Medicine for Managers

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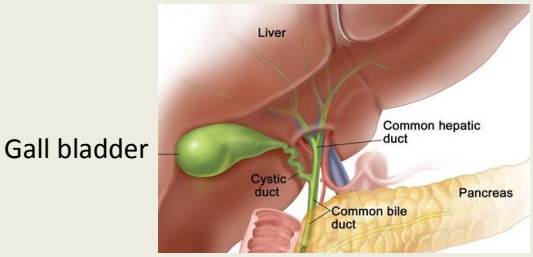
Acute Cholecystitis

Cholecystitis , or inflammation of the gall bladder, is derived from the Greek word "cholecyst" meaning *gall bladder* and suffixed with "-itis" meaning *inflammation of*. It is often associated with severe constitututional disturbance and pain and normally needs admission to hospital.



The gall bladder is a pear-shaped hollow structure which is located on the right side of the abdomen in a depression beneath the liver. Its function is to collect and store bile which is a greenish-brown liquid manufactured by the liver. Whilst in the gall bladder the bile is concentrated because of the structure's permeable lining which absorbs water. The bile serves two functions; it is a component of the digestive process by breaking down fats and it also acts as a reservoir for the dispersal of waste liver products. When food enters the small intestine, a hormone is released which acts on the gall bladder to cause it to contract, pushing bile down the cystic duct and into the common bile duct from which it enters the duodenum (the first part of the small intestine).

The symptoms of acute cholecystitis are normally severe and of rapid onset with pain centred beneath the ribs on the right side of the abdomen. The pain is persistent and may spread through to the back or up towards the right shoulder, sometimes between the shoulder blades. The pain is often aggravated by movement or taking a deep breath. The pain is described as amongst the most severe which can be experienced. The pain is accompanied by a high fever which may be associated with rigors (violent shivering attacks), sweating, vomiting and the development of jaundice (yellowing of the skin and eyes).

Almost all attacks of cholecystitis are associated with obstruction of the cystic duct (the tube leading out of the gallbladder) normally by a gallstone or sometimes by debris which has precipitated out of the bile and which is usually

made of particles of cholesterol and salts. Once the exit of the gallbladder is blocked infection can develop in the organ itself and effectively it can become a large abscess. The result is that, as pus forms, the pressure inside increases and the pain may be as a result of inflammation, toxin formation or pressure. The gallbladder may contain a solitary stone or anything up to a hundred individual stones.

Gall bladder stones themselves may be of two types. ***Cholesterol*** stones are made of solid cholesterol and are usually yellowish-green in colour. The second type is made of bilirubin ***pigment*** and are less common and usually smaller than cholesterol stones.

Occasionally cholecystitis develops without obstruction from a gallstone. It occurs in circumstances such as trauma, focal infection (which may be associated with septicaemia), or specific infections, often associated with compromise of the immune system. Such cases, though rare, are often associated with severe illness.

Cholelithiasis (the medical term for stones in the bladder), may develop insidiously and 10-15% of people may have gallstones of which they are unaware and which may be present for many years without symptoms.

Before the days of political correctness (and sensitivity), medical students were taught that the disease was common in those who were female, fair, fat, fertile and forty. Though regarded as wholly inappropriate now, there is some truth in it. It is more common in the 30-50 age group. Obesity, high cholesterol, diabetes, hormonal (oestrogenic) factors and oral contraception, as well as genetic factors, may play a part.

Diagnosis is often by clinical examination. A good general examination will provide a number of clues. All doctors (and *Trivial Pursuit* as well) is familioar with ***Murphy's sign***. It involves the doctor asking the patient to breathe out, placing a hand just below the middle of the lowest rib on the abdomen and then asking him or her to breathe in deeply. As air enters the lung, the liver and gall bladder is pushed downwards and when the inflamed gall bladder meets the examining hand it causes a sudden and severe pain. If the diagnosis is suspected, the patient needs admission. An ultrasound scan should confirm the diagnosis but, if it is not definitive, X-rays or a CT scan can be used to confirm the gall bladder disease.

The radiograph above shows a gall bladder with a thickened wall due to chronic inflammation and multiple stones outlined in the cavity.

When a person is admitted with acute cholecystitis, the initial treatment is conservative with nil-by-mouth, intravenous fluids, antibiotic and pain relief. After the acute symptoms subside, the individual can be reviewed and a decision made about the removal of the gall bladder. If surgery is carried out the gall bladder is removed by an operation called a ***cholecystectomy*** ("cholecyst" – gall bladder and "-ectomy" – removal of). Traditionally it was done by making a large incision in the abdomen below the ribs on the right and opening the abdomen to gain access to the gall bladder. More recently the operation is increasingly done using a keyhole technique called ***laparscopic cholecystectomy*** where the gallbladder is removed through small incisions less than 1" in length. The result is a cosmetically far better appearance and there is less abdominal wall muscle damage.

The operation is generally uneventful but the principal risks are perforation of the gall bladder leaking infected bile throughout the abdomen resulting in peritonitis. If the gall bladder dies as a result of the infection and becomes gangrenous, the risk is of a rapidly spreading septicaemia (blood poisoning) with the risk of very severe illness and even death.

Life without a gall bladder is not normally a problem. Following surgery, some people report dyspepsia, fat intolerance or diarrhoea but generally there are no significant problems. The bile produced by the liver continues to be manufactured but passes directly into the duodenum rather than being stored between meals in the gall bladder.

Bile is a useful part of the digestive system, a world away from that of ***Hippocrates***, the Greek philosopher (460-370BC) who described the body of man thus: *"The body of man has in itself blood, phlegm, yellow bile and black bile; these make up the nature of this body and through these he feels pain or enjoys health. Now he enjoys the most perfect health when these elements are duly proportioned to one another"*

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