Portal Hypertension

- Increase in portal venous pressure more than 12mm of Hg.
- Portal vein — Splenic vein
  — Superior mesentric vein.

Causes:

1) Pre-Hepatic Pre Sinusoidal
   - Thromborsis due to Sepsis
   - Abdominal surgery.
2) Intra Hepatic
   - Pre Sinusoidal
     - Schistosomiasis (Flat worms)
     - Sarcoidosis (Granuloma)
     - Drugs
     - Fibrosis
   - Sinusoidal
     - Cirrhosis.
     - Metastasis
     - Polycystic liver disease
   - Post Sinusoidal
     - Veno-occlusive disease
3) Post Hepatic Post sinusoidal
   - Budd-chiari Syndrome (Abdominal pain, Ascites Hepatomegaly)
     (Thrombus or Tumor obstructs venous flow to the Inferior Vena Cava).
   - Right sided Heart Failure
   - Constrictive Pericarditis.

Pathophysiology

Venous Blood accumulates in portal system
↓
Pressure rises >12mm Hg
↓
Portosystemic shunts.

- Inferior Portion of Oesophagus
- Superior Portion of Anal Canal
- Round ligament (Umbilical Vein)

① ↓ Blood to the liver
↓
↓ liver Function → ↓ Detoxication → ↑ Ammonia
↓
Hepatic Encephalopathy ← BBB

② Portosystemic shunts.

- Egophageal Varicis → Recanalization of Round ligament
↓ ↓
Easily rupture Umbilical veins
↓ ↓
GI Bleeding veins dilate
↓
Caput Medusae.

- Superior rectal Vein
↓
Haemorrhoids.

③ Blood Back up in Spleen
↓
Splenomegaly
↓
Hypersplenism — Anemia
— Leukemia
— Thrombocytopenia.

④ Endothelial Cells of arteries release ↑ Nitric oxide ↓
Arteries Dilate
↓
↓ Blood Pressure → Aldosterone
↓ ↓
↓ Low Kidney Blood flow Kidney retain
↑ Na & H_2O
↓ ↓
Low filtration Excess fluid into
↓ Cavities
Hepatorenal ↓
failure. Ascites (> 1L).
↓ ← Bacteria
Bacterial peritonitis invade

B - Bleeding
C - Caput Medusae
D - Diminished liver function
E - Enlarged spleen.

Clinical Features

1→ Hepatic Encephalopathy
→ Asterixis (Flapping Tremor)
→ Altered Consciousness.
→ Lethargy.
→ Seizure, Coma.

2→ ↓ Liver Function → Jaundice

3→ Esophagus — Haematemesis
→ Melena.

4→ Caput Medusae.

5→ Haemorroids. Painless, lumps, Bleeding.

6→ Splenomegaly, Pallor, Easy injection, Excessive bleeding.

7→ Ascites → Enlarged Abdomen.

Investigation

① Portal Venous pressure measurement
→ Through a baloon catheter from the Jugular Vena Cava to the portal vein.

② Liver Enzymes, → Liver Function.

③ CT & MRI of Brain → Hepatic Encephalopathy.

④ Upper Endoscopy → Oesophageal Varices.

⑤ Liver Ultrasound → Cirrhosis.

⑥ USG Abdomen → Spleen enlargement; Ascites.

⑦ Proctoscopy → Haemorroids.

⑧ Full Blood Count → Anemia, leukemia, Thrombo

Management

→ β Blockers → Bleeding

→ Oesophageal Varices → Ligation, Bloody Tamponade
Haemorroids →

→ TIPS → (Transjugular intrahepatic portosystemic
Stent shunt)

→ Fluid & Sodium restriction & Ascites
Diuretics