

Group = 6

**Disease =
OBSTRUCTIVE
JAUNDICE**

Government Medical Collage ,
Surat

Guidance by :-Dr. Sailesh M. Patel

Dr. SARITA PATEL

Group

members

History Of Patient

Presenting the case of 30 years old female admitted in G2 ward of the New Civil hospital on 20th October 2016.

- **Chief complains:**
- Pain in abdomen fever since one month.

ODP- Origin duration progress

- The patient had pain in abdomen with fullness and indigestion before 2 days So she went to Gurunanak hospital.
- Ultra sonography was done and came to know that there was calculi(stone) in Gall Bladder and also in distal part of bile duct.

- After 2 days, on 20th october patient was shifted to civil hospital where they did ultra sonography.
- The Gall Bladder was over distended with dialated cystic duct and sludge.
- The distal part of common bile duct became narrower and proximal to stricture there was calculi (stone).
- Patient has complain of yellowish discoloration of skin and sclera since one month and also has decrease appetite since one month.

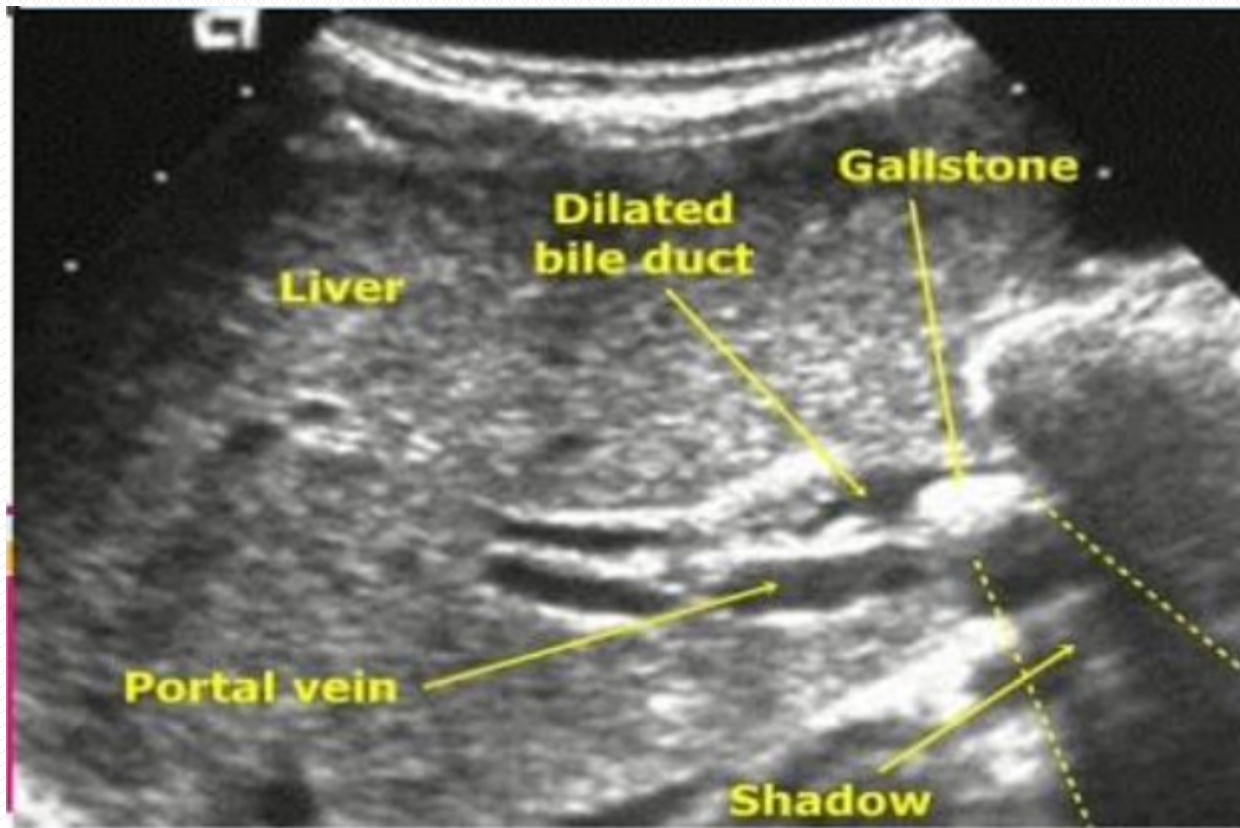
TYPES OF GALLSTONES



These dark brown or black stones form when the bile contains too much bilirubin.

yellow in color. Composed mainly of undissolved cholesterol .

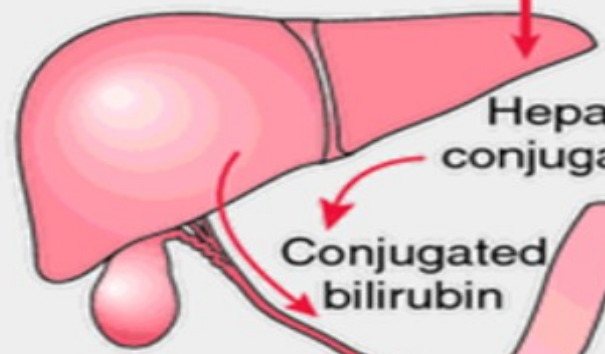
Ultra Sonography



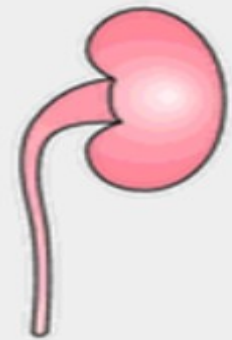
Red cell destruction Heme protein catabolism Bone marrow erythropoiesis

Bilirubin

Circulating albumin - bilirubin (unconjugated)

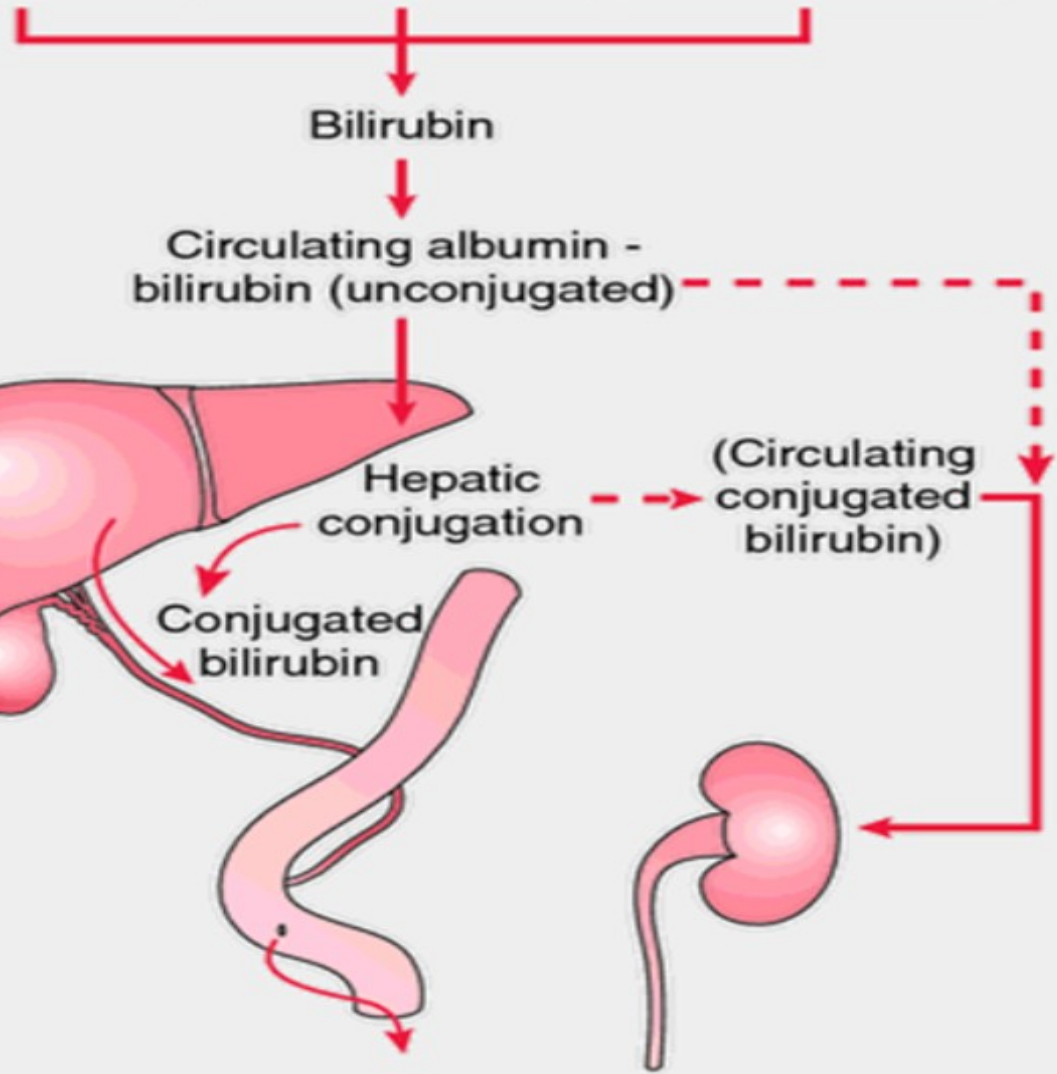


(Circulating conjugated bilirubin)

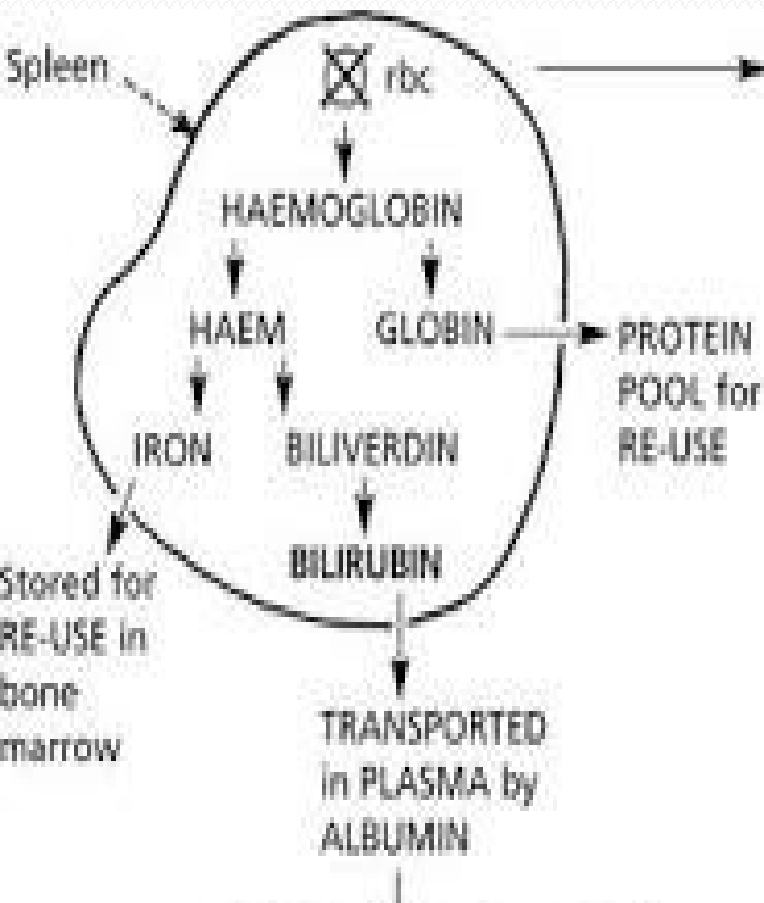


Bacterial deconjugation

Fecal stercobilinogen

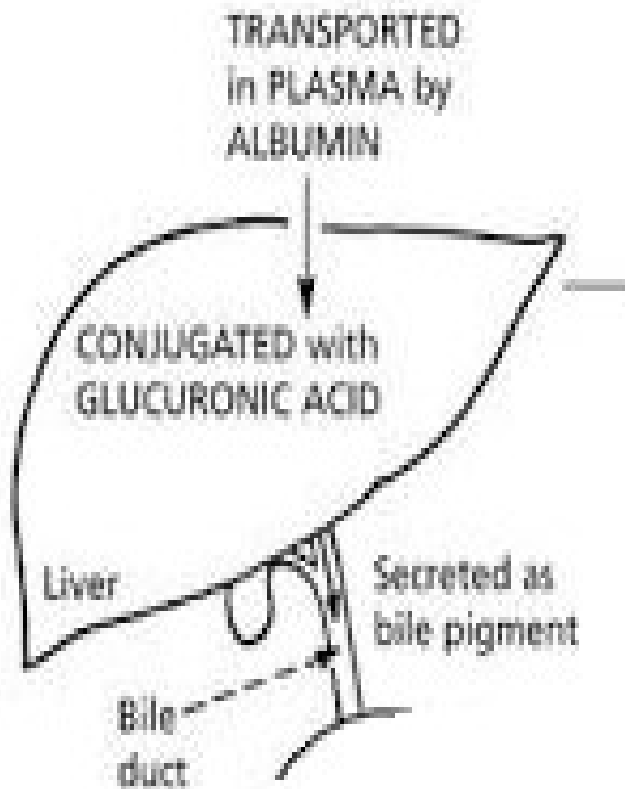


PRE-HEPATIC JAUNDICE



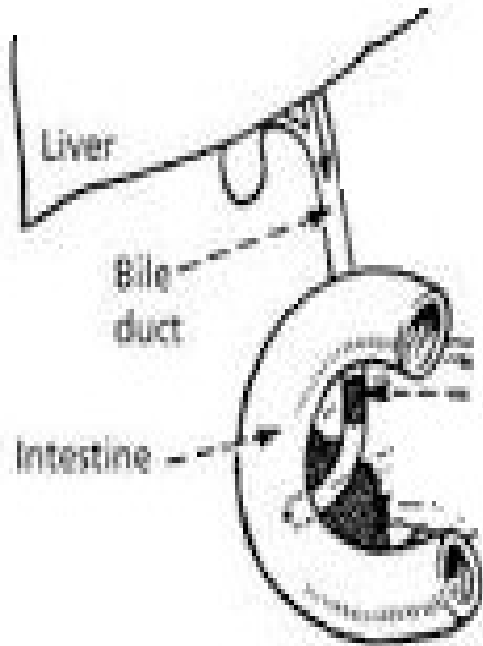
- due to increased RBC destruction, e.g. haemolytic anaemia .
- ↓ unconjugated bilirubin. bound to albumin; therefore does not appear in urine .

HEPATOCELLULAR JAUNDICE



- e.g. in hepatitis.
- Liver cell damage failure to conjugate bilirubin.

POST-HEPATIC (OBSTRUCTIVE JAUNDICE)



- obstruction to common bile duct e.g- gall stone, carcinoma of head of pancreas.
- Bile Fails to reach GUT.

Causes of pre-hepatic jaundice

- **Malaria** : A blood borne infection spread by mosquitoes.
- **Sickle cell anaemia** : An inherited blood disorder where the red blood cells develop abnormally.
- **Thalassaemia** : Similar to sickle cell.
- **Hereditary spherocytosis** : A genetic condition that causes red blood cells to have a much shorter life span than normal.

Causes of Hepatocellular jaundice

- **The viral hepatitis group of infections** : hepatitis A, hepatitis B and hepatitis C
- **Alcoholic liver disease** : Where the liver is damaged as a result of drinking too much alcohol.
- **Leptospirosis** : A bacterial infection that's spread by animals , particularly rats.
- **Liver cancer** : A rare and usually incurable cancer that develops inside the liver.

Causes of Obstructive Jaundice

Intrahepatic

- Hepatitis.
- Cirrhosis.
- Drugs
- Lymph node enlargement at porta hepatis .

Causes of Obstructive Jaundice

Extrahepatic

- Carcinoma of head of pancreas.
- Stones in biliary track.
- Inflammation of common bile duct.
- Cysts of bile duct.
- Pancreatitis.

SYMPTOMS

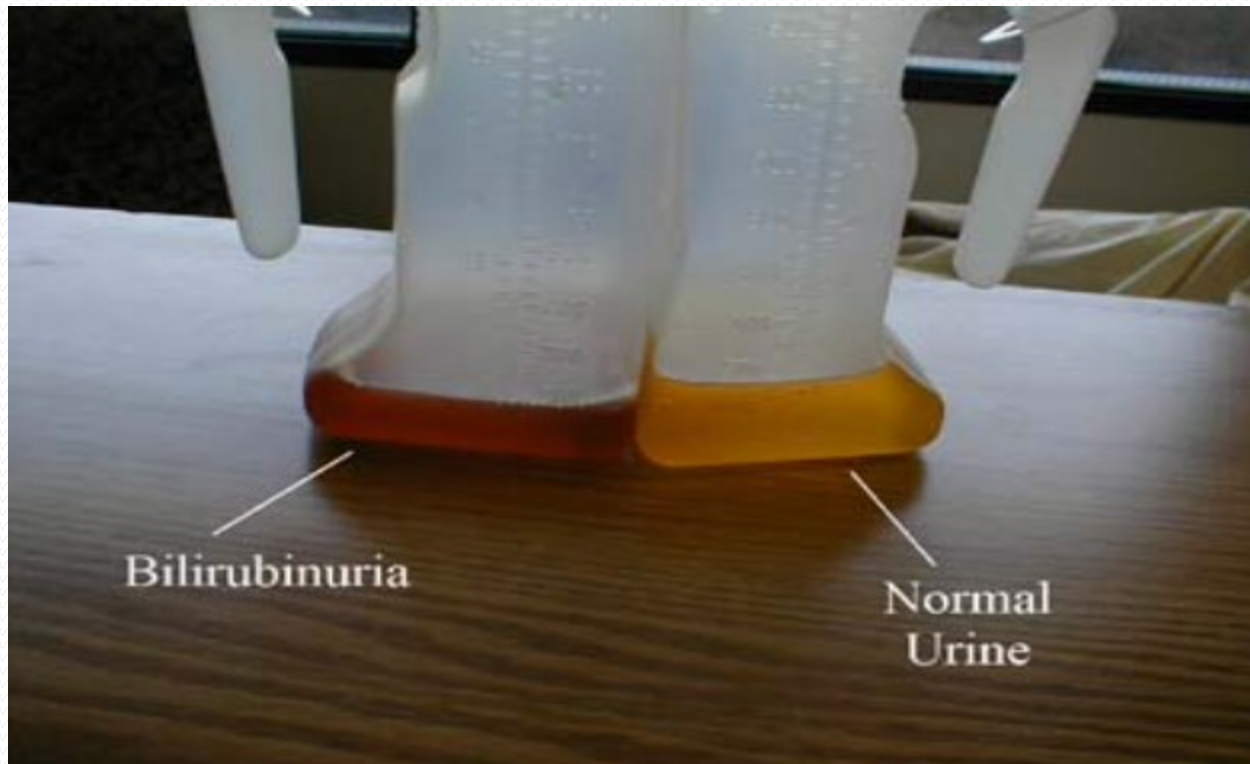
- Pain.
- Yellow discolouration skin and sclera & dark colour of urine [tea colour].
- Itching.
- Fever .
- Loss of appetite.
- Loss of weight.

Jaundice (Icterus)

- Jaundice is yellow color of skin , nail beds and sclerae (whites of the eyes) caused by deposition of bilirubin .
- Secondary to increased bilirubin levels in the blood.
- **Jaundice** is a common symptom .



URINE IN OBSTRUCTIVE JAUNDICE TEA COLOUR



PATHOLOGICAL REPORT

(Taken on 20 th Oct.)

- **WBC count : 15,600 per cu.mm**
(state of infection of gall bladder and common bile duct.)
- **HB : 8.2 gm/dl**
- **ESR : 76 mm in hr**

ESR : Erythrocyte Sedimentation Rate

Measurement of the rate at which RBCs in a test tube separated from blood serum becoming sediment in the bottom of the test tube.

<u>INCREASE</u>	DECREASE
Inflammation	Polycythemia
Infection	Leukemia
Anemia	Sickle cell anemia
Pregnancy	

Biochemistry Section

Sample type :- Blood(serum,Plasma) Collected :
20/10/2016

Examination (Test)	Result	Reference range	Alert
Albumin	3.1	3.5-5.2 gm/dL	Low abnormal
<u>Alkaline Phosphatase</u>	<u>683</u>	<u>42-128 U/L</u>	<u>High abnormal</u>
Total Protein	6.1	6.4-8.3 gm/dL	Low abnormal
Amylase	36	28-100 U/L	
<u>Bilirubin Direct</u>	<u>5.2</u>	<u><0.4 mg/dL</u>	<u>High abnormal</u>
<u>Bilirubin Total</u>	<u>5.6</u>	<u><1.3 mg/dL</u>	<u>High abnormal</u>
Bilirubin Indirect	0.4	<1.3 mg/dL	
Creatinine	0.6	0.8-1.3 mg/dL	
K+	3.34	3.5-5.1 mmol/L	Low abnormal
<u>Lipase</u>	<u>6</u>	<u>0-90 U/L</u>	<u>High abnormal</u>
	• ALT : 78.2 (should be less than 45 U/L)		

- **Albumin** : It is a plasma protein that is soluble in water. It decreases in liver diseases.
- **Alkaline phosphatase** : A hydrolase enzyme responsible for removing phosphate groups from many types of molecules. Its increase helps to detect liver diseases.
- In cases of obstruction in relation to pancreas leads to inflammatory condition and in response to that canalicular cells of bile duct increase production of ALP. It will not increase in prehepatic and hepatic jaundice.
- **Total protein** : Indicates total amount of protein in blood which includes mainly albumin and globulin.

- **Amylase**: An enzyme found chiefly in pancreatic juice which is used for hydrolyses of carbohydrates.
- **Lipase** : An enzyme found in pancreatic juice which is used for hydrolyses of lipid.
- It is slightly higher and not much significantly. Reason may be back flow of pancreatic juice which may lead to slight inflammatory changes in pancreatic cell. It leads to high lipase level
- **Bilirubin** : A yellow compound that occurs in the normal catabolic pathway of breakdown of heme in vertebrates.

- **Bilirubin direct** : In liver ,bilirubin is conjugated with glucuronic acid making it soluble in water The conjugated form is known as direct bilirubin.
- As there is obstruction in the pathway from liver to duodenum conjugated bilirubin will not reach to duodenum. Because direct bilirubin is water soluble it will pass back through blood and increased in blood and urine.

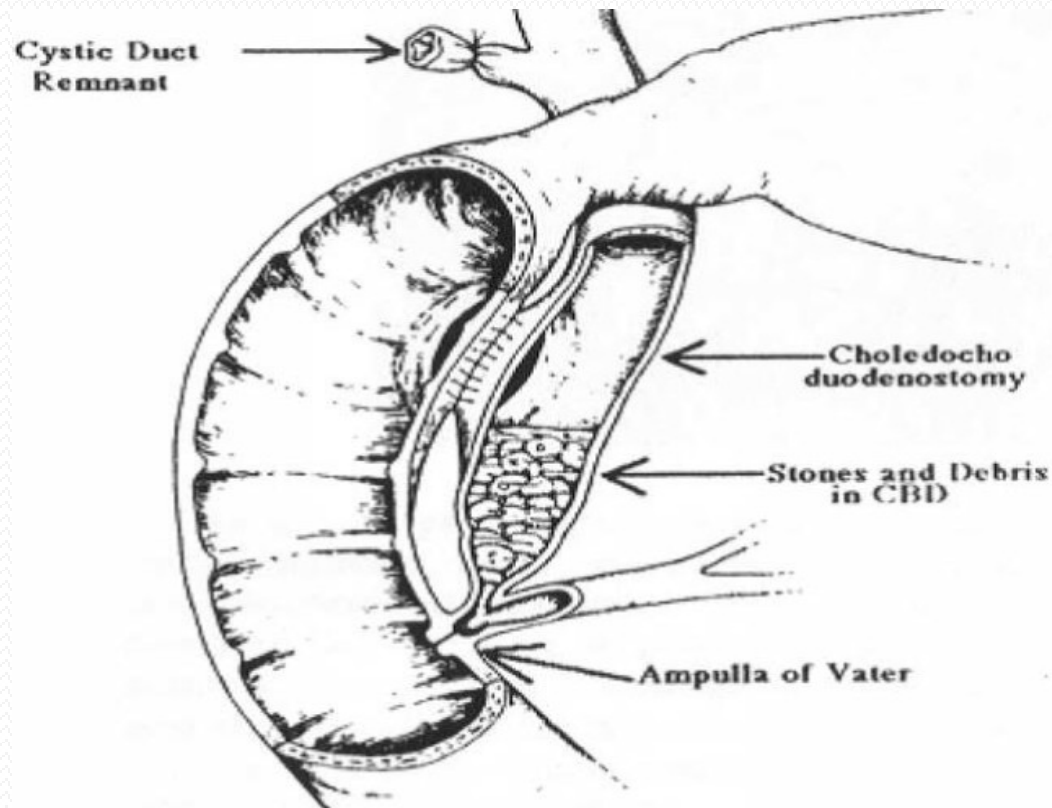
- **Bilirubin indirect** : Bilirubin attached to a protein before conjugation in liver is called indirect or unconjugated bilirubin.
- There is not obstruction in pathway till liver and not any dysfunction of liver. So conjugated process will remain normal and for that level of unconjugated bilirubin is normal.
- In cases of prolonged obstruction it can affect the liver cells and also conjugated process that may lead to increase in unconjugated bilirubin.
- **Total bilirubin** : Bilirubin direct + Bilirubin indirect.

- **K+ and Na+** : They are free ionic minerals present in body fluid.
- They may be in less amount because of poor nutrition and also because came out trough vomiting in liver disease.
- **ALT** : Alanine transaminase also known as alanine amino transferase (ALT).It is mainly found in liver and kidney. Its high level indicates abnormal condition related to liver.

22 th October

- The patient will be taken for the surgery known as **choledochoduodenostomy** **associated with** **cholecystectomy.**
- She was given vitamin K injection before surgery.
- She was also given blood as she was anemic.

Choledochoduodenostomy.



- Surgical creation of passage uniting the common bile duct and the duodenum in cases of acute biliary obstruction.

Vitamin k

- Vitamin K is a fat soluble Vitamin.
- We need bile salts for digestion and absorption of Vitamin K.
- As there is obstruction in bile duct so bile will not come to duodenum.
- There may not be absorption of vitamin K so patient may be deficient of Vitamin K.
- Vitamin K is useful for blood clotting so patient is given Vitamin K injection as there is surgery and of course there will be bleeding.

Sample type :- Blood(serum,Plasma) Collected :
22/10/2016

Examination (Test)	Post operative conditions (22/10/2016)	Pre operative conditions (20/10/2016)	Reference range
Albumin	2.4	3.1	3.5-5.2 gm/dL
Alkaline Phosphatase	441	683	42-128 U/L
Bilirubin Direct	1.2	5.2	<0.4 mg/dL
Bilirubin Total	1.4	5.6	<1.3 mg/dL
Bilirubin Indirect	0.2	0.4	<1.3 mg/dL
Creatinine	0.4	0.6	0.8-1.3 mg/dL
K+	2.97	3.34	3.5-5.1 mmol/L
Na+	130.21	133.30	136-145 gm/dL
Total protein	4.6	6.1	6.4-8.3 gm/dL

- **After Surgery.**

- **Alkaline phosphatase** : The new addition of ALP will be stopped but the amount which exists in blood will take time to decrease.
- **Bilirubin (direct and total)** : After surgery the passage is created for the bile to reach duodenum and then it will be excreted through feces also and that's why bilirubin will decrease.
- **Na⁺ and K⁺** : After surgery patient is not given any oral nutrition for some time may lead to imbalance of electrolytes.

Differential diagnosis of jaundice :

	Hemolytic jaundice	Hepatocellular jaundice	Obstructive jaundice
Unconjugated bilirubin	Increased	Increased	Normal
conjugated Bilirubin	Normal	Increased	Increased
ALP	Normal	Increased	Very high
Urine bile salt	Nil	Nil	Present
Urine conj. Bilirubin	Nil	Present	Present
Urine bilinogens	Increased	Present	Nil
Fecal urobilinogen	Increased	Decreased	Absent

.THANK YOU.