INTRODUCTION

Cholecystography is a radiological method by which gallbladder is visualized. The radiograph thus obtained is called the cholecystogram.

It can be done in two ways depending on the route of administration of the radiopaque dye. When the dye is taken orally it is called oral cholecystography when the dyes is injected intravenously it is called intravenous cholecystography.

Cholecystography is both an anatomical as well as physiological test, because it permits not only visualization but also the assessment of the function of gallbladder. A good shadow indicates that the dye was from the intestine excreted by the liver and concentrated by the gallbladder. However, in the absence of any vomiting diarrhoea or hepatic dysfunc-
tion. If gallbladder is not visualized, it indicates either a nonfunctioning gallbladder or an obstruction in cystic duct, cholecystography is indicated in the 1) diseases of the gallbladder such as cholecystis lithiasis, carcinoma and fistle 2) Congenital ana-
molies of gallbladder.
Intravenous cholecystography is performed when there is impairment in the absorption of oral dye from the intestine.

Stones are prevalent in Indian population. Although the precise magnitude of the problem and it's origin is obscure. Most researches agree that at any given time 10-20% of the population have stone.

However, the incidence of cholelithiasis in different institution have varied considerably.

Usually the surgically removed gallbladder manifests both cholecystis and cholelithiasis, on occasion inflammation is present without gall stones and on occasion the opposite is true. Among 272 symptomatic patients in the Framingham study (Fied Man et al. 1967) only 5.1% manifested cholecystis without cholelithiasis and 6.3% had cholelithiasis without cholecystis.

Although chronic cholecystitis is usually found in great majority of these inflamed gallbladders are opacified with oral cholecystographic media suggesting that nonvisualization signifies relatively advanced inflammatory disease or obstruction of cystic duct.
Acute cholecystitis occurs in approximately 3-10% of patients with gall stone.

Gallbladder disease occurs about twice as frequently in women as in man, women in their fifties have special predilection for the disease. Rather the incidence increases progressively each decade from 5-9% at ages 30-39 to 18-22% in 6th decade and 28% in the 7th decade.

A direct relationship between obesity and gall stones has also been demonstrated. The risk of gallbladder disease for both men and women is doubled if the body weight exceeds 20% the normal 20%.

A primary deficiency in patients with gall stones appears to be reduction in the size of the bile acid pool which normally ranges from 2-4 gm. but which amounts to only 1.0-1.1 gm in gall stone patients. As a result the ratio of bile acids to cholesterol is lost, solubilization of cholesterol falls and cholesterol crystallizes out of solution. The decreased bile acid pool appears to be the result not of diminished bile acid production, but of increased turn over. Whether this can be attributed to an increase
in the number of enterohepatic cycles with normal fractions loss in to the stool with each cycle, or to diminished absorption capacity for bile acids in intestine, is not known.

Chronic inflammation of gall bladder is almost always associated with the presence of gall stones and is though to result from repeated doubts of subacute or acute cholecystitis or from persistent mechanical irritation of the gallbladder wall.

Anomalies of the biliary tract may be found in 10 to 20% of the population, including abnormalities, in number, size and shape i.e. Agenesis of the gallbladder duplication rudimentary or over sized giant gallbladder and diverticulae.

Phrygian cap is a clinically innocuous entity in which a partial or complete septum or fold separates the fundus from the body. Anomalies of position or suspension are not uncommon and include left sided gallbladder interhepatic gallbladder, retrodisplacement of the gallbladder and floating gallbladder. The later condition predisposes to acute torsion, volvulus or herniation of the gall bladder.
Anatomy and Physiology

The gallbladder is a pear shaped 7.5 to 12.5 cm long with a capacity of about 50 ml but capable of 50 fold distension. The anatomical subdivision are a fundus a body and a neck which terminates in the narrow infundibulum. The angulated distal part of the neck forms a pouch called Hartmann's pouch, a common site for a solitary gall stone to lodge. The muscle fibres in the wall of the gallbladder are arranged in a criss cross manner being particularly well developed in the neck. The mucous membrane contains indentation of the mucosa that sink in to the muscle coat. These are crypts of luschka.

Healthy gallbladder has several functions.

1. Concentration of bile: By active absorption of water, sodium chloride and bicarbonate by the mucous membrane of the gallbladder into the blood stream bile becomes 5-10 times concentrated.

2. Reservoir for bile - Bile is stored.
3. Cholesterol excretion.

4. Secretion of mucin.

**Visualisation of Gall Bladder**

To visualize the gall bladder and common bile duct specialized radiographic investigations are performed. The investigations are performed by giving selective contrast media given either by oral route or by intravenous route.

Oral contrast media which are given orally are as follows:-

1. Iopanoid Acid.
2. Iobenzamic Acid.
3. Calcium-iopodate (Solubilooptin).
4. Sodium-iopodate (Biloptin).

Whereas contrast media given by intervenous are either ioliopiodone or biligraffin.

The contrast visualisation of gall bladder along with bile duct is known as cholangiography.

Commonly the oral dyes are used to visualize gall bladder.
Advantages of oral cholecystography are as follows:

- Investigation is simple cheaper and the dye which is a contrast media is well tolerated by the patients.

- Accuracy is 95% to 98% in normal person.

Besides this investigation also assesses the concentration power of gall bladder i.e. dye is only visualize when it gets concentrated 14 to 20 times of its secretions in the liver.

This investigation also tells normal functioning of the hepatocellular system.

In intravenous cholecystography contrast media is injected intravenously. Its limitation over to the oral cholecystography are its incidence of idiosyncracy which is reported to be 2 to 7 percent.