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Short Communication

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Multidetector Computed Tomography in Esophageal Varices

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Introduction

Cirrhosis and chronic liver disease are global diseases that cause significant morbidity and mortality. Its prevalence is increasing in Pakistan, owing to chronic hepatitis B and C infections, which are estimated to be as high as 4.3 percent and 4.7 percent, respectively. At least half of cirrhotic patients acquire esophageal Varices during their lifespan. In roughly 30%–40% of cirrhotic patients, life-threatening upper gastrointestinal (UGI) bleeding occurs as a result of esophageal Varices and as a complication of portal hypertension. Given the high morbidity and mortality associated with variceal hemorrhage, screening endoscopy for early diagnosis and treatment of variceal hemorrhage has been advocated for these individuals [1]. These individuals are offered prophylactic endoscopic and medicinal procedures in order to prevent the related morbidity and mortality.

Screening endoscopy has been shown to be intrusive, expensive, require anesthesia, and be poorly tolerated by patients over time. However, with recent advancements in Multidetector computed tomography (MDCT), CT's significance in chronic liver disease surveillance has expanded. Because CT has a sensitivity of 90% and specificity of 50% in detecting esophageal Varices, it can be considered a noninvasive and less expensive modality for esophageal Varices identification and risk assessment. Although rigorous examinations of diagnostic accuracy are primarily new and small in number, the capacity to directly visualize esophageal avarices on cross-sectional imaging has long been known. The distal esophagus is well covered by Multidetector computed tomography (MDCT), which is commonly used for hepatocellular carcinoma (HCC) screening and surveillance in cirrhotic patients. Can also be useful for the diagnosis of esophageal Varices [2]. This could help us identify individuals who would benefit from early preventative action and, as a result, minimize morbidity and mortality. Furthermore, we may be able to prevent patients from having to undergo intrusive, less compliant, and more expensive endoscopy.

To our knowledge, several international studies have been done on the accuracy and grading of esophageal Varices using hepatic CT; however, despite the growing frequency of chronic liver disease and cirrhosis in our country, there is little local literature available. From August 1, 2014, to July 31, 2015, a 12-month cross-sectional prospective study was done in the Department of Radiology, Aga Khan University Hospital (AKUH), and Karachi. He claimed that MDCT has sensitivity and specificity of 90% and 50% for detecting esophageal varies, respectively. Esophageal Varices are found in 50% of people with chronic liver disease. The research covered a total of 196 patients. The study included all patients with established chronic liver disease or cirrhosis who were referred to the radiology department at AKUH for an MDCT followed by an endoscopy within 20 days.

Patients with already diagnosed esophageal Varices, those with insufficient medical records, those who did not have an endoscopy following the MDCT, and those who had an endoscopy after 20 days were also excluded. It was decided to take informed consent. MDCT was used to screen all of the patients for hepatocellular cancer. The results of these patients' endoscopies were obtained from the hospital's medical Record System [3]. All CT imaging was done on a 64-slice Multidetector computed tomography system (Aquiline 64, Toshiba Medical Systems Corporation, Otawara, Japan). Automatic exposure control was used to set KVp and mAs. (Automatic exposure control is a default setting in the equipment that controls exposure and is calibrated every three months by a physicist with at least five years of expertise.) After the commencement of intravenous (IV) injection of 120 mL of nonionic contrast material at a rate of 3.5 mL/s, CT images were collected during the hepatic arterial dominant phase with a 30-second delay and the portal venous dominant phase with a 65-second delay. After acquiring volume data with 0.5 mm slice thickness, reconstruction in the coronal and sagittal planes with slice thickness of 5 mm and 3 mm, respectively was performed. An experienced consultant radiologist with at least five years of expertise in body imaging, who was blinded to the endoscopic findings, did the imaging interpretation.

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