

The effects of gall stones:

- 1) may be symptomless.
- 2) may cause acute cholecystitis
- 3) may cause chronic cholecystitis
- 4) may obstruct the cystic duct leading to empyema of the gall bladder
- 5) migrate into the common bile duct leading to obstructive jaundice
- 6) migrate into the duodenum
- 7) precipitate acute pancreatitis.

The Effects of Liver Failure

- 1) Jaundice: the liver cells fail to excrete normal amounts of bilirubin.
- 2) Low-grade fever.
- 3)
- 4) Coma, tremor, and mental changes.
- 5) Metabolic changes: decreased level of blood prothrombin causing a tendency to bleed.
- 6) Endocrine: change in distribution of body infertility, gynaecomastia in men, and testicular atrophy.

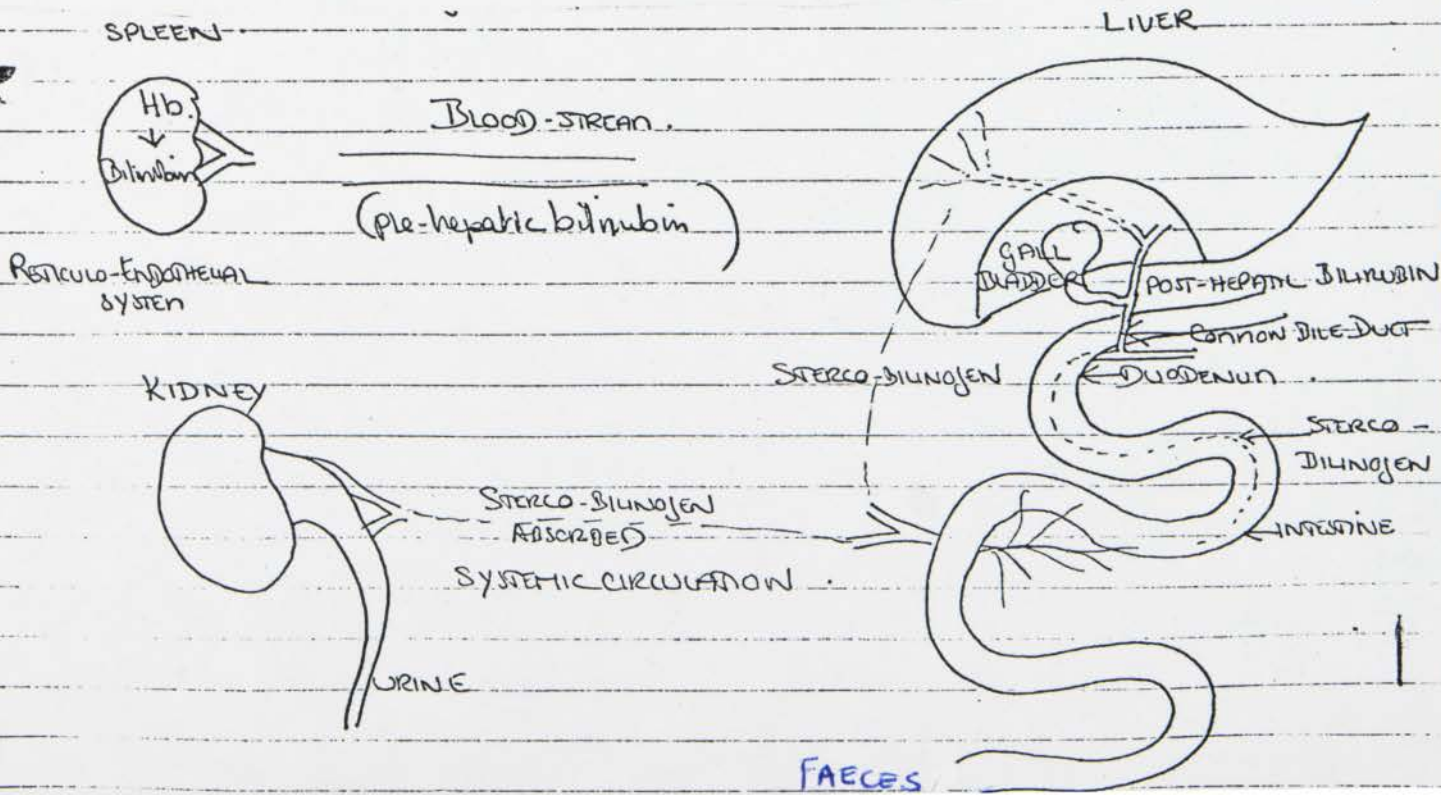
The Effects of Portal Hypertension

Obstruction of the portal venous system leads to:

- 1) Enlargement of the spleen.
- 2) Development of anastomotic channels; oesophageal varices.
- 3) Ascites: fluid is exuded into the abdominal cavity by the rise in hydrostatic pressure within the liver combined with liver cell failure.

Jaundice

The normal bile formation and circulation:



Types of Jaundice (a yellow discolouration of the skin and mucous membranes, due to an excess of circulating bilirubin):-

- 1) Haemolytic: the rate of bilirubin formation is greater than the rate at which it can be excreted by liver cells; this is due to the breakdown of haemoglobin in the spleen and thus an increase in prehepatic bilirubin, e.g. excessive breakdown of red cells in haemolytic anaemia.
- 2) Hepatocellular: bilirubin production is normal but the liver cells are incapable of excreting all the pigment which is then reabsorbed into the bloodstream.
e.g. cirrhosis of the liver, viral hepatitis.
- 3) Obstructive: bilirubin production is normal but the pigment excreted by the liver cells is prevented from reaching the intestine by obstruction of the biliary tract. This excess bilirubin can be excreted into the urine by the kidney.
e.g. stones in the common bile duct, secondary carcinoma, carcinoma of the pancreas.
- 4) Drug Jaundice: A mild form of obstructive jaundice following the administration of chlorpromazine.

Symptoms and signs associated with liver disease:

- 1) Gynaecomastia: the development of breast tissue in men, due to an increase in circulating oestrogen.
- 2) Haematemesis: due to bleeding oesophageal varices.
- 3) Jaundice - Investigations :
 - a) Estimations of the enzyme, alkaline phosphatase in the bloodstream will give an assessment of the degree of hepatocellular damage.
 - b) Estimation of the bilirubin level, broken down into pre-hepatic and post-hepatic bilirubin, helps to determine whether jaundice is obstructive or hepatocellular.
 - c) Detection of bilirubin in the urine indicates obstructive jaundice.
 - d) Liver biopsy : a potentially dangerous procedure which can induce serious bleeding; blood must always be taken beforehand for blood grouping and cross-matching.
- 4) "Flapping" Tremor:
- 5) Biliary Colic: right hypochondrial spasms of severe pain which may radiate to the right shoulder-blade.

Investigations:

cholecystogram
cholangiogram
plain X-ray.

Diseases of the Pancreas

- 1) Inflammations : e.g. Acute Pancreatitis - a sudden diffuse enzymatic destruction of the pancreatic substance due to the escape of active, lytic pancreatic substances.
Presents as an acute abdomen with severe pain, shock and circulatory collapse.
- 2) Metabolic: e.g. Diabetes Mellitus - a relative or absolute deficiency of insulin.
- 3) Tumours: e.g. Carcinoma of the Pancreas - 3-4% of deaths from malignant disease. Highly malignant with a very poor prognosis - 6 months from diagnosis.