

HEALTH RESEARCH ABSTRACT SUBMISSIONS

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Educational Level *	Other
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College *	College of Medicine
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Title of Research *	Mammillated Caudate Lobe and Hepatic Vein Compression can be used as Ultrasound Markers to Diagnose Liver Cirrhosis
Other Authors *	Dr. Abu-Yousef
Introduction & Purpose *	<p>Ultrasound (US) diagnosis of cirrhosis can be difficult in patients with chronic liver diseases. US signs include liver surface nodularity, enlarged caudate lobe, hepatic vein compression and coarse echotexture. Over the last several years we have observed four additional signs in patients with cirrhosis including gallbladder (GB) scalloping, mammillated caudate lobe, IVC scalloping, and GB wall edema. The purpose of our study is to assess the efficacy of these 4 signs compared to the known signs in the diagnosis of cirrhosis by correlating with liver pathology.</p>
Experimental Design *	<p>We reviewed the medical records of 201 patients, including 73 females and 128 males between the ages of 30 and 88 who have a history of chronic hepatitis C, steatohepatitis, autoimmune hepatitis, biliary cirrhosis, chronic liver disease, or alcohol abuse. The US exams were blindly reviewed by a US specialist. These results were compared to the liver biopsy findings, which served as the gold standard for diagnosis of cirrhosis. Specificity, sensitivity, positive predictive value (PPV) and negative predictive value (NPV) were determined for all of the features analyzed on the US exams.</p>
Results *	<p>152 had pathology proven cirrhosis and 49 were negative for cirrhosis. Caudate lobe size had the highest PPV (90%) with a specificity of 88%, sensitivity of 40% and NPV of 33%. Vascular compression of the hepatic veins had a PPV of 88% with a specificity of 72%, sensitivity of 67% and NPV of 40%. IVC scalloping had a PPV of 87% with a specificity of 78%, sensitivity of 46% and NPV of 30%. GB scalloping had a PPV of 85% with a specificity of 62%, sensitivity of 69% and NPV of 39%. The mammillated caudate lobe PPV was 85% with a specificity of 60%, sensitivity of 78% and NPV of 48%. GB wall edema had a PPV of 82% with a specificity of 83%, sensitivity of 25% and NPV of 26%. The nodularity of the liver surface had a PPV of 85% with a specificity of 61%, sensitivity of 74% and NPV of 43%. There were 13 patients with proven cirrhosis that were negative for any of the known US markers. However, using the four previously mentioned observed markers, 8 out of those 13 patients were found.</p>
Conclusions *	<p>Using biopsy as the gold standard, most US markers have high PPV and specificity, but low sensitivity and NPV. Although, the specificity and PPV were not higher than 88% and 90% respectively, when markers were</p>

combined and used together to predict the appearance of cirrhosis the usefulness of the tests increased dramatically. The most helpful diagnostic method in determining the diagnosis of cirrhosis was analyzing caudate nodularity and hepatic vein compression. When both of these markers are positive the test has 89% specificity with 94% PPV.

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