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### Gallbladder Disease

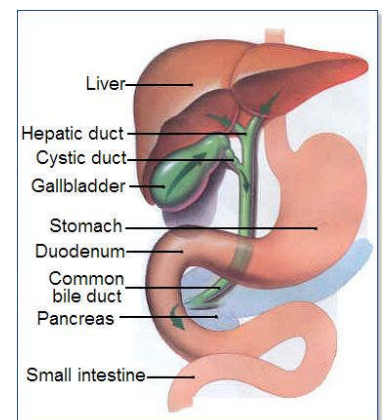
#### Gallstones (Cholelithiasis)



Gallstones are stones that form in the gall (bile). Bile is an oily liquid made by the cells of the liver that aids digesting food in the intestine, particularly fat. Bile flows from the liver into the bile duct and is then temporarily stored and concentrated in the gallbladder. The gallbladder periodically empties its stored bile (often in response to meals) back into the bile duct where it flows down into the first portion of the small intestine.

Gallstones form in the gallbladder because the bile is stagnant there. Cholesterol within the bile changes from a liquid to a solid form, and stone formation begins. Stones can be small or large, single or many, or may exist in the form of mud or sludge. There is likely a genetic basis for gallstone formation, and it is common to see gallstone problems on the female side of families.

The most common disorder of the biliary tract (gallbladder and bile ducts) is gallstones. As many as 10-20 percent of the U.S. population over the age of forty have gallstones, but only in a minority do symptoms occur. If gallstones are found by chance on an X-ray taken for some other reason it is standard practice to leave them alone if they are causing no symptoms, since the risk of developing problems is slightly less than the risk from an operation. However, once gallstones begin to cause symptoms, it is generally agreed they will continue to do so. Gallstones may present in a variety of ways as outlined below.



#### Biliary Colic

The majority of patients with symptoms from their gallstones will suffer from biliary colic (gallbladder pain). The attacks are caused by a stone becoming temporarily stuck in the neck of the gallbladder, blocking the flow of bile out of the gallbladder. The muscle in the wall of the gallbladder contracts in an effort to empty its bile and this produces pain. The location of pain is variable and includes the mid or right upper abdomen, chest or middle of the back. There may be nausea and vomiting. After a period of time, the stone either falls back into the gallbladder or, by virtue of the muscle contractions, is passed into the bile duct.

## **Acute Cholecystitis**

Acute cholecystitis simply means inflammation of the gallbladder. Like biliary colic, it is caused by a stone becoming stuck in the gallbladder neck. Many patients have previously suffered from biliary colic; however, the pain is often unrelenting and may be accompanied by fever. Occasionally, a bacterial infection of the bile may occur behind the stone. Surgery is generally recommended on a more urgent basis than with biliary colic.

## **Gallstone Pancreatitis**

If a gallstone is pushed out of the gallbladder into the bile duct, it can become lodged at the end of the duct, blocking both the bile duct and the duct draining the pancreas. Pancreatitis may result and is a very serious, and occasionally life threatening condition.

## **Choledocholithiasis**

This term refers to stones that have been passed into the bile duct and remain there, partially or completely blocking the flow of bile from the liver into the intestine. It leads to jaundice, liver dysfunction, and a potentially life threatening infection. Sometimes this condition can be predicted based on blood tests or x-rays, but other times can only be determined at surgery.

## **Biliary Dyskinesia**

This fairly common disorder implies dysfunction of the gallbladder, or inability to empty properly, but in the absence of gallstones. Generally, patients have the same symptoms as those with stones, but x-rays fail to demonstrate gallstones. Often times a special x-ray is done to diagnose this condition (HIDA scan), but occasionally x-rays are not helpful.

## **Surgery for gallstones**

The most common reason for recommending gallbladder surgery is pain from gallstones within the gallbladder. Removal of the gallbladder (where stones form) and its contained stones will prevent further symptoms. Your primary caregiver will often recognize the symptoms and confirm the diagnosis with standard tests. Most patients with symptoms are referred for surgical removal of the gallbladder to prevent further attacks and prevent complications associated with gallstones. There is no effective medical treatment for gallbladder problems. Most patients realize no side effects after removal of the gallbladder. Rarely patients will notice loose stools with various foods, though this can usually be treated effectively with bulk forming supplements.

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