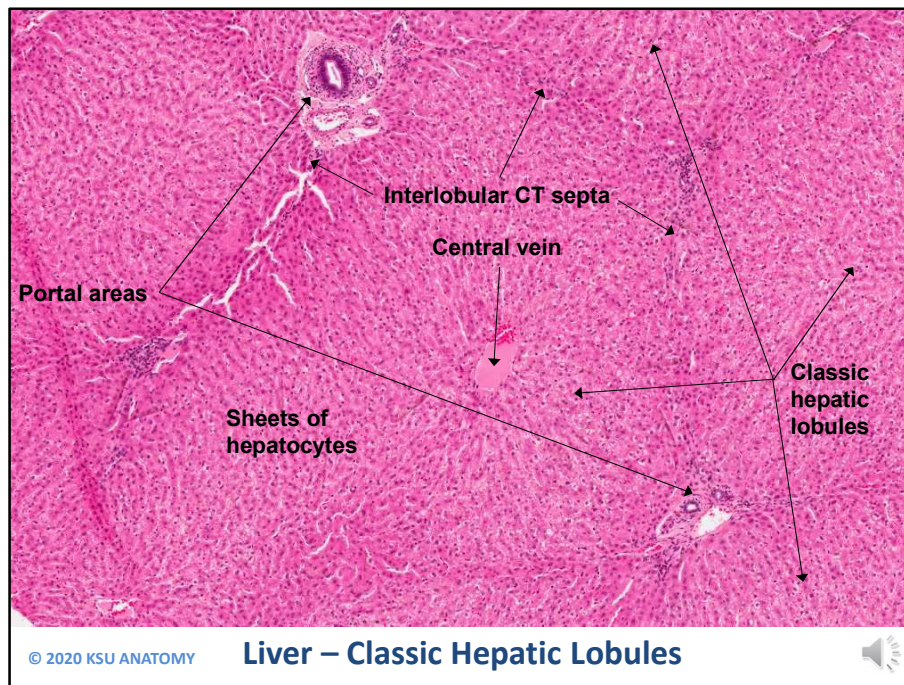




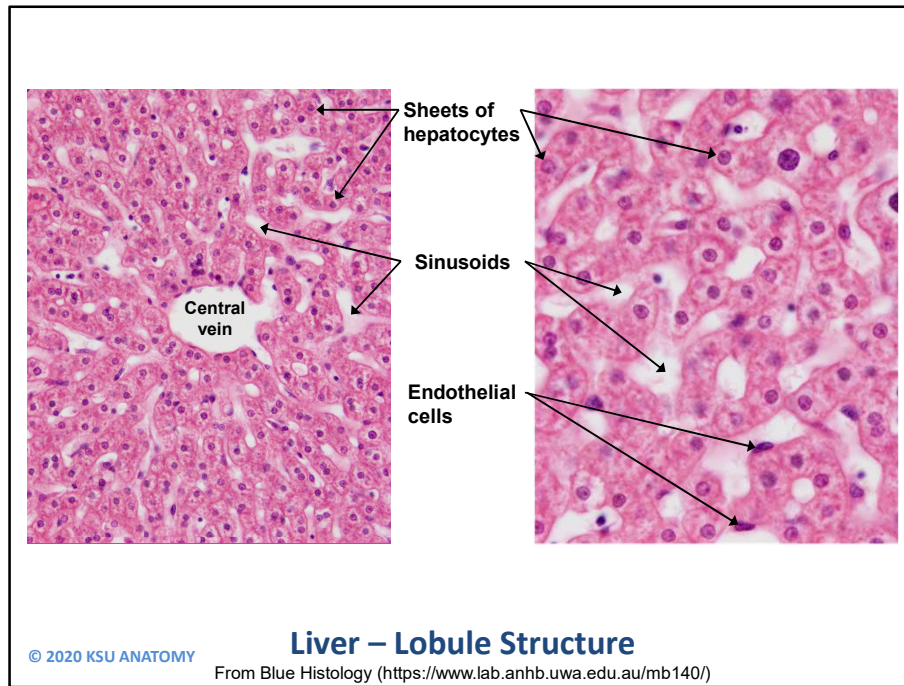
This is the Histology Practical Lab of **Liver, Pancreas, and Gall Bladder**.



This is a section in the liver.

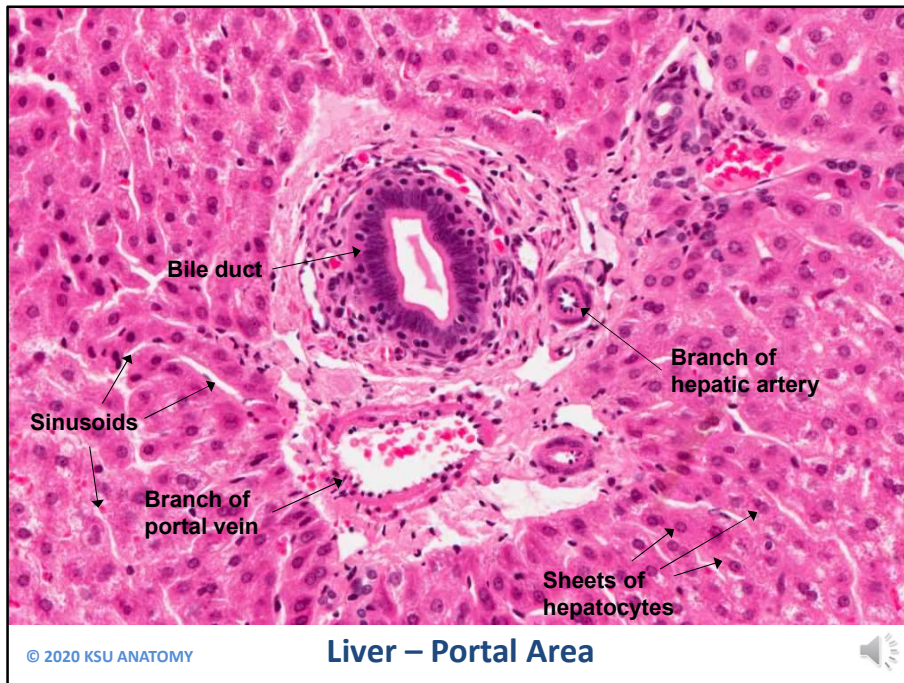
With the low power, we can see:

1. Many lobules (called classic hepatic lobules) separated from each other by interlobular CT septa (thin & incomplete). Each lobule has 5 or 6 sides (hexagonal) and is surrounded by parts of 5 or 6 other lobules.
2. The interlobular CT is thicker at the corners between the lobules. These regions are called portal areas or portal tracts.



This is a higher magnification to show the lobule structure:

1. In the center of the lobule there is a vein called the central vein.
2. The substance of the liver lobule is formed of plates or sheets of liver cells (hepatocytes).
3. These sheets radiate out from the center of the lobule to its periphery, stain red to pink (acidophilic), and branch and anastomose with each other, leaving between them blood sinusoids lined by endothelial cells.
4. Hepatocytes are:
 - Polygonal in shape.
 - Nuclei are round, central, and vesicular with a prominent nucleolus.
 - Some hepatocytes are binucleated.
 - Cytoplasm is acidophilic and appears vacuolated due to dissolved glycogen granules and fat droplets.

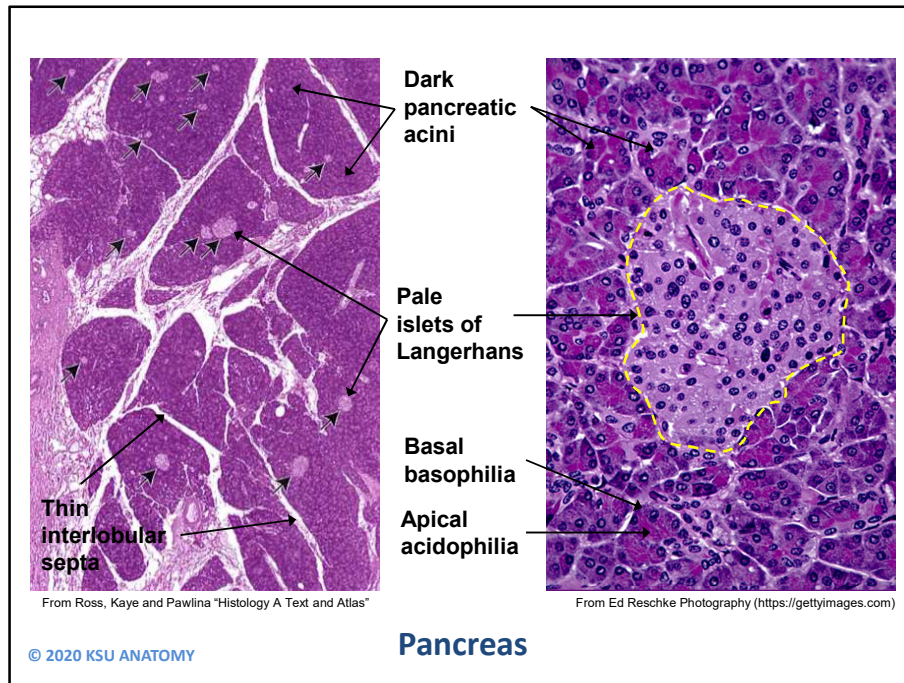


Each portal area contains three structures embedded in CT:

1. A bile duct (lined by simple cuboidal or columnar epithelium).
2. A branch of hepatic artery.
3. A branch of portal vein.

Identifying features of a section in the liver include:

- Classic hepatic lobules.
- Central veins.
- Sheets of hepatocytes.
- Blood sinusoids.
- Portal areas and their contents: bile ducts, branches of hepatic artery, branches of portal veins.



This is a section in the pancreas.

With the low power, we can see:

1. The pancreas is divided into lobules by thin interlobular CT septa.
2. The lobules consist of pale islands (islets of Langerhans) in a dark sea of acini (pancreatic acini).
3. Intralobular ducts are not prominent. This can help you differentiate a section in pancreas from a section in the parotid in which the intralobular ducts are very prominent even with the low power.

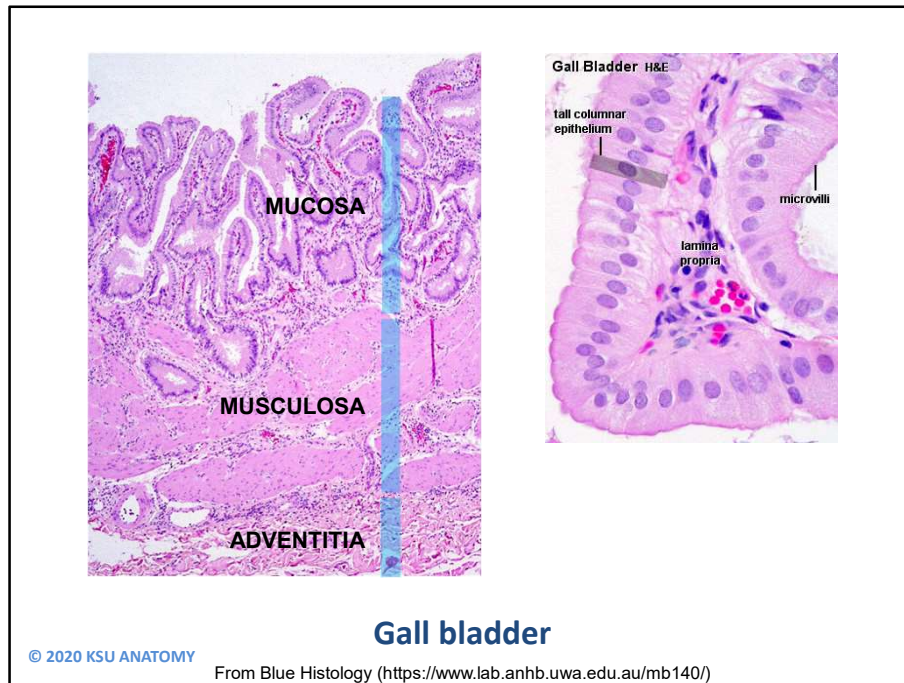
With the high power, pancreatic acini are serous acini like those of the parotid gland.

Nuclei are basal or nearer to the base and the cytoplasm is stained by two colors; basal basophilia due to abundant rER and apical acidophilia due to presence of secretory granules.

The islets of Langerhans are pale spherical collections of endocrine cells with blood capillaries in between. There are five types of cells in the islets, but they all look the same with routine stains.

Identifying features of a section in the pancreas include:

- Pancreatic acini.
- Islets of Langerhans.
- Thin interlobular CT septa.
- Acinar cells: basal basophilia and apical acidophilia.
- Intralobular ducts NOT prominent.



This is a section in the gall bladder. The wall is formed of 3 layers (NO submucosa). Mucosa is highly folded and lined by simple tall columnar epithelium with microvilli on the surface. There is NO muscularis mucosae. Musculosa is formed of smooth muscle fibers oriented in all directions. Adventitia or serosa.

Identifying features of a section in the gall bladder include:

- Highly folded mucosa.
- Simple columnar epithelium.
- NO villi.
- NO crypts.
- NO goblet cells.
- NO muscularis mucosae.
- NO submucosa.
- NO glands.
- Musculosa: smooth muscle fibers oriented in all directions.

Thank You



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