



ULTRASONOGRAPHIC DIAGNOSIS OF GALL BLADDER CANCER

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ABSTRACT Gall bladder cancer, despite being the most common malignant tumor of the biliary tract, is quite uncommon. The prognosis is most of the times poor because by the time it is detected it has already metastasised to distant organs. Signs and symptoms are mostly vague but may include abdominal pain, bloating, fever, jaundice, nausea and unintentional weight loss. Histologically, most of the gall bladder cancers are adenocarcinomas. We present to you a case study of a 60 year old woman who presented with right upper quadrant dull pain, anorexia and jaundice and thereon got detected with gall bladder cancer on ultrasonography with the findings of intraluminal calculus, multiple foci of irregular gall bladder thickening, porta hepatis lymphadenopathy, ascites and liver and common bile duct metastasis. The objective of this case study is to discuss the ultrasonographic picture of gall bladder cancer, its prognosis, risk factors, histology and current treatment which can create more awareness and henceforth help in the improvement of overall prognosis of this disease.

KEYWORDS : Gall Bladder Cancer, Ultrasonography, Prognosis, Treatment

INTRODUCTION

Carcinoma of gall bladder has a low overall prevalence, however it is the most common malignant tumor of the biliary tract and the fifth most common in the alimentary canal after colorectal, pancreatic, gastric and esophageal carcinoma. Factors that predispose an individual to gall bladder cancer include porcelain gallbladder, size of the gallstone, ethnic differences, and duration of harboured stones. Histologically, varieties of adenocarcinoma predominate, with only 10%-15% being a squamous or adenosquamous variety. Gall Bladder carcinoma primarily affects the elderly, with more than 85% cases occurring in the 6th decade of life or later; furthermore it occurs more often in women. Female to male ratios in the range of 3:1 to 4:1 have been reported.¹

CASE REPORT

A 60 year old female is referred to the clinic by a clinician for ultrasonography following the symptoms of dull pain in the right upper quadrant, anorexia and jaundice for the past 3 months. On the ultrasound, gall bladder can be seen well distended. A large calculus measuring 2.14 cm in size with gas is seen in its lumen (red arrow in Figure 3). Multiple areas of focal wall thickening are seen (green arrows in Figure 3). Intrahepatic biliary radicals appear prominent in the left lobe of liver (purple arrow in Figure 1). Soft tissue is present in the lumen of common bile duct (orange arrow in Figure 2). A large lymph node measuring 3.0 x 1.4 cm is seen at porta hepatis (blue arrow in Figure 6).

Large ill defined heterogenous area is noted in liver in the region surrounding gall bladder. Multiple round hypoechoic SOLs with necrotic centres are seen in the right lobe of liver (white arrows in Figure 5). The largest one measures 3.9 x 3.5 cm and is seen at periphery (black arrow in Figure 4). Mild to moderate free fluid is seen in pelvis and paracolic gutters (yellow arrow in Figure 1). Spleen measures 13.25 cm and is prominent (not seen in the images given below). Rest, no other abnormality is found.

The findings are strongly suggestive of gall bladder cancer with metastasis to liver and common bile duct. She has been further referred to for CT scan to help stage the cancer and further formulate an adequate management plan.

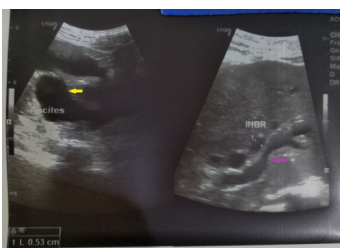


Figure 1



Figure 2

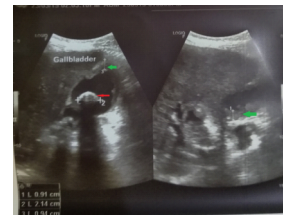


Figure 3



Figure 4

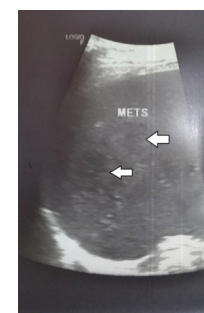


Figure 5

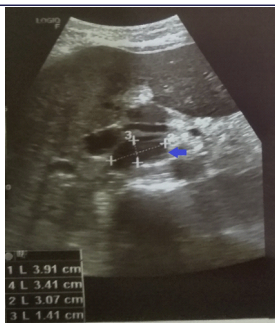


Figure 6

DISCUSSION

The gall bladder is a pear shaped hollow structure located under the liver and on the right side of abdomen. Its primary function is to store and concentrate bile, a yellow brown digestive enzyme produced by the liver. The gall bladder is part of the biliary tract.²

The transverse septum differentiates to form the hepatic diverticulum and the hepatic primordium. The hepatic diverticulum divides into 2 parts: pars hepatica(larger cranial part, primordium of the liver) and pars cystica(smaller ventricular invagination, primordium of gall bladder).³

When food (esp. fatty food) is being digested, the gall bladder squeezes and sends bile through cystic duct. The cystic duct joins up with the common hepatic duct to form common bile duct. The common bile duct joins with the pancreatic duct to empty into the 1st part of the duodenum at the ampulla of Vater.⁴

Gall bladder cancer is uncommon. When Gall bladder cancer is discovered at its earliest stages, the chance for a cure is very good. But most Gall bladder cancers are discovered at a late stage, when the prognosis is often poor.⁵

Nearly all of gall bladder cancers are adenocarcinomas. Papillary adenocarcinoma is a rare type of adenocarcinoma in which cells are arranged in finger like projections. It has a better prognosis than most other kinds of gall bladder adenocarcinomas. Other types of carcinomas can start in the gall bladder such as adenosquamous carcinomas, squamous cell carcinomas, carcinosarcomas, but these are rare.⁴

Gall bladder cancer is difficult to diagnose because it often causes no specific signs/symptoms. Signs/symptoms may include abdominal pain (esp. in the right upper quadrant), abdominal bloating, fever, nausea, jaundice and unintentional weight loss. It is more common in women, and the risk increases with age and a history of gall stones, polyps or chronic gall bladder infection.⁵

Tests and procedures to detect, diagnose and stage gall bladder cancer are usually done at the same time. The following tests and procedures may be used: Physical examination and history, Liver function tests, Blood chemistry studies, CT scan, Ultrasound exam, Percutaneous transhepatic cholangiography, Endoscopic retrograde cholangiopancreatography, MRI with Gadolinium, Endoscopic ultrasound, laparoscopy and biopsy.⁶

Three types of standard treatment are used: Surgery, Radiotherapy and Chemotherapy. If cancer has spread and cannot be removed, the following types of palliative surgeries may relieve the symptoms: Biliary bypass, endoscopic stent placement or percutaneous transhepatic biliary drainage.⁶

Curative resection is only possible for localised early disease which is usually found incidentally. This is reflected in the dismal prognosis-1 yr survival: 80% and 5yr survival: 1-5%.⁷

SONOGRAPHY

A normal gall bladder should be thin walled (<3 mm) and anechoic. Its size varies depending upon the amount of bile. Fasted, it will be approximately 10 cm long.⁷Gall bladder cancer can present as a focal intraluminal mass, focal or diffuse gall bladder wall irregular thickening, or large mass lesion replacing the entire gall bladder.⁷

The case we report presents with intraluminal calculus, multiple foci of irregular gall bladder thickening, porta hepatis lymphadenopathy, ascites and liver and common bile duct metastasis.

CONCLUSION

Gall bladder cancer is an uncommon malignancy with a high mortality rate. Detecting gall bladder cancer in its early stages can be difficult, despite improvement in ultrasound and CT imaging.⁹

Given that early detection is important in both decreasing morbidity and mortality of gall bladder carcinoma, with potential for surgical cure in cases limited to the gall bladder, patients with right upper quadrant ultrasound findings such as gallstones or polyps should be offered surgical consultation⁹

Further consultation of gall bladder carcinoma within the differential diagnosis by primary care clinicians, radiologists and surgeons may serve to maximise discovery before the time of surgery.⁹

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