The liver

Anatomy

- Weight: 1.5 kg.
- Rt lobe (larger ¾) & small lt
- Lobe ¼
- 8 segments I → IV left lobe
  - R → VIII Rt lobe

Support & stability

4 segments

1. Lt triangular lig
2. Rt triangular lig
3. Falciform lig
4. Lesser omentum.

Blood supply

- Portal vien 70-80% pressure 8-12 mmHg.
- Hepatic artery 20-30 % O2
- 1500 cc/mimt
- Pressure: 100-150 mm Hg.

Venius driange

- 1. 3 hepatic veins
  (main)
  - Rt
  - Lt
  - Middle
- Inferior hepatic veins.

Physiology: Functions of liver

- 1. Essential for life (24-48 hours without liver)
- 2. Bile formation & Excecretion
- 3. Protien formation
- 4. clotting factors.
- 5. body temp.
- 6. CHO metabolism.
- 7. produetion of urea.
- 8. PH balance.
- 9. lipid metabolism.
- 10. storage of vitamins (A,D, B12)
- 11. Iron , copper storage.
- 12. Detoxication of drugs.
- 13. Anti balateral activity.
- 14. Reticulo endothelial activity.

Investigations of Liver Diseases

- I. L.F.T.
- II. Imaging tests.
- A. non-invasive.
- B. Invasive.
- III. Liver Biopsy.
- IV. Laproscopy.

I. L.F.T.

1. Serum bilirubin 0.5 – 1mg/100ml.
2. serum alkaline phosphatse. 3-13 K.Auwte
3. serum Albumin:

   only site for pradulation 25-50gm/litre = 2.5 gm/100ml
4. transaminase :Aspartate transaminase ((AST))
   Alanine transaminase) 5-40 1.4/ litre
5. Gama Glulamyle tranpeptidase GGT= 10-48l.U
6. prothrombine time 12-16 sec.
7. α- feto pratien

II. Imaging Tests

A. Non-invasive

- 1. Plain x-ray of abdomen . Limited value
  . Calcification & Hydatid cyst.
- 2. Ultrasound: standard first –line & Doppler investigation
  Simple, non-invasive , of particular value in DX & screening
- 3. C.T. scan & spiral CT. of considerable value in Dx of tumours, cyst; detect lesion < 1cm. Also planing of liver surgery. C.T. with contrast study.
- 4. MRI, MRCP & MRA. Non-invasive, no- contrast MRA heapatic anty
  Partial viene.

B. Invasive Imaging tests

1. Angio graphy
2. PTC
3. ERCP
4. Nuclear scanning

1. Argio graphy

- Visualalisation of H. Artary Patency
- Planning for liver nessection.
- Arteriovenous malformation.
- Nature of liver nodule

2. P.T.C percutanous transhepatic chalengiography.)

- For patency of bile duets tumor
- For driage by stent application, insertion.

3. ERCP

- in obstructive jaundice diagnosis & stent inseration & strictur diltation

Complications:

1. Chalengitis 2. pancreatitis 3. Bleeding
4. performation

4. Nuclear scanning

- $T^{99}m$ I.V. injuetion & gamma camera in bile leak- bile obstruction – Dx of liver lesion Adenoma, Heamagioma.

III. Liver Biopsy:-

- Indication: 1. Paranclymal liver Dis. 2. Liver Tumor
- Contra indication
- 1. Bleeding tendency 2. Hydatid cyst 3. Haemargioma

IV. Laparoscopy & laparoscopic ultrasound:-

Diagnosis & Biobisy taken.

Liver trauma

- Uncommon serious morbidity & mortality Associated organs injuries
- A. Blunt trauma B. pentrating trauma
- Blunt trauma Extent Confusion
  - Laceration
  - Avulsion
- Rx Conservative
  - Open –surgical Rx indication
    - Cantinous blood loss
- Genentized pentonitisPenetrating injury :- stab wound or bullet.
- Rx: After Rescucitation surgery usually associated agan injuries.

Outcome & complications of liner Trauma

1. Haematoma
2. Abscessess.
3. Bile callection
4. Billiary fistula
5. Artenio venous fistula.
6. Arterio bilary fistula Haematobilia.
7. Hepatic Artery Aneurysm
8. Liver failure
9. Billiary tract stricture → Jaundice
10. Atrophy of liver segment