



GIT BLOCK

PATHOLOGY PRACTICAL

Prepared by:

- *Prof. Ammar Al Rikabi*
- *Dr. Sayed Al Esawy*

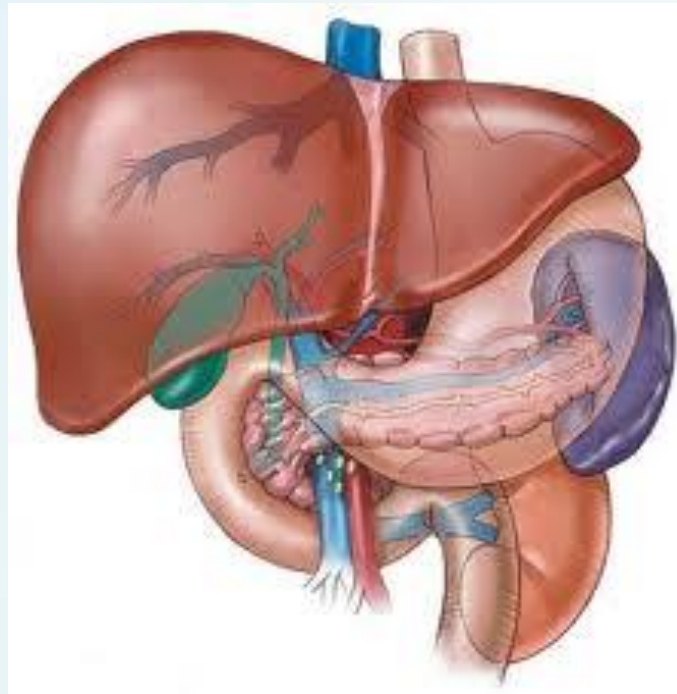
Head of Pathology Department: Dr. Hisham Al Khalidi



Hepatobiliary system

Integrated practical

27-12-2017



Hepatobiliary system



Normal anatomy and histology

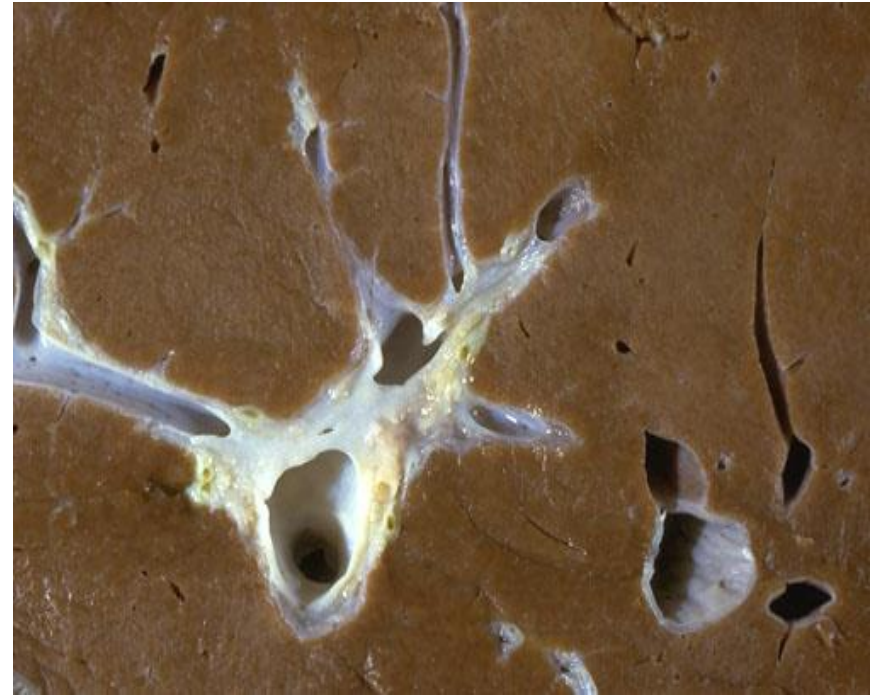
Normal Liver anatomy - Gross & Cut surface

External surface

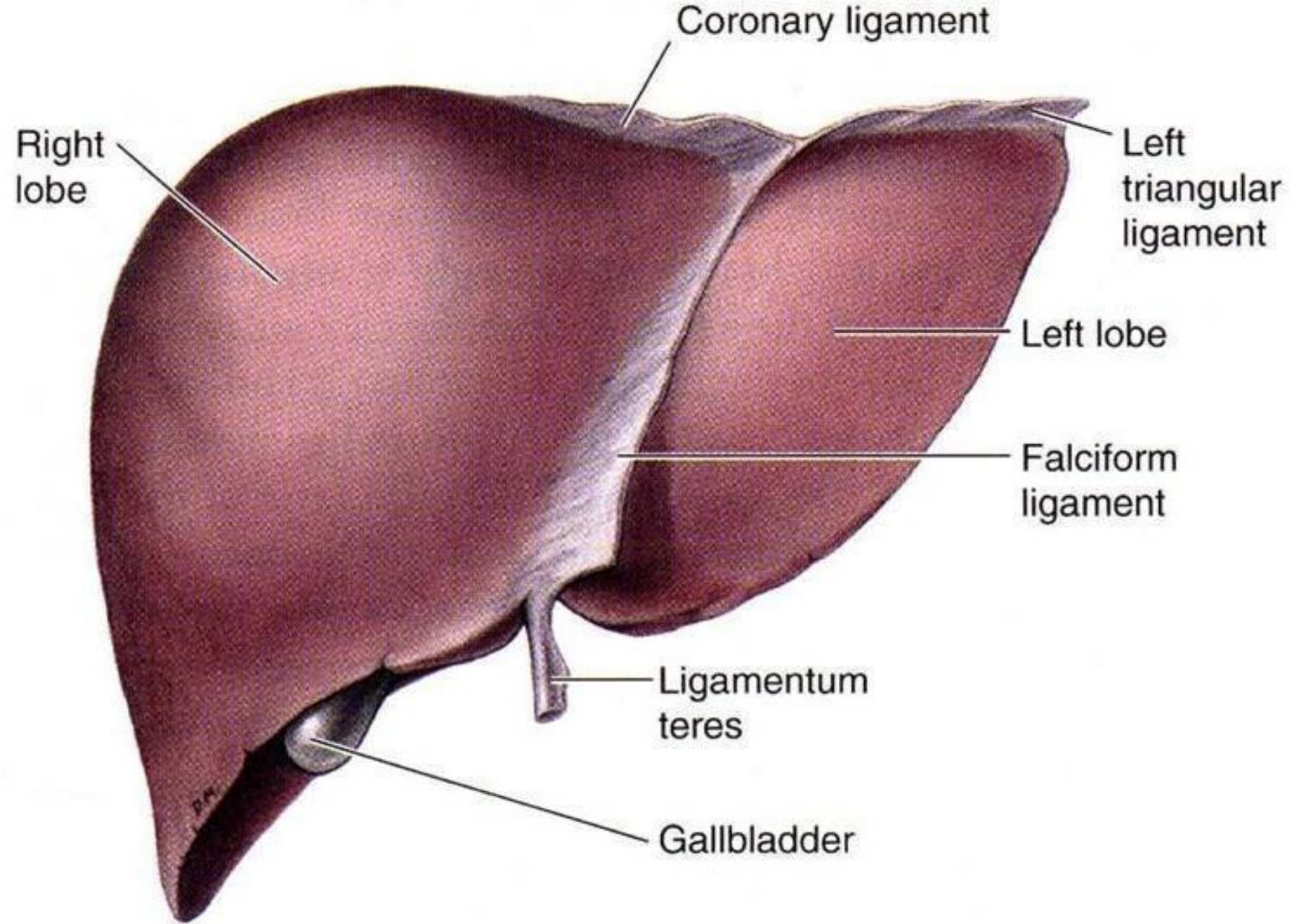


This is the external surface of a normal liver. The color is brown and the surface is smooth. A normal liver is about 1200 to 1600 grams.

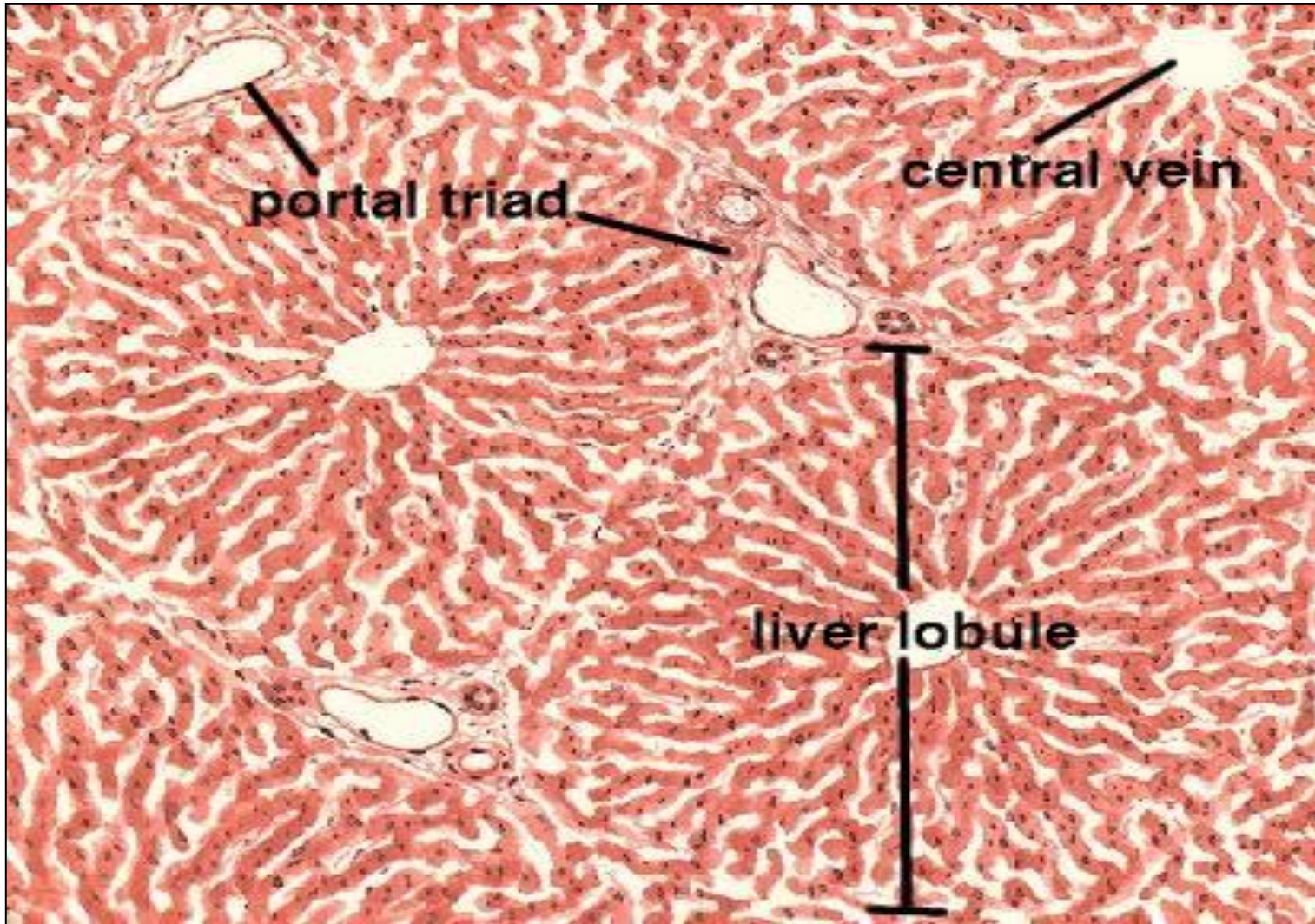
Cut surface



Near the hilum, note the portal vein, which branches at center left, with accompanying hepatic artery and bile ducts. At the lower right is a branch of hepatic vein

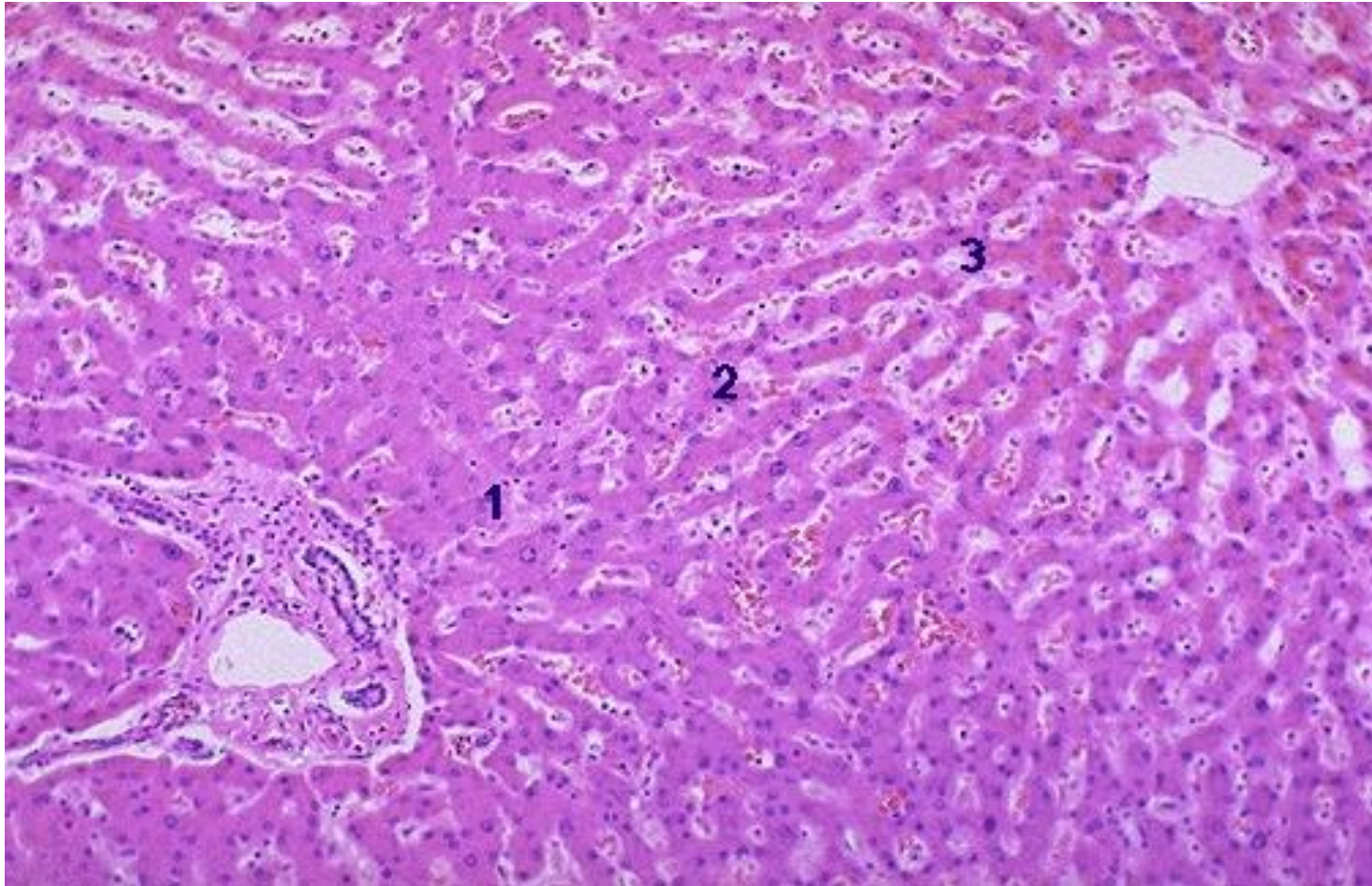


Normal Liver Histology - Gross



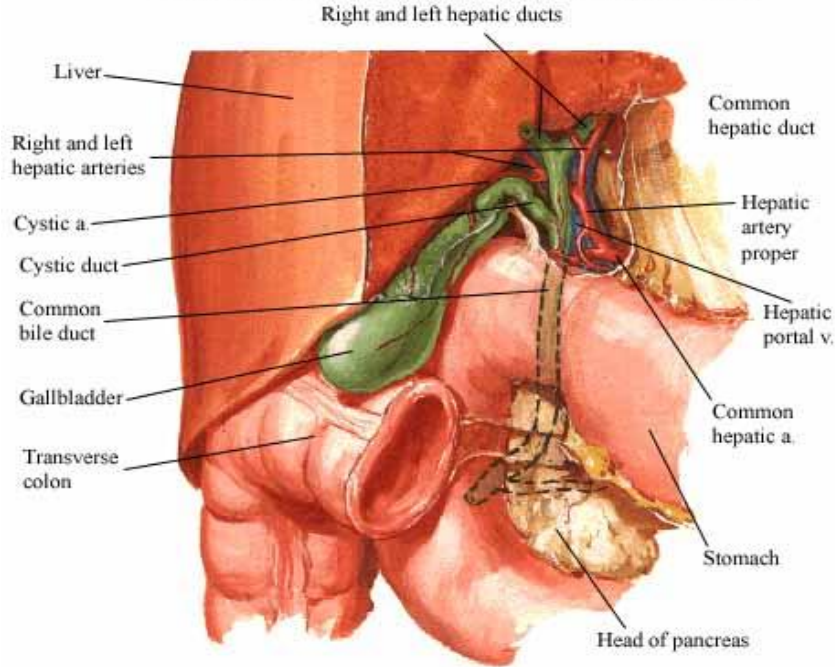
The classical view of liver tissue from a liver biopsy, H&E stained

Normal Liver Histology



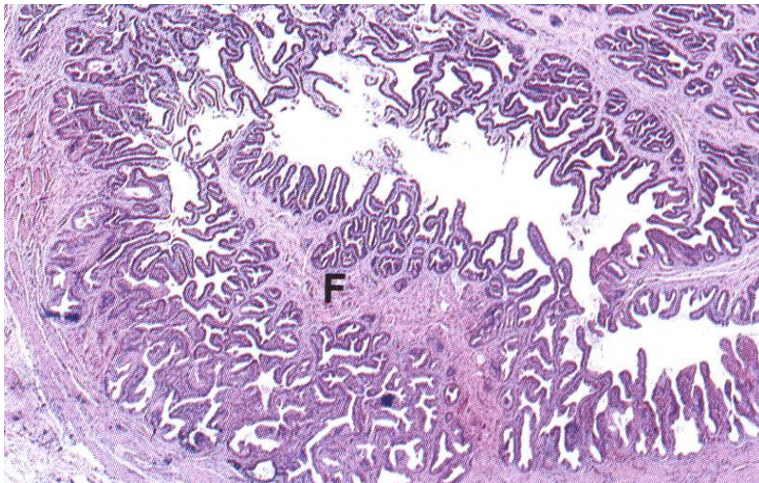
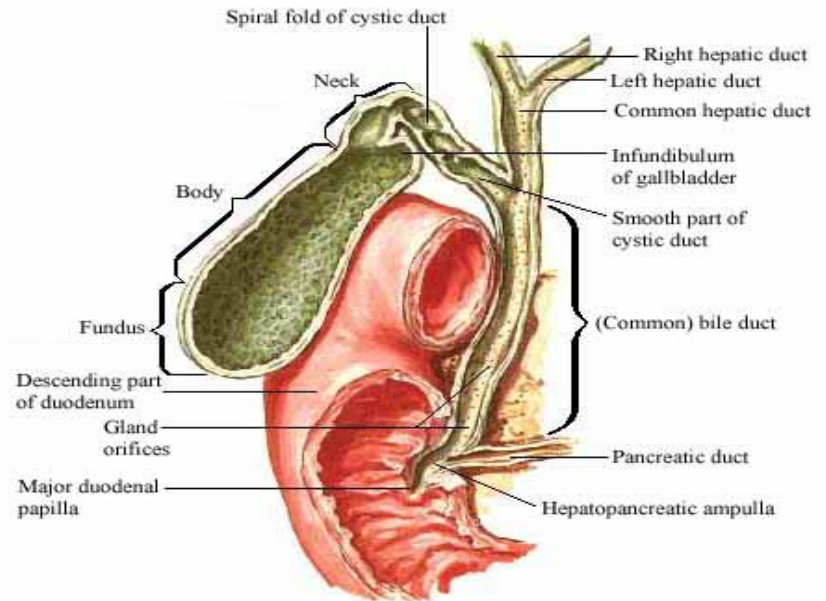
Liver is divided histologically into lobules. The center of the lobule is the central vein. At the periphery of the lobule are portal triads. Functionally, the liver can be divided into three zones, based upon oxygen supply.

Gallbladder and Extrahepatic Bile Ducts



Gallbladder and Extrahepatic Bile Ducts

Sectioned



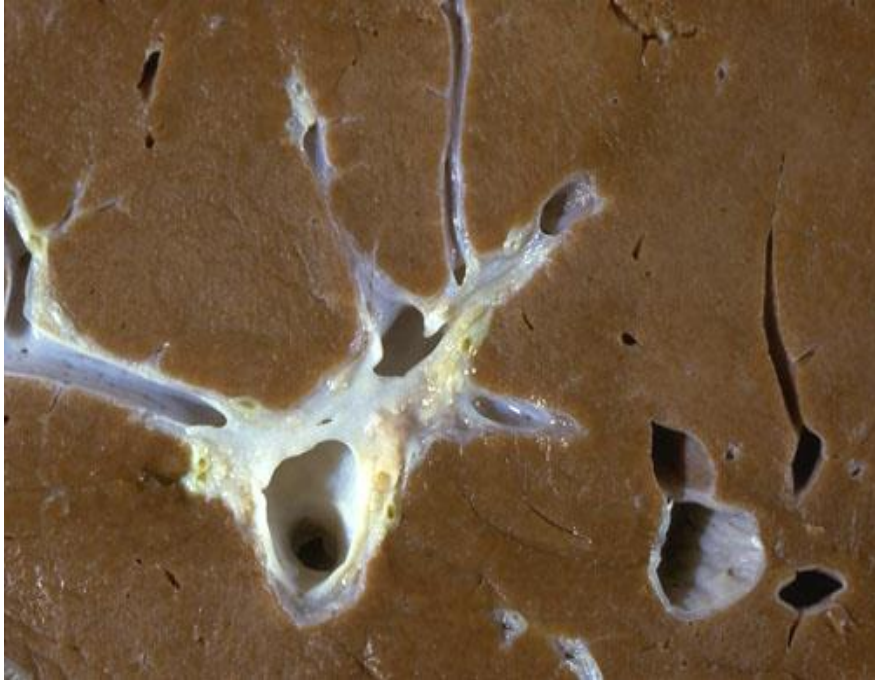


Gross and histopathology



Chronic VIRAL hepatitis (HBV & HCV)

Cut Section of Normal Liver & Ch. Hepatitis

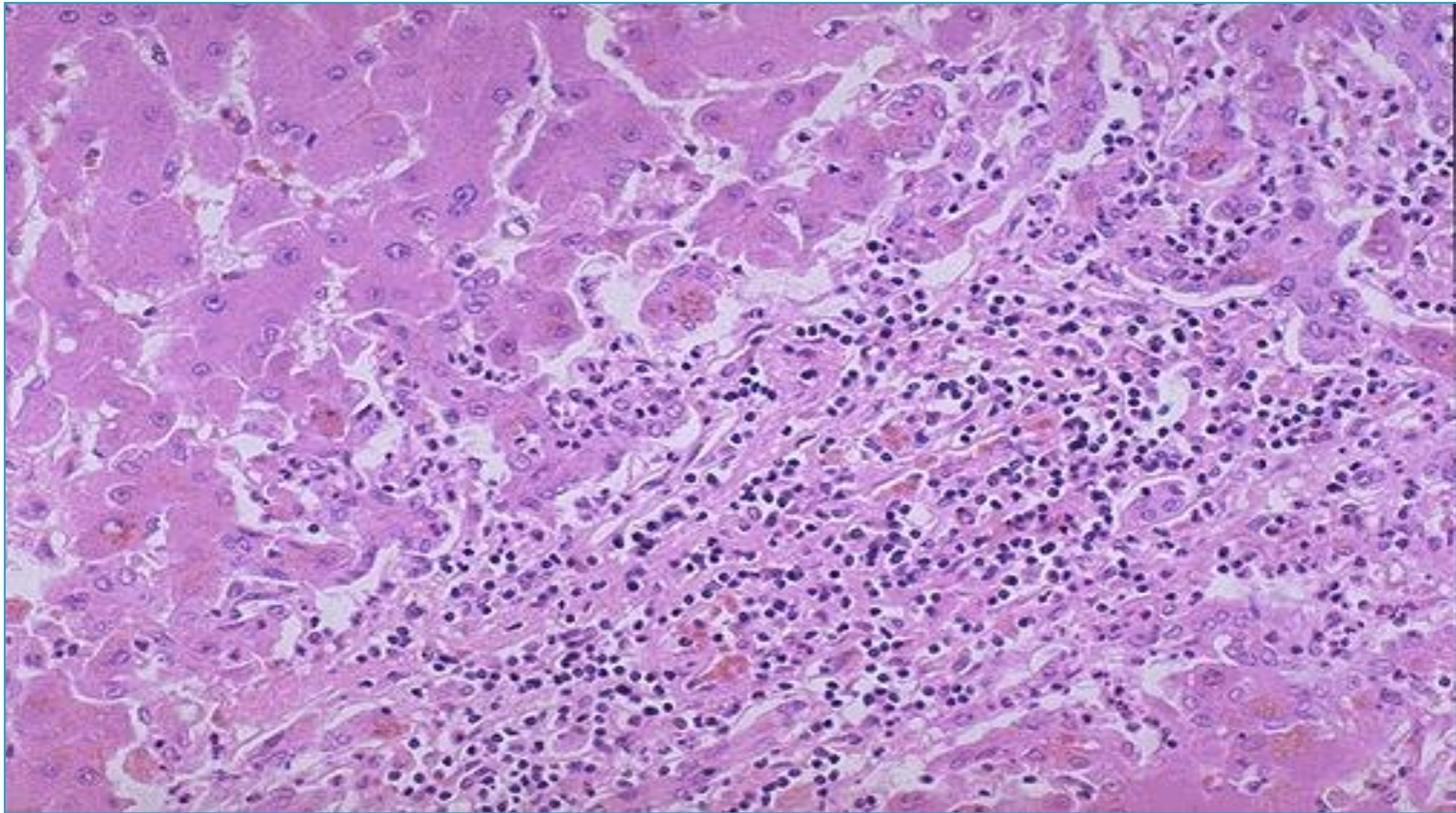


Normal Liver: has a brown color. Near the hilum here, note the portal vein carrying blood to the liver, which branches at center left, with accompanying hepatic artery and bile ducts. At the lower right is a branch of hepatic vein draining blood from the liver to the inferior vena cava.



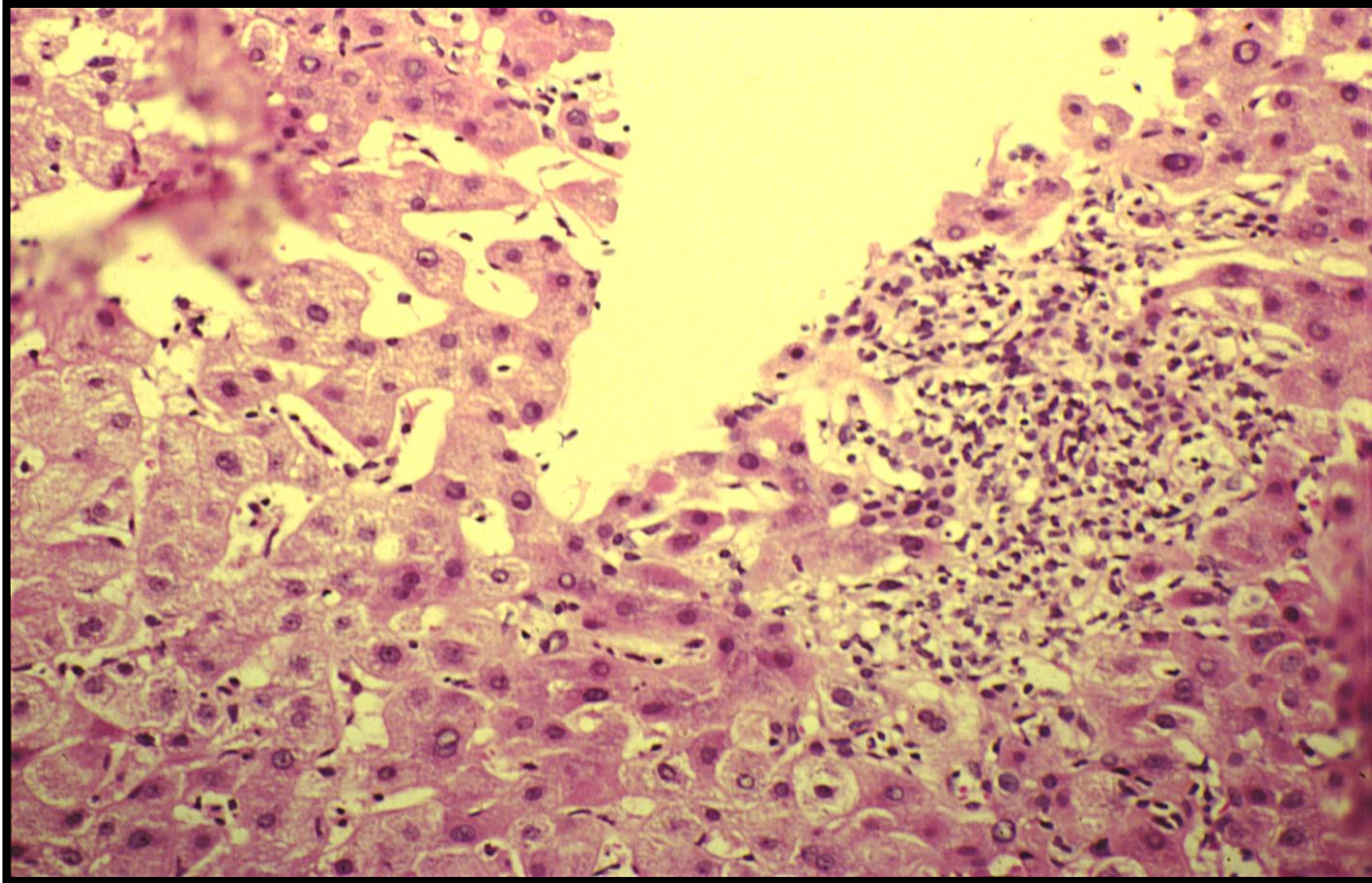
Chronic Hepatitis: The necrosis and lobular collapse is seen here as areas of hemorrhage and irregular furrows and granularity on the cut surface of the liver.

Chronic Viral Hepatitis B – Microscopic view



Viral hepatitis leads to liver cell destruction. A mononuclear inflammatory cell infiltrate extends from portal areas and disrupts the limiting plate of hepatocytes which are undergoing necrosis, the so-called "piecemeal" necrosis of chronic active hepatitis. In this case, the hepatitis B surface antigen (HBsAg) and hepatitis B core antibody (HBcAb) were positive.

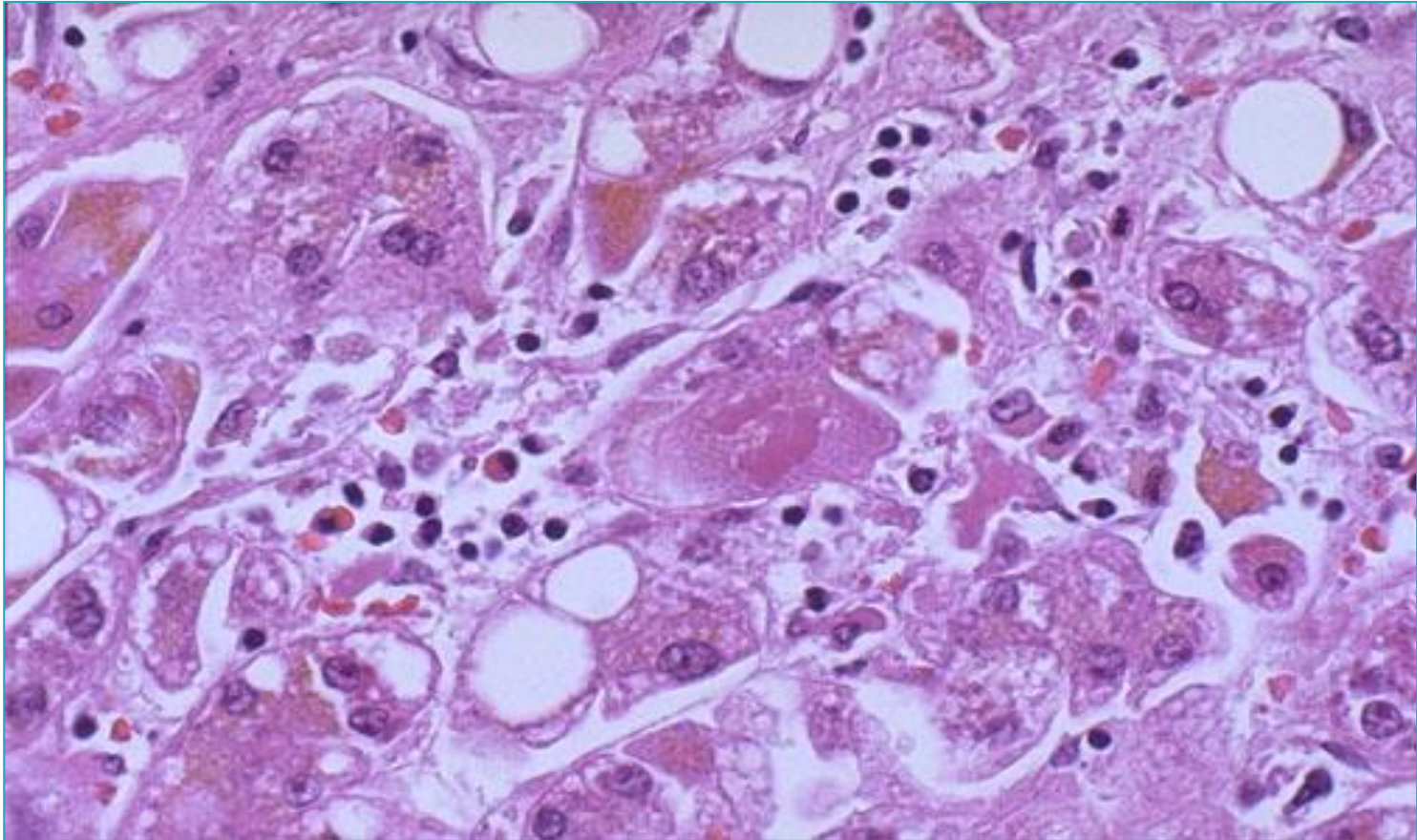
Chronic Viral Hepatitis B – HPF



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.

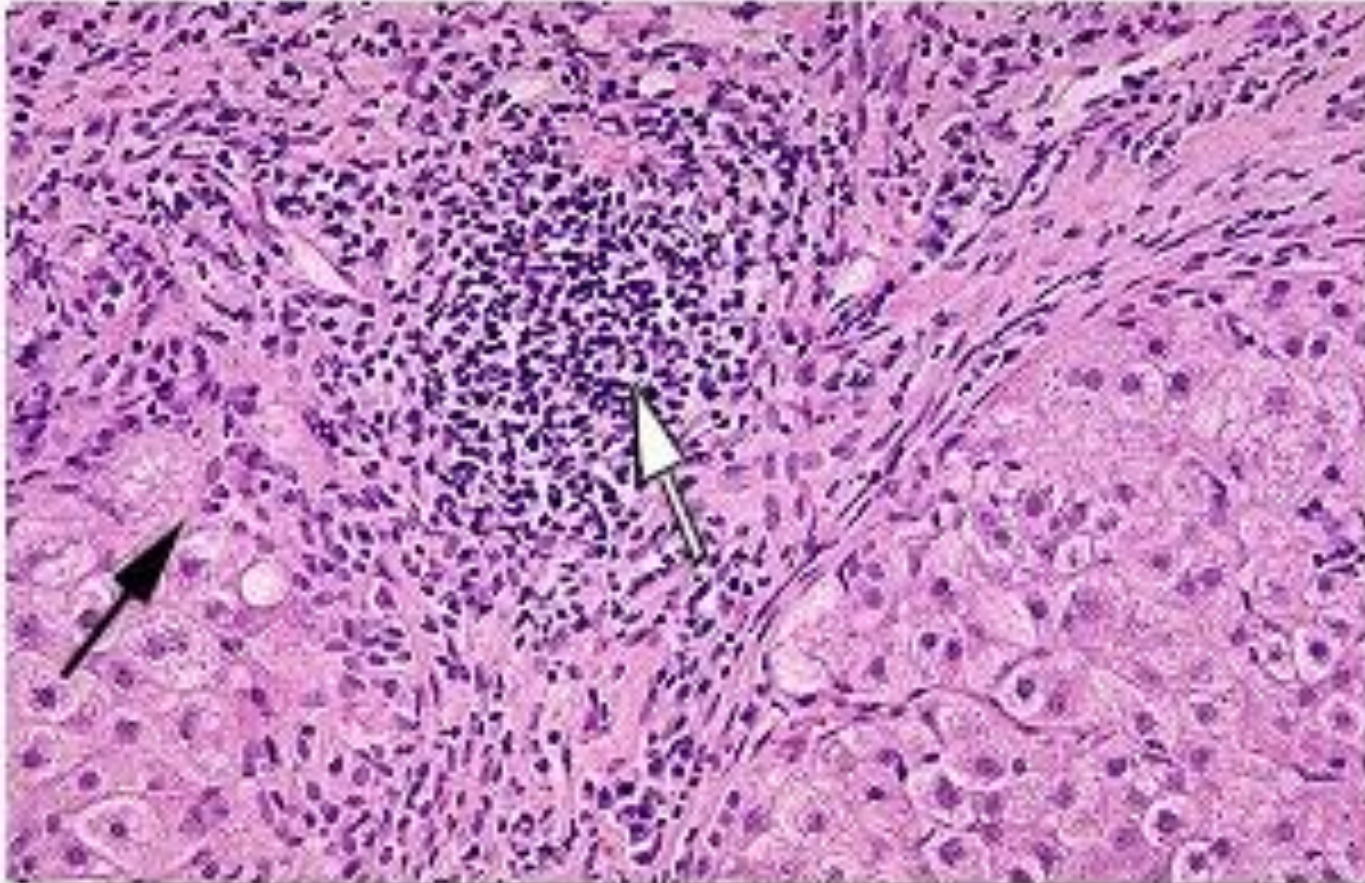
No evidence of cirrhosis or malignancy noted

Chronic Viral Hepatitis C – HPF



This is a case of viral hepatitis C, which in half of cases leads to chronic liver disease. The extent of chronic hepatitis can be graded by the degree of activity (necrosis and inflammation) and staged by the degree of fibrosis. In this case, necrosis and inflammation are prominent, and there is some steatosis as well.

Portal Inflammation in Chronic Hepatitis - HPF

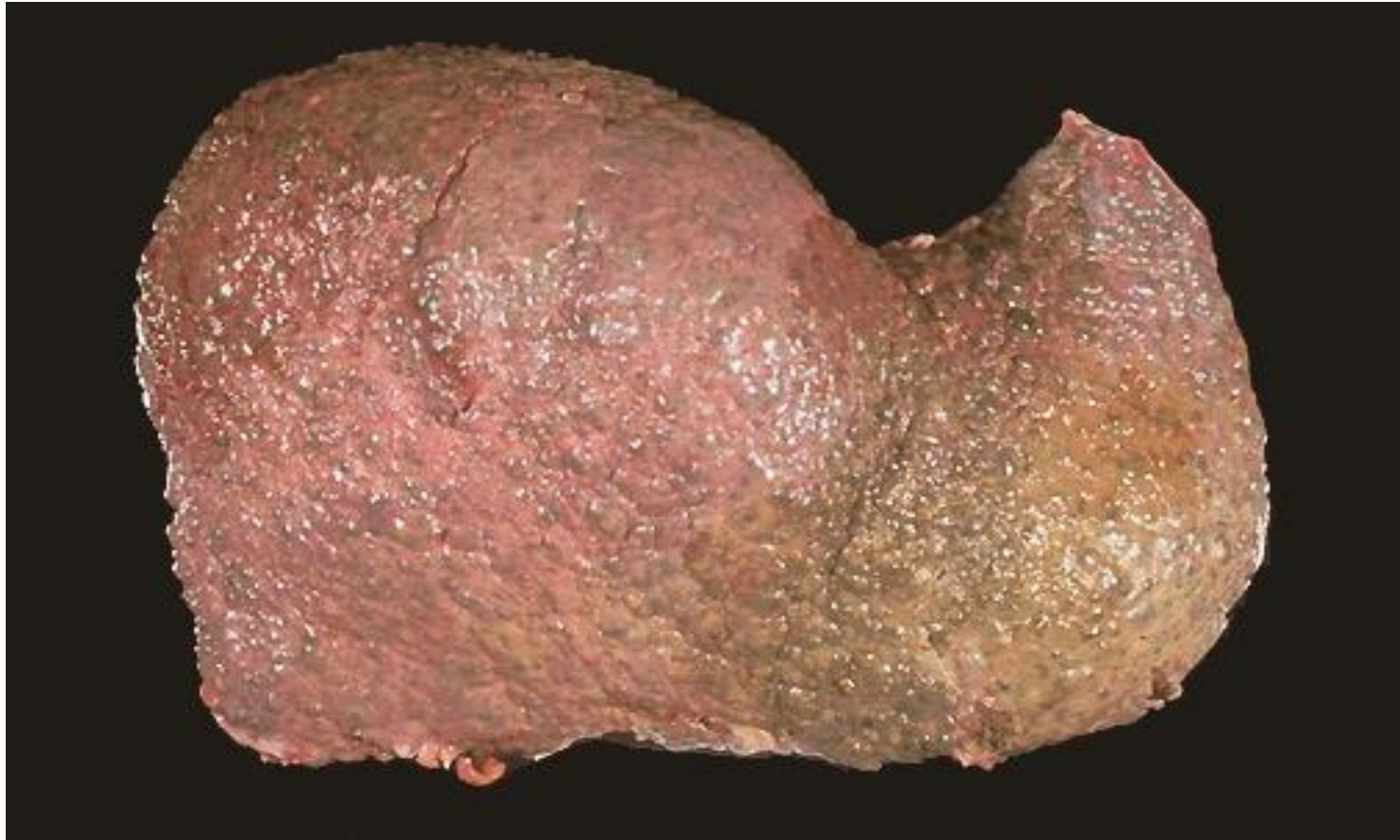


More severe portal infiltrates with sinusoidal infiltrates also



Hepatic cirrhosis

Micronodular Hepatic Cirrhosis - MRI



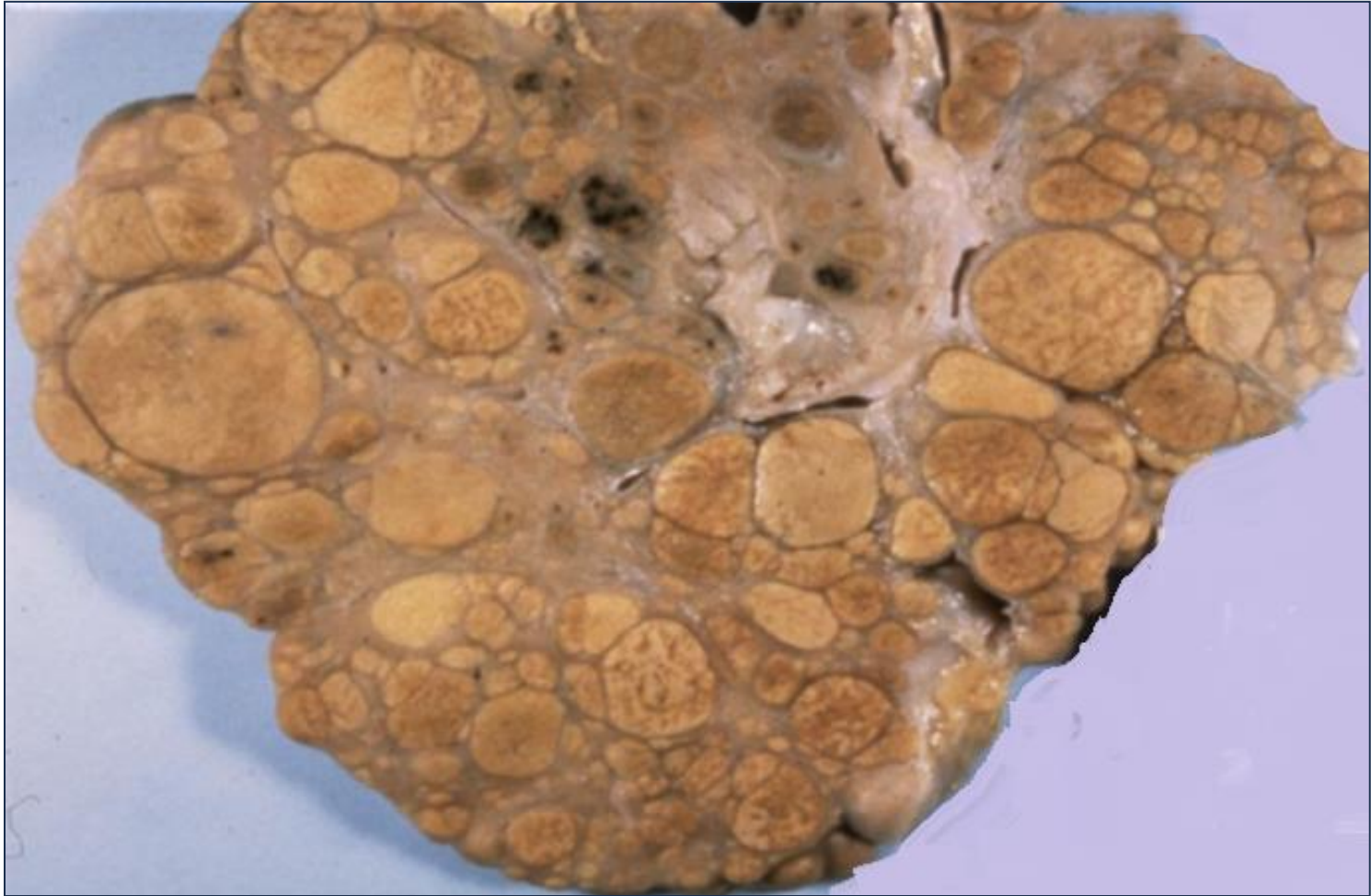
This is an example of a micronodular cirrhosis. The regenerative nodules are quite small, averaging less than 3 mm in size. The most common cause for this is chronic alcoholism. The process of cirrhosis develops over many years.

Micronodular cirrhosis with fatty liver- Gross



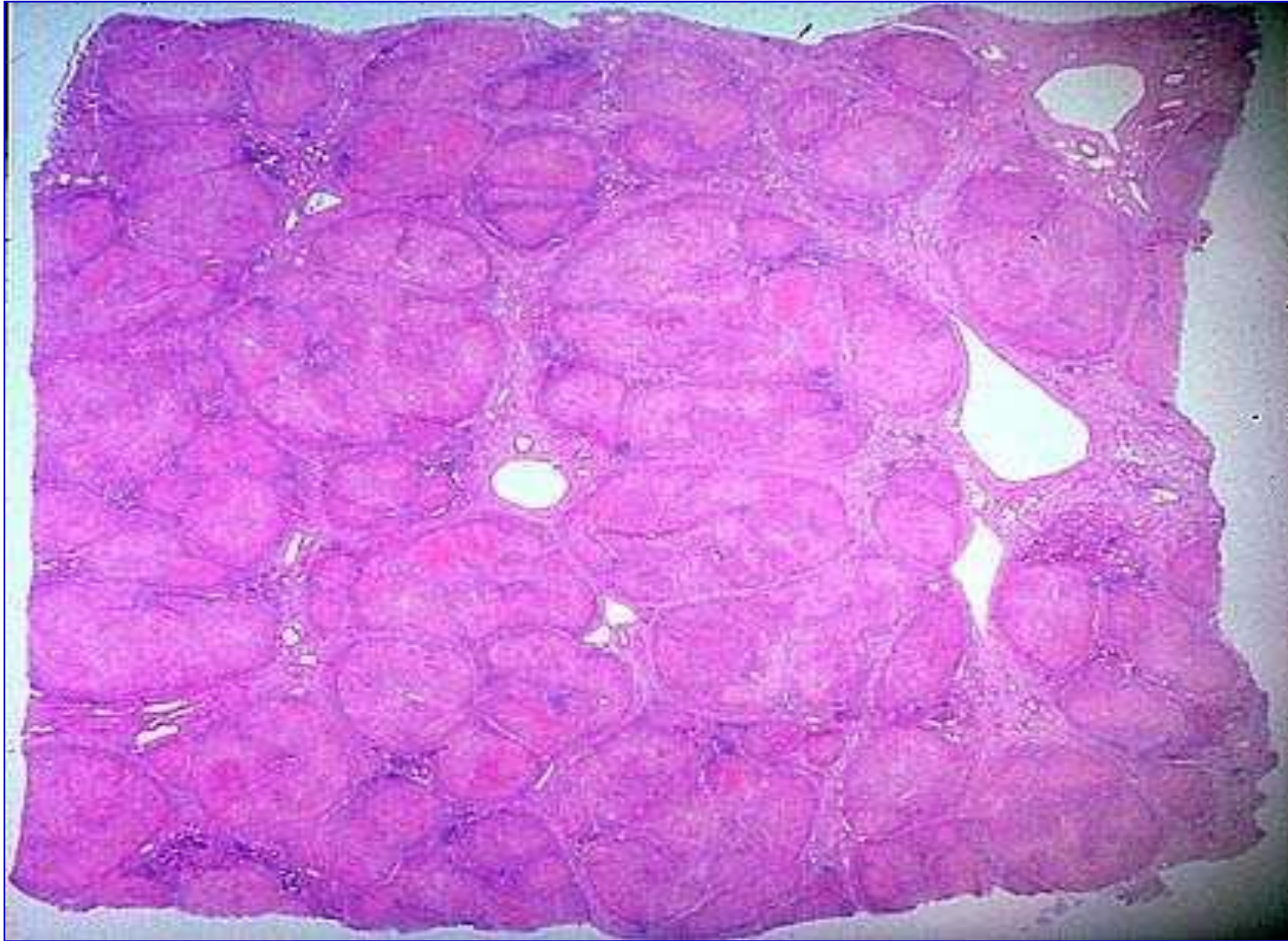
A close-up view of a micronodular cirrhosis in a liver with fatty change demonstrates the small, yellow nodules. Micronodular cirrhosis may also be seen with Wilson's disease, primary biliary cirrhosis, and hemochromatosis.

Hepatic Macronodular Cirrhosis – Gross



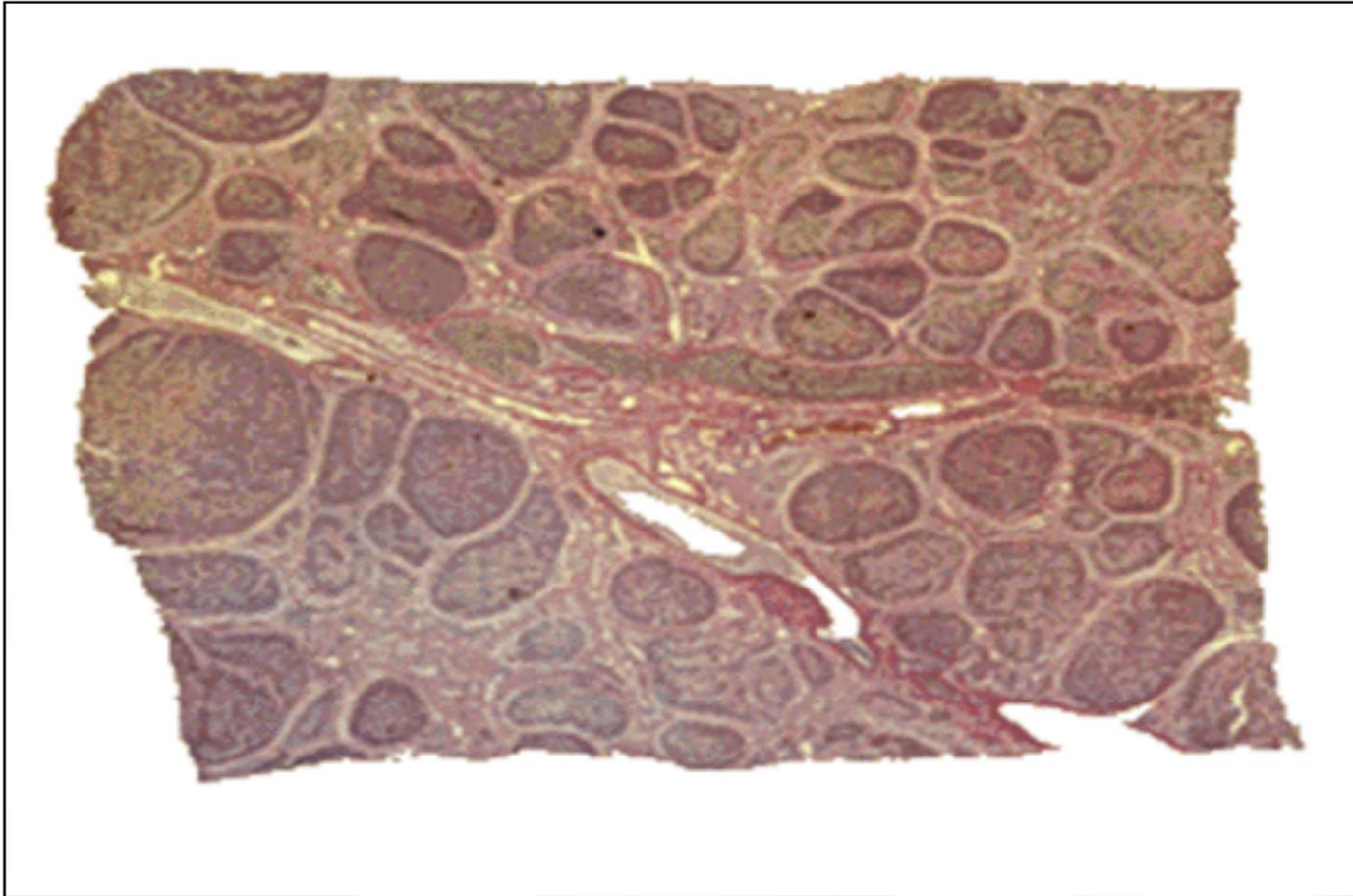
Gross picture shows multiple nodules of variable sizes with fibrosis. The major complications are portal hypertension, hepatic failure and hepatocellular carcinoma.

Hepatic cirrhosis – LPF



Irregular nodules separated by Portal to Portal fibrous bands

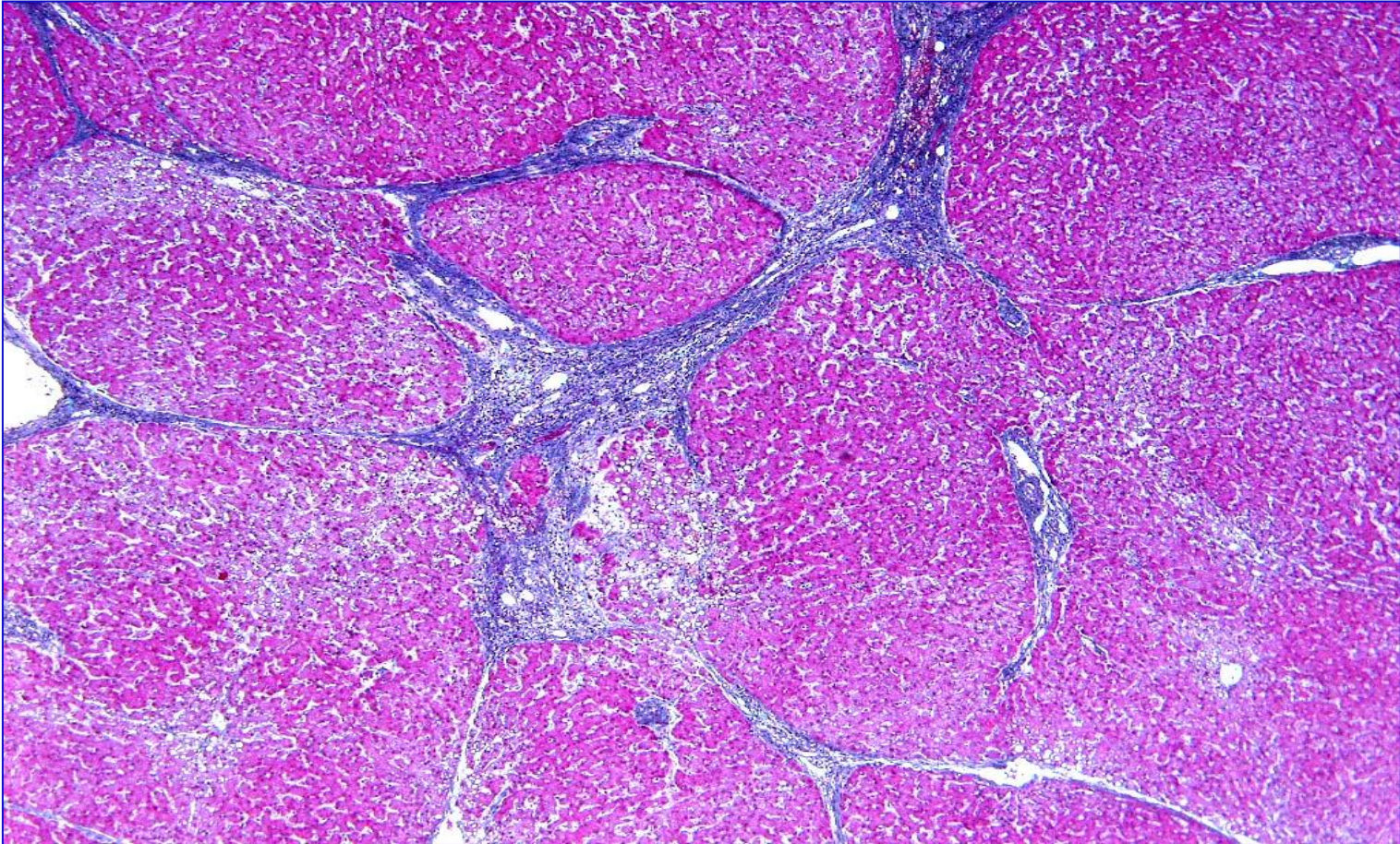
Hepatic cirrhosis – LPF



Hepatic Cirrhosis - LPF

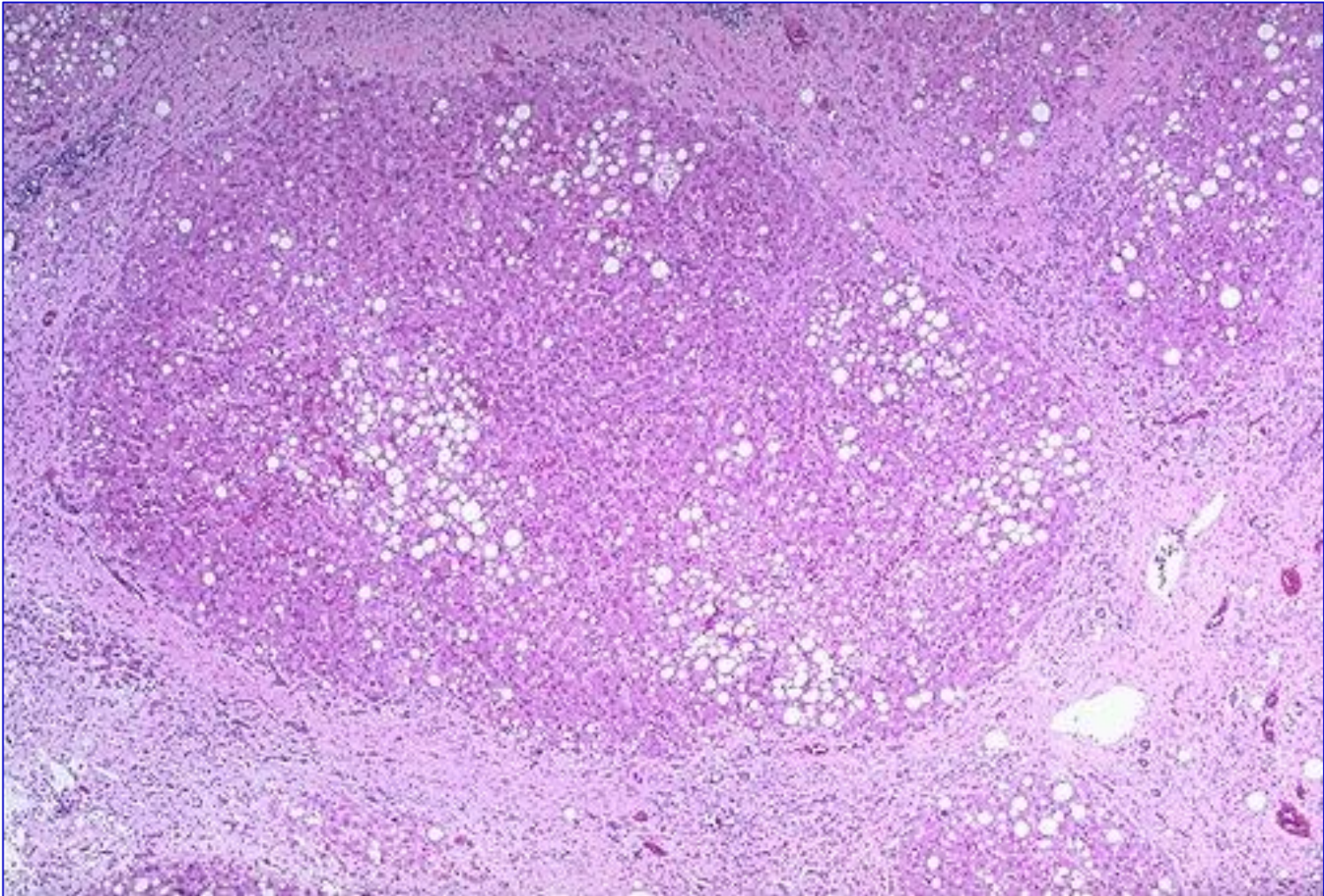
- *The parenchyma shows darker tan nodules of varying sizes.*
 - *These nodules are composed of hepatocytes.*
 - *The paler areas in between are collagen.*

Hepatic cirrhosis – Trichrome stain



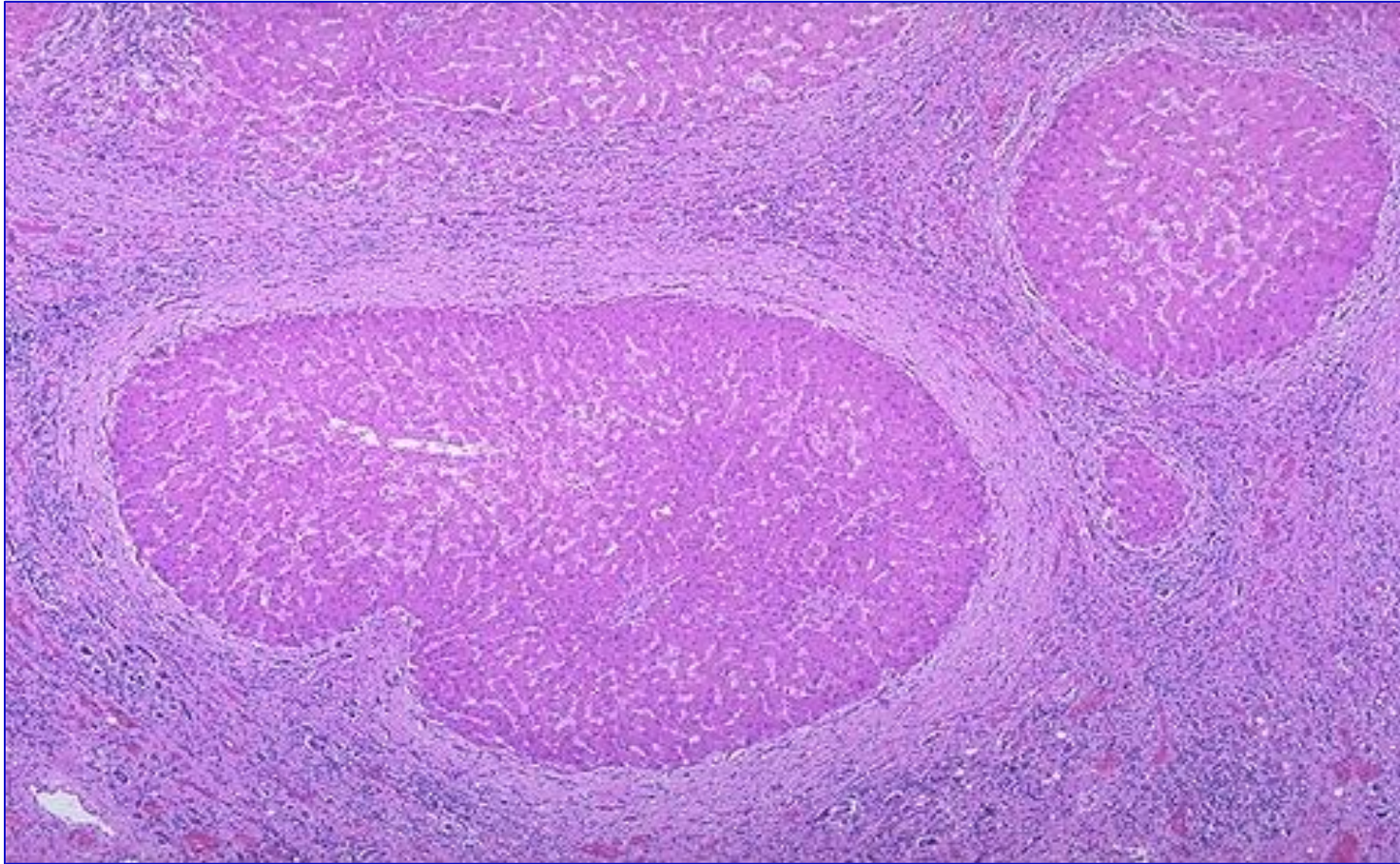
Loss of lobular architecture and formation of regenerative nodules of variable size and shape, surrounded by fibrous tissue. Each nodules consists of liver cells without any arrangement and with no central vein. Large number of proliferated bile ducts and chronic inflammatory cells are present in fibrous tissue.

Micronodular cirrhosis with fatty liver- LPF



***Micronodular cirrhosis is seen along with moderate fatty change.
Note the regenerative nodule surrounded by fibrous connective tissue
extending between portal regions.***

Hepatic cirrhosis – LPF



Microscopically with cirrhosis, the regenerative nodules of hepatocytes are surrounded by fibrous connective tissue that bridges between portal tracts. Within this collagenous tissue are scattered lymphocytes as well as a proliferation of bile ducts



HEPATIC ADENOMA

Hepatic Adenoma - Gross



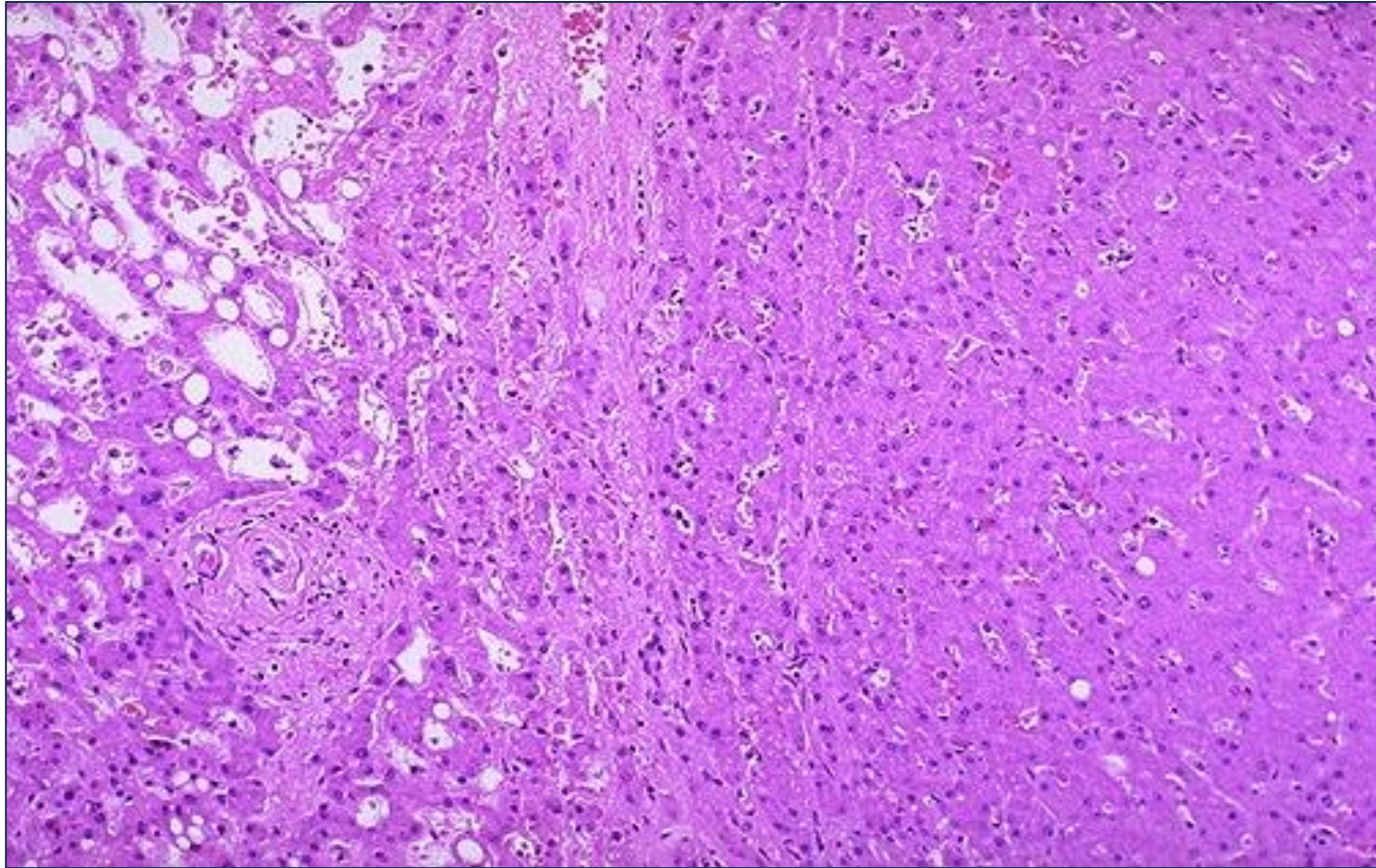
At the upper right is a well-circumscribed neoplasm that is arising in liver. This is an hepatic adenoma.

Hepatic Adenoma – Cut Section Gross



The cut surface of the liver reveals the hepatic adenoma. Note how well circumscribed it is. The remaining liver is a pale yellow brown because of fatty change from chronic alcoholism.

Hepatic Adenoma – Microscopic view

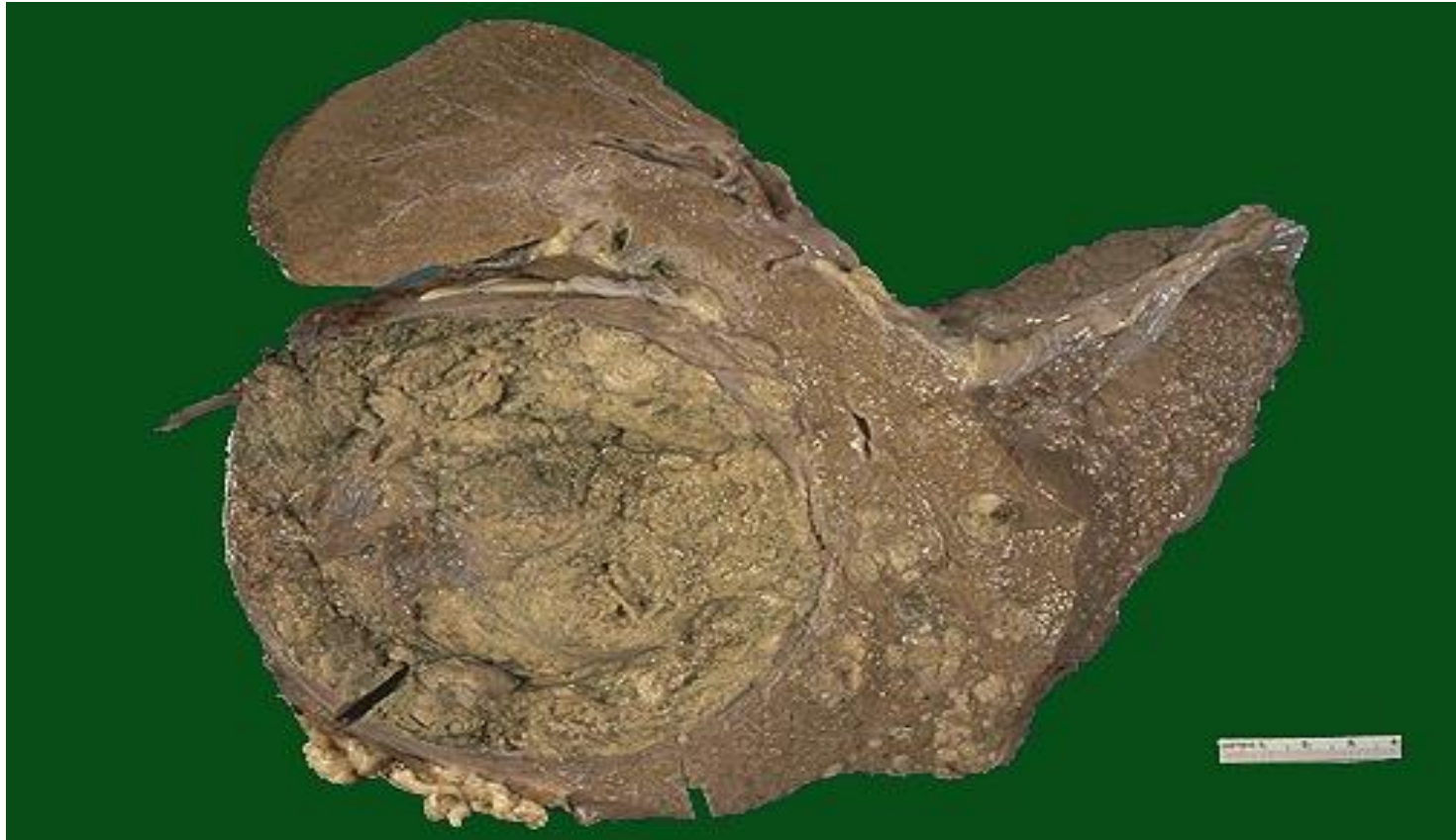


Normal liver tissue with a portal tract is seen on the left. The hepatic adenoma is on the right and is composed of cells that closely resemble normal hepatocytes, but the neoplastic liver tissue is disorganized hepatocyte cords and does not contain a normal lobular architecture.



HEPATOCELLULAR CARCINOMA

Hepatocellular Carcinoma - Gross



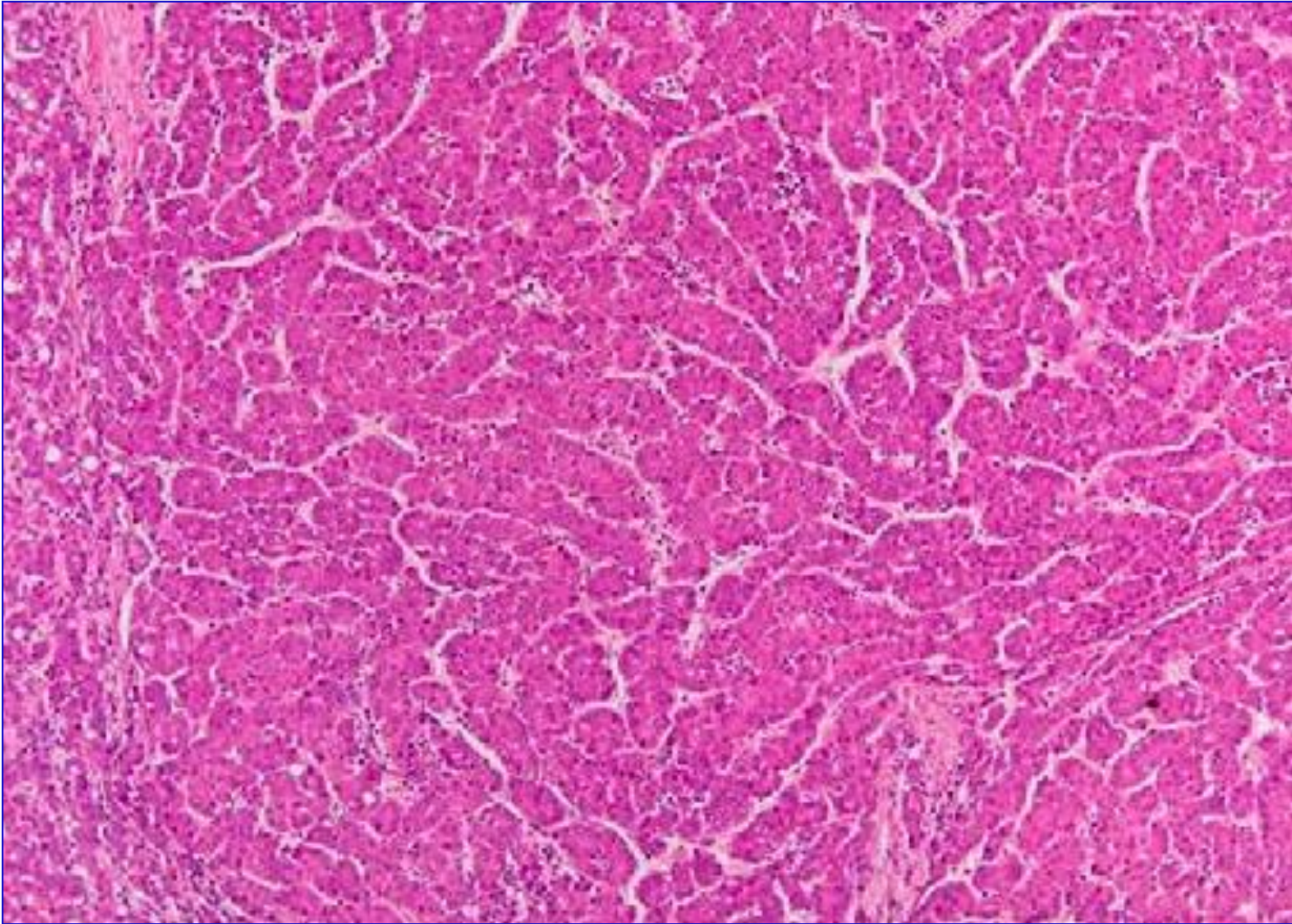
Here is an hepatocellular carcinoma. Such liver cancers arise in the setting of cirrhosis. Worldwide, viral hepatitis is the most common cause, but in the U.S., chronic alcoholism is the most common cause. The neoplasm is large and bulky and has a greenish cast because it contains bile. To the right of the main mass are smaller satellite nodules.

Hepatocellular Carcinoma - Gross



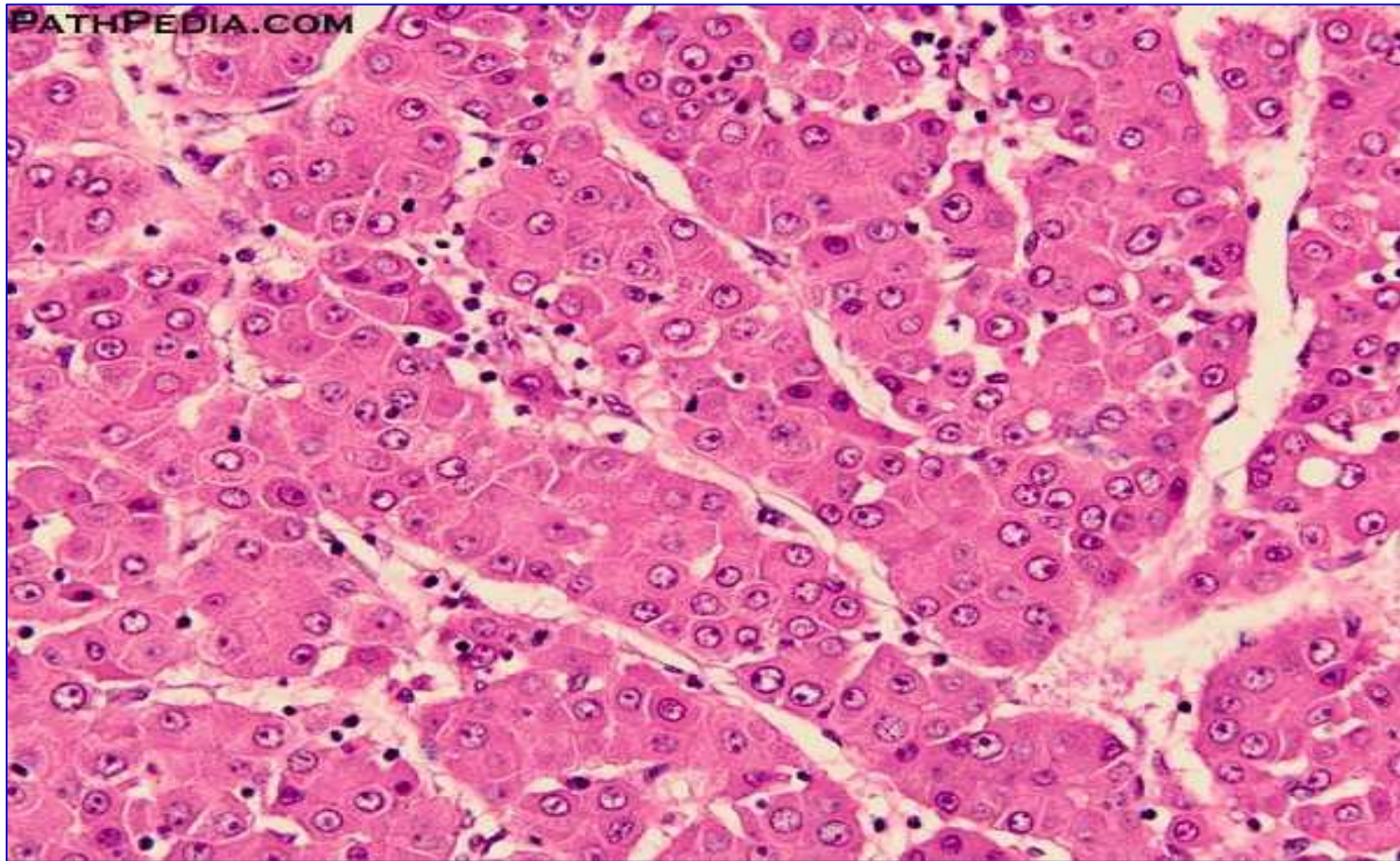
Here is another hepatocellular carcinoma with a greenish yellow hue. One clue to the presence of such a neoplasm is an elevated serum alpha-fetoprotein. Such masses may also focally obstruct the biliary tract and lead to an elevated alkaline phosphatase

Hepatocellular Carcinoma - LPF



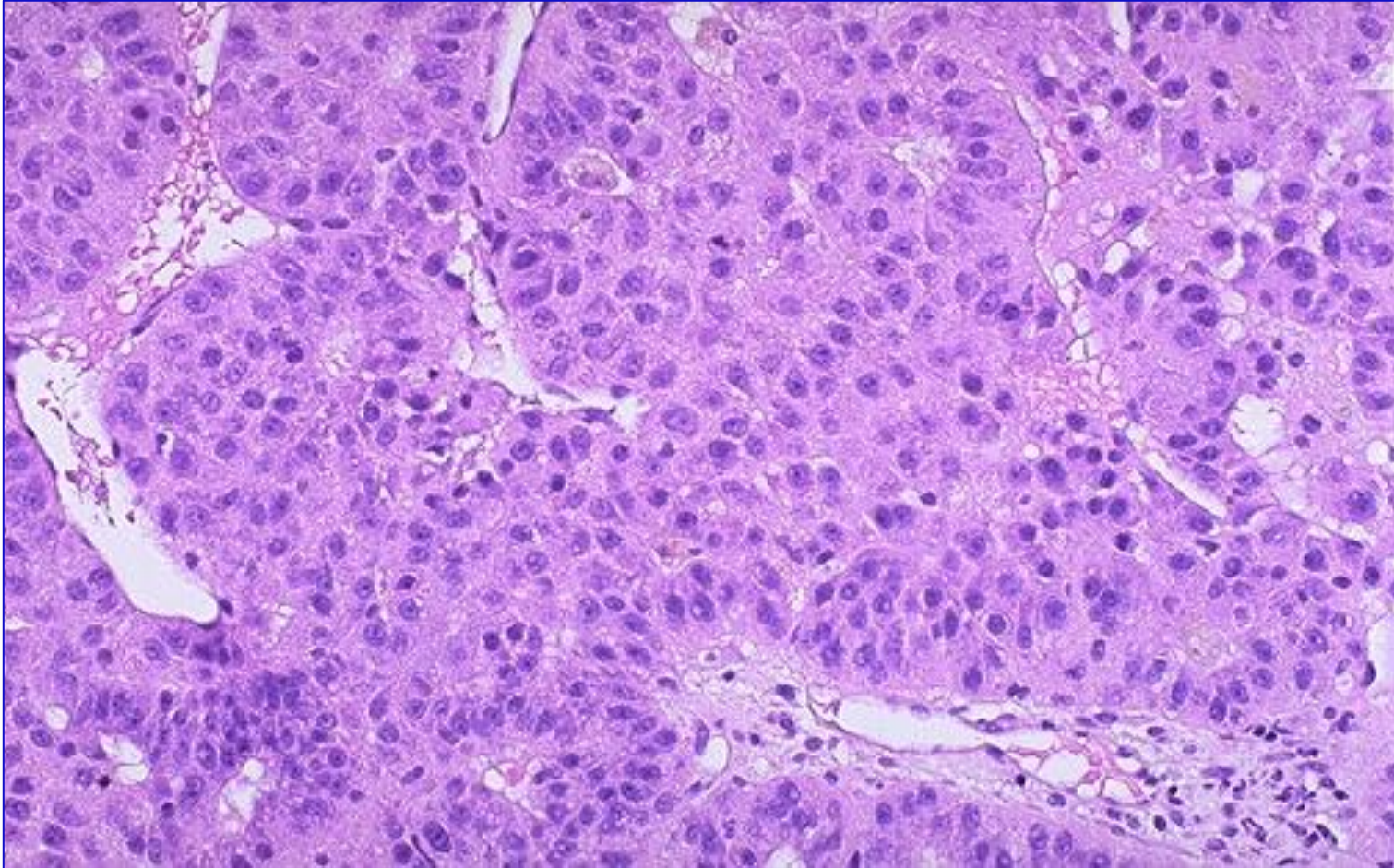
This example of well-differentiated HCC shows a trabecular pattern with intervening sinusoids.

Hepatocellular Carcinoma - MPF



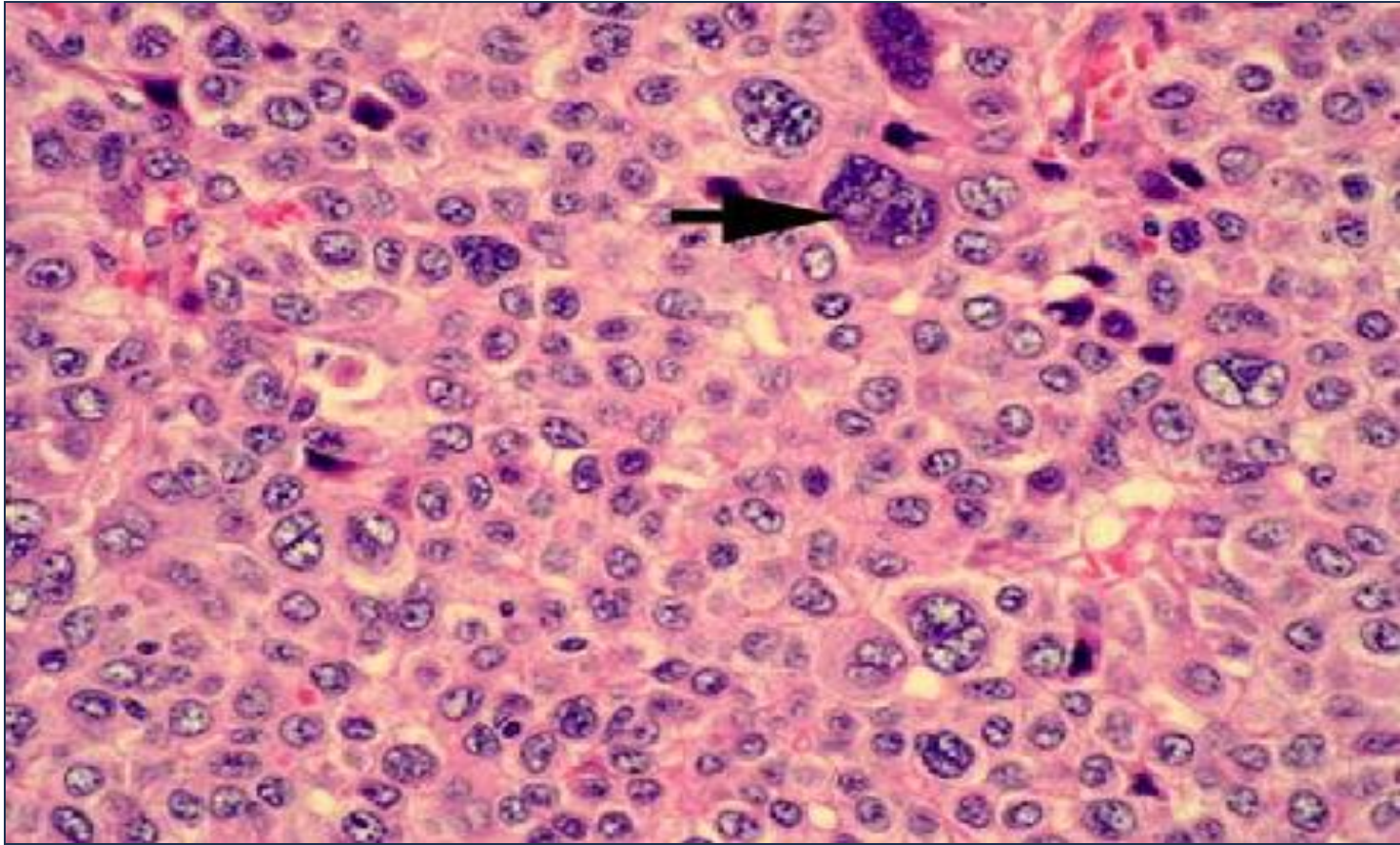
The key to the identification of HCC is its resemblance to hepatocytes, the presence of more than 2-3 cell-thick hepatocellular plates/cords, nuclear atypia, and absence of portal tracts. Note the hepatic plates are separated from each other by sinusoids.

Hepatocellular Carcinoma - MPF




Note that this hepatocellular carcinoma is composed of liver cords that are much wider than the normal liver plate that is two cells thick. There is no discernable normal lobular architecture, though vascular structures are present.

Hepatocellular Carcinoma - Microscopic



Anaplastic tumor giant cells can be seen in poorly differentiated HCC (arrow). Mitoses are numerous. Malignant liver cells are pleomorphic, binucleated or forming giant cells with hyperchromatic nuclei.



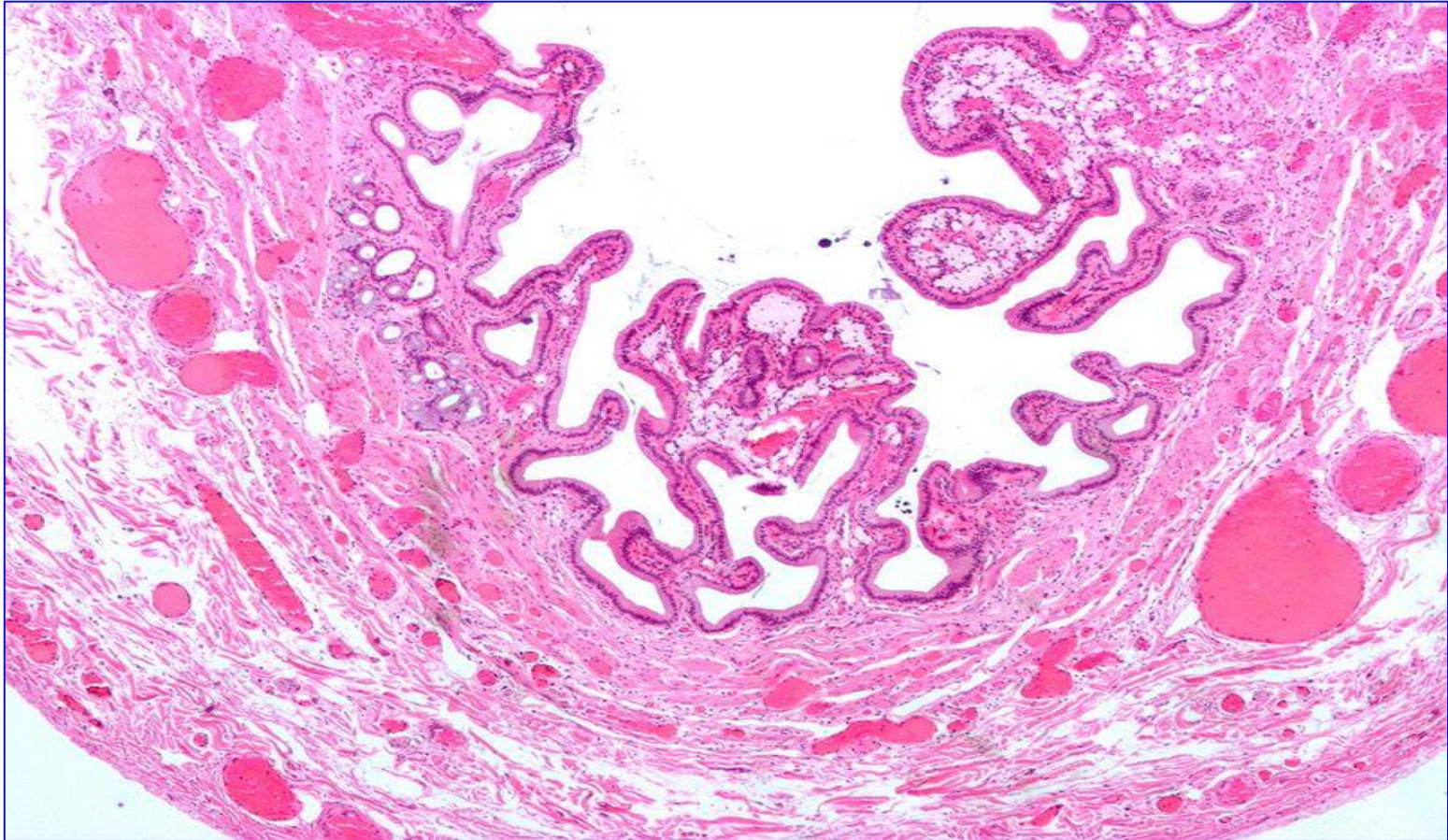
CHRONIC CHOLECYSTITIS WITH STONES

Chronic Cholecystitis with Gall stones - Gross



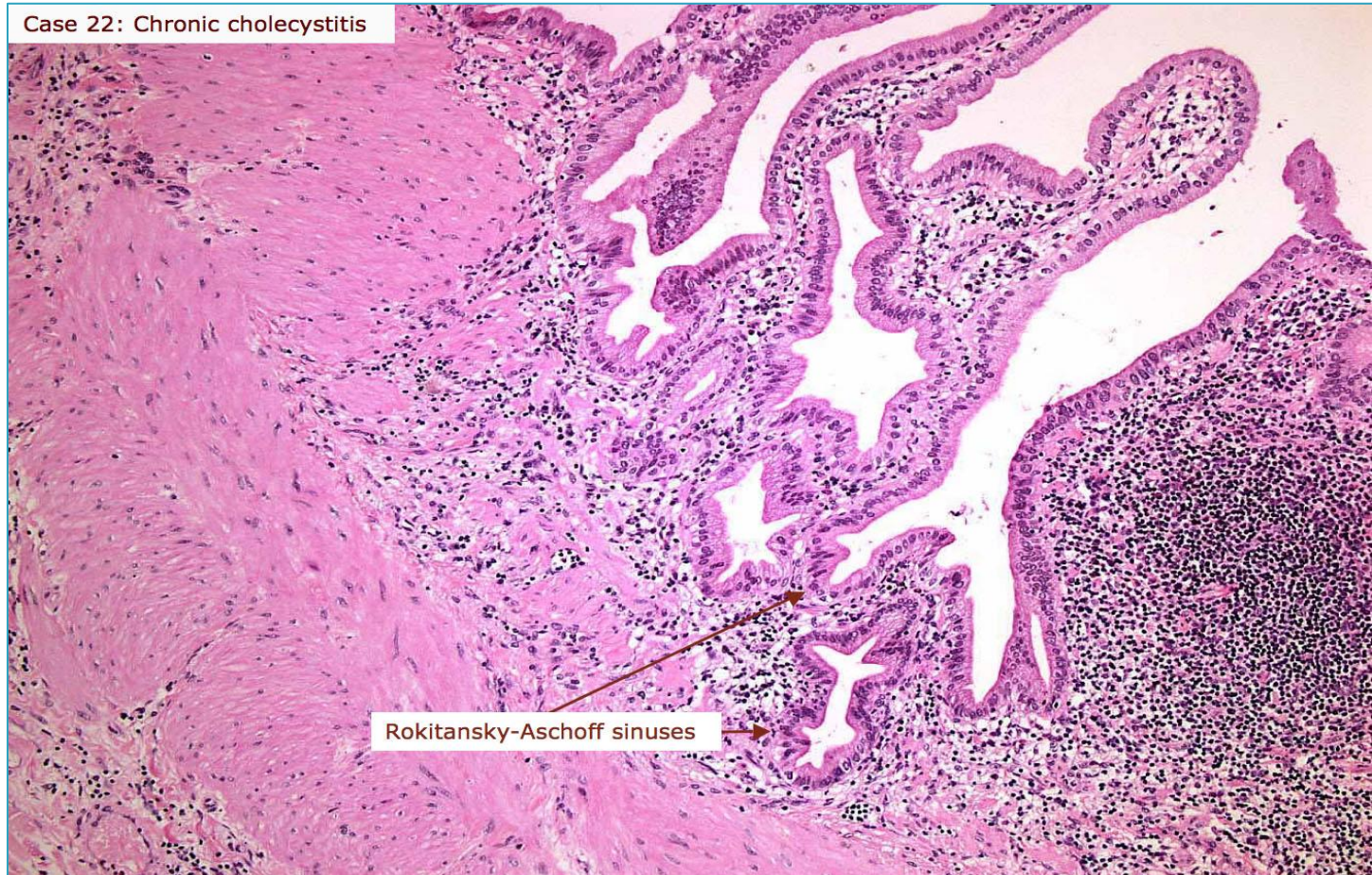
Gross appearance of gallbladder after sectioning longitudinally. Notice thickness of gallbladder wall, abundant polyhedric stones and small papillary tumor in the cystic duct.

Chronic Cholecystitis – Microscopic view



Dead lipid laden macrophages (foam cells) are seen in the finger-like projections into the gallbladder lumen. It should be apparent that this is gallbladder, as no muscularis mucosae is present (as elsewhere in the gastrointestinal tract). The blood vessels are congested and the subserosa edematous.

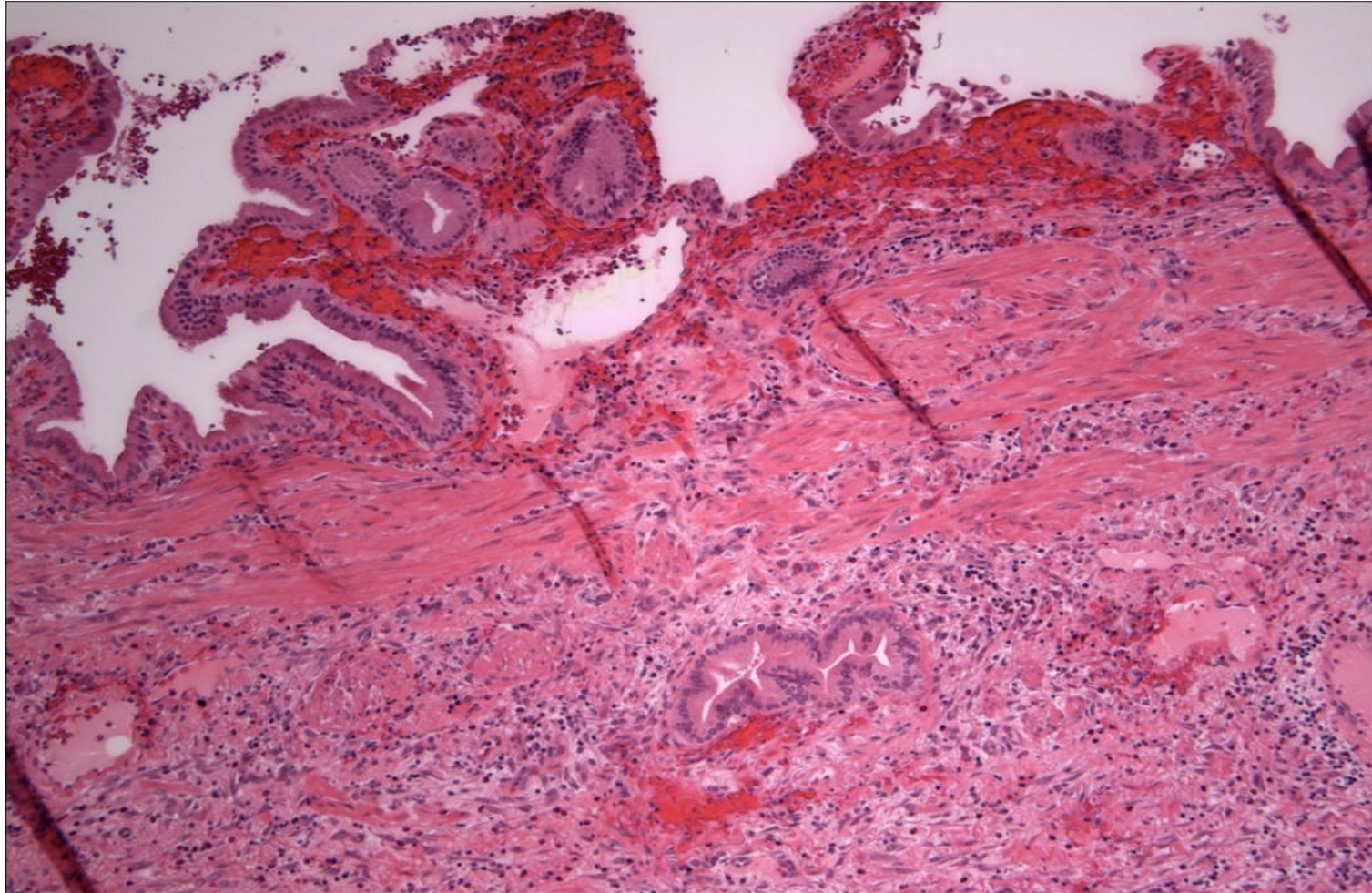
Chronic Cholecystitis – Microscopic view



***Irregular mucosal folds and foci of ulceration in mucosa.
Wall is penetrated by mucosal glands which are present in
muscle coat (Rokitansky- Aschoff sinuses).***

All layers show chronic inflammatory cells infiltration and fibrosis.

Chronic Cholecystitis – Microscopic view



***Mucosa wall is penetrated by mucosal glands which are present in muscle coat (Rokitansky- Aschoff sinuses).
All layers show chronic inflammatory cells infiltration and fibrosis.***

THE END