Objective

1. Identify the most important features of common benign liver tumors

2. Know the risk factors, diagnosis, and management of hepatocellular carcinoma
Classification

Benign

- Hemangioma
- Focal nodular hyperplasia
- Adenoma
- Liver cysts

Malignant

1. Primary liver cancers
   - Hepatocellular carcinoma
   - Fibrolamellar carcinoma
   - Hepatoblastoma
   - Others

2. Metastases
Benign Liver Lesions

1. Hemangioma
2. Focal nodular hyperplasia
3. Adenoma
4. Cysts
Hemangioma
Clinical Features

- The commonest liver tumor
- 5% of autopsies
- Usually single small
- Well demarcated capsule
- Usually asymptomatic
Hemangioma Diagnosis and Management

**Diagnosis**
- US: echogenic spot, well demarcated
- CT: venous enhancement from periphery to center
- MRI: high intensity area
- No need for FNA

**Treatment**
- No need for treatment
This is a benign hemangioma of the liver just beneath the capsule.
CT SCAN OF SOLITARY AND MULTIPLE HEPATIC HEMANGIOMAS
Focal Nodular Hyperplasia (FNH) Clinical Features

- Benign nodule formation of normal liver tissue
- Central stellate scar
- More common in young and middle age women
- No relation with sex hormones
- Usually asymptomatic
- May cause minimal pain
Focal Nodular Hyperplasia (FNH)
Diagnosis and Management

**Diagnosis:**
- US: Nodule with varying echogenicity
- CT: Hypervascular mass with central scar
- MRI: iso or hypo intense
- FNA: Normal hepatocytes and Kupffer cells with central core.

**Treatment:**
- No treatment necessary
- Pregnancy and hormones OK
CT/FNH
Hepatic Adenoma

Clinical features

- Benign neoplasm composed of normal hepatocytes no portal tract, central veins, or bile ducts
- More common in women
- Associated with contraceptive hormones
- Usually asymptomatic but may have RUQ pain
- May presents with rupture, hemorrhage, or malignant transformation (very rare)
Hepatic Adenoma
Diagnosis and Management

**DX**
- US: filling defect
- CT: Diffuse arterial enhancement
- MRI: hypo or hyper intense lesion
- FNA: may be needed

**Tx**
- Stop hormones
- Observe every 6m for 2 y
- If no regression then surgical excision
Hepatic adenoma
Hepatic adenoma
The hepatic adenoma 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.
Liver Cysts

- May be single or multiple
- May be part of polycystic kidney disease
- Patients often asymptomatic
- No specific management required
- Hydied cyst
Malignant Liver Tumors

1. Hepatocellular carcinoma (HCC)
2. Fibro-lamellar carcinoma of the liver
3. Hepatoblastoma
4. Intrahepatic cholangiocarcinoma
5. Others
Hepatocellular carcinoma (HCC)

Definition:
Hepatocellular Carcinoma (HCC) is a Malignant Tumor that Derives from Hepatocytes or Their Precursors
HCC: Incidence

- The most common primary liver cancer
- The most common tumor in Saudi men
- Increasing in US and all the world
HCC: Risk Factors

The most important risk factor is **cirrhosis** from any cause:

1. Hepatitis B (integrates in DNA)
2. Hepatitis C
3. Alcohol
4. Aflatoxin
5. Other
HCC: Clinical Features

- Wt loss and RUQ pain (most common)
- Asymptomatic
- Worsening of pre-existing chronic liver disease
- Acute liver failure

O/E:
- Signs of cirrhosis
- Hard enlarged RUQ mass
- Liver bruit (rare)
HCC: Metastases

- Rest of the liver
- Portal vein
- Lymph nodes
- Lung
- Bone
- Brain
HCC: Systemic Features

- Hypercalcemia
- Hypoglycemia
- Hyperlipidemia
- Hyperthyroidism
HCC: labs

- Labs of liver cirrhosis

**AFP (Alfa feto protein)**
- Is an HCC tumor marker
- Values more than 100ng/ml are highly suggestive of HCC
- Elevation seen in more than 70% of pt
HCC: Diagnosis

- Clinical presentation
- Elevated AFP
- US
- Triphasic CT scan: very early arterial perfusion
- MRI
- Biopsy
US: HCC
CT: Venous Phase
CT: Arterial Phase
HCC: Prognosis

- Tumor size
- Extrahepatic spread
- Underlying liver disease
- Pt performance status
HCC: Liver Transplantation

- Best available treatment
- Removes tumor and liver
- Only if single tumor less than 5cm or less than 3 tumors less than 3 cm each
- Recurrence rate is low
- Not widely available
HCC: Resection

- Feasible for small tumors with preserved liver function (no jaundice or portal HTN)
- Recurrence rate is high
HCC: Local Ablation

- For non resectable pt
- For pt with advanced liver cirrhosis
- Alcohol injection
- Radiofrequency ablation
- Temporary measure only
HCC: Chemoembolization

- Inject chemotherapy selectively in hepatic artery
- Then inject an embolic agent
- Only in pt with early cirrhosis
- No role for systemic chemotherapy
Chemoembolization
Fibro-Lamellar Carcinoma

- Presents in young pt (5-35)
- Not related to cirrhosis
- AFP is normal
- CT shows typical stellate scar with radial septa showing persistent enhancement
CHOLANGIOCARCINOMA

- Arises from the intra-hepatic biliary radicals.
- Presents mainly with jaundice.
- Slowly growing and metastasises late.
- Resection is the best treatment whether curative or palliative.
- Inoperable cases are best managed with percutaneous trans-hepatic or endoscopic stenting.
- It is usually chemo and radio resistant.
SARCOMA

- Arises from connective tissue components.
- Rapidly growing and usually reaches big size.
- Usually complicated by hypoglycemia.
- Treatment is usually palliative with chemotherapy or radiotherapy.
Secondary Liver Metastases

- The most common site for blood born metastases
- Common primaries: colon, breast, lung, stomach, pancreases, and melanoma
- Mild cholestatic picture with preserved liver function
- Dx imaging or FNA
- Treatment depends on the primary cancer
- In some cases resection or chemoembolization is possible
Metastatic tumors to the liver
Metastatic tumors to the liver
Thank you