

Test your knowledge

Approximately 10% of adults have gallstones. Some are perfectly well; others present with potentially fatal complications such as pancreatitis or empyema of the gallbladder. How up to date is your management of this common condition?

The multiple choice questions in this quiz may have more than one answer.

- What are the two principal types of gallstones?
 - calcium stones
 - uric acid stones
 - cholesterol stones
 - pigment stones
 - triglyceride stones
- Which of the following are risk factors for gallstones?
 - obesity
 - pregnancy
 - rapid weight loss
 - a family history of gallstones
 - oestrogen therapy
- What is the most accurate and cost effective investigation for gallstones?
 - a plain abdominal x-ray
 - an upper abdominal ultrasound
 - an MRI scan
 - a CT scan
 - endoscopic retrograde cholangiopancreatography (ERCP)
- Murphy's sign is indicative of acute cholecystitis. What is it?
 - a large palpable gallbladder
 - pain on inspiration in the right upper quadrant
 - pain on expiration in the right upper quadrant
 - pain on inspiration in the epigastrium
 - jaundice in a febrile patient
- Asymptomatic gallstones are a common finding on investigations to exclude another illness. What should be done with asymptomatic gallstones?
 - prophylactic surgery, as a patient will almost always develop problems as time goes by
 - serial ultrasound, which should be performed every two years; cholecystectomy is indicated if the stone (or stones) increase in size
 - serial liver function tests every two years, with cholecystectomy performed if an abnormality develops
 - cholecystectomy if the patient is under the age of 40 years
 - nothing – asymptomatic gallstones are likely to remain asymptomatic and cholecystectomy will not be indicated unless symptoms develop in the future
- Cholangitis is a bacterial infection in the bile ducts, and is usually associated with gallstones causing obstruction. What is the classic triad that heralds this illness?
 - dark urine, pale stools and vomiting
 - fever, jaundice and right upper quadrant pain
 - fever, jaundice and a palpable gallbladder
 - jaundice, a palpable gallbladder and epigastric pain
 - dark urine, pale stools and jaundice
- Choledocholithiasis (stones in the common bile duct) can cause pain and cholangitis and is associated with pancreatitis. Long term obstruction can lead to secondary biliary cirrhosis. Which of the following patterns of liver function tests is most likely to be seen in common bile duct obstruction?
 - elevated AST, ALT and alkaline phosphatase; normal GGT
 - elevated alkaline phosphatase and GGT; normal ALT and AST
 - elevated ALT and GGT; normal alkaline phosphatase and AST
 - elevated bilirubin
 - elevated GGT, AST and ALT; normal alkaline phosphatase
- What is the most common cause of an isolated finding of serum bilirubin in the general population?
 - gallstones
 - alcoholic liver disease
 - haemolysis
 - Gilbert's disease
 - viral hepatitis.



Figure. Cholelithiasis in an 82-year-old woman visible on upper abdominal ultrasound.

Reference

- Gregory PD. Gallstones and biliary tract disease. In: Scientific American Medicine. Rubinstein E, Federman DD, eds. New York: Scientific American, 1995: 4(vi).

Answers appear on page 144

Clinical quiz answers

(to questions on page 119)

1. c, d

The two principal types of gallstones are cholesterol and pigment stones.

2. a, b, c, e

Gallstones are more common in obese people and people who undergo rapid weight loss, as well as in women who are pregnant or receiving oestrogen therapy. Gallstones are very common so it is not unusual to find that other people in a patient's family have the same condition; however, a family history does not seem to be a risk factor in itself.

3. b

An upper abdominal ultrasound is the most accurate and cost effective method for diagnosing gallstones. Only a small percentage of stones will show up on a plain abdominal x-ray; a CT or MRI scan may show stones but these are not cost effective. Endoscopic retrograde cholangiopancreatography (ERCP) is used to investigate the possibility of stones in the common bile duct, not the gallbladder.

4. b

Murphy's sign is pain on inspiration in the right upper quadrant. It is generally a sign of acute cholecystitis (which is a complication of gallstones). Other acute inflammatory conditions can produce Murphy's sign, such as an hepatic abscess or haemorrhage into a metastasis.

5. e

The cumulative risk of silent gallstones causing symptoms is 10% at 5 years, 15% at 10 years and 18% at 15 years. People who develop symptoms are very unlikely to require emergency surgery, so routine surgery is not indicated.

6. b

The classic triad associated with cholangitis is fever, jaundice and right upper quadrant pain. The common bile duct is not always obstructed, so the motions are not necessarily pale. Dark urine reflects jaundice. The gallbladder is more likely to be palpable in malignant duct obstruction.

7. b

The most typical pattern of abnormal liver function tests in common bile duct obstruction is elevated alkaline phosphatase and GGT. The AST and ALT may be abnormal, but generally would be elevated to a lesser degree than alkaline phosphatase and GGT. The bilirubin level is not always elevated. However, these patterns are by no means always seen.

8. d

Gilbert's disease is the most common cause of an isolated hyperbilirubinaemia. It is an inherited condition (autosomal dominant) with variable penetrance, and occurs in about 5% of the general population. An isolated hyperbilirubinaemia does not warrant investigation.