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Non Traumatic Acute Abdomen A Comparative Analysis of Clinical, Radiological and Operative Findings

General Surgery

KEYWORDS : Non-Traumatic acute abdomen, abdominal surgery, Radiological diagnosis

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ABSTRACT

Title: *Non Traumatic Acute Abdomen A Comparative Analysis Of Clinical, Radiological And Operative Findings* ***Aim And Objectives:*** *To assess the diagnostic accuracy between clinical and operative findings, clinical and radiological findings, radiological and operative findings in non traumatic acute abdomen.*

Materials And Methods: *A prospective observational study was conducted on 105 patients of 15-65 years age groups with non-traumatic acute abdomen who underwent emergency abdominal surgery at Dr.D.Y. Patil Medical College, Hospital and Research Centre, Pune over a period of 2 years. Traumatic, Gynaecological, urological and conservatively managed cases were excluded from the study.*

Result: *Diagnostic accuracy of clinical diagnosis over radiological diagnosis was 74.29%, radiological diagnosis over post-operative diagnosis was 90.48% and clinical diagnosis over post-operative diagnosis was 76.19%*

Conclusion:*The study has suggested that surgeon can diagnose clinically acute abdomen diseases with upto 76% accuracy and with radiological investigations can diagnose with upto 90% accuracy.*

INTRODUCTION

Acute abdominal pain constitutes a significant percentage of emergency admissions worldwide and comprises the largest group (non-traumatic) of people presenting as general surgical emergency [(1)].

Challenging as it is, it requires careful history taking and thorough evaluation of symptoms, clinical examination and judicious use of laboratory and radiological investigations to confirm or exclude a diagnosis. [(2)]

AIM AND OBJECTIVES

To study in non traumatic acute abdomen, the various clinical patterns that help to make a clinical diagnosis and effectiveness of radiological investigations in diagnosing non traumatic acute abdomen and its accuracy as confirmed by operative findings.

To assess the diagnostic accuracy between clinical and operative findings, clinical and radiological findings, radiological and operative findings in non traumatic acute abdomen.

MATERIALS AND METHODS

A prospective observational study was conducted on 105 patients of 15-65 years age groups with non-traumatic acute abdomen who underwent emergency abdominal surgery at Dr.D.Y. Patil Medical College, Hospital and Research Centre, Pune over a period of 2 years. Traumatic, Gynaecological, urological, medical and conservatively managed cases were excluded from the study.

RESULTS

Accurate diagnosis of non-traumatic acute abdominal conditions is still difficult despite detailed history, proper clinical examinations and recent advances in diagnostic procedures. Following are the observations in our study.

1] Age

Majority of the cases in our study (Table 1) i.e. 38 cases (36.19%) were in the age group of 26 to 35 years. Similar finding was seen in the study "Comparative Analysis of Clinical, Radiological and Operative Findings in Acute Abdomen" conducted by BhavinderArora et al [(3)] (2015) who did prospective observational study conducted on 125 patients with acute abdomen to compare clinical, radiological and operative finding. The most common age group was 21-30 years.

2] Gender

In our study, males (67.6%) were more commonly affected with acute abdomen in the study group as compared to females (32.4%). (Table no 2) .

Similar finding was observed in the study "A comparative study of pre-operative with operative diagnosis in acute abdomen" conducted by Chhetri RK, Shrestha ML [(4)] (2005) who compared the pre-operative diagnosis with per- operative findings so as to guide the practicing physicians to manage the cases of acute abdomen properly. Among 102 who underwent emergency laparotomy with the provisional diagnosis of acute abdomen 62% were male and 38% female.

3] Correlation between clinical and radiological diagnosis in study group

Accuracy of clinical diagnosis for acute abdomen over radiological diagnosis in detecting acute appendicitis over radiological diagnosis was 87.5% , 92.59% for diagnosing intestinal obstruction, 73.08% for diagnosing perforative peritonitis and overall was 74.29%. (Table no 3)

Chhetri RK et al [4] in the study " A comparative study of pre-operative with operative diagnosis in acute abdomen" reported diagnostic accuracy of clinical diagnosis over radiological diagnosis of 71.4% in the diagnosis of non-traumatic acute abdomen.

4] Correlation between radiological and post operative diagnosis in study group

Accuracy of radiological diagnosis for acute abdomen over post operative diagnosis in detecting acute appendicitis over post operative diagnosis was 94.12% , 92% for diagnosing intestinal obstruction, 92.86% for diagnosing perforative peritonitis and overall was 90.48%. (Table no 4). Similar finding was seen in a study conducted by Bhavinder Arora et al [3] (2015) who did prospective observational study conducted on 125 patients with acute abdomen to compare clinical, radiological and operative finding. Appendicitis was the most common cause of laparotomy followed by perforation peritonitis, obstruction and mesenteric ischemia. Diagnostic accuracy of of radiological diagnosis was 85.6%.

5] Correlation between clinical and post operative diagnosis in study group

Accuracy of clinical diagnosis for non-traumatic acute abdomen as compared to post operative diagnosis in detecting acute appendicitis over post operative diagnosis was 88.24% , 96% for diagnosing intestinal obstruction, 71.43% for diagnosing perforative peritonitis and overall was 76.19%. (Table no 5). Hassan Abdulla Abadi Al- Aquli et al [5] (2016) in the study "The Diagnostic Accuracy Of Preoperative Diagnosis In Adult Male Patients With Non-Traumatic Acute Abdominal Conditions" evaluated the diagnostic accuracy of the preoperative assessment with the operative diagnosis of adult male patients with non-traumatic acute abdominal conditions. Study showed that the overall diagnostic accuracy of preoperative assessment was 86.15%. The diagnostic accuracy of perforated viscus / peritonitis was 100 %, the diagnostic accuracy of intestinal obstruction was 83.33%, while the diagnostic accuracy of acute appendicitis was 82.92%.

CONCLUSION

The study has strongly suggested that surgeon with efficient clinical skills and good analysis of clinical findings can diagnose acute abdomen diseases with upto 76% accuracy and with basic provision of Plain X-ray and Ultrasonography can diagnose acute abdomen diseases with upto 90% accuracy.

LIMITATIONS OF THE STUDY

However, our series is small and the paucity of literature in this field of comparing and evaluating various modalities of arriving at early diagnosis in acute abdomen refrains us from making any dogmatic conclusions.

Hence a further detail study in this regard is suggested to arrive at more concrete conclusions.

Conflict of Interest - None

Table 1: Age wise distribution of cases in study group

Age (Yrs)	No of cases	Percentage
15 – 25	17	16.19
26 – 35	38	36.19
36 – 45	27	25.71
46 – 55	14	13.33
56 – 65	9	8.57
Total	105	100

Table 2: Gender wise distribution of cases in study group

Gender	No of cases	Percentage
Male	71	67.6
Female	34	32.4
Total	105	100

Table 3: Correlation between clinical and radiological diagnosis in study group

Clinical diagnosis	Radiological diagnosis									
	Acute Appendicitis	Intestinal Obstruction	Hollow viscus Perforation	Mesentric Ischaemia	Splenic abscess	Liver abscess	Pelvic abscess	Acute Cholecystitis with gangrene of GB	Normal study	Total
Acute Appendicitis	28	0	0	0	0	0	0	0	2	30
Intestinal Obstruction	0	25	7	3	2	0	0	0	3	40
Perforative Peritonitis	0	1	19	2	0	0	0	0	1	23
Liver Abscess	0	0	0	0	0	1	0	0	0	1
Pelvic Abscess	0	0	0	0	0	0	2	0	0	2
Acute Cholecystitis	0	0	0	0	0	1	0	3	0	4
Right Colitis	4	1	0	0	0	0	0	0	0	5
Total	32	27	26	5	2	2	2	3	6	105

Clinical Diagnosis	Diagnostic accuracy as compared with radiological diagnosis
Acute Appendicitis	87.5
Intestinal Obstruction	92.59
Perforative Peritonitis	73.08
Overall	74.29

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Table 4: Correlation between radiological and post operative diagnosis in study group

Radiological diagnosis	Post operative diagnosis										
	Acute Appendicitis	Intestinal Obstruction	Hollow viscus Perforation	Mesentric Ischaemia	Meckels Diverticulum	Splenic abscess	Liver abscess	Pelvic abscess	Acute Cholecystitis with gangrene of GB	Inconclusive	Total
Acute Appendicitis	32	0	0	0	0	0	0	0	0	0	32
Intestinal Obstruction	0	23	1	0	1	0	0	0	0	2	27
Perforative Peritonitis	0	0	26	0	0	0	0	0	0	0	26
Mesentric Ischaemia	0	0	0	5	0	0	0	0	0	0	5
Splenic Abscess	0	0	0	0	0	2	0	0	0	0	2
Liver Abscess	0	0	0	0	0	0	2	0	0	0	2
Pelvic Abscess	0	0	0	0	0	0	0	2	0	0	2
Acute Cholecystitis with gangrene of GB	0	0	0	0	0	0	0	0	3	0	3
Normal study	2	2	1	0	1	0	0	0	0	0	6
Total	34	25	28	5	2	2	2	2	3	2	105

Radiological Diagnosis	Diagnostic accuracy as compared with post op diagnosis
Acute Appendicitis	94.12
Intestinal Obstruction	92
Perforative Peritonitis	92.86
Overall	90.48

Table 5: Correlation between clinical and post operative diagnosis in study group

Clinical diagnosis	Post operative diagnosis										
	Acute Appendicitis	Intestinal Obstruction	Hollow viscus Perforation	Mesentric Ischaemia	Meckels Diverticulum	Splenic abscess	Liver abscess	Pelvic abscess	Acute Cholecystitis with gangrene of GB	Inconclusive	Total
Acute Appendicitis	30	0	0	0	0	0	0	0	0	0	30
Intestinal Obstruction	0	24	8	3	1	2	0	0	0	2	40
Perforative Peritonitis	0	1	20	2	0	0	0	0	0	0	23
Liver Abscess	0	0	0	0	0	0	1	0	0	0	1
Pelvic Abscess	0	0	0	0	0	0	0	2	0	0	2
Acute Cholecystitis	0	0	0	0	0	0	1	0	3	0	4
Right Colitis	4	0	0	0	1	0	0	0	0	0	5
Total	34	25	28	5	2	2	2	2	3	2	105

Clinical Diagnosis	Diagnostic accuracy as compared with post op diagnosis
Acute Appendicitis	88.24
Intestinal Obstruction	96
Perforative Peritonitis	71.43
Overall	76.19

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