

Sonographic Estimation of Gallbladder Wall Thickness in Early Detection of Hepatitis C

SAQIB JAVAID AHMAD, MIAN WAHEED AHMAD

ABSTRACT

Objectives: The objective of this study was to early detection of the hepatitis C persons by estimation of gallbladder wall thickness on routine sonographic examination.

Study Design: A retrospective cohort study of 100 patients in each department.

Settings: This study was conducted in Radiology Department of Shalamar Hospital in collaboration with Jinnah Hospital, Lahore which is a tertiary care hospital.

Duration of Study: It was completed in two months from 2ⁿ June to 2nd August 2008.

Subjects and Methods: First 100 consecutive patients in each hospital with findings of gallbladder wall thickness of 3.5 to 4 mm during routine ultrasound examination were retrospectively evaluated for Hepatitis C screening.

Results: About 95 % of the non symptomatic patients found positive for hepatitis C in screening test.

Conclusion: Gallbladder wall thickness is a early sign of hepatitis C virus infection.

Keywords: ultrasonography, Gallbladder wall thickness, Hepatitis C.

INTRODUCTION

Ultrasound of the right upper quadrant is one of the most commonly performed sonographic studies. Sonography is the first-line imaging modality for evaluation of the patient who has right upper quadrant abdominal pain. It is accurate, quick, easy to perform, does not use ionizing radiation, and can be done in at the patient's bedside.

Gallbladder wall thickening may result from a broad spectrum of pathological conditions, intrinsic as well as extrinsic to the biliary tract, and may have different appearances. The normal gallbladder is a fluid-filled ovoid and therefore is an echo-free structure with a smooth echogenic thin wall. It is located in right upper quadrant in the gallbladder fossa between the left and right hepatic lobes. Anatomically it is divided into the neck, body, and fundus. The neck of the gallbladder lies closest to the liver hilum. Folds can occur in the gallbladder at the fundus, where it is known as a "Phrygian cap," and at the junction of the neck and body. The spiral valves of Heister are small folds in the cystic duct or gallbladder neck; they can appear as tiny protuberances in the latter location and should not be confused for stones. The fundus is variable in position and can be located anywhere from the diaphragm to the iliac crest.

*Department of Radiology, Shalmar Hospital and Jinnah Hospital
Lahore*

*Correspondence to Dr. Saqib Javaid Ahmad, Associate Professor
Radiology Email: uzair.ahmad@hotmail.com*

The normal gallbladder wall is normally less than 3mm thick in the fasted patient. The wall can appear thickened if the gallbladder is contracted because the patient recently has consumed a fat-containing meal. Systemic diseases and various gallbladder pathologies can also cause a thickened gallbladder wall. A correct diagnosis is usually established after a correlation of imaging findings, laboratory data and clinical history.

OBJECTIVE

The objective of this study was to early detection of the hepatitis C virus by estimation of gallbladder wall thickness on routine sonographic examination.

MATERIAL AND METHODS

First 100 consecutive patients in each hospital with findings of gallbladder wall thickness of 3.5 to 4 mm, during routine ultrasound examination, were retrospectively evaluated for Hepatitis C screening.

These scan were done on Toshiba just vision 200 and Capasee machines. Already known cases, chronic liver parenchymal disease patients and alcoholic were excluded from this study. All the results were collected and final the results formed.

RESULTS

About 70% of the a-symptomatic patients found positive for hepatitis C in screening test.

DISCUSSION

The normal liver has homogenous mid-level echogenicity and usually is slightly hypoechoic with respect to the spleen and hyperechoic or isoechoic compared with the kidney. It has a smooth border. Acute hepatitis caused by viral infection, drug toxicity, or alcohol can present with abdominal pain and jaundice. There are few specific sonographic signs for the diagnosis of acute hepatitis.

Sonographic findings in acute hepatitis may include hepatomegaly and decrease in liver echogenicity, causing the echogenic walls of the portal triads to stand out even more. This sign, however, is a subtle and is difficult to appreciate, and in many cases of hepatitis the liver appears normal.

Gallbladder wall thickening is the most common finding in either acute calculus or acalculous cholecystitis. It is a non-specific finding that may be seen in GB cancer and in a variety of extracholecystic benign conditions such as hepatitis, heart failure, hypoalbuminaemia and acute severe pyelonephritis.

About 0.5 to 1mm wall thickness only detect in Hepatitis C patients as depict in this study. Chronic Liver parenchymal Disease shows diffusely edematous and thickened gallbladder walls.

This study will help a lot regarding early detection and management of Hepatitis patients

however laboratory tests including screening and Elisa remains the gold standards.

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