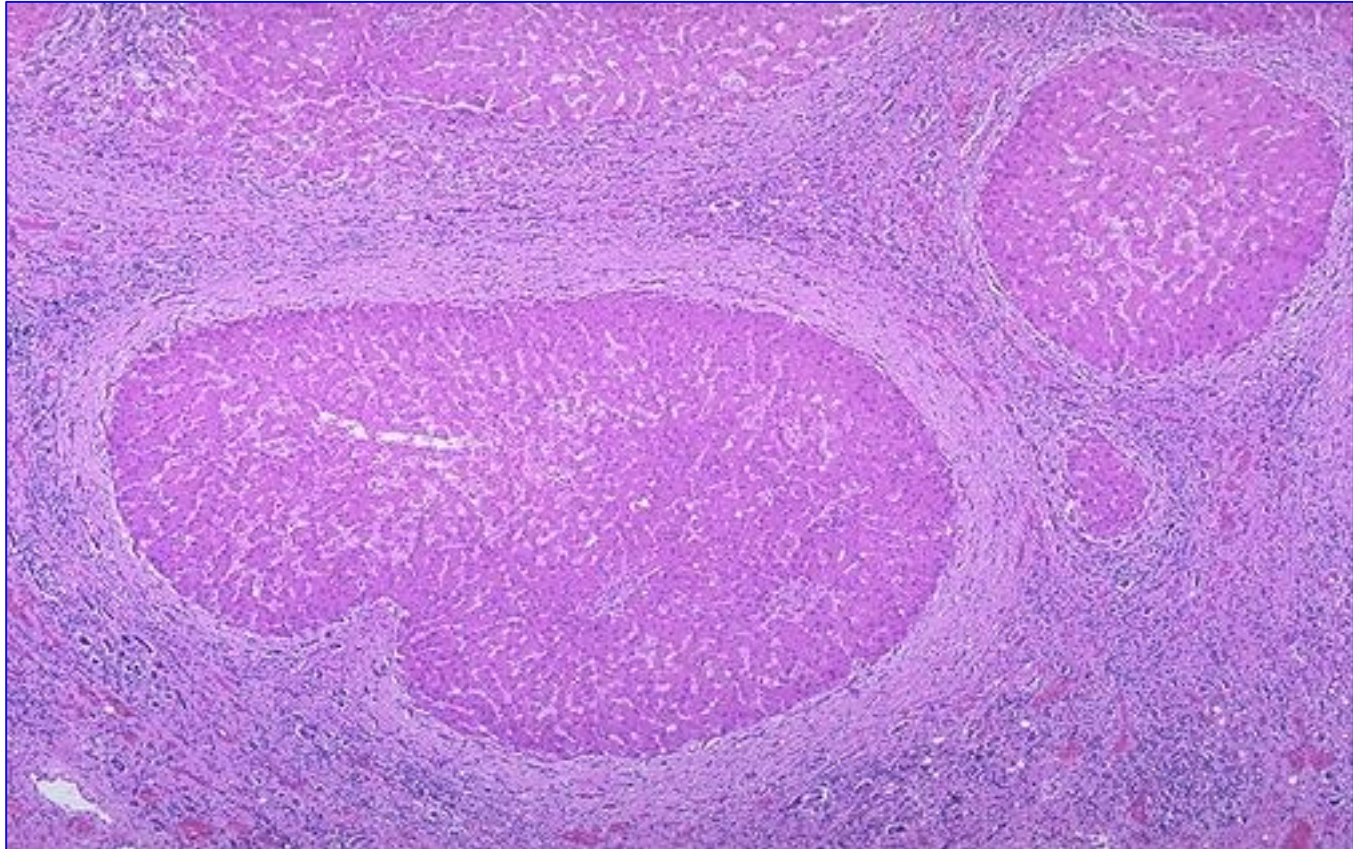


Nodular liver surface.

Organ: Liver

Dx: Hepatic cirrhosis

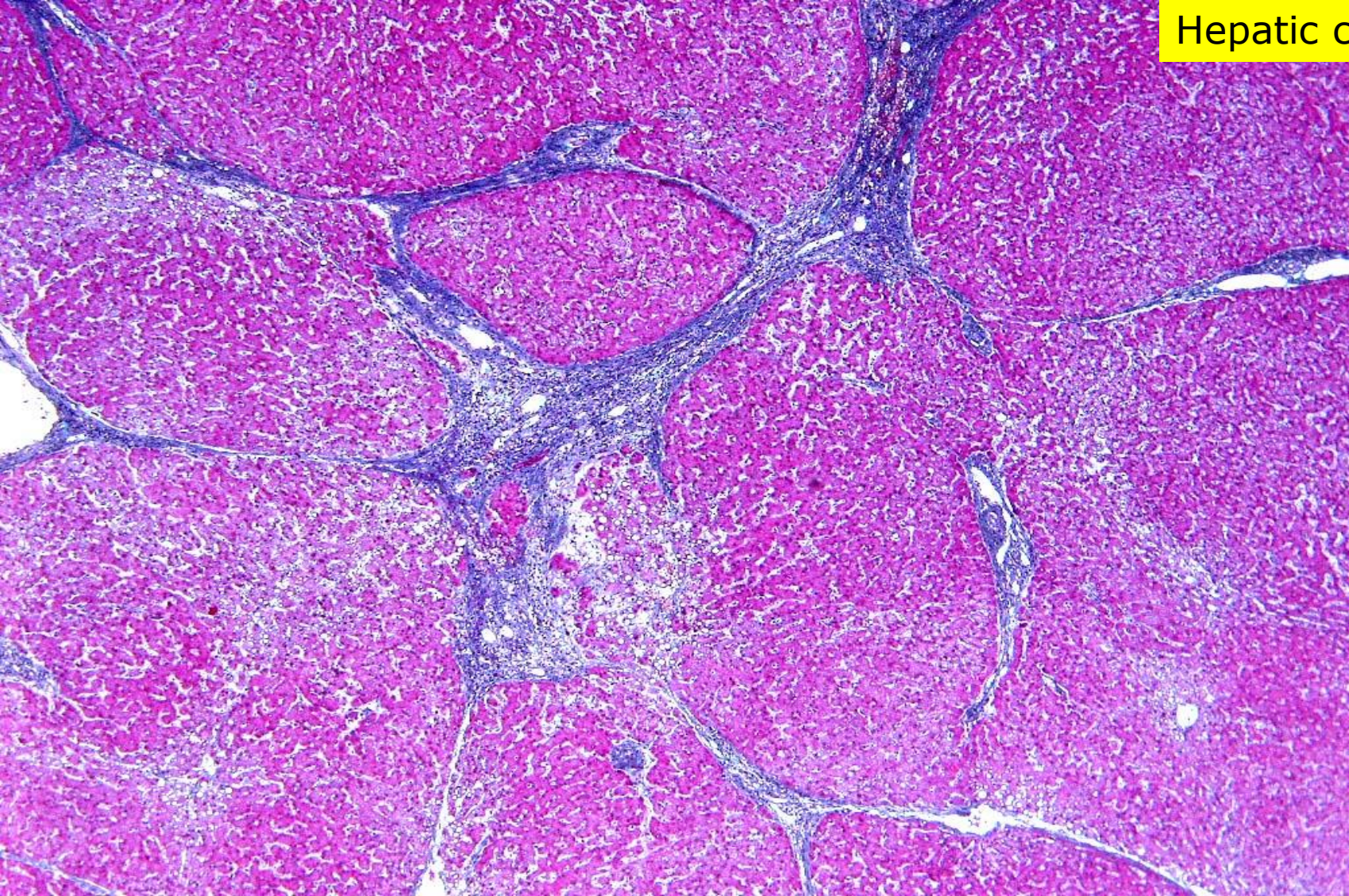
Hepatic cirrhosis



a – Regenerative hepatocytes nodules.

b- Fibrous bands between the regeneration nodules.

c- Proliferating bile ducts and chronic inflammatory cells within the fibrous bands.



MASSONS TRICHROME STAIN *showing :Fibrosis around liver nodules*

Cirrhosis of the liver:

- + Loss of lobular architecture and formation of regenerative nodules of variable size and shape, surrounded by fibrous tissue.**
- + Each nodules consists of liver cells without any arrangement and with no central vein.**

Complications that can occur in cirrhosis following portal HTN:

a- Ascites.

b- Oesophageal varices.

c- Hepatic encephalopathy.

d- Caput medusa.

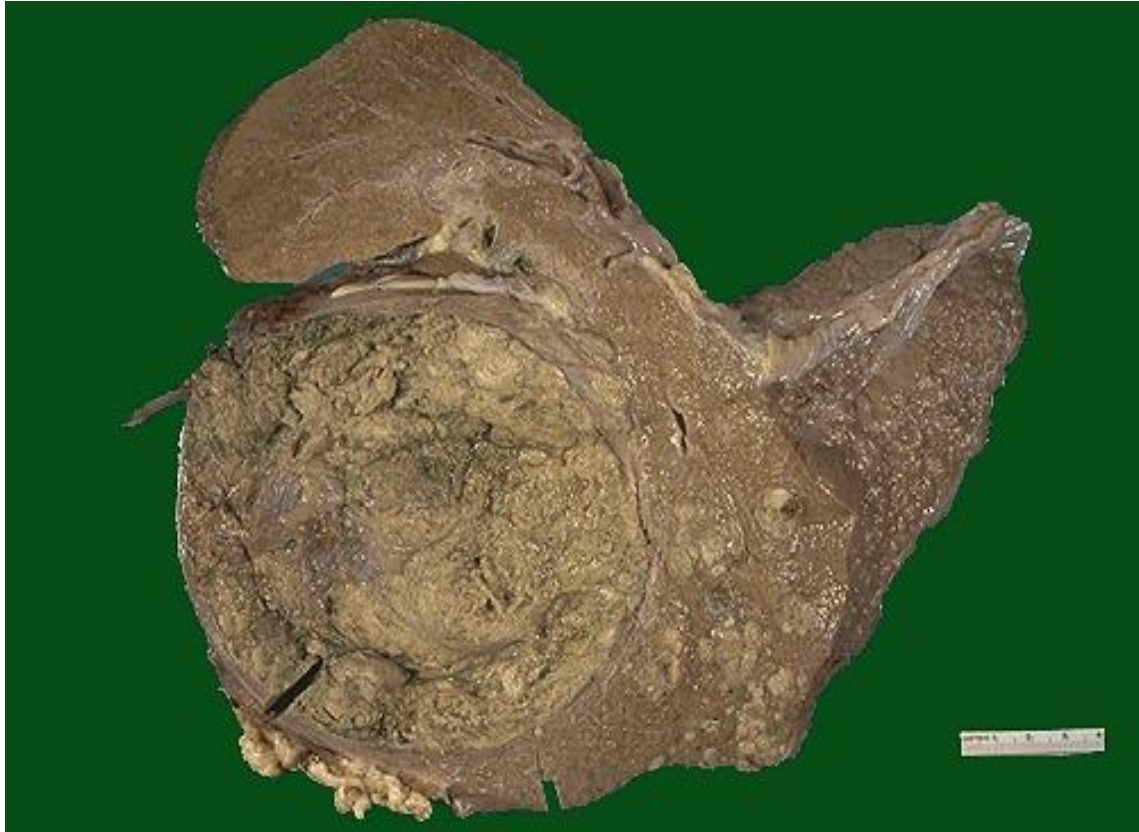
e- Splenomegaly.

f. Hemorrhoids.

g. Malnutrition.

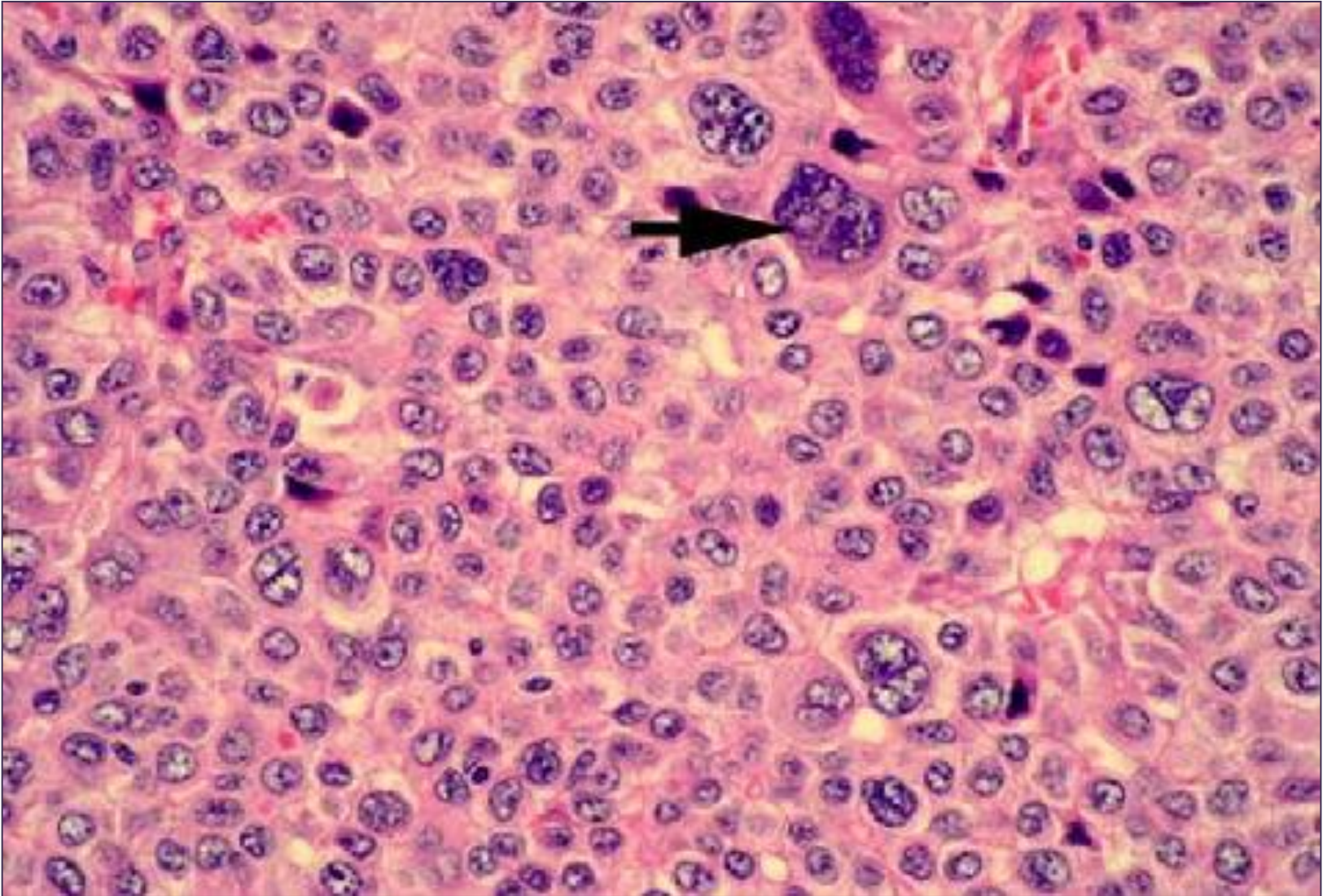
h. Skin spider angiomas.

Hepatocellular carcinoma



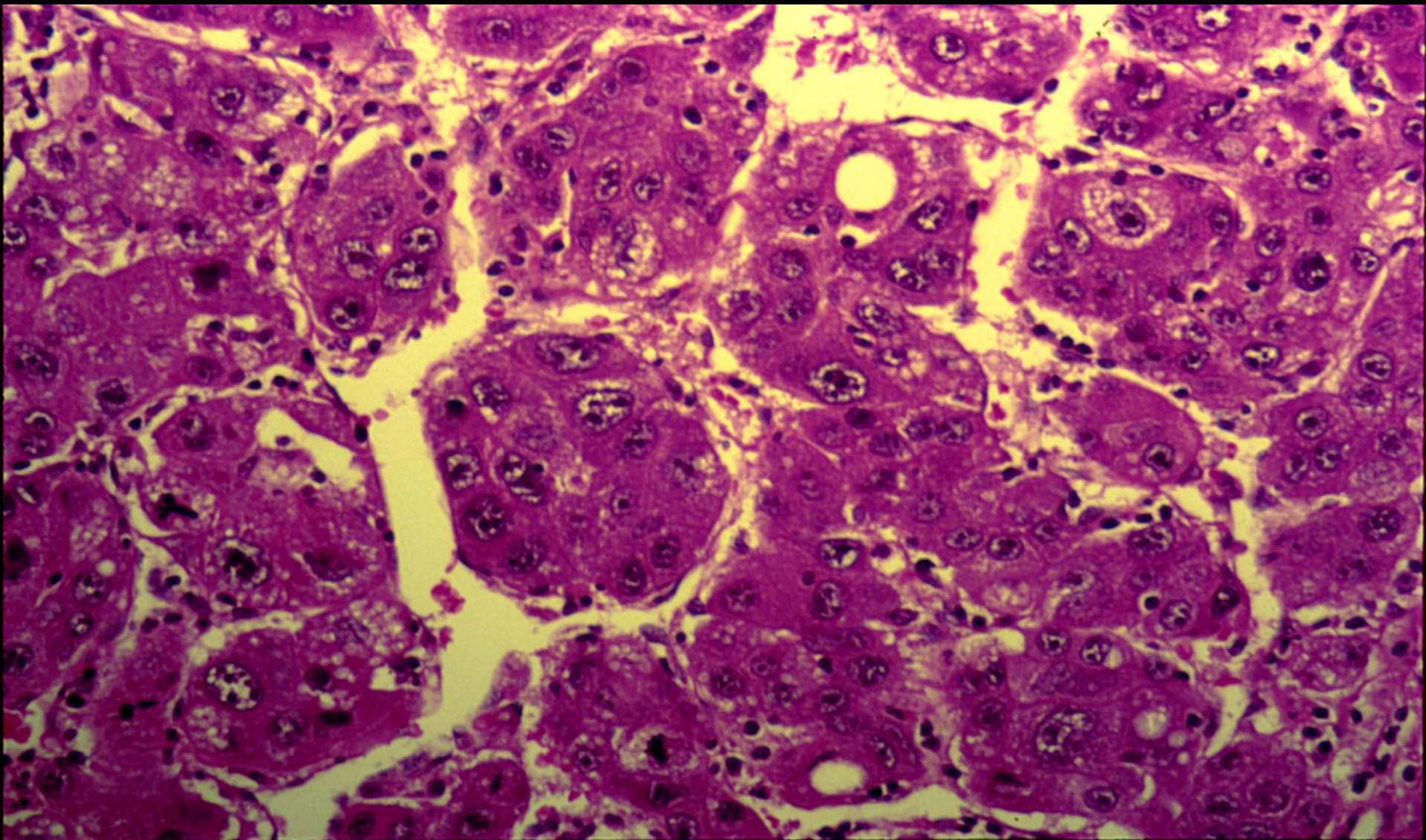
Hepatocellular carcinoma

Well circumscribed hepatic mass showing partly pale and partly Haemorrhagic cut surface.



- *Malignant cells*
- *Hepatocytes with prominent nucleoli and nuclear pleomorphism*
- *Loss of normal hepatic architecture*

HEPATOCELLULAR CARCINOMA



Hepatocellular carcinoma:

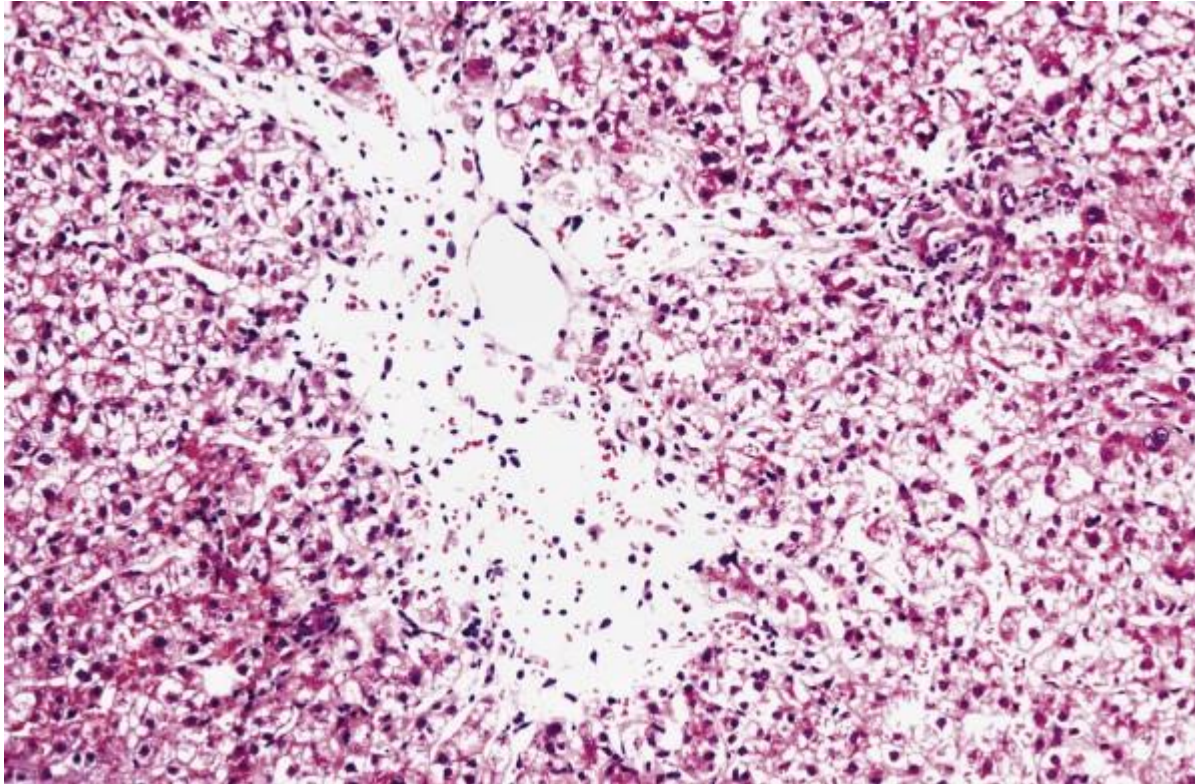
- + Thick cords, trabeculae and nests of malignant liver cells separated by sinusoidal spaces.**
- + Malignant liver cells are pleomorphic, binucleated or forming giant cells with hyperchromatic nuclei.**
- + Mitoses are numerous.**

Areas of haemorrhage and necrosis are present.

Aetiologic factors which leads to HCC:

- *Hepatitis B or C***
- *Chronic alcoholism***
- *Aflatoxin exposure***

Drug toxicity



Hepatocellular necrosis due to paracetamol (acetaminophen). Confluent necrosis with little inflammation is seen in a perivenular area.

Drug Toxicity

- Liver injury due to medications or other toxic agents.
- Can resemble any liver process; clinical correlation essential in diagnosis.

Histopathology: Changes that can be seen are:

- Cholestasis
- Steatosis
- Granulomas
- Hepatocellular Necrosis
- Predictable(intinsic) or unpredictable(idiosyncratic)