



## ACUTE ABDOMEN; ROLE OF LAPAROSCOPY IN ACUTE ABDOMEN.

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## INTRODUCTION

Acute abdomen is onset of sudden severe pain abdomen along with signs and symptoms focuses on abdominal involvement. Pain may be parietal visceral, or referred. Common causes are acute appendicitis, cholecystitis, bowel obstruction or perforation and mesenteric ischemia especially in elderly patients.<sup>1</sup> In general only quarter of patients who were previously labeled as patient of acute abdomen actually receive surgical treatments, so the dilemma is that which patient need surgical treatment in emergency in order to avoid surgical intervention in unnecessary conditions.<sup>2,3</sup> Acute abdominal pain accounts for 48% of surgical admissions in emergencies<sup>4</sup> and around one third of them defective diagnosis is not establish immediately<sup>5</sup>, diagnosis in such cases are highly challenging and even may need repeated clinical assessments for days<sup>6,7</sup> in order

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**ABSTRACT... Objectives:** To assess the role of laparoscopy in patients presented with acute abdomen, to know the extent of its diagnostic and therapeutic role. And to know that how frequent the laparoscopic procedure is converted into open surgical procedures. **Study Design:** Prospective cross sectional study. **Setting:** Department of surgery Khyber Teaching Hospital, Peshawar. **Period:** July 2015-july 2017. **Methodology:** A total of 240 patients who fulfilled inclusion criteria were selected randomly for study. Data was collected by using pre designed questionnaire after informed consent from patient and analyzed by SPSS 17. **Results:** Out of our total sample, 155(64.6%) were males while 85(35.4%) females. Mean age of patients was 32±11 years. 52(21.6%) were diabetics, 45(18.7%) were hypertensive while 37(15.4%) were smokers. Laparoscopy was successful in diagnosing all cases. After diagnosis 212(88.3%) patients were managed primarily by laparoscopy at the same procedure while 28(11.7%) patients were subjected to open procedure. All patients were followed post operatively till time of discharge. Average hospital stay was 6±4 days. Outcome showed that 3(1.2%) patients were expired in which 2 were having mesenteric ischemia and 1 had ruptured ectopic pregnancy while 237(98.7%) were discharged. **Conclusion:** Laparoscopy in cases of acute abdomen was noted as safe and accurate procedure with decreased mortality and morbidity. Moreover it is an authentic tool for diagnosis with high diagnostic accuracy. It also helps in management at same time and aid in further course of management.

**Key words:** Acute Abdomen, Acute Appendicitis, Laparoscopy, Open Surgery.

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to prevent unnecessary laparotomies but on other hand it may delay surgical intervention which is indicated earlier.<sup>8</sup>

In modern era laparoscopy has been advocated in order to establish definitive diagnosis and avoid negative laparotomies and associated morbidity. Different randomized control trials and descriptive studies have been conducted to compare early laparoscopy and observations in patients of acute abdomen.<sup>9,10</sup> It increases the diagnosis in acute undifferentiated abdominal pain, decreases unnecessary laparotomies and reduces the patients being discharged without final diagnosis.<sup>10</sup> In patients presenting with acute abdominal pain early laparoscopy is an outstanding management tool. It is safe, accurate and reduces hospital stay and morbidity.<sup>11</sup> It decreases delay in diagnosis and can also be

used as therapeutic tool concomitantly. In about 90% of cases it leads to definitive diagnosis, while in one third of cases it alters management plans.<sup>12,13</sup>

Minimal invasive surgery was not that much common until the advent of laparoscopic cholecystectomy and other therapeutic procedures<sup>14</sup>, but now a days its quiet common modality and is increasingly being used in emergency cases as well. Furthermore we have little data available regarding laparoscopy from our setup. We have conducted a study in order to assess the role of laparoscopy in patients presented with acute abdomen and to know the extent of its diagnostic and therapeutic role. Moreover we have also focused that how frequent the laparoscopic procedure is converted into open surgical procedures.

### Material and Methods

This prospective cross sectional study was conducted in department of surgery (Surgical D ward) Khyber Teaching Hospital, Peshawar, Pakistan from July 2015-july 2017. A total of 240 patients who fulfilled inclusion criteria were selected randomly for study. All patients who presented with sign and symptoms of acute abdomen<sup>1</sup>, had age more than 15 years who were not previously investigated or treated for same disease were included in study while those age less than 15 years, who were in shock at time of presentation, chronic obstructive diseases, respiratory distress, known cardiac patients, pregnant, traumatic emergency or those who were treated previously for same disease were excluded from the study. Standard laparoscopic procedure with 10mm optical umbilical port or palmer port and next 5mm port being inserted according to need of pathology based on clinical examination and initial laparoscopic examination and other ports if needed were used. Laparoscopy was conducted by the consultant in all cases as diagnostic procedure. Complicated cases which were difficult to handle by laparoscopy were converted to open surgery after diagnoses were made while rest of cases were managed by laparoscopy at same time. Data was collected by doctor on duty by using

pre designed questionnaire as data collection tool containing information regarding bio data and questions of interest after informed consent from patient, analyzed by SPSS 17 and described in paragraphs and tables. Frequency and percentages were calculated for categorical variables while mean and standard deviation was calculated for continuous variables.

### RESULTS

Out of our total study population 155(64.6%) were males, 85(35.4%) females, 96(40%) from urban while 144(60%) from rural area. Mean age of patients was  $32 \pm 11$  years (minimum age was 16 while maximum 92yrs. 52(21.6%) were diabetics, 45(18.7%) were hypertensive while 37(15.4%) were smokers. Laparoscopy was done for all patients as diagnostic procedure, in 212(88.3%) patients it was therapeutic as well while in 28(11.7%) patients were managed by open surgical procedure.

In total sample of 240 patients, 174 (72.5%) were diagnosed as cases of acute appendicitis followed by perforated duodenum in 19(7.9%) cases and ruptured ectopic pregnancy in 17 (7%) of cases. Detail given in Table-I below:

After diagnosis 212(88.3%) patients were managed primarily by laparoscopy at the same procedure while 28(11.7%) patients were subjected to open procedure, abdomen was opened and management was done accordingly detail given in Table-II below.

All patients were followed post operatively till time of discharge. Average hospital stay was  $6 \pm 4$  days (minimum 3 days and maximum 19 days). Outcome showed that 3(1.2%) patients were expired in which 2 were having mesenteric ischemia and 1 had ruptured ectopic pregnancy while 237(98.7%) were discharged.

### DISCUSSION

Laparoscopic intervention is an excellent option for patients presenting with acute abdomen. It improves early diagnosis and is helpful to undergo concomitant therapeutic action as well.

Diagnosis	Management			
	Primarily by Laparoscopy		Changed to Open Surgical Procedure	
	No. of Patients(n)	Percentage (%)	No. of Patients(n)	Percentage (%)
Acute appendicitis	167	69.5	07	03
Perforated duodenum	16	6.6	03	1.2
Ruptured ectopic pregnancy	17	07	00	00
Enteric perforation	02	0.8	09	3.7
Ruptured ovarian cyst	07	03	00	00
Gall stone ileus	00	00	04	1.6
Perforated gall bladder	03	1.2	00	00
Mesenteric ischemia	00	00	03	1.2
Meckel's diverticulitis	00	00	02	0.8

Table-I. Management

But being an invasive procedure it also increase the risk of iatrogenic injury specially in unexperienced hands, support the thought of some clinicians to avoid early laparoscopy.<sup>10,12,13</sup> Cuesta et al. provide enough data to emphasize that laparoscopy is the only definitive procedure for diagnosis in patients in whom noninvasive investigations fail to make definitive diagnosis.<sup>15</sup> We observed that laparoscopy was diagnostic in 100 percent of cases as all of the sample cases were diagnosed detail given in Table-I. Moreover it was therapeutic in 88.3% of cases, detail given in Table-II.

Ou CS et al. found laparoscopy in his study as diagnostic tool in 100% of cases supporting our study. He had treated 95% of cases by laparoscopy or assisted laparoscopic procedures with mortality of zero percent.<sup>16</sup> Saeed M et al. also described same results in his study in which they were successful in diagnosis of all of their 31 sample patients, supporting our results.<sup>14</sup> Although the diagnostic frequency vary from surgeon to surgeon, the quality of instruments and advancement of set up, as 2 randomized control trials in past noted diagnosis and subsequent management in 97% and 81% of cases in early laparoscopy.<sup>17,18</sup> R S Chung reported 100% diagnosis while in 21 out of 55 patients the laparoscopic procedure was converted into open surgery. He also described mesenteric ischemia in 2 cases in which one died within 48hrs of laparoscopy.<sup>19</sup> We had also intraoperative mortality of zero percent, although 3% of mortality was noted in post-operative hospital stay in surgical ICU in which 2 patients

were those who presented with mesenteric ischemia and one female patient who presented with ruptured ectopic pregnancy.

We observed an average hospital stay of  $6 \pm 4$  days comparable to that noted by Saeed M et al.<sup>14</sup> and R S Chung.<sup>19</sup> Moreover we noted Acute appendicitis as the most frequent diagnosis followed by Perforated duodenum, Ruptured ectopic pregnancy, Enteric perforation, Ruptured ovarian cyst, Gall stone ileus, Perforated gall bladder, Mesenteric ischemia and Meckel's diverticulitis detail given in Table-I and II. Chung RS have also noted almost same findings with acute appendicitis, acute cholecystitis, perforated duodenum and mesenteric ischemia although percentages may vary.<sup>19</sup>

Laparoscopy was noted as a safe procedure with no intraoperative mortality (in 100% cases). Other studies have also noted laparoscopy as safe and accurate procedure in dealing patients of acute abdomen.<sup>14,19,20</sup>

## CONCLUSION

Laparoscopy in cases of acute abdomen was noted as safe and accurate procedure with decrease mortality and morbidity. Moreover it is an authentic tool for diagnosis with high diagnostic accuracy. It also helps in management at same time and aid in further course of management.

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

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Your **attitude** will determine your **success** in life.

“Unknown”

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### AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Mohammad Zarin	Conception and design of study	
2	Junaid Zeb	Statistical expertise, abstract and article writing.	
3	M. Asim Khan	Drafting of the article.	
4	Syed Asad Maroof	Collection and assembly of data.	
5	Somia Ibrar	Drafting of the article.	