

A study of plain X-ray vs USG abdomen in acute abdomen cases

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Abstract

Acute Abdomen is a very vague term that is used very often in our field. This normally represents patients who complain of pain abdomen that is both sudden and severe in nature. This can be medical, surgical and also gynaecological emergencies. The patients can represent anywhere if they are represented in terms of life threatening spectrum ranging from the most trivial to the most life threatening conditions. This can be investigated using a simple X-ray as well as a USG. But in terms of the effectiveness the USG has always been considered as a superior. But X-ray is simpler and how much it is useful is the question of the hour. This study puts in a sincere effort to find the answer.

Key Words: Acute Abdomen, X-Ray, USG, Life Threatening.

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the only drawback is USG is not available easily so X-Rays are commonly done.^{7,8} The patients can represent anywhere if they are represented in terms of life threatening spectrum ranging from the most trivial to the most life threatening conditions. This can be investigated using a simple X-ray as well as a USG. But in terms of the effectiveness the USG has always been considered as a superior. But X-ray is simpler and how much it is useful is the question of the hour. This study puts in a sincere effort to find the answer.

INTRODUCTION

Acute Abdomen is a very vague term that is used very often in our field. This normally represents patients who complain of pain abdomen that is both sudden and severe in nature. This can be medical, surgical and also gynaecological emergencies. In 1986 Puylaert *et al*¹ used Ultrasonography for diagnosing acute abdomen conditions. In around 21-34% of patients the USG will be able to pin point the diagnosis and second/third differential diagnosis in further 12% of patients who will undergo the procedure. It is as good as laparoscopy and in fact better because it does not involve dissection to diagnose.²⁻⁵ Since the first time it has been used even the USG has been evolving and now it's considered to be more sensitive and specific in diagnosing⁶. In our country

AIMS AND OBJECTIVES

To find out the better way to diagnose the acute abdomen.

MATERIALS AND METHODS

This study was done in the Department of Radio-Diagnosis, Kanachur Institute of Medical Sciences, Deralakatte, Mangalore. This study was done using a sample size of 60 who came to different OPDs in the institute and presented themselves with Acute Abdomen symptoms. All 60 patients were considered for the study and were made to undergo the X-Ray first then they were made to undergo the USG. The X-Ray were then interpreted by a blinded Radiologist and also USG were made to be interpreted by another Radiologist. All the interpretation was noted and then the final diagnosis of

the patients were sought after the clinical and Histo - pathological and other laboratorial diagnosis was made.

Inclusion Criteria:

All the patients who came to OPS with Acute Abdomen Symptoms

All the patients were between 20 to 60 years.

Exclusion Criteria:

Patients who were diagnosed to have confirmed abdominal conditions.

Immuno - compromised and patients who were undergoing chemotherapy and steroid therapy.

All the statistical analysis was done using the R software.

RESULTS

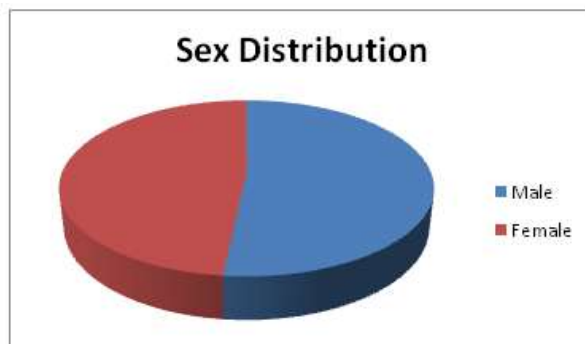
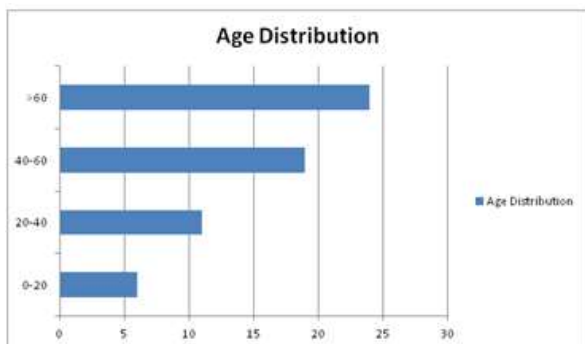


Table 1: Age Distribution; Table 2: Sex Distribution:

Table 3: Pathologies

Pathologies	Frequency
Renal Pathology	11
GI Pathology	27
Hepato-Biliary Pathology	07
Pancreatic Pathology	02
Gynaecological Pathologies	13

Table 2: Sensitivity and Specificity of the Investigation Method:

Method	Sensitivity	Specificity
X-Ray	39.3 %	40.6%
USG	87.5 %	75%

DISCUSSION

Acute abdomen a very vague term that has been frequently used to describe the acute and suddenly/acutely arising pain in the abdominal region. This can be accompanied by other symptoms like rigidity, guarding and tenderness. This usually starts suddenly and the patients will in majority of the cases seek the Medical Advice in Emergency or Causality Department. Sub-Acute conditions that present with signs and symptoms of short duration which may extend usually for a few days, which might indicate a progressive intra-abdominal condition that is threatening to patient’s life or capable of causing severe morbidity are also sometimes included in acute abdomen. Some of these processes can be trivial causes and some others can be life threatening. So this require rapid diagnosis with timely medical or surgical intervention to avoid significant morbidity and mortality. Every case should be declared an emergency unless proved otherwise. Acute abdomen does not invariably

signify the need for surgical intervention as some Medical and Gynaecological causes may also be there to be considered. A thorough history, good clinical examination, laboratory investigations which may or may not be interventional and imaging studies are necessary in order to arrive at a correct diagnosis, so that appropriate management can be started. The spectrum of diseases in acute abdomen is broad and varies according to different etiological and demographic patterns. Studies have shown that abdominal radiographs are not much sensitive and specific in the evaluation of patients presenting with nontraumatic acute abdominal pain but in a country like ours where sufficient number of Sonologists are not there who work atleast in a rural set up it becomes more and more problematic for a health system to give full medical and other modalities of treatment. Ultra sonography has been largely used in clinical practice and is considered to be a protocol of investigation of non-traumatic acute abdomen pain and it also lack radiation and have

revolutionized the diagnosis of many acute intraabdominal conditions especially in Gynecological conditions. Also inappropriate use of ultrasound in the assessment of acute abdominal pain can lead to an increase in the workload of the personnel involved, prolonged inpatient stay, possible delay in treatment, and increased hospital costs. Though CT scan has been shown to increase the referring physician's level of certainty in the diagnosis, reduce hospital admission rates, and help in guiding the therapeutic strategy, including surgical intervention, it is more expensive, has radiation hazards, not widely available especially in rural settings, non-portable and require certain prerequisites especially the contrast enhanced CT.^{7,8} Magnetic resonance (MR) imaging and diagnostic laparoscopy are also available, but they are used far less frequently for initial diagnostic workup⁹.

CONCLUSION

USG is the best way to diagnose the Acute abdominal conditions but X-Ray is also a good way to diagnose and can be used as a potent method with a well-trained Radiologist or clinician. USG also need that extra skill level to use it in a rural set up.

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