



A CASE CONTROL STUDY ON CLINICAL COMPARISON OF LAPAROSCOPY VS OPEN SURGERY IN ACUTE ABDOMEN

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ABSTRACT **INTRODUCTION:** To comparison of laparoscopy vs open surgery in acute abdomen and to evaluate the level of efficacy of both in light of patient welfare and management with less perioperative complications and hospital stay. This study was aimed to clinical comparison in acute abdomen.
METHODS: This study was hospital based comparative case control study, included 50 cases of acute abdomen of Pt JNM Medical College and DR.B.R.A.M. Hospital Raipur (C.G.) in year 2007 to 2008. In out of 50 cases, laparoscopy was performed in 25 cases & rest of the 25 cases was treated without laparoscopy.
RESULT: In the study group experienced less operating time ($P < 0.05$). The average hospital stay ($P < 0.001$) and the occurrence of post operative complication rate was low in the study group ($P < 0.05$)
CONCLUSIONS: Laparoscopic procedure is safe. It significantly reduces post op complications with less hospital stay with early mobility of the patient.

KEYWORDS : Acute Abdomen, Laparoscopic Surgery, Open Surgery, Laprotomy.

INTRODUCTION

There are acute abdominal conditions in which it is difficult to establish an indicative diagnosis before laparotomy a diagnosis is important in planning the right abdominal incision or to avoid an unnecessary laparotomy. Diagnostic noninvasive procedures such as X-Ray studies do not always appears conclusive. Diagnostic laparoscopy is the only technique which can visualize the interior of abdomen and by establishing an adequate diagnosis permits the surgeons to plan the right abdominal approach. (1)

The emergence of laparoscopy in the late 1980's as a credible therapeutic intervention heralded a new surgical age. Demonstrable reduction of wound complications, post-operative pain, hospital stay and costs in treating gallbladder disease (2) and gynaecological conditions such as laparoscopic sterilization(3) and hysterectomy (4) led to the expansion of its use in other abdominal organ pathology, such as the colon (5), stomach (6) and oesophagus (7). Initially laparoscopy was limited to elective surgery but as technology and surgical experience expanded so did the application of laparoscopy into the emergency setting (8). Laparoscopic surgery has now been described in many abdominal emergencies, such as acute appendicitis (9), blunt and penetrating trauma (10), perforated peptic ulcer disease (11) and acute pancreatitis (12), and this variety of conditions seems set to expand further.

There are acute abdominal conditions in which it is difficult to establish an indicative diagnosis before laparotomy. (13). Diagnostic noninvasive procedures such as radiological studies are not always conclusive. Laparoscopy is the only technique that can establish a diagnosis by direct visualization of the abdominal organs. The goal of this investigation was to study the comparison of clinical outcome of laproscopic and open laprotomy surgery and to a planned exploratory laparotomy in order to establish a diagnosis and indicate the right surgical approach. This approach can be laparoscopic or through a mini or a conventional laparotomy. In other cases negative findings will result in the choice of a conservative policy. The benefits of laparoscopic surgery in terms of lower morbidity, shorter hospital stay and quicker recovery times are well established On the other hand, a common criticism of laparoscopic surgery is that it is time consuming and complex. Thus the purpose of this study was with the objective of clinical comparison of laparoscopy vs open surgery in acute abdomen.

AIMS & OBJECTIVES

- 1) To comparison of laparoscopy vs open surgery in acute abdomen.
- 2) To compare the clinical outcomes between open laparotomy surgery and laparoscopic surgery in case of acute abdomen.

MATERIAL & METHODS

present study was conducted in Pt. J.N.M. Medical college and

B.R.A.M. Hospital, Raipur in the year 2007-2008. In this study included 50 cases of acute abdomen admitted in surgical wards.

In out of 50 cases, laparoscopy was performed in 25 cases & rest of the 25 cases was treated without laparoscopy. All cases treated by laparoscopy were included in the study group. All cases treated without laparoscopy were included in control group. Then we compare both groups to each other.

INCLUSION CRITERIA-

- 1) Acute abdomen with uncertain etiology.
- 2) Acute abdominal cases with equivocal non-invasive diagnostic results.
- 3) Some acute abdominal cases where diagnosis was known, for confirmation of diagnosis.
- 4) Recurrent acute abdominal cases.
- 5) Chronic abdominal cases which have acute episode.
- 6) Age group in between 15 year to 45 years of age.
- 7) Abdominal trauma.
- 8) Acute abdomen in patients having abdominal lump.

THE EXCLUSION CRITERIA-

The absolute and relative contraindications to laparoscopy in treatment of abdominal emergencies are the same as for elective procedure.

1. Uncorrected coagulopathy.
2. Haemodynamic instability.
3. Abdominal wall infection.
4. Severe cardiopulmonary disease.
5. Multiple previous upper abdominal procedures.
 - Patient not fit for surgery as well as general anesthesia.
 - Chronically ill debilitated pt.
 - Pts C chronic abdominal pain C no acute exacerbation

The exclusion criteria for control group was same as for study group.

1)IN STUDY GROUP – Patients of acute abdomen undergoes to laparoscopy & we make diagnosis & establish indication for therapeutic laparoscopy. If it is indicated, then we do therapeutic laparoscopy, otherwise we convert it into open surgery. Single surgeon for department performs all laparoscopy.

2)IN CONTROL GROUP – patients are diagnosed & treated without laparoscopy according to indications. The patients in control group was treated by surgeons using same protocol for management of acute abdomen accepted in the department.

In both groups, similar no. of the same pathology was included. The criterion for entering into control group was similar to that of study group.

In both group, we selected cases randomly from casualty. But all laparoscopy were performed in major OT because laparoscope was not available in casualty. In control group, operations were performed both in casualty as well as in major OT.

RESULT

Out of the total 50 recorded cases, 25 cases were laparoscopic operated and grouped in to study group. There were 14 males and 11 females, aged 31.84±9.55. In remaining 50 cases operated by open laprotomy and grouped in to control group. There were 13 males and 12 females, aged 30.88±10.23. See table 1

Table1- Clinical comparison of acute abdomen between the study group and control groups

	Study group n=25 (%)	Control group n=25 (%)	p value
Gender			
male	14 (56)	13 (52)	0.05
female	11 (44)	12 (48)	
Age (yr, mean ± SD)	31.84±9.55	30.88±10.23	0.73
per abdominal examination findings			
Distension of abdomen	10	7	
Pain abdomen	25	22	
Nausea and vomiting	22	15	
Fever	6	14	
Lump in abdomen	2	02	
previous abdominal surgery	3 (12)	3 (12)	1

Table 2 - Perioperative complications for the study group and control group

	study group n=25 (%)	control group n=25 (%)	p value
Complication rate	4 (16)	29(44)	x ² =4.57 <0.05
wound infection	0 (0)	10 (40)	
discharge from incision site	1 (4)	10 (40)	
Wound gap	0 (0)	4 (16)	
Liver abscess	1(4)	0 (0)	
Burst abdomen	0	3 (13)	
Others	2 (8)	2 (8)	
	0.66±0.74	4.80±3.84	<0.001

There were 4 cases of perioperative complications (16% incidence rate) for study group which included: 1 case of discharge from incision site and 1 case of liver abscess. For control group, with (a 44% occurrence rate) there were 29 cases of perioperative complications in the control group, which were: 10 case of wound infection, 10 cases of discharge from incision site, 4 cases of wound gap it may be incisional infection, 1 case of burst abdomen and 2 cases of others in both study and control group. The incidence rate of perioperative complications in the study group and control group groups were significantly associated (P<0.05). See table 2

Table3- post operative recovery in the study group and control group

	laparoscopic surgery	open laprotomy	p value
operation time (min)	143.89 ± 50.86	164.86 ± 67.99	<0.05
Hospital stay (day)	6.26 ± 2.86	9.40 ±4.93	< 0.005
Effective treatment time (days)	6.16 ±3.11	8.18 ±3.76	<0.05
post-Op hospital stay (days)	4.10±2.41	6.14 ±3.18	<0.05
Therapeutics delays (days)	3.64 ±4.22	2.80 ±2.48	>0.05

The operation time of study group was shorter than control group (143.89 ± 50.865 min vs 164.86 ± 67.993 min), which was statistically significant (P < 0.05). In study group hospital stay was shorter than control group (6.26 ± 2.86 vs 9.40 ±4.93) and that was also statistically

significant with p <0.05. Study group was significantly less than control group in terms of the effective treatment time and post-op hospital stay (p<0.05). See table 3

According to this table hospital stay time, effective treatment time & post-op hospital stay time was significant & shorter for study group than control group. But therapeutic delay between study & control group was not statistically significant.

DISCUSSION AND CONCLUSION

The present study was conducted in the Pt. J.N.M. Medical college and B.R.A.M. Hospital, Raipur in the year 2007-2008.

Abdominal pain is the most important thing in majority of surgical patients. Acute abdomen continues to be the commonest complaint for emergency surgical admission and demands a large portion of the general surgeons' workload. We found that laparoscopy was of great diagnostic value and a therapeutic procedure was feasible in significant number of patients. Moreover, observation on laparoscopy changed the further course of management in several cases and avoided unnecessary non-therapeutic laparotomies in a significant proportion of patients.

Present study included 50 cases of acute abdomen admitted in surgical wards of Pt. J.N.M. Medical college and B.R.A.M. Hospital, Raipur. Out of 50 cases, laparoscopy was performed in 25 cases [n=25] & rest of the 25 cases [n=25] were treated without laparoscopy. In our current study, we studied the advantages and disadvantages of laparoscopy vs an open operation, and have compared perioperative complications. In the present study, we found that the operating time of the study group was shorter than that of the control group, with statistical significant. Additionally, the recovery time, hospital stay and other aspects were evidently less than after open surgery.

But difference of Therapeutic delay between study & control group is not significant. It means that therapeutic delay is similar in both study and control group. This delay is because of delay in preparation of patient for operation in our hospital.

We conclude that a laparoscopic-assisted operation has more benefits due to reduced trauma, less complication and a reduced stay in hospital, as well as faster recovery. Thus, laparoscopic surgery may become the most effective therapy for acute abdomen in the future. Hospital stay time, Effective treatment time & Post op hospital stay time was shorter in study group than control group. Thus, laparoscopic surgery has advantages over open surgery in terms of decreased Hospital stay time, Effective treatment time.

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