ORIGINAL RESEARCH PAPER
Volume-9 | Issue-3 | March-2020 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

ROLE OF USG IN PATIENTS WITH ACUTE ABDOMEN IN A TERTIARY CARE CENTRE IN WEST BENGAL

Radiology

Soumitra Kumar Ghosh Associate Professor Department Of Radiology Malda Medical College Malda

Subhrajyoti Naskar* Associate Professor Department Of Community Medicine, Diamond Harbour Govt. Medical College. *Correspondong Author

ABSTRACT

INTRODUCTION: Acute abdomen is the common cause of emergency admissions. USG plays an important role in the diagnosis of disease.
METHODS: In this study 230 patients was taken with complaints of severe abdominal pain except those with a history of trauma or with a history of chronic abdominal pain. Clinical history, physical examination, ultrasonography, other imaging methods and histo-pathological examination were used to come to a final conclusion.
RESULT: In this study ultrasonography was diagnostic in 94.7% of patients. 1.7% patients were misdiagnosed and in 3.47%patients other investigations were required for the confirmation of diagnosis. The sensitivity of ultrasound in diagnosing renal calculus,calculus cholecystitis, liver abscess, mesenteric lymphadenitis, and ovarian cyst was 100% and in acute appendicitis and acute pancreatitis it was 96.6% and 82.4% respectively.
CONCLUSION: Ultrasonography is superior in organ system imaging. It helps in showing organ specific lesions which is helpful in follow up and response to treatment. Ultrasonography is also helpful in diagnosing alternative disease and to reduce negative surgical rate.

KEYWORDS

Abdominal Pain, Acute Abdomen, Diagnosis, Ultrasonography

INTRODUCTION

The term acute abdomen defines a clinical syndrome characterized by abdominal pain of sudden onset developed .over a period several hours requiring surgical or medical treatment[1]. Acute abdomen comprises 5-10 % of people presenting as a general surgical emergency[2]. An early and accurate diagnosis is essensial for prompt and appropriate management in order to limit morbidity and mortality. In surgical practice, abdominal pain is perhaps the most common symptom encountered, and almost in every case of abdominal pain the surgeon prefers to go for ultrasonography to confirm the diagnosis. Ultrasonography is cheap, non-invasive, reliable, and can be repeated as and when required. It is a high-resolution imaging technique. . Other advantage is the Doppler ultrasound, which allows visualization of blood flow and assessment of flow dynamics.

The purpose of laboratory tests and radiological examination is to confirm or exclude diagnostic possibilities that are being considered based on a proper history and physical examination. The main goal of imaging in acute abdomen is to narrow down the differential diagnosis and for prompt treatment.

MATERIALS AND METHODS

This was a prospective study of 230 patients between the age of 1-80 years (126 males and 104 females) carried out at a tertiary hospital in Malda during a period of one year.

Only those non traumatic patients who were admitted in the ward with complaints of severe abdominal pain were selected in the study. Patients with abdominal trauma, obstructed hernia and malignancy were excluded from the study. Patients were subjected to routine haematological, urine examination and biochemical estimations.

All the 230 admitted patients were examined in the ward and provisional clinical diagnosis was made by the information obtained from clinical history and physical examination. Simultaneously, routine laboratory and radiological investigations were carried out. Data collected from routine investigations was used to reach a reasonable provisional diagnosis.

Following this, all the patients were examined by radiologists with the pre-requisite of nil per oral from previous night and bowel preparation. With co-relation of clinical history, physical findings and ultrasonographic findings, ultrasonographic diagnosis was made.

Out of the 230 patients, 96 patients were managed conservatively while the rest 134 patients were operated at appropriate time. Operative findings were noted and fluid or tissue collected per operatively were sent for histo-pathological examination. The histo-pathological report was noted.

Final diagnosis was made after the surgery and histo-pathological report. Comments on individual cases were noted.

RESULTS

Sensitivity of Ultrasonography in Diagnosis of Disease

	No. of Cases	No. of cases where USG was helpful	Sensitivity
Appendicitis	59	57	96.6%
Calculus Cholecystitis	51	51	100%
Renal Calculus	46	46	100%
Liver Abscess	22	22	100%
Mesenteric Lymphadenitis	7	7	100%
Acute Pancreatitis	17	14	82.4%
Ovarian Cyst	6	6	100%
Miscellaneous	22	15	68.2%

According to the above results, ultrasonography is highly sensitive and specific for diagnosis of prevalent pathologies of acute abdominal conditions .

Diagnostic Accuracy of Ultrasonography in Acute Abdominal Conditions

USG	No. of patients	Percentage
Diagnostic	218	94.7%
Mis-diagnostic	4	1.7%
Other investigations required	8	3.47%

In this study ultrasonography was diagnostic in 94.7% of patients. 4 patients were misdiagnosed and in 8 patients other investigations were required for confirmation of diagnosis.

DISCUSSION

In this study, the ultrasonographic diagnosis in case of renal calculus, Calculus Cholecystitis ,liver abscess, mesenteric lymphadenitis, and ovarian cyst was 100% and in acute appendicitis and acute pancreatitis it was 96.6% and 82.4% respectively. However in 4 cases of portal hypertension ultrasonography gave the differential diagnosis of splenic mass/abscess/cyst which proved to be wrong on further study. Ultrasonography is highly accurate in gall bladder conditions. The

sensitivity of ultrasonography in diagnosing pancreatic conditions is 82.4%. In cases of gastritis, no specific pathology was found on ultrasonography. In mesenteric lymphadenitis, ultrasonography accurately diagnosed the condition and all patients were managed accordingly. In appendicitis, it gave an accurate diagnosis in 96.6% cases .

There are a few studies which have looked at the various parameters we analyzed. Walsh et al[6], while evaluating the role of immediate USG in acute abdomen showed that USG was more informative than plain X-Ray in 40% of their cases. Al Ajerami [3] in his study on acute appendicitis found the overall sensitivity and specificity of ultrasound, using surgical outcome as the gold standard, to be 84.8% and 83.3% respectively. Allemann et al[4] reported that in USG done by surgeons for patients with acute abdominal pain the correct diagnostic rate from 348 patients (70%) to 414 patients (83%). In the same study, USG was found to have a sensitivity and specificity of 94% and 99% in diagnosing biliary tract disease. Mishra et al[5] in their study of imaging for acute abdomen had 13 cases of appendicitis. USG was diagnostic in 11 with sensitivity and specificity of 91.6% and 97%. Zoller et al[7] in their meta analysis demonstrated that USG has sensitivity of 85% and a specificity of 96% in diagnosing acute appendicitis. Mc Grath et al[8] in their study on the role of early USG in the management of the acute abdomen concluded that it is most useful in the diagnosis of gynecological disorders. Manfredi et al[9]concluded that USG in acute pancreatitis is a good screening test in patients with suspected biliary pancreatitis and a mild clinical course but contrast enhanced CT is preferred for patients with acute pancreatitis.

CONCLUSION

Ultrasonography is cheap, non-invasive, reliable, simple to perform and can be repeated as and when required. For the abdominal surgeon, ultrasound provides a vital diagnostic and management aid in the assessment of the intra-abdominal diseases. It has a very high accuracy in cases of acute abdomen. Ultrasonography is superior in organ system imaging. It helps in showing organ specific lesions and its accurate measurement which is helpful in follow up and response to treatment. Ultrasonography is also helpful in diagnosing alternative disease and to reduce negative surgical rate.

FUNDING: Nil,

CONFLICT OF INTEREST: None initiated.

INSTITUTIONAL ETHICAL CLEARANCE: Yes

REFERENCES

1. Das S: Examination of an acute abdomen. A manual of clinical surgery Ch 2000;33:335-356.
2. White M J and Counselman F.L.: Troubleshooting acute abdominal pain- Part 1 and 2. Emergency Medicine:Jan 2002.
3. Al-Ajerami Y. Sensitivity and specificity of ultrasound in the diagnosis of acute appendicitis. East Mediterr Health J. 2012 Jan;18(1):66-9. [PubMed]
4. Allemann F, Cassina P, Rothlin M, Largiader F: Ultrasound scans done by surgeons for patients with acute abdominal pain. Eur J Surg 1999 Oct;165(10):966-70. [PubMed]
5. Mishra DS, Magu S, Sharma N, Rattan KN, Tiwari AD, Rohilla S. Imaging in acute abdomen. Indian J Pediatr. 2003 Jan;70(1):15-9. [PubMed]
6. Zoller WG, Kellner H, Schwerk WB. Value of ultrasound in diagnosis of acute appendicitis. Bildgebung 1996 Jun;63(2):78-82. [PubMed]
7. Walsh PF, Crawford D, Crossling F T, Sutherland GR, Negrette JJ, Shand J: The value of immediate ultrasound in acute abdominal conditions. A critical appraisal. Clin. Radiol 1990;42:47-49..
8. McGrath FP, Keeling F. The role of early sonography in the management of the acute abdomen ClinRadiol. 1991 Sep;44(3):172-4. [PubMed]
9. Manfredi R, Brizi MG, Canade A, Vecchioli A, Marano P. Imaging of acute pancreatitis. Rays 2001 Apr-Jun; 26(2):135-42. [PubMed]