

## An Overview on Gallstone Disease

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### COMMENTARY

A gallstone is a stone formed within the gallbladder out of precipitated bile components. The term cholelithiasis may refer to the presence of gallstones or to any disease caused by gallstones, and choledocholithiasis refers to presence of migrated gallstones within bile ducts.

Most people with gallstones (about 80%) are asymptomatic. However, when a gallstone obstructs the bile duct and causes acute cholestasis, a reflexive smooth muscle spasm often occurs, resulting in an intense cramp-like visceral pain in the right upper part of the abdomen known as a biliary colic. This happens in 1-4% of those with gallstones each year. Complications of gallstones may include inflammation of the gallbladder (cholecystitis), inflammation of the pancreas (pancreatitis), obstructive jaundice, and infection in bile ducts (cholangitis). Symptoms of these complications may include pain of more than five hours duration, fever, yellowish skin, vomiting, dark urine, and pale stools.

Risk factors for gallstones include birth control pills, pregnancy, a family history of gallstones, obesity, diabetes, liver disease, or rapid weight loss. The bile components that form gallstones include cholesterol, bile salts, and bilirubin. Gallstones formed mainly from cholesterol are termed cholesterol stones, and those mainly from bilirubin are termed pigment stones. Gallstones may be suspected based on symptoms. Diagnosis is then typically confirmed by ultrasound. Complications may be detected on blood tests.

The risk of gallstones may be decreased by maintaining a healthy weight with exercise and a healthy diet. If there are no symptoms, treatment is usually not needed. In those who are having gallbladder attacks, surgery to remove the gallbladder is typically recommended. This can be carried out either through several small incisions or through a single larger incision, usually under general anaesthesia. In rare cases when surgery is not

possible, medication can be used to dissolve the stones or lithotripsy to break them down.

In developed countries, 10-15% of adults have gallstones. Rates in many parts of Africa, however, are as low as 3%. Gallbladder and biliary related diseases occurred in about 104 million people (1.6% of people) in 2013 and they resulted in 106,000 deaths. Women more commonly have stones than men and they occur more commonly after the age of 40. Certain ethnic groups have gallstones more often than others. For example, 48% of Native Americans have gallstones. Once the gallbladder is removed, outcomes are generally good.

Gallstones, regardless of size or number, may be asymptomatic, even for years. Such "silent stones" do not require treatment. A characteristic symptom of a gallstone attack is the presence of colicky pain in the upper-right side of the abdomen, often accompanied by nausea and vomiting. The pain steadily increases for approximately 30 minutes to several hours. A person may also experience referred pain between the shoulder blades or below the right shoulder. Often, attacks occur after a particularly fatty meal and almost always happen at night, and after drinking.

In addition to pain, nausea, and vomiting, a person may experience a fever. If the stones block the duct and cause bilirubin to leak into the bloodstream and surrounding tissue, there may also be jaundice and itching. If this is the case, the liver enzymes are likely to be raised.

Rarely, gallstones in cases of severe inflammation may erode through the gallbladder into adherent bowel potentially causing an obstruction termed gallstone ileus.

Other complications include ascending cholangitis if there is a bacterial infection which can cause purulent inflammation in the biliary tree and liver and acute pancreatitis as blockage of the bile ducts can prevent active enzymes being secreted into the bowel, instead damaging the pancreas. Rarely gallbladder cancer may occur as a complication.

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