

**XVIII. Diseases of Liver, G. Bladder, Pancreas & Peritoneum
G. Bladder**

Gall Stones (mixed) 11/ - 7.323/3



Gall bladder	Size:	<ul style="list-style-type: none"> • Reduced
	Wall:	<ul style="list-style-type: none"> • Shows chronic cholecystitis • Thickened (showed adhesions to liver) *** • Pale white
	Mucosa:	<ul style="list-style-type: none"> • Smooth (in most parts) • Whitish-grey (and granular or turbid in other parts) • Ulcerated
	Cavity:	<ul style="list-style-type: none"> • Contains stones • Is contracted
Gall stones:	Number:	<ul style="list-style-type: none"> • Multiple and closely-packed
	Size:	<ul style="list-style-type: none"> • Moderately large • Equal (or slightly variable)
	Surface:	<ul style="list-style-type: none"> • Compressed opposing surfaces (faceted) • Brownish-grey and yellow
	Cut surface:	<ul style="list-style-type: none"> • Different lamellae and colours
	At centre:	<ul style="list-style-type: none"> • Is yellowish (cholesterol layer)
	At middle:	<ul style="list-style-type: none"> • Brown (concentric laminations of pigment)
	At periphery:	<ul style="list-style-type: none"> • Whitish chalky (calcium)



N.B.:

- Mixed stones are the commonest types of gall stones.
- They usually produce symptoms.
- The gall bladder often shows chronic cholecystitis (hence the term infected or cystogenous gall stones).
- The symptoms are those of the associated chronic cholecystitis rather than those of the stones.
- ***In jaundice due to impaction of a stone in the C.B.D.,*** the gall bladder is usually not distended to such an extent to be detected clinically because there was already a cholecystitis and the wall of gall bladder was so thickened that it cannot be greatly distended; indeed, it may be contracted.
- ***In jaundice due to pressure on the C.B.D. from without*** (as by carcinoma in the head of the pancreas), the gall bladder is greatly distended (***Courvoisier law***).



- ***The condition of the cavity of the gall bladder varies as follows:***
 - ***If there was no obstruction at the neck of the gall bladder*** → cavity : Normal, or Contracted by fibrous tissue.
 - ***If there was obstruction*** → the cavity is: Dilated. & Walls are thickened.
 - ***If the obstruction was marked*** (or almost total) before the inflammatory changes had time to cause thickening of the wall → hydrops of gall bladder (mucocoele).

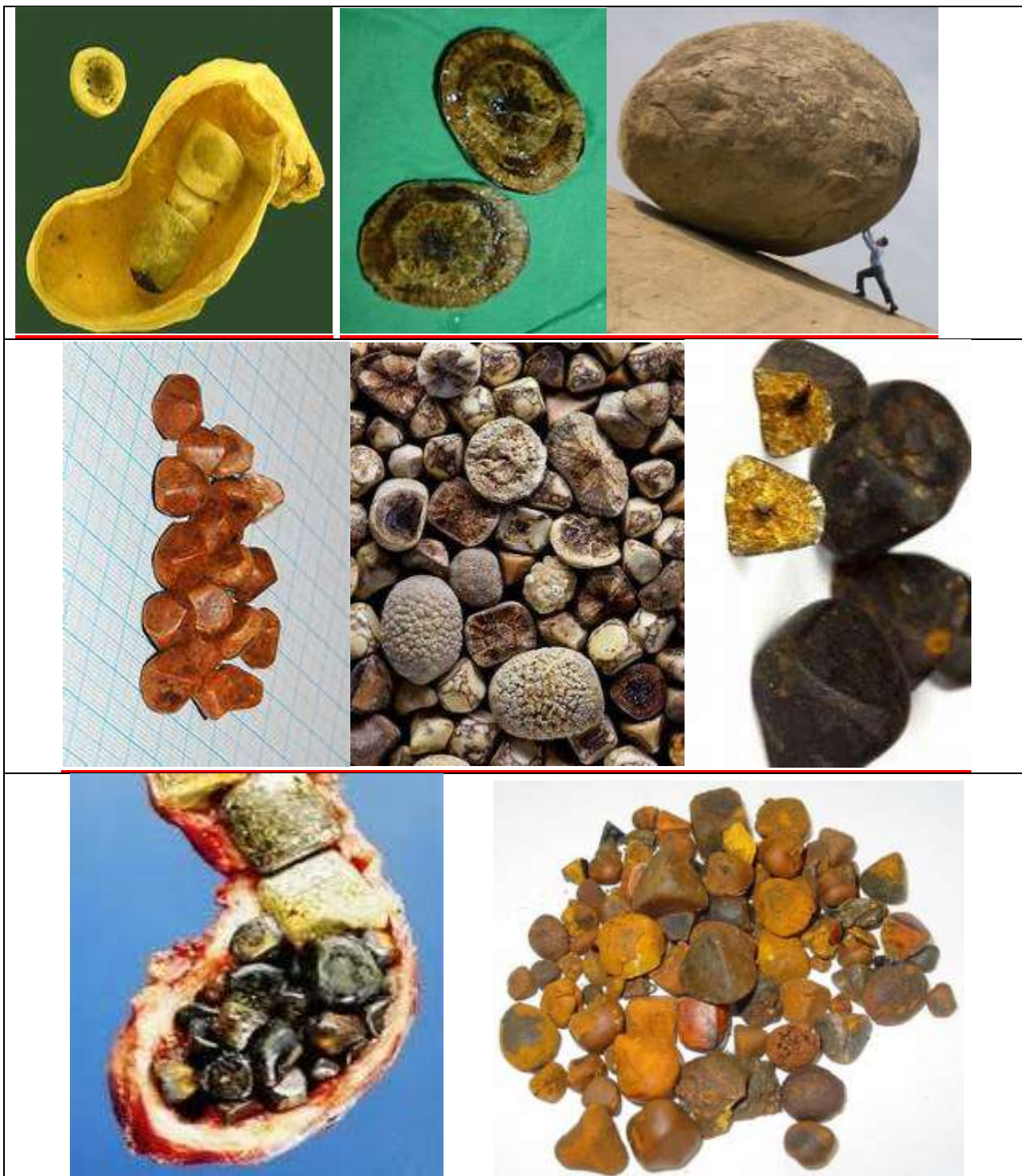
Gall Stones

A collection of gall stones:

The three chief types are included Types

1. Cholesterol stones
2. Pigment stones
3. Mixed stones





N.B.I:

The formation of gall stones is generally favoured by :

- 1. Bacterial infection.***
- 2. Bile-stagnation.***
- 3. Disturbance in cholesterol metabolism or/and abnormal bile-composition.***
- 4. Changes in the physico-chemical properties of bile.***
- 5. Neurogenic or/and hormonal influences.***
- 6. Certain predisposing factors to each particular type,***



- **Cholesterol stones**
 - Need an excretion of a high cholesterol-containing bile by the liver; the stone formed is whitish-yellow, rounded-ovoid, with a smooth-granular external surface and a glistening radial cut surface.
 - **Pigment stones**
 - Need a rise in the bilirubin content of the bile; the stones formed are multiple, Sands ovoid-rounded or irregular, somewhat faceted, black, friable and have a homogeneous cut surface
 - **Mixed stones**
 - Need an associated cholecystitis and may contain more than one stone-forming substance, the stones formed are multiple; moderate in size, faceted, whitish-greyish-brown or black and with concentric laminations on the cut surface.
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- **N.B.2:**
 - **Gall stones are common, and they may be formed anywhere in the biliary tract (but, chiefly in the gall bladder).**
 - *A common complication of stones is cholecystitis.*
 - *Gall stones may irritate the biliary ducts → cholangitis or/and biliary colic.*
 - *If a stone is*
 - **Impacted in the cystic duct** → *hydrops or empyema of gall bladder; and, if*
 - **Impacted in common bile duct** → *obstructive biliary cirrhosis or/and jaundice.*
 - **Gall stones may reach the duodenum or may cause obstruction of small intestine (passage is through a fistula), or**
 - **May lead to pancreatitis (by regurgitation of bile) or**
 - **May predispose to carcinomatous change**
 - ***(If there are gall stones + chronic cholecystitis + bile stasis and change in composition of bile-chronic irritation for a very long time in a susceptible individual).***

