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Research Article

Assessment of Ultrasonography Value in Acute Abdominal Pain in Male Population

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Abstract: ***Introduction:*** Ultrasound is the equipment used to diagnose the disease. An ultrasound scan could be a medical test that uses high-frequency sound waves to capture real time images of the organ. Different sorts of transducer or probe are used to supply the USG image. Abdominal pain can be classified as visceral, somatoparietal or referred pain that can be a manifestation of a wide array of systemic and local causes. An ultrasound scan could be a medical test that uses high-frequency sound waves to capture real time images of the organ. Different sorts of transducer or probe are used to supply the USG image. ***Purpose****:* The aim of this study is to evaluate the role of ultrasonography in different diagnostic conditions of abdomen**.** ***Methodology:*** A quantitative prospective study was performed to assess the role of ultrasonography in abdominal pain in male patients who undergoes abdominal ultrasonography in the radiology department of BSM Medical University Dhaka, Bangladesh from February 2012 to March 2013. 90 male patients were selected according to the inclusion criteria of this study. Patients will be signing a consent before the investigation. History was taken from patients prior to investigation. Abdominal ultrasound was performed. ***Result:*** out of 90 male patients, out of which 21 (23.3%) patients have fatty liver, 12 (13.3%) patients have right renal calculus, 9 (10%)patient have left renal calculus, 3(3.3%)patient have B/L renal calculus, 5 (5.5%) patients have acute pancreatitis, 3 (3.3%) patients have acute appendicitis, 2 (2.2%) patients have liver abscess, 7 (7.7%) patients have cyst, 7 (7.7%) patients have ascites, 19 (21.1%) patients have cholelithiasis and 1 (1.1%) patient have normal. Sonography play key role in to visualized gross primary investigation in abdomen. ***Conclusion:*** The study concludes uses of USG should be perform as a primary investigation for all patients. This study has shown a relatively high sensitivity, specificity and diagnostic accuracy of USG in cases of acute abdomen in a careful hand. USG is currently considered the preferred initial imaging technique for patients who are clinically suspected of having fatty liver, renal calculus, acute pancreatitis, acute appendicitis, ascites, cyst, liver abscess and cholelithiasis etc.
Keywords: USG, B/L, Appendicitis, Cholelithiasis, Fatty Liver, Cyst.

INTRODUCTION

Ultrasound is the equipment used to diagnose the disease. An ultrasound scan could be a medical test that uses high-frequency sound waves to capture real time images of the organ. Different sorts of transducer or probe are used to supply the USG image. Abdominal pain can be classified as visceral, somatoparietal or referred pain that can be a manifestation of a wide array of systemic and local causes. More common causes are cholecystitis, acute appendicitis, bowel obstruction, visceral perforation, mesenteric ischemia and ischemic colitys in elderly patients [1]. Abdominal sonography could be a sort of USG study use highfrequency transducer ranging from 3.5-10MHz). USG study used for the male and feminine patients to find out the pathologies. Ultrasound abdomen is one of the tests that's commonly employed in symptoms of abdominal pain. It is especially useful for soft tissue, solid organ, and fluid-filled anatomy [2]. Ultrasound imaging of the abdomen uses sound waves to form the image of structure within the abdomen. It evaluates the kidney, liver, gall bladder, bill duct, pancreas, spleen, and aorta. The abdomen is divided into 4 quadrants or 9 regions by two sagittal plans and two transverse plans. The umbilicus server at the center of the nine regions each region and its associated organ well [3]. Abdominal pain is the most common symptom. Abdominal USG includes some pathologies like the 2 differential diagnose of acute abdominal pain including appendicitis, ulceration urinary stones inflammatory bowel disease, biliary colic cholecystic, and pancreatitis [4]. Acute abdomen may be a condition that demands urgent attention and treatment. The acute abdomen may be common causes of abdominal pain or appendicitis, gastroesophageal reflux disease (GERD), pancreatitis, gallbladder disease, diverticulitis, and tiny bowel obstruction, an infection,

inflammation, vascular occlusion, or obstruction. The patient will usually present with sudden onset of abdominal pain with associated nausea or vomiting. Most patients with acute abdomen appear ill [5]. The Radiologist or technologist should obtain a complete history of the patient. This could be generally the corners of an accurate diagnose. A very detailed history taken from the patient about any previous diagnostic, pathology, or other reports must be present to the patient so that comparison easily is done. This could be providing important information [6,7].

MATERIALS AND METHODS

A quantitative prospective study was performed to assess the role of ultrasonography in abdominal pain in male patients who undergoes abdominal ultrasonography in the radiology department of BSM Medical University Dhaka, Bangladesh from February 2012 to March 2013. Those male Patients who are undergoing abdominal ultrasonography in the radiology department of BSM Medical University Dhaka, Bangladesh from February 2013 to March 2014 with advised abdominal pain are included in this study. 90 male patients were selected according to the inclusion criteria of this study. Patients will be signing a consent before the investigation. History was taken from patients prior to investigation. Abdominal ultrasound was performed.

Selection Criteria

In this study following patients under inclusion and exclusion criteria, Data collected after completion of scan and reporting. Male patients with findings under ultrasonography were included in this study, 75 patients with acute abdominal pain, 15 patients traumatic, All IPD and OPD male patient, Age (15-70 years) were taken under inclusion criteria. Post-operative patients, female patient were taken under as exclusion criteria.

Data Analysis

The purpose of data analysis is to categorize, organize, manipulate, and summarize the data that have been collected. The current study used a quantitative design. In this context, quantitative data refer to numbers that are collected and then interpreted using statistics. Numerical data are described in a meaningful manner thereby enabling any researcher to understand interrelationships that exist. Data analysis aims to describe statistical analysis results but does not comment on them. In this study, an analysis was done on the basis of the Mode frequency of findings.

RESULTS

Total of 90 patient's data used in this study who complain of acute abdominal pain during the period of study. The result of the scan collected and master chart is prepared. We found that 21.1% patients have acute abdominal pain was due to cholelithiasis, 13.3% patients have right renal calculus, 10% patients have left renal calculus, 3.3% patients have acute appendicitis, 5.5% patients have acute pancreatitis, 23.3% patients have fatty liver, 2.2% patients have a liver abscess, 7.7% patients have ascites, 7.7% patients have B/L renal calculus, 3.3% patients have cyst and 1.1% patients have normal. In rest 98.8% of patients' ultrasound help to diagnose the problem of acute pain.

Patients were categorized to the analysis of the result of the study in two age groups which were 15-40years and 40-60 years. Only these two groups were made because of all patients age within this age range. In the age of group15-40years, there were a total of 48 male patients. Four most common assessments in this group were fatty liver in 29.1% patients, left renal calculus 16.6%, right renal calculus 18.7 % and cholelithiasis 16.6% patients, rest of the patients were diagnosed with several other findings like B/L renal calculus 2.1%, pancreatitis 2.1%, cyst 6.2%, ascites 4.1%, liver abscess 0% and appendicitis 4.1%, etc.

And in the age group 40-70years, there were a total of 42 male patients. Two most common assessments in this group were Cholelithiasis in 26.2%, fatty liver 19.0% rest of the patients were diagnosed with several other findings like B/L renal calculus 4.7%, pancreatitis 9.5%, cyst 9.5%, ascites 9.5%, appendicitis 2.3% and liver abscess 4.7%etc. Results came out after this study was as follows as shown in table 5.1, 5.2 & 5.3.

Table 1: Shows the analysis of results of USG scan of patients having acute abdominal pain and age range 15-70 years

Diagnose	Male	Female	Total
Cholelithiasis	19	0	19
Right Renal Calculus	12	0	12
Left Renal Calculus	9	0	9
Acute Appendicitis	3	0	3
Acute pancreatitis	5	0	5
Fatty liver	22	0	22
Normal Scan	1	0	1
Liver abscess	2	0	2
Ascites	7	0	7
Cyst	7	0	7
B/L Renal Calculus	3	0	3

Table 2: Shows the analysis of results of USG scan of patients having acute abdominal pain and age range 15-40 years

Diagnose	Male	Female	Total	Percentage
Cholelithiasis	8	0	8	16.6%
Right Renal Calculus	9	0	9	18.7%
Left Renal Calculus	8	0	8	16.6%
Acute Appendicitis	2	0	2	4.1%
Acute Pancreatitis	1	0	1	2.1%
Fatty Liver	14	0	14	29.1%
Normal Scan	0	0	0	0%
Liver Abscess	0	0	0	0%
Ascites	2	0	2	4.1%
Cyst	3	0	3	6.2%
B/L Renal Calculus	1	0	1	2.1%

Table 3: Shows the analysis of results of USG scan of patients having acute abdominal pain and age range 40- 60years

Diagnose	Male	Female	Total	Percentage%
Cholelithiasis	11	0	11	26.2%
Right Renal Calculus	4	0	4	9.5%
Left Renal Calculus	1	0	1	2.3%
Acute Appendicitis	1	0	1	2.3%
Acute Pancreatitis	4	0	4	9.5%
Fatty Liver	8	0	8	19.0%
Normal Scan	1	0	1	2.3%
Liver Abscess	2	0	2	4.7%
Ascites	4	0	4	9.5%
Cyst	4	0	4	9.5%
B/LRenal Calculus	2	0	2	4.7%

Table 4: Shows the analysis of results of USG scan of patients having acute abdominal pain

Overall	Result in percentage
Cholelithiasis	21.1%
Right Renal Calculus	13.3%
Left Renal Calculus	10%
Acute Appendicitis	3.3%
Acute Pancreatitis	5.5%
Fatty Liver	23.3%
Normal	1.1%
Liver Abscess	2.2%
Ascites	7.7%
Cyst	7.7%
B/L Renal Calculus	3.3%

DISCUSSION

Diagnosis accuracy relies on improvements in the advanced imaging tools such as computed tomography (CT) or ultrasound (US) [8, 9]. Currently, the diagnostic workup in a patient presenting with acute abdominal pain, is based on clinical examination and if necessary, laboratory tests and, in many cases, imaging procedures. Ultrasound is an irreplaceable imaging technique in the assessment of pediatric acute abdominal pathologies; it can bring an immediate evaluation of acute abdominal conditions without the need for sedation or contrast in skilled hands [10]. In this study assessment of acute abdominal pain in ultrasonography was done. This study is inspired by research conducted by Puylaert JB, et al. [11] who performed a study on the role of US examination in the management of acute abdomen. Acute abdomen is a medical emergency, in which there is sudden and severe pain in the abdomen of recent onset with accompanying signs and symptoms that focus on abdominal involvement [12]. It can represent a wide spectrum of conditions, ranging from benign and self-limiting disease to a surgical emergency. Nevertheless, only one-quarter of patients who have previously been classified with an acute abdomen actually receive surgical treatment [13]. An ultrasound test uses high-frequency sound waves to create images of the patient's internal organs. Imaging tests can identify abnormalities and help doctors diagnose conditions. An abdomen ultrasound is a type of ultrasound used by doctors to examine abdominal organs. This includes the organ liver, pancreas, gallbladder, kidneys, intestines, etc. in this study most common Diagnose is finding out in the male patients taken as samples of age group between 15 to 70 years [14, 15]. And Fatty liver was the most common

finding after the calculation of results. This may need clinical as well as surgical treatment to be done. This study performed here because no study was done before on the topic of acute abdomen pain assessment. This study has shown a relatively high sensitivity, specificity and diagnostic accuracy of USG in cases of acute abdomen in a careful hand [16, 17]. USG is currently considered the preferred initial imaging technique for patients who are clinically suspected of having fatty liver, renal calculus, acute pancreatitis, acute appendicitis, ascites, cyst, liver abscess and Cholelithiasis etc. And the most common reason for acute abdominal pain as per this study is Fatty liver, 23.3% of patients having Fatty liver when USG was performed [18]. 1.1% of patients have a normal scan with no findings. In rest 98.75% patient's ultrasound help to diagnose the problem of acute painble 4: shows the analysis of results of USG scan of patients having acute abdominal pain [19]. Ultrasound is additionally useful for the Diagnose of solid organ conditions including acute cholangitis, acute cholecystitis, acute pancreatitis, or bowel disease. CT is that the 1st line procedure suggests to the patient but CT is an invasive procedure or high-cost price but USG is a non-invasive procedure or cheap cost so that we preferred USG for the suspected patient. During this case, abdominal ultrasound is that the 1st line procedure to judge its utility and limitation in determining the Diagnose of patients presenting with abdominal symptoms.

CONCLUSION

It is concluded that ultrasound is the best modality to rule out the problems at an earlier stage so that treatment can be started on behalf of reports of Ultrasonography scan in patients of acute abdominal pain, as it is fast and safe to patients, it does not include any ionizing radiation so female patients of reproductive age go through scan without any risk. The study concludes uses of USG should be performing as a primary investigation for all patients.

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