HEPATO-SPLENOMEGALY
NORMAL LIVER

- <4yrs: Liver normally palpable 2cm below Rt costal margin in the mid clavicular line.
- <12yrs: 1 cm
- > 12 yrs: not palpable
- Smooth surface, Non tender, Round
• Upper border is made out by percussion and lower border by palpation.

• Upper border of the normal liver corresponds to 5th intercostal space in the Rt mid clavicular line.
• At 1 wk of age ----- 4.5-5 cm
• At 12 yrs
  boys ----- 7-8 cm
  girls ----- 6-6.5 cm

The lower edge of the rt lobe extends downward and palpable as a broad mass in some normal people (Riedel lobe)
• > 12 yrs – liver usually not palpable

NORMAL LIVER SPAN
<table>
<thead>
<tr>
<th>Abnormality</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm liver</td>
<td>Cirrhosis, TB</td>
</tr>
<tr>
<td>Hard liver</td>
<td>Malignancy</td>
</tr>
<tr>
<td>Sharp border liver</td>
<td>Cirrhosis, infection (hepatitis, abscess), ccf, trauma</td>
</tr>
<tr>
<td>Tender liver</td>
<td>Cirrhosis, neoplasm</td>
</tr>
<tr>
<td>Asymmetric enlargement</td>
<td>Tumor/ cyst</td>
</tr>
</tbody>
</table>
DOWNWARD DISPLACEMENT OF THE LIVER

- Emphysema
- Pleural effusion/empyema
- Subdiaphramatic abscess
- Relaxation of the abdominal musculature
  - Generalized visceroptosis & Rickets
- Thoracic deformity like narrow costal angle
HEPATOMEGALY IN NEWBORN

• Neonatal hepatitis
• Extrahepatic Biliary atresia, choledocal cyst
• Erythroblastosis Fetalis
• Intrauterine infections
• Septicemia
• Metabolic disorders like Galactosemia, Alpha-1Antitrypsin deficiency etc
HEPATOMEGALY IN LATER INFANCY AND CHILDHOOD

- Viral infections
  - Viral Hepatitis A, B, Dengue, infectious mononeucliosis,
- Bacterial infections
  - enteric fever, septicemia, tuberculosis, Ricketsial disease,
- Protozoal infections
  - Malaria & Hepatic Amoebiasis
- Spirochital infections
  - Leptospirosis,
- Infiltrative diseases
  - Nutritional (fatty infiltration), malignancy like leukemia
- Storage disorders
  - Reye syndrome, glycogen storage disease, galactosemia, Wilson disease, etc
- Miscellaneous
  - Cirrhosis, VOD, Budd-Chiari syndrome
CLUES IN THE HISTORY/PHYSICAL EXAMINATION FOR CAUSE OF HEPATOMEGALY

- Onset
  - Acute: viral hepatitis
  - Chronic: chronic hepatitis, cirrhosis
- Fever
  - Typhoid, Dengue fever, Malaria, Tuberculosis
- Pruritis
  - Cholestasis
- Family History & consanguinity
  - Wilson’s, Thalassemias
• Hepatotoxic drugs
• Anti TB, Anti-Epileptic drugs, Anticancer drugs
• Anemia
• Hemolytic disease, Leukemias
• lymphadenopathy
• Disseminated TB, malignancy
• cataract
• Galactosemia, Cong Rubella syndrome
• microcephaly
• Intra uterine infecton like Rubella
• Tremors/ Flaccidity
• Lipid storage disease
• K F Ring
• Wilson’s disease
CLUES IN THE HISTORY/PHYSICAL EXAMINATION FOR CAUSE OF HEPATOMEGALY

hydrocephaly
Mental Retardation
Sudden onset of Profound disturbances of sensorium, pernicious vomiting and convulsions
Chronic diarrhea, repeated Respiratory infection with clubbing and failure to thrive
Grotosque facies

intra uterine infections like Toxoplasmosis, cmv
Galactosemia, lipid storage disorders
Reye syndrome
Mucoviscidosis (cystic fibrosis)
mucopolysaccharidosis
• A soft, thin spleen may be palpable in
  15% of neonates
  10% of normal children
  05% of adolescents

• Spleen must be 2-3 times its normal size before it is palpable
DIRECTIONS OF ENLARGEMENT OF SPLEEN

- **Children**: Enlarges vertically downward against its diagonally downward enlargement in children and adults.
- **Infants**: Enlarges downward against its diagonally downward enlargement in infants.

- **Lt iliac fossa**
- **Rt iliac fossa**
HOW TO DIFFERENTIATE SPLEEN FROM KIDNEY IN THE LEFT HYPOCHONDRIUM

• Upper margin of the spleen is concealed by the rib cage (get above the swelling is absent).
• Medial border of the spleen has a characteristic notch.
• Overlying bowel is absent in splenic enlargement.
• Splenic swelling tends to extend towards the umbilicus (vertically downwards in infants), kidney swelling enlarges vertically downwards towards left iliac fossa.
HOW TO DIFFERENTIATE SPLEEN FROM KIDENY IN THE LEFT HYPOCHONDRIUM

• Splenic swelling moves freely with respiration. Renal swelling does not.
• Splenic swelling is palpated from the anterior aspect where as kidney enlargement is palpable from the posterior aspect or bimanually.
• Kidney swelling in not ballotable unlike kidney swelling.
# CAUSES OF SPLENOMEGALY

<table>
<thead>
<tr>
<th>Causes</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infections</td>
<td>Bacterial: S.typhi, S.pneumoniae, H.influenzae</td>
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<td></td>
<td>Chronic: infective endocarditis, TB,</td>
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<td>Local infections: splenic abscess</td>
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<td></td>
<td>Viral: Acute viral infections – hepatitis A, B &amp; C, Hiv</td>
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<td></td>
<td>Others: Spirochetal, rickettsial, fungal and parasitic</td>
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<tr>
<td>Storage diseases</td>
<td>Lipidosis, mucopolysaccharidosis, carbohydrate metabolism defects (galactosemia, fructose intolerance)</td>
</tr>
<tr>
<td>Congestive</td>
<td>Ccf, intrahepatic – cirrhosis or fibrosis</td>
</tr>
<tr>
<td>Malignancies</td>
<td>Primary; leukemia, lymphoma, hodgkin disease</td>
</tr>
<tr>
<td>Hematological</td>
<td>Acute and chronic hemolysis</td>
</tr>
<tr>
<td>Immunologic and</td>
<td>Rheumatoid arthritis, SLE, SYSTEMIC VASCULITIS,</td>
</tr>
<tr>
<td>inflammatory processes</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>Cysts, hemangioma, hematoma</td>
</tr>
</tbody>
</table>
• Storage disorder (Gaucher’s disease)
• Hemolytic Anemias
• Kala-azar
• Tropical splenomegaly
• Chronic myeloid leukemia
• Myeloproliferative disease
CONGESTIVE HSM

- Cirrhosis with PHT- H/O JAUNDICE, Chronic history, haematemesis, malena, anorexia, wt loss
- Caput medusae
- Ascites
- Gynaecomastia
- Testicular atrophy
- Palmar erythema
- Spider nevi
- Vitamin deficiency
DIAGNOSIS

- Hepatomegaly / splenomegaly / hepatosplenomegaly to be evaluated based on the history and associated physical findings to arrive at a reasonably good clinical diagnosis.
- Definitive diagnosis is established by performing relevant investigations.
THANK YOU