Chapter 16

Inflammation → injury to liver cells with an influx of acute/chronic inflammatory cells

Foamy Degeneration → material retained bilaterally that gives a diffuse, foamy, swollen appearance

Steatosis → accumulation of fat in hepatocytes

Microvesicular steatosis → many little droplets that don’t displace the nuclei

Macrovesicular steatosis → one large droplet that displaces the nuclei

Necrosis → Ischemic necrosis, Councilman bodies from apoptosis

Centrilobular necrosis → necrosis of hepatocytes around the central vein

Focal necrosis → limited to scattered cells

Submassive necrosis → entire lobule of liver

Massive necrosis → most of the liver

Fibrosis → formed in response to inflammation or direct toxic insult to the liver, irreversible

Cirrhosis → due to continuing fibrosis and parenchymal injury

Jaundice/Icterus → skin and sclera turning a yellow color

Unconjugated bilirubin → water insoluble at physiological pH, cannot be excreted in urine

Conjugated bilirubin → water soluble, non-toxic, can be excreted thru urine

Cholestasis → arise from intra and extrahepatic obstruction and can cause jaundice

Pruritis (itching), Skin xanthomas, elevated serum alkaline phosphate

Unrelieved obstruction leads to portal track fibrosis

Hepatic failure

Massive hepatic necrosis

Chronic liver disease

Hepatic dysfunction without overt necrosis

Jaundice, hyperammonemia, febrile hepaticus, palmer erythema and spider angiomas

Hepatic encephalopathy

-rigidity, hyperreflexia, non-specific EEG changes, seizures, and asterixis

asterixis → a pattern of nonrhythmic rapid extension-flexion movements of the head and extremities

Cirrhosis → end stage chronic liver disease has 3 characteristics

Bridging fibrous septa

Parenchymal nodules

Architectural disruption of the entire liver

Major source of the collagen seems to be the fat-storing stellate cell or Ito cell. Cirrhosis Type 1, 3

Portal Hypertension

Major cause is right-sided heart failure

Dominant intrahepatic cause is cirrhosis

Ascites refers to a collection of excess fluid in the peritoneal cavity

Portosystemic shunts

Principal sites are at the hemorrhoidal veins and cardioesophageal veins (esophageal varices)

Appears in abdominal wall → caput medusae

Hepatitis A Virus → infectious hepatitis

Hepatitis B Virus → serum hepatitis

Blood and body fluids

Acute hepatitis → anicteric or icteric

Chronic Hepatitis → symptomatic, biochemical or serological evidence of continuing or relapsing hepatic disease form more than 6 months

Fulminant hepatitis → progresses from the onset of symptoms to hepatic encephalopathy

Alcoholic liver disease

Up to the time that fibrosis appears the fatty change is completely reversible if there is abstention from further intake of alcohol

Hepatocyte swelling and necrosis, Mallory bodies, neutrophilic reaction, fibrosis

Alcoholic cirrhosis → over a span of years it’s transformed into a brown shrunk, non-fatty organ < 1kg

Wernicke-Korsakoff syndrome

Mild elevations of bilirubin and alkaline phosphate

End stages → hepatic failure, massive GI bleeding, intercurrent infections, hepatorenal syndrome

Hemochromatosis → excessive accumulation of body iron

Micronodular cirrhosis, diabetes mellitus and skin pigmentation

Iron is stored as ferritin and can be used as needed, insoluble iron is called hemosiderin

Wilson’s disease → accumulation of toxic levels of copper in many tissues and organs

Based on a decrease in serum ceruloplasmin, increase in hepatic copper content and increased urinary copper excretion

Keyser Fleuseger rings → seen in the eyes

Secondary biliary cirrhosis → most common cause is cholelithiasis (gall stones)
Primary biliary cirrhosis → destruction of bile ducts, elevated alkaline phosphate and cholesterol levels, hyperbilirubinemia, and autoantibodies
Cirrhosis → MCC of impaired blood flow through the liver. Sickle Cell anemia
Liver cell adenoma is a benign neoplasm of hepatocytes
Most primary carcinomas of the liver arise from liver cells and are termed hepatocellular carcinoma
   Less common are cholangiocarcinomas and malignant angiosarcoma → bile ducts
Choledocholithiasis → presence of stones in the biliary tree
Cholangitis → acute inflammation of the wall of bile ducts

Chapter 17

Acute pancreatitis → associated with acinar cell injury, acute onset of abdominal pain resulting from enzymatic necrosis and inflammation of the pancreas
Elevation of pancreatic enzymes
MCC are gallstones and alcoholism
Inappropriate activation of the proenzyme trypsinogen into trypsin inside the acini
Pancreatic duct obstruction caused by gallstone impacting the papilla of Vater
Primary cell injury
Defective intracellular transport of proenzymes with acinar cells
Localization in the epigastrum with radiation to the back is characteristic, elevated serum amylase
Chronic Pancreatitis → repeated bouts of mild/moderate pancreatic inflammation
Carcinoma of the pancreas → arising in the exocrine part of the gland
   With carcinoma of the pancreatic head, ampullary region is invaded, obstructing bile outflow
   Cancer of the body and tail are large and disseminated by the time discovered
   Obstructive jaundice is associated with most cancers of the head
   Migratory thrombophlebitis (trousseau’s sign) seen with any part of the pancreas
Endocrine pancreas
   Beta cells → insulin
   Alpha cells → glucagons
   Delta cells → somatostatin
   PP Cells → pancreatic polypeptide
Diabetes mellitus
   Type 1 → insulin-dependent, juvenile onset diabetes
   Type 2 → non-insulin dependent diabetes, adult onset
   Long-term complications in blood vessels, kidneys, eyes, and nerves occur in both types and are the major causes of morbidity and death from diabetes
   Most important stimulus that triggers insulin release is glucose, which initiates insulin synthesis
   Insulin is a major metabolic hormone
Type II Diabetes
   Insulin resistance is a major factor in the development of type II diabetes
   Obesity with reduction of exercise
   Polyurea, polydipsia, polyphagia
Hyperinsulism → insulinomas → tumors of islet cells that secrete insulin and cause hypoglycemia, by fasting or exercise
Zollinger-Ellison Syndrome – Gastinomas – hypersecretion of gastrin that stimulates acid secretion in the stomach

Chapter 18

Hypospadias → abnormal opening of the urethra along the ventral aspect of the penis
Balantis/balanoposthitis → local inflammation of the glans penis and/or prepuce
Phimosis → when prepuce cannot be retracted easily over the glans
Paraphimosis → stenotic prepuce is forcibly pulled back over the glans resulting in congestion of the distal penis resulting in pain and even urinary retention
Hydrocele is the MCC of scrotal enlargement → accumulation of serous fluid w/in the tunica vaginalis due to infections, tumors.
Hematoceles → accumulation of blood in the tunica vaginalis
Chyloceles → accumulation of lymph in the tunica vaginalis
Varicoceles → dilated enlarged veins that drain into the testes and feel like a “bag of worms”
Cryptorchidism → failure of testicular descent into the scrotum. Risk of testicular malignancy
Gonorrhea and chlamydia are commonly involved → affected testicle is swollen and tender
Testicular neoplasms are most important cause of firm, painless enlargement of the testis
Acute bacterial prostatitis → caused by E.coli and other gram negative rods
   Dysuria, urinary frequency, lower back pain, and poorly localized pelvic pain
Nodular hyperplasia (glandular and stromal hyperplasia) → common abnormality of the prostate
Lower urinary tract obstruction, hesitancy, urinary urgency, frequency, and nocturia

Prostate Carcinoma
Palpable by rectal digital examination
PSA is used for early detection

Syphilis → T. pallidum – crosses placenta
Primary syphilis → chancre at the site of initial inoculation – hard chancre
Secondary syphilis → generalized lymph node enlargement, involves palms and soles of feet
Condylomata lata
Tertiary syphilis → 3 categories
   Cardiovascular – syphilitic aortitis
   Neurosyphilis – tabes dorsales
   Benign tertiary syphilis – gummas in bone, skin, and mucous membranes
   Argyll Robertson pupil
Congenital syphilis → when it crosses placenta – Infantile syphilis, late/tardive syphilis
Hutchinson triad
   Notched central incisors
   Interstitial keratitis
   Deafness from damage to 8th cranial nerve

Gonorrhea → N.gonorrhea
Urinary frequency and mucopurulent urethral exudate manifest gonorrhea
Nongonococcal Urethritis and Cervicitis → MC forms of STDs today
   Mucopurulent discharge containing a predominance of neutrophils
Chancroid → third venereal disease
   Hemophilus ducreyi → MCC of genital ulcers
Genital Herpes
   HSV – 2 is MC, HSV – 1 is next
   Episodes of recurrent disease are common during the first several years but tend to be milder and shorter duration
   Neonatal herpes → affected thru birthing process

Chapter 19
Lichen sclerosis → thinning of the epidermis and disappearance of the rete pegs
Condylomata lata → result of syphilis, is flat, moist, minimally elevated lesions
Vaginitis → producing a vaginal discharge called leukorrhea
   Candida albicans → curdy, white discharge with no odor
   Trichomonas vaginalis → water, copious gray-green discharge with foul odor
Cervical intraepithelial Neoplasia (CIN)
   CIN I → mild dysplasia – lower 1/3 of epithelium shows changes
   CIN II → moderate dysplasia – later 1/2 of epithelium shows changes
   CIN III → severe dysplasia and carcinoma in situ – marked dysplasia to the surface epithelium
Endometriosis → causes infertility, dysmenorrhea, pelvic pain, and other problems
Menorrhagia → profuse bleeding at time of period
Metrorrhagia → irregular bleeding between periods
Ovulatory bleeding → intermenstrual bleeding
Dysfunction uterine bleeding → abnormal bleeding in the absence of a lesion in the uterus
Salpingitis → inflammation of the tubes
Salpingo-oophoritis → inflammation of the ovaries
Polycystic ovaries/Stein-Leventhal syndrome → oligomenorrhea, hirsutism, and obesity in young women
Benign (mature) cystic teratomas → cyst with hair, bone, teeth, cartilage
Ectopic pregnancy → lower abdominal pain and missed period by two weeks
Preeclampsia → development of hypertension with proteinuria and edema
Eclampsia → seizures and convulsions involved